

LEE COUNTY, FL

Common Treatment Guidelines

APRIL 2015

Developed by the:
County Wide Protocol Subcommittee
Lee County, Florida

2015 – April Update

PARTICIPATING AGENCIES

Level of Service

Alva Fire and Rescue	BLS / Non Transport
Bayshore Fire Protection and Rescue Service District	BLS / Non Transport
Boca Grande Fire Control District	BLS / Non Transport
Bonita Springs Fire Control and Rescue District	ALS / Non Transport
Captiva Fire Control District	ALS / Non Transport
Cape Coral Fire, Rescue and Emergency Management Services	ALS / Non Transport
City of Fort Myers Fire Department	ALS / Non Transport
Estero Fire and Rescue District	ALS / Non Transport
Fort Myers Beach Fire Rescue EMS	ALS / Transport
Fort Myers Shores Fire and Rescue Control District	BLS / Non Transport
Iona McGregor Fire District	ALS / Non Transport
Lee County EMS	ALS / Transport
Lee County Airport Rescue and Fire Fighting	BLS / Non Transport
Lehigh Acres Fire Control District	ALS / Transport
Matlacha Pine Island Fire Control District	BLS / Non Transport
North Fort Myers Fire Control and Rescue District	BLS / Non Transport
San Carlos Park Fire Protection and Rescue District	ALS / Non Transport
Sanibel Fire and Rescue District	ALS / Non Transport
South Trail Fire Protection and Rescue District	ALS / Non Transport
Tice Fire and Rescue District	BLS / Non Transport
Upper Captiva Fire and Rescue District	BLS / Non Transport
Useppa Island Fire Department	BLS / Non Transport

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Section I: General Medical Guidelines

INTENT AND USE OF GUIDELINES

These medical treatment Guidelines have been developed as a part of the medical direction program for Emergency Medical Services (EMS) in Lee County, Florida. The treatment Guidelines have been designed as clinical guides, not as educational documents.

Some patients may require therapy not specified herein. The treatment Guidelines should not be construed as prohibiting such flexibility. The EMT-Basic or Paramedic must use his / her judgment in administering treatment in the following manner:

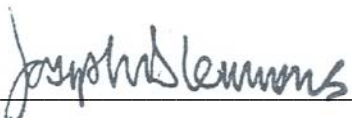
- The EMT-Basic, or Paramedic may determine that no specific treatment is needed; or
- The EMT-Basic, or Paramedic may consult medical direction before initiating any specific treatment; or
- The EMT-Basic or Paramedic may follow the appropriate treatment Guideline and then consult medical direction.

The Guidelines outline care for a typical case. As the Guideline continues, the assumption is usually made that previous steps were ineffective. For example, when treating a patient in ventricular fibrillation, the V-Fib Guidelines would be followed. If the patient’s rhythm changed to PEA, then the PEA Guidelines would be followed. In this or other situations where a change is made to a different Guideline during the course of care, the paramedic's judgment must determine where entry into the new Guideline sequence is appropriate. It would be impractical to write Guidelines that specify every possible sequence of events. **The order of treatment listed may not be appropriate for all situations. In fact, not all treatment options may be indicated in every situation.** The paramedic's judgment must be relied upon to determine which of the authorized treatment procedures are appropriate for a given situation.

All patients who receive ALS care should be transported to the hospital, unless the patient refuses transport and signs a release. Contact with the receiving hospital emergency department is required for all patients transported, even in situations where ALS care has not been initiated. This policy is intended to provide emergency departments with sufficient notification of incoming patients to allow appropriate preparations to be made. Direct contact with the physician in the emergency department need only be made when seeking consultation.

Each and every patient responded to is to have Trip Sheet / Patient Care Report appropriately completed.

Finally, it is to be noted that ALS Non-transport units may not necessarily carry out certain procedures and treatment modalities as listed herein as compared to ALS transport units.



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Sept 1, 2014
Date

INTRODUCTION TO ADULT INITIAL ASSESSMENT AND MANAGEMENT

Guidelines in Section I pg. 4 (Adult Initial Assessment) and Section I pg. 6 (Pediatric Initial Assessment) are designed to guide the EMT-Basic or Paramedic in his or her initial approach to assessment and management of adult and pediatric patients. The Pediatric Initial Assessment Guideline should be used for infant and pediatric patients. The care is specified as **EMT-Basic and Paramedic (BLS)** and **Paramedic Only (ALS)**.

- Adult: An individual greater than 8 years of age or greater than 40kg.
- Pediatric: An individual between 1-8 years of age or between 10-40 kg.
- Infant: An individual between 28 days-1 year of age or between 5-10 kg.
- Neonate: An individual from birth-28 days of age or less than 5 kg.

- Note: LMHS considers ALL patients less than 18 y/o a “pediatric patient” for purposes of admission criteria. This should not be confused with above AHA/PALS treatment guidelines.

Adult Initial Assessment should be used on all adult patients for initial assessment. During this assessment, if the EMT-Basic or Paramedic determines that there is a need for airway management; Airway Management Guideline should be used for the management of the airway. These Guidelines are frequently referred to by other Guidelines, which may or may not override them in recommending more specific therapy.

Medical Supportive Care guideline (Section I pg. 16) presents the basic components of preparation for transport of medical patients. Due to the significant differences in priorities and packaging in the pre-hospital care of trauma and hypovolemia cases, a separate Trauma Supportive Care Guideline has been developed. After following Adult Initial Assessment Guideline, the Medical Supportive Care Guideline or Trauma Supportive Care Guideline may be the only Guideline used in emergency medical situations where a specific diagnostic impression and choice of additional Guideline(s) cannot be made. Judgment must be used in determining whether patients require ALS or BLS level care. This Guideline is frequently referred to by other Guidelines, which may or may not override it in recommending more specific therapy.

ADULT INITIAL ASSESSMENT

EMT-BASIC AND PARAMEDIC

1. Scene Size-up
 - A. Review of Dispatch Information.
 - B. Assess Need for Body Substance Isolation.
 - C. Assessment of Scene Safety.
 - D. Determine Mechanism of Injury / Nature of illness
 - E. Determine Number and Location of Patients.
 - F. Determine Need for Additional Resources.
2. Initial Assessment
 - A. General Impression of Patient.
 - B. Assess Mental Status (AVPU) – Maintain Spinal Immobilization PRN.
 - C. Chief Complaint
 - D. Assess Airway.
 - E. Assess Breathing – Fully assess lungs sounds
 - F. Assess Circulation – Pulse, Major Bleeding, Skin Color and Temperature.
 - G. Assess Disability – Movement of Extremities / Defibrillation – VF / VT without pulse.
 - H. Expose and Examine Head, Neck, Chest, Abdomen, and Pelvis (Check back when patient is rolled on side).
 - I. Identify Priority Patients.
 - Priority I – Indicates an unstable ALS patient.
 - Priority II – Indicates a stable ALS patient.
 - Priority III – Indicates a BLS patient.
3. **Initial Management** (see Adult / Pediatric Medical Supportive Care Guideline and Trauma Supportive Care Guideline)
4. Secondary Assessment
 - A. Conduct a Head-to-Toe Survey.
 - B. Neurological Assessment.
 - C. Pupillary Response.
 - D. Glasgow Coma Score.
 - E. Assess Vital Signs.
 - Respirations.
 - Pulse.
 - Blood Pressure.
 - Capillary Refill.

- F. Skin Condition.
 - Color.
 - Temperature.
 - Moisture.
- 5. Obtain a Medical History.
 - A. **S** - Symptoms - Assessment of Chief Complaint.
 - O – Onset and Location.
 - P – Provocation.
 - Q – Quality.
 - R – Radiation.
 - R – Referred.
 - R – Relief.
 - S – Severity.
 - T – Time.
 - B. **A** - Allergies.
 - C. **M** - Medications.
 - D. **P** - Past Medical History.
 - E. **L** - Last Oral Intake.
 - F. **E** - Events Leading to Illness or Injury.
- 6. Other Assessment Techniques
 - A. Cardiac Monitoring.
 - B. Pulse Oximetry.
 - C. Capnography
 - D. Glucose Determination. (Blood Glucose)
 - E. Monitor Body Temperature.

PEDIATRIC INITIAL ASSESSMENT

EMT-BASIC, AND PARAMEDIC

1. Scene Size-up
 - A. Review of Dispatch Information.
 - B. Assess Need for Body Substance Isolation.
 - C. Assessment of Scene Safety.
 - D. Determine Mechanism of Injury / Nature of Illness.
 - E. Determine Number and Location of Patients.
 - F. Determine Need for Additional Resources.
 - G. Note Anything Suspicious at the Scene – Medications; Household Chemicals; Family Members.
 - H. Assess any Discrepancies between History and Patient Presentation.
2. Initial Assessment
 - F. General Impression of Patient (Pediatric Assessment Triangle)
 - Appearance.
 - Work of Breathing.
 - Circulation to Skin.
 - G. Assess Airway.
 - H. Assess Breathing. – Fully assess lung sounds
 - I. Assess Circulation. – Pulse, Major Bleeding, Skin Color, and Temperature.
 - J. Assess Disability – Movement of Extremities / Defibrillation, as indicated.
 - K. Expose and Examine the Patient as Appropriate Based on Age and Severity of Illness / Injury. Head (fontanel), Neck, Chest, Abdomen, and Pelvis (check back when patient is rolled on side).
 - L. Initiate Measures to Prevent Heat Loss.
 - M. Identify Priority Patients.
 - Priority I – Indicates an unstable ALS patient.
 - Priority II – Indicates a stable ALS patient.
 - Priority III – Indicates a BLS patient.
3. **Initial Management** (see Medical Supportive Care or Trauma Supportive Care Guideline).
4. Secondary Assessment
 - A. Conduct Toe-to-Head Survey.
 - B. Neurological Assessment.
 - Pupillary Response.

- Glasgow Coma Scale. (infant)
- C. Assess Vital Signs.
- Respirations.
 - Pulse.
 - Blood Pressure.
 - Capillary Refill.
 - Skin Condition.
 - Color.
 - Temperature.
 - Moisture
5. Obtain a Medical History.
- A. **S** - Symptoms - Assessment of Chief Complaint.
- O – Onset and Location.
 - P – Provocation.
 - Q – Quality.
 - R – Radiation.
 - R – Referred.
 - R – Relief.
 - S – Severity.
 - T – Time.
- B. **A** - Allergies.
- C. **M**- Medications.
- D. **P** - Past Medical History.
- E. **L** - Last Oral Intake.
- F. **E** - Events Leading to Illness or Injury.
6. Other Assessment Techniques
- A. Cardiac Monitoring.
 - B. Pulse Oximetry.
 - C. Capnography
 - D. Glucose Determination. (Blood Glucose)
 - E. Monitor Body Temperature.

AIRWAY MANAGEMENT GUIDELINES

CORE PRINCIPLES OF VENTILATION, AND OXYGENATION

AIRWAY ADEQUACY

IMPORTANT CONCEPTS IN AIRWAY MANAGEMENT

The assessment and management of a patient's airway is the **crucial** initial priority in all circumstances. Usually, this is easily accomplished when faced with a talking, breathing, and coherent patient. Other times it is more difficult to determine if the patient's airway is compromised, ventilatory rate inadequate, or air exchange is poor. Additionally, there may be circumstances when airway adequacy may become rapidly compromised secondary to a disease or injury (i.e., thermal injury to the face or anaphylaxis). When these conditions exist, an airway management approach must be determined rapidly and early airway management must be considered a priority while doing everything possible to expedite transport.

The purpose of establishing an adequate airway (or protecting an airway from compromise) is to allow appropriate movement of air to maintain oxygenation and to facilitate elimination of CO₂. There is a significant risk of hypoventilation and hypoxia with any airway intervention. This risk is often overlooked in the "heat of the battle." Sometimes, during the actual procedure, healthcare providers lose sight of the need for basic airway and ventilatory management. As procedural attempts continue, the patient's oxygenation status drastically decreases and their CO₂ dramatically rises. Both of these conditions are associated with significant potential to worsen patient outcome.

Hypoxia has been shown to decrease survival from pre-hospital trauma, especially in head injury. Similarly, increases in CO₂ as a result of little or no ventilation (for example, during the time an advanced airway is being attempted) also decreases survival and worsens outcome in head injury patients. If the process of establishing an airway is prolonged (as much as 30 seconds), we may actually make the patient's outcome worse, even though the airway is established.

It is better to maintain a BLS airway than make repeated or prolonged attempts to establish an advanced airway. All Providers on scene should be aware of periods of no ventilation (during airway management, transport or other circumstances) and make an effort to correct the situation immediately. In patients that can be ventilated effectively with a BVM, advanced airway attempts are not authorized.

The decision to place an advanced airway in a patient must ALWAYS be focused on the needs of the patient, proximity to the ED, availability of equipment, skill of the intubating Provider and possible use of more advanced tools or experienced Providers that are en route to successfully intubate with the fewest attempts possible. Repeated unsuccessful attempts to intubate a patient that can be effectively ventilated is harmful.

AIRWAY MANAGEMENT APPROACH

Our approach to airway management is extremely important. The best decision on how to manage an airway can be reached by answering the following questions:

- Proximity to the hospital?
- Is the airway being adequately maintained?
- Is there a need to clear the airway?
- Is the airway being protected against aspiration?
- Is ventilation adequate?
- Is oxygenation adequate?

- Is there a condition present, or is there a therapy required that mandates airway adjuncts?
- Do I have the tools to correct this problem?
- Do I have the skills to correct this problem?

Airway procedures should be implemented starting with the least and progressing to the most invasive:

- Manual maneuver (chin lift, jaw thrust, etc.),
- BLS adjuncts (NPA, OPA),
- Blind Insertion Airway (LMA, King LTS-D etc.),
- Orotracheal intubation,
- Surgical / needle cricothyrotomy

If the patient's airway cannot be maintained (i.e., inadequate ventilation), the Provider should immediately consider airway maneuvers (within their scope of practice) as listed above. Continue BLS maneuvers while evaluating the need for a rescue airway. If still unable to maintain adequate ventilation and/or airway protection, proceed to placement of the LMA, King LTS-D or other rescue airway. If STILL unable to ventilate, and the patient is unlikely to survive, proceed to ET intubation; then needle cricothyrotomy for the pediatric patient (10 years of age or less) or surgical cricothyrotomy (over 10 years old). Expeditious transport to the nearest ED should be the preeminent consideration.

COMMON SENSE APPROACH TO FACILITATE DIFFICULT AIRWAY MANAGEMENT

- Evaluate the need for an advanced airway versus expedited transport of the patient to definitive care with BLS airway management
- Audibly verbalize the procedure as it is being done (by intubating provider)
- Airway Axis Alignment by head repositioning (occipital / shoulder padding, "ramping", sniffing)
- Consider external laryngeal manipulation,
- Change your position,
- Change the blade,
- Change the provider who is intubating (this is often overlooked as a significantly useful approach)
- Once the airway is established, secure it with tube holder

CONFIRMING AND MONITORING APPROPRIATE ADVANCED AIRWAY PLACEMENT

Once an advanced airway is placed, it is **crucial** that all efforts are made to ensure it is definitively placed. **All advanced airway placements must be confirmed by EtCO₂ capnography.**

Additionally, it is important to continuously monitor airway placement for changes related to movement or obstruction. It is essential that all advanced airway attempts, as well as confirmation of placement, be documented in the Patient Care Record (PCR) with copies of all monitoring equipment printouts (O₂ saturation and EtCO₂) when available.

Confirmation of an appropriately placed advanced airway is multi-faceted and should include:

- Visualizing the placement,
- Auscultating for breath sounds over both lungs and epigastrium,
- Observing for equal chest rise and fall,
- Monitoring EtCO₂ (capnography),
- Monitoring pulse oximetry,
- Monitoring changes in vital signs, especially skin color

Once an advanced airway has been established, management of the tube or catheter should be of the highest priority during any patient movement.

- An appropriately sized cervical collar should be applied immediately following successful placement and securing of the airway.
- The BVM is to be disconnected from the tube during any transitional movement including
 - Log-rolling patient onto a backboard
 - Moving patient onto a stretcher
 - Loading and unloading from ambulance or helicopter
 - Transfer to the hospital stretcher
 - The tube is to be reassessed following any patient movement

Appropriate demonstration of persistent EtCO₂ is the most reliable indicator of tube placement in our assessment toolbox. All advanced airway placement must be confirmed by EtCO₂ capnography. Additionally, it is important to continuously monitor tube placement for any changes related to movement or obstruction. Loss of EtCO₂ is an immediate indicator of significant change, whether it is loss of tube placement or loss of perfusion. ALL changes in EtCO₂ **must** be immediately evaluated to determine the reason for the change.

VENTILATION / OXYGENATION – ADEQUATE / APPROPRIATE

INTRODUCTION

After it has been confirmed that the patient has a patent airway, the next step is to assess ventilation and oxygenation status. An initial assessment of respiratory rate and depth, skin color, and mental status will give a quick picture of whether the patient is breathing and oxygenating adequately.

Your physical assessment, EtCO₂ monitoring, and pulse oximetry provide a very accurate picture of how well the patient is being ventilated and oxygenated.

It is **crucial** that all Providers take responsibility for assessing adequate oxygenation and ventilation in every patient. This can be accomplished by monitoring:

- Respiratory rate and depth,
- Skin color,
- Capillary refill,
- Lung sounds,
- Work of breathing,
- Patient position (i.e. Tri-pod),
- Ability (inability) to maintain secretions,
- Pulse oximetry and ETCO₂ monitoring

OXYGENATION AND VENTILATION – THE IMPORTANT RELATIONSHIP

Ventilation is the mechanical aspect of breathing, in which O₂ moves into the lungs and CO₂ (normal by-product of metabolism) moves out of the lungs. Proper ventilation requires both adequate tidal volume (500-600 cc for an adult male) and respiratory rate.

Oxygenation is defined as “the addition of oxygen to any system, including the human body.” With ventilation serving as the mechanical means of adding oxygen to the body, the patient must have sufficient oxygen available, and the ability for that oxygen to be utilized (O₂/CO₂ exchange). While ventilatory rate and depth are the key components, there are other factors that can affect whether or not the patient is being adequately oxygenated. Even if the ventilation rate and depth are adequate, every patient must be evaluated for the need to have supplemental oxygen delivered and the most appropriate means for that to occur. Considerations in determining a patient’s need for supplemental oxygen include:

- Level of consciousness
- Ventilation rate and depth
- Mental status
- Circulatory status
- Skin color
- Chief complaint
- Previous history
- Type of incident

A condition related to a patient's breathing depth and rate that can create uncertainty for Providers is hyperventilation. Because the patient is breathing at an excessive rate and/or depth, he/she expels too much CO₂. The lack of adequate CO₂ causes a drop in the acid levels of arterial blood resulting in a condition called alkalosis. (Simply, the buildup of excess base in the body's fluids) It is the alkalosis that causes many of the symptoms commonly associated with hyperventilation including anxiety, dizziness, numbness, tingling in the hands, feet, and lips, and a sense of difficulty breathing.

Hyperventilation can occur as a response to serious illness or, in a healthy person, as a response to psychological stress. In either case, the key is a thorough assessment to identify treatable conditions. All patients suffering from hyperventilation should be given supplemental oxygen, calm reassurance in a professional manner in an effort to normalize their respiratory rate and depth, and be offered transport to the hospital.

Intentional hyperventilation by healthcare providers is very controversial for the following reason: CO₂ is a potent vasodilator. When CO₂ drops, as a result of iatrogenic hyperventilation (aggressive bag mask ventilation), blood vessels constrict. When arterial vessels constrict, blood flow to vital organs is minimized. In the case of a closed head/traumatic brain injury patient, iatrogenic hyperventilation will reduce blood flow to the injury/ischemic zone (penumbra) thus resulting in poor patient outcomes and an increase in morbidity/mortality.

When inadequate oxygenation is recognized, it is essential that steps be taken to immediately supplement the patient's oxygen intake. Remember our primary treatment goals for patients suffering from inadequate oxygenation include:

- Preventing or correcting hypoxia
- Normalizing CO₂
- Minimizing the effects of secondary injuries
- Decreasing airway resistance

Once it is determined that supplemental oxygen is required, the question would be "how much?" A truly correct answer can only be reached by thoroughly evaluating your patient's condition and considering the following guidelines:

- Nasal cannula at 2-6 L/min for patients suffering from minor injury or illnesses where lower liter flow is appropriate.
- Non-rebreather at 10-15 L/min (enough to keep the reservoir filled) for patients presenting with altered mental status, obvious difficulty breathing, poor skin color, poor circulatory status, possible or confirmed CO Poisoning, etc.
- Bag-valve-mask at 15 L/min or greater (enough to keep the reservoir filled) for patients with inadequate ventilation rate and/or depth

O₂ administration should be guided by SpO₂ to maintain saturations between 94-99% but to avoid over oxygenation by flooding patients with high flow O₂ when not indicated. Supplemental O₂ is not necessary when room air sats are > 94 % and the patient does not show signs of hypoxia, SOB or other obvious clinical need for supplemental O₂.

VENTILATION RATE AND DEPTH

A common pitfall in ventilation is to over-ventilate the patient by providing too much volume or too fast a rate.

The physics that allow us to move air in and out of the lungs can also have a major impact on blood circulation (one more important inter-relationship between the ABCs). When a normally breathing patient takes in a breath, intrathoracic pressure decreases allowing air to be “sucked in” due to the resulting pressure differential. This is in contrast to patients that are ventilated with positive pressure (whether intubated, Bag-Valve-Mask or Mouth-to-Mask). In these patients, we INCREASE intrathoracic pressure as we inflate the lungs. In this case, the heart itself is “squeezed” and doesn’t fill as well or move blood forward as well. **Overly aggressive ventilation will have a dramatically adverse effect on circulation.** If we don’t pay attention to rate and depth, we may actually harm the patient’s circulation, drop their blood pressure, and decrease perfusion. Ventilation rate should be guided by an EtCO₂ between 35-45 mm/Hg.

Ventilation depth and rate is variable and driven by the patient’s condition. We must be mindful of the volume and rate at which we are ventilating the patient. The majority of adult patients should be ventilated at a rate of 12 breaths per minute (see below). Studies have shown that excessive ventilation rates significantly decreased coronary perfusion pressures and ultimately patient survivability. This is particularly true in cases of cardiac arrest. Each ventilation should be sufficient to create adequate chest rise and be delivered over one second.

In the absence of EtCO₂ and pulse oximetry, rescue breathing (patients with a pulse) should be performed at the following rates

AGE	BREATHS PER MINUTE
Neonate / Infant (< 1 year)	30-60
Toddler (1-3 years)	24-40
Preschooler (4-5 years)	22-34
School age (6-12 years)	18-30
Adolescent (13-18 years)	12-16
Adult (18+ years)	10-12

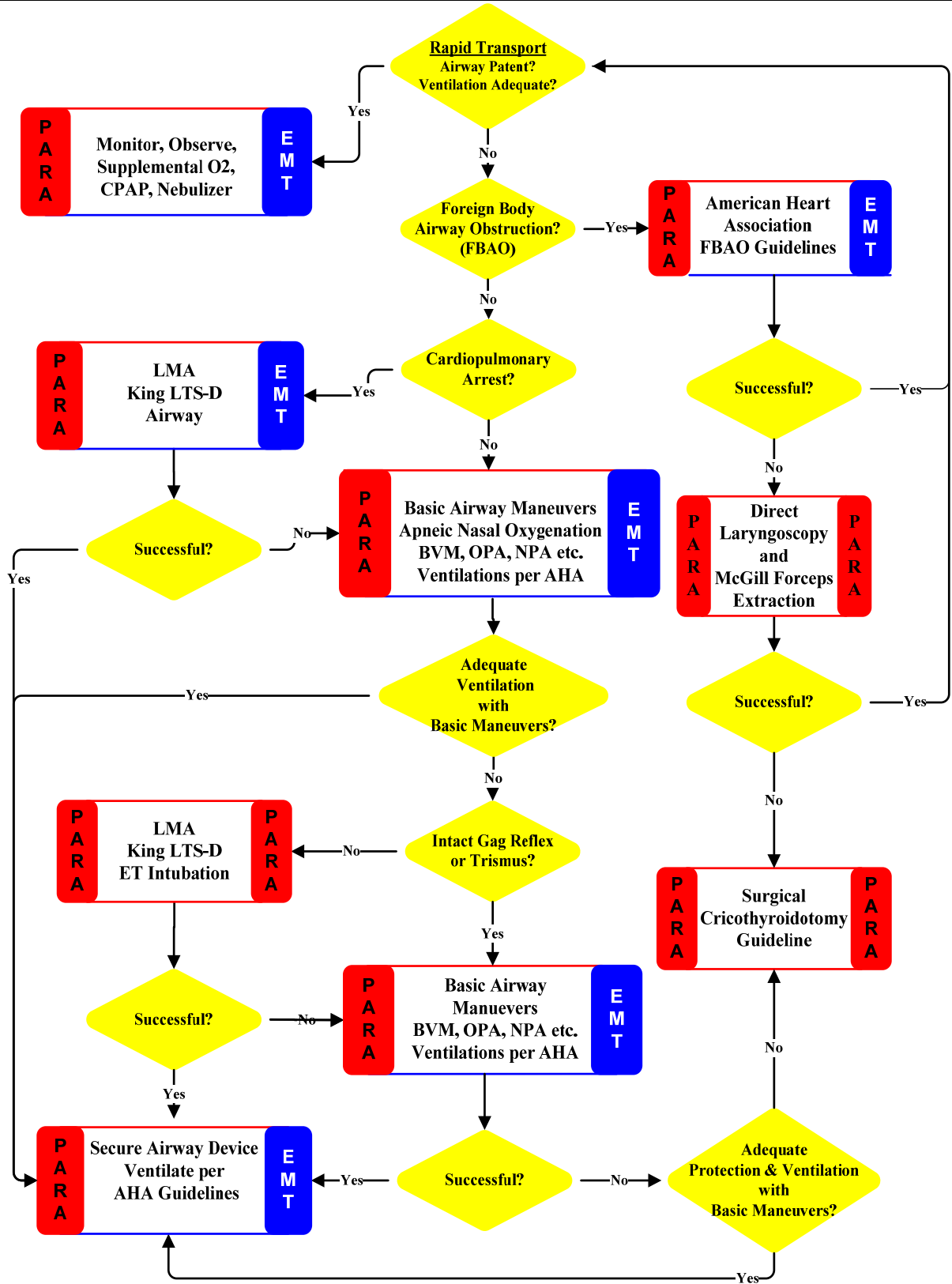
AIRWAY PEARLS

- **Airway management is not merely a psychomotor skill to be utilized when the patient can no longer manage their own. Rather, it is a mindset and a constellation of skills, tools and techniques that we employ not only to manage non-patent airways with various adjuncts, but also to preserve patient’s ability to manage their own airways.**
- **Airway management is not just one thing; it is a continuum of interventions ranging from simple positioning to surgical cricothyrotomy. Generally we need only progress as far along the continuum as is necessary to achieve adequate oxygenation and ventilation.**
- **For any patient with significant respiratory distress or neurological compromise, assess with the potential need for airway management in mind.**
- **Capnography (EtCO₂) and pulse oximetry are mandatory with all advanced airway insertions. Colormetric (EZ Cap) may be used for initial CO₂ detection when continuous capnography is not immediately available.**
- If airway/oxygenation/ventilation is being maintained by BVM with continuous pulse oximetry values greater than 90%, an advanced airway is not required.
- **Apneic Nasal Oxygenation:** Adding a nasal cannula at 15 lpm to your pre-oxygenation techniques has been shown to maintain an oxygen saturation of 98% or better in apneic patients.
- While new airway adjuncts and tools like video laryngoscopy offer intriguing possibilities, they are still no substitute for thorough assessment, preplanning and communication with team members.
- Supine positioning can result in a marked reduction in functional residual capacity; transport patients in semi-Fowler’s position whenever possible. Positioning is equally important when preparing the patient for insertion of an airway adjunct.
- Success at securing a difficult airway does not lie solely with the person holding the laryngoscope. Preplanning is vital!! Making proper use of your partner and additional personnel may mean the difference between success and failure.
- For the purposes of this protocol, a “secure airway” is when the patient is receiving appropriate oxygenation and ventilation.
- When placing an advanced airway, every effort must be made to avoid iatrogenic hyper/hypocapnea, hypotension, bradycardia and O₂ desaturation events.
- An intubation attempt is defined as passing the laryngoscope blade or endotracheal tube past the teeth with the intent to intubate.
- Ventilatory rate should be consistent with the AHA Guidelines.
- Utilize external laryngeal manipulation to facilitate difficult ET intubations.
- If difficult ET intubation is anticipated consider early use of **Blind Insertion Airway Device (LMA / King).**
- Apply C-collar before moving the patient to help reduce the risk of tube dislodgment.

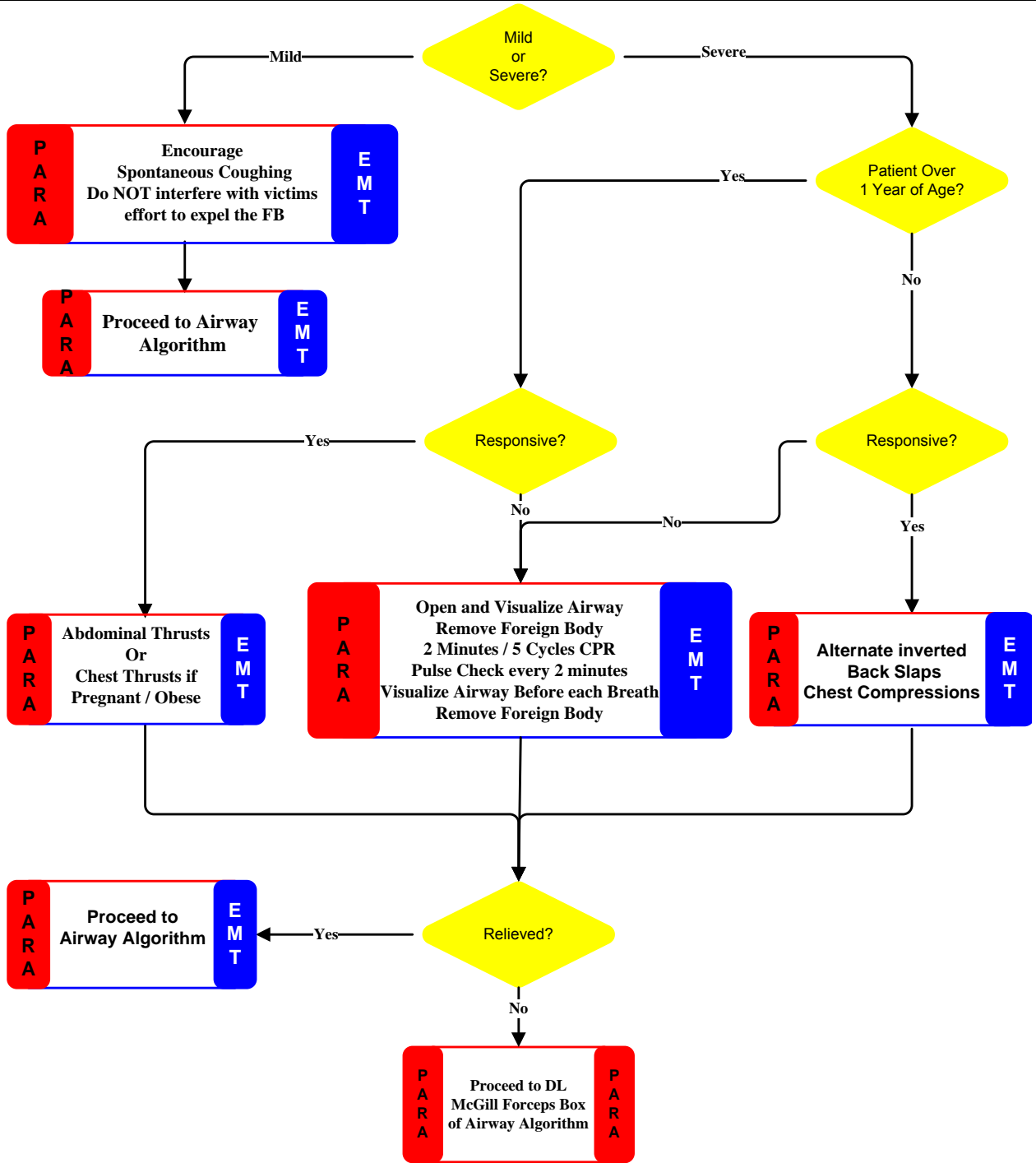
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- Maintain C-spine immobilization for all patients with suspected spinal injury.
- Gastric tubes should be inserted with all advanced airways when possible.
- If gastric distention is suspected secondary to BVM ventilation, manual gastric decompression should be done to avoid persistent vomitus airway contamination.
- Secure all advanced airways with the appropriate commercial tube holder, tape or any other acceptable technique for any given airway.

AIRWAY MANAGEMENT GUIDELINES



FOREIGN BODY AIRWAY OBSTRUCTION



MEDICAL SUPPORTIVE CARE

EMT-BASIC AND PARAMEDIC

Initial Assessment Guideline

Airway Management Guideline

If pulseless, refer to Cardiac Arrest Guideline

PARAMEDIC ONLY

1. Monitor EKG PRN.
2. Establish IV as indicated.
3. Establish hospital contact for notification of incoming patient and obtaining consultation for additional orders.

NOTES: * APPLY EQUALLY TO TRAUMA SUPPORTIVE CARE

1. *A **minimum** of two full sets of V/S should be documented on all patient transports. For any hemodynamically unstable patient V/S should be obtained no more than every 5 minutes and for stable patients every 15 minutes during transport and subsequently documented. In addition to the minimum above, V/S shall be obtained before and after every medication administration.
2. *Authorized IV routes include all peripheral venous sites. **Lee County EMS IV-certified EMTs and Paramedics in EMT positions may start IVs (upper extremity only) under the supervision of a credentialed Paramedic.**
3. For hypotension, administer a fluid challenge (500ml) of NS or RL. Repeat fluid challenge until desired effect is achieved, monitoring for pulmonary edema before and after each infusion.
4. IV lock or medication access point (MAP) may be used in lieu of an IV bag in some patients, when appropriate. Any patient that will receive IV medications or Nitro SL should have an IV NS infusing to facilitate proper flushing of medications and fluid resuscitation if necessary.
5. *When unable to establish a peripheral IV in a patient that needs emergent IV fluids, medication or to be resuscitated, IO (intraosseous) access may be used (credentialed paramedics only).
6. *LCEMS Paramedic Interns may perform any ALS procedure at the discretion of their FTO and within their scope of practice.

TRAUMA SUPPORTIVE CARE

EMT-BASIC AND PARAMEDIC

1. Initial Assessment Guideline.-Initiate trauma alert, as directed by Trauma Transport Protocol (TTP).
2. Airway Management Guideline (manually stabilize c-spine PRN).
3. Correct any open wound / sucking chest wound (occlusive dressing).
4. Control hemorrhage.
5. Conduct focused history and a trauma physical exam.
6. Follow Spinal Precaution Guideline as indicated.

PARAMEDIC ONLY

7. Immediately correct any massive flail segment (intubate), tension pneumothorax (chest decompression), and / or cardiac tamponade (pericardiocentesis).
8. Monitor EKG PRN.
9. Perform quick-look EKG if patient is pulseless. (if appropriate)
10. Establish IV of Lactated Ringers with 10gtt/cc infusion set and large bore IV catheter.
11. Moderate to severe trauma IV/L.R. on a macro drip or a blood solution set and titrate to SBP 100 mmHg in adults and 70-80 mmHg in Peds. Do not attempt to “normalize” the BP. Permissive hypotension helps minimize blood loss until definitive measures are taken by a surgeon.
12. Intravenous access attempts should not delay transport.
13. Second and third lines in transport, if time and conditions allow.

PATIENT RESTRAINT

GENERAL

The use of patient restraints is authorized in all instances where a patient's *violent* behavior may jeopardize the safety of the patient or crew. Additionally, restraints may be used when a patient, judged to be incompetent to make rational decisions, exhibits *violent* behavior that may disallow necessary medical treatment. This situation falls under the guidelines of implied consent. When the decision to restrain a patient is made, either leather or cloth restraints may be used. Tape may be used on the forearms and lower legs, for additional security when cloth restraints are used on violent patients.

PATIENT POSITIONING

Patients should not be restrained in the supine position when there is a risk of vomiting and aspiration. Any patient under the influence of an intoxicating agent and / or with an AMS, and who is not intubated, should be placed in a head elevated position (if possible) if restraints are deemed necessary. It is understood that there are times when you must restrain a patient while they are supine. Caution is to be used with any patient you are unable to place in a head elevated position, while restraints are in place. This is to include all patients that require restraints and have spinal immobilization measures in place. Be alert and prepared to rotate the backboard to clear the patient's airway, and have suction equipment available and ready for use.

ASSESSMENT AND DOCUMENTATION

When a patient is restrained, the restraints shall be placed only tight enough to secure the extremity without compromising neurovascular function. Distal neurovascular function shall be checked and documented after application and every 10 minutes thereafter. The required test procedures to be followed are:

1. Grip strength-should be equal and strong on most patients.
2. Sensations-both upper and lower extremities should have good sensations and absence of numbness.
3. Capillary refill-tests performed on both upper and lower extremities must result in a capillary refill time of less than 2 seconds.

The reason for restraining the patient and the results of all the above tests shall be documented on the patient care report. In addition, grip strength, sensation and capillary refill tests are to be performed and the results documented every 10 minutes. In the event of a short transport time, the results of a minimum of 2 sets are to be documented on your patient care report. One set must be completed upon arrival at the receiving facility.

HOSPITAL NOTIFICATION

The receiving facility shall be notified prior to arrival that a violent patient is in restraints and security should be available upon arrival.

REFUSAL OF CARE

POLICY

Any and all individuals that are involved as patients or potential patients should receive proper evaluation, treatment and transportation to the appropriate medical facility. There may be times when this policy may not be carried out due to a refusal of care. Prehospital personnel should utilize the refusal of care procedure in situations in which a patient refuses evaluation, treatment, and / or transportation.

A patient shall be defined as an individual who meets any of the below criteria:

ANY INDIVIDUAL WHO ACTIVATES EMS FOR THEMSELVES
ANY INDIVIDUAL WITH AN INJURY OR ILLNESS
ANY INDIVIDUAL WITH A MEDICAL OR TRAUMATIC COMPLAINT
ANY INDIVIDUAL WITH A NEW ALTERED LEVEL OF CONSCIOUSNESS
ANY INDIVIDUAL IN THE SAME VEHICLE AS A SIGNIFICANTLY INJURED OCCUPANT
ANY INDIVIDUAL PER EMT / PARAMEDIC MEDICAL DISCRETION

DEFINITIONS

1. Patients **ABLE** to Refuse Care.

A patient can refuse medical care based on the following guidelines:

- A.** Capacity to understand - defined by the ability to understand the nature and consequences of their actions by refusing medical care and / or transportation, and
- B.** Adult - eighteen (18) years of age or older, or:
 - An emancipated minor (a).
 - A married minor.
 - A legal representative for the patient (parent or guardian).

2. Patients **NOT ABLE** to Refuse Care.

A person may be considered incompetent to refuse medical care and / or transportation if the severity of their medical condition prevents them from making an informed, rational decision regarding their medical care. Therefore, they may not refuse medical care and / or transportation based on the following guidelines:

- A.** Altered level of consciousness (e.g. head injury or under the influence of alcohol and / or drugs).
- B.** Suicide (attempt or verbal threat).
- C.** Severely altered vital signs.
- D.** Mental retardation and / or deficiency.
- E.** Not acting as a "reasonable person would do, given the same circumstances".
- F.** Less than eighteen (18) years of age (except those outlined in above section - A. 1. b.).

3. Implied Consent.

- A. If a person is determined to be incompetent, they may be treated and transported under an "implied consent" (what the reasonable individual would consent to under the same circumstances).
- B. If the patient is transported and / or treated on the basis of implied consent, field personnel should use reasonable measures to ensure safe transport to the closest appropriate facility.

NOTE: An Emancipated Minor is a person under the age of 18 who:

Medical Emancipation (<18)

- Is female, unmarried, pregnant and/or has a minor child;
- An unmarried minor female who is pregnant may consent to medical care and treatment relating to her pregnancy and following birth can make medical decision on behalf of the child. PHI about the pregnancy and any treatment related to it may not be released to anyone without the patient's authorization.

Legal Emancipation (under the age of 18 but at least 16)

- Is married, or
- Is enlisted in military service, or
- Has been declared emancipated by court order.

- No minor less than 16 can be emancipated in Florida

REFUSAL PROCEDURE

This procedure applies in both single and multiple patient situations.

1. Determine the mental status and the extent and history of injury, MOI, or illness.
 - A. Ensure that the patient is conscious, alert, oriented and understands (mental reasoning) their condition (patient GCS = 15).
 - B. Unless the patient specifically refuses, do a complete physical assessment, including one set of vital signs.
2. Inform the patient and / or responsible party (parent or guardian) of the potential consequences of their decision to refuse treatment and / or transport to a definitive-care facility (loss of life or limb, irreversible sequela), and ensure that the patient and / or responsible party fully understand.
3. All measures should be taken to convince the patient to consent, including enlisting the help of family or friends.
4. If the patient continues to refuse, the patient and / or responsible party may then sign a "Refusal of Care" form. Ensure that the following information is provided:
 - A. That the release is against medical advice.
 - B. That it applies to this instance only.
 - C. That EMS should be requested again if necessary or desired.

5. After the "Refusal of Care" form is signed, it must be witnessed.
6. If the patient or responsible party will not sign the release, then document this on the EMS run report. If available, witness signatures should be obtained.
7. Where it is possible, patients will be left in the care of family, friends, or responsible parties.
8. Carefully document the assessment and vital signs, including all issues and circumstances indicated.

A CALL IS CONSIDERED CANCELLED IF:

- Prior to arrival on scene, dispatch cancels the call.
- After arrival on scene, no patient is found.

SUMMARY:

All patient contact results in either a transport to an ER, or a completed Refusal of Care form.

CONSIDERATIONS FOR PATIENT REFUSING TRANSPORT AFTER TREATMENT

It is the intent of Lee County EMS to transport all patients who have received ALS treatment to a receiving facility. In the event the patient refuses transport after all attempts are made to convince them of the need for more definitive care, the following conditions should be met in order for non-transport:

1. Patient has a history of the illness that initiated the call.
2. Patient has regained baseline mental status.
3. A full ALS / neurological assessment has been completed and documented.
4. Explain the risks / severity of not being transported and offer the benefits of being transported with witnesses.
5. A competent adult family member or friend is with, and will remain with the patient to call for help in the event of a recurrence.
6. Involve EMS Supervision as needed for assistance with the above patient.
7. Patient must sign a release (PCR) and have adult family member or friend witness, if possible.
8. Case must be well documented to include evidence that each of the previous requirements has occurred.

LEE COUNTY SCHOOL TRANSPORTATION ACCIDENT WAIVER PROCEDURES

POLICY

Any and all students that are involved as patients or potential patients should receive proper evaluation, treatment and transportation to the appropriate medical facility. There may be times when this policy may not be carried out due to **no injuries, no complaints, and no mechanism of injury that dictates transport to a hospital**. Pre-hospital personnel should utilize the *School District Bus Accident Refusal Form* in situations in which a student meets the above mentioned criteria.

DEFINITIONS

1. Lee County School Transportation Accident-Student Responsibility Affidavit
 - This form shall be copied on yellow paper and shall only be used for the non-transport documentation of children that are occupants of a Lee County School District vehicle.
2. School Administrator
 - A school administrator/representative is dispatched to the scene of all school bus accidents and is responsible for the safety of the children on the bus and assures continued transport to their destination.
 - This is the only person permitted to sign the Student Responsibility Affidavit Form showing that the school board takes back legal custody of students not transported to a hospital.
3. Legal Custodian
 - While a child is an occupant of a Lee County School District vehicle they are in legal custody of the School District.
 - A parent or legal guardian of a student

PROCEDURE

1. Each student and School District employee shall be properly evaluated as per the Lee County Common EMS Treatment Guidelines. Children that have no injuries, no complaints and no mechanism of injury that dictates transport to a hospital may be left with a legal custodian that would include a School District Administrator or an actual parent of the child that arrives on scene.
2. Each student and School District employee shall have a separate EMS Patient Care Report completed documenting the evaluation of that individual.
3. Students that are not transported due to meeting the guidelines listed in Procedure 1 shall have their names **PRINTED** on the Lee County School Transportation Accident-Student Responsibility Affidavit.
4. The form must be filled out completely including the bus number and the School board Representative on scene shall print their name and sign the form at the bottom.
5. If multiple busses are involved a separate form for each bus shall be filled out and the appropriate students shall be listed.

ADVANCED DIRECTIVE PREEXISTING CONDITIONS

It is the intent of Lee County Common EMS providers to provide timely and appropriate treatment to all patients who call for assistance. At times, you will encounter a patient with a preexisting condition that may require emergent treatment. These same patients are under the direct care of their supervising physician who has prescribed treatments for these circumstances. If a patient under your care has a prescribed standing order from their physician (i.e.; Medic Alert Bracelet or a File/Vile of Life with specific physician instructions), make every effort to accommodate the direction of that order. Before any treatment, you must assure that the right patient receives the right dose of the right drug via the right route, and the medication has not expired. Any treatment that you provide must be within the scope of your training and knowledge. If at any time, you have concern or question related to such treatment, contact online medical control and / or a supervisor. Once any treatment is delivered, every attempt should be made to transport these patients to the most appropriate facility for further evaluation.ⁱ

DEATH IN FIELD

This Guideline is divided into separate sections that cover the different situations of death in the field that the paramedic will be presented with. All patients found in cardiac arrest will receive cardiopulmonary resuscitation unless an exception is met as outlined in the following sections:

1. Advanced Directives / Do Not Resuscitate Order (DNRO).
2. Determination of Death.
3. Discontinuance of CPR.

I. ADVANCED DIRECTIVES / DO NOT RESUSCITATE ORDER (DNRO).

A. LEGISLATIVE AUTHORITY.

Under Chapter 401.45, Florida Statutes (F.S.) "Denial of Emergency Treatment Civil Liability" a competent adult, or an incompetent adult, through health care surrogate who was previously chosen, or proxy or guardian, has the right to be able to control decisions regarding medical care, including the withdrawal or withholding of life-prolonging procedures. This legislation authorizes EMS personnel to honor a prehospital Do Not Resuscitate Order (DNRO). This legislative authority does not include a "Living Will."

B. VALID DO-NOT-RESUSCITATE ORDERS.

1. An original yellow DNRO DOH Form 1896 executed as required by State Statute (with original signatures).
2. A copy on yellow paper (or similar color to the original) of DNRO DOH Form 1896 executed as required by State Statute (with original signatures).
3. The patient is wearing a bracelet, which identifies the patient and indicates the patient has executed a DNRO in accordance with DOH Form 1896.
 - A. In this instance, EMS personnel **MUST** receive the original DNRO DOH Form 1896, or a copy on yellow paper, that contains original signatures (attach to EMS Run Report).
4. Oral orders from non-physician staff members, or telephoned requests from an absent Physician do not adequately assure Paramedics that the proper decision making process has been followed and are **NOT** acceptable.

C. CONFIRMATION AND DOCUMENTATION.

1. The Paramedic must confirm the identity of the patient with a DNRO through a driver's license, other photo identification, or from a witness in the presence of the patient. If a witness is used to identify the patient, this shall be documented in the EMS Run Report and will include:
 - A. The full name of the witness.
 - B. The address and telephone number of the witness.
 - C. The relationship of the witness to the patient.

II. DETERMINATION OF DEATH.

The EMT or PARAMEDIC may determine that the patient is dead / non-salvageable and decide not to resuscitate the patient under the following guidelines.

1. The patient may be determined to be dead / non-salvageable and will not be resuscitated or transported if all four (4) presumptive signs of death and at least one (1) conclusive sign of death are identified.
 - A. The four presumptive signs of death that **MUST** be present are:

- Unresponsiveness.
 - Apnea.
 - Pulseless.
 - Fixed pupils.
- B. In addition to the four presumptive signs of deaths, at least one (1) of the following conclusive signs of death that **MUST** be present:
- Injuries incompatible with life (e.g. decapitation, massive crush injury, incineration, etc.).
 - Tissue decomposition.
 - Rigor Mortis of any degree with warm air temperature.
 - a) Hardening of the muscles of the body, making the joints/jaw rigid.
 - Livor Mortis (Lividity) of any degree and / or generalized cyanosis.
 - a) Venous pooling of blood in dependent body parts causing purple discoloration of the skin, which does blanch with pressure.
- C. Patients with suspected hypothermia, barbiturate overdose, or electrocution require full ALS resuscitation unless there are injuries incompatible with life or tissue decomposition.
2. A trauma victim who does not meet the "Determination of Death" criteria listed above may be determined to be dead / non-salvageable based on the following criteria:
- A. Pulselessness and apnea associated with:
- Asystole (confirmed in two leads) and
 - a) Blunt trauma arrest, or
 - b) Prolonged extrication time (> 15 minutes) where no resuscitative measures can be initiated prior to extrication.
 - Arrest from a primary brain injury or with no brain-stem reflexes; arrest from blunt multiple injuries.
 - Arrest from blunt injury to torso.
- B. Consideration should be given for the possibility of organ harvest; however this should not be the sole reason for resuscitation.
3. Absence of pulse or spontaneous respiration in a multiple casualty situation where EMS resources are required for stabilization of living patients. The local law enforcement agency, which has jurisdiction, will be responsible for the body once death has been determined. The body is to be left at the scene until a disposition has been made by the Medical Examiner's Office or local jurisdiction.

III. DISCONTINUANCE OF CPR.

PARAMEDIC ONLY

1. Resuscitation that is started in the field by EMS personnel cannot be discontinued without an order from medical direction. EMS personnel are not obligated to continue resuscitation efforts, which were started inappropriately by others at the scene. **HOWEVER**, contact with medical direction is required to cease resuscitative efforts in **ALL** situations.

2. When there is a delay in presenting a DNRO to EMS personnel, resuscitation must be started. However, once the DNRO is presented to EMS personnel, the EMT or PARAMEDIC with an order from medical direction may terminate resuscitation.
3. A PARAMEDIC with an order from medical direction may terminate resuscitation provided the following criteria are met:
 - A. Appropriate BLS and ALS have been attempted without restoration of circulation and breathing.
 - B. An advanced airway has been successfully utilized.
 - C. Intravenous medication and counter shocks for ventricular fibrillation have been administered according to the appropriate treatment Guideline(s) (see Adult Guidelines or Pediatric Guidelines).
 - D. Persistent asystole or PEA EKG patterns are present and no reversible causes are identified.
 - Patients with suspected hypothermia, barbiturate overdose, or electrocution require full ALS resuscitation, unless there are injuries incompatible with life or tissue decomposition.
4. Provide appropriate grief counseling or support to the patient's immediate family, bystanders, or others at the scene.
 - A. Provide family members with appropriate referral information, if available.
5. Deceased Preparation.
 - A. Once it has been determined that the patient is dead and resuscitation will not continue, cover the body with an EMS sheet. Do NOT use anything from the scene to cover the body to avoid transference of evidence. DO NOT remove any property from the body or the scene for any purpose.
 - B. Contact the Lee County Medical Examiner's Office at 277-5020.
 - C. If it is determined that the deceased shall be transported to the medical examiner's office, immediately notify the appropriate law enforcement agency. Remain on scene until either law enforcement or the Medical Examiner's contracted transport service arrives.
 - D. If the Medical Examiner releases the deceased to a funeral home, the paramedic shall assist the family in making arrangements with the funeral home. The EMS agency is not required to remain on scene pending arrival of the transport service. Care shall be taken to ensure that the family member's needs (such as arranging for a friend or other family member to come to the scene to provide support) are taken care of prior to departing the scene. This includes removal of control measures (i.e., IV line, electrodes, advanced airway).
 - E. Complete the EMS run report, documenting the above criteria, and leave a copy with the patient for the Medical Examiner's Office or fax a copy to the Medical Examiner's Office.
 - F. EKG rhythm documentation must be attached to the patient care report.
 - G. Consult the patient's family for "Organ Donor" information, if appropriate.

AIR TRANSPORT

Air medical transport should be used when a critically ill and /or injured patient(s) will benefit from faster transport and reduced out-of-hospital time.

PROCEDURE & CRITERIA:

1. Place “air medical transport” on standby when:
 - A. Call information obtained by Dispatch suggests the need for air medical transport
2. Request “air medical transport” within the first 2 minutes of patient contact for:
 - A. Priority 1 patients that exceed a ground transport time of **30 minutes** or,
 - B. Priority 2 patients that are inaccessible by roads (e.g., remote wilderness areas and bridgeless barrier islands)

NOTES:

1. Any on-scene first responder may request air medical transport.
2. Any LCEMS Supervisor, on-scene or not, may request air medical transport based on available information at that time.
3. Lee Control may auto-launch air medical transport if information obtained suggests a high index of suspicion that air medical transport will reduce the out-of-hospital time for a Priority 1 patient.
4. After initial assessment, the attending paramedic on-scene should cancel air medical transport if the patient’s condition does not warrant the service or meet the criteria.
5. The following patients are not appropriate for air medical transport:
 - Cardiopulmonary Arrest patients (CPR in-progress)
 - Haz-Mat patients (Regardless of Decontamination Status)
 - Priority 3 patients
6. Lee Control must be notified if more than one patient requires air medical transport.
(If available, additional air medical resources will be dispatched for additional patients)
7. Ground crews should not attempt to determine if the weather is “good enough” for the aircraft to fly. Simply request the aircraft and the pilot will determine if the mission can be accepted.

LANDING ZONES (LZ):

1. Fire department personnel are responsible for preparing/securing LZs and assuming the LZ Controller role. It is necessary for fire personnel to separate themselves from the EMS operation as soon as possible in order to begin LZ preparations.
 - A. All LZs should be a minimum of 100’ x 100’ (day or night).
 - All LZs must be illuminated at the corners with strobe lighting and/or a steady-burn light source.
 - Hard surface LZs (highway, parking lots, etc) are preferential to soft surface LZs.
 - B. LZ security must be maintained for the duration of the event.
 - C. When requested by the pilot, the LZ Controller will provide a LZ report . This report should include the type of LZ (hard versus soft surface), wind direction and speed and any potential hazards that may be identified from the ground (wires, fences, signs, etc.).

- The LZ Controller should be the only individual hailing the aircraft and providing LZ information. All other radio traffic, including patient care reports, is unnecessary and could disrupt the critical phase of flight.
- D.** After the patient has been loaded in the aircraft, the pilot will advise the LZ Controller that the aircraft is ready to depart. The LZ Controller should clear the aircraft for take-off by looking around the LZ and to the sky for any other aircraft traffic in the vicinity.
- E.** If at any time the LZ becomes unsafe for takeoff or landing, transmit “ABORT, ABORT, ABORT” over the radio and halt the operation until the unsafe condition is corrected.

TRANSFER OF CARE:

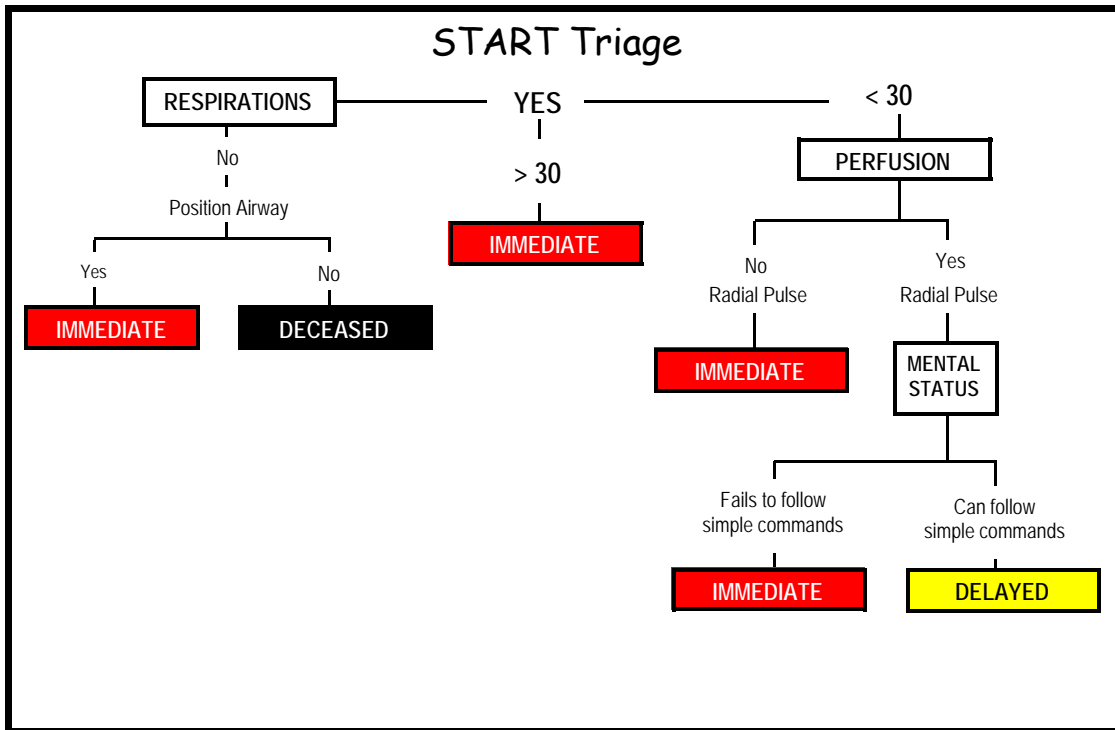
Excerpted from the Medical Director’s Memorandum of 11 May 2005:

1. Prepare the patient in treatment area or ambulance (bedside). This includes completing the Lee County Transfer of Care Worksheet with as much information as conditions allow.
2. Upon arrival at the bedside, the flight team will immediately receive a patient report from the ground Paramedic-in-Charge.
3. The primary flight paramedic will assume team leader role and direct the remaining patient care issues and treatment modalities.
4. The flight team will perform an appropriate patient assessment and determine the need for further emergent treatments based upon flight physiology.

MASS CASUALTY- START TRIAGE

GENERAL

This system is designed to assist rescuers to find the most seriously injured patients. As more rescue personnel arrive on scene, the patients will be re-triaged for further evaluation, treatment, stabilization, and transportation. A patient may be re-triaged many times and as often as time allows. Attempt to document as much information on each patient as time and conditions will allow. **For Pediatric patients, utilize JUMPSTART protocol.**



DEFINITIONS

○ GREEN	○ Minor
○ YELLOW	○ Delayed
○ RED	○ Immediate
○ BLACK	○ Deceased

STEP 1

Tell all patients who can get up and walk, to move to a specific and safe area. These patients are initially considered to be **GREEN** until examined later.

STEP 2

Begin where you stand and move in an orderly and systematic manner through the remaining victims, stopping at each patient for a quick assessment and tagging. The stop at each patient should never take more than one minute.

The following parameters are to be evaluated in order: **R**espirations, **P**erfusion & **M**ental Status (RPM).

RESPIRATIONS: If the patient is not breathing, quickly clear the mouth of any foreign matter, properly open the airway and re-evaluate respirations

- If no respirations: Tag BLACK

- If breathing > 30/minute: Tag **RED**
- If breathing < 30/minute: Proceed to perfusion evaluation

PERFUSION: Palpate a radial pulse.

- If no palpable radial pulse: Tag **RED**
- If radial pulse is present: Proceed to Mental Status evaluation

MENTAL STATUS Have the patient follow simple commands such as “Open your eyes”, “Close your eyes”, “Squeeze my hand”.

- If patient cannot follow these simple commands: Tag **RED**
- If patient is able to follow these simple commands: Tag either **YELLOW** OR **GREEN** based on mechanism of injury, injuries noted or your general impression.

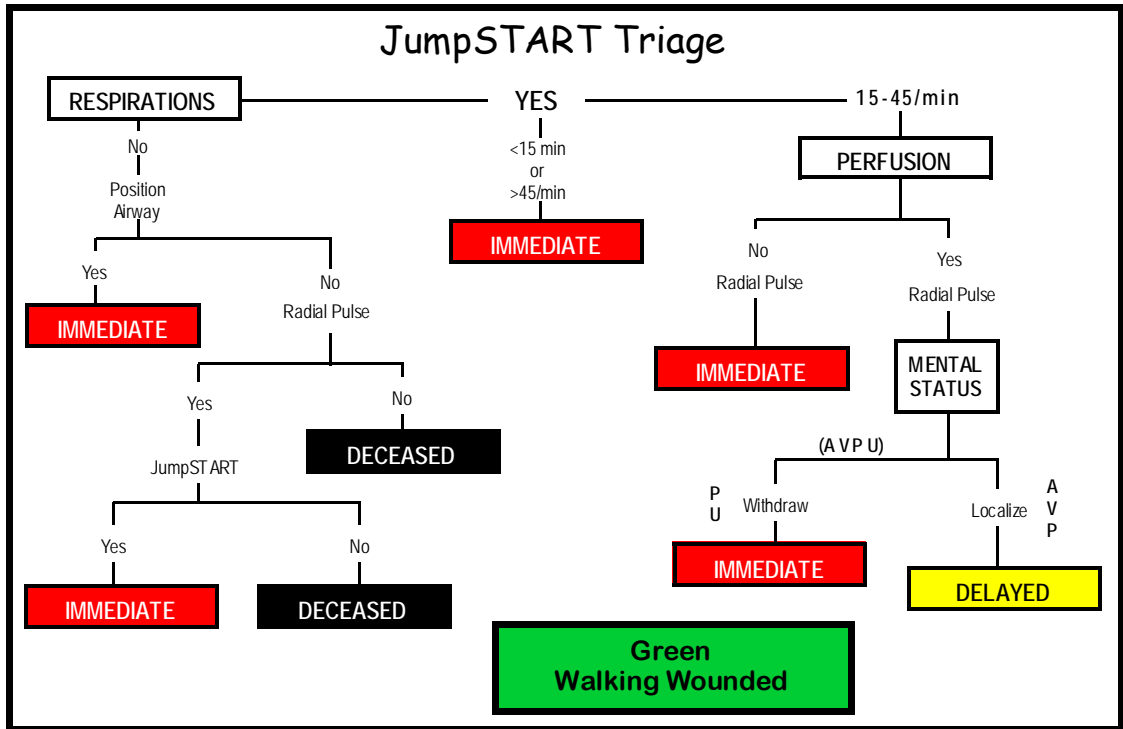
STEP 3

Repeat step 2 for the initial group of patients that were temporarily designated green and placed away from the immediate scene.

MASS CASUALTY – JUMPSTART TRIAGE

GENERAL

This system is to be used in concert with the START Triage system to assist rescuers to find the most seriously injured pediatric patients. As more rescue personnel arrive on scene, the patients will be re-triaged for further evaluation, treatment, stabilization, and transportation. A patient may be re-triaged many times and as often as time allows. Attempt to document as much information on each patient as time and conditions will allow.



DEFINITIONS

○ GREEN	○ Minor
○ YELLOW	○ Delayed
○ RED	○ Immediate
○ BLACK	○ Deceased

STEP 1

Tell all patients who can get up and walk, to move to a specific and safe area. These patients are initially considered to be **GREEN** until examined later. If an infant satisfies all of the physiologic “delayed” criteria (i.e., fulfill no “immediate” criteria) and appear to have no significant external injury, they may be triaged to the minor category.

STEP 2

Begin where you stand and move in an orderly and systematic manner through the remaining victims, stopping at each patient for a quick assessment and tagging. The stop at each patient should never take more than one minute.

The following parameters are to be evaluated in order: **R**espirations, **P**erfusion & **M**ental Status (RPM).

RESPIRATIONS: If the patient is not breathing, quickly clear the mouth of any foreign matter, properly open the airway and re-evaluate respirations

- If no respirations: Check for peripheral pulse
- If pulse is present: “JumpSTART” - Give 5 breaths
- If patient remains apneic after “JumpSTART”: Tag **BLACK**
- If “JumpSTART” triggers spontaneous respirations: Tag **RED**
- If breathing < 15 or > 45/minute: Tag **RED**
- If breathing = 15 - 45/minute: Proceed to perfusion evaluation

PERFUSION: Palpate a peripheral pulse.

- If no palpable peripheral pulse: Tag **RED**
- If peripheral pulse is present: Proceed to Mental Status evaluation

MENTAL STATUS: Perform a rapid "AVPU" assessment, keeping in mind the apparent developmental stage of the child.













































- If Alert, responds to Voice, or localizes Pain: Tag **YELLOW**
- If withdraws from Pain, postures, or Unresponsive: Tag **RED**

STEP 3

Repeat step 2 for the initial group of patients that were temporarily designated green and placed away from the immediate scene.

TRANSPORT DESTINATION GUIDELINE

The following list is to be used when determining the most appropriate facility for patient transport

	STEMI / ACS	Stroke Alerts	Trauma Alert	Emergent Pediatrics	OB / GYN	Neonates	ICE Alert	Pedi Ortho	
Lee Memorial D-1		P 							Helipad
Lehigh Regional D-3									Helipad
Cape Coral D-4		P 							Helipad
Gulf Coast D-5		C 							Helipad
Naples Community – Downtown D-6		C 							Helipad
HealthPark D-7									Helipad
Englewood D-8									Helipad
Fawcett Memorial D-9		P 							No Helipad
Bayfront Punta Gorda D-10		P 							Helipad
Bayfront Charlotte D-11		P 							Helipad
Venice Regional D-12		P 							No Helipad
Physicians Regional – Pine Ridge D-13		P 							Helipad
Naples Community – North D-14		P 							Helipad
Sarasota Memorial D-16		C 							Helipad

C= Comprehensive Stroke Center **P**= Primary Stroke Center

Patients shall be transported to the local hospital of their choice. When their condition creates conflict with that choice, every effort should be made to convince/educate the patient/family of the need to transport to the most appropriate facility for treatment of their illness and or injury. If the patient is fully competent and refuses that direction, transport to the facility of their choice.

LCEMS may transport 911 patients to an out-of-county hospital, if requested, and if that hospital is closer than the appropriate Lee County hospital. **Continued on the next page**

TRAUMA

Trauma Alerts, **regardless of age** will be transported to Lee Memorial Hospital as the Level II Trauma Center. Non trauma-alert patients with a high index of suspicion (elderly, etc.) should preferentially be transported to the Trauma Center as a reasonable precaution. All other less serious trauma can be transported to **any** receiving hospital. An exception is: Health Park will not accept adult orthopedics.

ALL injuries that may require (OMFS) Maxillofacial surgical care/referral should be transported to D-1.

CARDIAC

ALL active ACS patients should be transported to the closest PCI facility.

ALL ROSC patients should be transported to a PCI facility.

OB

High-risk Obstetrical patients shall be transported to Health Park and are defined as:

- Pregnant patient > 21 weeks who is seizing or is post seizure
- Pregnant patient > 21 weeks with suspected fetal abnormalities or fetal compromise
- Pregnant patient with pre-term labor < 34 weeks
- History of cardiac disease with chest pain, any gestation
- Home birth with pre-term or distressed infant
- Respiratory distress / acute asthma > 21 weeks

An Obstetrical patient with an imminent OB emergency shall be transported to the closest OB facility.

An Obstetrical patient having a non-OB emergency should be transported to the closest appropriate facility.

An Obstetrical patient with gestation greater than 21 weeks who has been involved in a MVC (or other trauma) and has the potential for fetal distress is considered a Trauma Alert.

Notify LMH Trauma Center (D-1) as early as possible when transporting a trauma alert that is known to be pregnant.

ONCOLOGY

LMH (D-1) is the only hospital within the LMHS that can provide on-going chemotherapy and other cancer specific treatments to admitted patients. This should be a consideration when transporting cancer patients especially if the acute illness is related to that disease process.

PEDIATRICS

All non-emergent pediatric patients not likely to need admission may be transported to any local hospital Emergency Department. ALL patients (except Trauma Alerts) less than 18 y/o likely requiring admission should be transported to HealthPark (D-7).

ADULT ORTHO

All Lee County hospitals other than Health Park can accommodate Adult Orthopedic cases.

HAZMAT patients may be transported to any receiving Hospital once appropriately DECON'D.

Hazmat patients shall not be placed in the ambulance before they are adequately decon'd.

INTER-FACILITY TRANSFERS

The LMHS ED directors have requested you contact the ED by telemetry when you are bringing in an emergent transfer that is going to the cath-lab, trauma services or other non-ED location. They just want a heads-up in case the patient requires their intervention. This does not include routine in-patient bed to bed stable transfers.

ALL trauma transfers to LMH (D-1) for trauma services **SHALL** have a C-collar in place for the patient movement. This includes patients that have been “c-spine cleared” by the sending facility.

LEE COUNTY FIRE CHIEF'S FIREFIGHTER REHAB

PURPOSE:

To establish procedures for implementation of a Rehab Sector within the ICS structure.

SCOPE:

The procedure is to provide proper rehab for all emergency personnel at any given time necessary that meets or exceeds NFPA 1584.

RESPONSIBILITIES:

Emergency Personnel – Responsible for reporting to the Rehab Sector when ordered to do such by a commanding officer. To advise the commanding officer when any member of his/her crew is in need of Rehab.

Incident Commander – Must ensure all personnel receive the proper rest, refreshments, medical evaluation, monitoring, and clearance.

Rehab Sector Officer – Ideally, a paramedic should be assigned the Rehab Sector Officer role. Reports directly to the IC and the Incident Safety Officer (ISO). Function include:

1. Report to the IC and obtain rehabilitation requirements
2. Locate and establish a rehab site
3. Identify the EMS personnel requirements and request additional personnel to assist as required
4. Provide required resources for rehabilitation
5. Check vital signs, monitor for heat stress, and signs of medical issues
6. Document medical monitoring on Incident Rehab Worksheet
7. Provide medical care and transportation to medical facilities as required
8. Inform the IC and ISO when personnel require transportation to the treatment at a medical facility
9. Ensure documentation of any medical care provided
 - a. Any and all injuries will require a Patient Care Report to be completed

ESTABLISHMENT OF REHABILITATION SECTOR:

Location

1. If a specific location has not been designated, the Rehab Officer shall select an appropriate location based on site characteristics and designations such as fire apparatus, ambulance, nearby garage, or make-shift rehab structure.
2. The Rehab Officer should immediately notify the IC where the rehab area has been established

Site Characteristics

1. Far enough away from hot zone/tactical area that members may safely remove their turnout gear and SCBA, preferably upwind
2. Large enough to accommodate the number of personnel expected with a separate area for members to remove Personal Protective Equipment (PPE)
3. Provide shade
4. Away from exhaust fumes
5. Provide access to SCBA replenishment/refill equipment
6. Easy entrance and exit routes for ambulances
7. Prompt re-entry back into the emergency operation upon complete rehabilitation
8. It is helpful if restroom facilities are a part of the rehab area or nearby
9. Away from spectators and the media

Site Setup (use safety cones/tape if available)

1. Single entry/exit point
2. Medical Monitoring area
3. Medical evaluation/treatment area

Resources

1. Fluids/food – Potable drinking water, sports beverages, ice, food, and snacks
2. Medical monitoring equipment
3. Tarps
4. Water supply for active cooling (wet towels, misting fans, ice vests, forearm immersion chairs)
5. Blankets and warm, dry clothing for winter months
6. Chairs (if available)

Rehabilitation Procedures

1. Entry
 - a. Collect accountability passport(s)/tags
 - place on status board
 - a. Log names on the Fire Rehab Worksheet
 - b. Dress-down incoming personnel
 - c. Assign to the seating area

2. Initiate Incident Rehab Worksheet using vital sign parameters below
 - a. Normal Parameters
 - Temperature – $\leq 100.6^{\circ}$ Fahrenheit
 - Heart Rate – < 100 bpm
 - Respiratory Rate – between 12-20 breaths/min
 - Blood Pressure – Systolic < 160 and Diastolic < 100
 - Pulse Oximetry (SpO₂) – 95-100% on room air
 - CO Levels (SpCO) – $< 10\%$ of baseline level

- b. Life Threatening Signs & Symptoms (If you detect any of these conditions, transport to a medical facility is recommended)
 - Chest Pain
 - Shortness of Breath
 - Altered Mental Status
 - Dizziness
 - Nausea
3. Cooling (Active is preferred if equipment is available)
 - a. Passive
 - Removal of PPE
 - Remove to a cooler environment
 - a. Active
 - Cold packs
 - Cool, wet towels
 - Forearm immersion
 - Misting fans
 - Ice vests
4. Hydration
 - a. Water/fluids should be provided
 - b. Caffeine and carbonated beverages should be avoided
5. Rest
 - a. Minimum: 10 minutes of rest
 - If vitals within normal limits, may be released
 - b. Additional 10 minutes of rest required if vitals not within normal limits
 - If vitals still not within normal limits, move to Medical Treatment Area
6. Release
 - a. Any individuals that cannot be cleared shall be reported to the IC and ISO
 - b. All personnel leaving Rehab shall retrieve their Passports from the Rehab Officer
 - c. All completed Incident Rehab Forms shall be given to the IC or ISO

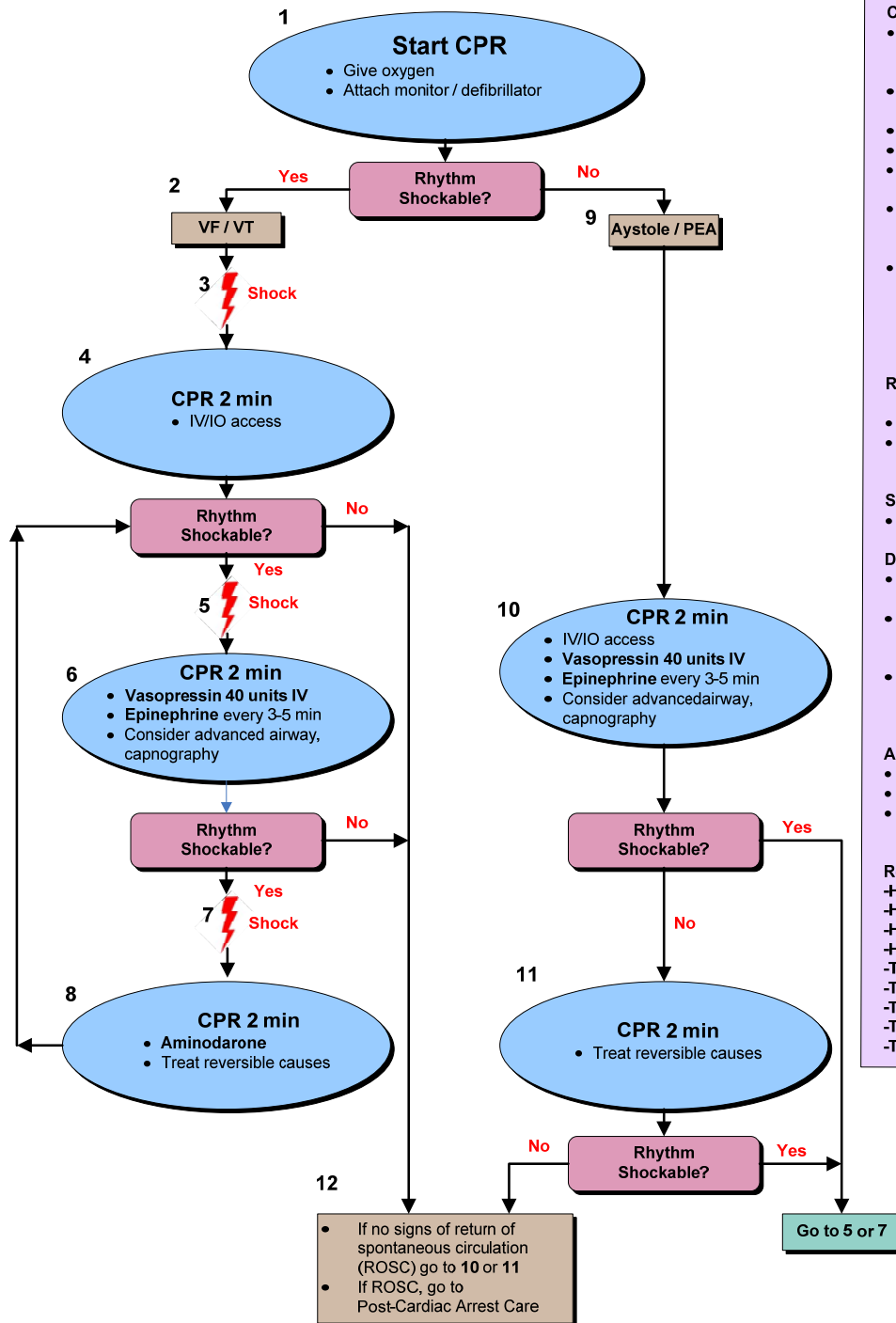
**DUE TO ON-GOING NATIONAL MEDICATION
SHORTAGES, ALL TREATMENT GUIDELINES
INVOLVING MEDICATION ARE BASED ON
AVAILABILITY.**

Section II: Cardiac Arrest

*****ALL defibrillation/cardioversion energy settings should be in compliance with individual manufactures recommendations. Physio/LP settings will be higher than settings in this document.**

Cardiac Arrest – Initial Approach

ADULT PULSELESS ARREST



CPR Quality

- Push hard (>2 inches and fast ≥ 100/min) and allow complete chest recoil
- Minimize interruptions in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression-ventilation ratio
- With advanced airway, ventilate every 6-8 seconds w/o interrupting compressions
- Quantitative waveform capnography
 - if etco2 <10 mm Hg, attempt to improve CPR quality

Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in etco2 (typically ≥40 mm Hg)

Shock Energy

- Biphasic 200 J

Drug Therapy

- **Epinephrine IV/IO Dose:** 1 mg every 3-5 minutes
- **Vasopressin IV/IO Dose:** 40 units can replace first or second dose of epinephrine
- **Amiodarone IV/IO dose**
First dose: 300 mg bolus
Second dose: 150 mg bolus

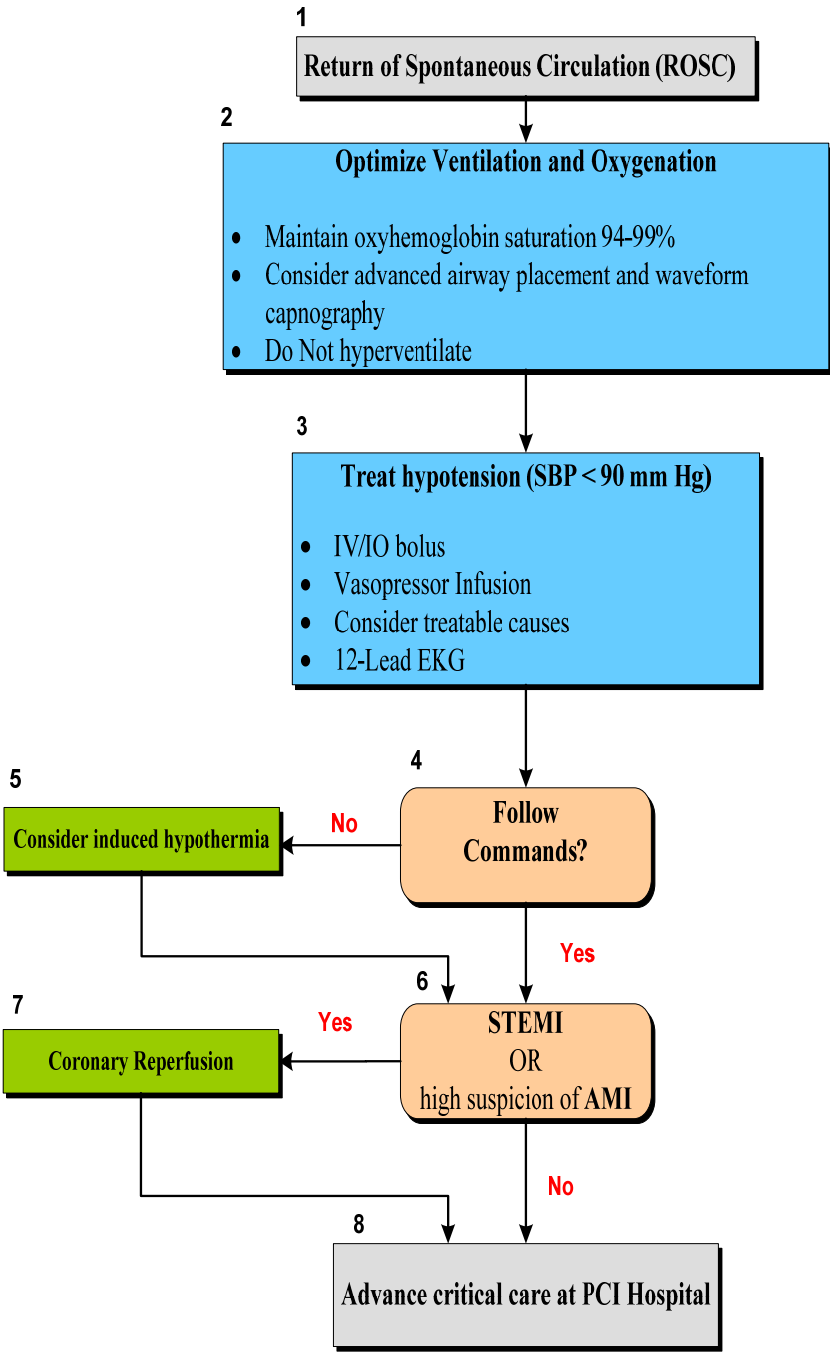
Advanced Airway

- Supraglottic advanced airway
- Waveform capnography
- 8-10 breaths per minute with continuous chest compressions

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

ADULT IMMEDIATE POST-CARDIAC ARREST CARE



Doses/Details

Ventilation/Oxygenation
 Avoid excessive ventilation.
 Start at 10-12 breaths/min and titrate to target EtCO₂ of 35-40 mm HG. When feasible, titrate FIO₂ to minimum necessary to achieve SpO₂ ≥ 94%.

IV Bolus:
 1-2 L normal saline. If induced hypothermia, may use 4°C fluid.

Amiodarone: 150 mg/100 ml D5W over 10 mins and repeat as needed for refractory/recurrent VF/VT only.

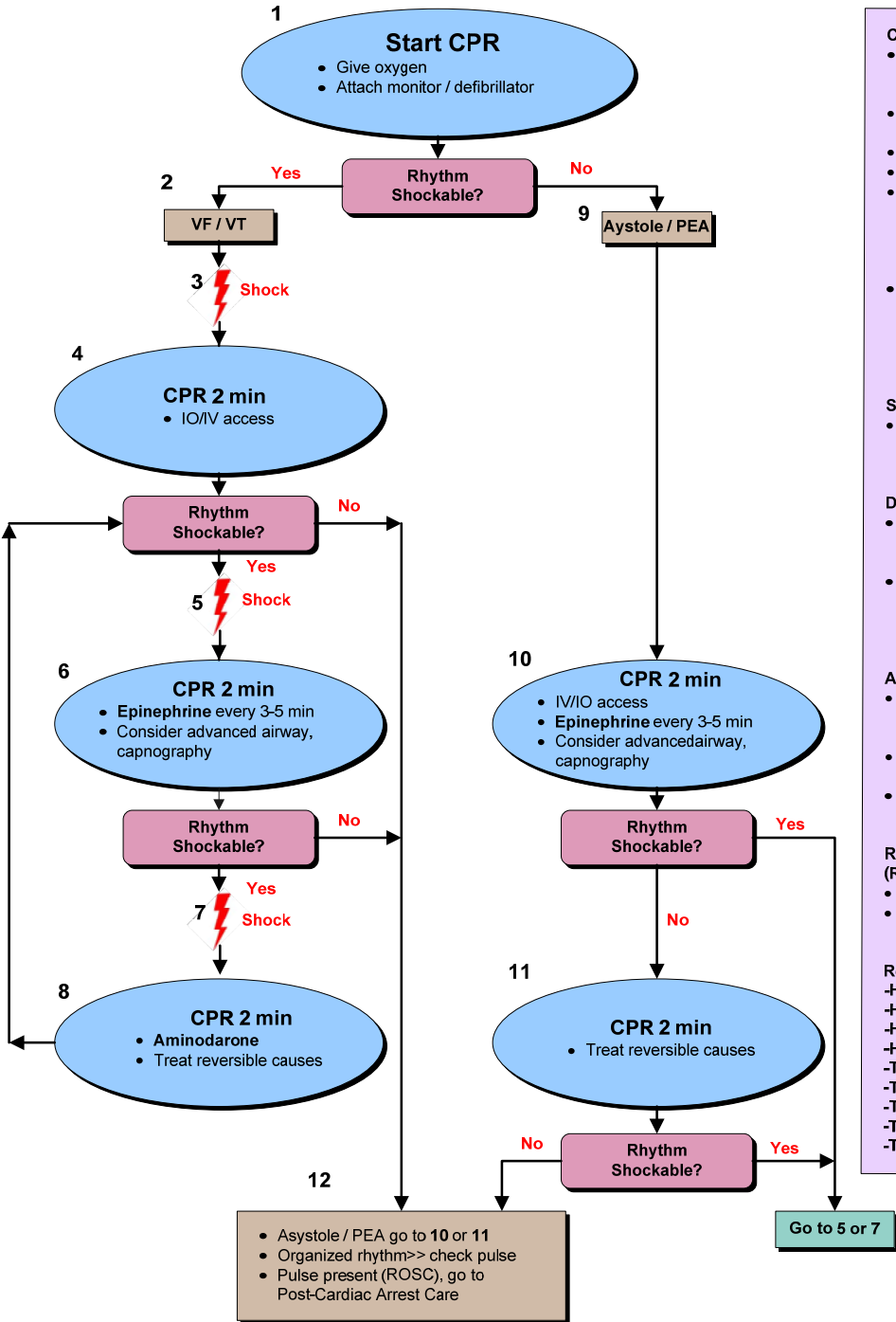
Epinephrine IV Infusion:
 1-5 mcg per minute, titrate up if needed (preferred over dopamine if patient is bradycardic)

Reversible Causes
 Hypoxia
 Hypovolemia
 Hydrogen ion (acidosis)
 Hypo-/hyperkalemia
 Hypothermia
 Tension pneumothorax
 Tamponade (cardiac)
 Toxins
 Thrombosis (pulmonary)
 Thrombosis (coronary)

ROSC PEARLS

- **Transport to a PCI facility.**
- **Criteria for Induced Hypothermia:**
 - ROSC following cardiac arrest and not related to blunt / penetrating trauma or hemorrhage
 - Patient remains unconscious / unresponsive post-ROSC
 - Age 16 or older
 - Temperature after ROSC > 34 c degrees
 - Transport to a PCI Hospital that can continue Induced Hypothermia Therapy.
- Patients develop metabolic alkalosis with cooling.
- #ResQPOD ON when doing CPR, OFF when not doing CPR
- Hyperventilation is a significant cause of hypotension and recurrence of Cardiac Arrest in the post-resuscitative phase and must be avoided. Other common causes are hypovolemia, pneumothorax and reactions to ALS medications.
- Transition from BVM to CAREvent as soon as possible to avoid hyperventilation.
- The condition of post-resuscitative patients is dynamic, monitor closely.
- Following ROSC, many patients are tachycardic secondary to Epi / Atropine. Unless WCT / VT allow time for the medications to metabolize and the HR to gradually normalize. Don't over-treat compensatory or induced tachycardias.
- Consult Medical Control for post-resuscitation patient management.

PEDIATRIC PULSELESS ARREST



CPR Quality

- Push hard (> 1/3 of A/P diameter of chest) and fast ≥ 100 /min and allow complete chest recoil
- Minimize interruptions in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 15:2 compression-ventilation ratio. If advanced airway, 8-10 breaths per minute with continuous chest compressions
- Quantitative waveform capnography
 - if etco2 <10 mm Hg, attempt to improve CPR quality

Shock Energy

- First shock 2 J/kg, second shock 4 J/kg, subsequent shocks > 4 J/kg, maximum 10 J/kg or 200 Js

Drug Therapy

- **Epinephrine IV/IO Dose:** 0.01 mg/kg 1:10,000 every 3-5 minutes
- **Aminodarone IV/IO dose** 5 mg/kg bolus during cardiac arrest. May repeat up to 2 times for refractory VF/VT

Advanced Airway

- Endotracheal intubation or supraglottic advanced airway, if necessary
- Waveform capnography to confirm and monitor ET tube placement
- 8-10 breaths per minute with continuous chest compressions

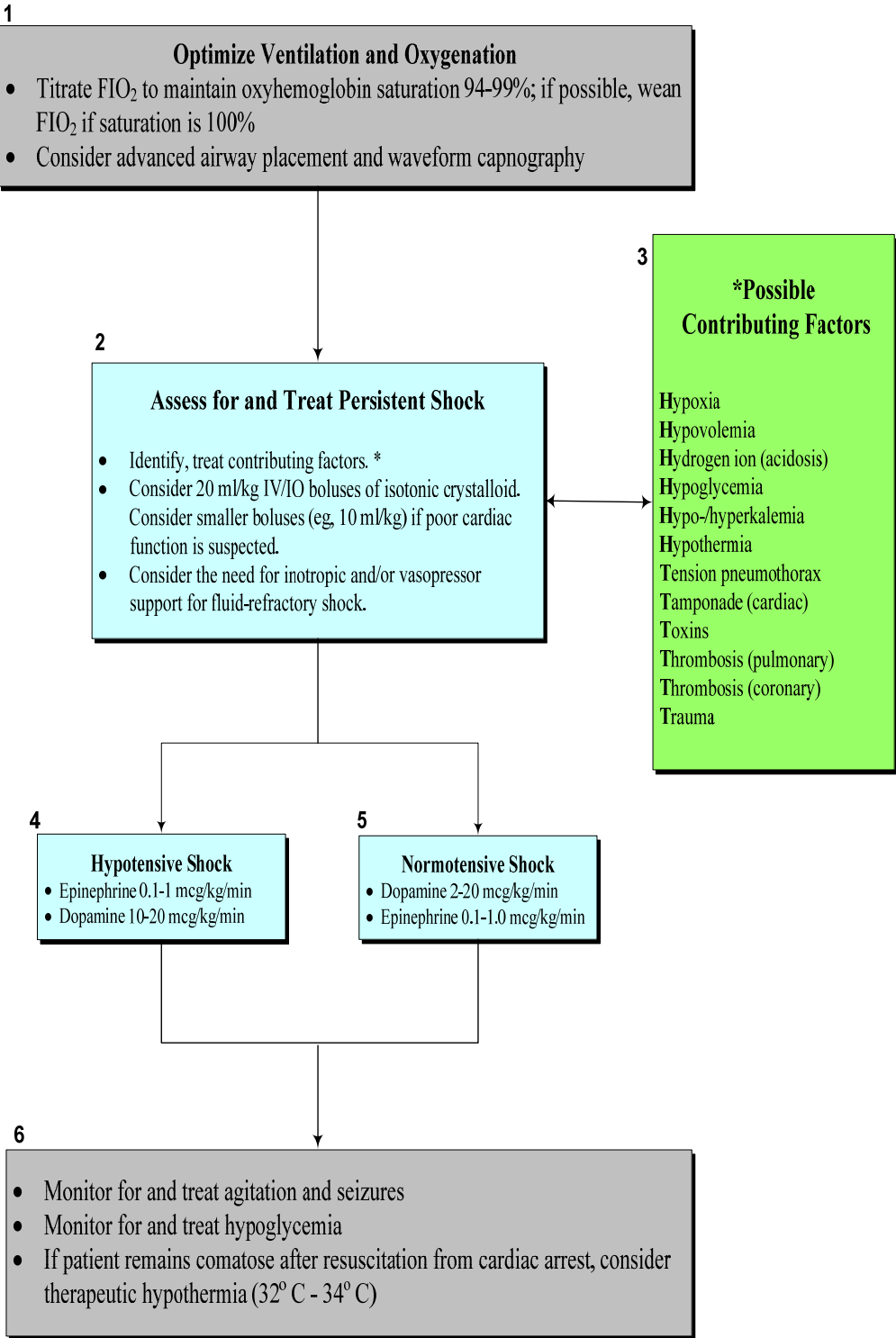
Return of Spontaneous Circulation (ROSC)

- Pulse and blood pressure
- Abrupt sustained increase in etco2 (typically ≥ 40 mm Hg)

Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen ion (acidosis)
- Hypo-/hyperkalemia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

PEDIATRIC MANAGEMENT OF SHOCK AFTER ROSC



Section III: Cardiac Emergencies

ACUTE CORONARY SYNDROME - STEMI

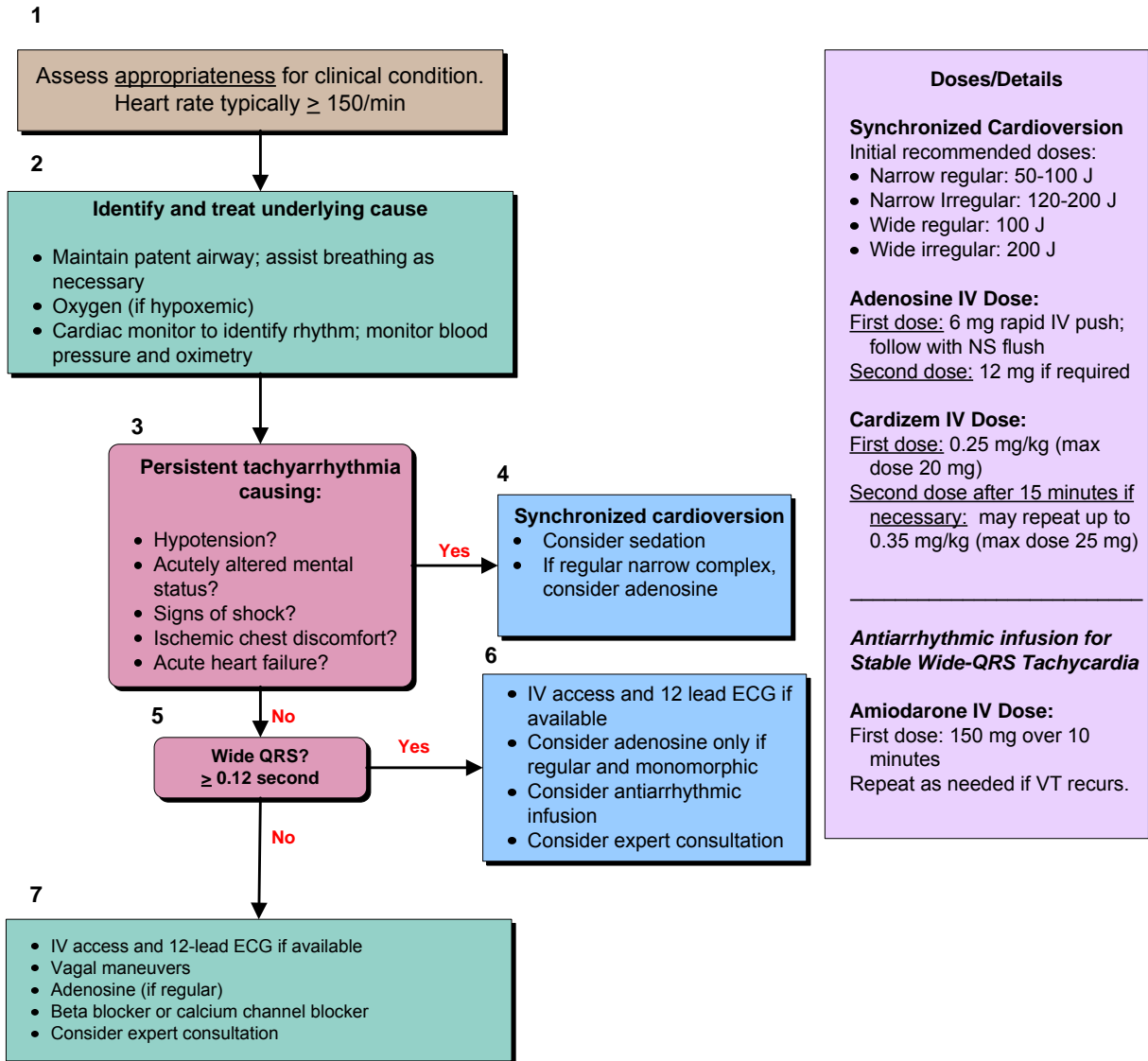
<p>History:</p> <ul style="list-style-type: none"> • SAMPLE • OPQRST • Age, gender, family Hx • Physical exertion • Emotional stress • Bleeding disorders • Cocaine / illicit drug use 	<p>Signs and Symptoms:</p> <ul style="list-style-type: none"> • CP (pain, pressure, aching, tight) • Location (substernal, epigastric, arm, neck, jaw, shoulder, back) • Radiation of pain • Pallor, diaphoresis, temperature • Dyspnea / SOB • Nausea, vomiting, dizziness 	<p>Differential:</p> <ul style="list-style-type: none"> • Trauma • Angina vs. MI • Pericarditis • PE • Asthma / COPD • Pleuritic pain • Esophageal spasm • Aortic aneurysm
<p>ADULT</p> <p style="background-color: #0000FF; color: white; padding: 2px;">EMT-BASIC PROVIDER</p>	<p>PEDIATRIC (<40 KG)</p> <p style="background-color: #0000FF; color: white; padding: 2px;">EMT-BASIC PROVIDER</p>	
<ul style="list-style-type: none"> ○ Medical Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ #ASA 324 mg (chewable) see pearl below. ○ Nitrolingual spray 0.4 mg SL (every 5 min) as long as symptoms persist and no sign of hypo-perfusion. ○ Scene time < 10 minutes 	<ul style="list-style-type: none"> ○ 	
<p>PARAMEDIC</p>	<p>PARAMEDIC</p>	
<ul style="list-style-type: none"> ○ 12-lead EKG (+ STEMI = rapid transport to STEMI center) ○ *Normal Saline (250-500ml) for hypo-perfusion (RVI) ○ Tridil drip 10 mcg/min IV (increase by 10 mcg/min q-5 min) titrate to desired effect not to exceed 50 mcg/min while maintaining SBP > 100 mmHg. ○ *Fentanyl 1-2 mcg/ kg SIVP for severe pain unresponsive to Ntg or where Ntg cannot be given due to hypo-perfusion. Titrate to avoid over sedation. 	<ul style="list-style-type: none"> ○ On-line medical consultation 	
<p>PHYSICIAN ORDER ONLY</p>	<p>PHYSICIAN ORDER ONLY</p>	
<ul style="list-style-type: none"> ○ 	<ul style="list-style-type: none"> ○ 	
<p>Pearls:</p> <ul style="list-style-type: none"> • <u>ALL active ACS patients should be transported to a PCI facility.</u> • STEMI = S-T segment elevation in two or more related leads. (Regardless of time). • Transmit all 12 lead EKGs if transporting to PCI hospital • Withhold Nitroglycerin in any patient who has used Viagra, Cialis, Levitra or similar mediation in the previous 48 hrs. • Nitrates in all forms should be avoided in patients with initial systolic blood pressures less than 90 mm Hg <u>or</u> greater than or equal to 30 mm Hg below baseline, in patients with marked bradycardia or tachycardia, and in patients with known or suspected RV infarction. • #Administer ASA to all patients with ACS unless hypersensitive to aspirin. Give regardless of pre-arrival ASA was given unless 324 mg <u>chewable</u> dose is confirmed. • Monitor V/S before and after each medication administration and q 5 min thereafter. • Repeat 12-lead EKG every 10 minutes if possible. • Diabetic, elderly and female patients often have atypical presentation or generalized complaints. • Avoid pre-load reducing medication for hypotension / hypo-perfusion. <p>Continued on next page</p>		

- Use pre-load reducing medication with caution in RVI and stop at any time s/s of hypoperfusion develop and resuscitate with IV fluids.
- *Avoid excessive fluid administration if evidence of pulmonary edema present i.e. JVD, crackles.
- *Fentanyl can cause bradycardia. Monitor rate changes and treat if appropriate.

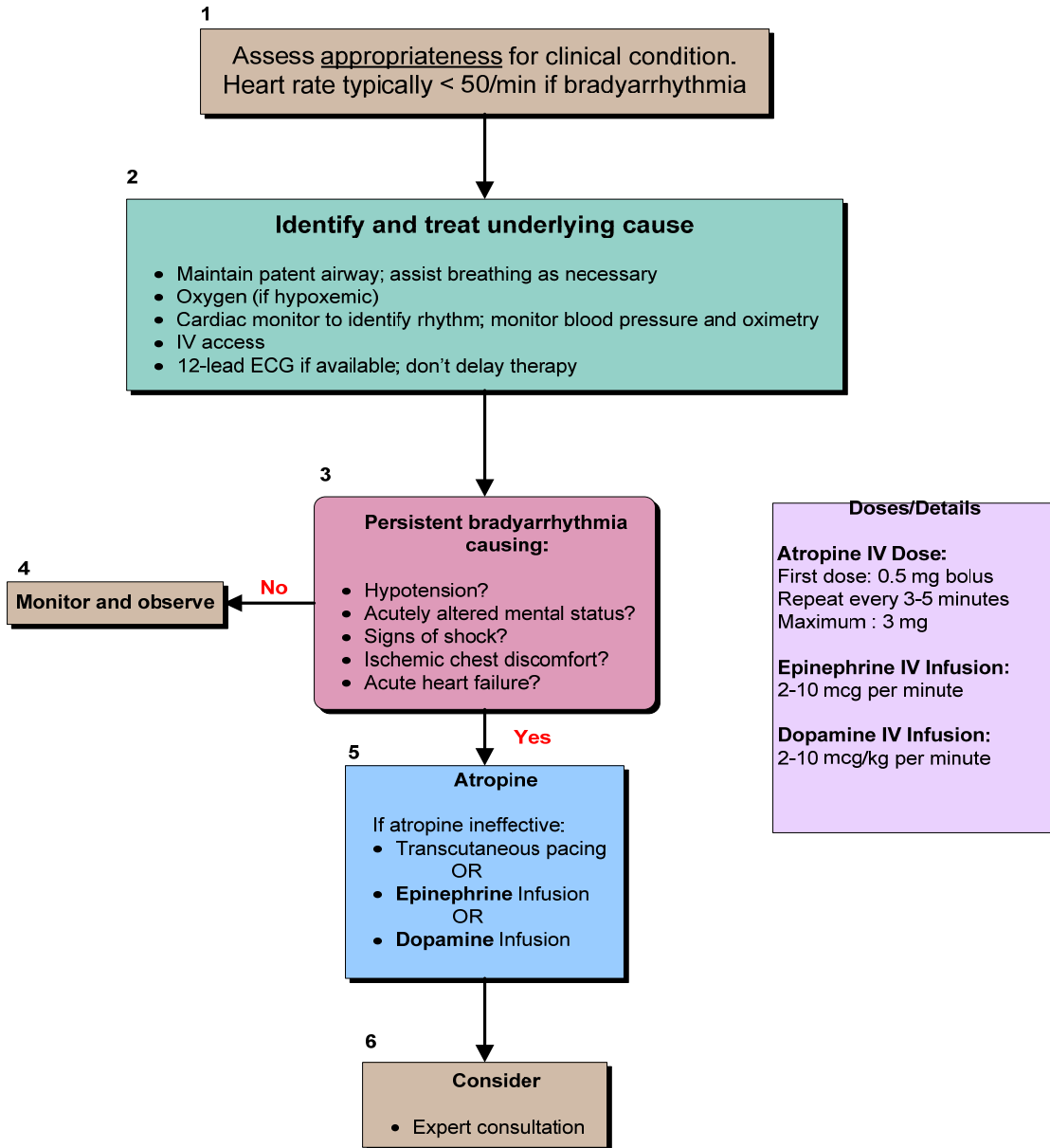
CONGESTIVE HEART FAILURE CARDIOGENIC PULMONARY EDEMA

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST CHF, CAD, STEMI Medications: Digitalis, Lasix Acute onset Recent Hx of exertional SOB 	<ul style="list-style-type: none"> Respiratory distress, bilateral rales / crackles, wheezes Anxiety, orthopnea JVD, peripheral edema Cool, pale, diaphoretic Acute weight gain (fluid) 	<ul style="list-style-type: none"> COPD MI, CHF Aspiration Pneumonia Non-cardiac pulmonary edema Asthma / anaphylaxis
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Nitrolingual spray 0.4 mg SL (every 1 min x 3) as long as symptoms persist and no sign of hypo-perfusion. 	<ul style="list-style-type: none"> 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> CPAP / PEEP 5-10 cm/H₂O 12-lead EKG (+ STEMI = rapid transport to STEMI center) Tridil drip 10 mcg/min IV (increase by 10 mcg/min q-5 min) titrate to desired effect not to exceed 50 mcg/min while maintaining SBP > 100 mmHg. EPInephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg 	<ul style="list-style-type: none"> On-line medical consultation 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	
<p>Pearls:</p> <ul style="list-style-type: none"> STEMI = S-T segment elevation in two or more related leads. (regardless of time) Withhold Nitroglycerin in any patient who has used Viagra, Cialis, Levitra or similar medication in the previous 48 hrs. Nitrates in all forms should be avoided in patients with initial systolic blood pressures less than 90 mm Hg or greater than or equal to 30 mm Hg below baseline, in patients with marked bradycardia or tachycardia, and in patients with known or suspected RV infarction. Give ASA 324 mg if evidence of concurrent ACS. Consider AMI in all these patients. Monitor V/S before and after each medication administration and every 5 minutes thereafter. Avoid pre-load reducing medication if s/s of hypo-perfusion. Avoid excessive fluid administration. Monitor level of consciousness and V/S carefully and move to advanced airway if condition deteriorates. 		

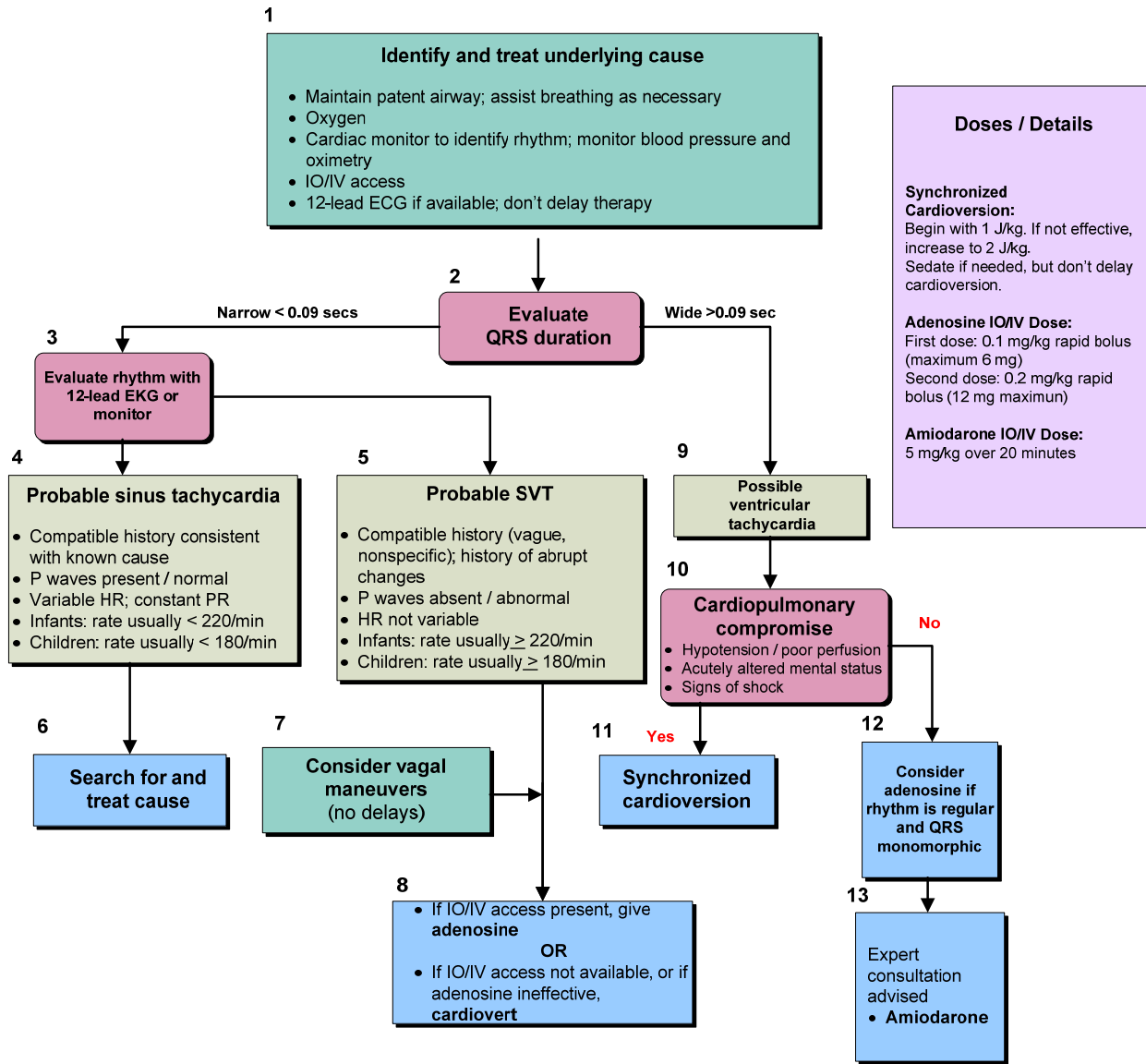
ADULT TACHYCARDIA WITH PULSES



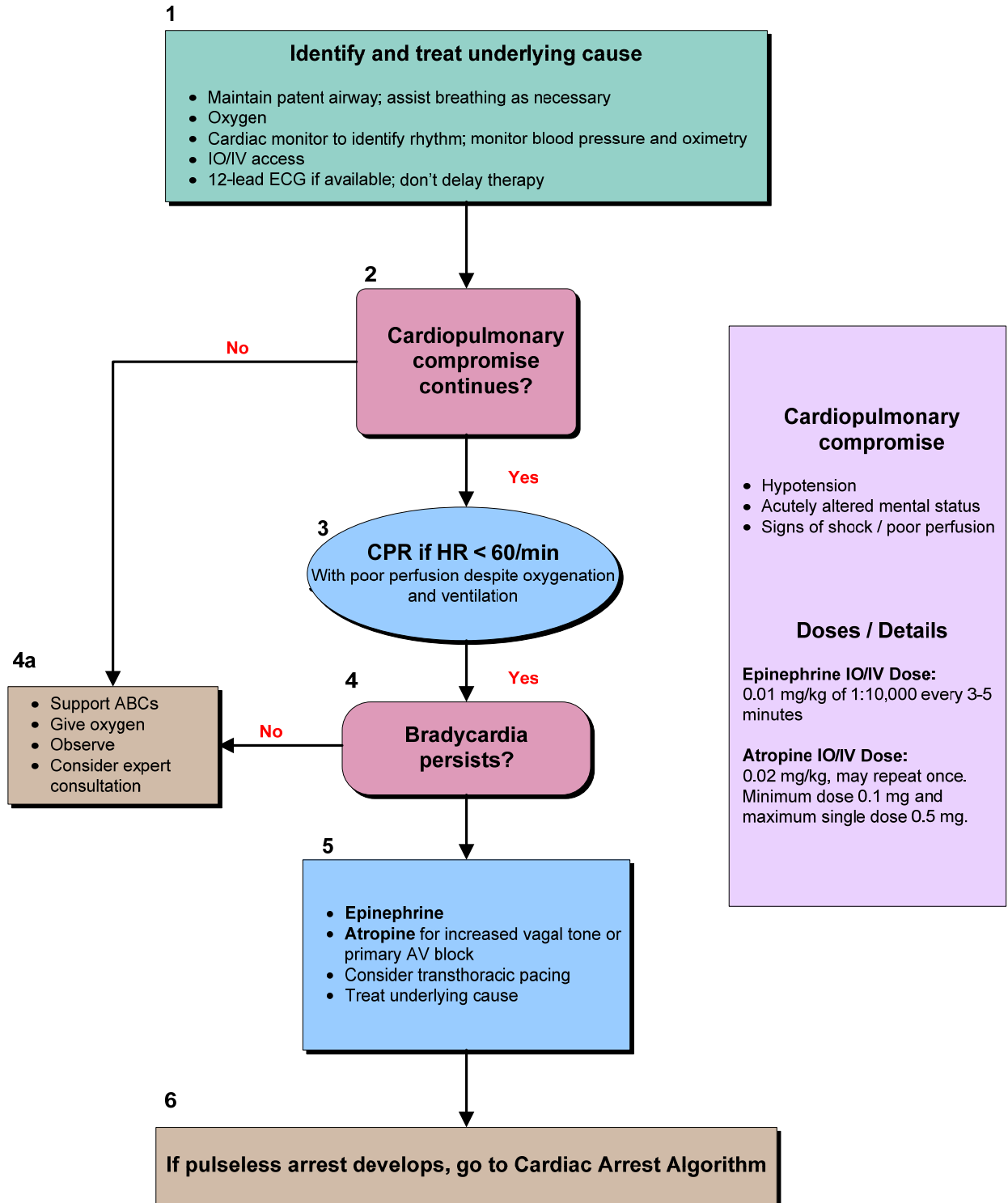
ADULT BRADYCARDIA



PEDIATRIC TACHYCARDIA WITH PULSES AND POOR PERFUSION



PEDIATRIC BRADYCARDIA WITH A PULSE



Section IV: Environmental Emergencies

DROWNING / SUBMERSION			
History:	Signs and Symptoms:	Differential:	
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Submersion, regardless of depth. • Trauma: diving, MVC • Age of victim, Duration • Water temperature, contamination • ETOH, drugs, seizure 	<ul style="list-style-type: none"> • Unresponsive / agitated / AMS • Coughing, gagging, vomiting • Barotrauma: Pain, headache, vertigo, bleeding from ears / nose, focal paralysis, paresthesias, visual disturbances, euphoria. 	<ul style="list-style-type: none"> • Trauma • Pre-existing, contributory medical condition • Barotrauma: air embolism, decompression sickness, nitrogen narcosis 	
ADULT		PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER		EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Remove wet clothing and ensure warmth ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Focused BLS ○ Albuterol 2.5 mg AT for wheezing 		<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Remove wet clothing and ensure warmth ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Focused BLS ○ Albuterol 2.5 mg AT for wheezing 	
PARAMEDIC		PARAMEDIC	
<ul style="list-style-type: none"> ○ CPAP / PEEP 5-10 cm/H₂O for s/s pulmonary edema ○ Normal Saline 500 ml IV bolus if evidence of hypovolemia exists. (repeat as needed) ○ Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg 		<ul style="list-style-type: none"> ○ PEEP 5-10 cm/H₂O for s/s pulmonary edema ○ Normal Saline 20 ml/kg IV bolus if evidence of hypovolemia exists. (repeat as needed) 	
PHYSICIAN ORDER ONLY		PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> ○ 		<ul style="list-style-type: none"> ○ Epinephrine 0.1-1 mcg/kg/min IV/IO infusion 	
<p>Pearls:</p> <ul style="list-style-type: none"> • Appropriate Cardiac Arrest protocols should be followed on pulseless patients. • Rescuers should not enter the water unless specifically trained to do so. For victims struggling on the surface, throw the ResQ Disk and attempt to bring them to safety. • Always maintain spinal precaution and immobilize if that possibility exists. • Drowning is the leading COD among would-be rescuers. • In cold water drowning, resuscitate until warm. (transport) • All submersion victims should be transported for evaluation. Latent s/s develop as long as 24 hours post-submersion. • SCUBA divers dive computer or dive log should be transported with the patient. • All suspected barotrauma patients should be transported to a facility that has hyperbaric chamber (D-5). 			

HYPERTHERMIA			
History:	Signs and Symptoms:	Differential:	
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Exposure to increased temperatures and / or humidity. • Exertion; time and length of exposure • Child / Geriatric • ETOH , Rx and illicit drugs 	<ul style="list-style-type: none"> • AMS, unconsciousness • Heat Stroke: hot / flushed / dry • Heat exhaustion: diaphoretic / pale • N/V, hypotension and / or shock • Syncope, fatigue, muscle cramps • Seizure 	<ul style="list-style-type: none"> • Fever, sepsis, dehydration • Hypoglycemia • Agitated / Excited Delirium • DT's • CNS lesion / tumor • Hyperthyroidism 	
ADULT		PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER		EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Blood Glucose: treat if < 60 mg/dl ○ Remove from environment, remove clothing as appropriate <ul style="list-style-type: none"> • Normal mental status Cool patient with water to skin and increase evaporation • AMS Aggressive cooling to unclothed patient with water misting, fans, ice packs to groin, axilla and neck. 		<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Blood Glucose: treat if < 60 mg/dl ○ Remove from environment, remove clothing as appropriate <ul style="list-style-type: none"> • Normal mental status Cool patient with water to skin and increase evaporation • AMS Aggressive cooling to unclothed patient with water misting, fans, ice packs to groin, axilla and neck. 	
PARAMEDIC		PARAMEDIC	
<ul style="list-style-type: none"> ○ Normal Saline IV 500 ml bolus (repeat as needed) If body temp > 104.0 give (COLD) Saline 		<ul style="list-style-type: none"> ○ Normal Saline IV 20 ml/kg bolus (repeat as needed) If body temp > 104.0 give (COLD) Saline 	
PHYSICIAN ORDER ONLY		PHYSICIAN ORDER ONLY	
○		○	
<p>Pearls:</p> <ul style="list-style-type: none"> • Appropriate Cardiac Arrest protocols should be followed on pulseless patients. • Very young and old more prone to develop heat emergencies. • Cocaine, methamphetamine, amphetamines and salicylates may elevate body temps. • Many Rx medications alter the body's thermoregulatory mechanism. • Sweating generally diminishes / stops as the core temperature rises above 104° F. • Withdrawal cooling methods as core temp falls below 101.0 to avoid hypothermia. 			

HYPOTHERMIA			
History:	Signs and Symptoms:	Differential:	
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Exposure to environment even in normal ambient temperatures. • Child / Geriatric • ETOH , Rx and illicit drugs • Length of exposure, wet / dry 	<ul style="list-style-type: none"> • Cold, clammy, shivering • AMS / unconsciousness • Hypotension / shock • Extremity pain / paresthesias • High dysrhythmia potential • Frostbite 	<ul style="list-style-type: none"> • Sepsis or other shock state • Hypoglycemia • CNS insult: <ul style="list-style-type: none"> ▪ Stroke ▪ Head injury ▪ Spinal cord injury ▪ Tumor 	
ADULT		PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER		EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Blood Glucose: treat if < 60 mg/dl ○ Remove from environment / wet clothing; ensure, provide warmth ○ Handle patient gently, don't allow physical exertion 		<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Blood Glucose: treat if < 60 mg/dl ○ Remove from environment / wet clothing; ensure, provide warmth ○ Handle patient gently, don't allow physical exertion 	
PARAMEDIC		PARAMEDIC	
<ul style="list-style-type: none"> ○ Normal Saline IV as needed (warmed if possible) ○ Thiamine 100 mg SIVP for hypoglycemic with evidence of ETOH abuse or malnourishment. ○ D₅₀W SIVP if hypoglycemic 		<ul style="list-style-type: none"> ○ Consult Medical Control 	
PHYSICIAN ORDER ONLY		PHYSICIAN ORDER ONLY	
○		○	
<p>Pearls:</p> <ul style="list-style-type: none"> • Appropriate Cardiac Arrest protocols should be followed on pulseless patients. • Defibrillation and antidysrhythmics may be ineffective until patient warmed > 88-90° F. • Primary V-fib common in patients < 88° F. • Rough handling of the patient may cause V-fib. • Hypothermia causes progressive bradycardias. • Very young / old patients more susceptible to hypothermia. • Obtain 12-lead if possible. 			

BITES AND ENVENOMATIONS		
History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Type of animal, wound location • Domestic vs. Wild • Previous reactions to similar event • Allergy to antivenin or horse serum • Immuno-compromised patient 	<ul style="list-style-type: none"> • Rash, punctures, wounds, bleeding • Impaled retained stinger apparatus • Pain, swelling, erythema • Allergic reaction: urticaria, itching, wheezing / SOB, hypoperfusion • Syncope / near syncope / orthostatic • N/V, muscle spasm, diaphoresis 	<ul style="list-style-type: none"> • Human bite • Animal bite • Snake envenomation • Spider envenomation • Hymenoptera envenomation • Cnidaria (nematocysts) • Stingray, catfish
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Immobilize affected limb if necessary ○ Appropriate specific treatment guidelines ○ Allergic Reaction Guideline 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Immobilize affected limb if necessary ○ Appropriate specific treatment guidelines ○ Allergic Reaction Guideline 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ Pain Management Guideline ○ *Midazolam 2 mg SIVP for Black Widow bite abdominal muscle spasm / pain. 	<ul style="list-style-type: none"> ○ Pain Management Guideline 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> ○ 	<ul style="list-style-type: none"> ○ *Midazolam / Diazepam 	
<p>Pearls:</p> <ul style="list-style-type: none"> • Human bites are highly infectious and should be treated by a physician. • All mammal bites have the risk of Rabies exposure and <u>all bites / wounds risk bacterial infection.</u> • Evidence of infection: pain, swelling, redness, drainage, warm / hot; red streaks and swollen lymph nodes proximal to wound. • Indigenous venomous snakes in Lee County are: Eastern Diamondback and Pigmy rattlesnakes, Cottonmouth Water Moccasin and Coral Snake. There are many exotic species kept by dealers and citizens. <ul style="list-style-type: none"> • Coral snake venom is neuro-toxic and deadly, but rare and not as painful as a pit viper. • Pit viper envenomation is highly variable, 25 % are dry bites (no venom injected) • Envenomated bites are very painful with redness and swelling. (pit vipers) • No ice, tourniquets, cutting or sucking snake bites. Immobilize extremity in neutral position. • *Black Widow spider bites are not acutely painful, but may progress to severe abdominal spasms. • Stingray and catfish injuries should be immersed in very warm water ASAP for immediate pain relief. They need to be seen by a physician to r/o foreign body and dT / antibiotic prophylaxis. • Jellyfish (cnidaria) should be removed from the skin with sea water, rinse area with vinegar if available. Warm (hot) water immersion also helps with pain control. RX Pain Control if necessary. 		

ALLERGIC REACTION / ANAPHYLAXIS

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST Onset and Location Envenomation / sting / bite Food / medication / plant exposure PMHx of allergy / sensitivity Pre-arrival medications 	<ul style="list-style-type: none"> Redness, itching, urticaria, rash Cough, wheeze, respiratory distress Angioedema Chest tightness, throat constriction, tongue swelling, difficulty swallowing Hypotension, tachycardia, pallor, diaphoresis 	<ul style="list-style-type: none"> Contact dermatitis Vasovagal event Asthma or COPD Infection / Septic shock FB upper airway obstruction Drug OD / adverse effect
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring *Epi-Pen Administer patient's prescribed auto-injector Albuterol 2.5 mg AT for bronchospasm 	<ul style="list-style-type: none"> Medical Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring *Epi-Pen Jr. Administer patient's prescribed auto-injector Albuterol 2.5 mg AT for bronchospasm 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> Normal Saline 500 ml IV bolus if signs of hypo-perfusion and repeat as necessary Epinephrine 0.5 mg IM (1:1,000) for patient in respiratory distress or shock (anaphylaxis) **Diphenhydramine 50 mg SIVP / IM Epinephrine (1:10,000) 0.5 mg SIVP if patient is pre-arrest Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg Solumedrol 125 mg SIVP 	<ul style="list-style-type: none"> Normal Saline 20 ml/kg IV bolus if signs of hypo-perfusion and repeat as necessary Epinephrine 0.01 mg/kg IM (1:1,000) (max 0.4 mg per dose) for patient in respiratory distress or shock (anaphylaxis) **Diphenhydramine 1 mg/kg SIVP / IM (max 25 mg per dose) Solumedrol 1 mg/kg SIVP / IM for patients > 2 y/o. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Epinephrine 0.1-1 mcg/kg/min IV/IO infusion 	
<p>Pearls:</p> <ul style="list-style-type: none"> Epi has <u>no</u> absolute contraindication for true anaphylaxis. (shock / swollen airway). <u>Epi should be given immediately for anaphylaxis.</u> <u>Contact Medical Control</u> prior to administering Epinephrine to patients who are > 50 y/o, have PMHx of CAD or have HR > 140 or SBP > 160 if not in extremis. *Epi-Pen administration is intended for responders with no ALS capabilities. Safely and rapidly eliminate the source of exposure, if possible. **Diphenhydramine for local reactions and rash; Diphenhydramine, Solumedrol and / or Epi for severe generalized reactions respectively. Per individual, each allergic reaction is generally worse than any previous reaction. 		

Section V: Medical Emergencies

ASTHMA / REACTIVE AIRWAY DISEASE / COPD

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Asthma, allergies • COPD- chronic bronchitis, emphysema, CHF. • Home Tx: O₂, nebulizers • Meds: Theophylline, steroids, Beta₂ inhalers • Toxic / noxious exposure 	<ul style="list-style-type: none"> • SOB, respiratory distress / failure • Wheezing, rhonchi, diminished breath sound. • Increased resp. rate, effort, accessory muscles. • Tachycardia / bradycardia (late) • Fever, cough, sputum production (colored?) • Skin: dry, warm / hot, friable, purpuric. • SpO₂ < 92 %, EtCO₂ > 50 mmHg, Shark-fin waveform capnography 	<ul style="list-style-type: none"> • Asthma, COPD, CHF • Aspiration, FBAO • Anaphylaxis • Pulmonary embolus • Pleural effusion, pneumonia • Pneumothorax, pericardial tamponade • Hyperventilation syndrome, emotional • Toxic exposure: CO / smoke etc.
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ *Epi-Pen Administer patient's prescribed auto-injector ○ Albuterol 2.5 mg AT for wheezing 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ *Epi-Pen Administer patient's prescribed auto-injector ○ Albuterol 2.5 mg AT for wheezing 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ DuoNeb AT if refractory to albuterol ○ CPAP / PEEP 5-10 cm/H₂O, titrate as needed ○ Solumedrol 125 mg SIVP <u>Asthma</u> <ul style="list-style-type: none"> • Magnesium Sulfate 2 gm in 100cc D₅W IV infusion over 10 mins for patients refractory to above Tx. • Epinephrine (1:1,000) 0.3-0.5 mg IM for severe respiratory distress refractory to above Tx. • Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg • Epinephrine (1:10,000) 0.5 mg SIVP if patient is pre-arrest. 	<ul style="list-style-type: none"> ○ DuoNeb AT if refractory to albuterol ○ Solumedrol 1 mg/kg SIVP for patients > 2 y/o. ○ Epinephrine (1:1,000) 0.01 mg/kg (max 0.3 mg) IM for patient in respiratory distress. ○ Magnesium Sulfate 50 mg/kg (max 2 gm) in 100cc D₅W IV infusion over 10 mins for patients refractory to above Tx. (For patients > 2 y/o) ○ <u>Croup / Epiglottitis / Bronchiolitis</u> <ul style="list-style-type: none"> • Normal Saline AT if no evidence of bronchospasm. • Epinephrine 3 mg (1:1,000) / 3.0 cc NS AT if in extremis. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> ○ DuoNeb (more than the one AT above) 	<ul style="list-style-type: none"> ○ DuoNeb (more than the one AT above) ○ Epinephrine 0.1-1 mcg/kg/min IV/IO infusion 	
<p>Pearls:</p> <ul style="list-style-type: none"> • Contact Medical Control prior to administering Epinephrine to patients who are > 50 y/o, have PMHx of CAD or have HR > 140 or SBP > 160 if not in extremis. • *Epi-Pen administration is intended for responders with no ALS capabilities. • A 12-lead EKG should be obtained on all of these patients when possible. • A silent chest in a patient in respiratory distress is considered a pre respiratory-arrest sign. • Persistent shark-fin wave form equals on-going bronchospasm. Consider additional up-drafts. 		

ABDOMINAL PAIN (NON-TRAUMA)

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST Gender / age PMHx (surgery) Medication Fever Pregnancy 	<ul style="list-style-type: none"> Pain (visceral, somatic, referred) Tenderness (location, rebound) N/V, diarrhea, constipation Olig / poly / dys / hematuria Vaginal bleeding / discharge Fever, pallor, cool, diaphoretic Hyper / hypotension, tachy / bradycardia 	<ul style="list-style-type: none"> PUD / GERD / ACS Cholecystitis, pancreatitis, gastritis Renal colic, AAA, Pyelonephritis PID, ovarian cyst / tumor, UTI Bowel obstruction, appendicitis Hernia, testicular torsion Gastroenteritis, diverticulitis, Crohn's
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical Supportive Care Guidelines Orthostatic vitals (if not already symptomatic) 	<ul style="list-style-type: none"> Medical Supportive Care Guidelines Orthostatic vitals (if not already symptomatic) 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> Normal Saline 500 ml IV bolus if symptomatic of hypo-perfusion and repeat as necessary Ondansetron 4 mg SIVP for <u>vomiting</u> Pain Management Guideline 	<ul style="list-style-type: none"> Normal Saline 20 ml/kg IV bolus if symptomatic of hypo-perfusion and repeat as necessary Pain Management Guideline 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Ondansetron 0.1 mg/kg mg SIVP for <u>vomiting</u> 	
<p>Pearls:</p> <ul style="list-style-type: none"> Definitive care for abdominal pain occurs at the hospital and rapid transport may be indicated. Repeat vital signs after each fluid bolus and give additional fluids based on patient condition. Strict NPO should be maintained Abdominal pain in women of childbearing age assumed to be ectopic pregnancy until proven otherwise. Appendicitis begins as diffuse peri-umbilical pain later becoming intense and localized to the RLQ. 		

ALTERED MENTAL STATUS HYPO / HYPERGLYCEMIA

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST PMHx of DM, Medic Alert Report or evidence of illicit drug use Report or evidence of toxic ingestion Acute change in baseline status Trauma 	<ul style="list-style-type: none"> AMS: change from baseline Agitated, violent, confused, somnolent Hypoglycemia (cool, diaphoretic) Hyperglycemic (warm, dry, Kussmal- resps. , diuresis, acidotic) 	<ul style="list-style-type: none"> Head trauma, shock, toxic CNS (CVA, tumor, seizure, septic) Thyroid, acidosis / alkalosis Environmental exposure Alcoholism, malnutrition Pancreatic / adrenal tumor
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical Supportive Care Guidelines Blood Glucose: treat if < 60 mg/dl Oral Glucose 15 gms (+ self-protected airway) 	<ul style="list-style-type: none"> Medical Supportive Care Guidelines Blood Glucose: treat if < 60 mg/dl Oral Glucose 7.5 gms (+ self-protected airway) 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> <u>Hypoglycemic</u> <ul style="list-style-type: none"> Thiamine 100 mg SIVP / IM for hypoglycemic w/ evidence of ETOH abuse or malnourishment. D₅₀W 25 gms SIVP Glucagon 1 mg IM if no IV access <u>Hyperglycemic</u> <ul style="list-style-type: none"> Normal Saline 1000 ml IV for BG > 350 mg/dl and / or signs of hypo-perfusion and dry lungs. Repeat if patient's condition dictates. 	<ul style="list-style-type: none"> <u>Hypoglycemic</u> <ul style="list-style-type: none"> *D₂₅W 0.5 gm/kg SIVP If <u>NO IV Access</u> Glucagon 0.5 mg IM if < 20 kg Glucagon 1 mg IM if > 20 kg <u>Hyperglycemic</u> <ul style="list-style-type: none"> Normal Saline 20 ml/kg IV for BG > 350 and / or signs of hypo-perfusion. Repeat if patient's condition dictates. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	
<p>Pearls:</p> <ul style="list-style-type: none"> Maintain high index of suspicion for the many causes of AMS Do NOT let alcohol confuse the clinical picture, alcoholics frequently develop hypoglycemia. Thiamine may be omitted if the patient has no sign or suspicion of malnutrition. Do not give oral glucose if the patient cannot protect their own airway. Hypoglycemics can be violent, protect emergency personnel and the patient with necessary restraint. All IV doses can be given IO. If hypoglycemic patient has insulin pump on, turn off or disconnect if at all possible. When patient's mental status returns to baseline, the patient should be encouraged to eat. *Dilute given concentration (D_{12.5}W) if necessary to be age appropriate. 		

EXCITED / AGITATED DELIRIUM

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Situational crisis • Substance abuse / overdose • Psychiatric illness / medications • Injury to self or threats to others • Medic alert tag 	<ul style="list-style-type: none"> • Anxiety, agitation, confusion • Affect change, bizarre behavior • Hallucinations, delusional thoughts • Combative / Violent • Suicidal / Homicidal thoughts • Hypertensive / Tachycardic • Adrenergic overstimulation 	<ul style="list-style-type: none"> • Hypoxia / Trauma • Alcohol Intoxication • Medication effect / OD • Depression / Bipolar • Schizophrenia
ADULT		PEDIATRIC (<40 KG)
EMT-BASIC PROVIDER		EMT-BASIC PROVIDER
<ul style="list-style-type: none"> ○ Scene Safety ○ Medical Supportive Guidelines <ul style="list-style-type: none"> • Appropriate levels of patient restraint for these patients must continually be evaluated, as patient condition may rapidly deteriorate and the potential for positional airway compromise develop. • Remove patient from stressful environment. ○ Focused history and physical exam. <ul style="list-style-type: none"> • Blood Glucose: treat if < 60 mg/dl. • If patient HOT to touch, begin passive and active cooling measures as soon as safe to do so. 		<ul style="list-style-type: none"> ○
PARAMEDIC		PARAMEDIC
<ul style="list-style-type: none"> ○ Ketamine 5mg/kg IM (loading dose not to exceed 500mg) or ○ Midazolam 5 mg IM/IN or Midazolam 2.5– 5.0 mg IV with peripheral pulses present. ○ If a patient emerges from the loading dose, <ul style="list-style-type: none"> ▪ Ketamine 2.5mg/kg Slow IV/IO or ▪ Midazolam 2.5– 5.0 mg IV/IO/IM/IN to effect with SBP> 100 mmHg. ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Hyperthermia Guidelines, ○ Normal Saline 1000ml bolus to rehydrate / cool patient. 		<ul style="list-style-type: none"> ○ On-line medical consultation
PHYSICIAN ORDER ONLY		PHYSICIAN ORDER ONLY
<ul style="list-style-type: none"> ○ 		<ul style="list-style-type: none"> ○
<p>Pearls:</p> <ul style="list-style-type: none"> • Do NOT load a violent patient into the ambulance until the patient is adequately controlled with physical and / or chemical restraint. • Be sure to consider possible medical / trauma causes for behavior (hypoglycemia, over-dose, substance abuse, hypoxia, hyperthermia, head injury, etc.). • Patients should not be transported in a prone or hog-tied position. Any position that impedes respiration should be avoided. • Do not overlook the possibility of associated domestic violence or child abuse. • More than 1 liter of NS may be required for adequate hydration. • If Cardiac Arrest or “pre-arrest”, consider fluid bolus and Sodium Bicarb early. 		

PAIN & ANXIETY MANAGEMENT / SEDATION

History: <ul style="list-style-type: none"> • SAMPLE • OPQRST • Age , PMHx • Location • Onset, Duration, Nature • Severity (scale) • Allergies and current meds 	Signs and Symptoms: <ul style="list-style-type: none"> • Severity (1-10 scale) • Quality (sharp, dull, crampy, tight) • Radiation, referred • Aggravating / relieving factors • Intermittent / constant 	Differential: <ul style="list-style-type: none"> • Musculoskeletal • Abdominal • Cardiac / Pleuritic • Renal (colic) • Neurogenic (Varicella Zoster)
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ #Ketorolac 30 mg SIVP for mild to moderately severe pain ○ Fentanyl 1-2 mcg/kg (per dose) SIVP / IM / IN titrate to effect for pain w/o evidence of hypo-perfusion. (may repeat once after 5 mins if necessary) ○ Midazolam 2 mg (max 5 mg) SIVP / IM / IN for severe anxiety and / or muscle spasm without evidence of hypo-perfusion. <ul style="list-style-type: none"> ➤ <u>*Post Advanced-Airway Sedation:</u> <ul style="list-style-type: none"> • Midazolam 5 mg SIVP • Fentanyl 2 mcg/kg SIVP ➤ <u>Pain related to IO use:</u> <ul style="list-style-type: none"> • Lidocaine 0.25 mg/kg IO administered slowly through IO before bolus or meds in an alert patient. 	<ul style="list-style-type: none"> ○ Fentanyl 1-2 mcg/kg (per dose) SIVP / IM / IN titrate to effect for pain w/o evidence of hypo-perfusion. (may repeat once after 5 mins if necessary) ○ Midazolam 0.1 mg/kg (max 2 mg per dose) SIVP / IM / IN for severe anxiety adversely affecting clinical status without evidence of hypo-perfusion. <ul style="list-style-type: none"> ➤ <u>Pain related to IO use:</u> <ul style="list-style-type: none"> • Lidocaine 0.25 mg/kg IO administered slowly through IO before bolus or meds in an alert patient. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
○	○	
Pearls: <ul style="list-style-type: none"> • Pain severity (1-10) is a vital sign to be recorded pre and post medication delivery and at disposition. • # ketorolac / Toradol should be given for muscle strain (low back), kidney stones and other pain not likely to involve bleeding. Dental pain and other painful processes that involve inflammation should be considered. Ketorolac is an NSAID and should not be given to anyone allergic to ASA or any other NSAID. It should also be withheld from anyone with <u>renal disease, kidney transplant</u> or patients needing immediate surgery. • *Conscious sedation / maintenance is done in “cocktail” fashion – no pause. Sedation and analgesia are administered immediately following confirmation of airway device placement. • Full V/S should be obtained before and after every medication and every 15 min there-after. • All patients should have drug allergies documented prior to administering any medication. • Opioids and Benzodiazepines cause respiratory depression. Use cautiously in patients with head injuries, COPD and respiratory distress. Airway / ventilation must be monitored closely. 		

OVERDOSE / TOXIC INGESTION

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST Ingestion (suspected) of potentially toxic substance Substance, route, quantity, time Intentional, accidental, criminal Available medication / illicit drugs 	<ul style="list-style-type: none"> Changes in mental status Hypotension – hypertension Bradycardia – tachycardia, dysrhythmias Decreased – increased respiratory rate Seizures, SLUDGEM, ataxia Constricted – dilated pupils 	<ul style="list-style-type: none"> Acetaminophen (Tylenol) NSAIDs (aspirin, ibuprophen) Tricyclic antidepressants (TCAs) Benzodiazepines / amphetamines Cholinergics / anticholinergics Opiates, sympathomimetics Solvents, alcohols, organophosphates
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Blood Glucose: treat is < 60 mg/dl 	<ul style="list-style-type: none"> Same as adult 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> Normal Saline 500 ml for hypotension without evidence of pulmonary edema. Naloxone 0.4-2.0 mg (per dose) SIVP or IN for suspected opiate OD if <u>respiratory rate < 12</u>. DO NOT give naloxone to an intubated patient. Diphenhydramine 50 mg IV / IM for patient with evidence of dystonic reaction. Sodium bicarbonate 1 mEq/kg SIVP for TCA O.D. with sustained HR > 120, QRS > 100 ms. <li style="background-color: yellow;">Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg Midazolam 2-10 mg (2 mg increments) SIVP titrate to effect for hyperadrenergic state from (meth) amphetamines, cocaine or PCP use. Usually presents with HR>120 and HTN. Atropine 1-2 mg SIVP q 5 min for SLUDGEM (no max dose) 	<ul style="list-style-type: none"> On-line medical consultation 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
○	○	
<p>Pearls:</p> <ul style="list-style-type: none"> Do not rely on patient’s history of ingestion, especially in suicide attempt. Bring medicine bottles, containers, contents, emesis to ED. Tricyclic Antidepressant (TCA): major area of toxicity: seizure, dysrhythmia, hypotension, AMS-coma. The patient may rapidly progress from alert to death. Acetaminophen: normal early, then N/V progressing to liver failure and death (especially with alcohol) Opiates / Benzodiazepines: Bradycardia, hypotension, respiratory depression / arrest. Hyperadrenergics: tachycardia, hypertension, hyperthermia, dilated pupils, seizures. Cholinergics: (wet) SLUDGEM, confusion, weakness, diaphoresis, seizure. Anticholinergics: (dry) delirium, tachycardia, dilated pupils, seizure, dysrhythmias. Solvents: N/V, changes in mental status, ataxia, dermatological changes. Insecticides: (organophosphates / carbamates) “see cholinergics” MARK 1 kits contain Atropine 2 mg and pralidoxime 600 mg in an autoinjector for self administration. Consider CPAP / PEEP for any patient with Pulmonary Edema. <li style="color: red;">Consider contacting Poison Control Center for consultation: 1-800-222-1222 or Medical Control 		

SEIZURE MANAGEMENT

History: <ul style="list-style-type: none"> • SAMPLE • OPQRST • Witnessed seizure activity • PMHx of seizure, diabetes, trauma • Pregnancy. • Anticonvulsant medication • Medic Alert Bracelet 	Signs and Symptoms: <ul style="list-style-type: none"> • AMS (unconsciousness, somnolence, agitation, confusion) • Diaphoretic, tachycardic • Incontinence, tongue bleeding • Primary / secondary trauma • Tonic / clonic activity • Substance abuse 	Differential: <ul style="list-style-type: none"> • Head injury, tumor, CVA • Cardiac arrest, hypoxia, shock • Metabolic / electrolyte derangement • Meningitis / Encephalitis, fever • Alcohol / drug withdrawal • Eclampsia
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Blood Glucose: treat if < 60 mg/dl 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Blood Glucose: treat if < 60 mg/dl 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ *Midazolam 2.0-5.0 mg SIVP / IO <li style="padding-left: 20px;">-or- ○ Midazolam 5.0 mg IM / IN if no IV / IO. ○ Magnesium Sulfate 4 gms in 100 cc D₅W wide open for active seizures secondary to eclampsia until seizure stops then slow to finish dose. ○ Thiamine 100 mg SIVP for hypoglycemic w/ evidence of ETOH abuse or malnourishment. ○ D₅₀W 25 gms SIVP for hypoglycemia 	<ul style="list-style-type: none"> ○ Midazolam 0.1 mg/kg SIVP / IO (max 2 mg per dose) <li style="padding-left: 20px;">-or- ○ Midazolam 0.2 mg/kg IM / IN (max 5 mg per dose) ○ D₂₅W 0.5 gm/kg SIVP for hypoglycemia 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> ▪ 	<ul style="list-style-type: none"> ▪ 	
Pearls: <ul style="list-style-type: none"> • Sudden Cardiac Arrest is frequently the cause of “seizure like activity” • Protect patient from injury during active seizure. • 5 minutes of continuous seizure activity or two or more seizures w/o conscious period are emergent. Treat aggressively to stop seizure activity. Be prepared to support ventilations. • All Benzodiazepines are respiratory depressants, closely monitor airway / ventilation status of patient and assist / control when necessary. • Ensure patients experiencing febrile seizures are not excessively dressed or bundled and determine last acetaminophen / ibuprofen dose. 		

SEPSIS / SEPTIC SHOCK

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> • SAMPLE • OPQRST • Recent Infection <ul style="list-style-type: none"> ▪ Urinary tract ▪ GI ▪ Respiratory ▪ Skin / wound • Infirm / elderly • Immuno-compromised • Taking Antibiotics 	<ul style="list-style-type: none"> • Temp < 96° or > 100.4° F • SBP < 90 mmHg or hypoperfusion • MAP < 65 mmHg • HR > 90 bpm • RR > 20 bpm • EtCO₂ < 25 mmHg • SpO₂ < 91% (pneumonia) • Fever, pallor, cool, diaphoretic • Red, warm, swollen (localized) • Rash: petechiae, purpura • Altered mental status (especially elderly patients) 	<ul style="list-style-type: none"> • CHF • Simple pneumonia • Viral Illness • Allergic Reaction
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Blood Glucose: treat if < 60 mg/dl 	<ul style="list-style-type: none"> ○ Medical Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Blood Glucose: treat if < 60 mg/dl 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ <u>*Consider CPAP/PEEP for SpO₂ < 94% in spite of delivered O₂ with adequate perfusion</u> ○ Normal Saline 20 ml/kg IV bolus unless s/s of CHF/pulmonary edema. Repeat if necessary. ○ Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg 	<ul style="list-style-type: none"> ○ Normal Saline 20 ml/kg IV bolus unless s/s of CHF. Repeat if necessary. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> ▪ 	<ul style="list-style-type: none"> ▪ Epinephrine 0.1-1 mcg/kg/min IV/IO infusion 	
<p>Pearls:</p> <ul style="list-style-type: none"> • Early recognition and goal-directed therapy reduces mortality. • Crystalloid resuscitation is paramount in sepsis care. Even normotensive patients require aggressive fluid administration. • Septic patients can present with low, normal or high core body temps. • Caution with patients presenting with “noisy” respirations. Pneumonia (sepsis) vs. CHF. • *Use PEEP with caution!! It is contraindicated in hypoperfusing conditions. • ED transfer report with a sense of urgency to convey “sepsis” to assure timely therapy. 		

STROKE / CVA

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST CVA, TIA Recent surgery ASCVD, Htn, DM Atrial fibrillation Meds (blood thinners), tobacco use 	<ul style="list-style-type: none"> AMS, headache, ataxia, seizure Loss of cognition, speech or slurred speech. Lateralizing motor / sensory deficit Hypertension / hypotension A-fib Vertigo, visual disturbance 	<ul style="list-style-type: none"> Hypoglycemia Seizure (post-ictus) Bell's Palsy Brain Tumor, AVM, abscess CNS infection Cardiac dysrhythmia Drug OD / reaction
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring <ul style="list-style-type: none"> Maintain SpO₂ > 94% while avoiding unnecessary high flow O₂. Advance airway as needed. Blood Glucose: treat if < 60 mg/dl Cincinnati Stroke Scale: acutely positive = Stroke Alert Scene time < 10 minutes for Stroke Alerts 	<ul style="list-style-type: none"> 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> 12-lead EKG (+ STEMI = transport to STEMI / STROKE center) Thiamine 100 mg SIVP / IM for hypoglycemic w/ evidence of ETOH abuse or malnourishment. D₅₀W 25 gms SIVP ONLY if hypoglycemic 	<ul style="list-style-type: none"> On-line medical consultation 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	
<p>Pearls:</p> <ul style="list-style-type: none"> Stroke Alert = rapid transport to Stroke Center following Advanced Stroke Triage Form. Monitor airway closely, dysphagia and vomiting are common. Correct hypoglycemia early Try to pinpoint on-set of symptoms and document time Avoid excessive fluid administration unless indicated Head of stretcher 30° unless contraindicated 		

Section VI: OB / GYN

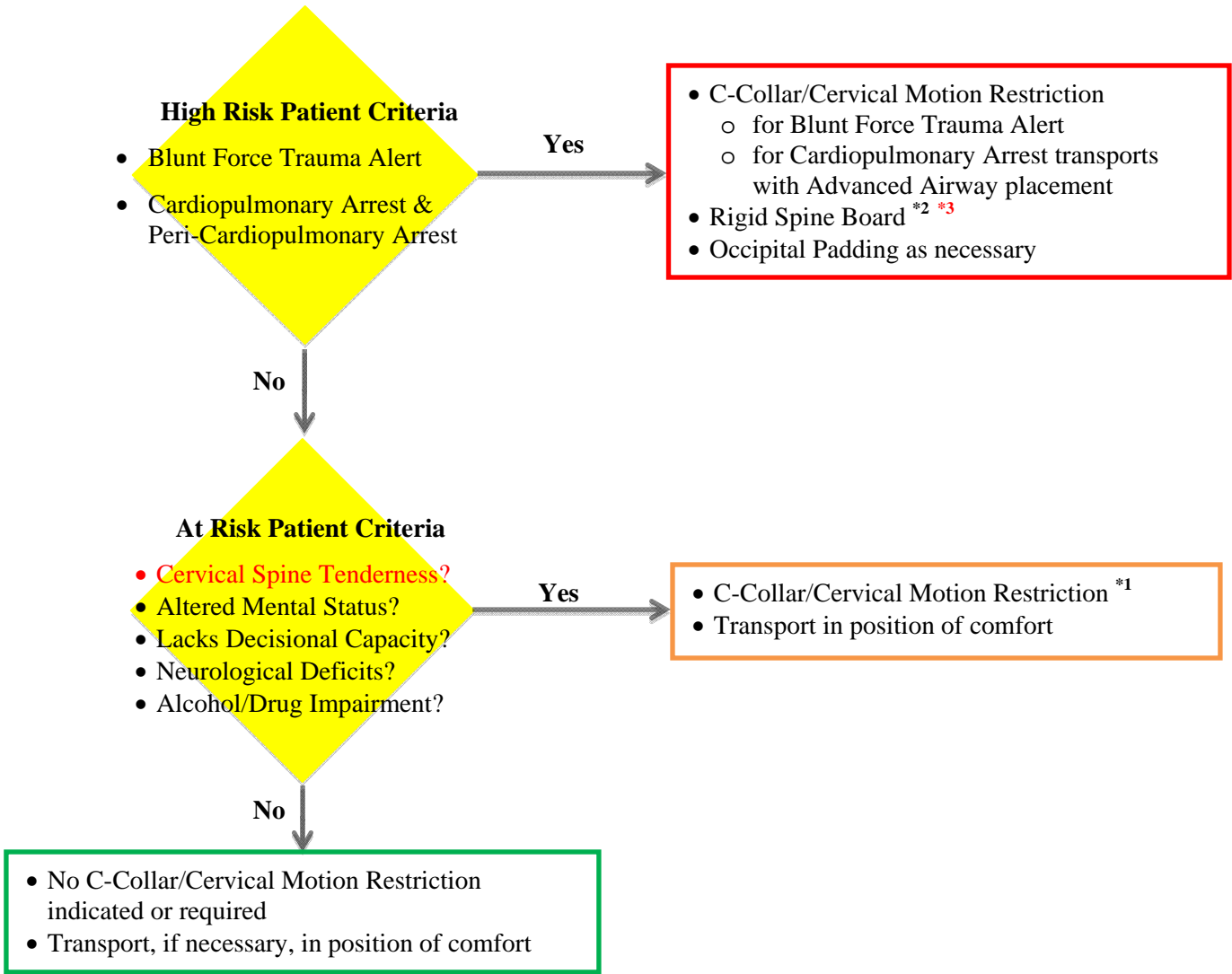
OBSTETRICAL EMERGENCIES

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST Antihypertensive medication Prenatal care Gravida / Para 	<ul style="list-style-type: none"> Vaginal bleeding Abdominal pain Seizures, hypertension Severe headache, visual changes Edema – hands, face 	<ul style="list-style-type: none"> Pre-eclampsia / eclampsia Placental abruption Placenta previa Spontaneous abortion Therapeutic abortion
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Blood Glucose: treat is < 60 mg/dl 	<ul style="list-style-type: none"> 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> Magnesium Sulfate 4 gms/100 cc D₅W wide open for active seizures secondary to eclampsia until seizure stops then slow to finish dose. Midazolam 2.0-5.0 mg SIVP / IM / IN for eclamptic seizure not responsive to magnesium sulfate or for patients with seizure Hx not related to pregnancy. 	<ul style="list-style-type: none"> On-line medical consultation 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	
<p>Pearls:</p> <ul style="list-style-type: none"> Severe headache, vision changes, or RUQ abdominal pain may indicate pre-eclampsia. In the setting of pregnancy, hypertension is defined as SBP > 140 or DBP > 90 mmHg. Maintain patient in a left lateral position to minimize risk of supine hypotensive syndrome. Ask patient to quantify any bleeding by # of pads used per hour. Magnesium Sulfate and benzodiazepines may cause hypotension and decreased respiratory drive, monitor the patient closely. <p><u>NORMAL DELIVERY PROCEDURES</u></p> <ul style="list-style-type: none"> Apply gentle palm pressure to the infant's head to prevent explosive delivery and tearing of perineum. <ul style="list-style-type: none"> As delivery occurs, suction mouth then nose. If amnion is still intact as head delivers: <ul style="list-style-type: none"> - Instruct mother to stop pushing. - Gently tear open membrane and immediately suction mouth, then nose. Keep newborn warm and dry. Keep newborn at vaginal level until cord is cut. <ul style="list-style-type: none"> Clamp the cord 6 & 9 inches away from baby and cut between the clamps. APGAR score at 1 minute and 5 minutes. <p><u>COMPLICATED DELIVERY</u></p> <ul style="list-style-type: none"> Significant blood loss or delayed placental delivery. <ul style="list-style-type: none"> Unless multiple births are anticipated, begin fundal massage. Lactated Ringers 250-500 cc or as needed to maintain SBP 100 mmHg. Encourage the newborn to breast feed. Nuchal cord <ul style="list-style-type: none"> Attempt to slip cord over the head. If cord is too tight to remove, immediately clamp and cut cord. Prolapsed cord <ul style="list-style-type: none"> Maintaining a pulsatile cord is the objective. 		

- Administer O₂ to mother.
- Place mother in Trendelenburg or knee-chest position.
- Place two fingers of gloved hand into vagina to raise presenting portion of newborn off the cord.
- Maintain that position during rapid transport to OB facility.
- Instruct mother to pant and not bear down with each contraction.
- If possible, keep cord warm / moist with sterile saline dressings.
- **Breech presentation**
 - Administer O₂ to mother.
 - Support newborn's body as it is delivered.
 - Gently guide the infant upward to allow delivery of the posterior shoulder then downward to deliver the anterior shoulder.
 - As the head passes the pubis, apply gentle upward pressure until the mouth appears over the perineum and immediately suction the mouth, then nose.
 - If the head does not deliver, form a "V" with the index and middle finger on either side of the infant's nose. Push the vaginal wall from the face and maintain that position during rapid transport to an OB facility.
- **Shoulder dystocia**
 - Position mother on her Lt. side in a dorsal-knee-chest position to increase the diameter of the pelvis.
 - Attempt to guide the infant's head downward to allow the anterior shoulder to slip under the symphysis pubis. Avoid excessive force or manipulation.
 - Gently rotate the fetal shoulder girdle into the wider oblique pelvic diameter.
 - If delivery does not occur, maintain airway patency as best as possible and immediately transport to OB facility.
- **Stillborn / spontaneous abortion**
 - All patients with suspected abortion should receive O₂, emotional support, and transportation for physician evaluation.
 - All products of conception should be carefully collected and transported with the mother to the hospital.

Section VII: Trauma

SPINAL PRECAUTION GUIDELINE



Pearls:

*1 C-Collars or Cervical Motion Restriction among at-risk patients is paramount and clinically sufficient in most cases.

*2 Rigid Spine Boards should only be used as an extrication or transfer device – not a therapeutic intervention.

*3 Patients should be removed from rigid spine board confinement after transitioning to the ambulance stretcher.

Exceptions: Blunt Force Trauma Alerts, or when ease of transfer and/or patient safety is a concern, or in situations where CPR may be needed or ongoing.

Penetrating Trauma Alerts do not benefit, and may worsen, from rigid spine board confinement.

- Exam-based/goal-directed spinal immobilization improves patient outcome – *precautionary spinal immobilization offers no patient value, may result in iatrogenic injury and is therefore discouraged.*
- Scoop Stretchers are preferential to long spine boards in most circumstances.
- There is no evidence that rigid spine boards prevent injury deterioration during transport.

BURNS / ELECTROCUTION / SMOKE INHALATION

History: <ul style="list-style-type: none"> • SAMPLE • OPQRST • Type: thermal, chemical, radiological, electrical • Length of exposure • Inhalation / airway injury • Other trauma 	Signs and Symptoms: <ul style="list-style-type: none"> • Loss of consciousness, near syncopal • Hypotension / tachycardia / shock • Pain, edema, shivering • Respiratory distress • Airway compromise: singed facial hair, hoarseness / stridor /wheezing 	Differential: <ul style="list-style-type: none"> • Superficial (1°) redness/painful • Partial thickness (2°) blistering • Full thickness (3°) pearly white, charred, leathery • Chemical • Electrical • Radiation
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, SpCO, EKG monitoring ○ Blood Glucose: treat is < 60 mg/dl ○ Stop the burning process, remove from the environment ○ Remove all jewelry / constricting items ○ Monitor airway closely and begin O₂ therapy early ○ Apply DSD to Burns > 15% BSA ○ Apply Water-Jel dressing to all burn areas < 15% BSA then cover to minimize evaporation / heat loss 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, SpCO, EKG monitoring ○ Blood Glucose: treat is < 60 mg/dl ○ Stop the burning process, remove from the environment ○ Remove all jewelry / constricting items ○ Monitor airway closely and begin O₂ therapy early ○ Apply DSD to Burns > 15% BSA ○ Apply Water-Jel dressing to all burn areas < 15% BSA then cover to minimize evaporation / heat loss 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ NS 500 ml IV if evidence of hypo-perfusion (repeat as necessary) ○ Pain Control Guideline ○ High voltage electrical injury or direct lightning strike with significant tissue destruction <ul style="list-style-type: none"> • NS 1000 ml bolus • Sodium Bicarbonate 1 mEq/kg (max 100 mEq) ○ Smoke inhalation / suspected CO/CN poisoning <ul style="list-style-type: none"> ▪ Cyanokit 5 g IV infusion over 15 mins for moderate to severe exposure as defined in table below. (IF AVAILABLE) 	<ul style="list-style-type: none"> ○ NS 20 ml/kg ml IV if evidence of hypo-perfusion (repeat as necessary) ○ Pain Control Guideline ○ High voltage electrical injury or direct lightning strike with significant tissue destruction <ul style="list-style-type: none"> • NS 20 ml/kg bolus • Sodium Bicarbonate 1 mEq/kg (max 50 mEq) ○ Smoke inhalation / suspected CO/CN poisoning <ul style="list-style-type: none"> • Cyanokit 70 mg/kg IV infusion over 15 mins for moderate to severe exposure as defined in table below. (IF AVAILABLE) 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
○	○	
Pearls: <ul style="list-style-type: none"> • Critical Burns: any burn > 25% BSA; 3° burns > 10% BSA; 2° and 3° burns to the face, eyes, hands or feet; airway/respiratory burns; burns with extremes of age or co-morbidities; electrical burns. • Early ET intubation is required in significant inhalation injuries. • Consider Carbon Monoxide (CO) and Cyanide (CN) toxicity if removed from confined space. (see next page) • Consider child/elder abuse in those populations. • Burn patients are prone to hypothermia; Preserve body heat by Hibler’s method. • Decontaminate all chemical/radiation burns before transport. • Reverse triage electrocution/lightning strike victims. • Safely evacuate patient from source and protect rescuers/public. 		

Clinical Severity

Suspected Carbon Monoxide (CO), Cyanide (CN), or Combined Exposure

Note: Pulse Oximetry may give false readings in patients exposed to CN, methemoglobin or CO

<u>Mild Exposure</u>	<u>Moderate Exposure</u>	<u>Severe Exposure</u>
+ soot in nose / mouth / oropharynx + Headache + Anxiety + Blurry vision	+ Soot in nose / mouth / oropharynx + Confusion / disorientation / AMS + Hypotension + Cardiac Dysrhythmias	+ Soot in nose / mouth / oropharynx + Coma / respiratory or cardiac arrest + Hypotension
<ul style="list-style-type: none"> • Administer 100% O₂ via NRB • Monitor SpO₂, SpCO, SpMet, EtCO₂, ECG • Reassess frequently 	<ul style="list-style-type: none"> • Administer 100% O₂ via NRB • Monitor SpO₂, SpCO, SpMet, EtCO₂, ECG • Reassess frequently • Intubate / PEEP as indicated • Collect blood sample (marble, lavender, grey top) • If Hypotensive, give fluid challenge and administer Cyanokit. 5 g IV over 15 min. enroute to appropriate facility. 	<ul style="list-style-type: none"> • Administer 100% O₂ with BVM and advanced airway / PEEP, as indicated • Monitor SpO₂, SpCO, SpMet, EtCO₂, ECG • Reassess frequently • Collect blood sample (marble, purple, grey top) • If Hypotensive, give fluid challenge and administer Cyanokit. 5 g IV over 15 min. enroute to appropriate facility. Monitor for clinical response / and need for second 5 g dose.

EXTREMITY TRAUMA / AMPUTATIONS / CRUSH INJURY

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE / DCAP-BTLS OPQRST Mechanism: crush / penetrating / amputation Time / type of injury Open vs. closed wound / fracture Wound contamination 	<ul style="list-style-type: none"> Pain, swelling, deformity Hypotension / hypovolemia / shock Diminished sensory-motor function Diminished distal pulse / cap refill Diminished distal temperature Abnormal limb coloration 	<ul style="list-style-type: none"> Abrasion Contusion Laceration Dislocation / fracture Crush / Amputation

ADULT EMT-BASIC PROVIDER	PEDIATRIC (<40 KG) EMT-BASIC PROVIDER
<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Blood Glucose: treat is < 60 mg/dl 	<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Blood Glucose: treat is < 60 mg/dl
PARAMEDIC	PARAMEDIC
<ul style="list-style-type: none"> Pain Management Guideline *Crush injury syndrome*: prior to release of compression when possible <ul style="list-style-type: none"> EKG monitoring for hyperkalemia Ringers Lactate 1000cc IV bolus Sodium Bicarbonate 1 mEq/kg SIVP 	<ul style="list-style-type: none"> Pain Management Guideline *Crush injury syndrome*: prior to release of compression when possible <ul style="list-style-type: none"> EKG monitoring for hyperkalemia Ringers Lactate 20 ml/kg IV bolus Sodium Bicarbonate 1 mEq/kg SIVP
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY
○	○

Pearls:

- Hemorrhage control:** Direct pressure, pressure dressing, elevation, pressure points, and tourniquet.
- Uncomplicated fractures / dislocations with adequate circulation should be splinted in position of function.
- Fractures / dislocations with circulation compromise and / or angulation should be manipulated to restore circulation and be splinted in position of function if possible (following appropriate pain control if possible). If the attempt is unsuccessful, splint in position found and expedite transport.
 - Fractures and joint dislocations without a distal pulse or signs of circulation are a true emergency.
- For patients with potential pelvic fractures, the treatment of choice is application of the **SAM pelvic splint**.
- Isolated proximal femur (hip) fractures are usually best managed with anatomical splinting utilizing a scoop stretcher. Traction splints are not appropriate for proximal femur fractures or hip Fx.
- Femoral shaft fractures **may** be immobilized utilizing a traction splint unless one of the situations listed below is present:
 - If use would delay transport of a patient with life threatening condition (multiple trauma or trauma alert).
 - Injuries involving the knee joint.
 - Injuries involving the pelvis.
 - Partial amputation.
 - Ipsilateral lower leg Fx / injury.
- Incomplete Amputated body part or tissue
 - Direct pressure, pressure dressing, elevation, pressure points, and tourniquet.**
 - Splint affected digit or limb in position of function.
- Amputated body part or tissue
 - Direct pressure, pressure dressing, elevation, pressure points, and tourniquet.**

- All retrievable tissue should be transported (do not delay transport for retrieval).
- Rinse amputated part with NS, and then wrap with sterile saline soaked dressing(s).
- Place into a plastic bag or container then onto ice or cold pack.
- Do not allow part / tissue to come into direct contact with ice.
- Tooth Avulsion
 - Handle tooth by chewing surface only. (avoid touching the root)
 - Rinse with water or saline. Do not scrub, dry or wrap tooth in tissue or cloth.
 - Place tooth in container with (in order of preference)
 - Milk
 - NS
 - Water
- *Crush injury syndrome *
 - Constant crush injuries greater than 4 hours duration. (pinned, entrapment, building collapse etc.)
 - Most patients in whom the syndrome develops have an extensive area of involvement such as lower extremities and / or pelvis.
 - IV fluids and other treatment required prior to release of compression. (see in Tx area)
 - Early Sodium Bicarbonate alkalinizes the urine, controls hyperkalemia and acidosis.

EYE INJURY/COMPLAINT

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE OPQRST Blunt/penetrating/chemical Open vs closed injury Involved chemical MSDS Tetanus status Normal visual acuity Indwelling contact lenses 	<ul style="list-style-type: none"> Pain, swelling, blood Deformity, contusion Visual deficit Leaking aqueous/vitreous humor Upwardly fixed eye “Shooting” or “streaking” light Visible contaminants or FB Lacrimation 	<ul style="list-style-type: none"> Abrasion / laceration Globe rupture Retinal nerve damage/detachment Chemical / thermal burn Orbital fracture Orbital compartment syndrome Neurological event Acute glaucoma Retinal artery occlusion
ADULT		PEDIATRIC (<40 KG)
EMT-BASIC PROVIDER		EMT-BASIC PROVIDER
<ul style="list-style-type: none"> Medical /Trauma Supportive Care Guidelines Assess visual acuity Evaluate pupils DO NOT allow patient to rub their eyes Burn/chemical injury/minor abrasion- Tetracaine 2 gtts (may repeat q 5-10 mins X 2) to affected eye and irrigate with NS 1000 ccs (if indicated) per effected eye Penetrating / blunt force trauma- cover using shield. Apply saline moistened gauze for globe disruption 	<ul style="list-style-type: none"> Same as adult 	
PARAMEDIC		PARAMEDIC
<ul style="list-style-type: none"> Pain Control Guideline 	<ul style="list-style-type: none"> 	
PHYSICIAN ORDER ONLY		PHYSICIAN ORDER ONLY
<ul style="list-style-type: none"> . 		<ul style="list-style-type: none">
<p>Pearls:</p> <ul style="list-style-type: none"> Normal visual acuity can be present even with severe eye injury Have patient remove contact lens whenever possible Any chemical or thermal burn to the eye/face should raise suspicion of respiratory insult Orbital fractures raise concern of globe or nerve injury Always cover both eyes to prevent further injury Use shields, not pads, for physical trauma to eyes. Pads OK for unaffected eye. DO NOT apply pressure directly to globe Do NOT remove impaled objects Suspected globe rupture or compartment syndrome require emergent ophthalmological intervention 		

HEAD INJURY / TBI

History:	Signs and Symptoms:	Differential:
<ul style="list-style-type: none"> SAMPLE / DCAP-BTLS OPQRST Mechanism: blunt / penetrating Loss of consciousness Multiple trauma Helmet use? or damage to helmet Active / controlled bleeding 	<ul style="list-style-type: none"> AMS, unconsciousness Pain, swelling, bleeding Hypo/hypertension, brady/tachycardia Abnormal craniofacial contour Respiratory compromise Vomiting, repetitive questioning Unequal pupils, posturing 	<ul style="list-style-type: none"> Skull fracture Traumatic Brain Injury: <ul style="list-style-type: none"> Concussion Epidural hematoma Subdural hematoma Subarachnoid hemorrhage Stroke, Seizure, Hypoglycemic
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Blood Glucose: treat is < 60 mg/dl 	<ul style="list-style-type: none"> Medical / Trauma Supportive Care Guidelines Continuous SpO₂, EtCO₂, EKG monitoring Blood Glucose: treat is < 60 mg/dl 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> Basic / Advanced airway as needed -ventilate to maintain normal EtCO₂ (35-45 mmHg) Seizure protocol as needed for seizure Epinephrine 1-5mcg/min IV/IO infusion for hypo-perfusion. Titrate to maintain SBP > 100 mmHg 	<ul style="list-style-type: none"> Basic / Advanced airway as needed -ventilate to maintain normal EtCO₂ (35-45 mmHg) Seizure protocol as needed for seizure 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Epinephrine 0.1-1 mcg/kg/min IV/IO infusion 	
<p>Pearls:</p> <ul style="list-style-type: none"> If GCS < 12 consider air medical transport or rapid ground transport and < 8 intubation should be considered. Increased ICP may cause hypertension and bradycardia (Cushing's reflex). Do NOT over ventilate, maintain normal EtCO₂ levels. Preserve body heat by Hibler's method. Hypotension should be treated aggressively to maintain SBP > 100 mmHg. (> 80 mmHg in Peds) Limit IV fluids if not hypotensive. (SBP>100 mmHg). Monitor and document changes in the level of consciousness. With potential or obvious skull fracture, use caution when applying direct pressure. Open skull fracture should be covered with non-pressure DSD. Control scalp / facial bleeding as above. Massive blood loss can result from small wounds. All clear fluid in the outer ear IS NOT CSF. (tears, sweat, water) 		

MULTIPLE TRAUMA

History: <ul style="list-style-type: none"> • SAMPLE / DCAP-BTLS • OPQRST • Time and mechanism of injury • Damage to structure or vehicle • Location in structure or vehicle • Others injured or dead • Speed and details of MVC • Restraints / protective equipment 	Signs and Symptoms: <ul style="list-style-type: none"> • Pain, swelling, deformity, open wounds • External / internal blood loss • AMS / unconsciousness • Hypotension / shock • Cardiac arrest 	Differential: <ul style="list-style-type: none"> • Chest: <ul style="list-style-type: none"> ▪ Tension pneumothorax ▪ Hemothorax ▪ Flail chest ▪ Pericardial tamponade ▪ Open chest wound • Intra-abdominal bleeding • Pelvis / Femur fracture • Vertebral Fx / spinal cord injury • Head injury
ADULT	PEDIATRIC (<40 KG)	
EMT-BASIC PROVIDER	EMT-BASIC PROVIDER	
<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Airway / Ventilation control / support ○ Rapid Trauma Assessment and GCS ○ Scene time < 10 minutes 	<ul style="list-style-type: none"> ○ Medical / Trauma Supportive Care Guidelines ○ Continuous SpO₂, EtCO₂, EKG monitoring ○ Airway / Ventilation control / support ○ Rapid Trauma Assessment and GCS ○ Scene time < 10 minutes 	
PARAMEDIC	PARAMEDIC	
<ul style="list-style-type: none"> ○ Ringers Lactate IV titrate to maintain SBP > 100 mmHg. Two large bore sites if possible. ○ Pain Management Guideline ○ *Needle Chest Decompression if evidence of <u>tension pneumothorax</u>. 	<ul style="list-style-type: none"> ○ Ringers Lactate IV titrate to maintain SBP > 80 mmHg. ○ Pain Management Guideline ○ *Needle Chest Decompression if evidence of <u>tension pneumothorax</u>. 	
PHYSICIAN ORDER ONLY	PHYSICIAN ORDER ONLY	
○	○	
Pearls: <ul style="list-style-type: none"> • Hemorrhage control: Direct pressure, pressure dressing, elevation, pressure points, and tourniquet. • <u>Preserve body heat by Hibler's method.</u> • Control all blood loss that is accessible. • Rapid transport is the primary objective and most procedures should be done enroute. • Request air medical transport early, when appropriate. • Trauma Alert patients that are immediately accessible are frequently transported faster by ground. • Moderate to severe trauma IV/L.R. on a macro drip or a blood solution set and titrate to SBP 100 mmHg in adults and 70-80 mmHg in Peds. Do not attempt to "normalize" the BP. Permissive hypotension helps minimize blood loss until definitive measures are taken by a surgeon. • > 20 week pregnant patients should be transported in a 30 degree left side recumbent position to decompress the IVC and improve pre-load. • Scalp and facial wounds bleed profusely, assure they are controlled. • *Diminished breath sounds alone does not equal tension pneumothorax. • Apply SAM pelvic splint for suspected pelvic fractures. • Reduce / align long bone fractures when possible. • Always consider a medical event may have led to the traumatic event. i.e. hypoglycemia, seizure. • Cardiac Arrest secondary to blunt force trauma is rarely survivable. • All traumatic cardiac arrest patients that resuscitation is attempted; bilateral needle chest decompression and pericardiocentesis should be performed in addition to standard resuscitative measures. • Give LMH Trauma Alert-criteria as early as possible. 		

APPENDIX A: PHARMACOLOGY REFERENCE

ADENOSINE (ADENOCARD)

ACTIONS:

An endogenous nucleoside from human body cells, it slows conduction time through the AV-node restoring patients to a normal sinus rhythm.

INDICATIONS:

- Regular paroxysmal supraventricular tachycardia
- Regular narrow complex tachycardia

CONTRAINDICATIONS:

- 2nd or 3rd degree AV block or any bradycardia
- Known sick sinus syndrome unless an artificial pacemaker is in place
- Known hypersensitivity to adenosine

PRECAUTIONS:

- Wide Complex Tachycardia
- Atrial Fibrillation and Atrial Flutter with a rapid ventricular response
- Patients with ASTHMA, or COPD

ADVERSE REACTIONS:

- Transient high degree AV blocks, chest pain, palpitations, and shortness of breath.

DOSAGE:ADULT:

- 6mg given rapidly (1-2 seconds) IV push, followed by a 20cc flush. Two additional doses of 12mg rapid IV push, followed by a 20cc flush may be given as indicated.

PEDIATRIC:

- 0.1mg/kg rapid IV push, followed by a 3-5cc flush (6mg max). A second dose of 0.2mg/kg rapid IV push, followed by a 3-5 cc flush, may be repeated (12mg max).
- Refer to Broselow tape
The half-life of Adenocard is 10 seconds. After drug administration flush the IV for 30 seconds.

ROUTE:

- IV. Should be administered through vascular access most proximal to central circulation.

HOW SUPPLIED:

- 6 mg in a 2 ml pre-filled syringe. 12 mg in a 4 ml pre-filled syringe.

ALBUTEROL SULFATE (PROVENTIL)

ACTIONS:

A selective beta-2 adrenergic receptor agonist, thereby decreasing bronchospasm.

INDICATIONS:

- Asthma
- Chronic bronchitis
- Emphysema
- Anaphylaxes (bronchospastic component)
- Chronic Obstructive Pulmonary Disease (COPD)

CONTRAINDICATIONS:

- Known hypersensitivity to Proventil

PRECAUTIONS:

- Concern should be given in patients with a history of cardiovascular disease due to the beta-2 effect Albuterol has on the heart.
- Hypertension
- Sensitivity to the drug

ADVERSE REACTIONS:

- Tachycardia
- Palpitations
- Paradoxical bronchospasm
- Exacerbation of angina
- Anxiety
- Hypertension
- Palpitations

DOSAGE:

- One dose vial (2.5 mg in 3 ml NS) nebulized

ROUTE:

- Nebulizer at 6 liters per minute

HOW SUPPLIED:

- 2.5 mg in a 3 ml vial

AMIODARONE (CORDARONE)

ACTIONS:

Antidysrhythmic drug with sodium channel blocking, and anti-sympathetic nervous system properties, resulting in negative dromotropic effect on the heart. Prolonged administration results in a lengthening of the cardiac action potential. Amiodarone possesses negative chronotropic effects slowing conduction and prolonging the refractory period. Amiodarone administration prolongs intranodal conduction and refractoriness of the atrioventricular node, but has no effect on the sinus node. Used in a wide variety of atrial and ventricular tachydysrhythmias and for rate control of rapid atrial arrhythmias in patients with impaired LV function.

INDICATIONS:

- Ventricular Fibrillation and Pulseless Ventricular Tachycardia.
- Treatment of Ventricular Tachycardia and Wide Complex Tachycardia of uncertain etiology
- Control of hemodynamically stable Ventricular Tachycardia when cardioversion is unsuccessful
- Used as adjunct to cardioversion of SVT and PSVT
- May be used for rate control in atrial fib and flutter when other therapies are ineffective or contraindicated
- Acceptable for termination of ectopic or multifocal atrial tachycardia with Left Ventricular dysfunction

CONTRAINDICATIONS:

- Torsade de Pointes
- Cardiogenic Shock
- Hypotension

PRECAUTIONS:

- May produce vasodilatation and hypotension, and negative inotropic effects
- Use with caution in renal failure, half-life can last up to 40 days

ADVERSE REACTIONS:

- Hypotension
- Headache
- Bradycardia
- AV conduction abnormalities
- Flushing

DOSAGE:ADULT:

- Cardiac Arrest: 300 mg IV push (bolus), repeated in 3-5 minutes at 150 mgs if required.
- Wide Complex Tachycardia / SVT (stable): 150mg in 100 ml D₅W over 10 minutes, may repeat if necessary.

PEDIATRIC:

- VF/ Pulseless VT is 5 mg/kg IVP / IO (max 300 mg)
- VT / SVT (with pulse) 5 mg/kg in 100 ml D₅W over 20-60 minutes (max 300 mg)

ROUTE:

- IV, IO Bolus (IVP) in cardiac arrest; Fast IV infusion (mixed in 100 ml D₅W over 10 minutes) all others with pulse

HOW SUPPLIED:

- 150 mg in a 3 ml prefilled syringe

ASPIRIN (ASA)

ACTIONS:

Aspirin blocks pain impulses in the CNS, dilates peripheral vessels, and inhibits platelet aggregation.

INDICATIONS:

- Prevention of platelet aggregations in ischemia and thromboembolism
- Unstable angina
- Prevention of myocardial infarction or re-infarction

CONTRAINDICATIONS:

- Hypersensitivity to salicylates
- GI bleeding
- Active ulcer disease
- Hemorrhagic stroke
- Bleeding disorders

PRECAUTIONS:

- None

ADVERSE REACTIONS:

- Stomach irritation
- Indigestion
- Nausea or vomiting
- Allergic reaction

DOSAGE:

- 324 mg (4 tabs)

ROUTE:

- Chewed and swallowed

HOW SUPPLIED:

- 81 mg baby aspirin tabs

ATROPINE SULFATE

ACTIONS: (ANTICHOLINERGIC)

Parasympathetic blocker, reducing vagal tone. Atropine is a parasympatholytic (anticholinergic) that acts to block acetylcholine receptors, thus inhibiting parasympathetic stimulation. Can be used in DAI to mitigate reflex bradycardia and suppress oral / nasal secretions.

INDICATIONS:

- Hemodynamically symptomatic bradycardias
- Heart blocks
- Organic phosphate poisoning

CONTRAINDICATIONS:

- None when used as antidote to nerve agent
- Tachycardias

PRECAUTIONS:

- If given in too small a dose, or if given too slowly, bradycardia may worsen.
- May have little effect in infranodal AV blocks. (Be prepared to pace or give epi)

ADVERSE REACTIONS:

- Dryness of the mouth and nose, blurred vision, dilated pupils, tachycardia, headache and restlessness

DOSAGE:

ADULT:

- Brady-Dysrhythmias: 0.5mg every 5 minutes to a maximum of 0.04mg/kg or 3 mg total dosage.
- Organic Phosphate Poisoning: 0.5-1 mg boluses, titrating until signs / symptoms resolve.

PEDIATRIC:

- Brady-Dysrhythmias: 0.02 mg/kg (0.1mg minimum dose). May be repeated every 5 minutes to a maximum total dose of 1 mg in a child and 2 mg in an adolescent.
- Refer to Broselow tape for resuscitation dose

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 1 mg in a 10 ml pre-filled syringe
- 0.5 mg in a 5 ml pre-filled syringe

DIAZEPAM (VALIUM)

ACTION: (BENZODIAZAPINE)

Valium is a central nervous system depressant, anticonvulsant, sedative and hypnotic medication. It suppresses the spread of seizure activity through the motor cortex of the brain. It does not appear to abolish the abnormal discharge focus. It is also an effective muscle relaxant and can relieve severe muscle spasms.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Major motor seizures
- Status epilepticus
- Conscious sedation prior to cardioversion
- Muscle spasms
- Delirium tremors associated with acute alcohol withdrawal
- Acute anxiety states

CONTRAINDICATIONS:

- History of hypersensitivity to Valium

PRECAUTIONS:

- Respiratory depressant effects are more pronounced when patient has ingested alcohol or other CNS depressant agents
- Because Valium is a relatively short acting drug, seizure activity may recur
- Administer slowly until desired effects are obtained

ADVERSE REACTIONS:

- Respiratory depression
- Hypotension
- Bradycardia

DOSAGE:

ADULT:

- Sedation, seizures and muscle spasms 5 to 10mg, at a rate of 5mg/minute, if more is required contact ED Physician

PEDIATRIC:

- 0.2 mg/kg IV / IO Max 5mg per dose (Refer to Broselow Tape)

ROUTE:

- IV, IO

HOW SUPPLIED:

- 10 mg in a 2 ml Carpuject (5mg/ml)

DILTIAZEM (CARDIZEM)

ACTION:

Cardizem is a calcium channel blocker. Cardizem inhibits the influx of extra cellular calcium across both the myocardial and vascular smooth muscle cell membranes. The end result decreases the contractility of the myocardial smooth muscle, dilation of the coronary and systemic arteries.

INDICATIONS:

- Atrial Fibrillation
- Atrial Flutter
- Angina
- Hypertension
- Paroxysmal supraventricular tachycardia (PSVT) refractory to adenosine

CONTRAINDICATIONS:

- Patients with cardiogenic shock, or patients with a systolic B/P <90mmHg and hypoperfusion.
- Patients with known accessory pathway conditions (WPW)

PRECAUTIONS:

- Unless contraindicated, give IV fluid bolus before and during Cardizem administration to lessen the hypotensive effect.
- Use with caution in patients with ventricular dysfunction, severe bradycardia or with previous conduction abnormalities
- It should not be used in obstetric patients
- Must be refrigerated

ADVERSE REACTION:

- Systemic hypotension
- Nausea / Vomiting
- Bradycardias
- Heart blocks
- Asystole

DOSAGE:

- 0.25 mg/kg IV over 2-3 minutes, not to exceed 20 mg.
- If necessary a second dosage of 0.35 mg/kg IV may be given over 2-3 minutes, not to exceed 25 mg.

*** NOTE: There is to be a 15-minute interval between 1st and 2nd dosage.**

ROUTE:

- IV, IO

HOW SUPPLIED:

- 25 mg in a 5 ml MDV

DIPHENHYDRAMINE HYDROCHLORIDE (BENADRYL)

ACTION:

Benadryl is an antihistamine with anticholinergic (drying) and sedative side effects. Antihistamines compete with histamine for cell receptor sites during allergic reactions.

INDICATIONS:

- Anaphylaxis (administered after epinephrine)
- Allergic Reactions
- Dystonic reactions

PRECAUTIONS:

- Use with caution in patients with a history of asthma, cardiovascular disease, and hypertension
- Sedative effects are more pronounced when patient has ingested alcohol or other CNS depressants (barbiturates, phenothiazine, antidepressants, or narcotics)

ADVERSE REACTION:

- Tachycardia
- Hypotension
- Central Nervous System depression
- Nausea and vomiting

DOSAGE:ADULT:

- 50 mg

PEDIATRIC:

- 1 mg/kg up to 25 mg

INFANT:

- 1 mg/kg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 50 mg in a 1 ml pre-filled syringe

D₅W (5% DEXTROSE IN WATER)

ACTION:

D₅W is a hypotonic glucose solution, used to keep a vein open and to supply calories necessary for cell metabolism. While it will have an initial effect of increasing the circulatory volume, glucose molecules rapidly diffuse across the vascular membrane with a resultant free water increase. It has a pH of 4.3 and contains 5g of dextrose per 100ml.

INDICATIONS:

- Infusion of Cordarone or Magnesium Sulfate

CONTRAINDICATIONS:

- None for its intended use

PRECAUTIONS:

- N/A

ADVERSE REACTIONS:

- N/A

DOSAGE:

- 100 ml

ROUTE:

- IV infusion

HOW SUPPLIED:

- 100 ml bags

DEXTROSE (D₂₅W / D₅₀W)

ACTION:

Dextrose in water supplies supplemental glucose in cases of hypoglycemia. D-50% is a hypertonic solution primarily used to elevate the blood sugar. It may be used to initially decrease intracranial pressure.

INDICATIONS:

- Hypoglycemia
- Coma of unknown origin
- Cardiac arrest
- And in rare instances cerebral edema

CONTRAINDICATIONS:

- Patients with increased ICP or intracranial hemorrhage

PRECAUTIONS:

- Perform a Glucometer check and draw a blood tubes prior to administration, if possible
- Localized venous irritation and tissue necrosis may result from infiltrated line

ADVERSE REACTIONS:

- Hyperglycemia
- Thrombophlebitis

DOSAGE:ADULT:

- 25 grams of D₅₀W

PEDIATRIC:

- 0.5 gm / kg of D₂₅W or D₅₀W
- Refer to Broselow tape

ROUTE:

- IV, IO

HOW SUPPLIED:

- D₅₀W - 25 grams glucose in a 50 ml pre-filled syringe.
- D₂₅W - 2.5 grams of glucose in a 10 ml pre-filled syringe.

DOPAMINE (INTROPIN)

ACTION:

Vasopressor – dose dependent alpha, beta, and dopaminergic agonist.

- Low dose - (0.5-2mcg/kg/min.) causes vasodilatation in renal, mesenteric, cerebral, and coronary arteries, via activation of the dopamine receptor sites.
- Intermediate dose - (2-10 mcg/kg/min.) produce a step-wise increase in contractility, automaticity, and conductivity via beta-receptor effects.
- High dose - (10-20mcg/kg/min.) the alpha receptor effects predominate producing peripheral vasoconstriction.
- Extremely high dose- (>20mcg/kg/min) renal and mesenteric vessels constrict resulting in decreased blood flow and significant peripheral vasoconstriction.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- **Infusion monitoring during interfacility transport only**
- Hypoperfusion due to myocardial infarction, sepsis, severe congestive heart failure, and pulmonary edema
- Cardiogenic shock

CONTRAINDICATIONS:

- VF / VT

PRECAUTIONS:

- Correct any volume deficit before instituting dopamine therapy, unless otherwise directed.
- Do not mix with Sodium Bicarbonate; this deactivates Dopamine

ADVERSE REACTIONS:

- Ectopy, local tissue necrosis if line infiltrates, tachycardia, palpitations, dysrhythmia, hypotension, nausea and vomiting

DOSAGE:ADULT / PEDIATRIC:

- 400mg/250cc premixed bag yields 1600 mcg/ml
- Initiate therapy at rate of 5mcg/kg/min and titrate to a blood pressure of 100 systolic in adults and 80-90 in pediatric patients

ROUTE:

- IV, IO

HOW SUPPLIED:

- 400 mg in a 250 ml premix bag (1600 mcg/ml)

DUODOTE

ACTION:

DuoDote is an auto-injector containing Atropine and Pralidoxime Chloride. Atropine's ability to block acetylcholine receptors reduce respiratory secretions, relieve airway constriction, and may reduce respiratory paralysis. Pralidoxime reactivates the enzyme acetylcholinesterase, which allows acetylcholine to be degraded, thus relieving the parasympathetic over-stimulation (cholinergic crisis) caused by excess acetylcholine. Pralidoxime potentiates the effect of Atropine, and their ability to reduce respiratory paralysis is significantly improved when the two medications are administered together.

INDICATIONS:

- Organophosphate poisoning
- Nerve agent exposure

CONTRAINDICATIONS:

- Hypersensitivity (rare)

PRECAUTIONS:

- None

ADVERSE REACTIONS:

- Cardiac dysrhythmias, especially tachycardias
- Hypertension
- Hyperventilation
- Muscle weakness
- Nausea

DOSAGE:**ADULT / PEDIATRIC:**

- Mild symptoms, including dyspnea, increased secretions, chest tightness, nausea, vomiting, and cardiac dysrhythmias: One auto-injector = Atropine 2.0 mg and Pralidoxime 600 mg IM. If patient condition stabilizes, no additional doses are necessary; if patient's symptoms progress to include severe symptoms below, administer two additional auto-injectors.
- Severe symptoms, including copious secretions, severe dyspnea, involuntary urination/defecation, convulsions, altered mental status or unconsciousness: Administer three auto-injectors; consider anticonvulsants

DUONEB

ACTION:

DuoNeb is a combination medication, which contains both Albuterol & Ipratropium bromide.

- Albuterol is a selective beta-2 adrenergic receptor agonist, thereby decreasing bronchospasms.
- Ipratropium bromide is an anticholinergic (parasympatholytic) agent, which causes localized bronchodilation.

INDICATIONS:

- DuoNeb is indicated for relief of bronchospasms associated with asthma and chronic obstructive pulmonary disease, including chronic bronchitis and emphysema that is unresponsive to treatment with albuterol alone.

CONTRAINDICATIONS:

- Hypersensitivity to atropine or its derivatives
- Known hypersensitivity to Proventil

PRECAUTIONS:

- Monitor vital signs and use cautiously in patients with hypertension or cardiac disease

SIDE EFFECTS:

- Respiratory: Cough, exacerbation of symptoms.
- CNS: Nervousness, dizziness, headache.
- Cardiovascular: Palpitations.
- GI: Nausea, vomiting, GI distress.
- Other: Tremor, dry mouth, blurred vision.

DOSAGE:**ADULT / PEDIATRIC:**

- One dose vial (3.0 ml NS) nebulized

ROUTE:

- Nebulizer at 6 liters per minute

HOW SUPPLIED:

- 0.02% in a 3.0 ml vial

EPINEPHRINE

ACTION:

Alpha and beta adrenergic agonist that stimulates all the effects of the sympathetic nervous system except those affecting the arteries of the face and sweat glands; major sympathetic effects include: Positive chronotropic effect, positive inotropic effect, increased systemic vascular resistance, bronchodilation, assist in the conversion of ventricular fibrillation, and Increased cerebral blood flow in cardiac arrest.

INDICATIONS:

- Asystole
- Pulseless electrical activity
- Heart blocks, bronchospasms, and anaphylaxis.
- Ventricular fibrillation
- Pulseless ventricular tachycardia

CONTRAINDICATIONS:

- Hypovolemic Shock

PRECAUTIONS:

- Give cautiously in patients with hypertension, tachycardia, or who are pregnant.
- Do not mix with Sodium Bicarbonate. This results in a deactivation of the Epinephrine.

ADVERSE REACTIONS:

- Tachycardia, palpitations, anxiety and headache
- Increased myocardial oxygen demand

DOSAGE:ADULT:

- Cardiopulmonary Arrest dose: 1 mg of 1:10,000 repeated every three to five minutes.
- Asthma and Anaphylaxis: 0.01mg/kg IM (0.5 mg max single dose 1:1,000)
- Shock, Symtomatic Bradycardias, ROSC and other hypoperfusion states:
 - 1-5mcg/min and titrate to desired effect.

PEDIATRIC:

- Cardiopulmonary Arrest dose: 0.01mg/kg IV/IO. Refer to Broselow tape
- Symtomatic Bradycardias: 0.01mg/kg IV/IO. Refer to Broselow tape.
- Asthma and Anaphylaxis: 0.01 mg/kg IM (0.3 mg max single dose 1:1,000)
- Shock, Symtomatic Bradycardias, ROSC and other hypoperfusion states:
 - 0.1-1mcg/kg/min and titrate to desired effect.

ROUTE:

- IV, IM, IO, IN, AT

HOW SUPPLIED:

- 1:1000 - 1 mg in a 1 ml ampule
- 1:10,000 - 1 mg in a 10ml pre-filled syringe

EPINEPHRINE INFUSION JOB AID

Epinephrine Infusion Standard Concentration (1:1) - 1mg EPI in 1000cc IVNS					
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	1mcg/min	2mcg/min	3mcg/min	4mcg/min	5mcg/min
gtt/min (mL/hr)	60	120	180	240	300

Epinephrine Infusion Double Concentration (2:1) - 2mg EPI in 1000cc IVNS					
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	1mcg/min	2mcg/min	3mcg/min	4mcg/min	5mcg/min
gtt/min (mL/hr)	30	60	90	120	150

Epinephrine Infusion Concentration: 1mg EPI in 500cc IVNS					
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	1mcg/min	2mcg/min	3mcg/min	4mcg/min	5mcg/min
gtt/min (mL/hr)	30	60	90	120	150

Epinephrine Infusion Concentration: 1mg EPI in 250cc IVNS					
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	1mcg/min	2mcg/min	3mcg/min	4mcg/min	5mcg/min
gtt/min (mL/hr)	15	30	45	60	75

ETOMIDATE (AMIDATE)

ACTION:

Etomidate is a non-barbiturate, anesthetic, sedative, hypnotic agent used for general anesthesia. Following rapid administration the onset of action will produce a loss of consciousness within 60 seconds. The exact mechanism of action has not been fully determined yet. Etomidate is capable of producing all levels of CNS depression, from light sleep to deep coma. Effects are dependent upon dosage, rate and route of administration. Its duration is 3-15 minutes.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- General anesthesia, conscious sedation of patients prior to short-term invasive procedures (intubation, cardioversion, etc.)

CONTRAINDICATIONS:

- Known hypersensitivity to etomidate.
- Known adrenocortical steroid secretion depression (e.g....Addison's Disease)
- Patients in cardiac or traumatic arrest

PRECAUTIONS:

- May induce seizure in patients with known seizure disorders unless the patient is pretreated with benzodiazepines prior to administration of Etomidate.

ADVERSE REACTIONS:

- Nausea, Vomiting / projectile vomiting, pain at the injection site, hyper / hypoventilation to apnea, snoring, hypo / hypertension, laryngospasm, brady / tachycardia, myoclonic activity and adrenocortical steroid suppression.

DOSAGE:

- 0.3mg/kg Slow IV Push over 10-20 seconds (Refer to DAI chart)

ROUTE:

- IV, IO

HOW SUPPLIED:

- 40mg in a 20ml Bristojet. (2mg/ml)

FENTANYL

ACTION:

Fentanyl is a potent narcotic analgesic. The principal actions of therapeutic value are analgesia and sedation. A dose of 100 mcg is approximately equivalent to 10 mg of Morphine. Fentanyl has less emetic activity than Morphine and significantly less histamine release than Morphine, which preserves cardiac stability. The onset of action is almost immediate when given IV; however, the maximal analgesic and respiratory depressant effect may not be noted for several minutes. The usual duration of the analgesic effect is 30-60 minutes after a single IV dose. Fentanyl, like all narcotics, is a respiratory depressant and all patients receiving Fentanyl should have pulse oximetry and EtCO₂ monitored. Virtually all patients complaining of moderate to severe pain, regardless of etiology, may be a candidate for pain management with Fentanyl. Narcan does antagonize Fentanyl, but usually requires much higher doses, 2-10 mgs.

INDICATIONS:

- For analgesic action of short duration
- Pain secondary to trauma
- Crush injuries
- Burn patients
- Musculoskeletal pain
- Abdominal pain

CONTRAINDICATIONS:

- Hypovolemia (uncorrected)
- Hypotension (relative)
- Head Injury (relative)
- Drug Hypersensitivity

PRECAUTIONS / ADVERSE REACTIONS:

- Fentanyl should be given slowly when administered IV, rapid IV administration may cause hypotension, N/V, bradycardia and Rigid Chest Wall Syndrome.
- Elderly and debilitated patients may not tolerate usual dosing.

DOSAGE:ADULT AND PEDIATRIC

- 1-2 mcg/kg slow IV, or IM / IN (may repeat once after 5 mins if necessary)

ROUTE:

- IV, IO, IM, IN, AT (nebulized)

HOW SUPPLIED:

- 250 mcg in 5cc MDV (50 mcg/cc)

FUROSEMIDE (LASIX)

ACTION:

Potent vasodilator (**preload reducer**) and diuretic. Blocks the re-absorption of sodium in the Loop of Henle as well as the distal and proximal tubules.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Congestive heart failure
- Pulmonary Edema

CONTRAINDICATIONS:

- Dehydrated patients

PRECAUTIONS:

- Patients with hypersensitivity to sulfa may experience reactions to Furosemide
- May need higher dose in patients with renal failure
- Blood Pressure <90 systolic

ADVERSE REACTIONS:

- Hypotension
- Hypokalemia, electrolyte abnormalities, muscle cramps, weakness, thirst, light headedness, dizziness, nausea and vomiting

DOSAGE:**ADULT:**

- 40 mg IV may be repeated once

PEDIATRIC:

- 1 mg/kg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 40 mg in 4 ml pre-filled syringe (10 mg/ml)

GLUCAGON

ACTION:

Pancreatic hormone. Increases the breakdown of glycogen to glucose and stimulates glucose synthesis, resulting in blood glucose elevation.

INDICATIONS:

- Persistent symptomatic hypoglycemia
- Unable to gain IV access
- Beta Blocker Overdose

CONTRAINDICATIONS:

- Hypersensitivity
- Only effective if liver glycogen is available
- May be ineffective in chronic states of hypoglycemia, starvation, and adrenal insufficiency
- Do not mix with saline

PRECAUTIONS:

- None

ADVERSE REACTIONS:

- Tachycardia
- Hypotension
- Nausea and vomiting
- Urticaria

DOSAGE:**ADULT:**

- 1 mg IM

PEDIATRIC:

- 0.5 mg IM if < 20 kg
- 1 mg IM if > 20 kg

ROUTE:

- IM

HOW SUPPLIED:

- Glucagon must be reconstituted (with provided diluent) before administration
- Dilute 1 unit (1 mg) white powder in 1 ml of diluting solution (1 mg/ml)

HYDROXOCOBALAMIN (CYANOKIT)

ACTION:

Cyanokit (hydroxocobalamin) has a high affinity for cyanide ions and is converted to cyanocobalamin (vitamin B₁₂). B₁₂ is a water soluble vitamin that is then removed from the circulation and is readily excreted in the urine.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Cyanokit is indicated for the treatment of known or suspected cyanide poisoning. Cyanide poisoning may result from inhalation, ingestion, or dermal exposure to various cyanide containing compounds, including smoke from closed-space fires (smoke inhalation).
- Haz-mat and terrorist incidents involving cyanide

CONTRAINDICATIONS:

- None

PRECAUTIONS:

- Known anaphylactic reactions to hydroxocobalamin or cyanocobalamin.
- Transient increases in blood pressure during the infusion.
- A pre-treatment purple-top vacutainer should be drawn, if possible, because Cyanokit interferes with colorimetric determined lab parameters.

ADVERSE REACTIONS:

- Chromaturia (red urine)
- Erythema (skin redness), rash
- Increased blood pressure, headache
- Nausea/vomiting, diarrhea

DOSAGE:

- IV infusion through a dedicated IV line.
- After reconstitution, each vial contains 25 mg/ml

ADULT:

- 5 gms (two 2.5 gm vials) over 15 minutes

PEDS:

- 70 mg/kg (max 5 gms)

ROUTE:

- IV, IO

IPRATROPIUM BROMIDE (ATROVENT)

ACTION: (ANTICHOLINERGIC)

Atrovent is an anticholinergic (parasympatholytic) agent that inhibits vagally-mediated reflexes by antagonizing the action of acetylcholine on bronchial smooth muscle. The bronchodilation that results is site specific rather than systemic.

INDICATIONS:

- Persistent bronchospasm
- COPD exacerbation

CONTRAINDICATIONS:

- Hypersensitivity to ipatropium, or to atropine and its derivatives.

PRECAUTIONS:

- Use with caution in patients narrow-angle glaucoma

ADVERSE REACTIONS:

- Nausea / Vomiting
- Coughing
- Headache
- Tachycardia
- Dry Mouth
- Blurred vision

DOSAGE:

**One unit dose vial of atrovent added to one unit dose vial of albuterol (aerosolized treatment)
This is equivalent to DuoNeb and shall be used in all treatment guidelines that call for DuoNeb.**

ADULT:

- 0.5 mg/2.5 ml vial (one unit dose)

PEDS:

- Same as Adult over the age of 12.

ROUTE:

- AT

KETAMINE HYDROCHLORIDE (KETALAR)

ACTIONS: (SEDATIVE/HYPNOTIC ANALGESIC)

Ketamine is a nonbarbiturate/non-competitive NMDA receptor antagonist and dissociative, amnestic, analgesic, commonly used in the emergency setting for sedation and pain management (particularly in patients with respiratory compromise and/or allergies to opiates or barbiturate analgesics). The onset of action is rapid (30 to 60 seconds) and the analgesic duration of action may last for hours. Ketamine causes a catecholamine release that may increase heart rate and blood pressure. It is also a bronchodilator, and may be beneficial in patients with bronchospasm requiring advanced airway/pulmonary management.

INDICATIONS:

- Excited/Agitated delirium
- Procedural sedation

CONTRAINDICATIONS:

- Known hypersensitivity
- Hypertensive crisis
- Penetrating Ocular Trauma

PRECAUTIONS:

- Use with caution in the presence of hypertension
- Use with caution in the presence of intraocular pressure

ADVERSE REACTIONS:

- Laryngospasm
- Hypersalivation
- Nausea/vomiting
- Hypertension
- Tachycardia
- Emergence phenomenon (i.e., anxiety, agitation, hallucinations)
- Blurred vision

DOSAGE:

ADULT:

- IM: Loading dose – 5 mg/kg (not to exceed 500mg)
- IV/IO: Repeat doses – 2.5mg/kg (slow IVP)

ROUTE:

- IV, IO, IM, IN

HOW SUPPLIED:

- Vial: 500mg/5mL, 500mg/10mL, 1000mg/10mL or 200mg/20mL

KETOROLAC (TORADOL)

ACTION: (NSAID) NONSTEROIDAL ANTI-INFLAMMATORY / ANALGESIC

Ketorolac is an NSAID that inhibits prostaglandins (anti-inflammatory) and analgesic for mild to moderately severe pain. It is non-narcotic and non-habit forming. In kidney stones especially, it is indicated (first) in conjunction with Opioids for more effective pain control.

INDICATIONS:

- Mild to moderately severe pain

CONTRAINDICATIONS:

- Allergy / Hypersensitivity to any NSAID including ketorolac, ASA, ibuprofen, naproxen etc.
- Significant renal disease or kidney transplant
- Bleeding or clotting disorders
- Recent Hx of gastrointestinal bleeding
- Patients needing surgical intervention such as open or angulated fractures
- Pregnant or breastfeeding women, and children < 16 y/o
- Head injuries / Headaches
- Non-specific abdominal pain

PRECAUTIONS:

- ACS patient

ADVERSE REACTIONS:

- Nausea / Vomiting
- Stomach up-set
- Dry Mouth
- Blurred vision

DOSAGE:

ADULT:

- 30 mg IV

PEDS:

- Contraindicated in children < 16 y/o.

ROUTE:

- IV, IM

LACTATED RINGER'S

ACTION:

Lactated Ringer's is an isotonic crystalloid solution, used for fluid and electrolyte replacement. Lactated Ringer's remains in the vascular space for 30-60 minutes.

INDICATIONS:

- Hypovolemic Shock
- Any condition causing body fluid loss

CONTRAINDICATIONS:

- Congestive Heart Failure
- Pulmonary Edema

PRECAUTIONS:

- Use with caution in patients with renal disease
- Monitor patients for signs and symptoms of circulatory overload

ADVERSE REACTIONS:

- Phlebitis
- Venous thrombosis
- Fluid overload

DOSAGE:

- Titrate to effect
- Pediatric patients start at 20 ml/kg

ROUTE:

- IV, IO

HOW SUPPLIED:

- 1000 ml bags

LORAZEPAM (ATIVAN)

ACTION: (BENZODIAZAPINE)

Ativan is a benzodiazepine with antianxiety, sedative and anticonvulsant effects. When given IV, it appears to suppress the propagation of seizure activity produced by foci in the cortex, thalamus, and limbic areas.

INDICATIONS:

- Motor Seizures
- Status epilepticus
- Long acting sedation

CONTRAINDICATIONS:

- Hypersensitivity to lorazepam / benzodiazepines

PRECAUTIONS:

- Respiratory depression is more pronounced when patient has ingested alcohol or other CNS depressant drugs.
- Ativan is longer acting than Valium or Versed.
- Inadvertent intra-arterial injection may produce arteriospasm which may result in gangrene / amputation.
- Extreme caution must be used in elderly patients and patients with limited pulmonary reserve.

ADVERSE REACTIONS:

- Respiratory Depression
- Hypotension
- Bradycardia

DOSAGE:

Just before administration, an equal volume of saline should be mixed with Ativan.

ADULT:

- 0.1 mg/kg up to 4.0 mg per dose IV / IO

PEDS:

- 0.1 mg/kg IV / IO titrated to stop seizure (max 2.0 mg per dose)

ROUTE:

- IV, IO

MAGNESIUM SULFATE

ACTIONS:

Magnesium is an intracellular electrolyte that is vital to many body functions. It acts as a physiological calcium channel blocker and blocks neuromuscular transmission. Hypomagnesemia will greatly affect the neuromuscular, gastrointestinal and cardiovascular systems. Hypomagnesemia is associated with cardiac arrhythmias, symptoms of cardiac insufficiency, and sudden death. Hypomagnesemia can cause refractory ventricular fibrillation. Administration of magnesium sulfate in the emergency setting appears to reduce the incidence of ventricular arrhythmias that follow an acute myocardial infarction.

Magnesium sulfate is a central nervous system depressant effective in the management of seizures associated with eclampsia. It is used for the initial therapy of convulsions associated with pregnancy. If Magnesium fails to control seizures, proceed with other anticonvulsant agents.

INDICATIONS:

- Cardiac arrest if suspected hypomagnesemia
- Torsades de Pointes
- Bronchospasm refractory to AT
- Life threatening arrhythmias with digitalis toxicity
- Eclampsia

CONTRAINDICATIONS:

- Heart Block or AMI

PRECAUTIONS:

- Magnesium should be administered slowly to minimize side effects
- Maintain continuous cardiac monitoring
- Use with caution in renal failure

ADVERSE REACTIONS:

- Flushing of the skin, sweating
- Central Nervous System depression
- Respiratory depression
- Hypotension
- Bradycardias and cardiac arrhythmias

DOSAGE:ADULT:

- Torsades de pointes: 2 grams in 100cc NS or D₅W over 10 minutes.
- Asthma: 2 grams in 100cc NS or D₅W over 10 minutes.
- Eclampsia: 4 grams in 100cc NS or D₅W wide open until seizure stops, then slow to finish dose.

PEDIATRIC:

- 50 mg/kg (max 2 gm) in 100cc NS or D₅W over 10-20 mins (Refer to Broselow tape)

HOW SUPPLIED:

- 5 grams in 10cc lifeshield syringe

METHYLPREDNISOLONE (SOLUMEDROL)

(ACTION:

Potent anti-inflammatory synthetic steroid

INDICATIONS:

- Control of severe allergic reactions, asthma attacks, and bronchospasm associated with COPD that does not respond to other treatments

CONTRAINDICATION:

- Known hypersensitivity, neonates, and patients with systemic fungal infections.

PRECAUTIONS:

- Use with caution in patients with GI Bleeding or diabetes

ADVERSE REACTIONS:

- Cardio: Fluid retention, hypertension / hypotension, dysrhythmia, CHF, electrolyte imbalance.
- CNS: Seizures, vertigo, and headache.
- GI: Nausea / vomiting, GI bleeding, abdominal distention, etc.
- General: Urticaria, anaphylactic reaction.

DOSAGE:**ADULT:**

- 125mg

PEDIATRICS 2-16 YEARS OF AGE:

- 1mg/kg Max dose 125 mg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 125 mg / 1cc

MIDAZOLAM (VERSED)

ACTION: (BENZODIAZAPINE)

Versed is a potent, short-acting Benzodiazepine with strong anti-seizure, hypnotic and amnesic properties. It is widely used as a sedative prior to cardioversion. Versed is 3-4 times more potent than Valium, with a 1.5 minute onset of action when administered intravenously and 15 minutes when administered intramuscularly. Versed has impressive amnesic properties making it the drug of choice for conscious sedation. Like all Benzodiazepine class drugs, Versed is a central nervous system depressant.

INDICATIONS:

- Primary benzodiazepine for seizure control and pharmacological restraint.
- Conscious sedation of patients prior to short-term invasive procedures (cardioversion, etc.)
- Alternative to Etomidate, Ativan, and Diprivan in DAI guideline.

CONTRAINDICATIONS:

- Hypersensitivity to the drug
- Narrow-angle glaucoma
- Obstetrical patients in the last few weeks of pregnancy

PRECAUTIONS:

- A slight to moderate decrease in mean arterial pressure, cardiac output, systemic vascular resistance and heart rate may be seen
- Lower dosages should be considered in patients that are debilitated or chronically ill

ADVERSE REACTIONS:

- Respiratory depression
- Laryngospasm
- Bronchospasm
- Respiratory depressant effects are more pronounced when patient has ingested alcohol or other CNS depressant agents
- Hypotension secondary to histamine release (treated with IV fluids / Benadryl)

DOSAGE:

ADULT:

- Conscious Sedation: 2 mg slow IV push, repeat as necessary in boluses of 0.5–2 mgs, titrated to the desired level of sedation, not to exceed a total dosage of 5mgs IV
- Seizures 2 – 5 mgs IV, IO, IN, IM
- NOTE: You may dilute 5mg of Versed in 9cc of saline to result in a 0.5mg/cc concentration for IV administration.

PEDIATRIC:

- 0.1mg/kg SIVP (2 mg max single dose)
- 0.2 mg/kg IM / IN, (5 mg max single dose).

ROUTE:

- IV, IO, IM, IN

HOW SUPPLIED:

- 5mgs in 1 ml Carpuject

MORPHINE

ACTION:

Morphine is central nervous system depressant and potent analgesic. As such morphine provides both analgesia and sedative properties. It increases peripheral venous capacity and decreases venous return while providing mild arterial dilatation; central nervous system depression; decreases myocardial oxygen demand.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Ischemic heart pain
- Musculoskeletal pain
- Burns
- Non-hemorrhagic abdominal pain

CONTRAINDICATIONS:

- Allergy to Morphine
- Acute Mental Status Depression
- Acute Respiratory Depression
- Acute Perfusion Depression (Systolic BP < 100mmHg)

PRECAUTIONS:

- Hypotension

ADVERSE REACTIONS:

- Hypotension
- Central Nervous System depression
- Respiratory depression
- Nausea / vomiting

DOSAGE:**ADULT:**

- Pain Management
 - If systolic B/P is greater than 100 mm/Hg: Morphine 2mg. May be repeated in 2mg increments until desired effect, or the maximum dose of 0.1mg/kg has been administered
 - If more than maximum dose of Morphine Sulfate is required, call Emergency Department Physician for orders

PEDIATRIC:

- Titration up to a maximum dose of 0.1 mg/kg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 10mg in 1ml vial

NALOXONE (NARCAN)

ACTION:

Narcotic antagonist reverses the central nervous system and respiratory depression effects of narcotics; reverses the cardiovascular effects to a lesser extent. Naloxone competes for narcotic receptor sites in the brain, and displaces narcotic molecules from the opiate receptors.

INDICATIONS:

- Known or suspected narcotic overdoses involving the following:
- Morphine Demerol heroin Nucynta
- Hydrocodone Dilaudid codeine
- Oxycodone Fentanyl methadone
- Known or suspected overdoses of the following synthetic narcotics:
- Nubian Talwin Stadol Darvon

CONTRAINDICATIONS:

- Hypersensitivity reaction
- Patients that have advanced airways in place.

PRECAUTIONS:

- Narcan should be administered cautiously, if at all, to patients who are known or suspected to be physically dependent on narcotics. Abrupt and complete reversal of narcotic effects by Naloxone can cause withdrawal-type effects.
- Avoid opiate reversal in the prehospital setting unless there is compelling medical justification to do so. Expect vomiting and combativeness following reversal. If used, naloxone should be given very slowly and titrated to adequate respiratory drive, not to awaken the patient.

ADVERSE REACTIONS:

- Aspiration
- Hypotension / hypertension
- Nausea / Vomiting
- Acute narcotic withdrawal syndrome (nausea, vomiting, sweating, tachycardia, hypertension, tremor, agitation, diarrhea, abdominal cramps, seizures, and cardiac arrest)

DOSAGE:ADULT:

- 0.4 - 2 mg (higher doses 2-5mg may be required in Darvon/synthetic opiates OD)

PEDIATRIC:

- 0.1mg/kg with a maximum single dose of 2mg. (Refer to Broselow tape)

ROUTE:

- IV, IM, IO, IN

HOW SUPPLIED:

- 2 mg in a 2 ml pre-filled syringe

NITROGLYCERIN DRIP (TRIDIL)

ACTION:

Antianginal Agent: Nitroglycerin is a rapid smooth-muscle relaxant that reduces cardiac work and, to a lesser degree, dilates the coronary arteries. This results in increased coronary blood flow and improved perfusion of the ischemic myocardium. Relief of ischemia causes reduction and alleviation of chest pain. Pain relief following nitroglycerin administration usually occurs within 1-2 minutes, and the therapeutic effects can be observed up to 30 minutes later.

As a rapid-acting smooth-muscle relaxant, nitroglycerin causes vasodilation, which reduces preload. Decreased preload leads to decreased cardiac work and relaxation of the vascular smooth muscle and consequent dilation of the peripheral arteries and veins. Arteriolar relaxation reduces systemic vascular resistance and systolic arterial pressure, thereby reducing afterload, further reducing the workload of the myocardium.

INDICATIONS:

- Angina pectoris
- Myocardial infarction
- Congestive heart failure
- Hypertension

CONTRAINDICATIONS:

- Hypotension
- Increased intracranial pressure
- VIAGRA, and other similar acting medications taken within 48 hours

PRECAUTIONS:

- Volume-depleted patients may experience exaggerated hypotensive response
- Excessively tachy/bradycardic patients may experience exaggerated hypotensive response
- Postural hypotension
- Right ventricular / Inferior Infarct

ADVERSE REACTIONS:

- Headache
- Nausea / Vomiting
- Tachycardia
- Dizziness
- Palpitations
- Apprehension

DOSAGE:

- 25 mg in 250cc of D5W (100ug/cc). Starting at 10ug/min and titrate to effect.
- IV Infusion through a dedicated IV line.

ROUTE:

- IV infusion with pump only

HOW SUPPLIED:

- 25 mg in 250 ml of D₅W

NITROGLYCERIN SPRAY

ACTION:

Antianginal Agent: Nitroglycerin is a rapid smooth-muscle relaxant that reduces cardiac work and, to a lesser degree, dilates the coronary arteries. This results in increased coronary blood flow and improved perfusion of the ischemic myocardium. Relief of ischemia causes reduction and alleviation of chest pain. Pain relief following nitroglycerin administration usually occurs within 1-2 minutes, and the therapeutic effects can be observed up to 30 minutes later.

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- Postural hypotension
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ADVERSE REACTIONS:

- Headache
- Nausea / Vomiting
- Tachycardia
- Dizziness
- Palpitations
- Apprehension

DOSAGE:

- 0.4 mg that may be repeated as long symptoms persist and no hypo-perfusion

ROUTE:

- Sublingual

HOW SUPPLIED:

- Each aerosol contains 200-metered doses of 0.4mg

NOREPINEPHRINE (LEVOPHED)

ACTION:

Norepinephrine is an alpha- and beta₁-adrenergic agonist. Norepinephrine is a potent vasoconstrictor that also increases myocardial contractility (+ inotrope), and vasodilates the coronary arteries. Norepinephrine is rarely used in the pre-hospital setting.

INDICATIONS:

- **Infusion monitoring during interfacility transport only**
- Cardiogenic shock
- Neurogenic shock
- Inotropic support
- Hemodynamically significant hypotension refractory to other sympathomimetic amines

CONTRAINDICATIONS:

- Hypotensive patients with hypovolemia

PRECAUTIONS:

- Norepinephrine may cause fetal anoxia when used in pregnancy
- Increases myocardial oxygen requirements, raises B/P and heart rate.
- Infuse norepinephrine through a large, stable vein to avoid extravasation and tissue necrosis.
- Use infusion pump to ensure precise flow rate.
- Should be mixed with IV solutions containing dextrose.
- Do not administer in the same IV line as alkaline solutions.

ADVERSE REACTIONS:

- Headache
- Dysrhythmias
- Tachycardia
- Reflex Bradycardia
- Hypertension

DOSAGE:

Administer by intravenous infusion only.

ADULT:

- 0.5 – 1 mcg/min titrated to improve blood pressure (up to 30 mcg/min)

PEDIATRIC:

- 0.1– 2 mcg/kg/min titrate to achieve desired B/P and systemic perfusion.

NORMAL SALINE (0.9% SODIUM CHLORIDE)

ACTION:

Normal saline is an isotonic crystalloid solution, used for fluid and electrolyte replacement. 0.9% normal saline contains 154 mEq's of sodium ions (Na⁺) and 154 mEq's of chloride (Cl⁻) ions per liter of thus making it isotonic with the extracellular fluid. It has a Ph of 5.0 and contains 900mg of sodium per 100ml.

INDICATIONS:

- Diabetic ketoacidosis
- Heat related emergencies
- Freshwater drowning
- Keep vein open

CONTRAINDICATIONS:

- Congestive Heart Failure
- Pulmonary Edema

PRECAUTIONS:

- Circulatory overload
- Renal disease
- Large volume infusion may dilute other electrolytes; Lactated Ringers may be a more prudent choice for large volume infusion

ADVERSE REACTIONS:

- Febrile response
- Infection at the injection site
- Venous thrombosis

DOSAGE:

- Titrate to effect; larger volumes may be required in patients suffering DKA

ROUTE:

- IV, IO, AT

HOW SUPPLIED:

- 250 ml bags, 1000 ml bags

ONDANSETRON (ZOFRAN)

ACTION:

The mechanism by which ondansetron works to control nausea and vomiting is not fully understood; it is believed that the antiemetic properties occur as a result of serotonin receptor antagonism.

INDICATIONS:

- Nausea and vomiting with moderate to severe dehydration or electrolyte imbalance.

CONTRAINDICATIONS:

- Allergy to ondansetron or to any similar medication, including dolasetron, granisetron, or palonosetron.

PRECAUTIONS:

- Liver disease (hepatically cleared)
- Breast-feeding (passes through the milk)
- Pregnancy (no adverse effects are known)

ADVERSE REACTIONS:

- None known in therapeutic doses

DOSAGE:ADULT:

- 4 mg SIVP over 2-5 minutes

PEDIATRIC:

- By order only in pediatric patients less than 40 kg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 4mg in 2ml vial (2 mg / ml)

OXYGEN

ACTION:

Increased concentrations of oxygen increase the saturation level in the hemoglobin in the red blood cell. This results in an increased oxygenation level at the tissue. Oxygen is required for the efficient breakdown of glucose into a usable energy form.

INDICATIONS:

- Hypoxia
- Oxygen should be used in any type of patient that has or may have a condition in which an increased oxygen level will decrease tissue hypoxia
- Chest pain
- Abdominal pain
- Trauma patients
- Respiratory distress
- Nitrogen washout

CONTRAINDICATIONS:

- Short term none. Titrate to O₂ saturation between 94-99%

PRECAUTIONS:

- Possible oxygen toxicity in COPD patients
- Never deprive the hypoxic patient of oxygen for fear of respiratory depression
- Thrombotic stroke patients with SpO₂ > 94%

ADVERSE REACTIONS:

- None

DOSAGE:

- Patients in mild distress should receive 2 to 6 liters via a nasal cannula
- Patients in moderate to severe distress from should receive 100% oxygen via a 100% non-rebreather

ROUTE:

- Blow by, nasal cannulas, face masks, CPAP, advanced airways

HOW SUPPLIED:

- Self-Explanatory

PROMETHAZINE (PHENERGAN)

ACTIONS:

- Antiemetic, anticholinergic, sedative

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Severe protracted vomiting

CONTRAINDICATIONS:

- Phenergan should not be given to children 16 years of age or less
- Systolic BP below 90mmHg
- Unresponsive or sedated patients (morphine may potentiate the sedative side effects of Phenergan)
- Patient with allergies to Phenothiazines (found in some tranquilizers and anti-histamines)
- Head injury is a relative contraindication due to possible sedative effects. Contact medical control for direction
- Pregnancy or the possibility of pregnancy.
- Coma
- Reyes's Syndrome

PRECAUTIONS:

- Watch for dystonic reactions
- Serious phlebitis / vascular injury * To avoid vascular injury, must be given diluted through a wide open / running, patent IV

ADVERSE REACTIONS:

- Sedation, dizziness, dysrhythmia, hyperexcitability, hallucinations, seizures, sudden death, dystonic reactions

DOSAGE:**ADULT:**

- 6.25 - 12.5 mg infused through a wide open IV of NS. (Repeat x 1 if necessary after 10 minutes)
- 12.5 – 25 mg IM

PEDS :

- 0.1mg/kg SIVP (physicians order only)

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 25 mg/ml in 1ml Carpuject

PRALIDOXIME (2-PAM)

ACTION:

Pralidoxime reactivates the enzyme acetylcholinesterase, which allows acetylcholine to be degraded, thus relieving the parasympathetic over-stimulation (cholinergic crisis) caused by excess acetylcholine.

INDICATIONS:

- Organophosphate poisoning (after atropine)
- Nerve agent exposure

CONTRAINDICATIONS:

- Hypersensitivity to pralidoxime

PRECAUTIONS:

- Reduce dosage in cases of known renal insufficiency
- Pralidoxime is NOT recommended in carbamate poisoning.

ADVERSE REACTIONS:

- Tachycardia
- Hypertension
- Laryngospasm
- Hyperventilation
- Muscle weakness
- Nausea

DOSAGE:**ADULT:**

- 600 mg IM by auto-injector (may repeat in 15 & 30 minutes) or 1-2 grams IV over 15-30 minutes

PEDS:

- 25-50 mg/kg IV over 15-30 minutes

ROUTE:

- IM

HOW SUPPLIED:

- Auto-injector

SODIUM BICARBONATE

ACTION:

Alkalinizing agent used in the treatment of metabolic acidosis.

INDICATIONS:

- Any life – threatening acidosis
- Cardiac Arrest (after defibrillation, airway management, and other pharmaceutical interventions)
- Rarely administered in the first 10 minutes of resuscitation unless metabolic acidosis is known or highly suspected.
- Tricyclic antidepressant overdose
- Known hyperkalemia
- Phenobarbital overdose

CONTRAINDICATIONS:

- Respiratory acidosis

PRECAUTIONS:

- Possible fluid overload in patients with a history of heart failure
- Precipitates calcium chloride
- Inactivates catecholamine's

ADVERSE REACTIONS:

- Metabolic alkalosis
- Tissue necrosis if the IV infiltrates.

DOSAGE:ADULT:

- 1Meq/kg of 8.4% repeated in 10 minutes if necessary at 0.5 Meq/kg

PEDIATRIC:

- 1Meq/kg of 8.4% repeated in 10 minutes if necessary at 0.5 Meq/kg

NEONATE:

- 1 Meq/kg of 4.2% repeated in 10 minutes if necessary at 0.5 Meq/kg

ROUTE:

- IV, IO

HOW SUPPLIED:

- 8.4% - ADULT / PED: 50 mEq in 50 ml, in a pre-filled syringe.
- 4.2% - INFANT/NEONATE: 5 mEq in 10 ml, in a pre-filled syringe.

SUCCINYLCHOLINE (ANECTINE / QUELICIN)

ACTION:

A short acting, depolarizing neuro-muscular blocking agent. Combines with the cholinergic receptors in the motor nerves to cause depolarization. Neuromuscular transmission is thus inhibited, which renders the muscles unable to be stimulated by acetylcholine. Following IV injection, complete paralysis is obtained within 1 minute and persists for approximately 5-10 minutes. Effects then begin to fade, and a return to normal is seen within 6 minutes. Muscle relaxation begins in the eyelids and jaw. It progresses to the limbs, the abdomen, the diaphragm and intercostals and finally the vocal cords. Succinylcholine has no effect on consciousness.

INDICATIONS: LEE COUNTY EMS NO LONGER CARRIES THIS MEDICATION

- Drug Assisted Intubation

CONTRAINDICATIONS:

- Known hypersensitivity to the drug
- Individuals with a history of malignant hyperthermia
- Known difficult airway (neck scar from previous airway OR)
- Obstructed airways
- Burns / crush injury > 24 hr
- Cardiac arrest
- Neuromuscular disorders
- Known or suspected hyperkalemia

PRECAUTIONS:

- High suspicion of “can’t intubate, can’t ventilate cause.”

ADVERSE REACTIONS:

- Hypotension
- Bradycardia
- Dysrhythmia
- Initial muscle fasciculation
- Malignant hyperthermia

DOSAGE:**ADULT / PEDIATRIC**

- 2 mg/kg (Refer to DAI chart)

ROUTE:

- IV, IO

HOW SUPPLIED:

- 200 mgs in a 10ml vial (20 mg/ml)

TETRACAINE

ACTION:

Provides local anesthesia to the eye. Provides relief from eye pain to facilitate an appropriate eye exam and treatment.

INDICATIONS:

- Irritation and /or pain of the eye(s) when there is non-penetrating injury.

CONTRAINDICATIONS:

- Known hypersensitivity to tetracaine or other “caine” anesthetics
- Penetrating or open eye injury.

PRECAUTIONS:

- The cornea may be damaged by prolonged application of anaesthetic eye drops.

ADVERSE REACTIONS:

- Burning sensation in eyes (frequent)
- Redness
- Tearing

DOSAGE:**ADULT / PEDIATRIC**

- 1-2 drops in the affected eye(s) every 5-10 minutes as needed for pain control.

ROUTE:

- Topical: for eyes only

HOW SUPPLIED:

- Ophthalmic drops in a single use vial

THIAMINE (VITAMIN B1)

ACTION:

Thiamin is a necessary component for carbohydrate metabolism. Certain states such as alcoholism and malnourishment may affect the intake, absorption, and utilization of glucose.

INDICATIONS:

- Coma of unknown origin, especially if alcohol may be involved, with Thiamine given prior to glucose administration
- Delirium tremens, with Thiamine given prior to glucose administration

CONTRAINDICATIONS:

- Hypersensitive reaction to Thiamine

PRECAUTIONS:

- Thiamine should be administered prior to the administration of glucose

ADVERSE REACTIONS:

- Allergic reaction

DOSAGE:

- 100 mg

ROUTE:

- IV, IO, IM

HOW SUPPLIED:

- 100 mg in a 1 ml Carpuject

VASOPRESSIN

ACTION: (HORMONE)

Hemodynamic measurements suggest it causes profound shunting of blood to the myocardium and brain and away from the muscles and skin. This may be mediated by the release of nitric oxide. In the brain Vasopressin provides significantly more perfusion during cardiopulmonary resuscitation than epinephrine, perhaps secondary to nitric acid release.

Unlike epinephrine, Vasopressin continues to cause intense vasoconstriction in the presence of the severe acidosis that accompanies cardiopulmonary arrest. Vasopressin possesses a longer duration of action than epinephrine. Unlike epinephrine, which significantly increases myocardial oxygen consumption via β 1-adrenergic receptor activation, Vasopressin enhances myocardial oxygen delivery and may increase cardiac contractility, without the marked increased in oxygen consumption observed with catecholamines.

INDICATION:

- Refractory Ventricular Fibrillation
- Pulseless Ventricular Tachycardia
- Asystole
- Pulseless Electrical Activity
- May be useful for hemodynamic support in vasodilatory shock (septic or anaphylactic shock)

CONTRAINDICATIONS:

- Known hypersensitivity to the drug
- Responsive patients with known coronary artery disease

PRECAUTIONS:

- Potent peripheral vasoconstrictor.
- Increased peripheral vascular resistance may provoke cardiac ischemia and angina

ADVERSE REACTIONS:

- Local or systemic allergic reactions

DOSAGE:

ADULT:

- 40 units

ROUTE:

- IV, IO

HOW SUPPLIED:

- 20 units in a 2ml vial

XYLOCAINE (LIDOCAINE)

ACTIONS:

Antiarrhythmic – decreases phase 4 depolarization; inhibits impulse transmission in the myocardial nervous system.

INDICATIONS:

- Local anesthetic (the only current pre-hospital indication)
- Ventricular Fibrillation (in the absence of Amiodarone) (Class IIb)
- Pulseless Ventricular Tachycardia (in the absence of Amiodarone) (Class IIb)
- Significant ventricular ectopy in the setting of myocardial ischemia / infarction
- Stable Ventricular Tachycardia
- Wide Complex Tachycardia of unclear etiology

CONTRAINDICATIONS:

- Bradycardia with PVC's

PRECAUTIONS:

- Prophylactic use in MI's is not indicated
- Reduce dose (maintenance, not loading) with liver impairment or LV dysfunction
- Discontinue infusion at first sign of toxicity

ADVERSE REACTIONS:

- Lidocaine Toxicity (Light headiness, dizziness, blurred vision, nausea, vomiting, seizures, hypotension, bradycardia and central nervous system depression)

DOSAGE:ADULT:

- Local anesthetic for IO: 0.25 mg/kg IO before fluid/medication infusion

PEDIATRIC:

- Local anesthetic for IO: 0.25 mg/kg IO before fluid/medication infusion

ROUTE:

- IV, IO

HOW SUPPLIED:

- 100 mg in a 5 ml pre-filled

APPENDIX B: BLS MEDICAL PROCEDURES / CHECKLISTS

AUTOMATIC EXTERNAL DEFIBRILLATION

INDICATIONS:

- Place AED on all pulseless patients to potentially identify and treat ventricular fibrillation or pulseless ventricular tachycardia.

CONTRAINDICATIONS / PRECAUTIONS:

- Do not place AED on patients with a pulse.
- Remove patient from standing water and wipe water from surface of chest.
- Do not place a defibrillation paddle or electrode directly over an implanted pacemaker or defibrillator.
- Remove transdermal medication patches and wipe area clean before placing defibrillation paddles or electrodes.
- Utilize pediatric pads, if available, for pediatric patients <8 years of age or <25 kg.

EQUIPMENT NEEDED:

- Automatic External Defibrillator (AED).

PROCEDURE:

1. Determine patient is unresponsive and pulseless.
2. Perform CPR until defibrillator is available.
3. Turn on AED.
4. Position patches on chest at sternum-apex.
5. Follow voice prompts.
6. Shock patient if advised by AED. Verbally and visually clear team-members, including yourself, from the patient.
7. Perform CPR for 2 minutes.
8. Continue to follow AED voice prompts.

BAG-VALVE-MASK VENTILATION

INDICATIONS:

- Patient requiring positive pressure ventilation
- Patient in respiratory arrest
- Patient in severe respiratory distress

CONTRAINDICATIONS / PRECAUTIONS:

- None in adult patients or pediatrics
- Inflate only to chest rise
- Insure proper chest rise if pop off valve activates (peds only)

EQUIPMENT NEEDED:

- Bag-valve-mask with reservoir
- Oxygen tubing
- Oxygen bottle with regulator and flow meter
- Assorted clear masks

PROCEDURE:

1. Open the airway with jaw thrust or head tilt / chin lift
2. Insert an airway adjunct (oral or nasal airway)
3. Select proper bag: adult, child, infant
4. Select appropriate size mask
5. Connect reservoir and oxygen tubing
6. Create proper mask-to-face seal with the “EC” clamp technique
7. Ventilate adult patient once every 5-6 seconds and every 3-5 seconds for children and infants
8. Adjust oxygen liter flow to ensure reservoir bag stays inflated

BLOW-BY OXYGEN

INDICATIONS:

- Infant / child that will not tolerate a mask or nasal cannula
- Patient requiring supplemental low concentration oxygen

CONTRAINDICATIONS / PRECAUTIONS:

- Do not blow oxygen directly in the eye's of a newborn

EQUIPMENT NEEDED:

- Oxygen tubing
- Oxygen bottle and regulator with flow meter

PROCEDURE:

1. Explain procedure to patient if possible
2. Attach oxygen tubing to oxygen regulator
3. Adjust liter flow to 4-6 liters / minute
4. Place tubing approximately 1-2 inches from patients nose / mouth
5. Monitor patient as appropriate

CAREVENT

INDICATIONS:

- Emergency ventilatory support
- Respiratory arrest
- Cardiorespiratory arrest

CONTRAINDICATIONS:

- None

PRECAUTIONS:

- Over / under inflation (tidal volume) if not on correct device setting
- Never attach CAREvent directly to an advanced airway. Always use CAREvent circuit

EQUIPMENT NEEDED:

- Oxygen bottle and regulator with pigtail or wall mount O₂ port
- CAREvent circuit

PROCEDURE:

1. Assure patency of advanced airway
2. Select the tidal volume / frequency of ventilation for the patient
3. Attach CAREvent via circuit and observe patient's chest rise / fall during ventilation
4. Monitor patient frequently for signs of adequate ventilation / oxygenation and reassess often
5. EtCO₂, SpO₂ and EKG should be monitored at all times during use
6. Thoroughly clean after each use

CAREvent Settings							
Control Position	1	2	3	4	5	6	7
Age Range Starting Points	OFF	Child	Adolescent	Adult Female	Adult Female/ Male	Adult Male	Do Not Use
Tidal Volume Vt (mL)	OFF	200	300	400	600	800	1100
Frequency Vf (BPM)	OFF	20	15	15	12	12	12
<i>Weight Based Vt Setting: 6–8mL/kg (Ideal Body Weight)</i>							
<i>PEEP Setting: 5–10cmH2O. Use PEEP with caution in hemodynamically challenged patients.</i>							

COMBITUBE

INDICATIONS:

- Patient in respiratory arrest
- Patient in cardiac arrest
- Airway adjunct when endotracheal intubation has failed

CONTRAINDICATIONS / PRECAUTIONS:

- Gag reflex present
- History of esophageal trauma, recent ingestion of caustic substances, known esophageal disease, tracheostomy or laryngectomy
- Under 5 feet tall
- Foreign body airway obstruction
- Patients suspected of hypoglycemia prior to dextrose administration

EQUIPMENT NEEDED:

- Combitube
- 100cc syringe
- 20cc syringe

PROCEDURE:

1. Confirm that the patient is being properly ventilated with high flow oxygen and a nasal or oral airway
2. Check / prepare airway device, test cuffs for leaks and lubricate
3. Pre-oxygenate patient
4. Remove the nasal or oral airway if necessary
5. Position head in neutral position
6. Perform a tongue jaw lift
7. Insert the device downward following the natural curvature of the pharynx stopping when teeth lie between the two black bands
8. Inflate blue pilot bulb with 100cc of air #1
9. Inflate white pilot bulb with 15cc of air #2
10. Ventilate through blue tube and observe for chest rise / fall with good lung sounds and no gastric sounds. #1
11. If no chest rise / fall or lung sounds, but have gastric sounds, ventilate through the clear tube #2
12. Confirm placement by observing chest rise / fall, good lung sounds and no gastric sounds

ENDOTRACHEAL INTUBATION PREPARATION

INDICATIONS:

- When Endotracheal Intubation is required

CONTRAINDICATIONS / PRECAUTIONS:

- None

EQUIPMENT NEEDED:

- Proper size ET tube
- Laryngoscope and proper blade for patient age
- Proper size stylette
- 10cc syringe
- BVM
- Oral tracheal or nasal pharyngeal airway
- C-Collar
- Commercially available ET holder

PROCEDURE:

1. Open airway with jaw thrust or head tilt chin lift
2. Ventilate patient using BVM with high flow oxygen
3. Pre-oxygenate patient until ready to begin intubation attempts
4. Make sure all equipment is ready and operational (cuff check, blade light, etc)

EPINEPHRINE AUTO-INJECTOR

INDICATIONS:

- The patient exhibits signs and symptoms of a severe allergic reaction
- (anaphylaxis), including respiratory distress or shock.

CONTRAINDICATIONS / PRECAUTIONS:

- None in a life-threatening allergic reaction.
- May see tachycardia, pallor, dizziness, chest pain, headache, nausea / vomiting or nervousness.

EQUIPMENT NEEDED:

- Auto-Injector
- Alcohol wipe

PROCEDURE:

1. Obtain patient's Auto-Injector.
2. Verify medication is not expired.
3. Remove the gray safety cap from the injector.
4. Place the tip of the injector against the lateral aspect of the patient's thigh, midway between the waist and the knee.
5. Push the injector firmly against the thigh until the spring-loaded needle is deployed and the medication has been injected, holding for at least 10 seconds.
6. Observe patient for either positive or untoward side effects.
7. Properly dispose of injector in sharps container.
8. Record drug administered, dose, route, name of person who administered drug, and effects.

GLUCOMETER

INDICATIONS:

- To determine blood glucose levels in patients with an altered level of consciousness.

CONTRAINDICATIONS / PRECAUTIONS:

- Use capillary blood per device manufacturer's direction.

EQUIPMENT NEEDED:

- Glucometer
- Test strips
- Alcohol wipe
- Lancet or blood-letting device
- 4x4 for bleeding control

PROCEDURE:

1. Calibration testing done per device manual.
2. Prepare test strip and Glucometer per device manual.
3. Cleanse site with alcohol prep.
4. Pierce desired site (fingertip-adult / heel-Infant) with lancet enough to initiate blood flow
5. Wipe initial blood sample with clean 4x4.
6. Compress capillary bed until second blood droplet develops.
7. Hold test strip to blood droplet. Allow test strip capillary action to draw blood sample into test strip.
8. Hold 4x4 on puncture site to control bleeding.
9. Properly dispose of lancet in sharps container.
10. Allow Glucometer to measure and display glucose reading.
11. Clean and restock Glucometer

HELMET REMOVAL

INDICATIONS:

- ALL motorcycle helmets shall be removed
- Patient's airway cannot be adequately accessed or secured
- If shoulder pads need to be removed for any reason, helmet must also be removed
- Helmet is not form fitted and head is loose inside helmet

CONTRAINDICATIONS / PRECAUTIONS:

- Shoulder pads could further compromise the C-spine if only the helmet is removed
- No respiratory distress and no need to access the airway
- If removal of facemask can facilitate airway maintenance

EQUIPMENT NEEDED:

- Two rescuers
- Scissors or shears
- Screwdriver

PROCEDURE:

1. Rescuer 1 maintains inline immobilization
2. Rescuer 2 cuts or loosens the chin strap
3. Rescuer 2 takes over inline immobilization
4. Rescuer 1 removes the helmet
5. Rescuer 1 takes over inline immobilization
6. Rescuer 2 applies an extrication collar

HIBLER'S METHOD

PASSIVE EXTERNAL RE-WARMING

INDICATIONS:

- Iatrogenic hypothermia increases mortality and morbidity in patients who are hemorrhaging. Cold blood does not clot and patients who are critically ill and injured are unable to control their thermoregulatory mechanism. The sequelae is acidosis, coagulopathy and hypothermia – otherwise known as the “Lethal Triad”. Hibler’s method of thermopreservation helps protect patients from hypothermic insult and reduces the cascade of multi-system organ failure.
- High acuity patients with suspected internal and/or significant external bleeding.

CONTRAINDICATIONS / PRECAUTIONS:

- Fever
- Post CardioPulmonary Arrest receiving Therapeutic Hypothermia

EQUIPMENT NEEDED:

- Commercially manufactured isothermic emergency blanket or any combination of material that consists of a tight outside moisture resistant layer with an inside dry insulating layer.

PROCEDURE:

1. Completely open the blanket and drape over the stretcher – moisture resistance layer down, insulating layer up.
2. Place the patient onto the stretcher and wrap them up – snug as a bug in a rug.
3. Limited skin exposure

HIP IMMOBILIZATION

INDICATIONS:

- Hip fracture
 - Shortened and externally rotated
- Hip dislocation
 - Shortened and internally rotated

CONTRAINDICATIONS / PRECAUTIONS:

- Assessment of neurovascular status

EQUIPMENT NEEDED:

- Pillow
- Kling or cravats
- Scoop stretcher
- KED

PROCEDURE:

4. Slide cravats or similar lengths of Kling under knee area of both legs and position one high under the upper leg, one under the lower half of the upper leg and one just below the knees
5. Spread legs open by moving the unaffected leg
6. Place a pillow or blanket lengthways between legs and move unaffected leg back in position
7. Tie cravats or Kling around both legs
8. Disassemble scoop stretcher
9. Slide half of scoop stretcher under affected side while lifting up side of patient only enough to get stretcher in place
10. Slide other half of scoop stretcher under the unaffected side lifting up on patient only enough to attach both ends of scoop together
11. Pad as necessary for patient comfort
12. Secure patient to scoop with four straps

IMPEDANCE THRESHOLD DEVICE (RESQPOD)

INDICATIONS:

- Cardiopulmonary Arrest.

CONTRAINDICATIONS / PRECAUTIONS:

- Responsive patient.
- Spontaneous breathing.
- Respiratory arrest.
- Effectiveness is dependant on the quality of CPR: remember to compress the chest 1.5 to 2 inches at a rate of 100 per minute.

EQUIPMENT NEEDED:

- Impedance Threshold Device (Res-Q-POD)
- BVM.
- Advanced airway.

PROCEDURE:

1. Place the ITD on face mask immediately at the start of CPR.
2. Ensure a continuous tight seal to the face during compressions and ventilations.
3. Once an advanced airway is in place, transfer the ITD to the advanced airway and turn on the ventilation timing lights.
4. Use ventilation timing device to ensure proper timing of ventilation.
5. If the patient experiences a return of spontaneous circulation, remove the ITD immediately; with re-arrest, immediately reattach the ITD.
6. If the ITD fills with fluid, remove the device, squeeze the bag to blow the fluid from the device, and continue its use.

INHALER ADMINISTRATION

INDICATIONS:

- Prescribed to patient's with diagnosed pulmonary disease
- Signs and symptoms of respiratory difficulty

CONTRAINDICATIONS / PRECAUTIONS:

- Altered mental status
- Inhaler is not prescribed to the patient
- Patient has already reach the maximum dose

EQUIPMENT NEEDED:

- Patient's prescribed metered dose inhaler

PROCEDURE:

1. Shake canister and mouthpiece well
2. Invert the device and hold it close to the patient's mouth
3. Advise patient to exhale, pushing as much air from lungs as possible
4. Place mouthpiece in patient's mouth and instruct patient to close his / her lips loosely around the mouthpiece with tongue underneath
5. Advise patient to inhale deeply, press down on canister quickly then release it (over 5 sec)
6. Instruct patient to hold his / her breath for 5 to 10 seconds before exhaling
7. Monitor patient for desired effects

IV THERAPY SET UP

INDICATIONS:

- For fluid replacement and / or medication administration.

CONTRAINDICATIONS / PRECAUTIONS:

- Selecting proper fluid and administration set as directed.
 - Mini drip (60 drops / ml) for medication administration or fluid restriction.
 - Maxi drip (10 drops / ml) for fluid infusion.
 - Ringers Lactate for electrolyte or fluid replacement (trauma or volume loss etiologies).
 - Sodium Chloride for electrolyte, fluid replacement (heat related illnesses), or medical patients.
 - D5W for medication infusions.

EQUIPMENT NEEDED:

- IV fluid
- Administration set
- Alcohol wipes
- Veniguard
- Gauze

PROCEDURE:

1. Obtain and set up alcohol wipes, constricting band, and gauze.
2. Examine IV solution for proper type, clarity and expiration date.
3. Review administration set for proper type, and remove from container.
4. With flow valve shut off, attach IV tubing to IV solution.
5. Squeeze drip chamber until half full.
6. Open flow valve and allow solution to run through entire tubing, expelling all air.
7. Do not contaminate either the connection at the IV bag, or the connection at the IV site.

KING LTS-D TUBE

INDICATIONS:

- Patient in respiratory arrest.
- Patient in cardiac arrest
- Airway adjunct for appropriate patient needing airway / ventilatory support

CONTRAINDICATIONS:

- Gag reflex
- History of esophageal disease
- Ingested caustic substance

EQUIPMENT NEEDED:

- King Tube
- 80-100 cc syringe
- Water soluble lubricant
- ETCO₂ detection
- NG Tube
-

PROCEDURE:

1. Confirm patient is being properly ventilated with high flow oxygen.
2. Check / prepare King LTS-D Tube and advance the NG tube through the gastric port to the tip of the King tube.
3. Position head in neutral position.
4. Hold the LTS-D at the connector with the dominant hand.
5. With non-dominant hand, hold mouth open and apply chin lift.
6. Using mid-line or lateral approach, introduce tip into mouth.
7. Advance the tip behind the base of the tongue while rotating tube back to midline so that the blue orientation line faces the chin of the patient.
8. Without exerting excessive force, advance tube until base of connector is aligned with teeth or gums.
9. Inflate the LTS-D with the appropriate volume of air for given tube size.
10. Attach the resuscitator bag to the LTS-D.
11. While bagging the patient, gently withdraw the tube until ventilation becomes easy and free flowing (large tidal volume with minimal airway pressure).
12. Adjust cuff inflation if necessary to obtain a seal of the airway at the peak ventilatory pressure employed.
13. Secure the LTS-D with commercial tube holder.
14. Advance 14-18F NG tube through gastric tube port in King Tube to reduce gastric pressure.

LARYNGEAL MASK AIRWAY (I-GEL)

INDICATIONS:

- Patient in respiratory arrest
- Patient in cardiac arrest
- Airway adjunct when endotracheal intubation has failed
- Temporary rescue airway in failed DAI

CONTRAINDICATIONS / PRECAUTIONS:

- Gag reflex present
- Tracheostomy or larynectomy
- Foreign body airway obstruction

EQUIPMENT NEEDED:

- LMA
- Water soluble lubricant
- ETCO₂ detection
- NG Tube

PROCEDURE:

1. Confirm the patient is being properly ventilated with high flow oxygen.
2. Select appropriate LMA. Check the device and place the NG tube through the gastric tube port until even with the tip of the LMA.
3. Lubricate posterior portion of device and NOT the mask itself.
4. Pre-oxygenate patient.
5. Remove nasal or oral airway if necessary.
6. Place head in neutral position or slightly extended (sniffing).
7. Insert device downward along hard palate. Stop when it is felt to “pop” into place or when resistance is felt.
8. Control ventilation with BVM and transition to CareVent as quickly as possible
9. Assess for air leakage. If leakage occurs, reposition or remove the LMA if necessary.
10. Confirm placement with chest rise and fall, lung sounds, lack of gastric sounds and etCO₂ detection
11. Secure tube with airway support strap.

LONG BACKBOARD IMMOBILIZATION

INDICATIONS: FOLLOW THE SPINAL PRECAUTION GUIDELINE FOR DECISION MAKING THEN PROCEED TO LONG BOARD/SCOOP STRETCHER AS NEEDED.

- Blunt-Force Trauma Alerts
- Trauma patients that have an altered LOC
- Trauma patients that are under the influence of drugs / alcohol

CONTRAINDICATIONS / PRECAUTIONS:

- Proper placement of patient on backboard is essential

EQUIPMENT NEEDED:

- C- collar
- Long backboard
- Four backboard straps

PROCEDURE:

1. Patient. must be properly aligned on board
2. Place straps over patient's chest, pelvis, upper legs and lower legs

NASAL CANNULA (O₂ AND/OR CO₂)

INDICATIONS:

- Spontaneous breathing patient without respiratory compromise
- Patient unable to tolerate a mask
- Measure expired CO₂
- Maintain O₂ saturation between 94-99%

CONTRAINDICATIONS / PRECAUTIONS:

- Epistaxis

EQUIPMENT NEEDED:

- Nasal Cannula
- Oxygen bottle with regulator and flow meter

PROCEDURE:

1. Explain procedure to patient
2. Attach nasal cannula to oxygen regulator
3. Adjust liter flow to 2-6 liters / minute
4. Apply nasal cannula to patient

NASOPHARYNGEAL AIRWAY PLACEMENT

INDICATIONS:

- Patient not fully responsive
- Patient with a gag reflex
- Need assistance maintaining an open airway

CONTRAINDICATIONS / PRECAUTIONS:

- Improper sized airway
- Fractured facial bones
- Epistaxis

EQUIPMENT NEEDED:

- Assorted sizes of nasopharyngeal airways
- Water soluble lubricant

PROCEDURE:

1. Explain procedure to patient if necessary
2. Select appropriate airway by measuring from the tip of the nose to the ear lobe in position of function
3. Lubricate airway with a water soluble lubricant
4. Insert the airway into the larger or more open nostril
5. If you meet resistance, gently rotate from side to side as you insert. If resistance continues remove and try the other nostril
6. Airway should rest against the flare of the nostril

NEBULIZER THERAPY

INDICATIONS:

- Asthma
- COPD
- CHF
- Certain chemical exposures

CONTRAINDICATIONS / PRECAUTIONS:

- Severely hypoxic patients should be intubated and the “IN-LINE ETT Application” should be used.

EQUIPMENT NEEDED:

- Proper medication per protocol
- Nebulizer device
- Oxygen
- CPAP Circuit (for IN-LINE CPAP Application)
- CareVent Circuit (for IN-LINE ETT Application)

PROCEDURESTANDARD APPLICATION

1. Assemble nebulizer per manufacturers instructions
2. Place medication in bowl of nebulizer
3. Attach to oxygen with tubing and place at 6 LPM
4. Have patient begin treatment when mist is visible
5. Instruct patient to inhale slowly and deeply and hold breath for 3 to 5 seconds before exhaling
6. Continue until medication is depleted
7. Repeat treatment as necessary per protocol

IN-LINE CPAP APPLICATION

1. Assemble nebulizer per manufacture instructions. Do not attach the mouth piece.
2. Connect the nebulizer “T-Adapter” to the corrugated end of the CPAP circuit (where the mouth piece would go). Connect other end to the elbow on the mask.
3. Place medication in bowl of nebulizer.
4. Attach nebulizer to oxygen with tubing at 6 lpm. Titrate oxygen to mist flowing towards the pt.

IN-LINE ETT APPLICATION

1. Assemble nebulizer per manufacture instructions. Do not attach the mouth piece.
2. Attach the CareVent circuit to the pt as if connecting the ventilator.
3. Connect the nebulizer “T-Adapter” to the corrugated end of the ventilator circuit (where the mouth piece would go).
4. Attach the blue corrugated tubing from the nebulizer to the BVM or CareVent.
5. Place medication in bowl of nebulizer.
6. Attach nebulizer to oxygen with tubing at 6lpm. Titrate oxygen to mist flowing towards the pt.

NON-REBREATHER MASK

INDICATIONS:

- Patient requiring high concentrations of oxygen to maintain O₂ saturation between 94-99%
- Respiratory distress
- Cardiac related symptoms
- Shock / Trauma

CONTRAINDICATIONS / PRECAUTIONS:

- Patient with O₂ saturation > 94%
- None for short term use

EQUIPMENT NEEDED:

- Non-rebreather mask
- Oxygen bottle and regulator with flow meter

PROCEDURE:

1. Explain procedure to patient
2. Check tank pressure (minimum 1000 psi)
3. Attach NRBM to oxygen regulator
4. Pre fill reservoir bag
5. Adjust liter flow to ensure reservoir bag stays inflated
6. Apply and adjust mask to the patient
7. Monitor reservoir bag for constant inflation

OROPHARYNGEAL AIRWAY PLACEMENT

INDICATIONS:

- Unconscious patient
- No gag reflex

CONTRAINDICATIONS / PRECAUTIONS:

- Responsive patient
- Gag reflex

EQUIPMENT NEEDED:

- Assorted sizes of oropharyngeal airways
- Suction

PROCEDURE:

1. Select appropriate size airway by measuring from the center of the mouth to the angle of the jaw or corner of the mouth to the ear lobe in the position of function
2. Insert airway using any medically acceptable method
3. If the patient gags during insertion remove the airway

PULSE OXIMETRY

INDICATIONS:

- To determine effective oxygenation

CONTRAINDICATIONS / PRECAUTIONS:

- Hypothermia may cause false readings
- Hypotension may cause false readings
- Carbon monoxide causes falsely high SpO₂ readings
- Nail polish
- Jaundice
- Vasoconstrictive drugs
- Do not depend only on the device for proper oxygenation

EQUIPMENT NEEDED:

- Pulse oximeter with proper probe

PROCEDURE:

1. Turn on device
2. Place probe to proper body part
3. Read results on device

RESQ DISC

INDICATIONS:

- Rescue of drowning victims.

PRECAUTIONS:

- Rescuer safety is the number one concern.
- The rope from the ResQ Disc should never be attached directly to the rescuer. Hold the rope with two fingers so it maybe released immediately should victim start to pull the rescuer into the water.
- Use caution around the shorelines of bodies of water; footing maybe unstable.
- NEVER ENTER THE WATER TO ATTEMPT A WATER RESCUE.

EQUIPMENT NEEDED:

- ResQ Disc

PROCEDURE:

1. Pull tab on Velcro strap and let it drop to the ground
2. Unwind 20 feet or more of line and let it drop to the ground.
3. Stick your first two fingers into the loop on the strap end of the rope.
4. Put your right hand thumb into the thumb indent.
5. Pretend you are in the left hand batters box on a baseball diamond and want to throw the disc to the pitcher 90 feet away.
6. Pull your right hand back behind you, like you would if you had a bat ready to hit a pitch, rotate your shoulders back like a wind up with a bat.
7. When you throw, pull the disc in a straight line across your chest and extend your arm pointing at the pitcher who is your target.
8. Keep the disk horizontal (parallel or level to the ground) as you release it.
9. When you release the disk at the end of the throw, your wrist will snap the disc and cause it to rotate shedding the line.

SAM PELVIC SLING II

INDICATIONS:

- Any suspected pelvic fracture secondary to high velocity/energy event. Exam alerting suggestive of pelvic fracture include, but are not limited to:
 - 1) deformity over any pelvic bony prominences,
 - 2) leg-length asymmetry or abnormal lower extremity rotation,
 - 3) any soft tissue injury over the pelvis or bleeding from the rectum, vagina or urethra and
 - 4) lower extremity neurovascular asymmetry or defect.

CONTRAINDICATIONS / PRECAUTIONS:

- Isolated trochanter fractures.
- Application prior to extrication.

EQUIPMENT NEEDED:

- SAM Pelvic Sling II or other commercial pelvic binder/splint

PROCEDURE:

1. Follow SAM Medical Products recommendations:

[HTTP://WWW.SAMMEDICAL.COM/WP-CONTENT/UPLOADS/2014/02/SLI-206-CIV-6_WEB.PDF](http://www.sammmedical.com/wp-content/uploads/2014/02/SLI-206-CIV-6_WEB.PDF)

[HTTP://WWW.SAMMEDICAL.COM/PRODUCTS/SAM-PELVIC-SLING-II/](http://www.sammmedical.com/products/sam-pelvic-sling-ii/)

SLING & SWATHE

INDICATIONS:

- Injury to the clavicle, shoulder, upper arm, elbow

CONTRAINDICATIONS / PRECAUTIONS:

- Shoulder injuries that don't allow proper positioning due to pain upon movement

EQUIPMENT NEEDED:

- Two slings, or
- One sling and roller bandage

PROCEDURE:

1. Position patient's arm against chest and at a 45° angle at the elbow, if possible
2. Place a sling over the patient's chest with short end behind the elbow, and one long point over the opposite shoulder and the other long point lying across the patient's lap
3. Bring the bottom point over the patient's arm over the injured shoulder
4. Tie the two long ends of the sling together behind patient's neck
5. Secure short end of sling over elbow with a knot or safety pin
6. Apply swathe (sling or roller bandage) around patient and over sling to secure arm in place

SPLINTING

INDICATIONS:

- Signs & Symptoms of a bone or joint injury including:
- Deformity or abnormal position of an extremity
- Pain and tenderness
- Grating
- Swelling, bruising or discoloration
- Guarding
- Exposed bone ends
- Joint locked into position.

CONTRAINDICATIONS / PRECAUTIONS:

- Realignment should only be attempted once, and only if there is severe neurovascular compromise (extremely weak or absent distal pulses)

EQUIPMENT NEEDED:

- As needed:
- Rigid splints
- Air splints
- Ladder splints
- SAM splints
- Kling
- Slings
- Pillow
- Vacuum splints

PROCEDURE:

1. Splint joints and bone ends above and below
2. Immobilize open and closed fractures in the same manner
3. Cover open fractures to minimize contamination
4. Check pulses, sensation, and motor function before and after splinting
5. Stabilize the extremity with gentle, in-line traction to a position of normal alignment
6. Immobilize a long bone extremity in a straight position that can easily be splinted
7. Immobilize joints as found; joint injuries are only aligned if there is no distal pulse
8. Apply cold to reduce swelling and pain
9. Apply compression to reduce swelling
10. Elevate the extremity if possible

SUCTIONING

INDICATIONS:

- Removal of blood, emesis, and secretions
- Removal of food particles or objects that can cause obstruction

CONTRAINDICATIONS / PRECAUTIONS:

- Ensure pre and post oxygenation

EQUIPMENT NEEDED:

- Appropriate suction device
- Proper suction catheter

PROCEDURE:

1. Turn on and prepare suction device
2. Assure presence of mechanical suction
3. Select proper suction catheter
4. Insert proper suction tip without applying suction
5. Apply suction to the oropharynx / nasopharynx during removal of the catheter
6. Limit suction times: adult 10 seconds, infants and children 5 seconds
7. Stop suctioning immediately if heart rate drops in infants and children.

TOURNIQUET

INDICATIONS:

- A prehospital tourniquet is indicated when ALL conventional means of hemorrhage-control fails to stop ongoing hemorrhage in/from an extremity. The tourniquet should be placed prior to extrication and transport if the need exists. There is a clear survival advantage if placement is done prior to the onset of shock.
- Life threatening extremity hemorrhage that cannot be controlled by other means
- Serious or life threatening extremity hemorrhage when tactical considerations prevent the use of standard hemorrhage control measures

CONTRAINDICATIONS / PRECAUTIONS:

- Proximal extremity location where tourniquet application is not practical

EQUIPMENT NEEDED:

- Tourniquet

PROCEDURE:

1. Remove any clothing on or near the extremity to avoid concealment of injury, tourniquet or to interfere with tourniquet placement and tightness
2. Place tourniquet proximal to wound
3. Tighten per manufacturer instructions until hemorrhage stops and distal pulse is eliminated
4. Secure tourniquet per manufacturers instruction
5. Note time of tourniquet application and communicate this to receiving care providers
6. Dress wound if possible
7. If delayed or prolonged transport and tourniquet application time 1 hour or greater, contact medical control
8. An additional tourniquet can be placed next to the initial tourniquet if bleeding control is inadequate following initial placement

TRACTION SPLINT

INDICATIONS:

- Femur fracture

CONTRAINDICATIONS / PRECAUTIONS:

- Compound fracture of limb being splinted
- Fractures to lower extremity of same leg
- Fracture to foot or ankle of same leg

EQUIPMENT NEEDED:

- Hare Traction Splint

PROCEDURE:

9. Rescuer 1 manually stabilizes the injured leg so that no motion occurs at the site of injury
10. Assess motor, sensory, and distal circulation in the injured extremity
11. Apply the ankle hitch
12. RESCUER 1 to apply manual traction while holding the ankle hitch just above the attachment ring(s) and pulling and supporting upper leg near fracture site
13. Measure the splint against the uninjured leg and adjust to extend from the ischial tuberosity to approximately 8-12 inches beyond the foot
14. RESCUER 1 raises injured leg while under traction and RESCUER 2 places splint in place
15. Apply the proximal ischial strap
16. Connect the “S” hook of the ratchet mechanism to the ring(s) of the ankle hitch
17. Wind the mechanism until the traction is equal to what is being manually applied by RESCUER 1
18. Further tighten ratchet as needed to reduce pain and align fracture
19. Secure the splint support straps around the leg
20. Re-evaluate proximal / distal securing devices
21. Re-assess motor, sensory, and distal circulation
22. Secure patient. to backboard
23. Secure splint to backboard as needed

VITAL SIGNS

INDICATIONS:

- Frequent assessment on all patients as directed in “Medical Supportive Care”.

CONTRAINDICATIONS / PRECAUTIONS:

- None

EQUIPMENT NEEDED:

- Watch
- BP Cuff
- Stethoscope
- Penlight

PROCEDURE:

1. Assess Respirations (observe rate for 1 minute, quality, depth, patterns, efforts, and breath sounds).
2. Assess Pulse (count for 1 minute, feeling for quality, regularity,) Sites are carotid, brachial, femoral, posterior tibial and dorsalis pedis.
3. Assess Skin (observe for color, temperature, moisture, capillary refill < 2 seconds).
4. Assess Pupillary Reaction (observe size and reactivity to light).
5. Blood Pressure (Taken by palpation and auscultation).

APPENDIX C: ALS MEDICAL PROCEDURES / CHECKLISTS

BLOOD ALCOHOL SAMPLING

INDICATIONS:

- As requested by law enforcement.

CONTRAINDICATIONS / PRECAUTIONS:

- Do not use alcohol wipe to clean site.

EQUIPMENT NEEDED:

- Blood draw kit from law enforcement.
- IV catheter or vacutainer system.

PROCEDURE:

1. Prepare equipment.
2. Explain procedure to patient.
3. Apply constricting band or BP cuff.
4. Locate vein.
5. Clean site with betadine, not alcohol.
6. Enter vein with IV catheter or vacutainer needle.
7. Draw requested tubes from the kit.
8. Release band or cuff.
9. Hook up IV, MAP PRN or remove vacutainer needle.
10. Secure or cover site.
11. Label all tubes as directed (initials, date, time, patient's name).
12. Confirm with law enforcement procedure was done correctly, and return all items to kit.

BONE INJECTION GUN (BIG)

INDICATIONS:

- Inability to establish effective peripheral IV access after two attempts
- Age 12 years and older
- Clinical indications for emergent medication administration

CONTRAINDICATIONS / PRECAUTIONS:

- Major trauma to the lower extremity being considered for IO access
- Cellulitis or other indications of infection at or near the injection site
- Congenital bone abnormalities in the lower extremity

EQUIPMENT NEEDED:

- Three way stopcock
- 10 cc syringe
- IV solution / administration set up

PROCEDURE:

1. Connect the stopcock to the IV set infusion bag and flush
2. Identify the injection site. The flat surface of the anterior tibia 2 cm medially and 1 cm proximally to the tibial tuberosity
3. Place patient supine and carefully restrain manually
4. Prep site thoroughly with iodine solution
5. Place the blue part of the device at the above site perpendicular to the skin.
6. Hold the blue part with one hand. Squeeze and release the red safety latch at the device top with the other hand. Inject the needle. Lift up the device.
7. Pull out the trocar needle. Fix the needle with the safety latch. The needle should be firmly anchored in the bone.
8. Attempt to aspirate 0.5 – 1 ml of bone marrow. This is not always possible even if the needle position is correct.
9. Inject 10 ml of Normal Saline. The solution must flow freely.
10. Connect and affix the 3 way stopcock with the IV set.
11. Administer medication.
12. Watch for signs of extravasations into the surrounding area.

CARDIAC MONITORING

INDICATIONS:

- All ALS patients shall have their EKG rhythm monitored if indicated.

CONTRAINDICATIONS / PRECAUTIONS:

- Do not delay transport of trauma patients to attach the EKG monitor.

EQUIPMENT NEEDED:

- Monitor / defibrillator.
- 3-4 electrodes.
- Razor.

PROCEDURE:

1. Treat patient per appropriate protocol
2. Shave excessive hair on chest to maximize electrode adhesion.
3. Place electrodes on limbs (L arm, R arm, L Leg, R Leg or trunk equivalent).
4. Obtain baseline EKG tracing.
5. Interpret EKG:
 - Analyze the rate (six-second or triplicate method).
 - Analyze the rhythm (regular, irregular, pattern).
 - Analyze the P-waves (present, regular, upright or inverted?).
 - Analyze the P-R interval (normal duration 120 – 200 ms).
 - Analyze the QRS complex (normal duration 40 – 120 ms).

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

INDICATIONS

- Congestive heart failure / pulmonary edema
- Pulmonary edema secondary to near drowning
- Asthma
- COPD

CONTRAINDICATIONS / PRECAUTIONS:

- Patient less than 8 years of age
- Unable to maintain a patent airway
- Decrease level of consciousness
- Pneumothorax
- Any patient in a hypoperfusion state
- Facial Trauma / Burns
- Recent surgery to face or mouth
- Epistaxis
- Patient unable to tolerate mask or pressure

EQUIPMENT NEEDED:

- CPAP Flow generator
- CPAP Mask kit
- Adjustable CPAP / PEEP valve
- Oxygen tank
- Quick connect pigtail
- Cardiac Monitor
- SpO₂ Monitor
- EtCO₂ Monitor

PROCEDURE:

1. Assemble mask kit during morning routine or after last CPAP call. Set CPAP / PEEP valve per appropriate guideline.
2. Patient should be in an upright position
3. Assure all monitoring devices are attached
4. Connect CPAP generator to quick connect pigtail
5. Turn on oxygen tank
6. Reassure the patient and explain procedure
7. Hold the mask on the patients face, gradually creating seal.
8. When pt. tolerates mask secure head straps, ensure snug fit.
9. Monitor patient condition and vitals every 5 minutes
10. Reassess patient breathing effort
11. For COPD pt, administer IN-LINE nebulized DuoNeb / Albuterol per appropriate guideline.
12. If necessary, titrate CPAP / PEEP valve up to 10 cm/H₂O if vitals are stable and breathing difficulty has not improved
13. If SpO₂ does not increase, titrate FiO₂ to a SpO₂ of at least 90% or administer supplemental oxygen via mask port for non adjustable CPAP generators.

14. Advise receiving hospital that you are transporting a patient currently ON CPAP and assure that they will have respiratory prepared.

CRICOTHYROTOMY (SURGICAL)

INDICATIONS:

- Airway not controllable by any other means
- Severe Facial Injuries where intubation cannot be performed

CONTRAINDICATIONS / PRECAUTIONS:

- Inability to identify anatomical landmarks
- Tracheal transection
- Children under 10 years old
- Underlying anatomical abnormalities

EQUIPMENT NEEDED:

- Scalpel blade
- 5.5 to 7.0 ET cuffed tube
- Antiseptic solution
- BVM with oxygen source
- Suction device
- Bulky dressing and tape

PROCEDURE:

1. Position Patient Supine with head and neck midline in neutral position
2. Locate anatomical landmarks of the neck and identify the cricothyroid membrane
3. Make a 2-cm vertical incision in the skin with the scalpel at the level of the cricothyroid membrane
4. With the cricothyroid membrane exposed, puncture it horizontally with scalpel. Using the handle of the scalpel or forceps rotate several times to spread tissue on each side.
5. Introduce the E.T. tube through the opening approximately 1 ½ inches and inflate the cuff.
6. Ventilate with BVM and auscultate lung sounds and ensure chest rise and fall.
7. Secure the E.T. tube with appropriate device
8. Ventilate with BVM and high flow oxygen

CRICOTHYROTOMY (NEEDLE)

INDICATIONS:

- Airway not controllable by any other means
- Severe Facial Injuries where intubation cannot be performed
- Recommended cricothyrotomy technique for the pediatric patient

CONTRAINDICATIONS / PRECAUTIONS:

- Inability to identify anatomical landmarks
- Tracheal transection
- Underlying anatomical abnormalities

EQUIPMENT NEEDED:

- Towels
- 14 ga. catheter-over-needle
- 3 cc syringe
- 3 mm ET tube adapter
- Antiseptic solution
- BVM with oxygen source
- Suction device
- Bulky dressing and tape

PROCEDURE:

1. Position patient supine with a towel under the shoulders to hyperextend the neck
2. Locate anatomical landmarks of the neck and identify the cricothyroid membrane
3. Connect a 14 ga IV needle / catheter to a 3 cc syringe
4. Direct the 14 ga IV needle / catheter toward the midline, caudally and posteriorly, at a 45 degree angle.
5. Aspirate air to confirm placement in the trachea
6. Advance the catheter into the trachea, and remove needle.
7. Aspirate air to confirm placement in the trachea
8. Connect adapter from 3 mm ET tube to the IV hub
9. Attach BVM and ventilate
10. Assess lung sounds
11. Secure IV hub using dressings and tape

EKG (12 LEAD)

INDICATIONS:

- Complaints of chest pain or discomfort
- Drug overdoses
- Epigastric pain
- Unexplained diaphoresis
- Dyspnea
- Unexplained syncope
- CHF / Pulmonary Edema
- Thoracic back pain in the absence of trauma
- Dysrhythmia

CONTRAINDICATIONS:

- None.

PRECAUTIONS:

- Do not perform 12 Lead EKG until life-threatening conditions are managed.
- Do not delay transport of the cardiac patient to perform the 12 Lead EKG.

EQUIPMENT NEEDED:

- 12 Lead EKG machine.
- 10 electrodes.
- Razor.

PROCEDURE:

1. Treat patient per ACS / STEMI protocol
2. Shave excessive hair on chest to maximize electrode adhesion.
3. Place electrodes on limbs (L arm, R arm, L Leg, R leg).
4. Place electrodes on chest:
 - V1: 4th interspace right parasternal border.
 - V2: 4th interspace left parasternal border.
 - V3: Diagonally between V2 and V4.
 - V4: 5th interspace at Lt. mid-clavicular line.
 - V5: Lt. anterior-axillary line, same plane as V-4.
 - V6: Lt. mid-axillary line, same plane as V-4.
5. Perform 12 Lead EKG.
6. Interpret and/or transmit EKG:
 - ST-segment elevation of greater than 1 mm (2 mm in V-2) in two or more related leads.
 - Reciprocal changes
 - Ischemic T-wave inversion.
 - Nondiagnostic or normal EKG
 - STEMI Mimic: pericarditis or early repolarization
 - Unreadable: LBBB

Wall affected	Leads	Artery(s) involved	Reciprocal changes
Anterior	V ₂ – V ₄	Left coronary artery, Left anterior descending (LAD)	II, III, AVF
Anterolateral	I, AVL, V ₃ – V ₆	Left anterior descending (LAD) and diagonal branches, circumflex and marginal branches	II, III, AVF
Anteroseptal	V ₁ – V ₄	Left anterior descending (LAD)	
Inferior	II, III, AVF	Right coronary artery (RCA)	I, AVL
Lateral	I, AVL, V ₅ , V ₆	Circumflex branch or left coronary artery	II, III, AVF
Posterior	V ₈ , V ₉	Right coronary artery (RCA) or circumflex artery	V ₁ – V ₄ ST segment depression (R > S in V ₁ and V ₂).
Right ventricular	V _{4R}	Right coronary artery (RCA)	-----

Lead Summary

I Lateral Circumflex Artery	aVR	V1 Septal Left Anterior Descending Artery	V4 Anterior Right Coronary Artery
II Inferior Right Coronary Artery	aVL Lateral Circumflex Artery	V2 Septal Left Anterior Descending Artery	V5 Lateral Circumflex Artery
III Inferior Right Coronary Artery	AVF Inferior Right Coronary Artery	V3 Anterior Right Coronary Artery	V6 Lateral Circumflex Artery

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END –TIDAL CO₂ DETECTORS

INDICATIONS:

- Adjunct used to help verify endotracheal tube placement, by displaying either colorimetric or electronic indicators.

CONTRAINDICATIONS / PRECAUTIONS:

- Results may be affected by recent consumption of carbonated beverages (transient finding), or in cases of low cardiac output.
- Always use this device in concert with frequent reassessment of lung sounds, pulse oximetry tracking, patient color and overall condition.

EQUIPMENT NEEDED:

- CO₂ detector (BVM with colorimetric device) or
- CO₂ detector (Separate device placed between ET tube and BVM)
- Electronic CO₂ monitor (Placed between ET tube and BVM)
- Electronic CO₂ monitor by nasal cannula sampler

PROCEDURE:

1. Complete intubation procedure and initial assessment of tube placement
2. Attach CO₂ monitor between ET tube and BVM
3. Ventilate with at least 6 cleansing breaths
4. Observe for color change (purple -.03% to yellow – 5%)
5. If electronic, monitor numerical values (35-45 torr)

ENDOTRACHEAL INTUBATION

INDICATIONS:

- When a patient cannot maintain his / her own airway
- When prolonged artificial ventilations are needed

CONTRAINDICATIONS / PRECAUTIONS:

- Severe oral trauma
- Patient needs to be well oxygenated prior to intubation attempts
- In-line stabilization should be performed for suspected cervical injured patients

EQUIPMENT NEEDED:

- Proper size E.T. tube
- Laryngoscope and proper size blade
- 10 ml syringe
- Proper size stylette for E.T. tube
- Secondary confirmation device
- C-Collar
- ET tube securing device

PROCEDURE:

1. Position the head properly and remove oral / nasal airway
2. With the left hand, insert the laryngoscope blade while displacing the tongue to the left
3. Direct the blade downward until in proper position with direct visualization of the glottic opening
4. Introduce the ET tube through the right corner of the mouth and advance the cuff through the glottic opening to approximately ½ - 1 inch past the vocal cords
5. Remove stylette
6. Inflate the cuff with 1cc of air per 1mm Internal Diameter of tube and disconnect the syringe from the cuff inlet port (example: an 8.0 tube = 8 cc air in cuff)
7. Ventilate the patient with appropriate device
8. Confirm proper placement by, auscultation of lungs bilaterally and over epigastrium, chest rise / fall, appropriate color change on CO₂ device, + Capnography, visualize # on tube
9. Secure the ET tube with appropriate device

EZ-IO

INDICATIONS:

- Adult or pediatric patients in need of emergent vascular access to facilitate rapid administration of IV fluids or medications

CONTRAINDICATIONS / PRECAUTIONS:

- Ipsilateral extremity fracture.
- Previous ipsilateral orthopedic repair.
- Previous ipsilateral IO within 24 hours.
- Ipsilateral extremity infection.
- Inability to locate anatomical landmarks.

EQUIPMENT NEEDED:

- EZ-IO System.
- Appropriate IV solution.
- Lidocaine.

PROCEDURE:

1. Ensure appropriate body substance isolation.
2. Prepare EZ-IO driver and appropriate needle set EZ-IO AD for patients 40kg and greater. EZ-IO PD for patients 3 to 39kg.
3. Locate appropriate insertion site.
 - a. Proximal Tibia
 - b. Humeral head
4. Prep insertion site using aseptic technique.
5. Stabilize site and insert (drive) appropriate needle
6. Remove EZ-IO driver from needle while stabilizing catheter hub.
7. Remove stylet from catheter.
8. Connect primed EZ-Connect (IV extension)
9. Administer Lidocaine 0.25 mg/kg IO (conscious patient only)
10. Rapid bolus flush EZ-IO catheter with crystalloid solution.
11. Begin crystalloid infusion after ensuring IO patency
12. Utilize pressure for continuous infusions (pressure bags, infusion pumps, syringe bolus)
13. Dress site, secure tubing and apply EZ-IO wristband.
14. Monitor EZ-IO site and patient condition.
15. Remove EZ-IO within 24 hours of insertion.

INTRAMUSCULAR INJECTION

INDICATIONS:

- For the administration of certain medications

CONTRAINDICATIONS / PRECAUTIONS:

- Avoid accidental administration into a blood vessel by aspirating prior to injection.

EQUIPMENT NEEDED:

- Syringe, medication
- needle (21ga 1 ½")
- Alcohol swab
- Band-Aid

PROCEDURE:

1. Prepare equipment, medication to be given
2. Explain procedure to patient
3. Select proper injection site
(deltoid / dorsogleuteal / vastus lateralis)
4. Clean site with alcohol swab, starting with small circles and working into larger ones.
5. Hold skin taut
6. Puncture the skin and enter the muscle at a 90 degree angle.
7. Aspirate for blood return. (If positive, remove needle)
8. Inject medication
9. Cover with Band-Aid
10. Dispose of needle / syringe in sharps container
11. Observe for positive or untoward effects.
12. Document drug given, time given, route, effects and person administering drug.

INTRAOSSEOUS CANNULATION

INDICATIONS:

- Used when traditional peripheral venous access cannot be achieved.
- Reserved for critical patients mostly who require venous access for fluid or medication therapies.

CONTRAINDICATIONS / PRECAUTIONS:

- Fracture above the site (tibial / pelvic).

EQUIPMENT NEEDED:

- Intraosseous needle
- 10 cc syringe filled with Saline
- Alcohol or betadine pad
- IV fluid / Administration set Bulky dressings / tape / kling

PROCEDURE

1. Prepare equipment: Examine IO needle to ensure trochar is lined up with bevel. Draw up 10 ml saline in syringe.
2. Locate site. (1-3cm below and just medial to the tibial tuberosity)
3. Cleanse the area with alcohol or betadine, using antiseptic technique.
4. Support the leg by placing a towel under the knee and leg.
5. Grasp the thigh and knee above and lateral to the insertion site. Wrap the fingers and thumb around the knee to stabilize the proximal tibia. Do not allow any portion of your hand to rest behind the insertion site.
6. Insert the needle at determined site of the anteromedial aspect of the proximal tibia.
7. Penetrate the skin, and use a boring type motion to penetrate the bony cortex at a 90 degree angle, or slightly caudal.
8. Unscrew cap, remove trochar and attach 10ml syringe.
9. Flush IO needle with 10ml Saline. If resistance or tissue edema is noted, terminate procedure.
10. Remove syringe.
11. Connect IV tubing.
12. Secure IO needle with kling, gauze, and secure similar to an impaled object.
13. Continue to monitor ease of fluid infusion, as well as any changes in the soft tissue.
14. Dispose of trochar in sharps container
15. Document time, date, location, needle, person who did the procedure, and site assessment

IV ACCESS - PERIPHERAL

INDICATIONS:

- Vascular access for the administration of medications or fluids.

CONTRAINDICATIONS / PRECAUTIONS:

- Do not cannulate at or distal to fracture sites.
- Use caution when initiating IV access into feet or ankles.
- DO NOT reinsert needle into a catheter once withdrawn.

EQUIPMENT NEEDED:

- IV fluid
- Administration set
- Alcohol wipes
- Veniguard
- Gauze
- IV Catheter

PROCEDURE:

1. Explain procedure to patient.
2. Apply constricting band or BP cuff.
3. Locate vein of choice.
4. Clean site with alcohol swab using aseptic technique.
5. Stabilize vein by holding pressure distal to point of insertion.
6. Enter vein with bevel up.
7. Observe flash, advance catheter over the needle.
8. Draw blood sample.
9. Remove constricting band.
10. Remove needle, placing in sharps container. Apply pressure to proximal end of IV catheter to prevent blood return, while holding catheter hub.
11. Release constricting band.
12. Attach IV tubing to catheter, releasing pressure over IV catheter.
13. Infuse IV fluid, and observe for tissue swelling or resistance to infusion.
14. Secure site with Veniguard.
15. Set fluid rate as directed.
16. Document date, time, site, catheter size, fluid used, rate of infusion and person performing the procedure.

IV DRUG PREPARATION / ADMINISTRATION

INDICATIONS:

- For the administration of all IV medications.

CONTRAINDICATIONS / PRECAUTIONS:

- Allergic Reactions.
- Untoward Reactions (hypotension, etc. as related to each specific drug's effects).

EQUIPMENT NEEDED:

- Alcohol wipes
- Syringes / Needles / Medication
- IV Fluid

PROCEDURE:

1. Confirms: Right patient / Right drug / Right dose / Right route / Right time / Right documentation.
2. Determines allergies.
3. Verifies medication is not expired.
4. Verifies fluid is not cloudy, discolored, and box has not been tampered with.
5. Properly prepares medication.
6. Expels air from syringe.
7. Clean off injections site with alcohol wipe.
8. Insert needle, or blunt tip cannula into injection site.
9. Administer desired dose.
10. Remove syringe and disposes of properly.
11. Flush medication with 20ml of fluid (IV or bolus).
12. Monitor patient for positive or adverse effects.
13. Document name of drug given, time given, route, dose, name of person administering drug and effects of administration

MANUAL DEFIBRILLATION

INDICATIONS:

- Ventricular fibrillation or pulseless ventricular tachycardia.

CONTRAINDICATIONS / PRECAUTIONS:

- Do not shock asystole, pulseless electrical activity, or productive non-arrest rhythms.
- Remove patient from standing water and wipe water from surface of chest.
- Do not place a defibrillation paddle or electrode directly over an implanted pacemaker or defibrillator.
- Remove transdermal medication patches and wipe area clean before placing defibrillation paddles or electrodes.

EQUIPMENT NEEDED:

- EKG monitor / defibrillator.
- Electrode gel (if paddles utilized).

PROCEDURE:

1. Determine patient is unresponsive and pulseless.
2. Perform CPR until defibrillator is available.
3. Set lead select switch to “paddle” mode (or lead I, II, or III if monitor leads are used).
4. Apply conductive gel to paddles (if utilized).
5. Position paddles or patches on chest at sternum-apex.
6. Verbally and visually clear team-members, including yourself, from the patient.
7. Charge defibrillator and shock at recommended AHA guidelines. Pediatric dosage is generally 2 joules/kg initially, repeated at 4 joules/kg if required.
8. Reconfirm the rhythm prior to each shock.
9. Provide appropriate post-resuscitation support.

MEDICATION ADMINISTRATION PORT (MAP)

INDICATIONS:

- To obtain IV Access for future fluid or medication administration.

CONTRAINDICATIONS / PRECAUTIONS:

- IV at or below fracture site.

EQUIPMENT NEEDED:

- IV catheter
- Saline Lock device
- Syringe
- Saline
- Alcohol swab
- Veniguard

PROCEDURE:

1. Prepare all equipment.
2. Apply constricting band or BP cuff.
3. Locate vein of choice.
4. Clean site using aseptic technique.
5. Cannulate vein.
6. Remove constricting band and withdraw needle.
7. Attach MAP.
8. Flush with 3ml of saline via syringe or pre-filled system.
9. Observe site for swelling or increase in resistance to fluid infusion.
10. Cover site with Veniguard.
11. Dispose of needle in sharps container, syringe per SOP.
12. Document date, time, site, size, IV catheter, amount of flush and person performing procedure.

Administer all IV medication through a running IV infusion

NASOGASTRIC TUBE PLACEMENT

INDICATIONS:

- As an adjunct in gastric emptying for nonparticulate overdoses (ingestions)
- To decompress the stomach after intubation (ET, King, LMA) to reduce the possibility of aspiration

CONTRAINDICATIONS / PRECAUTIONS:

- Patient who has ingested caustic substances
- Esophageal tumors / esophageal varices
- Significant facial trauma
- Pediatric patients
- Basilar skull fractures

EQUIPMENT NEEDED:

- Double – Lumen Levin tube (proper size)
- Water-soluble lubricant
- Tape
- 50ml irrigation syringe
- Emesis basin
- Suction unit

PROCEDURE

1. Explain procedure to patient
2. Measure tube from patient's stomach to ear to the tip of the nose
3. Lubricate tip and first 2 to 3 inches of tube
4. Place patient in high Fowler's position with neck flexed forward
5. Instruct patient to sip small amounts of water and swallow on command during procedure to assist in passage of the tube
6. Insert the tube along the floor of an unobstructed nostril, choose nostril with the most open channel
7. Gently and slowly advance the tube while patient continues to swallow until the tube is at the desired level noted by the marks on tube
8. If patient begins to cough or choke stop and allow the patient to rest, if problem persists remove tube and start again
9. After tube insertion is complete, verify placement by injecting 20 to 30ml of air into the tube while auscultating the epigastric region for sounds of air movement, leave syringe attached until aspiration of stomach contents is initiated
10. Secure the tube with tape to the nose and cheek
11. Lavage stomach contents by injecting 100ml to 150ml bolus of normal saline into the tube and allow the return of gastric contents by aspiration
12. Document amount of fluid infused and returned by lavage

NEEDLE CHEST DECOMPRESSION (ANTERIOR APPROACH)

INDICATIONS:

- Tension Pneumothorax associated with closed chest trauma and the following signs and symptoms:
- Respiratory distress / anxiety or restlessness
- JVD (if not hypovolemic)
- Decreasing LOC
- Initially tachycardic, but later will be bradycardic
- Hypotension
- Tracheal deviation (very late sign)
- Absent breath sounds

CONTRAINDICATIONS / PRECAUTIONS:

- Not all signs and symptoms listed above will be present
- Must enter skin above the ribs to avoid neurovascular bundle
- Creation of a pneumothorax may occur if not already present
- Laceration of the lung is possible if poor technique is used

EQUIPMENT NEEDED:

- 10cc syringe
- ARS needle, 14 or 16ga IV catheter / minimum 2" length for adult patients. For patients smaller than adult size, use only the length of needle that is necessary to decompress the chest, usually much less than 2".

PROCEDURE:

1. Attach the needle to syringe and prep skin
2. Insert needle / syringe straight in into the second intercostal space in the midclavicular line, just above the top of the rib
3. Advance the catheter forward while applying negative pressure to the plunger until the hub of the needle is in contact with the patient's skin
4. Confirmation of tension pneumothorax will be evident by the plunger of the syringe being pushed out, or ease of pulling back on plunger
5. If confirmed, remove needle and syringe
6. If negative pressure is attained from pulling back on plunger, remove entire catheter
7. If frank blood is present when pulling back on plunger, remove entire catheter

NEEDLE CHEST DECOMPRESSION (ANTERIOR-AXILLARY APPROACH)

INDICATIONS:

- Tension Pneumothorax associated with closed chest trauma and the following signs and symptoms:
- Respiratory distress / anxiety or restlessness
- JVD (if not hypovolemic)
- Decreasing LOC
- Initially tachycardic, but later will be bradycardic
- Hypotension
- Tracheal deviation (very late sign)
- Absent breath sounds
- For use when the anterior approach is inaccessible.

CONTRAINDICATIONS / PRECAUTIONS:

- Not all signs and symptoms listed above will be present
- Must enter skin above the ribs to avoid neurovascular bundle
- Creation of a pneumothorax may occur if not already present
- Laceration of the lung is possible if poor technique is used

EQUIPMENT NEEDED:

- 10cc syringe
- ARS needle, 14 or 16ga IV catheter / minimum 2" length for adult patients. For patients smaller than adult size, use only the length of needle that is necessary to decompress the chest, usually much less than 2".

PROCEDURE:

1. Attach the needle to syringe and prep skin
2. Insert needle / syringe straight in into the fourth intercostal space in the mid-axillary line, just above the top of the rib (in line with the nipple)
3. Advance the catheter forward while applying negative pressure to the plunger until the hub of the needle is in contact with the patient's skin
4. Confirmation of tension pneumothorax will be evident by the plunger of the syringe being pushed out, or ease of pulling back on plunger
5. If confirmed, remove needle and syringe
6. If negative pressure is attained from pulling back on plunger, remove entire catheter
7. If frank blood is present when pulling back on plunger, remove entire catheter

PERICARDIOCENTESIS

INDICATIONS:

- When a Cardiac Tamponade represents an immediate threat to life including:
- Cardiac arrest (most often with PEA)
- Shock or severe cardiovascular collapse
- Look for Jugular vein distention, muffled heart sounds and hypotension (Beck's Triad)
- An elevated Central Venous Pressure is the single best way to distinguish pericardial tamponade from hemorrhagic shock

CONTRAINDICATIONS / PRECAUTIONS:

- Beck's Triad is only present in 30% of patients with Pericardial Tamponade
- Watch for re-developing signs / symptoms and repeat procedure as necessary

EQUIPMENT NEEDED:

- 60cc syringe
- 18 ga X 3 ½" spinal needle

PROCEDURE:

1. Attach the syringe and needle
2. Locate the xiphoid process
3. Insert the needle just to the left of the patient's xiphoid and inferior to the left rib
4. At a 45° angle to the patient, advance the syringe and needle slowly, aiming toward the patient's left mid-clavicle
5. While advancing slowly, apply negative pressure to the syringe
6. Once fluid is encountered, stop advancing the needle and continue aspirating
7. Aspirate up to 60cc, then remove needle and syringe
8. Reassess for improvement
9. Repeat process as necessary

RAD-57 PULSE CO-OXIMETER

INDICATIONS:

- Continuous noninvasive monitoring of:
- Oxygen saturation of arterial hemoglobin (SpO₂)
- Pulse rate
- Carbon Monoxide concentration in arterial blood (SpCO)
- Carboxyhemoglobin saturation (SpMet)
- Methemoglobin concentration in arterial blood (SpMet)

CONTRAINDICATIONS / PRECAUTIONS:

- If low perfusion indication is frequently displayed, find a better perfused monitoring site
- Elevated levels of Carboxyhemoglobin (COHb) may lead to inaccurate SpO₂ measurements
- Elevated levels of Methemoglobin (MetHb) will lead to inaccurate SpO₂ measurements

EQUIPMENT NEEDED:

- RAD-57 monitor
- Sensor

PROCEDURE:

1. Place sensor on non-dominant ring finger of patient
2. Press the Power button to turn the oximeter on
3. Verify all front-panel indicators momentarily illuminate and an audible tone is heard
4. Monitor the patient
5. To turn off, press and hold the Power On/Off button for 2 seconds

SUBCUTANEOUS MEDICATION ADMINISTRATION

INDICATIONS:

- For the administration of certain medications.

PRECAUTIONS:

- Avoid accidental administration into a blood vessel by aspirating prior to injection.

EQUIPMENT NEEDED:

- Syringe, medication
- Needle (23-25ga ½" - 5/8")
- Alcohol swab

PROCEDURE:

1. Prepare equipment, medication to be given.
2. Explain procedure to patient.
3. Select proper injection site (Deltoid, anteroproximal aspect of quadriceps, back or abdomen).
4. Clean site with alcohol swab using aseptic technique.
5. Elevate the SQ tissue by pinching the injection site.
6. With bevel up, insert the needle at a 45 degree angle.
7. Aspirate for blood return. If positive, remove needle.
8. Inject medication.
9. Massage site with alcohol swab.
10. Dispose of needle / syringe in sharps container.
11. Observe for positive or untoward effects.
12. Document drug given, time given, route, effects and person administering drug.

SYNCHRONIZED CARDIOVERSION

INDICATIONS:

- Tachycardia with serious signs and symptoms related to the tachycardia.

PRECAUTIONS:

- Cardioversion is generally unnecessary for heart rates <150 bpm.
- If delays in cardioversion occur and clinical conditions are critical, proceed with immediate unsynchronized defibrillation.

EQUIPMENT NEEDED:

- BSI
- EKG monitor / defibrillator
- Electrode gel
- Peripheral IV supplies

PROCEDURE:

1. Take B.S.I. precautions
2. Obtain vital signs and assess patient condition.
3. Place patient on high flow oxygen.
4. Identify rhythm on the cardiac monitor.
5. Insert peripheral IV as soon as possible
6. Identify and treat underlying causes of tachycardia prior to cardioversion
7. Premedicate whenever possible
(Valium 5-10 mg IV or Versed 2-5 mg IV)
8. Turn on the synchronizer switch and verify that the monitor is detecting the R waves.
9. Press and hold the discharge buttons until the defibrillator discharges on the next R wave.
10. Cardiovert (synchronized)
50j, 75j, 120j, 150j, 200j – Biphasic
11. Ensure synchronizer is enabled prior to each shock.
(Varies with each monitor / defibrillator manufacturer)

TRANSCUTANEOUS PACING

INDICATIONS:

- May be used for all symptomatic bradycardias.

CONTRAINDICATIONS:

- Do not pace patients with severe hypothermia.
- Asystolic cardiac arrest for greater than 20 minutes.

EQUIPMENT NEEDED:

- EKG monitor / defibrillator / pacer
- Peripheral IV supplies.

PROCEDURE:

1. Treat patient per Bradycardia Protocol.
2. Identify rhythm on the cardiac monitor.
3. Insert peripheral IV as soon as possible
4. If patient is conscious and aware of situation during pacing, administer Valium 5-10 mg IV or Versed 2-5 mg IV. Refer to Conscious Sedation Protocol.
5. Apply pacing electrodes.
6. Set the pacemaker to 80 beats per minute.
7. Set the output setting to 0.
8. Turn on the pacer.
9. Slowly increase the output until ventricular capture is detected.
10. Reassess the vital signs. Adjust the rate and amperage as necessary to maintain perfusion.

NERVE STIMULATION

INDICATIONS:

- Vagal maneuvers increase vagal nerve stimulation and can slow an SVT and even convert it to a normal sinus rhythm.

CONTRAINDICATIONS:

- Carotid sinus massage contraindicated in those with suspected carotid atherosclerosis, including those of late middle age and the elderly.
- Never attempt simultaneous bilateral carotid sinus massage.
- Ocular pressure is contraindicated.

EQUIPMENT NEEDED:

- EKG monitor / defibrillator.

PROCEDURE:VALSALVA

1. Treat patient per Tachycardia Protocol.
2. Identify rhythm on the cardiac monitor.
3. Monitor the EKG and obtain a continuous readout. Terminate valsalva at the first sign or slowing or heart block.
4. Instruct patient to bear down, as if attempting to have a bowel movement, or cough forcefully.

CAROTID SINUS MASSAGE

1. Treat patient per Tachycardia Protocol.
2. Identify rhythm on the cardiac monitor.
3. Position patient supine, slightly hyperextending the head
4. Gently palpate each carotid pulse separately. Auscultate each side for carotid bruits. Do not attempt carotid sinus massage if the pulse is diminished or if carotid bruits are present.
5. Monitor the EKG and obtain a continuous readout. Terminate massage at the first sign or slowing or heart block.
6. Tilt the patient's head to either side. Place your index and middle finger over one artery, below the angle of the jaw and as high up on the neck as possible.
7. Firmly massage the artery by pressing it against the vertebral body and rubbing.
8. Maintain pressure for no longer than 5-10 seconds.
9. If the massage is ineffective, you may repeat it, preferably on the other side of the patient's neck.

VENOUS CATHETERIZATION (MEDIPOINT)

INDICATIONS:

- Access of an existing venous catheter for medication or fluid administration when no other access sites are available.

CONTRAINDICATIONS:

- Do not use with patients showing signs or symptoms of infection at the insertion site.

PRECAUTIONS:

- Always maintain universal precautions and utilize aseptic technique throughout insertion and maintenance procedures.

EQUIPMENT NEEDED:

- Facemask
- Gloves
- Betadine swab
- 20 ga infusion set (Adult patients)
- 22 ga infusion set (Pediatric patients)
- 10 cc syringe with saline

PROCEDURE:

1. Prepare all equipment.
2. Don appropriate PPE.
3. Cleanse area around port, using standard invasive procedures preparation technique.
4. Insert needle at 90 degrees to the port.
5. Advance needle until it contacts the bottom of the port reservoir.
6. Aspirate 3-5 cc of blood to confirm proper placement
7. Flush needle with 10 cc of saline, observing for swelling and resistance. ** If there is any evidence of infiltration, pain, clotting or resistance during infusion, do not use the needle.
8. Secure device using Veniguard
9. Administer medication / fluids slowly, observing for any signs of infiltration.
10. Record procedure, any complications, fluid or medications administered on the Patient Care Report.

APPENDIX D: Forms

ADVANCED STROKE TRIAGE FORM

Date: _____ Time: _____ Unit# _____ Incident Number _____ Sex: Male Female

Patients Name: _____ Age: _____

Event Witness Name: _____ Cell #: _____ Home# _____

Closest Relative: _____ Cell #: _____ Home# _____
(If Different From Above)

Cincinnati Stroke Scale (FAST)		L.A. Motor
Check if abnormal	Stroke Alert Determination	Score
<input type="checkbox"/> Face:	<u>Have patient smile/show teeth;. Look for asymmetry or facial droop</u> Normal: Both sides of the face move equally or not at all Abnormal: One side of the face droops	0 1
<input type="checkbox"/> Arm:	<u>Motor weakness; close eyes, and extend arms with palms up.</u> Normal: Arms stay equally extended, and drift down equally Abnormal: One arm drifts down when compared to the other Severely Abnormal: One arm falls, or no effort at on one side	0 1 2
<input type="checkbox"/> Speech:	<u>"You can't teach an old dog new tricks"</u> Normal: Repeats the phrase clearly and correctly Abnormal: Difficulty speaking or understanding	
	Grip Strength: <u>Grip both hands, and have patient squeeze</u> Normal Grip Weak Grip No Grip	0 1 2
Time:	Time last seen Normal: _____	Total L.A.M.S. Score: _____

If any box above (FAST) is checked, this patient is a possible Stroke Alert; Move to SECTION 1

SECTION 1: CHECK ALL APPROPRIATE BOXES

<input type="checkbox"/>	Time last seen normal is greater than 12 hours.
<input type="checkbox"/>	Resolution of Stroke symptoms prior to arrival at E.D. (TIA)
<input type="checkbox"/>	Glucose less than 60 and symptoms improve with administration of D50.



Are any items in **Section 1** checked?

YES: Patient **is not** a Stroke Alert. TRANSPORT TO THE NEAREST STROKE CENTER.

NO: Proceed to **Section 2**; THIS IS A STROKE ALERT.

SECTION 2:



Is the patient permanently bed or wheelchair confined, do they require **constant** care OR is assistance **essential** for activities of daily living **prior to today's event**?

YES: TRANSPORT TO THE NEAREST STROKE CENTER (call a Stroke Alert)

NO: Proceed to **Section 3**.

SECTION 3: L.A.M.S. Score



- Score 3-5
- Score 0-2

Proceed to **Section 4**

TRANSPORT TO NEAREST STROKE CENTER (call Stroke Alert)

Continued next page

SECTION 4: Use ONLY if L.A.M.S. score is 3-5

<input type="checkbox"/>	Estimated arrival at Emergency Department is greater than 3.5 hours since last seen normal.
<input type="checkbox"/>	Seizure (at onset)
<input type="checkbox"/>	Patient is on any of the following blood thinners: Coumadin (Warfarin), Pradaxa (Dabigatran), Brilinta (Ticagrelor), Xarelto (rivaroxaban), Lovenox (Anoxaparan), or Fragmin (Dalteparin)
<input type="checkbox"/>	Recent (within 14 days) or current bleeding, trauma, surgery, or invasive procedure.
<input type="checkbox"/>	Bleeding/Clotting disorders (history of GI/GU bleeding within last 21 days)
<input type="checkbox"/>	Pregnancy or completion/termination of pregnancy less than 30 days
<input type="checkbox"/>	Intracranial pathology (Tumor, aneurysm, arteriovenous malformation (AVM) intracranial hemorrhage)
<input type="checkbox"/>	Sudden onset of worst headache ever, with associated neck stiffness



Are any items in **Section 4** checked?

YES: TRANSPORT TO A COMPREHENSIVE STROKE CENTER (callStroke Alert)

NO: TRANSPORT TO NEAREST STROKE CENTER (Call a Stroke Alert)

RYAN WHITE

RYAN WHITE/PUBLIC SAFETY EXPOSURE REPORT FORM

****RESPONDER SECTION****

Exposed Employee Information:

Name: _____ ID: _____

Soc. Sec. #: _____ Phone (H): _____ (C) _____

Home Address: _____ Phone (W): _____

City: _____ State: _____ Zip: _____

Emergency Worker Category: EMS _____ Firefighter _____ Law Enforcement _____ Other _____

Incident Information:

Agency: _____ Run #: _____ Shift: _____

Incident Location: _____

Type of Incident (e.g. auto accident, trauma, etc.): _____

Exposure Incident Description:

Date of Exposure: _____ Time of Exposure: _____

1. What was the method of contact? Aerosol: _____ Droplet: _____ Blood: _____ Other: _____
 _____ Needle stick with contaminated needle (Describe)
 _____ Blood or body fluids into natural body openings (e.g. nose, mouth, eye)
 _____ Blood or body fluids into wound, sores, or rashes that are: ___ <24hrs or ___ >24hrs old
 _____ Contaminated sharp object
 _____ Other (please specify): _____

2. Disease possibly exposed to:
 HIV: _____ Hepatitis: _____ Rabies: _____ TB* _____
 Meningococcal Infections: _____ Other: _____ Unknown _____

3. How did the exposure occur? (Be specific): _____

4. What immediate action was taken in response to the exposure to remove the contamination? (e.g. hand washing): _____

5. What universal precautions were being taken at the time of exposure? _____

6. Is it possible that you could be pregnant? Yes _____ No _____ N/A _____

Responder Name: (Print) _____ (Sign) _____

*(There is no need to go to a hospital for suspected TB exposure incident.)

PINK – EMPLOYEE

YELLOW – MEDICAL FACILITY

WHITE – DESIGNATED OFFICER

****SHIFT SUPERVISOR SECTION****

1. Assure exposed responder and this form are delivered to the hospital where the source patient was transported.
 Name of facility: _____ Date: _____ Time: _____
 Charge Nurse Name: _____ Charge Nurse Signature _____

2. Department Designated Officer and Physician Contact Information:
 Name: _____
 Phone: _____ Infection Control Physician

3. When was the Department Designated Officer contacted? _____
 Date: _____ Time: _____ Person Contacted: _____
 Shift Supervisor Name: (Print) _____ (Sign) _____
 Date: _____ Shift Supervisor Contact Information: _____

****MEDICAL FACILITY SECTION****

Source Patient's Identification #: _____
 Findings: Disease Identified: Yes _____ No _____
 When were results reported to Agency Designated Officer listed in section above? _____
 When were results reported to LCERA infection control physician _____
 Recommendations Given: _____

 Medical Facility Representative Name: (Print) _____ (Sign) _____
 Date: _____ Medical Facility Contact Information: _____

****DEPARTMENT DESIGNATED OFFICER SECTION****

Follow up: _____

Referral to: _____
 Department Designated Officer Name: (Print) _____ (Sign) _____
 Date: _____ Designated Officer Contact Information: _____

PINK – EMPLOYEE

YELLOW – MEDICAL FACILITY

WHITE – DESIGNATED OFFICER

RYAN WHITE/PUBLIC SAFETY EXPOSURE REPORT FORM

TERMINOLOGY: (From OSHA)

Exposure Incident

An exposure incident is a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or other potentially infectious materials that results from the performance of an employee's duties.

- "Non-intact skin" includes skin with dermatitis, hangnails, cuts, abrasions, chafing, acne, etc.
- "Parenteral" includes human bites that break the skin

Other Potentially Infectious Materials (OPIM)

Materials other than human blood are potentially infectious for bloodborne pathogens. These include 1) the following human body fluids: semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids or 2) any unfixed tissue or organ (other than intact skin) from a human (living or dead).

INSTRUCTIONS: POST-EXPOSURE INCIDENT RESPONSIBILITIES

Emergency Response Employee

1. Immediately wash and decontaminate affected area.
2. Notify your shift supervisor as soon as decontamination is completed. If necessary, have another employee do this.
3. Complete the RESPONDER SECTION of this form.
4. As directed by your shift supervisor:
 - a. Sign in at Emergency Room of the hospital to which source individual was transported. If possible, you should ride in the ambulance with the source patient to the Emergency Room.
 - b. Assure delivery of this Lee County Ryan White / Public Safety Exposure Report form to the charge nurse at the emergency room the source patient was transported.
5. Retain employee copy of the Lee County Ryan White / Public Safety Exposure Report form.
6. Employees who decline treatment and / or Post Exposure Prophylaxis (PEP) must sign a PEP DECLINATION FORM. This form shall be forwarded with this report form to the Agency's Designated Officer.

Responsibilities of the Shift Supervisor

1. Confirm an *exposure incident* has occurred as defined above.
2. Accompany employee to designated treatment hospital if possible.
3. Assist employee with completing Lee County Ryan White/Public Safety Exposure Report form as necessary.
4. Obtain this form from the employee and complete the SHIFT SUPERVISOR SECTION.
5. Contact Infection Control Physician.
6. Notify DO within 48 hours of occurrence.

Responsibilities of the Health Care Provider / Facility

1. Follow protocols, policies and procedures for any emergent treatment necessary.
2. Complete the MEDICAL FACILITY SECTION of this form.
3. Assure that source patient blood is tested for infectious disease in accordance with Florida Statute Chapter 381.004 and the Ryan White, HIV/AIDS Treatment Extension Act of 2009 Part G.
4. Provide neutral counseling to advise employee of risks and benefits associated with any and all treatments, including drug toxicities and uncertain outcome of PEP.
5. Forward appropriate source patient blood results to LCERA Infection Control Physician.
6. Notify the respective LCERA Designated Officer whether the patient tested positive or negative for any of the diseases tested.

Revised: 09/20/2010

LEE COUNTY COMMON INCIDENT REHAB WORKSHEET

Lee County Common Incident Rehab Worksheet

INCIDENT LOCATION: _____ INCIDENT NUMBER: _____ DATE: _____

Name							
Assigned Unit							
Initial Evaluation Time							
Blood Pressure							
Pulse Rate							
Respirations							
Temperature [tympanic] [core] [oral] Circle							
SpO2 Level							
SpCO Level**							
SpMet Level**							
Injuries	Y N	Y N	Y N	Y N	Y N	Y N	Y N
C/O illness	Y N	Y N	Y N	Y N	Y N	Y N	Y N
FF Hydrated?	Y N	Y N	Y N	Y N	Y N	Y N	Y N
Treatment Given*	Y N	Y N	Y N	Y N	Y N	Y N	Y N
2nd Eval. Time (10 minutes from Initial)							
Blood Pressure							
Pulse Rate							
Respirations							
Tympanic Temp.							
SpO2 Level							
SpCO Level**							
SpMet Level**							
3rd Eval. Time (20 minutes from Initial)							
Blood Pressure							
Pulse Rate							
Respirations							
Tympanic Temp.							
SpO2 Level							
SpCO Level**							
SpMet Level**							
Return to Work Time							
[Initials of IC refusing recommendations]							

*If Medical Tx given see Patient Care Report
 **If Equipment Available

- Symptoms Requiring Transport to ER**

 - Chest Pain
 - SOB
 - Dizziness
 - Altered Mental Status
 - Nausea

Parameters that must be met to be released
 Temperature: ≤100.8°F
 Heart Rate: <100bpm
 Respiratory Rate: Between 12-20/min
 Blood Pressure: Systolic <160 and Diastolic <100
 Pulse Oximetry (SpO2): >91% on room air
 CO Levels (SpCO): <10% of baseline

Any signs or symptoms outside these parameters shall be sent to Treatment Area

*****NO PERSON SHOULD BE RELEASED FROM REHAB UNTIL CLEARED BY THE REHAB OFFICER**

* As Incident Commander I am overriding the recommendations made by the Rehab Officer by initialling above and taking full responsibility of my actions by signing here: _____ print: _____

Rehab Officer: (Print) _____ (Signature) _____ Page ___ of ___

LEE COUNTY SCHOOL TRANSPORTATION ACCIDENT STUDENT RESPONSIBILITY AFFIDAVIT

Agency _____ PCR/RUN # _____ Date _____

School _____ Bus # _____

The students listed below have been evaluated by Emergency Responders and it has been determined that no complaints or injuries were found present at the time of exam, thus the need for transport to an Emergency Department by ambulance was deemed unnecessary.

The below signed takes legal custody of students listed below and hereby releases and holds harmless Emergency Medical Service (EMS), The EMS Care Providers, The EMS Medical Director(s), the responding Lee County Fire/Rescue Districts(s), the Lee County Board of County Commissioners, the City of Cape Coral, the City of Ft. Myers, and the Medical Control Physician(s) from any liability for any medical consequences, which may result in any way related to the non-transport of listed students.

1.	21.
2.	22.
3.	23.
4.	24.
5.	25.
6.	26.
7.	27.
8.	28.
9.	29.
10.	30.
11.	31.
12.	32.
13.	33.
14.	34.
15.	35.
16.	36.
17.	37.
18.	38.
19.	39.
20.	40.

SCHOOL BOARD REPRESENTATIVE	RESCUE SERVICE REPRESENTATIVE
Printed Name _____	Witness _____
Signature _____	Signature _____

LEE COUNTY EMS TRAUMA TRANSPORT PROTOCOL

DISPATCH PROCEDURES

- A. Upon receipt of any call for help that is determined to be trauma related, the Communications Operator shall solicit the following information from the caller:
1. Approximate number of patient(s) involved.
 2. The location of the injured patient(s).
 3. The extent and severity of the patient(s) injuries.
 4. The patient(s) apparent state of consciousness.
 5. The type of traumatic incident, with particular regard to the possible mechanism of injury (i.e., car vs. car, car vs. tree, explosion, gunshot, fire, etc.).
- B. The Communications Operator will then dispatch the closest EMS unit along with the nearest fire department (FD) response unit to the location of the incident. The closest responding units will be determined by utilizing information derived from Lee County's Enhanced 911 /Computer- Aided Dispatch System.
- C. The Lee County EMS air medical asset may be sent as an initial response ALS unit to trauma patients in remote or inaccessible areas of Lee County. These areas are determined by the information provided by the Enhanced 911 and CAD Systems at the Communications Center. Ground ALS units will be sent to all trauma calls (except as previously mentioned). Lee County EMS personnel on the scene of any trauma call, may request the helicopter, when air transport would be the quickest means for the trauma patient to arrive at the trauma center.
- D. The first ALS unit arriving on scene of a trauma related incident would then advise Communications of the severity of the situation. If it is determined that it is a multi-casualty incident, (MCI = 5 or more patients) additional ALS units and an EMS Supervisor will be dispatched to the scene. Any additional requests for EMS resources will be determined by the on-scene EMS Incident Commander.
1. Should on scene personnel (lead paramedic, incident command, etc.) recognize a need for other emergency agencies (e.g. law enforcement, fire, additional EMS, air transport, or air support) they shall notify dispatch immediately. On scene personnel must identify the resources or agencies needed and the specific amount of personnel, equipment, etc. required. The communications center shall dispatch or make contact with the appropriate services (mutual aid/automatic aid). A contact

list of all available emergency services is maintained and available through the Lee County Public Safety Communications Center.

- E. Other emergency response agencies that may be on-scene prior to EMS (e.g., Fire Department / Law Enforcement First Responders) should relay requests for additional resources through their respective On-Scene Officer / Incident Commander. The Officer/Incident Commander shall contact their Communications Operator who will place an automated ring down call to Lee Control (EMS Dispatch Center).

TRAUMA PATIENT ASSESSMENT (ADULT AND PEDIATRIC)

Triage

- A. Upon arrival at the location of a trauma related incident, the EMS team will assure that each injured person (adult or pediatric) is medically assessed under the guidelines of the Lee County protocol and insure transport to the closest State Approved Trauma Center (S.A.T.C.).

- B. For each injured adult patient (16 years of age or older), the EMS team will
 - 1. Assess the condition, determine the vital signs, and determine the Glasgow Coma Scale score.

 - 2. Assess the patient's condition and determine whether or not the patient meets the criteria listed on Attachment A (Adult Trauma Triage Criteria & Methodology).

 - 3. If the patient meets one or more of the stated criteria on Attachment A, they will identify the trauma patient as a *TRAUMA ALERT PATIENT*.

- C. For each injured pediatric patient (15 years of age or younger), the EMS team will
 - 1. Assess the condition, determine the vital signs, and determine the Glasgow Coma Scale score.

 - 2. Assess the patient's condition and determine whether or not the patient meets the criteria listed on Attachment B (Pediatric Trauma Scorecard Methodology).

 - 3. If the patient meets one or more of the stated criteria on Attachment B, they will identify the trauma patient as a *TRAUMA ALERT PATIENT*.

- D. If the condition(s) of the patient(s) exceed the resources of the EMS personnel on scene, then a request for additional assistance should be made through Lee Control. The Communications Operator will dispatch the most appropriate ALS unit (air or ground) to the scene of the incident.

TRAUMA DESTINATION REQUIREMENTS / TRAUMA TRANSPORT DESTINATION CRITERIA

Lee Memorial Hospital – Level II Trauma Center
2776 Cleveland Avenue
Ft. Myers, Fl. 33901

- A. Lee Memorial Hospital - Lee Memorial Health System is the closest designated and state approved trauma center for Lee County. Lee Memorial Hospital - Lee Memorial Health System is a Level II state approved trauma center. All *TRAUMA ALERT* patient(s) adult and pediatric will be transported there unless exceptions exists as noted below.
- B. Obstetrical Trauma Alert patients who are at risk for fetal distress shall be transported to Lee Memorial Hospital – Lee Memorial Health System
- C. Exceptions to transporting the *TRAUMA ALERT* patient(s) to Lee Memorial Hospital - Lee Memorial Health System would be:
 - 1. Patient in cardiac arrest with all control measures in place.
 - 2. EMS crew is unable to achieve control measures and the patient will succumb to their injuries without such measures being in place before reaching the trauma center.
 - 3. A (closer) hospital is contacted on telemetry and agrees to assist with these control measures before continuing to transport to the trauma center (Lee Memorial Hospital - Lee Memorial Health System).
 - 4. If Lee Memorial Hospital – Lee Memorial Health System. is temporarily unable to provide adequate trauma care to the *Trauma Alert Patient(s)* the EMS Team may determine to transport the patient(s) to a capable hospital closest to the scene of the traumatic incident. This hospital must be contacted prior to transport and confirm that they are equipped and capable to handle the *TRAUMA ALERT* patient(s).

Other Lee County, Florida Hospitals:

Cape Coral Hospital - Lee Memorial Health System
636 Del Prado Boulevard
Cape Coral, FL 33990

Gulf Coast Medical Center - Lee Memorial Health System
13681 Doctor's Way
Fort Myers, FL 33912

Lehigh Regional Medical Center
1500 Lee Boulevard
Lehigh Acres, FL 33936

Health Park Medical Center - Lee Memorial Health System
9981 Health Park Circle
Fort Myers, FL 33908

NOTE:

All deviations or diversions are to be documented, in their entirety on the corresponding Patient Care Report (PCR) in accordance with the F.A.C. 64J - 2.

TRANSFER OF PATIENT CARE INFORMATION / DOCUMENTATION OF THE TRAUMA CALL

- A. The EMS provider responsible for the patient shall ensure that a prehospital trauma alert is issued upon determining that a trauma patient meets the requirements of Rules 64J-2.004 and 64J-2.005, F.A.C. The words “trauma alert” shall be used when notifying the trauma center, or hospital that EMS is en route with a trauma alert patient. The EMS provider issuing the trauma alert shall also provide the trauma center or hospital with information required under subsection 64J-1.014(5), F.A.C., and the information listed below at the time the patient is transferred to the personnel of the receiving trauma center or hospital:
1. Time of injury if different from the time of the call;
 2. Date of injury if different from day of call;
 3. County of injury;
 4. County of residence of patient;
 5. Cause of injury;
 6. Injury site/type;
 7. Trauma alert criteria if met as defined in Rule 64J-2.004 or 64J-2.005, F.A.C., and
 8. Protective devices if motor vehicle crash, bicycle or marine crash.
- B. The information listed above shall be documented on the patient care record of the transporting unit that delivered the patient in accordance with the requirements of Rule 64J-1.001(18) and 64J-1.014, F.A.C.
- C. Every patient who sustains blunt or penetrating trauma and is transported shall have a Lee County EMS Patient Care Report (PCR) completed in accordance with Lee County EMS Guidelines/Protocol, standard operating guidelines/procedures, and the F.A.C. 64J-2. Each completed PCR shall be delivered with the patient at time of disposition.
- D. Any trauma patient who is pronounced dead on scene shall have a PCR completed by one of the EMS crewmembers or Supervisor. These PCRs are to be completed in accordance with the PCR manual/document and subsequent memoranda. These PCRs are to be provided to the administrative office for processing. Copies of these PCRs may be given to on-scene investigators in accordance with Lee County EMS standard operating guidelines/procedures.

NOTE:

Lee County EMS utilizes an electronic patient care reporting system. Our current receiving facilities have access to obtain and review the patient care report including the trauma alert criteria score sheet from the system. Procedures are in place and alternative mechanisms available to Lee County EMS providers to ensure continuity of care during unforeseen occurrences.

EMERGENCY INTER-FACILITY TRANSFERS

- A. If an Inter-facility transfer for established *Trauma Alert Patient(s)* becomes necessary and is requested by a medical facility within Lee County, the closest EMS ambulance will be dispatched for transport of the patient(s).
- B. Hendry, Glades, Collier or Charlotte County EMS may request the use of the Lee County EMS air medical asset for the transport of trauma alert patients to the trauma center in Lee County. The Lee County EMS air medical asset will be available for the transport of Trauma Alert patients when such transport will not compromise the fulfillment of the helicopter's primary responsibility to the patients of Lee County.
- C. Certain patients transported to the trauma center will require rapid stabilization and transport to a specialized care hospital outside Lee County. Lee County EMS will assist in facilitating this transfer through the use of appropriate transport mechanism (ground or air).

MEDICAL DIRECTOR APPROVAL/ATTESTATION

TRAUMA TRANSPORT PROTOCOLS
MEDICAL DIRECTOR APPROVAL

I, Joseph D. Lemmons, DO, FACOEP, Pre-hospital Medical Director for Lee County Emergency Medical Services certify to the Division of Emergency Medical Operations that I have reviewed and approve the trauma transport protocols dated February 1, 2014.

_____ ON FILE _____
Signature, Lee County EMS Medical Director

Date

Adult Trauma Triage Criteria & Methodology

The EMT or paramedic shall assess the condition of those injured persons with anatomical and physiological characteristics of a person sixteen (16) years of age or older for the presence of at least one of the following four (4) criteria to determine whether to transport as a trauma alert. These four criteria are to be applied in the order listed, and once any one criterion is met that identifies the patient as a trauma alert; no further assessment is required to determine the transport destination.

Criteria:		
<input type="checkbox"/>	1. Meets color-coded triage system (see below)	
<input type="checkbox"/>	2. GCS \leq 12 (Patient must be evaluated via GCS if not identified as a trauma alert after application of criterion 1.)	
<input type="checkbox"/>	3. Meets local criteria (specify): _____	
<input type="checkbox"/>	4. Patient does not meet any of the trauma criteria listed above but, in the judgement of the EMT or paramedic, should be transported as a trauma alert (document) _____	

COMPONENT		
AIRWAY	RESPIRATORY RATE OF 30 or GREATER <input type="checkbox"/> B	ACTIVE AIRWAY ASSISTANCE ¹ <input type="checkbox"/> R
CIRCULATION	SUSTAINED HR OF 120 BEATS PER MINUTE or GREATER <input type="checkbox"/> B	LACK OF RADIAL PULSE WITH SUSTAINED HEART RATE (>120) or BP <90 mmHg <input type="checkbox"/> R
BEST MOTOR RESPONSE	BMR =5 <input type="checkbox"/> B	BMR = 4 or LESS or PRESENCE OF PARALYSIS, or SUSPICION OF SPINAL CORD INJURY or LOSS OF SENSATION <input type="checkbox"/> R
CUTANEOUS	SOFT TISSUE LOSS ² or GSW TO THE EXTREMITIES <input type="checkbox"/> B	2ND OR 3RD ⁰ BURNS TO 15% or MORE TBSA or AMPUTATION PROXIMAL TO THE WRIST or ANKLE or ANY PENETRATING INJURY TO HEAD, NECK, or TORSO ³ <input type="checkbox"/> R
LONGBONE FRACTURE⁴	SINGLE FX SITE DUE TO MVA or FALL 10' or MORE <input type="checkbox"/> B	FRACTURE OF TWO or MORE LONGBONES <input type="checkbox"/> R
AGE	55 YEARS or OLDER <input type="checkbox"/> B	
MECHANISM OF INJURY	EJECTION FROM VEHICLE ⁵ or DEFORMED STEERING WHEEL ⁶ <input type="checkbox"/> B	

■ R = any **one (1)** - transport as a trauma alert ■ B = any **two (2)** - transport as a trauma alert

1. Airway assistance beyond administration of oxygen
2. Major degloving injuries, or major flap avulsion (>5 in.)
3. Excluding superficial wounds in which the depth of the wound can be determined
4. Longbone (Including humerus, (radius, ulna), femur, (tibia or fibula).
5. Excluding motorcycle, moped, all terrain vehicle, bicycle, or open body of a pickup truck
6. Only applies to driver of vehicle)

12/4/2002

Pediatric Trauma Scorecard Methodology

The EMT or Paramedic shall assess the condition of those injured individuals with anatomical and physical characteristics of a person fifteen (15) years of age or younger for the presence of one or more of the following three (3) criteria to determine the transport destination per 64E-2.001, Florida Administrative Code, (F.A.C.):

- 1) Pediatric Trauma Triage Checklist: The individual is assessed based on each of the six (6) physiologic components listed below (left column). The single, most appropriate criterion for each component is selected (along the row to the right). Refer to the color-coding of each criteria and legend below to determine the transport destination:

COMPONENT			
SIZE	> 20 Kg (44+ lbs.) <input type="checkbox"/> G	>11-20 Kg (24-44 lbs.) <input type="checkbox"/> G	WEIGHT ≤ 11 Kg or LENGTH ≤ 33 INCHES ON A PEDIATRIC LENGTH AND WEIGHT EMERGENCY TAPE <input type="checkbox"/> B
AIRWAY	NORMAL <input type="checkbox"/> G	SUPPLEMENTED O ₂ <input type="checkbox"/> G	ASSISTED or INTUBATED (1) <input type="checkbox"/> R
CONSCIOUSNESS	AWAKE <input type="checkbox"/> G	AMNESIA or LOSS OF CONSCIOUSNESS <input type="checkbox"/> B	ALTERED MENTAL STATUS (2) or COMA or PRESENCE OF PARALYSIS or SUSPICION OF SPINAL CORD INJURY or LOSS OF SENSATION <input type="checkbox"/> R
CIRCULATION	GOOD PERIPHERAL PULSES; SBP > 90 mmHg <input type="checkbox"/> G	CAROTID or FEMORAL PULSES PALPABLE, BUT THE RADIAL OR PEDAL PULSE NOT PALPABLE or SBP < 90-mmHg <input type="checkbox"/> B	FAINT OR NON-PALPABLE CAROTID OR FEMORAL PULSE or SBP < 50 mmHg <input type="checkbox"/> R
FRACTURE	NONE SEEN or SUSPECTED <input type="checkbox"/> G	SINGLE CLOSED LONG BONE (3) FRACTURE (4) <input type="checkbox"/> B	OPEN LONG BONE (3) FRACTURE (5) OR MULTIPLE FRACTURE SITES OR MULTIPLE DISLOCATIONS (5) <input type="checkbox"/> R
CUTANEOUS	NO VISIBLE INJURY <input type="checkbox"/> G	CONTUSION or ABRASION <input type="checkbox"/> G	MAJOR SOFT TISSUE DISRUPTION (6) OR MAJOR FLAP AVULSION or 2 ^o OR 3 ^o BURNS TO ≥10% TBSA OR AMPUTATION (7) or ANY PENETRATING INJURY TO HEAD, NECK, OR TORSO (8) <input type="checkbox"/> R

R = RED, any one (1) - transport as a trauma alert B = BLUE, any two (2) - transport as a trauma alert G = GREEN, follow local protocols

- 2) Meets local criteria (specify):
- 3) Patient does not meet any of the trauma criteria listed above, but the EMT or Paramedic can call a "Trauma Alert" if, in his or her judgement, the trauma patient's condition warrants such action. Must be documented on run report pursuant to 64E-2.013, (F.A.C.)

1. Airway assistance includes manual jaw thrust, continuous suctioning, or use of other adjuncts to assist ventilatory efforts.
 2. Altered mental states include drowsiness, lethargy, inability to follow commands, unresponsiveness to voice, totally unresponsive.
 3. Long bones include the humerus, (radius, ulna), femur, (tibia or fibula).
 4. Long bone fractures do not include isolated wrist or ankle fractures.
 5. Long bone fractures do not include isolated wrist or ankle fractures or dislocations.
 6. Includes major degloving injury.
 7. Amputation proximal to wrist or ankle.
 8. Excluding superficial wounds where the depth of the wound can be determined.

References

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BOARD OF COUNTY COMMISSIONERS

John E. Manning
District One

01 October 2012

Lee County Emergency Medical Services members,

Brian Bigelow
District Two

Lee County Fire District members,

Ray Judah
District Three

The primary mission of any emergency medical service is to provide life and limb saving interventions while effecting rapid transport to definitive care. A smooth and orderly "transfer of care" between the non-transport and the transport EMT/Paramedic is essential for good patient outcome. This transition or transfer of care is largely dependent upon the ability of both parties to give and receive information to optimize patient safety. This includes the transfer of subjective (HPI) and objective (exam) information and all interventions rendered prior to the arrival of the transporting service.

Tammy Hall
District Four

From time to time the focus of the transfer of care becomes convoluted and when it does, the end result is often a less than desirable transition from the non-transport first responders to the transporting service.

Frank Mann
District Five

This directive is to restate the position of the Medical Directors regarding transfer of care from a non-transport to the transporting service. In order to make the transfer of care consistent, effective and timely, the following inter-agency/intra-department measures should used:

Karen B. Hawes
County Manager

- The non-transport EMT/Paramedic, if first on-scene, should:

- ensure scene safety,
- make patient contact,
- obtain a history of present illness and SAMPLE history,
- perform a physical exam,
- provide life and limb saving interventions while preparing the patient for transport,
- provide the transport service with a hand-off report.

Michael D. Hunt
County Attorney


Diana M. Parker
County Hearing Examiner

- When the transport service arrives on-scene, the transporting EMT/Paramedic should:

- confirm or ensure scene safety,
- receive a verbal report from the non-transport service while simultaneously making patient contact,
- confirm or obtain a history of present illness and SAMPLE history,
- perform a physical exam,
- continue and/or provide life and limb saving interventions, in concert with the non-transport EMT/Paramedic, while orchestrating and preparing the patient for transport,
- execute transport while continuing/providing interventions as necessary and indicated.
- provide a hand-off report to the Emergency Department staff.

All EMT/Paramedic providers must maintain a heightened awareness as to the best course of action for optimal and compassionate patient care. The measures or steps noted above are best practice driven and should not be considered a hierarchy but rather a continuum of care. This continuum must focus on: 1) performing a thorough patient exam, 2) providing necessary interventions/goal directed therapy based upon the exam and, 3) having a constant situational attentiveness for and movement towards definitive care.

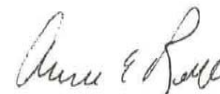
Cooperation between all EMT/Paramedic providers, regardless of certification levels or credentials, is encouraged and expected.



Joseph D. Lemmons, DO, FACOEP



Keith A. Lafferty, MD



Alexander Rodi, DO

BOARD OF COUNTY COMMISSIONERS

John E. Manning
District One

13 January 2012

Brian Bigelow
District Two

From the Office of the Medical Director

Ray Judah
District Three

To ALL Lee County EMS Paramedics and EMTs

Tammy Hall
District Four

The need to restate and clarify LCEMS Common Treatment Guidelines as it relates to Core Principles of Airway Management has become apparent. We have had some recent events that exposed some on-going misimpressions or lack of knowledge of the Guidelines that cannot continue.

Frank Mann
District Five

In August, we began a new (old) approach to airway management that emphasizes back-to-the-basics. This approach starts with the most basic principles needed to control ventilation/oxygenation and moving to the next most basic means. If that fails, progress through the Guideline, only if it is needed. We no longer take away a patient’s ability to control their own airway. If you are able to maintain adequate ventilation and oxygenation with a BVM or CPAP, then that’s what you do, and rapidly transport to an Emergency Department.

Karen B. Hawes
County Manager

No LCEMS paramedic (or EMT) has the authority to do ANY procedure, use ANY equipment, or give ANY medication they are not trained on or authorized to use by the LCEMS Common Treatment Guidelines. If it is not in our Guidelines, you are not authorized to do it.

Michael D. Hunt
County Attorney

Current literature, and our own data, supports proper/effective BLS airway management and rapid transport to an Emergency Department where controlled ETT placement can occur, if necessary. In the event of a complete respiratory arrest, a blind insertion airway (LMA) as well as an ETT is available to you.

Diana M. Parker
County Hearing Examiner

If you are collaboratively working on a patient with a non-transport ALS FD that is authorized to do DAI, you may be confronted with a decision to DAI a patient. If the FD initiates DAI, the Fire Medic “owns” the procedure and the LCEMS medic should assist only. ALL (LCEMS) monitoring capability, as ordered in the Guidelines, should be in place before starting this procedure. Unless unable to do so, this should be done while transporting to the ED. Extended scene times while “DAIing” a patient are not acceptable.

I have always said I will support you unless you give me a reason not to. Please do not place me in an indefensible position due to your patient care. If you stray from the Guidelines and “freelance” medical care, I cannot and will not support that practice.

I have attached the Core Principles of Oxygenation / Ventilation as well as the Airway algorithm and suggest all of you read it and practice what it directs you to do.



Joseph Lemmons, DO, FACOEP, CWS
Medical Director
Lee County EMS/Public Safety

P.O. Box 398, Fort Myers, Florida 33902-0398 (239) 533-2111

lee-county.com

AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER



**BOARD OF COUNTY COMMISSIONERS**

John E. Manning

District One

April 1, 2013 (updated from 2007)

Cecil L. Pendergrass

District Two

To All Lee County EMS and Fire personnel,

Larry Kiker

District Three

This letter is to serve as a directive for the transfer of care from Ground Crew to Aeromedical Crew Members (ACM).

Tammy Hall

District Four

It is understood that patients requiring air medical transport are either of critical nature or have the potential of becoming critical within a short period of time. There may be numerous personnel performing the necessary task to prepare the patient for air transport. In order to make the transfer of care consistent and effective, please follow the steps listed below:

Doug Meurer

*Interim County
Manager*

- Ensure the Landing Zone (LZ) is controlled and the LZ information is communicated to ACM, as per the present policy.
- Prepare patient in treatment area or ambulance (bedside). This includes completing the Lee County Transfer of Care Worksheet with as much information as conditions allow. The top two copies of the worksheet shall be given to the flight team.
- Upon arrival at bedside, the ACMs will immediately receive a patient report from the ground Paramedic-in-Charge.
- The primary ACM will immediately assume team leader role and assume and/or direct the remaining patient care issues and treatment modalities.
- The flight team will perform an appropriate patient assessment and determine the need for further emergent treatments based upon flight physiology.
- The ground crew will follow directions from the flight team regarding the transfer and loading of the patient from the scene.

Michael D. Hunt

County Attorney

Diana M. Parker

*County Hearing
Examiner*

This directive is to take effect immediately.

Joseph D. Lemmons, DO
Medical Director
Lee County Emergency Medical Services

P.O. Box 398, Fort Myers, Florida 33902-0398 (239) 533-2111

lee-county.com

AN EQUAL OPPORTUNITY AFFIRMATIVE ACTION EMPLOYER



BOARD OF COUNTY COMMISSIONERS

John E. Manning
District One

Sept. 1, 2014

Cecil L. Pendergrass
District Two

Division of Emergency Medical Operations

4052 Bald Cypress Way, Bin C-18

Larry Kiker
District Three

Tallahassee, Florida 32399-1738

Tammy Hall
District Four

To Whom It May Concern:

Frank Mann
District Five

Lee County Emergency Medical Services is approved to use the Ambu Perfit ACE adjustable cervical collar (Adult) and Ambu Mini Perfit ACE (Infant, Pediatric, and Small Adult).

Doug Meurer
Interim County Manager

Respectfully,

Michael D. Hunt
County Attorney

A handwritten signature in black ink that reads "Joseph Lemmons".

Diana M. Parker
County Hearing Examiner

Dr. Joseph Lemmons

Medical Director

Lee County Emergency Medical Services

P.O. Box 398, Fort Myers, Florida 33902-0398 (239) 533-2111
lee-county.com



(239) 344-5410

Writer's Direct Dial Number: _____

- Bob James**
County Clerk
- Debra R. G. Gray**
District Two
- Har Judah**
District Three
- Terry Hill**
District Four
- John E. Nelson**
District Five
- Donald D. Bivitt**
County Manager
- Barbara Quast**
County Attorney
- Diana M. Parker**
County Planning Director

April 14, 2005

To all Lee County EMS Paramedics and EMT's,

This letter is to serve as a directive for the management of patients who have been exposed to the effects of a tazer gun.

- Assess and ensure scene safety.
- Assess patient per Lee County Treatment Guidelines, performing the appropriate Initial Assessment.
- If any complaints are offered, or any abnormal findings are noted on the Initial Assessment, continue care by referring to the appropriate Treatment Guidelines. If patient condition warrants, transport to the most appropriate receiving facility.
- DO NOT REMOVE THE TAZER BARBS FROM ANY PATIENT. TREAT THE BARBS LIKE ANY OTHER IMPALED OBJECT, AND STABILIZE IN THE POSITION FOUND.**
- Ensure the appropriate documentation regarding your findings are noted in your patient care report.

This directive is effective immediately, and will be sent to all Lee County Law Enforcement agencies to ensure they are aware of our responsibilities for this type of incident.

Dr. Joseph D. Lemmons
Medical Director
Lee County EMS



P.O. Box 508, Fort Myers, Florida 33902-0308 (239) 335-2911
In word and deed, we are Lee County.
AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER

From: Mary_Lewis2@doh.state.fl.us
Sent: Tuesday, April 14, 2009 9:09 AM
To: Tuttle, Scott
Cc: Roy_Pippin@doh.state.fl.us
Subject: Electronic protocols

Electronic protocols Page 1 of 1

9/1/2009

Scott, In regards to our telephone conversation this morning, electronic protocols would be considered equipment switched over when changing trucks. As with any other required piece of equipment, if the vehicle is subject to call, the protocols would be required to be on that vehicle. However, as discussed the out of service trucks do not have narcotics, monitors, etc so a "hard copy" of the protocols would not be required. If you have any questions please feel free to contact me anytime.

Regards,

Shelly Lewis, Paramedic

Compliance Officer
Florida Department of Health
Bureau of Emergency Medical Services
4052 Bald Cypress Way, Bin C-18
Tallahassee, Florida 32399-1738
Phone: (850) 245-4440 ext. 2771
Fax: (850) 245-4378
Check our website at: www.fl-ems.com

Mission: To promote and protect the health and safety of all people in Florida through the delivery of quality public health services and promotion of health care standards.

Please note: Florida has a very broad public records law. Most written communications to or from state officials regarding state business are public records available to the public and media upon request. Your e-mail communications may therefore be subject to public disclosure.

ANOTATED UP-DATES

Anotated Updates

4-15-09

Deleted D-2 from dialysis transport destination protocol.

Deleted Physicians Regional: No GI patients.

4-20-09

Added to Multiple Trauma Pearls: Moderate to severe trauma IV/L.R. on a macro drip or a blood solution set and titrate to SBP 100 mmHg in adults and 70-80 mmHg in Peds.

4-30-09

Added ICE protocol and D-5 as destination.

Added FMBFD to participating agencies.

6-5-09

Atropine pharmacology page changed CAM to DAI; page A-6

Diprivan pharmacology page changed CAM to DAI; page A-13

Etomidate pharmacology page changed CAM to DAI; page A-17

Succinylcholine pharmacology page changed CAM to DAI; page A-38

Versed pharmacology page changed CAM to DAI, added Ativan to alternate; page A-42

Ambu laryngeal mask changed CAM to DAI; page B-2

O2 dose adjusted to 2-6 lpm; route adjusted to reflect devices, added caution for strokes; page A-32

Surgical Cricothyroidotomy removed nasal intubation; page C-6

Needle Cricothyroidotomy removed nasal intubation; page C-7

Transportation Guideline added LMHP for Induced Hypothermia.

7/21/2009

DAI algorithm inserted

Airway algorithm inserted

FBAO algorithm inserted

FBAO verbiage removed

Pain Management title changed to include Conscious Sedation

Added max dose to versed in Pain Management

Added PEARL for Conscious Sedation in Pain Management

Fentanyl dose changed to 2 mcg/kg

2015 – April Update

Removed Crash Airway Management page

Etomidate pharmacology paged changed CAM to DAI, IO route added

Removed DAI Page

Removed DAI algorithm

Added Core Principal Airway, Ventilation, Oxygenation

8/25/09

Transport guidelines updated to include Physicians Regional for STEMI.

Find and replace performed on O2 changed to O₂ and CO₂ to CO₂

Credit to Travis County EMS in references

State required cervical collar letter added to references

State acceptance of electronic protocols added

11-10-09

Changed ALM to LMA Supreme with changes in procedure.

11-24-09

Update Ativan dosing from 2 mg Max to 4 mg.

1-5-10

Section I-3 Added neonate to Initial Assessment and Management

1-7-10

Section I-16 Added Note #1 to Medical Supportive Care r/t V/S.

2-22-10

Section 1-4 added bullets under the assessment section of the vital signs

Section 1-5 Lung Sounds separated to its own bullet

Section 1-19 bolded any and all; Added new line into box that defines a patient

3-29-10

Revised Atropine Pharm page: Removed 3rd degree block as a contraindication. Added second line under precautions.

Added Table of “Coronary Artery involved” with given area of the STEMI

2015 – April Update

5-1-10

Added ARS needle to Needle Decompression Guidelines

Added Huber needle/Port-A-Cath to ALS Medical Procedures

6-1-10

Revised Air Transportation LZ instructions

Added NG tube preinsertion to King LTS-D and LMA procedure pages.

Repaired DAI drug chart

Amended Pearl under ACS r/t ASA administration

Added to Lidocaine pharm page: Local anesthetic for IO: 0.25 mg/kg IO before fluid/medication infusion

2-1-11

Replaced 2005 Adult/Pediatric AHA Algorithms with 2010

Removed Lasix from all Treatment Guidelines

Amended Pharm page for Lasix

Removed Morphine from CHF Treatment Guideline

Added "Give ASA 324 mg if evidence of concurrent ACS." In CHF Treatment Guideline

Amended Jellyfish sting to include vinegar and hot water immersion IAW AHA changes

Updated Transport Protocol and included LZ information for each hospital

Added Bone Injection Gun (FMFD)

Added paragraph on O2 guidance in the Oxygenation/Ventilation Core Principles

6-1-11

Replaced Zofran for Phenergan in Abd pain

Amended transport destination guidelines

Amended Airway Core Principle

Removed DAI from Guidelines

Removed Succs and Etomidate

Removed Morphine

Added Fentanyl to ACS Guidelines

Amended Air Transportation LZ instructions

Amended Stroke Guidelines

Added FF Rehab Form

Added Ryan White Form

Added Post-Advanced Airway sedation to Pain management/Sedation Guideline

9-1-11

Removed “on-line Medical control” involvement from refusal procedure.

Removed Death in Field: B. Valid DNRO Orders #4.

2-1-12

Removed Charlotte Regional Hospital from PCI/STEMI destination

Added Peace River Memorial Hospital to PCI/STEMI destination

Removed CPAP from Pediatric Drowning Guidelines

Removed N Collier Medical Center from ICE Alert destination

Added “INTERFACILITY TRANSFER” into Destination Guideline.

Added tourniquet to trauma Guidelines.

Added tourniquet to Appendix B

Added Sepsis Treatment Guidelines

6-1-12

Destination Guidelines: Added restrictions to out of county transportation.

Removed Sternal IO procedure page.

REVISION 4.4

7-10-12

Changed Captiva Fire Dept from BLS to ALS non-transport provider

Destination Guidelines: Removed guidance related to destination for dialysis patients because no longer necessary. All Lee County hospitals currently have that ability.

Added Medical Director Guidance on DAI (Drug Assisted Intubation) under REFERENCES page 3.

8-1-12

Added additional PEARLS for Ntg in cardiac Guidelines.

Revised “what makes an individual a patient.”

12-1-12

Added Cardizem dosing to Tachycardia algorithm

Added letter from the Medical Directors r/t Transition of Care.

2015 – April Update

Revised Emancipated Minor section

Revised “Breaths per Minute” in the Airway Management Guidelines.

1-20-13

Changed Therapeutic hypothermia to include all cardiac arrests

Clarified / updated entire destination guidelines

Removed outdated Pediatric Assessment Flow Chart

Added new AHA Pediatric Management of Shock after ROSC

Added new AHA Adult Immediate Post Cardiac Arrest Care

Added new (XCollar) *DISCRIMINATE SPINAL IMMOBILIZATION* Guideline

Removed out-dated short board / KED extrication BLS procedure pages.

Added AIRWAY PEARLS

Added Apneic Nasal Oxygenation to the Airway Management Guidelines Algorithm

REVISION 4.5

7-1-13

Added early notification bullet in transport guidelines r/t pregnant trauma alert patient.

9-1-13

Added transmission of EKG to 12-lead procedure in Appendix C.

10-1-13

Added D-4 as Primary Stroke Center.

Changed Epi dose in anaphylaxis (adult) to 0.5 mg and modified PEARLS

Added clarification in IV therapy in Medical Supportive Care

11-1-13

Added new Advanced Stroke Triage Form

Added ketorolac guideline and pharmacy sheet

Removed Lorazepam from Guidelines

Changed MCI definition to “5 or more patients” to be compliant with FL standards

REVISION 4.6

4-1-14

Modified Amiodarone in Post ROSC care.

Modified the *DISCRIMINATE SPINAL IMMOBILIZATION* Guideline.

REVISION 4.7 (.1, .2)

Consolidated Epi doses between the Guidelines
 Added Oncology to Transportation Guidelines
 Revised the Spinal Precaution Guidelines
 Removed many of the immobilization procedures
 Consolidated the adult ROSC care Guidelines
 Removed “tube checker devices” from procedures
 Revised C-collar letter to the State.
 Revised OPA procedure wording
 Added Hibler’s Method procedure page (BLS)
 Removed 3-way stop-cock from ARS procedure (approved by Trauma Services)
 Removed some “transfer specific” procedures referring to ventilators
 Removed “umbilical catheter” procedure page
 Removed “IFT” Medications in Pharmacology section
 Added The Lee County Pit Crew Model (Cardiac Arrest)
 Added PEARL to MULTIPLE TRAUMA r/t transporting pregnant patients
 Removed Huber needle procedure page
 Removed “in-line intubation” procedure page
 Changed D-5 to Comprehensive Stroke Center.

REVISION 4.7. 3

Removed Lee County Pit Crew Model (awaiting further revision)
 Revised Spinal Precaution

REVISION 2015 – April Update:

- Addition of Ketamine
- Revised Excited Delirium Guideline
- Replaced Dopamine infusions with Epinephrine infusions throughout
- Change/Update format of Trauma Transport Protocol
- Addition of Pit Crew Model
- Transport Destination grid updated – NCH-Downtown, Physicians Regional Pine Ridge
- CAREvent Procedure
- SAM Pelvic Sling II

