

**SOUTHEAST VOLUNTEER FIRE DEPARTMENT
MEDICAL PROTOCOLS**

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RALPH W. LOVE, DO
Medical Director

SOUTHEAST VOLUNTEER FIRE DEPARTMENT

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SECTION 1

MEDICAL DIRECTOR APPROVAL

Southeast Volunteer Fire Department

Section 1 - Medical Director Approval

The Emergency Care Attendants (ECA) and Emergency Medical Technicians (EMT) of the Southeast Volunteer Fire Department (SVFD) shall be providing pre-hospital basic and advanced life support emergency medical treatment to the sick and injured under my authority as Medical Director for SVFD. Any and all life support treatment that may be rendered to the sick and injured, by SVFD ECAs and EMTs shall be initiated under strict standards and practices utilizing standard medical orders reviewed and signed by me.

Changes in these standing orders can only be made by the SVFD Medical Director. These Standing Orders and policies were developed for use within the SVFD response area, and while transporting patients to the appropriate hospital. In the event SVFD EMS personnel in a SVFD response vehicle are out of the SVFD response area and come upon a situation requiring patient care (i.e. MVA, injured person, etc), these Standing Orders and procedures are to be used to provide patient care until patient care is released to another agency with personnel of equal or higher level of certification or the patient is transported by SVFD to the appropriate facility and care turned over to hospital staff. SVFD personnel shall utilize these protocols only when acting in their official capacity when representing SVFD.

In accordance with the provisions of the Texas "Medical Practices Act" and the Texas "Emergency Medical Services Act", the following medical protocols have been issued to the certified ECAs and EMTs of SVFD. These protocols are to be implemented when the need to perform emergency life support procedures arise in patients whose conditions necessitate immediate medical intervention prior to the issuance of other physician orders.

I have approved the medical protocols defined in this document for use by SVFD. In addition, as defined in the appendix to this document, I have also approved the possession of the necessary medical equipment, supplies, and drugs to implement these protocols.

Ralph W. Love, DO
Medical Director
SOUTHEAST VOLUNTEER FIRE DEPARTMENT

October 1, 2011
Effective Date

SECTION 2

GENERAL INFORMATION

SECTION 2 - GENERAL INFORMATION

Protocols are written descriptions of standards of care provided by the Medical Director to be utilized in the absence or unavailability of a medical physician licensed in the state of Texas. In addition to specific procedures to be followed regarding direct patient care, these standards include qualifications required of personnel executing the protocols, hospital selection, duties of the medical director, and requirements for documentation and receiving facility notification.

Protocols shall be adhered to once the attendant elects to utilize the written standard for patient care. Any deviation, including a decision not to perform a particular step, is only justified when the medical personnel present are unable to perform the step as written, or when performance of that step will have a detrimental effect on the patient. Any deviation must be fully documented in the run report.

A physician providing on-line or on-site medical control may vary from established protocols. Such variance must be charted and the physician's name documented for review by the Medical Director.

2.1 Personnel Skill Level Definitions

All SVFD members must be certified by the Texas Department of Health (TDH) or enrolled in a training program that will prepare that person for certification. In addition, those persons that are certified as an EMT-Intermediate or Paramedic must have received authorization from the Medical Director after being precepted by experienced SVFD medics prior to performing advanced life support (ALS) skills without supervision of a member qualified to perform those skills (Unless waived by the Medical Director). Members that are in training toward a higher level of TDH certification are allowed to perform the skills of that higher level under the supervision of a member qualified to perform those skills.

Regardless of any certification, license, or orders received, a member shall only practice those invasive skills and administer those drugs in which he has been trained, both didactically and practically, and in which he is comfortable. The skill levels, are as follows:

2.1.1 Untrained

This term refers to persons having received no certifications from TDH. Example: general public, bystanders and family members. SVFD does not use any non-EMS certified personnel (i.e. RN, LVN, RT) for patient care. Untrained individuals cannot perform any patient care.

2.1.2 First Responder

This term refers to members of certified first responder organizations who have been trained in CPR and basic first aid procedures.

2.1.3 All Skill Levels

This term encompasses all TDH certifications, ECA, EMT-B, EMT-I, EMT-P, and LP.

2.1.4 Students

All medical care provided by students must be supervised by a full member of SVFD. Students are allowed to perform skills up to the level of certification for which they are enrolled. The student may not perform skills that are above the supervising SVFD member's certification or protocols.

2.1.5 ECA and EMT-Basic

This member has received basic training in non-invasive first aid, the proper administration of drugs for certain acute situations and emergency medical care techniques. He is currently certified by TDH as an Emergency Care Attendant (ECA) or Emergency Medical Technician (EMT) - Basic.

2.1.6 EMT-Intermediate

In addition to the above skills, this member has received training in venipuncture and the intravenous administration of crystalloid solutions, the maintenance of patients' airways by the insertion of endotracheal tubes or other approved airway device and the proper administration of drugs for certain acute emergencies. The member is currently certified by TDH as an EMT - Intermediate and has received authorization from the Medical Director to practice venipuncture, intravenous crystalloid solution administration, and intubation and MAST application.

2.1.7 EMT-Paramedic and/ or LP (Licensed Paramedic)

This member has received training in all skills listed previously and has received advanced training in patient examination and assessment, the proper administration of drugs for certain acute emergencies, the interpretation of electrocardiograms, and defibrillation. The member is currently certified by TDH as an EMT-Paramedic or a Licensed Paramedic and by the American Heart Association (AHA) as, at a minimum, a provider in Advanced Cardiac Life Support (ACLS).

2.2 Medical Director Duties Regarding Protocol Usage

The Medical Director, who is a Texas licensed physician, has agreed to assume responsibility for medical care provided by the agency. The Medical Director will:

1. Approve the standing orders / treatment protocols for use during the absence or unavailability of a physician.
2. Perform periodic review of patient charts for proper follow through of treatment per protocol standards. Evaluation of proper patient care documentation shall also be performed.
3. Ensure Quality assurance adherence

2.3 Hospital Selection

Patients and family members have a right to designate the hospital to which they will be transported with the following exceptions:

1. The medical care needed is such that the transport time would be detrimental to the welfare of the patient.

2. The patient has received drug therapy as a result of execution of these protocols or due to a physician's orders; in which case the patient will be transported to the closest hospital that can provide an appropriate level of care.
3. The requested hospital lacks the services required by the patient.

When it is inappropriate to transport a patient to a requested hospital, members should ensure that the patient and family members are made aware of the reason that this decision must be made.

In general, the patient should be referred to the closest, appropriate hospital as determined by regional categorization based on medical needs.

The Medic in charge will have the discretion to choose the closest most appropriate medical facility based on assessment findings when providing Patient care.

In the event a patient's physician orders his/her patient to a recognized medical facility, the attendant must adhere to this order unless the exceptions above pertain.

2.4 General Care Standards

This document does not contain an all-inclusive list of procedures that SVFD members may be required to perform or be proficient in using. These instead represent major interventions that may be required from time-to-time. All SVFD members are expected to be proficient in those procedures in which they have been trained and are authorized to use. For situations not covered by these protocols, the attending member should initiate basic care for his skill level and contact the receiving hospital for appropriate orders if necessary.

2.4.1 Basic Treatment

Basic treatment, including specifically the following procedures when appropriate, **MUST** be initiated before any advanced treatments in these protocols are attempted;

1. Maintenance of a patent airway by non-invasive techniques, such as positioning and the insertion of oral airways.
2. Assistance of breathing by either mouth-to-mask/barrier respiration or with bag-valve mask units.
3. Maintenance of circulation by cardiopulmonary resuscitation.
4. Administration of oxygen.
5. Proper positioning of the patient, including the use of the recovery position in the unconscious patient.
6. Administration of drugs for certain acute emergency situations.

2.4.2 Advanced Treatment

The advanced treatments in these protocols are to be applied when the specific circumstances called for in each protocol are met. In no case is the institution of an advanced treatment protocol to delay the institution or maintenance of a basic treatment protocol, including transportation when appropriate. Common sense must be used when initiating advanced treatments. All SVFD members are expected to recognize their limits and not expend excessive time attempting techniques which they are capable of performing under certain circumstances, but which they cannot successfully perform on the patient currently being treated.

The following advanced care procedures may be implemented regardless of any specific protocol steps that are utilized.

1. Intubation of the patient shall be performed if personnel are unable to maintain a patent airway by other means.
2. An intravenous line of lactated ringers or a saline lock may be initiated in any patient who fails to meet specific criteria as outlined in the protocols below but whom, in the opinion of the advanced life support personnel present, should have vascular access or fluid resuscitation performed. Justification for this IV shall be included in the patient medical record.

2.4.3 Medication Standards

Medications and IV fluids will be checked prior to administration to the patient to ensure that they are not expired and that they are clear and free of any contaminants. Medications will be checked a minimum of three times prior to administration to ensure that it is the correct medication in the correct concentration. These checks generally will occur prior to and during preparation for administration and then just prior to administration to the patient.

When more than one IV bag is infused in a patient prior to the arrival at the receiving hospital, IV bags will be labeled to indicate the bag number currently being infused.

Any bag which has medications added shall be clearly labeled with the name of the drug, the quantity added, the time when the bag was hung, and the initials of the EMT - Paramedic preparing the bag for infusion.

2.4.4 Communication

Voice communication with the receiving hospital must be initiated as soon as feasible after the initiation of an advanced protocol. Additional orders may be received at this time.

Voice communication should be attempted with the receiving hospital during transport of any patient so as to alert the hospital staff to the impending arrival of the patient.

2.4.5 Charting

The following information must be recorded on the patient run sheet. In addition it should be relayed to the base hospital as appropriate.

1. Patient assessment

- a. Chief complaint
 - b. History of current illness
 - c. Relevant past patient history
 - d. Patient's general appearance
 - e. Level of consciousness
2. Vital signs
 - a. Pulse, including rate, quality and rhythm
 - b. Blood pressure, (auscultated, palpated, non-invasive)
 - c. Respiration, including depth, and quality
 - d. Skin temperature and color
 - e. Pupil status, including size and reactivity to light
 3. Physical examination
 - a. Medications currently being taken by the patient
 - b. Known allergies
 - c. Patient's private physician
 4. EKG interpretation, when appropriate, with typical rhythm strips amended to the chart. The EKG strip(s) should be labeled with the patient's name and SVFD run number.
 5. Treatment rendered. For ALS this will include the time of the administration and dosage of any drug. The establishment of an IV / IO including time, size of device, fluid type, rate and attempts. Advanced airway management to include time of completion and description of procedure and device.

A copy of the run sheet must be given to the hospital for inclusion in the patient's chart.

2.4.6 Restraints

The use of patient restraints falls into two categories within these protocols. The first use of restraints is for the general protection of the non-violent patient where use is required for general patient safety. The second use is for the control of a violent or potentially violent patient where the safety of those around the patient is the primary concern.

1. All patients transported on a stretcher shall have all appropriate belts in place on a routine basis.
2. Patients that are ambulatory as well as any non-patient riders (e.g. family members, etc.) shall use the standard seat belt restraints present on the seat in which they are riding. The driver shall ensure that front seat passengers are properly restrained while the attendant shall have responsibility for ensuring adequate restraint of all patients.
3. All patients with altered mental status that are being transported by aircraft shall have their wrists/arms and ankles/legs secured to the backboard by roller gauze or other suitable means. If the patient is being transported without a backboard, SVFD personnel shall assist flight crews with restraints that they feel are appropriate.
4. If it becomes necessary to restrain a patient due to the potential for violent behavior during transport, SVFD personnel may use "reasonable force" to restrain the patient. Once restraint is determined to be required, it should be accomplished as rapidly and

completely as possible while using only the force necessary for safe restraint. Use the following guidelines as required:

- a) Ensure that adequate assistance, including law enforcement personnel, if required, is present before any attempt is made at patient restraint.
- b) Determine a plan of action and ensure that all personnel are prepared to execute the plan.
- c) Use only that force required for rescuer and patient safety.
- d) Always ensure that airway control and patient resuscitation can be performed regardless of the manner in which the patient is restrained
- e) Devices that require the use of a key for release shall not be used unless the attendant has control of the key throughout the period of patient contact.
- f) Medical personnel may request law enforcement personnel to accompany them in the ambulance if in their judgment this is required for safety.
- g) Any use of restraints on an individual, beyond routine stretcher straps, shall be documented in the run record. This documentation shall include the nature of the restraints used and the reason for their use in the narrative.

2.5 Patient Refusal of Treatment and/or Transport

Any patient meeting the criteria defined below may refuse treatment and/or transport by SVFD. A patient meeting these same criteria may also refuse all or part of the treatment that SVFD personnel through protocols, or the receiving hospital through radio or telephone contact deem necessary for the patient's condition.

If in the opinion of the on scene SVFD personnel, the patient is a potential threat to himself or others, law enforcement shall be called. Law enforcement may decide to place the patient into protective custody and then request transport for them.

A patient refusing treatment shall meet the following criteria:

1. Adult (age 18 or older) or an emancipated juvenile.
2. Of sound mind, not under the influence of drugs or alcohol.
3. Understands the possible consequences of their decision to disallow treatment.
4. Has not attempted suicide.

The following procedure shall be followed when accepting a patient refusal:

1. The patient shall be instructed as to the possible consequences of his failure to allow treatment.
2. If applicable, one of the patient refusal instruction forms shall be used for these instructions and a copy shall be provided to the patient.

3. The patient shall be asked to sign the transport refusal portion of the run sheet and if applicable a copy of the patient refusal instructions.
4. If a patient refuses to sign the transport refusal portion of the run sheet then SVFD personnel should attempt to have a person who witnessed the refusal sign the refusal to sign transport refusal portion of the run sheet. If possible, a law enforcement officer is preferred as the witness. If no officer is available, then appropriate address data should be collected on the witness.
5. The medic shall use the narrative portion of the run record to document the circumstances surrounding the refusal of transport. This becomes extremely important in those cases where a patient refuses to sign the refusal of transport.

If a minor is involved in an incident where treatment or transport is not required, refusal of treatment or transport is still required and shall be obtained by SVFD personnel. Parents and legal guardians, including adults with temporary responsibility for the minor (schoolteachers and principals, scout leaders, etc.) may refuse treatment for the child. Friends, regardless of "age", may not. If in doubt as to the identity of the person approving the refusal, law enforcement shall be called.

In some cases, refusal may occur via telephone with the patient's parent or guardian. In this event, the parent shall be provided similar information as if they were present at the incident regarding the minor's condition. The parent's name shall be recorded on the run sheet as documentation of the call along with their driver's license number. If possible, two different SVFD members should talk with the parent to ensure that all instructions and the refusal are clearly understood. If in doubt, law enforcement shall be called for assistance.

2.6 Do Not Resuscitate (DNR) Order

Senate Bill 673 established the Subtitle A, Title 8, Health and Safety Code, Chapter 674: Out-of-Hospital Do- Not- Resuscitate Law. The Bureau of Emergency Management of the Texas Department of Health adopted written policies implementing this law on November 15, 1996. As a portion of this law, TDH adopted a standardized DNR form (see Appendix C) listing procedure that shall be withdrawn or withheld. These procedures are:

1. Cardiopulmonary resuscitation (CPR)
2. Endotracheal intubation or other advanced airway management
3. Artificial ventilation
4. Defibrillation
5. Transcutaneous cardiac pacing
6. Administration of cardiac resuscitation medications.

The DNR Order, once executed, does not have an arbitrary termination date and remains in effect until revoked. In addition to the form, standardized identification bracelets and necklaces have been developed for rapid identification of the DNR patient. These identification devices (see Appendix C) will have the state standardized DNR logo in red, white, and black on their front. However, it is not required for a patient to have this identification for their DNR forms to be valid.

SVFD members, when presented with a signed TDH standardized DNR Order, or upon discovery of a standardized DNR identification device, or an executed Living Will, or other legal DNR Order (xerographic copies are acceptable) shall perform the following steps:

1. Terminate cardiopulmonary resuscitation
2. Terminate attempts at advanced airway management. In the event that a patient has already been intubated, the endotracheal tube shall be left in place.
3. Cease artificial ventilation
4. Cease further defibrillation attempts
5. Cease transcutaneous pacing if there has not been a capture and the patient remains pulseless or profoundly bradycardic. If capture has occurred, pacing will be allowed to continue.
6. Cease administration of any additional cardiac resuscitation medications. IV lines or piggyback drips that have been initiated will be allowed to be continued at their current rate.

Additionally the following shall apply:

1. Neither BLS nor ALS care shall not be delayed in any way while a determination is being made of the validity of the DNR Orders.
2. If there are any questions as to the validity of the DNR Order, on scene medical personnel shall contact the "receiving" hospital and/or the patient's attending physician.
3. TDH DNR orders shall not apply to the following:
 - a. There are indications of unnatural or suspicious circumstances surrounding the patient condition.
 - b. Patient is pregnant.
4. If the patient is transported, the DNR Order shall be kept with the patient.
5. A copy shall be made of the DNR Order and placed with the patient's SVFD run record. The original shall be turned over to the receiving facility.
6. Personnel may accept an out-of-hospital DNR order that has been executed in any other state if there is no reason to question the authenticity of the order.
7. Documentation of contact with patients that meet the TDH DNR criteria shall consist of the following;
 - a) an assessment of the patient's condition
 - b) method of determining DNR status (orders or ID device)
 - c) problems relating to the DNR Order
 - d) name of the patient's attending physician
 - e) full name, address, telephone number, and relationship of the witness used to identify the patient.

2.7 Protocol Implementation

Any one patient may fall into several classifications based upon these protocols. The patient should be treated for the most life-threatening emergency first. In the Advanced Life

Support Protocols, there are two sub-sections listed within some protocols, those, which a member may implement prior to establishing communication with the base hospital, and those, which represent typical orders the emergency room physician may give after communication has been established. BLS personnel should be familiar with all protocols since there are often BLS care procedures contained in the ALS protocols.

2.8 On Scene Physician Intervention

Upon occasion, SVFD members may be approached by a physician who after properly identifying himself, wishes to assist with care for the patient through providing direction to the on-scene medical personnel. When the physician has an established relationship with the patient, an effort should be made to abide by these directions to the greatest extent possible. These directions should be documented on the run record as coming from the patient's physician.

Though often well intentioned, the intervention by a physician that does not have a previously established relationship with the patient may create a distraction to the personnel providing care for the patient. The following guidelines should be followed in this case:

1. Explain to the physician that all medical operations are being performed per written protocol or per on-line medical direction and that these are according to the SVFD Medical Directors wishes. If the physician still insists on providing direction, then,
2. Explain that the physician will have to take complete charge for the care of the patient including accompanying the patient to the hospital and documentation of all activities during transport. If the physician still insists on providing direction, then,
3. Contact the receiving hospital and request that the Emergency Room Physician discuss the intervention with the physician. If the physician still insists on providing direction, then,
4. SVFD personnel should document all direction given and care provided. If the on scene medical personnel do not agree with the care proposed by the intervening physician they may refuse to participate in that specific care. In this event, they shall immediately contact the receiving hospital and again speak to the Emergency Room Physician.

2.9 Special Circumstances

1. DOS – In the event that a medic shall be dispatched to a scene whereas the intended patient is not viable, i.e. decapitated, rigor or lividity, it shall be the responsibility of law enforcement to secure the scene. No patient care shall take place upon this determination of DOS. Furthermore, the medic shall document their findings on a run report for the purposes of record keeping concerning further inquiries into the matter.
2. Unsafe Scenes – In the event that a medic is dispatched to a call that is potentially unsafe, i.e. GSW, SW, Domestic, he/she shall “stage” a safe distance from the location and notify dispatch of that location. Upon notification by law enforcement that the scene is safe and secure the medic shall proceed and perform patient care as needed.
3. Unfounded calls or false alarms – In the event that a medic is dispatched to a call whereas they are unable to locate the intended patient, they shall notify dispatch to attempt to call back the calling party. If there is no patient, they shall return to service and do not have to document the call on a run report.

2.10 Family Violence

1. Refer to protocol 3.5 for specific treatment direction.
2. All patients shall receive information concerning safe shelters and counseling centers from the medic caring for the patient.
3. Documentation of all information and direction given by the medic shall be included in the run report.

2.11 Psychiatric Emergencies

1. When responding to a psychiatric emergency, personnel should be aware of the possible dangers involved. Always await law enforcement to enter or make patient contact and determine the scene is safe for medical personnel.
2. If there is no medical condition or emergency that requires treatment, (injuries, overdose, etc.) patient should be transported to the nearest appropriate facility. ie, Christus St. Joseph, Houston, and Ben Taub hospital, Houston, Memorial Herman .
3. If there is a medical emergency or traumatic injury involved, the patient must be cleared medically by the nearest appropriate facility.

2.12 Termination of Resuscitation

- BLS staffed crew should follow the appropriate cardiac arrest protocol and perform medical interventions accordingly.
- Paramedic staffed crew protocol, due to the short transport time to the nearest Appropriate medical facility, CPR & ALS treatment of a Patient will not be Discontinued Once started by others unless obvious signs of Death are present:
 1. Rigor mortis set in
 2. Obvious blood pooling
 3. Cold Body temperature
 4. Injuries incompatible to sustain life
- Approved Paramedic and EMS Supervisor, when either of the two situations exist.
 1. Delay in transporting Patient to Medical facility which would not Benefit the patient's outcome due to extenuating circumstances.
 2. Long extrication time from Patient's dwelling where periods of absent CPR are present.

Criteria:

1. Arrest should be Non Trauma related.
2. Arrest should be from medical causes not affected by external source, i.e.

- Toxicological Exposure, i.e. Overdose
 - Hypo/Hyperthermia
 - Submersion
 - Electrocution
 - Patient is pregnant
3. Patient must be over 18 years of age.
 4. Patient must have received ALS care, i.e. Advanced Airway, IV/IO and Medication Administration.
 5. On-scene ALS resuscitative efforts by Paramedic should be supported for 20 minutes without a successful ROSC.
 6. Persistent PEA or Asystole at termination of Efforts.
 7. Upon approval to terminate, tie off and knot IV lines proximal to insertion site, and removed IV bag. Established IV/IO catheters, ETT and ECG electrodes/Defibrillation pads are to remain in place.

Contraindications:

1. Persistent Ventricular Fibrillation or Ventricular Tachycardia noted on EKG..
2. Patient exhibits any sign of spontaneous resuscitation, i.e. pulses are briefly noted, spontaneous body or eye movement.
3. Patient goes into cardiac arrest while under direct care of Southeast Personnel.
4. Patent Advanced Airway or IV/IO not established.

Specific Considerations:

1. When Considering to Terminate Resuscitative efforts, an EMS Supervisor(s) should be contacted and that individual should make every effort to go on scene.
2. Lead Medic in charge should meet with family members if present and notify them of unsuccessful resuscitation efforts and protocols in place to Terminate efforts.
3. Law Enforcement should be advised of Termination of efforts so Medical Examiner's office can be contacted.
4. Ensure all documentation is appropriately managed.
5. Notify Medical Director within 48 hrs of Termination efforts.

SECTION 3

Adult BLS and ALS Medical Protocols

3.1 Abdominal Pain / Non-traumatic

A. All Skill Levels

1. Assess ABC's - treat appropriately.
2. Obtain accurate medical history.
 - Past abdominal disorders?
 - Recent abdominal trouble?
 - Location of Pain? What quadrant? Radiating?
3. DO NOT evaluate the abdomen extensively.
4. DO NOT use extensive palpation.
5. Assess Pulse oximeter level.
6. Administer oxygen at 15 LPM by NRB mask.
7. Be alert for shock and treat accordingly.
8. Check blood glucose level.
9. Transport ASAP.
10. Contact ER for further instructions.

B. EMT-I (In addition to A. above)

1. Administer IV LR titrate to a systolic BP > 90 mm-Hg
2. Draw baseline bloods.

C. EMT-P, and LP (In addition to A. & B. above)

1. Apply cardiac monitor.
2. Consider Phenergan 12.5 – 25 mg SIVP for persistent vomiting

3.2 Abdominal Trauma / Blunt Trauma

A. All Skill Levels

1. Assess ABC's - treat appropriately.
2. Obtain history of injury.
3. Apply pulse Oximeter.
4. Administer oxygen at 15 LPM by NRB mask.
5. Carefully palpate abdomen to determine rigidity, tenderness, etc.
6. Suspect shock.
 - a. Treat as in shock protocol.
 - b. Give nothing by mouth.
 - c. Be alert for vomiting - prevent aspiration.
 - d. Recognize the possibility of damage to underlying organs.
7. Transport ASAP.
8. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Administer IV LR titrated to a systolic BP > 90 mm-Hg.
2. Draw baseline bloods

C. EMT-P, and LP (In addition to A. & B. above)

1. Apply cardiac monitor.
2. Consider Phenergan 12.5-25 mg SIVP or IM for persistent vomiting.

3.3 Abdominal Trauma / Penetrating Trauma

A. All Skill Levels

1. Check ABC's - treat appropriately.
2. If object is still in place, **DO NOT ATTEMPT TO REMOVE!!**
3. Stop external bleeding
4. Apply pulse oximeter
5. Administer oxygen 15 LPM via NRB mask.
6. Treat for shock as needed.
7. Chest wounds below the nipple line must be suspected of having penetrating wounds to the abdomen.
8. Transport ASAP, being careful not to aggravate the injury
9. Contact ER for further orders

B. EMT-I (In addition to A. above)

1. Establish Bilateral Large Bore IV LR TKO titrated to a systolic BP > 90 mm-Hg.
2. Draw baseline bloods

C. EMT-P, & LP (In addition to A. and B. above)

1. Apply cardiac monitor

3.4 Allergic Reaction / Anaphylactic Shock

Indications:

A patient should have the clinical appearance of an individual suffering from an allergic reaction (anaphylaxis). This may include the following:

- History of exposure to an allergen within the past 30 minutes.
- History of allergic reactions
- Respiratory distress, tightness in the chest, and coughing or wheezing.
- Hives, facial swelling, or itching.
- Nausea or abdominal cramps.
- Altered level of consciousness

A. All Skill Levels

1. Assess ABC's - treat accordingly.
2. Monitor vital signs and obtain O2 sat by pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask.
4. Administer Epi-pen 0.3 mg 1:1000
5. Transport ASAP.
6. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Administer IV LR titrated to a BP > 90 mm-Hg.
2. Draw baseline bloods

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor
2. Administer Diphenhydramine – 25 to 50 mg slow IVP or IM if unable to establish IV.
3. If dyspnea, cyanosis, stridor, or decreasing level of consciousness present,
 - a. Administer Epinephrine 1:10,000 – 0.1 to 0.3 mg IV or Epinephrine 1:1,000 0.3 to 0.5 mg SQ if unable to establish IV.
 - b. Administer Solu-Medrol 125 mg IVP or IM if unable to establish IV.
 - c. Monitor vital signs and watch for ECG changes in rate and rhythm.

3.5 Assault / Sexual Assault

A. All Skill Levels

1. Assess for injuries and provide immediate treatment based on the specific protocol.
2. Assess whether or not the person was involved in an act of family violence. If so go to #3, if the patient was involved in possible sexual assault go to #5.
3. Immediately provide the person with the family violence form showing the nearest family violence shelter
4. DOCUMENT the information given in the run report.
 - a. Include the fact that the person has received the information on family violence.
 - b. Include the reasons for the belief that the person's injuries were a result of family violence.
5. If person was possibly a victim of sexual assault observe rules of evidence for police:
 - a. Contact police immediately
 - b. Do not question patient for details other than injury related questions.
 - c. Do not let patient use the restroom, shower, or wash in any way.
 - d. Do not let patient change clothing, cover patient with sheet or blanket if needed.
 - e. Do not remove any other clothing or potential evidence from scene without permission from police.
 - f. Provide patient with numbers to sexual assault crisis centers.
 - g. Transport patient to an ER with Sexual Assault Nurse Examiner (SANE). If after contacting area hospitals there are no SANE's available the patient should be transported to one of the following hospitals. **Adults** to Ben Taub Houston, Memorial Hermann Hospital. **Pediatrics** to Texas Children's Hospital or Memorial Hermann Children's Hospital.

3.6 Asthma

Indications:

- Prior history of asthma (if no history, go to dyspnea protocol)
- Wheezing heard on auscultation of lungs.
- Chest may be hyper resonant on percussion.
- In obvious respiratory distress, using accessory muscles and body position to aid respiration.

A. ALL LEVELS

1. Assess ABC's treat accordingly.
2. Monitor vital signs and obtain an O₂ sat. by pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask.
4. Transport ASAP
5. Contact ER for further instructions.

B. EMT-B (In addition to A. above)

1. Determine what medications have been taken prior to EMS arrival.

C. EMT-I (In addition to A. and B. above)

1. Establish IV of LR and run at 100-150 cc/hr
2. Draw baseline bloods

D. EMT-P and LP (In addition to A, B, and C. above)

1. Apply cardiac monitor.
2. If pt has not taken large doses of inhalant bronchodilators, administer Atrovent (Ipratropium Bromide) unit dose and Albuterol (Proventil) 2.5 mg/3 ml via an oxygen-powered Nebulizer.
3. Administer Solu-Medrol 125 mg IVP or IM if unable to establish IV.
4. A second treatment with Albuterol 2.5 mg/3ml may be administered if the first treatment fails to relieve the respiratory distress.
5. If severe bronchoconstriction is present with inadequate air passage:
Epinephrine 1:1,000 - 0.4 mg sq ADULT ONLY.

3.7 Burns / Chemical

Exposure to corrosive chemicals can cause 2nd and 3rd degree burns. Chemical compounds of this type include common alkalis such as sodium or potassium hydroxide (drain cleaners) and lime and common acids such as hydrochloric, nitric, muriatic, and sulfuric. Exposure to other materials may also cause burns and medical personnel should attempt to SAFELY determine the causative agent. CHEMTREC or the Poison Control Center may be able to provide other information that it of use to medical personnel.

A. All Skill Levels

1. **ASSESS SCENE SAFETY!!! USE PERSONAL PROTECTIVE PRECAUTIONS TO ENSURE YOUR SAFETY!!!**
2. Remove pt from area of exposure.
3. Assess ABC's - treat accordingly.
4. Remove pt clothing and decontaminate pt prior to transport.
 - a. Decontaminate pt according to MSDS unless unavailable, then use water from hose or shower for no less than 15minutes.
 - b. Dry chemicals should be brushed off prior to irrigation.
 - c. For eye exposures-lactated ringers IV fluid connected to IV tubing can be used for irrigation while enroute to the hospital.
 - d. Do not try to neutralize acids or alkalis; water is the only irrigating agent that should be used.
5. After flushing is complete, the burned area should be covered with dry sterile dressing or sheet, and the patient transported ASAP, monitoring vital signs and pulse oximeter. **CONSIDER TRANSPORTING TO A BURN CENTER.**
6. Use the Rule of Nines to estimate burn coverage on the body.

B. EMT-I (In addition to A. above)

1. Establish IV lactated ringers and infuse at a rapid rate. (Refer to Parkland Burn Formula in the appendix)
2. Draw baseline bloods
3. Consider intubation if indicated for burns of the face and throat.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.

3.8 Burns / Thermal Major

A. All Skill Levels

1. Assess ABC's - treat accordingly.
2. Monitor vital signs - apply pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask
4. Dress wounds with sterile, dry, burn dressings. It is MANDATORY that gloves be worn to prevent contamination.
5. Transport ASAP. Consider transport to Burn Center.

B. EMT-I (In addition to A. above)

1. Establish IV of Lactated Ringers and infuse at rapid rate. (Refer to the Parkland Burn Formula in the appendix)
2. Draw baseline bloods
3. If patient exhibits signs of inhalation injury and is exhibiting stridor or respiratory distress, intubate patient to protect and secure the airway.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor.

3.9 Burns / Thermal Minor

A. All Skill Levels

1. Assess ABC'S treat accordingly
2. Treat pt symptomatically
3. Monitor vital signs, pulse Oximeter
4. Transport to appropriate facility.

3.10 Cardiac Arrest / Respiratory Arrest

Indications:

- Unconsciousness.
- No respirations.
- No palpable carotid or femoral pulse.

A. All Skill Levels

1. Assess ABC's
2. If no respiration's assist with BVM with oxygen at 15 LPM.
3. Perform CPR as appropriate.
4. Attach AED to pt and analyze pt, follow instructions of AED.
5. Try to obtain pt medical history.
6. Place pt on backboard for transport
7. Transport ASAP.
8. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated Ringers at 250 to 500 cc/hr.
2. Draw baseline bloods.
3. Secure airway appropriately, intubate as needed.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor, treat rhythm with appropriate protocol.

3.10.1 Cardiac Arrest / Asystole

A. EMT-P and LP (In addition to 3.10 above)

Indications:

- Unconsciousness.
 - Palpable carotid or femoral pulse.
 - EKG verification of lack of electrical activity, in two leads if possible.
 - If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.
1. If cardiac arrest was witnessed, immediately give one precordial thump.
 2. Using EKG, verify lack of electrical activity in two leads, if possible. If rhythm is unclear and possibly ventricular fibrillation (VF), go to VF protocol. If Asystole is confirmed, continue as outlined below.
 3. Continue CPR.
 4. Intubate and ventilate with ambu bag with oxygen at 12 – 15 LPM.
 5. Consider external pacing (if considered, perform immediately).
 6. Initiate an IV line with Lactated Ringers at a rapid rate.
 7. Administer Epinephrine 1:10,000 - 1.0 mg IVP. Repeat every 3-5 minutes. (If unable to give IV, Give 2 times the dose down the ET tube.)
- 7a. May give Vasopressin 40 units IV/IO in place of 1st dose of Epinephrine.
8. Consider possible causes and treatments in parenthesis:
 - a) Hypoxia (confirm airway placement and ventilation with 100% oxygen).
 - b) Hypovolemia (fluid challenge).
 - c) Hypothermia (provide warming environment).
 - d) Hydrogen ion - Acidosis (hyperventilate then consider Sodium Bicarb.).
 - e) Hypo / hyperkalemia
 - f) Tablets - Drug overdose.
 - g) Tamponade, cardiac
 - h) Tension Pneumothorax (Chest decompression)
 - i) Thrombosis, coronary
 - j) Thrombosis, pulmonary – embolism
- k) Consider Sodium Bicarbonate 1 mEq/kg IVP, according to the following:
- 1) Contraindication: Lactic acidosis due to inadequate ventilation in prolonged CPR.

- 2) Indications: Preexisting hyperkalemia. Preexisting bicarbonate responsive acidosis. Tricyclic antidepressant overdose. Extended arrest intervals in the intubated patient.

3.10.2 Cardiac Arrest / Pulseless Electrical Activity (PEA)

A. EMT-P and LP (In addition to 3.10 above)

Indications:

- Unconsciousness.
- No palpable carotid or femoral pulse.
- EKG verification of presence of electrical activity.

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including CPR.
2. If cardiac arrest was witnessed, immediately give one precordial thump.
3. Using EKG, verify presence of electrical activity.
4. Continue CPR.
5. Intubate and ventilate with 100% oxygen.
6. Initiate an IV line with Lactated Ringers at a rapid rate.
7. Administer Epinephrine 1:10,000 - 1.0 mg IVP. Repeat every 3-5 minutes. (ET dose 2 times the IV dose if unable to establish an IV.)
- 7a. May give Vasopressin 40 units IV/IO in place of 1st dose of Epinephrine.
8. Consider possible causes and treatments in parenthesis:
 - a) Hypoxia (confirm airway placement and ventilation with 100% oxygen).
 - b) Hydrogen ion - acidosis (increase ventilation rate).
 - c) Hypovolemia (volume infusion/fluid challenge of 500 cc lactated ringers)
 - d) Hyper / hypokalemia
 - e) Hypothermia (provide warming environment)
 - f) Tablets – drug overdose
 - g) Tension Pneumothorax (needle decompression)
 - h) Tamponade, cardiac
 - i) Thrombosis, coronary
 - j) Thrombosis, pulmonary - embolism.
9. Consider Sodium Bicarbonate 1 mEq / kg according to the following Indications:
 - a) Preexisting hyperkalemia.
 - b) Preexisting bicarbonate responsive acidosis.
 - c) Tricyclic antidepressant overdose.
 - d) Extended arrest intervals in the intubated patient.

3.10.3 Cardiac Arrest / Ventricular Fibrillation and Pulseless Ventricular Tachycardia

A. EMT-P and LP (In addition to 3.10 above)

Indications:

1. Unconsciousness.
2. No palpable carotid or femoral pulse.
3. EKG verification of ventricular fibrillation (VF) or ventricular tachycardia (VT).
Verification should be performed in two leads if possible.

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. If cardiac arrest was witnessed, immediately give one precordial thump.
2. Using EKG, verify rhythm of VF or VT in two leads, if possible.
3. Defibrillate at 120-200Joules BIPHASIC or 360Joules MONOPHASIC.
4. Resume CPR immediately (5 cycles)
5. Recheck Rhythm, If shockable rhythm give one shock @ previous dose or higher.
6. Continue CPR 5 cycles
7. Intubate and ventilate with 100% oxygen.
8. Initiate an IV line with Lactated ringers at a rapid rate.
9. Administer Vasopressin 40 units IVP (**single dose only**) or Epinephrine 1:10,000 1.0 mg IVP. Repeat every 3-5 minutes. May deliver Epinephrine via ET tube at 2 times the IV dose if unable to rapidly establish an IV.
10. If Vasopressin is given first and there is no conversion after 10 minutes begin using Epinephrine.
11. Defibrillate at 360 joules within 30-60 seconds after each Epinephrine bolus.
12. Administer Amiodarone or Lidocaine as follows:
 - a. Amiodarone 300mg IVP. Consider administering Amiodarone 150 mg IVP in 3-5 minutes.
 - b. Lidocaine 1.5 mg/kg IVP q 3-5 minutes to a loading dose of 3.0 mg/kg. If rhythm converts start Lidocaine Drip at 2-4 mg/min.
13. Defibrillate at 360 joules within 30-60 seconds after each medication bolus.
14. Administer Magnesium Sulphate 1-2 gm IVP for Torsades de Pointes or suspected Hypomagnesemic state or severe refractory VF.
15. Consider Sodium Bicarbonate 1 mEq/kg IVP, according to the following Indications:
 - a Preexisting hyperkalemia.
 - b Preexisting bicarbonate responsive acidosis.
 - c Tricyclic antidepressant overdose.
 - d Extended arrest intervals in the intubated patient.
16. Repeat Cycles of Shock

- a. Shock
- b. CPR
- c. Med's
- d. Rhythm Checks
- e. Shock
- f. CPR
- g. Med's etc..... Until stable rhythm returns or change to Asystole or PEA

3.10.4 Cardiac Dysrhythmia / Bradycardia (Heart rate less than 60 BPM)

A. EMT-P and LP (In addition to 3.10 above)

Indications:

1. Sinus bradycardia with one or more of the following conditions;
 - a) Hypo-tension (systolic less than 80 mm-Hg).
 - b) Altered mental status.
 - c) Chest pain.
 - d) Dyspnea.
 - e) Suspected ischemia or infarction.
 - f) Shock
 - g) Congestive heart failure

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including administration of oxygen at 15 LPM by NRB mask.
2. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
3. Using EKG, verify rhythm present.
4. Administer Atropine 0.5 - 1.0 mg IVP for the following rhythms where one or more of the above indications are present and the patient is in distress:
 - a) sinus bradycardia without block.
 - b) first degree AV block.
 - c) second degree type I
5. Atropine may be repeated every 5min. until a maximum dose of 0.04 mg/kg has been administered.
6. Perform transcutaneous pacing for the following conditions:
 - a) Administration of atropine is unsuccessful in resolving the arrhythmias above.
 - b) Type II second degree AV heart block is present even without any of the above indications.
 - c) Third degree AV heart block is present even without any of the above indications.
 - d) Presence of junctional or ventricular escape beats.

NOTE: If patient is intolerant of the pacing current, administer Diazepam - 10 mg IVP. May repeat Diazepam - 10 mg IVP (not to exceed max dose of 30mg).every 15 minutes as needed to maintain patient tolerance of current.

7. If systolic pressure remains below 90 mm-Hg, administer Dopamine, start at 2-10 mcg/kg/min and titrate to a pressure of 90 mm-Hg with a maximum dose of 20 mcg/kg/min OR Epinephrine 2-10mg/min.
8. Atropine .5 - 1.0 mg IVP may be given but with extreme caution, if pacing is not immediately available, for the following conditions:
 - a) Second degree type II AV blocks

b) Third degree AV blocks.

9. Transport ASAP.

10. Contact ER for further orders.

11. Receiving physician will advise of any additional treatment.

3.10.5 Cardiac Dysrhythmia / Paroxysmal Supraventricular Tachycardia (PSVT) (Stable)

A. EMT-P and LP (In addition to 3.10 above)

Indications:

EKG showing supraventricular tachycardia (SVT) with a heart rate greater than 150 and NONE of the following:

- Hypotension
- Chest pain
- Dyspnea
- Decreased level of consciousness

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including administration of oxygen at 15 LPM by NRB Mask.
2. Monitor EKG and obtain an O2 sat. by pulse Oximeter.
3. Initiate an IV line with Lactated ringers, in a large vein with at least a 20 ga. IV catheter, at a TKO rate of 25 ml/hour.
4. Perform vagal maneuver with the following contraindications:
 - a) Do not use carotid sinus massage in patients with carotid bruits.
 - b) Do not use ice water immersion in patients with known ischemic heart disease.
5. If SVT continues, administer Adenosine - 6 mg fast IVP followed by 20cc of IV flush in a syringe.
6. If SVT continues, administer Adenosine - 12 mg fast IVP followed by 20cc of IV flush.
7. Transport ASAP.
8. Contact ER for further orders.
9. Receiving Physician will advise of any additional treatment.

3.10.6 Cardiac Dysrhythmia / Paroxysmal Supraventricular Tachycardia (PSVT) (Unstable)

A. EMT-P and LP (In addition to 3.10 above)

Indications:

EKG showing supraventricular tachycardia (SVT) with a heart rate greater than 150 and one or more of the following:

- hypotension
- chest pain
- dyspnea
- decreased level of consciousness

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including administration of oxygen at 15 LPM by NRB mask.
2. Monitor EKG and obtain an O2 sat. by pulse oximeter.
3. Initiate an IV line with Lactated ringers, in a large vein with at least a 20 ga. IV catheter, at a rate appropriate to patient condition (Do not delay cardioversion.)
4. If defibrillator not immediately available to perform cardioversion, attempt vagal maneuver with the following contraindications:
 - a) Do not use carotid sinus massage in patients with carotid bruits.
 - b) Do not use ice water immersion in patients with known ischemic heart disease.
5. Administer Diazepam (Valium) - 10 mg IVP (if time permits).
6. Perform synchronized cardioversion at 100 joules.
7. If unresolved, perform synchronized cardioversion at 200 joules.
8. If unresolved, perform synchronized cardioversion at 300 joules.
10. If unresolved, perform synchronized cardioversion at 360 joules.
11. Transport ASAP
12. Contact ER for further orders
13. Receiving Physician will advise of any additional treatment.

3.10.7 Cardiac Dysrhythmia / Premature Ventricular Contractions (PVC)

A. **EMT-P and LP** (In addition to 3.10 above)

Indications:

Signs and symptoms of an acute myocardial infarction and one or more of the following:

- Presence of six or more PVC's per minute.
- Presence of multiform PVC's.
- Presence of coupled PVC's (couplets).
- Potential for the occurrence of R-on-T phenomenon.

A patient that has no indication of having suffered an acute myocardial infarction or who demonstrates no distress due to the PVC's should not be treated prophylactically.

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including administration of oxygen at 15 LPM by NRB mask.
2. Monitor EKG and obtain an O₂ sat. by pulse oximeter.
3. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
4. Administer Amiodarone 150mg SIVP. May repeat once if no change after 10 minutes.
5. If no change with Amiodarone, consider Lidocaine 1.5 mg/kg SIVP.
6. If unresolved, administer Lidocaine - 0.75 mg/kg IVP. Repeat every 5-10 minutes until either the PVC's are eliminated or a maximum of 3.0 mg/kg has been administered.
7. If Lidocaine successful establish a Lidocaine drip - 2.0 to 4.0 mg/min. (Remove)
8. Transport ASAP
9. Contact ER for further orders
10. Receiving Physician will advise of any additional treatment.

3.10.8 Cardiac Dysrhythmia / Ventricular Tachycardia – Stable

A. EMT-P and LP (In addition to 3.10 above)

Indications:

- EKG showing either ventricular tachycardia (VT) or other wide-complex tachycardia of uncertain type that is not due to paroxysmal supraventricular tachycardia. Rates are usually greater than 150 BPM.
- Patient is in no or minimal distress without any serious signs or symptoms.

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including administration of oxygen at 15 LPM by NRB mask.
2. Monitor EKG.
3. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
4. Transport ASAP
5. Contact ER for orders

Upon establishing communication with the emergency room physician, orders may be phrased "continue ACLS protocols". In this event, the following protocols will apply.

1. Administer Amiodarone or Lidocaine as follows.

- a) Administer Amiodarone 150 mg over 10 minutes IV.
- b) If rhythm unresolved, repeat Amiodarone 150 mg once in 5-10 min.

OR

- a) Lidocaine 1-1.5 mg/kg IVP.
- b) If refractive, Lidocaine 0.5-0.75 mg/kg q five minutes.
- c) If rhythm converts, use 250cc bag premixed Lidocaine (concentration 4mg / cc) and administer at 2-4 mg / min IVPB.

2. Have intubation and suction equipment available.

The receiving physician must specifically authorize the following steps:

3. Administer Diazepam (Valium) - 10 mg IVP.
4. Perform synchronized cardioversion at 100 joules.

5. If unresolved, perform synchronized cardioversion at 200 joules.
6. If unresolved, perform synchronized cardioversion at 300 joules.
7. If unresolved, perform synchronized cardioversion at 360 joules.
8. Receiving physician will advise of any additional treatment.

3.10.9 Cardiac Dysrhythmia / Ventricular Tachycardia (Unstable)

A. **EMT-P and LP** (In addition to 3.10 above)

Indications:

EKG showing ventricular tachycardia (VT) usually with a rate greater than 150 BPM and one or more of the following serious signs and symptoms:

1. Chest pain.
2. Dyspnea.
3. Decreased level of consciousness.
4. Hypotension (systolic pressure less than 90 mm-Hg).
5. Shock.
6. Pulmonary congestion.
7. Indications of congestive heart failure.
8. Indications of acute myocardial infarction.

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including oxygen administration at 15 LPM by NRB mask.
2. Monitor EKG and obtain an O2 sat. by pulse oximeter.
3. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
4. Assess vital signs.
5. Have intubation and suction equipment available.
6. Administer Lidocaine 1-1.5 mg/kg IVP if this will not delay cardioversion.
7. Administer Diazepam (Valium) - 10 mg IVP.
8. Perform synchronized cardioversion at 100 joules.
9. If unresolved, perform synchronized cardioversion at 200 joules.
10. If unresolved, perform synchronized cardioversion at 300 joules.
11. If unresolved, perform synchronized cardioversion at 360 joules.
12. Administer Lidocaine 1-1.5mg/kg IVP, if not previously given. If Lidocaine converts rhythm then start Lidocaine drip at 2-4 mg/min.
13. If Lidocaine is unsuccessful, Administer Amiodarone 150mg over 10 minutes.
14. If rhythm unresolved, repeat Amiodarone 150 mg once in 5-10 minutes.
15. Transport ASAP
16. Contact ER for further order

3.11 Chest Pain and General Cardiac Care / Myocardial Infarction

Indications:

A patient should have the clinical appearance of an individual suffering from an acute myocardial infarction. This may include the following:

- History of coronary artery disease.
- Non-traumatic chest pain.
- Respiratory distress.
- Diaphoresis.
- Nausea and vomiting.
- Apprehension.
- Rapid pulse with palpitations.

A. All Skill Levels and First Responder Personnel

1. Secure and maintain a patent airway.
2. Administer oxygen at 15 LPM via NRB mask.
3. Monitor vital signs and obtain O₂ saturation by pulse oximeter.
4. Obtain a patient history.
5. Transport as soon as possible.
6. Contact the ER for further orders

B. EMT-I (In addition to above)

1. Establish IV with Lactated ringers TKO rate of 25 ml/hr
2. Draw baseline bloods

C. EMT-P and LP (In addition to A, B, and C. above)

1. Apply EKG.
2. Administer aspirin – 325 mg orally. (4 – 81 mg chewable aspirin tablets) Patient should crush, suck, or chew tablets. **Do not administer to patients with an allergy to aspirin.**
3. If patient complains of severe non-traumatic substernal, shoulder, neck, arm, or back pain, and patient blood pressure is greater than 100 mm-Hg systolic, administer nitroglycerin spray (0.4 mg) - one spray. If no relief, this may be repeated twice at five-minute intervals.
4. Treat cardiac dysrhythmias per the appropriate protocol.
5. Establish voice communication with the base hospital.

3.12 Chest Trauma

A All Skill Levels

1. Assess ABC's and treat appropriately
2. Secure and maintain a patent airway.
3. Control active bleeding.
4. Administer oxygen at 15 LPM via non-rebreather mask.
5. Position patient to facilitate respiratory exchange.
6. Monitor vital signs and an O₂ saturation by pulse oximeter.
7. Stabilize spine and splint fractures.
8. In open chest wounds, cover with an occlusive dressing and closely monitor patient for the development of tension pneumothorax. If there is evidence that a tension pneumothorax has developed, remove dressing briefly to allow air to escape then reapply dressing and continue monitoring patient.
9. For a suspected flail chest, stabilize the chest wall and ventilate with high flow oxygen.
10. For a suspected pneumothorax, hemothorax, or cardiac tamponade, ventilate with high flow oxygen and transport as soon as possible.
11. Rapid transport to Trauma Center. (Consider transport by helicopter)
12. Contact the ER for further orders.

B EMT-I (In addition to A. above)

1. If required intubate for airway control
2. Initiate two IV lines with Lactated Ringers with large bore catheters to run at a rapid rate.
3. Draw baseline bloods prior to beginning infusion.

C EMT-P and LP (In addition to A and B above)

1. If signs and symptoms of Tension Pneumothorax are present, perform Needle Chest Decompression immediately.
2. Apply cardiac monitor - treat rhythm with appropriate protocol.

3.13 Congestive Heart Failure / Pulmonary Edema

Indications:

A patient should be suffering from acute dyspnea. Signs and symptoms may include the following:

- Dyspnea
- Tachypnea
- Chest pain
- Rales and wheezes
- Hypertension
- Tachycardia
- Altered level of consciousness
- Anxiety
- Pedal edema
- Frothy sputum

A. All Skill Levels

1. Assess ABC's, treat appropriately
2. Obtain a patient history.
3. Monitor vital signs and obtain an O₂ sat. by pulse oximeter.
4. Administer oxygen at 15 LPM via NRB mask.
5. Transport patient, as soon as possible in sitting position.
6. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers at a TKO rate.
2. Draw baseline bloods.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor, treat rhythm with appropriate protocol
2. If systolic blood pressure is greater than 100 mm-Hg, administer nitroglycerin spray (0.4 mg) - one spray. Repeat every five minutes up to three doses.
3. Administer Furosemide - .5 to 1mg/kg slow IVP. This may be performed after the initial dose of nitroglycerin has been administered.
4. CPAP @ 100% O₂ 10cm H₂O pressure

3.14 Diabetic Emergency / Insulin Shock – Hypoglycemia

Indications:

A patient must have a history of insulin dependent diabetes and recent injection of insulin. If the patient is unconscious with no history of insulin use, then the Unconscious Protocol should be used. The patient may also have the following signs and symptoms.

- Weak, rapid pulse
- Cold, clammy skin
- Weakness, lack of coordination
- Headache
- Irritability, nervous behavior
- Intoxicated appearance
- Unconsciousness

A. All Skill Levels

1. Assess ABC's treat appropriately
2. Obtain patient history.
3. Administer oxygen at 15 LPM via NRB mask. Exception: COPD patients may use 2-4 LPM via nasal cannula.
4. Perform a blood glucose determination. If patient is conscious and blood glucose is less than 60 mg%, administer 1 tube (15 gms) of oral glucose.
5. Monitor vital signs.
6. Transport as soon as possible.
7. Contact ER for any further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
2. Draw baseline bloods.
3. Perform a blood glucose determination. If < 60 administer Dextrose 50% 25gm. If you suspect ETOH abuse, administer Thiamine 100mg IVP before D-50.
4. If unable to establish IV, administer Glucagon 1mg IM.
5. If patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor, treat rhythm with appropriate protocol
2. If blood glucose is less than 60 mg/dl, administer Dextrose 50% - 50 ml IVP.
Note: if you suspect ETOH abuse, administer Thiamine 100 mg IVP before D50.

3.15 Diabetic Emergency / Diabetic Coma - Diabetic Ketoacidosis

Indications:

A patient may have a history of insulin dependent diabetes with a recent failure to administer required insulin doses. If the patient is unconscious with no history of insulin use, then the Unconscious Protocol should be used. The patient may have the following signs and symptoms:

- Polyuria, polydypsia and / or polyphagia
- Nausea and vomiting
- Tachycardia
- Deep, rapid (Kussmaul) respirations
- Warm, dry skin
- Fruity odor on breath
- Abdominal pain
- Falling blood pressure
- Fever (occasionally)
- Decreased level of consciousness

A. All Skill Levels

1. Assess ABC's treat appropriately.
2. Obtain patient history.
3. Administer oxygen at 15 LPM via NRB mask.
4. Perform a blood glucose determination.
5. Monitor vital signs.
6. Transport as soon as possible.
7. Contact the ER for any further orders.

B. EMT-I (In addition to A. above)

1. If the patient is unconscious, intubate for airway control.
2. Monitor vital signs, pulse oximetry.
3. Initiate an IV line with Normal Saline at 250 to 500 cc/hr.
4. Draw baseline bloods
5. Perform a blood glucose determination and report the value to the receiving hospital.
6. Receiving physician will advise of any additional treatment.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor, treat rhythm with appropriate protocol

3.16 Electrocutation

A. All Skill Levels

1. Assure the scene is safe.
2. Assess ABC's and treat appropriately.
9. Monitor vital signs, pulse oximetry.
3. Administer oxygen at 15 LPM via NRB mask.
4. Transport as soon as possible. Secure C-spine as indicated. Consider triage to trauma center.
5. Examine for entrance and exit wounds. Control bleeding.
6. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. If the patient is unconscious, intubate for airway control.
2. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
3. Draw baseline bloods.
4. Receiving physician will advise of any additional treatment.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor, treat rhythm with appropriate protocol

3.17 Lower extremity fractures / Pelvic fractures

1. Assess distal circulation, movement, and sensation. Reassess after splinting.
2. Immobilize the fracture above and below the site.
3. Apply cold pack to extremity fractures. Do not apply pressure to the site.

3.18 Hypertensive Crisis (without indications of CVA)

Indications:

A patient must have a systolic blood pressure greater than 200 mm/Hg and / or a diastolic blood pressure greater than 120 mm/Hg. A patient may also have some or all of the following:

- headache
- dizziness / fainting
- diaphoresis
- nausea and or vomiting
- epistaxis
- anxiety / restlessness
- Chest Pain
- Altered Mental Status

A. All Skill Levels

1. Assess ABC's and treat appropriately.
2. Obtain a patient history.
3. Administer oxygen at 15 LPM via NRB mask.
4. Monitor vital signs and pulse oximeter
5. Transport as soon as possible.
6. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. If the patient is unconscious, intubate for airway control.
2. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
3. Draw baseline bloods.
4. Receiving physician will advise of any additional treatment.

C. EMT-P and LP (In addition to A. and B. above)

1. Monitor EKG treat rhythm appropriately.
2. If possible, determine patients normal blood pressure before treatment
3. Administer 1 NTG 0.4 mg SL OR Labetolol 20mg SLOW IV Push. (1 Time)
4. Monitor vital signs every 5 to 10 minutes while enroute to the hospital.
5. May consider repeating the NTG.
6. Receiving physician will advise of any additional treatment

3.19 Hyperthermia

Indications:

- Evidence of exposure to elevated temperatures.
- Decreased level of consciousness not attributable to other illness or injury.
- Profuse sweating (early) progressing to cessation of all sweating.
- Skin may be cold and clammy (early) progressing to hot and dry.
- Cardiac dysrhythmias, particularly tachycardia, may be present.
- Hypotension
- Tachypnea
- Core body temperature exceeds 102.0 F (rectal equivalent on infrared thermometer).

A. All Skill Levels

1. Remove pt from source of heat.
2. Assess ABC's, treat appropriately
3. Monitor vital signs and obtain O2 sat by pulse oximeter.
4. Administer oxygen at 15 LPM via NRB mask.
5. Determine core body temperature but do not delay other treatment.
6. Begin cooling of patient by removing clothing and covering with water soaked sheets. Ice packs may be placed at the patients arm pits and groin. Cooling should be at a steady rapid rate but should not cause shivering. If shivering occurs, reduce cooling rate. Continue cooling until the core temperature falls below 102.0 F.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers (LR), using macro-drip tubing. Infuse an initial challenge of 250 cc fluid.
2. Draw baseline bloods
3. Reassess patient.
4. If the patient responds to the fluid challenge, continue infusion at a rate of 250 cc/hr.
5. If there is no response to the fluid challenge, reduce infusion rate to TKO and continue cooling.

C. EMT-P and LP (In addition to A. and B. above)

1. Monitor EKG and treat cardiac arrhythmias per those protocols.
2. If seizures occur, administer Diazepam - 5 mg IVP. Repeat every 10-15 minutes as needed to control seizure.
3. Establish voice communication with the receiving hospital.

3.20 Hypothermia / Moderate

A. All Skill Levels

1. Assess ABC's - treat appropriately.
2. Treat for trauma if noted or suspected
3. Move pt to warm environment, remove wet clothing and cover with insulating materials.
4. Administer oxygen at 15 LPM via NRB mask, assist respirations with BVM as needed.
5. Obtain a patient history.
6. Use heat packs in axilla and groin areas
7. Transport ASAP in recumbent position if possible.
8. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers (LR), using macro-drip tubing. Infuse an initial challenge of 250 cc fluid. (Use warmed fluids if at all possible)
2. Draw baseline bloods
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Monitor EKG and treat cardiac arrhythmias per hypothermia / severe protocol.
2. Receiving physician will advise of any additional treatment.

3.21 Hypothermia / Severe

A. All Skill Levels

1. Assess ABC's - treat appropriately.
2. Treat for trauma if noted or suspected
3. Move pt to warm environment, remove wet clothing and cover with insulating materials.
4. Administer oxygen at 15 LPM via NRB mask, assist respirations with BVM as needed.
5. Do not use SAD with pulseless pt perform CPR until arrival at ER
6. Obtain a patient history.
7. Use heat packs in axilla and groin areas
8. Obtain a patient history and incident events if possible. (DO NOT DELAY TRANSPORT FOR EITHER)
9. Transport ASAP in a 10-degree head down tilt if possible.
10. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. If the patient is unconscious, intubate for airway control. (DO NOT HYPERVENTILATE – BAG AT A RATE OF 8 TO 10 BPM)
2. Do not attempt IV access, if CPR in progress.

C. EMT-P and LP (In addition to A. and B. above)

1. Monitor EKG – (DO NOT ATTEMPT TO DEFRIBILLATE OR START AN IV IN THIS SITUATION)

NOTE THE PATIENT IS NOT DEAD UNTIL WARM AND DEAD!!! (DON'T GIVE UP)

3.22 Hypotension / No Trauma or MI

Indications:

- Adult patient.
- No apparent trauma.
- No evidence of an acute myocardial infarction.
- Existence of one of the following:
 - Two auscultated blood pressures taken 5 minutes apart with a systolic pressure less than 90 mm-Hg.
 - An auscultated systolic pressure less than 100 mm-Hg with a second auscultated blood pressure, taken five minutes later which is 10 mm-Hg lower than the first pressure.

A. All Skill Levels

3. Assess ABC's and treat appropriately.
4. Obtain a patient history.
5. Administer oxygen at 15 LPM via NRB mask.
6. Monitor vital signs and pulse oximeter
7. Place patient in trendelenburg position
8. Transport as soon as possible.
9. Contact the ER for further orders.

B. **EMT-I** (In addition to A. above)

1. Initiate an IV line with Lactated ringers, at a rapid rate.
2. Draw baseline bloods

C. **EMT-P and LP** (In addition to A. and B. above)

1. Monitor EKG treat rhythm appropriately.
3. Treat bradycardia or tachycardia per those protocols.
4. Establish voice communication with the receiving hospital.
5. If cardiac rate and rhythm are normal and Hypovolemia is not suspected, administer a Dopamine drip beginning at 5 mcg/kg/min. Titrate Dopamine administration to the lowest rate that will maintain a systolic pressure of 90 mm-Hg but do not exceed 20 mcg/kg/min.
6. Receiving physician will advise of any additional treatment.

3.23 Hypovolemic Shock

A. All Skill Levels

1. Assess ABC's and treat appropriately
2. Secure and maintain a patent airway.
3. Control obvious hemorrhage.
4. Monitor vital signs and pulse oximeter closely.
5. Administer oxygen at 15 LPM via non-rebreather mask.
6. Transport as soon as possible. Elevate the feet and legs.
7. Contact the ER for further orders.

B EMT-I (In addition to A. above)

1. Initiate two IV lines with Lactated Ringers with large bore catheters to run at a rapid rate.
2. Draw baseline bloods

C. EMT-P and LP (In addition to A. and B. above)

1. Monitor EKG treat rhythm appropriately.
2. Receiving physician will advise of any additional treatment.

3.24 Near Drowning / Diving Injuries

A. All Skill Levels

1. Assess ABC's and treat appropriately.
2. Maintain C-spine and patent airway.
3. Administer oxygen at 15 LPM by NRB mask or assist w/ a BVM as necessary.
4. If hypothermic refer to the appropriate protocol.
5. Obtain vital signs and continuously monitor changes in LOC.
6. Transport as soon as possible.

B. EMT-I (In addition to A. above)

1. If the patient is unconscious, intubate for airway control.
2. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
3. Draw baseline bloods

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.25 Obstetrical Emergency / Child Birth

A. All Skill Levels

1. Assess ABC's treat appropriately.
2. Monitor vital signs and obtain O2 sat by pulse oximeter administer oxygen at 15 LPM via NRB mask.
3. Assess patient for immediacy of delivery.
4. If delivery imminent prepare for emergency field delivery.
 - a. Prepare ob kit and get suction ready.
 - b. Baby's airway should be cleared as soon as head is delivered.
 - c. Note time of delivery
 - d. See NEONATAL RESUSCITATION PROTOCOL 4.7.
 - e. Clamp and cut umbilical cord
 - f. Massage fundus to facilitate delivery of placenta and decrease bleeding.
 - g. Transport ASAP.
 - h. Deliver placenta, should deliver spontaneously, do NOT pull on the cord. Give placenta to receiving hospital. DO NOT DISCARD.
5. If not imminent place patient on left side and transport ASAP.
6. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers TKO.
2. Draw baseline bloods.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.26 Obstetrical Emergency / Preterm Labor – Spontaneous Abortion

Indications

- Patient beyond expected menstrual date.
- Abdominal cramping
- Vaginal bleeding

D. All Skill Levels

7. Assess ABC's treat appropriately.
8. Monitor vital signs and obtain O2 sat by pulse oximeter.
9. Administer oxygen at 15 LPM via NRB mask.
10. Place patient on left side.
11. Transport ASAP.
12. Contact ER for further orders.

E. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods

F. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.27 Obstetrical Emergency / Abruption Placenta

Indications:

- Patient in third trimester.
- Severe abdominal pain.
- May have vaginal bleeding.

A. All Skill Levels

1. Assess ABC's treat appropriately.
2. Monitor vital signs and obtain O2 sat by pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask.
4. Place patient on left side.
5. Transport ASAP.
6. Contact ER for further orders.

B. EMT-I (in addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.28 Obstetrical Emergency / Eclampsia

Indications:

- Less than 20 weeks pregnant.
- Patient is generally young.
- Patient is edematous, pale, hyperactive.
- In severe cases, the patient may have:
 - Persistent headache
 - Vision difficulty
 - Mental confusion or disorientation
 - Anxiety
 - Persistent vomiting

A. All Skill Levels

1. Assess ABC's treat appropriately.
2. Monitor vital signs and obtain O₂ sat by pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask.
4. Obtain pt history.
5. Keep patient calm and quiet.
6. Place patient on left side.
7. Transport ASAP, minimizing stress to patient.
8. Contact ER for further orders.

B. EMT-I (in addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.29 Obstetrical Emergencies / Excessive Post-partum Bleeding

A. All Skill Levels

1. Access ABC's, treat accordingly.
2. Administer oxygen at 15 LPM via NRB mask.
3. Massage uterus to help stop bleeding.
4. Monitor vital signs closely O2 sat by pulse oximeter.
5. Transport as soon as possible.
6. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.30 Obstetrical Emergencies / Placenta Previa

Indications:

- Patient in third trimester.
- Painless vaginal bleeding with or without contractions.
- History of vaginal bleeding.
- Uterus soft, non-tender.

A. All Skill Levels

1. Access ABC's - treat accordingly.
2. Administer oxygen at 15 LPM via a non-rebreather mask.
3. Place patient on left side.
4. Monitor vital signs closely O₂ sat by pulse oximeter.
5. Transport as soon as possible.
6. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

NOTE: No digital or vaginal inspection should be done. **EXCEPTION:** A gloved hand may be introduced at the vaginal opening **ONLY** when the cord presents first. Slight pressure should be placed on the baby's head to keep the cord from being shut off from the blood flow.

3.31 Overdose

Indications:

- History obtained by reliable source indicates ingestion.
- Change in level of consciousness with evidence of pills or substance accessible to patient.
- Suspect ingestion based on behavior of the patient.

A. All Skill Levels

1. Access ABC's, treat accordingly
2. Obtain a patient history.
3. Monitor vital signs.
4. Administer Oxygen at 15 LPM via NRB mask.
5. If able to determine the drug involved, contact either the Regional Poison Control Center via the dispatcher or the receiving doctor for direction to administer either ipecac or activated charcoal.
6. Transport as soon as possible.
7. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. If narcotic suspected, administer Narcan 2 mg slow IVP or ETT if unable to start IV. (titrate to patient response)
3. Contact the ER for further orders. This may include the administration of Activated Charcoal w/ sorbital 50 gm p.o. if the patient is conscious.
4. Receiving physician will advise of any additional treatment.

3.32 Pain Control

Indications:

Relief of pain from:

- Isolated musculoskeletal trauma (fractures)
- Burns
- Possible kidney stone passage (ureteral colic)

Contraindications:

- Any altered state of consciousness or possible head trauma.
- Chronic obstructive pulmonary disease
- Pneumothorax or traumatic chest injury
- Abdominal distension or trauma where bowel sounds are absent
- Major facial trauma
- Hypotension
- Decompression sickness
- Air embolism
- Known renal insufficiency

3.32.1 Administration of Toradol (Ketorolac)

A. EMT-P and LP ONLY

1. Toradol should be administered to patients who express mild to moderate discomfort.
2. Assess for above indications. **DO NOT ADMINISTER TO PATIENTS WITH AN ALLERGY TO ASPIRIN**
3. Establish an IV of lactated ringers at TKO.
4. Apply cardiac monitor
5. Administer Toradol 30mg slow IVP, monitor for possible reaction.
For Pts over 60 yrs or under 60 kg, administer Toradol 15mg slow IVP

3.33 Poisoning

A. All Skill Levels

1. Remove patient from continued exposure to the source of the poison, if possible, and if this can be performed without exposure of EMS personnel.
2. Access ABC's- treat accordingly.
3. Obtain a patient history, including identification of substance involved.
4. Monitor vital signs and obtain O2 sat by pulse oximeter.
5. For an inhalation exposure, administer oxygen at 15 LPM via non-rebreather mask.
6. If not an inhalation exposure, administer oxygen at 15 LPM via non-rebreather mask.
7. For an external exposure, remove all patient clothing and flood the affected area with water for at least 15 minutes. Continue irrigation enroute to hospital if possible.
8. For ingestion, contact either the Regional Poison Control Center via the dispatcher or the receiving doctor for direction to administer ipecac and/or activated charcoal.
9. Transport as soon as possible.
10. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

2. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
3. Draw baseline bloods
4. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

2. Apply cardiac monitor - treat rhythm with appropriate protocol.
3. Receiving physician will advise of any additional treatment.

3.34 Respiratory Distress / Dyspnea

Indications:

A patient should be suffering from acute dyspnea. Signs and symptoms may include the following:

- Wheezing
- Retractions
- Distended neck veins
- Cyanosis

A. All Skill Levels

1. Access ABC's - treat accordingly.
2. Monitor vital signs and obtain O₂ sat by pulse oximeter.
3. Administer oxygen at 15 LPM via NRB mask.
4. Transport ASAP.
5. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers at a TKO rate of 15 ml/hour.
2. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. Administer Albuterol 2.5 mg in 3cc saline by oxygen powered nebulizer
3. Have intubation and suction equipment available.
4. Receiving physician will advise of any additional treatment.

3.35 Seizures / Status Epilepticus

Indications:

- Active seizures lasting longer than 15 minutes or still active on EMS arrival.
- Two or more seizures with no intervening period of consciousness (status epilepticus).

A. All Skill Levels

1. Assess ABC's and treat appropriately.
2. Perform rapid physical exam, observe seizure activity for any localization; observe seizure for type and duration.
3. Obtain an accurate past and present medical history.
4. Protect patient during and after active seizure activity.
5. Administer oxygen at 15 LPM via NRB mask.

Post-Seizure

- Monitor vital signs and obtain an O₂ sat. by pulse oximeter.
- Place in recovery position
- Perform a blood glucose determination.
- Provide appropriate treatment for trauma.
- Transport as soon as possible.
- Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with Lactated ringers at a TKO rate of 25 ml/hour.
2. Draw baseline bloods.
3. If blood glucose is < 60 mg/dl, administer Dextrose 50% - 50 ml IVP.
4. Repeat blood glucose determination after 5 minutes.
5. If blood glucose remains < 60 mg/dl, repeat Dextrose administration.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor
2. Administer Diazepam 10 mg IVP/IM. Repeat every 10-15 minutes as needed to control seizure.
3. Receiving physician will advise of any additional treatment.

3.36 Snake Bites

B. All Skill Levels

1. Access ABC's - treat accordingly.
2. Administer oxygen at 15 LPM by NRB mask.
3. Immobilize the affected part.
4. Cleanse the wound and immobilize, remove any constrictive items.
5. Attempt to identify the type of snake.
6. Transport as soon as possible.

C. EMT-I (In addition to A. above)

1. Initiate an IV line of lactated ringers at a rate appropriate to the patient's condition.
2. Draw baseline bloods

D. EMT-P and LP (in addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.37 Spinal Trauma

A. All Skill Levels

1. Secure C-spine and access ABC's, treat accordingly.
2. Administer oxygen at 15 LPM by NRB mask.
3. Assess circulation, sensation and range of motion.
4. Immobilize in an appropriate manner to a long spine board.
5. Consider transport as soon as possible to a Trauma Center.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Draw baseline bloods.
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. If patients heart rhythm is <60 BPM and patient is hypotensive, administer atropine 0.5 mg IVP, repeat in 3 minutes if no change until maximum total dose of 0.04 mg / kg has been administered.
3. If patient is experiencing signs and symptoms of a spinal cord injury, (i.e. decrease or loss of sensation to the extremities, decrease or loss of motor function, or tingling sensation,) administer methylprednisolone (Solu-Medrol) @ 30 mg / kg IV bolus over 20 minutes.
4. Receiving physician will advise of any additional treatment.

3.38 Stroke / CVA

Indications:

- Slurred speech and / or word finding difficulty.
- Weakness or paralysis on one side of the body.
- Facial droop or field cut (Vision does not cross midline).
- Confusion or difficulty following simple commands.

A. All Skill Levels

1. Assess ABC's - treat appropriately.
2. Administer oxygen at 15 LPM via NRB mask or assist ventilations with BVM.
3. Obtain the exact time of symptoms onset in order to determine if patient candidate for fibrinolytic therapy.
4. If symptoms onset is less than 3 hours, transport patient to facility capable of administering fibrinolytic therapy as soon as possible. (Consider transport by helicopter)
5. Monitor vital signs and obtain an O₂ sat. by pulse oximeter.
6. Perform a blood glucose determination.
7. Transport as soon as possible.
8. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. Perform blood glucose determination.
2. Establish IV Lactated Ringers TKO
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm appropriately.
2. If BP greater than 200 systolic and or 120 diastolic, may administer NTG 0.4mg SL. Or Labetolol 20mg SLOW IV Push (1 Time)
3. May administer Valium 5 – 10 mg IV or IM if no IV is established for seizures. May repeat every 10-15 minutes as needed to control seizure.
4. If blood glucose is < 60 mg/dl administer Dextrose 50% - 50 ml IVP.
5. Check blood glucose after 5 min. If < 60 mg/dl repeat Dextrose 50%-50ml IVP.
6. Receiving physician will advise of any additional treatment.

3.39 Trauma / Severe

Indications:

A patient must have been subjected to severe trauma, which may lead to further complications. Typical situations are:

- Traumatic injury with massive hemorrhage.
- Traumatic injury to the abdomen or thorax, with possible internal injury.
- Traumatic injury to numerous systems.
- Head trauma with a falling blood pressure.

A. All Skill Levels

1. Assess ABC's and treat appropriately.
2. Remove pt from sources of trauma
3. Control hemorrhage
4. Control of c-spine with full precautions.
5. Administer oxygen at 15 LPM by NRB mask.
6. Monitor vital signs and pulse oximeter.

B. EMT-I (In addition of A. above)

1. Initiate two IV lines with Lactated Ringers with large bore catheters to run at a rapid rate.
2. Draw baseline bloods
3. If the patient is unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

3.40 Unconsciousness / Decreased Level of Consciousness

Indications:

A patient must have a decreased level of consciousness to utilize this protocol. The patient may respond to verbal or painful stimuli and should not have any apparent signs of CVA. The patient may have a history of diabetes, hypoglycemia, or drug abuse.

A. All Skills Levels

1. Assess ABC's - treat accordingly.
2. Remove from sources of trauma
3. Control c-spine as needed
4. Administer oxygen at 15 LPM via NRB mask or assist ventilations with BVM.
5. If the patient is pulseless attach AED and assess.
6. Monitor vital signs and obtain an O₂ saturation level by pulse oximeter.
7. Perform a blood glucose determination.
8. Transport as soon as possible.
9. Contact the ER for further orders.

B. EMT-I (In addition to A. above)

1. If trauma or hypovolemia is present, initiate an IV line with Lactated Ringers at a rapid rate.
2. If trauma or hypovolemia are not present, initiate an IV line with lactated ringers at a TKO rate of 25 ml/hour.
3. Draw baseline bloods cc
4. Administer Naloxone 2.0 mg slow IVP, titrated to patients respiration.
5. If patient is not a known diabetic, administer Thiamine 100 mg slow IVP.
6. After performing blood glucose determination.
 - a) If blood glucose is < 60 mg/dl, administer Dextrose 50% - 50 ml IVP. (EMT-I approved)
 - b) Repeat blood glucose determination after 5 minutes.
 - c) If blood glucose remains < 60 mg/dl, repeat Dextrose administration.
7. If patient remains unconscious, intubate for airway control.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol.
2. Receiving physician will advise of any additional treatment.

SECTION 4

PEDIATRIC PROTOCOLS

SVFD pediatric prehospital care will concentrate on stabilization of basic cardio-respiratory functions coupled with rapid transport to an appropriate care facility. It should be understood though that pediatric prehospital care is not simply a "load-and-go" situation. In general, these protocols are designed to provide intervention that will allow the necessary time for this transport to occur through a mixture of both ALS and BLS actions. Most grievous errors in pediatric prehospital care are due to a failure to adequately perform BLS.

Within this section a newborn or neonate will refer to a patient less than one month old, an infant 1-12 months old, and a child 1-12 years old. Adolescents that are as large as, an adult should be treated based on the adult protocols while keeping in mind the unique psychology of the child. In all cases when administering drugs, doses will be computed on a weight basis.

4.1 Anaphylaxis

Indications:

A patient should have the clinical appearance of an individual suffering from an allergic reaction (anaphylaxis). This may include the following:

- History of exposure to an allergen within the past 30 minutes.
- History of allergic reactions.
- Respiratory distress, tightness in the chest, and coughing or wheezing.
- Hives, facial swelling, or itching.
- Nausea or abdominal cramps.
- Altered level of consciousness

A. All Skill Levels

1. Access ABC's - treat accordingly.
2. Monitor vital signs and obtain O2 sat by pulse oximetry.
3. Administer oxygen at 15 LPM via NRB mask including administration of humidified oxygen if available.
4. Administer Epi-Pen Jr. .15mg,1:1000
5. Transport ASAP.

Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Obtain vascular access with lactated ringers. In an infant, titrate IV for a HR > 90. For older patients Titrate for a BP > 90 mm/Hg.
2. Intubate if necessary. Verify tube placement.

C EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor - treat rhythm with appropriate protocol.
2. Administer Epinephrine 1:10,000 - 0.01 mg/kg slow IVP/IOP (0.1 mg maximum)If severe wheezing present, administer Albuterol (Proventil) 2.5mg in 3cc unit dose via an oxygen powered nebulizer attached to a mask.
3. Administer Diphenhydramine - 1 mg/kg IVP/IOP/IM (maximum 50 mg) while enroute.
4. Administer Solumedrol 1 mg/kg slow IVP/IOP/IM.
5. Receiving physician will advise of any additional treatment.

4.2 Asthma

Indications:

- Prior history of asthma (if no prior history, go to dyspnea or anaphylaxis protocol, as appropriate.)
- Wheezing heard on auscultation of lungs.
- Chest may be hyper-resonant on percussion.
- In obvious respiratory distress, using accessory muscles and body position to aid respirations.

All Skill Levels

1. Assess ABC's treat accordingly.
2. Monitor vital signs and obtain an O2 sat. by pulse oximetry.
3. Administer oxygen at 15 LPM via NRB mask.
4. Transport ASAP
5. Contact ER for further instructions.

EMT-I (In addition to A. above)

1. If asthma severe, establish an IV of Lactated ringers and run at 1-2 cc/kg/hr.

EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor
2. If the patient has not taken large doses of inhalant bronchodilators, administer Albuterol 2.5mg in 3cc unit dose via an oxygen powered hand held Nebulizer. Children too young to breathe through the Nebulizer mouthpiece can have the drug administered by blow by.
3. If unable to administer Albuterol or if patient has severe bronchospasm, administer Epinephrine 1:1,000 0.01 mg/kg SQ (maximum dose 0.3 mg). If HR > 180, receiving physician must approve Epinephrine.
4. Administer Solumedrol 1 mg/kg slow IVP/IOP/IM.
5. Receiving physician will advise of any additional treatment.

4.3 Cardiac Arrest / Asystole

Indications:

- Unconsciousness.
- No palpable carotid or femoral pulse (umbilical pulse in newborn).

A. All Skill Levels

1. Assess ABC's
2. If no respiration's assist with BVM with oxygen at 15 LPM.
3. Perform CPR as appropriate.
4. Try to obtain pt medical history.
5. Transport ASAP.
6. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate an IV line with lactated ringers at 250 to 500 cc/hr.
2. Secure airway appropriately.
3. Intubate and Ventilate with 100% oxygen.

C. EMT-P and LP (In addition to A. and B. above)

1. Apply cardiac monitor and treat rhythm with appropriate protocol. If rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.
2. Using EKG, verify lack of electrical activity in two leads, if possible. If rhythm is unclear and possibly ventricular fibrillation (VF), go to VF protocol. If asystole is confirmed, continue as outlined below.
3. Continue CPR.
4. Obtain vascular access using Lactated ringers at a TKO rate.
5. Administer Epinephrine 1: 10,000 - 0.01 mg/kg IVP/IOP. If only ET route is available, administer epinephrine 1: 1,000 - 0.1 mg/kg.
6. Administer Epinephrine 1: 1,000 - 0.1 mg/kg IVP/IOP/ET. Repeat every 3-5 minutes.
7. If blood glucose less than 60 mg/dl, administer Dextrose 25% - 0.5 gm/kg. Use Dextrose 50% if patient >2 years old.
8. Consider Sodium Bicarbonate 1 mEq/kg if patient is intubated and being hyperventilated.

Contraindication:

Lactic acidosis due to inadequate ventilation in prolonged CPR.

The indications are:

- a) Preexisting hyperkalemia
- b) Extended arrest intervals in the intubated patient.
- c) Suspected Tricyclic drug overdose.

4.4 Cardiac Arrest / Pulseless Electrical Activity (PEA)

Indications:

- Unconsciousness.
- No palpable carotid or femoral pulse.

▪ All Skill Levels

1. Assess ABC's
2. If no respiration's assist with BVM with oxygen at 15 LPM.
3. Perform CPR as appropriate.
4. Try to obtain pt medical history.
5. Transport ASAP.
6. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate vascular access with lactated ringers at a TKO rate.
2. Secure airway appropriately, intubate as needed.

C. EMT-P and LP (In addition to A. and B. above)

1. Using EKG, verify presence of electrical activity.
2. Administer Epinephrine 1: 10,000 - 0.01 mg/kg IVP/IOP. If only ET route available, administer epinephrine 1:1,000 - 0.1 mg/kg.
3. Administer Epinephrine 1: 1,000 - 0.1 mg/kg IVP/IOP/ET. Repeat every 3-5 minutes.
4. If blood glucose is < 60 mg/dl, administer Dextrose 25% - 0.5 gm/kg IVP / IOP. Use Dextrose 50% if patient > 2 yr. old.
5. Consider possible causes and treatments in parenthesis:
 - a) Hypoxemia (confirm airway placement and ventilation with 100% oxygen).
 - b) Hypothermia (provide warming environment).
 - c) Hypovolemia (fluid challenge)
 - d) Hypo / Hyperkalemia or Metabolic Disorders
 - e) Toxins-Poisons – Drug overdose
 - f) Tamponade, cardiac
 - g) Tension Pneumothorax (needle decompression).
 - h) Thromboembolism

6. Consider Sodium Bicarbonate 1 mEq / kg according to the following.

Contraindication:

Lactic acidosis due to inadequate ventilation in prolonged CPR.

Indications:

- a) Preexisting hyperkalemia

- b) Extended arrest intervals in the intubated patient.
- 7. Receiving physician will advise of any additional treatment.

4.5 Cardiac Arrest / Ventricular Fibrillation and Pulseless Ventricular Tachycardia

Indications:

- Unconsciousness.
- No palpable carotid or femoral pulse. No umbilical pulse in the newborn.
- EKG verification of ventricular fibrillation (VF) or ventricular tachycardia (VT). Verification should be performed in two leads if possible.

A. All Skill Levels

1. Assess ABC's
2. If no respiration's assist with BVM with oxygen at 15 LPM.
3. Perform CPR as appropriate and maintenance of patient warmth.
4. Try to obtain pt medical history.
5. Transport ASAP.
6. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate vascular access with lactated ringers at a TKO rate.
2. Secure airway appropriately, intubate as needed.

C. EMT-P and LP (In addition to A. and B. above)

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Using EKG, verify rhythm of VF or VT in two leads, if possible.
2. Defibrillate at 2 joules/kg.
3. CPR (5 Cycles)
4. Check Rhythm
5. Defibrillate at 4 joules/kg
6. CPR (5 cycles)
7. If VF or VT recurs after conversion, use previously successful energy level as the starting point for further defibrillation attempts.
8. Continue CPR.
9. Intubate and ventilate with 100% oxygen.
10. Initiate vascular access with lactated ringers at a TKO rate.
11. Administer Epinephrine 1:10,000 - 0.01 mg/kg IVP/IOP. If only an ET route is available, administer Epinephrine 1:1,000 - 0.1 mg/kg.
12. Administer Amiodarone or Lidocaine as follows.
 - a. Administer Amiodarone 5 mg/kg IVP/IOP. Repeat every 5 minutes to a maximum of 15 mg/kg. OR
 - b. Lidocaine 1 mg / kg IVP / IOP
13. Defibrillate at 4 joules/kg within 30-60 seconds of administration.
14. Administer Epinephrine 1:1,000 - 0.1 mg/kg IVP/IOP/ET. Repeat every 3-5 minutes.

15. Defibrillate at 4 joules/kg.
16. If blood glucose < 60 mg/dl, administer Dextrose 25% - 0.5 gm/kg IVP/IOP. Use Dextrose 50% if patient > 2 yr. old.
17. Consider Sodium Bicarbonate 1 mEq/kg according to the following:

Contraindication:
 - a) Lactic acidosis due to poor ventilation in prolonged CPR.
Indications:
 - a) Preexisting hyperkalemia.
 - b) Extended arrest intervals in the intubated patient.
 - c) Tricyclic drug ingestion
18. Reconsider causes; hypoxia, acidosis, hypothermia, drug overdose.
19. Receiving physician will advise of any additional treatment.

4.6 Cardiac Arrhythmia – Bradycardia

Indications:

- Heart Rate less than 60.
- Slow Heart Rate for patient's age with any of the following:
 - Poor Perfusion
 - Hypotension
 - Respiratory difficulty
 - Altered level of consciousness.

A. All Skill Levels

1. Assess ABC's
2. If no respiration's assist with BVM with oxygen at 15 LPM.
3. Perform CPR as appropriate and maintenance of patient warmth.
4. Monitor vital signs and obtain O2 sat by pulse oximetry.
5. Try to obtain pt medical history.
6. Transport ASAP.
7. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Initiate vascular access with lactated ringers at a TKO rate.
2. Secure airway appropriately, intubate as needed.

C. EMT-P and LP (In addition to A. and B. above)

If the rhythm converts to another treatable rhythm, continue patient care using the appropriate protocol.

1. Initiate basic care, including CPR and maintenance of patient warmth.
2. Using EKG, verify presence of electrical activity.
3. Continue CPR.
4. Intubate and ventilate with 100% oxygen.
5. Obtain vascular access using Lactated ringers at a TKO rate.
6. Administer Epinephrine 1: 10,000 - 0.01 mg/kg IVP/IOP. If only ET route available, administer Epinephrine 1:1,000 - 0.1 mg/kg.
7. Administer Epinephrine 1: 1,000 - 0.1 mg/kg IVP/IOP/ET. Repeat every 3-5 minutes.

8. Administer Atropine 0.02 mg/kg IVP/IOP/ET (minimum dose of 0.1 mg). Repeat in 5 minutes to a maximum dose 0.04 mg/kg.
9. If blood glucose < 60 mg/dl, administer Dextrose 25% - 0.5 gm/kg IVP/IOP. Use Dextrose 50% if patient > 2 yr. old.
10. Consider cardiac pacing.
11. Consider possible causes and treatments in parenthesis:
 - a) Hypoxia (confirm airway placement and ventilation with 100% oxygen).
 - b) Hypothermia (provide warming environment).
 - c) Hypovolemia (volume infusion of 10 ml/kg Lactated ringers).
 - d) Acidosis (increase ventilation rate).

- e) Tension Pneumothorax (needle decompression - on specific orders of MD).
 - f) Drug overdose / exposure.
 - g) Cardiac Tamponade.
12. Consider Sodium Bicarbonate 1 mEq/kg according to the following

Contraindication:

- a) Lactic acidosis due to inadequate ventilation in prolonged CPR.

Indications:

- a) Preexisting hyperkalemia
- b) Extended arrest intervals in the intubated patient.
- c) Tricyclic drug ingestion.

13. Receiving physician will advise of any additional treatment.

4.7 Neonatal Resuscitation

Indications:

The following protocol is intended primarily for use in the distressed newborn but may be used in any infant under one year of age. The child will show some or all of the following signs and symptoms:

- a) Respiratory depression ($R < 20$)
- b) Bradycardia ($HR < 100$)
- c) Central cyanosis.

Treatment of the distressed newborn begins with several relatively simple steps intended to resolve the most likely causes of distress. Many of these steps may be performed with minimal "advanced" equipment. If the infant's condition improves in response to a given treatment, more invasive/advanced procedures should not be performed unless the infant's condition deteriorates further. The steps shown in each group may be performed in parallel. Voice contact with the hospital should be established as soon as possible.

Drying, Warming, Positioning, Suction, Tactile Stimulation

Oxygen

Bag-mask Ventilation

Chest Compression

Intubation

Medications

A. All Skill Levels

1. Place the newborn in a warm environment in order to prevent hypothermia. The environmental temperature may need to be uncomfortably warm for the medics in the ambulance in order to maintain the newborn's temperature.
2. Dry the infant of any amniotic fluid.
3. Place the newborn on his back in a slightly head down position with the neck extended.
4. Elevate the shoulders with a one-inch layer of towel or blanket placed under the shoulders.
5. The head may be turned to the side if required to drain secretions.
6. Suction the mouth first and then the nose using a bulb syringe.
7. If meconium was present in the amniotic fluid this suctioning must be very thorough.

4.8 Seizures / Status Epilepticus

Indications:

- Active seizures lasting longer than 15 minutes or still active on EMS arrival
- Two or more seizures with no intervening period of consciousness (status epilepticus)

A. All Skill Levels

1. Assess ABC's
2. Monitor vital signs and obtain O₂ saturation levels by pulse oximeter.
3. If no respirations assist with BVM with oxygen at 15 LPM.
4. Perform CPR as appropriate and maintenance of patient warmth.
5. Try to obtain patient medical history.
6. Transport ASAP
7. Contact ER for further orders.

B. EMT-I (In addition to A. above)

1. Obtain vascular access with LR at TKO. Draw baseline bloods.
2. Secure airway appropriately, intubate as needed.

C. EMT-P and LP (in addition to A and B above)

1. If blood glucose <60 mg / dl, administer dextrose 25% - 0.5 gm / kg IVP / IOP. Use Dextrose 50% if patient > 2 years old.
2. Administer Diazepam 0.2 mg/kg IVP. If IV is unavailable administer Diazepam 0.2 mg/kg PR via 2" catheter followed by flush of 2-3 ml air.
3. Establish voice communication with the base hospital.
4. Receiving physician will advise of any additional treatment.

4.9 Shock / Cardiorespiratory Failure / Trauma

Indications

Patient showing evidence of being in shock with any of the following:

- tachycardia
- absent peripheral perfusion
- poor central perfusion
- respiratory distress
- decreased level of consciousness
- blood pressure may or may not be abnormal
- evidence of trauma.

Treatment Before Communication Established with Hospital

ALL SKILL LEVELS

1. Remove from source of trauma, if present.
2. Initiate basic care, including positioning of the patient, airway maintenance, control of C-spine, and high flow oxygen.

EMT-I

1. Initiate an IV or IO line with Lactated ringers, at a TKO rate of 10 cc/hour.

EMT-P

- 1 Apply cardiac monitor and treat cardiac dysrhythmias per those protocols.
- 2 If patient remains in shock, administer LR - 20 cc/kg IVP / IOP. Repeat up to a total of 80 cc/kg.
3. If blood glucose < 60 mg/dl, administer Dextrose 25% - 0.5 gm/kg IVP
4. Establish voice communication with the receiving hospital.

Treatment After Communication Established with Hospital

1. If evidence of respiratory depression due to narcotic exposure, administer Naloxone 0.1 mg/kg SIVP SIOF. Titrate Naloxone administration to improved respiration.
2. If cardiac rate and rhythm are normal and hypovolemia is not suspected, administer a Dopamine drip beginning at 5.0 to 10.0 mcg/kg/min. Titrate Dopamine administration to the lowest rate that will maintain a good cardiorespiratory function. Do not exceed 20 mcg/kg/min.

4.10 Special Situations

Indications:

- Suspected abuse and or neglect.
- Unaccompanied minor.
- Unmanageable guardian(s)

Treatment

1. Treat injury or illness according to the appropriate protocol.
2. Notify SVFD dispatch to provide for law enforcement on the scene.
3. Using your best assessment and judgment, determine when law enforcement will need to intervene in order to provide the most appropriate care to the patient.
4. Document and report all suspected abuse situations to the proper authorities.

SECTION 5

SEMI-AUTOMATIC DEFIBRILLATOR PROTOCOL

5.1 Semi-Automatic Defibrillator Protocol

Authority for Use

The Physiocontrol LifePak 12 or LifePak 500 semi-automatic defibrillator (SAD) may be used with the following protocol by any member of SVFD, provided they have completed the SAD training program. The SAD will be applied to ANY AND ALL patients that have the indications noted below unless the scene environment is not safe for them to do so.

Indications (all indications must be met to initiate the SAD treatment)

- Unconsciousness.
- Apnea.
- No palpable carotid or femoral pulse.

Treatment

1. Initiate basic care, including CPR, until SAD can be connected to patient.
2. If patient is adult and cardiac arrest was witnessed, immediately give one precordial thump.
3. Notify dispatcher that SAD protocol is in progress.
4. **LifePak 500 SAD:** ECA, EMT, EMT-I, EMT-P
 - If patient is a pediatric (birth to 8 years of age or 10kg to 25kg) use Infant/Child reduced energy SAD pads
 - If patient is an adult (over 8 years of age or greater than 25kg) use adult pads.
- LifePak 12 AED:**ECA, EMT, EMT-I
 - EMT-P should use standard pediatric pads.
 - If patient is an adult (over 8 years of age or greater than 25kg) use the adult pads
5. Turn SAD on.
6. Stop CPR during assessment of the patient's rhythm.
7. If the SAD indicates a shockable rhythm, CLEAR the patient area.
8. Depress SHOCK button and monitor SAD for SHOCK DELIVERED announcement.
9. Resume CPR for 2 minutes.
10. Check breathing, pulse, and rhythm as recommended by the SAD.
11. Follow prompts from SAD.
12. If still no pulse, advise dispatcher to relay patient update to the hospital.

13. Load patient and transport. Further orders will be relayed from the receiving physician.
14. If spontaneous pulse and breathing return, assist ventilation and monitor pulse.
15. Should a SVFD Paramedic arrive on the scene, normal ACLS protocols, or SAD protocols will be in effect at the Paramedic's discretion.

Section 6

APPENDICES AND GLOSSARY

AUTHORIZATION FOR POSSESSION OF DRUGS DRUG CONCENTRATION STATEMENT

This document authorizes SVFD to have in its possession and distribute controlled substances and other pharmacological agents used in patient care. All controlled substances are to be secured. On the following page is a list of the approved drugs for use by SVFD EMS personnel for patient care.

From time to time, the drugs on the following sheet may be supplied in concentrations or amounts other than those indicated. Regardless of the particular manner in which the drugs are supplied, equivalent total amounts must be present, and it is the paramedics' responsibility to be certain the correct dosages are administered to the patient.

Unless specified otherwise, generics and name brand products are considered interchangeable.

Ralph W. Love
Medical Director

October 1, 2011
Effective Date

September 30, 2013
Expiration Date

APPENDIX A

AUTHORIZATION FOR POSSESSION OF DRUGS AND MEDICAL EQUIPMENT

The following is authorization for the possession and distribution of controlled substances by the personnel of SVFD. All controlled substances are to be stored and transported on SVFD EMS vehicles only. No drugs, for use in patient care, other than those listed shall be present on any SVFD ambulance at any time.

A.1 Pharmacological Agents

NOTE: If the indicated container is unavailable, other containers containing equivalent quantities of drug are acceptable. Quantities are the minimum unit levels.

Quantity (minimum)	Medication	Description/Container
1	Activated Charcoal	25gms
10	Adenosine (Adenocard)	6 mg/2 ml vial
4	Albuterol (Proventil)	2.5 mg/3 ml vial
6	Amiodarone (Cordarone)	150mg / 3ml vial
1 Bottle	Aspirin	81 mg chewable tablets
4	Atrovent (Ipratropium Bromide)	0.5mg/2.5 ml vial
6	Atropine sulfate	1 mg/10 ml pre-filled syringe
2	Dextrose 25%	2.5 gm/10 ml pre-filled syringe
2	Dextrose 50%	25 gm/50 ml pre-filled syringe
2	Diphenhydramine HCl (Benadryl)	50 mg/1 ml vial
2	Diazepam (Valium)	10 mg/2 ml vial
1	Dopamine	400 mg premixed bag
2	Epinephrine 1:1000	30 mg multi-dose vial
4	Epinephrine 1:1000	1mg/1ml ampule
6	Epinephrine 1:10,000	1 mg/10 ml pre-filled syringe
2	Etomidate (Amidate)	2 mg/ml 40ml amp
2	Furosemide (Lasix)	40 mg/10 ml vial
2	Glucagon	1mg units
1	Glucose (oral)	15gm tube
2	Labetolol	20mg/4cc pre-filled syringe
6	Lidocaine	100 mg/5 cc pre-filled syringe
1	Lidocaine	2gms/500cc pre-mixed bag
2	Magnesium Sulfate	1gm/2cc vial
3	Naloxone (Narcan)	2 mg/2 cc ampule
2	Nitroglycerin	0.4 mg/sublingual spray / bottle
2	Promethazine (Phenergan)	25mg/1ml vial
3	Solumedrol (Methylprednisolone)	1gm act-o-vial

2	Solumedrol (Methylprednisolone)	125mg act-o-vial
2	Sodium bicarbonate – 8.4%	50 mEq/50 ml pre-filled syringe
2	Succinylcholine (Anectine)	20 mg/ml 10ml vial
2	Toradol (Ketorolac)	30mg/2cc vial
2	Thiamine	100 mg/cc vial
2	Vasopressin (Norcuron)	40 unit vials
2	Dextrose 5%	250 ml bag

A.2 Intravenous Administration Equipment

Quantity	Device or Solution Description
6	14 ga IV catheter (over needle)
6	16 ga IV catheter (over needle)
6	18 ga IV catheter (over needle)
6	20 ga IV catheter (over needle)
6	22 ga IV catheter (over needle)
6	24 ga IV catheter (over needle)
1	EZ IO Intraosseous Infusion set
8	Select 3 IV administration set
8	Lactated Ringer's (LR) 1000 cc
8	IV start kits

A.3 Miscellaneous Medical Equipment

Quantity	Description
1	Laryngoscope handle
1 ea.	Laryngoscope blade, Macintosh type, size 1, 2, 3, 4
1 ea.	Laryngoscope blade, Miller type, size 0, 1, 2, 3, 4
1 ea.	Endotracheal tube, sizes 2.5 to 9.0 mm
1 ea.	Combitube (adult & small adult)
1	Cardiac monitor / defibrillator with pacemaker/AED
1	CPAP Unit with O2 Pigtail

APPENDIX B

MEDICATION DRIPS

Several of the protocols in this document require the establishment of medication drips. The following pages define the procedures to be followed in establishing these drips.

Appendix B.1 Lidocaine Drip

Use a 500 cc bag premixed Lidocaine. This will give a medication concentration of 4 mg/cc. Infusion rate is normally in the range of 2-4 mg/min.

Lidocaine Infusion Rates	
2mg/min.	30gtts/min.
3mg/min.	45gtts/min.
4mg/min.	60gtts/min.

Appendix B.2

Dopamine Infusion rates

VASOPRESSOR INFUSION														
DOPAMINE (INTROPIN)														
MIX 400 MG (400,000 MCG) IN 250 ML D5W = 1,600 MCG/ML														
BODY WEIGHT														
LBS	88	99	110	121	132	143	154	165	176	187	198	209	220	231
KG	40	45	50	55	60	65	70	75	80	85	90	95	100	105
MCG / KG / MIN			AMOUNT TO INFUSE IN MCGGTS / MIN OR ML / HR											
2.5	4	4	5	5	6	6	7	7	8	8	8	9	9	10
5	8	8	9	10	11	12	13	14	15	16	17	18	19	20
7.5	11	13	14	15	17	18	20	21	23	24	25	27	28	30
10	15	17	19	21	23	24	26	28	30	32	34	36	38	39
12.5	19	21	23	26	28	30	33	35	38	40	42	45	47	49
15	23	25	28	31	34	37	39	42	45	48	51	53	56	59
20	30	34	38	41	45	49	53	56	60	64	68	71	75	79
25	38	42	47	52	56	61	66	70	75	80	84	89	94	98
30	45	51	56	62	67	73	79	84	90	96	101	107	113	118
35	53	59	66	72	79	85	92	98	105	112	118	125	131	138
40	60	68	75	83	90	98	105	113	120	128	135	143	150	158
45	68	76	84	93	101	110	118	127	135	143	152	160	169	177
50	75	84	94	103	113	122	131	141	150	159	169	178	188	197

NOTES:

1. ADMINISTER 2-20 MCG / KG/MIN
2. DO NOT MIX WITH SODIUM BICARBONATE

Appendix C.1 Out of Hospital DNR

OOH Identification devices shall require:

(1) An intact, unaltered, easily identifiable **plastic** identification OOH DNR bracelet, with the word “Texas” (or a representation of the geographical shape of Texas and the word “STOP” imposed over the shape) and the words “Do Not Resuscitate” **shall** be honored by qualified EMS personnel in lieu of an original OOH DNR Order form.

OR

(2) An intact, unaltered, easily identifiable **metal** bracelet or necklace inscribed with the words, “Texas Do Not Resuscitate – OOH” **shall** be honored by qualified EMS personnel in lieu of an OOH DNR Order form.



OOH DNR form: See following pages.

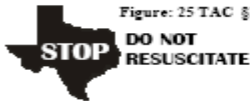


Figure: 25 TAC §157.25 (b)(2)

TEXAS DEPARTMENT OF STATE HEALTH SERVICES
STANDARD OUT-OF-HOSPITAL DO-NOT-RESUSCITATE ORDER

This document becomes effective immediately on the date of execution. It remains in effect until the patient is pronounced dead by authorized medical or legal authority or the document is revoked. Comfort measures will be given as needed.

All persons who sign the form must sign again under number 3.

1. Patient's full legal name - printed or typed Date of Birth: Male/Female (Circle One)

2. COMPLETE ONE OF THE FOUR BOXES: A, B, C, or D. If using Box A, B, or C, Witnesses and Physician's Statement must be completed.

A. Patient's Statement: I, the undersigned, am an adult capable of making an informed decision regarding the withholding or withdrawing of CPR, including the treatments listed below, and I direct that none of the following resuscitation measures be initiated or continued: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature Date Printed or Typed Name

B. Only use this box if the order is being completed by a person acting on behalf of an adult patient who is incompetent or otherwise unable to make his or her wishes known.

I am the patient's: legal guardian; agent under Medical Power of Attorney; or Qualified Relative (see back); AND:

- I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten means of communication; OR
I am acting under the guidance of a prior Directive to Physicians; OR
I am acting upon the known values and desires of the patient; OR
I am acting in the patient's best interest based upon the guidance given by the patient's physician.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature Date Printed or Typed Name

C. Only use this box if the order is being completed by a person acting on behalf of a minor patient who has been diagnosed with a terminal or irreversible condition.

I am the minor patient's: Parent; legal guardian; or managing conservator.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature Date Printed or Typed Name

WITNESSES: (see qualifications on reverse) We have witnessed all of the above signatures.

Witness 1 Signature Date Witness Printed or Typed Name

Witness 2 Signature Date Witness Printed or Typed Name

PHYSICIAN'S STATEMENT: I, the undersigned, am the attending physician of the patient named above. I have noted the existence of this order in the patient's medical records, and I direct out-of-hospital health care professionals to comply with this order as presented.

Date Physician's signature Printed name License number

D. Only use this box if the order is being completed by two physicians acting on behalf of an adult who is incompetent or otherwise unable to make his or her wishes known, and who is without a legal guardian, agent, or qualified relative.

- I attest to issuance of an Out-of-Hospital DNR by the patient by nonwritten communication; OR
The patient's specific wishes are unknown, but resuscitation measures are, in reasonable medical judgement, considered ineffective in these circumstances or are otherwise not in the best interest of the patient.

I direct that none of the following resuscitation measures be initiated or continued on behalf of the patient: Cardiopulmonary Resuscitation (CPR), Transcutaneous Cardiac Pacing, Defibrillation, Advanced Airway Management, Artificial Ventilation.

Signature Treating Physician Date Printed or Typed Name

Signature Second Physician who is not involved in treating the patient Date Printed or Typed Name

3. ALL PERSONS WHO SIGNED MUST SIGN HERE (Pursuant to H&SC 166.083(b)(13). This document has been properly completed.

Signature of Patient, Agent or Relative (A, B, or C) Signature of Second Physician (D) Signature of Attending Physician

Signature of Witness Signature of Witness Date

SHOULD TRANSPORT OCCUR, THIS DOCUMENT OR A COPY MUST ACCOMPANY THE PATIENT.

OUT-OF-HOSPITAL DNR INSTRUCTIONS

PURPOSE:

This form was designed to comply with the requirements as set forth in Chapter 166 of the Health and Safety Code (H&SC) relating to the issuance of Out-of-Hospital Do-Not-Resuscitate (DNR) orders for the purpose of instructing Emergency Medical Personnel and other health care professionals to forgo resuscitation attempts and to permit the patient to have a natural death with peace and dignity. This order does NOT affect the provision of other emergency care including comfort care.

APPLICABILITY:

This form applies to all health care professionals operating in any out-of-hospital setting to include hospital outpatient or emergency departments and physician's offices.

IMPLEMENTATION:

A competent adult may execute or issue an Out-of-Hospital DNR Order. The patient's attending physician will document the existence of the directive in the patient's permanent medical record.

If an adult patient is capable of providing informed consent for the order, he/she will sign and date the out-of-hospital DNR order on the front of this sheet in Box A. In the event that an adult patient is unable to provide informed consent, his/her Legal Guardian, agent under Medical Power of Attorney, or Qualified Relative may execute the order by signing and dating the form in Box B. If an adult patient is unable to provide informed consent and none of the persons listed in Box B are available, the treating physician may execute the order using Box D with the consent of a second physician who is not treating the patient and/or is a member of the health care facility ethics committee or other medical committee.

The following persons may execute an out-of-hospital DNR order on behalf of a minor: the minor's parents, the minor's legal guardian or the minor's managing conservator. A person executing a DNR order on behalf of a minor may execute the order by signing and dating the form in Box C. **An out-of-hospital DNR order may not be executed unless the minor has been diagnosed by a physician as suffering from a terminal or irreversible condition.**

The form must be signed and dated by two witnesses except when executed by two physicians only (Box D).

The original standard Texas Out-of-Hospital DNR form must be completed and properly executed. Duplicates may be made by the patient, health care provider organization or attending physician as necessary. **Copies of this completed document may be used for any purpose that the original may be used and shall be honored by responding health care professionals.**

The presence of a Texas DNR identification device on a person is sufficient evidence that the individual has a valid Out-of-Hospital DNR Order. Therefore, either the original standard form, a copy of the completed standard form, or the device is sufficient evidence of the existence of the order.

For information on ordering identification devices or additional forms, contact the Texas Department of State Health Services at (512) 834-6700.

REVOCAATION:

The Out-of-Hospital Do-Not-Resuscitate Order may be revoked at ANY time by the patient OR the patient's Legal Guardian/Agent/Managing Conservator/Qualified Relative, Parent (if a minor), or physician who executed the order. The revocation may involve the communication of wishes to responding health care professionals, destruction of the form, or removal of all or any Do-Not-Resuscitate identification devices the patient may possess.

AUTOMATIC REVOCAATION: This Out-of-Hospital DNR order is automatically revoked if the patient is known to be pregnant or in the case of unnatural or suspicious circumstances.

DEFINITIONS:

Attending Physician: The physician who is selected by or assigned to a patient who has primary responsibility for a person's treatment and care and is licensed by the Texas State Board of Medical Examiners or who is properly credentialed and holds a commission in the uniformed services of the United States and who is serving on active duty in this state. (H&SC 166.002 (3) & (12))

Qualified Relatives: Those persons authorized to execute or issue an out-of-hospital DNR order on behalf of a person who is comatose, incompetent, or otherwise mentally or physically incapable of communication under Section 166.088 H&SC Section 166.088 refers to 166.039: "One person, if available, from one of the following categories, in the following priority...: (1) The patient's spouse; (2) the patient's reasonably available adult children; (3) the patient's parents; or (4) the patient's nearest living relative."

Health Care Professional: Means physicians, nurses, physician assistants and emergency medical services personnel, and, unless the context requires otherwise, includes hospital emergency department personnel. (H&SC 166.081 (5))

Witnesses: Two competent adult witnesses must sign the form acknowledging the signature of the patient or the person(s) acting on the patient's behalf (except when signed by two physicians in Section C). Witness One must meet the qualifications listed below. Witness Two may be any competent adult. Witness One (the "qualified" witness) may not be: (1) person designated to make a treatment decision for the patient; (2) related to the patient by blood or marriage; (3) entitled to any part of the estate; (4) be a person who has a claim against the estate of the patient; (5) the attending physician or an employee of the attending physician; (6) an employee of a health care facility in which the patient is being cared for, if he or she is involved in providing direct patient care to the patient; or (7) an officer, director, partner, or business office employee of a health care facility in which the patient is being cared for or any parent organization of the health care facility.

Please report any problems with this form to the Texas Department of State Health Services at (512) 834-6700.

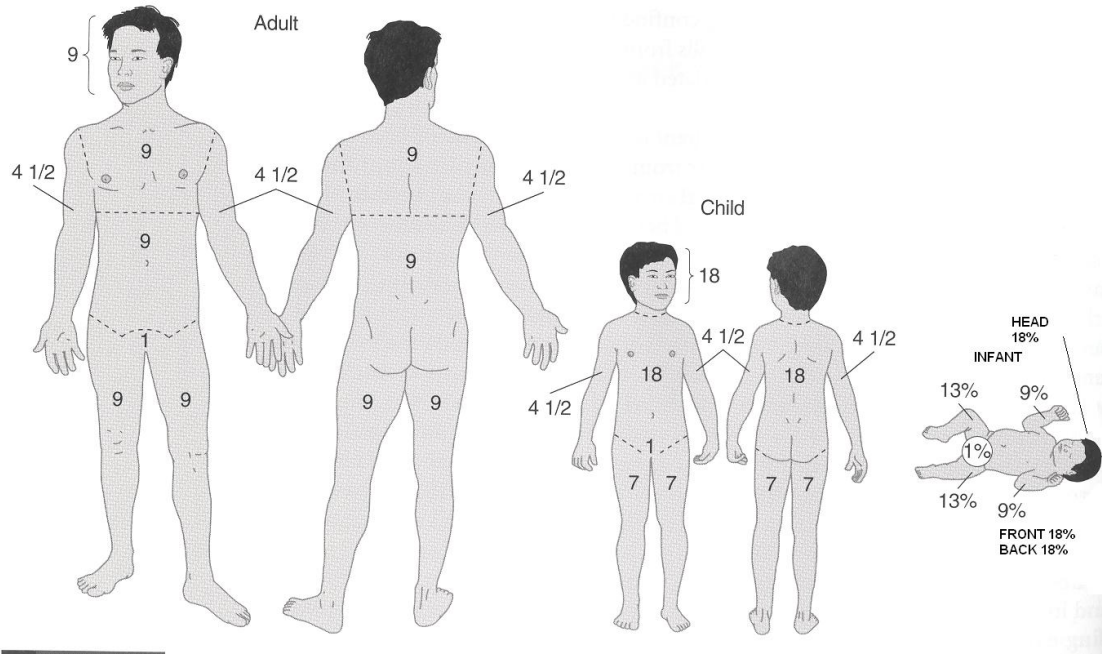
Revised July 19, 2005
Texas Department of State Health Services

Appendix D.1 Burns: Adult

CLASSIFICATION OF BURNS			
DEPTH	CAUSE	SURFACE	SENSATION
FIRST DEGREE	SUN, FLASH, HOT LIQUID, FLAME	RED, DRY, ABSENCE OF BLISTERS	PAINFUL
SECOND DEGREE (PARTIAL THICKNESS)	SUN, FLASH, HOT LIQUID, FLAME	RED/MOTTLED, SWELLING, BLISTERS	PAINFUL
THIRD DEGREE (FULL THICKNESS)	FLAME, HOT LIQUID/OBJECT, ELECTRIC	PALE/WHITE, DRY, CHARRED, OR LEATHERY	PAINLESS
"RULES OF NINES"			
ADULT			
REGION	% TBSA		
HEAD/NECK	9%		
THORAX	18% FRONT 18% BACK		
ARM	9% RIGHT 9% LEFT		
LEG	18% RIGHT 18% LEFT		
PERINEUM	1%		

- PALM OF HAND = 1% TBSA

- Assess burn area and degree by using the “Rule of Nines”



Appendix D.2 Burns: Pediatric

CLASSIFICATION OF BURNS			
DEPTH	CAUSE	SURFACE	SENSATION
FIRST DEGREE	SUN, FLASH, HOT LIQUID, FLAME	RED, DRY, ABSENCE OF BLISTERS	PAINFUL
SECOND DEGREE (PARTIAL THICKNESS)	SUN, FLASH, HOT LIQUID, FLAME	RED/MOTTLED, SWELLING, BLISTERS	PAINFUL
THIRD DEGREE (FULL THICKNESS)	FLAME, HOT LIQUID/OBJECT, ELECTIRC	PALE/WHITE, DRY, CHARRED, OR LEATHERY	PAINLESS
"RULES OF NINES"			
CHILD / INFANT			
REGION	% TBSA		
HEAD/NECK	18%		
THORAX/PERINEUM	18% FRONT 18% BACK		
ARM	9% RIGHT 9% LEFT		
LEG	14% RIGHT 14% LEFT		
<ul style="list-style-type: none"> • PALM OF HAND = 1% TBSA 			

Appendix E.1

Modified GCS for children and infants:

MODIFIED GLASCOW COMA SCALE FOR INFANTS/CHILDREN		
CHILD		
EYE OPENING	BEST VERBAL RESPONSE	BEST MOTOR RESPONSE
SPONTANEOUSLY 4	ORIENTATED 5	OBEYS COMMANDS 6
TO COMMAND 3	CONFUSED 4	LOCALIZES PAIN 5
TO PAIN 2	INAPPROPRIATE WORDS 3	WITHDRAWS FROM PAIN 4
NO RESPONSE 1	INCOMPREHENSIBLE 2	FLEXION (DECORTICATE) 3
	NO RESPONSE 1	EXTENSION (DECEBERATE) 2
		NO RESPONSE 1
INFANT		
EYE OPENING	BEST VERBAL RESPONSE	BEST MOTOR RESPONSE
SPONTANEOUSLY 4	COOS, BABBLES 5	SPONTANEOUS 6
TO SPEECH 3	IRRITABLE CRIES 4	LOCALIZES PAIN 5
TO PAIN 2	CRIES TO PAIN 3	WITHDRAWS FROM PAIN 4
NO RESPONSE 1	MOANS, GRUNTS 2	FLEXION (DECORTICATE) 3
	NO RESPONSE 1	EXTENSION (DECEBERATE) 2
		NO RESPONSE 1
<ul style="list-style-type: none"> • IF THE PATIENT IS INTUBATED, UNCONSCIOUS, OR PREVERBAL, THE MOST IMPORTANT PART OF THIS SCALE IS MOTOR RESPONSE 		

Appendix E.2 Glasgow Coma Score – Adult

ADULT GLASGOW COMA SCALE		
EYE OPENING	BEST VERBAL RESPONSE	BEST MOTOR RESPONSE
SPONTANEOUSLY 4	ORIENTATED 5	OBEYS COMMANDS 6
TO COMMAND 3	CONFUSED 4	LOCALIZES PAIN 5
TO PAIN 2	INAPPROPRIATE WORDS 3	WITHDRAWS FROM PAIN 4
NO RESPONSE 1	INCOMPREHENSIBLE 2	FLEXION (DECORTICATE) 3
	NO RESPONSE 1	EXTENSION (DECEBERATE) 2
		NO RESPONSE 1
<ul style="list-style-type: none"> • GLASGOW COMA SCORE = E+V+M 		

Appendix F

Oxygen

OXYGEN ADMINISTRATION					
ADMINISTRATION CHART					
DEVICE	LITERS/MIN			O2 DELIVERED	
NASAL CANNULA	1 2 4 6			<ul style="list-style-type: none"> • 24% • 28% • 36% • 44% 	
VENTURI MASK	4 8			<ul style="list-style-type: none"> • 28% • 40% 	
NRB MASK	10 15			<ul style="list-style-type: none"> • 80% • 90% 	
POCKET MASK	MOUTH-TO-MASK 10 15 30			<ul style="list-style-type: none"> • 17% • 50% • 80% • 100% 	
BAG-VALVE-MASK (WITH RESERVOIR)	ROOM AIR 10 15			<ul style="list-style-type: none"> • 21% • 90% • 95% 	
POSITIVE PRESSURE (DEMAND VALVE)	100			<ul style="list-style-type: none"> • 100% 	
OXYGEN TANK REFERENCE					
CYLINDER TYPE	LITERS	GALLONS	CUBIC FEET	WEIGHT	TANK FACTOR
D/DD	400	105	14.1	1 lb.	.16
E	660	174	23.3	1 lb., 3 oz.	.28
M	3450	912	122	10 lb., 1 oz.	N/A
G	5300	1400	187	15 lb., 8 oz.	N/A
H	6900	1825	244	20 lbs., 8 oz.	3.14
M60	1738	N/A	61.4	21 lbs., 7 oz.	0.78
MM	3455	N/A	122	38 lbs., 6 oz.	1.56
OXYGEN TANK FORMULA					
$\frac{\text{PSI} \times \text{TANK FACTOR}}{\text{LITERS PER MINUTE}} = \text{MINUTES OF OXYGEN}$			$\frac{\text{MINUTES OF OXYGEN}}{60} = \text{HOURS OF OXYGEN}$		

Appendix G General Reference

AGE					
NEWBORN	INFANT	CHLD	ADOLESCENT		
0-1 MONTH	1-12 MONTHS	12 MONTHS-8 YRS	8-15 YRS		
AGE BASED ESTIMATES FOR VITAL SIGNS AND WEIGHT					
AGE	WT/KG	HR/MIN	RR/MIN	SYST BP	DIAST BP
PREMATURE	1	145	40	42 (+/-10)	21 (+/-8)
PREMATURE	1-2	135	40	50 (+/-10)	28 (+/-8)
NEWBORN	2-3	125	40	60 (+/-10)	37 (+/-8)
1 MONTH	4	120	24-35	80 (+/-16)	46 (+/-16)
6 MONTHS	7	130	24-35	89 (+/-29)	60 (+/-10)
1 YEAR	10	120	20-30	96 (+/-30)	66 (+/-25)
2-3 YEARS	12-14	115	20-30	99 (+/-25)	64 (+/-25)
4-5 YEARS	16-18	100	20-30	99 (+/-20)	65 (+/-20)
6-8 YEARS	20-26	100	12-25	100 (+/-15)	60 (+/-10)
10-12 YEARS	32-42	75	12-25	110 (+/-17)	60 (+/-10)
> 14 YEARS	> 50	70	12-18	118 (+/-20)	60 (+/-10)
<ul style="list-style-type: none"> • NORMAL SYSTOLIC BP (CHILD > 1 YR) = 90 + (2 X AGE IN YEARS) 					
<ul style="list-style-type: none"> • WEIGHT ESTIMATION IN KG = (2 X AGE IN YEARS) + 8 					
SIZE ESTIMATE	<ul style="list-style-type: none"> • (16 + AGE IN YEARS) /4 • TIP OF LITTLE FINGER 				
CUFF VS UNCUFFED	<ul style="list-style-type: none"> • AGE < 8 YEARS: UNCUFFED • AGE > 8 YEARS: CUFFED (SUBTRACT 0.5 FROM ET SIZE CALCULATED) 				

ENDOTRACHEAL TUBE

ACCEPTABLE MEDICATIONS PER ETT

- NARCAN
- ATROPINE
- LIDOCAINE
- EPINEPHRINE
- *DILUTE IN 3-5 CC NS

Appendix H Newborn Assessment

APGAR SCORE			
SIGN	0	1	2
HEART RATE/MINUTE	ABSENT	< 100	> 100
RESPIRATIONS	ABSENT	SLOW, IRREGULAR	GOOD, CRYING
MUSCLE TONE	LIMP, FLACCID	SOME FLEXION	ACTIVE MOTION
REFLEX IRRITABILITY (CATHETER IN NARES)	NO RESPONSE	GRIMACE	COUGH, SNEEZE, VIGOROUS CRY
COLOR	BLUE OR PALE	PINK BODY WITH BLUE EXTREMITIES	COMPLETELY PINK

NOTES:

1. A RESPIRATORY RATE OF 60-90 IS NORMAL IN THE FIRST FEW HOURS OF LIFE.
2. APGAR SCORES ARE ASSESSED AT 1 MINUTE AND 5 MINUTES OF AGE:
 - A. < 3 PREDICTS POOR NEUROLOGIC OUTCOME
 - B. IF THE 5-MINUTE SCORE IS < 7, ADDITIONAL SCORES SHOULD BE OBTAINED EVERY 5 MINUTES FOR A TOTAL OF 20 MINUTES
 - C. THE APGAR SCORE SHOULD NOT BE USED TO DETERMINE THE NEED FOR RESUSCITATION. RESUSCITATIVE EFFORTS SHOULD BE INITIATED PROMPTLY AND SHOULD NOT BE DELAYED WHILE THE SCORE IS OBTAINED.

Appendix I

The Cincinnati Prehospital Stroke Scale

Facial Droop (have patient show teeth or smile):

- *Normal* – Both sides of face move equally
- *Abnormal* – One side of face does not move as well as the other side

Arm Drift (patient closes eyes and holds both arms straight out for 10 seconds):

- *Normal* – both arms move the same or both arms do not move at all(other findings, such as pronator grip may be helpful)
- *Abnormal* – one arm does not move or one arm drifts down compared with the other

Abnormal Speech (have the patient say “you can’t teach an old dog new tricks”):

- *Normal* – patient uses correct words with no slurring
- *Abnormal* – patient slurs words, uses the wrong words, or is unable to speak

Interpretation: If any 1 of these 3 signs is abnormal, the probability of a stroke is 72%.

APPENDIX J VEHICLE SUPPLY LIST

Quantity	Misc. Supplies	Quantity	Spinal Immobilization
3	Burn Sheets	2	Backboard
2	Disposable Blanket	1	Scoop Stretcher
1 bx	Ammonia Inhalant	6	Stiff-Neck Select C Collar
1	Ring Cutter	2	Baby No-Neck C Collar
2	Pen Light	6	Pediatric C Collar
1	Trauma Shear	2	Rolls 2" Medical Tape
1	Center Punch	1	Spider Strap or Webbing
2	Bite Stick	6	CID
4	Stretcher Sheet		
5	Towel		IV Supplies
2	Soft Restraint	8	IV Start Kit
1	Flashlight	8	Select 3 Tubing
5	Emesis Bag	6	Vacutainer - Blue
2	Blankets	6	Vacutainer - Red
1	Medical Protocol Book	6	Vacutainer - Purple
2	Sharp Container	2	Vacutainer Barrel
1	Stethoscope	8	Luer Lock Adapter
1	Adult BP Cuff	20	Alcohol Preps
1	Child BP Cuff	6	18ga x 1 ½ " needles
1	Infant BP Cuff	6	20ga x 1
1	Glucometer	6	25ga x 1 ½" needles
10	Glucometer Lancet	6	25ga x 5/8" needles
10	Glucometer Strip	8	Clave (saline lock)
2	OB Kit	8	T-Connector
			Syringes
3	Reflective Triangle	5	1 cc
1	Stair Chair	5	3 cc
4	Biohazard Bags	10	10 cc
1	Fire Extinguisher	5	30 cc
1	No Smoking signs (cab & patient compartment)	2	Tubex Injector
			IV Fluids
		6	Saline Flush
		8	1000cc LR
		2	Dopamine Premix 400mg
		2	Lidocaine 2gm/500 cc Premix
		1	Dextrose 5% 250 ml bag

Quantity	IV Catheters	Quantity	ET Tubes
6	14 Gauge	1	2.5
6	16 Gauge	1	3.0
6	18 Gauge	1	3.5
6	20 Gauge	1	4.0
6	22 Gauge	1	4.5
6	24 Gauge	1	5.0
2ea	3 multiple sized catheters	1	5.5
6	Saline Locks	1	6.0
1	EZ IO IO infusion sets	1	6.5
		2	7.0
		2	7.5
		2	8.0
	Bandaging & Splinting	1	8.5
12	Triangular Bandages	1	9.0
25	Sterile 4x4	4	Lubricating Jelly
2	Chest Seal	1	Laryngoscope Handle
4	Vaseline Gauze	1ea	Combitube (adult & small adult)
3	Multi-Trauma Dressing		
12	Rolls Kerlix		Miller Blade
1 pk	Non-Sterile 4x4	1	Each 0-4
2	Oval Eye Pad		
6	Hot Pack		MacIntosh Blade
6	Cold Pack	1	Each 0-4
1 bx	Band-Aid		
6	Sterile Water		Oral Airways
2	Eye Wash	1	Each 0-6
5	SAM splint		
1	KED		Bag Valve Mask
1	Adult Traction Splint	1	Adult
1	Pediatric Traction Splint	1	Child
4	1" Adhesive Tape	1	Pediatric
4	1" Transpore Tape		
4	3" Cloth Tape		Oxygen Delivery Devices
		4	Pediatric Non-Rebreather
	Airway Management	2	Infant Non-Rebreather
1	Adult OP Airway Kit	5	Adult Nasal Cannula
2	Yankauer with tubing	5	Adult Non-Rebreather
	French Suction Catheter	4	Adult Nebulizer Mask
1	14 f	1	Wall mounted suction unit
1	16 f	1	Portable Suction Unit
1	18 f	1	O ₂ Wrench
1	Adult BVM		Main Oxygen Tank (500 PSI Min)
1	Adult ET Tube Holder	2	Portable Oxygen Cylinder
		1	Portable Oxygen Regulator
		1	CPAP Unit W/ O ₂ Pigtail

Quantity	Personal Protection		Quantity	Cardiac Monitoring
1 bx	Hand Wiper		1	Lifepack 12 or 15
1 bx	Gowns		1	Adult Combo Pad
4	HEPPA Mask		1	Pediatric Combo Pad
2	Goggles		1	Tube, Defibrillator Jell
2	Face Shield		6	Adult EKG Electrode
2	Safety Glasses		4	Pediatric EKG Electrodes
1	Box Gloves – Each Size		1	Lifepack 12/15 EKG Paper
	Decontamination		1	Spare Lifepack Battery
4	Rubbing Alcohol			
4	Hydrogen Peroxide			
1	Disinfectant Wiper			

This list represents the minimum medical and personal protection supplies that are to be carried on each response ready ambulance. This list is effective October 1, 2009 and expires September 30, 2011

Ralph W. Love, DO
Medical Director

October 1, 2011
Effective Date

Section 7

Advanced Procedures

7.1. Needle Chest Decompression - (Needle Thoracostomy)

Indications:

- Patient condition is rapidly deteriorating in spite of oxygen and ventilatory assistance with absence of breath sounds on affected side
- Subcutaneous emphysema associated with severe respiratory distress
- Tracheal deviation toward the opposite side of the tension pneumothorax
- Hypotension, jugular venous distention, and / or decreasing level of consciousness with severe respiratory distress and history consistent with tension pneumothorax.
- Increasing resistance to adequate ventilation assistance in the intubated patient with absence of breath sounds on the affected side.

Procedure:

1. Identify the second rib, located just inferior to the clavicle
2. Prep the site with betadine or alcohol
3. Aseptically insert a 14 or 16 gauge over the needle catheter (use a 18 or 20 gauge for pediatric patients) just above the third rib in the second intercostal space along the midclavicular line until a rush of air escapes.
4. Remove the needle and secure catheter in place.
5. Attach a Heimlich or Flutter valve to prevent reentry of air into chest cavity.
6. Monitor for recurrence of tension pneumothorax.
7. Document the procedure, clinical findings, and patient response.

Complications:

1. Laceration of the intercostal vessels
2. Pneumothorax or Hemothorax if not already present
3. Laceration of the lung
4. Infection

7.2 Orotacheal Intubation

Indications:

- Patients with significant respiratory compromise or the inability to protect their airway
- Contraindications:
- Caution is advised in patients with potential Cervical Spine injury. Maintain manual C-Spine restriction during intubation attempts or utilize an alternative intubation method or alternative airway device to adequately ventilate the patient.

Procedure:

1. Airway should be cleared of secretions or foreign bodies, including dentures.
2. Apply cardiac and oxygen saturation monitors if immediately available.
3. prepare equipment
4. Hyperventilate with 100% oxygen. Note: the spontaneously breathing patient should have minimal assistance with ventilation. This will decrease possibility of gastric distention and regurgitation / aspiration.
5. Have assistant apply cricoid pressure, if available.
6. Insert appropriate laryngoscope blade into mouth and do not pry on teeth during attempt. Each attempt should take no longer than 30 seconds.
7. Visualize the glottic opening and insert appropriate size endotracheal tube to an appropriate depth.
8. Auscultate for absence of sounds over the epigastrium and confirm bilateral breath sounds. Observe for chest wall movement.
9. If endotracheal tube is determined to be in the esophagus, remove tube and hyperventilate patient with BVM and 100% oxygen. Repeat above steps or if able to ventilate with BVM in conjunction with another airway adjunct, consider rapid transport to closest hospital.
10. Inflate cuff and secure tube at appropriate depth.
11. Continue ventilating patient with 100% oxygen. Reauscultate breath sounds periodically to confirm tube placement.
12. Document procedure, including unsuccessful attempts, patient response and clinical findings.

Complications:

1. Failed tracheal intubation
2. Oral trauma, to include broken teeth
3. Right main stem intubation. Evidenced by absence of breath sounds on the Left. Resolve by withdrawing endotracheal tube until breath sounds are auscultated in bilateral lung fields. Re-secure endotracheal tube.
4. Aspiration
5. Hypoxia, during prolonged attempts

7.3 Nasotracheal Intubation

Indications:

- Patients with significant respiratory compromise or the inability to protect their airway
- Possible cervical spine injury
- Trismus or unable to open mouth

Contraindications:

1. Apnea
2. Severe facial trauma with possibility of cranial intubation, as evidenced by large amount of CSF or visible brain tissue from nose or mouth
3. Excessive force needed to pass tube through nares.
4. Use caution with known bleeding diathesis.

Procedure:

1. Apply cardiac and oxygen saturation monitors if immediately available.
2. Prepare equipment, Lubricate distal endotracheal tube
3. Hyperventilate with 100% oxygen. Note: the spontaneously breathing patient should have minimal assistance with ventilation. This will decrease possibility of gastric distention and regurgitation / aspiration.
4. Insert endotracheal tube into nare using appropriate technique for right or left nare.
5. Advance endotracheal tube during inspiration, watch for chest rise and fall, as well as listen for respirations.
6. When successfully intubated the patient will usually cough and air movement will be heard from proximal endotracheal tube.
7. Auscultate for absence of sounds over the epigastrium and confirm bilateral breath sounds. Observe for chest wall movement and resistance to manual ventilation with Ambu-bag.
8. If endotracheal tube is determined to be in the esophagus, remove tube and hyperventilate patient with BVM and 100% oxygen. Repeat above steps or if able to ventilate with BVM in conjunction with another airway adjunct, consider rapid transport to closest hospital.
9. Inflate cuff and secure tube at appropriate depth.
10. Continue ventilating / assisting ventilations with 100% oxygen. Reauscultate breath sounds periodically to confirm tube placement.
11. Document procedure, including unsuccessful attempts, patient response and clinical findings.

Complications:

1. Failed tracheal intubation
2. Oral trauma, to include broken teeth
3. Right main stem intubation. Evidenced by absence of breath sounds on the Left. Resolve by withdrawing endotracheal tube until breath sounds are auscultated in bilateral lung fields. Resecure endotracheal tube.
4. Aspiration
5. Hypoxia, during prolonged attempts
6. Increased intracranial pressure
7. Epistaxis

7.4 External Jugular Vein Cannulation

Indications:

- When peripheral IV attempts are unsuccessful or unobtainable and vascular access is essential for patient management

Cautions:

- In the case of possible cervical spine trauma when manipulating the head and neck is not possible, as this can make visualizing and accessing the external jugular vein difficult. Manual cervical spine restriction must be maintained during attempts

Procedure:

1. Prepare equipment.
2. Position patient, usually supine position.
3. Turn patient's head to opposite side of intended cannulation
4. Identify the external jugular vein and prep the site with betadine or alcohol.
5. Stabilize the vein with non-dominant hand and cannulate with appropriate size catheter directing the needle toward the clavicle on the same side.
6. Verify placement into vein by positive blood return.
7. Remove needle - advancing catheter in place.
8. Attach IV line and secure access in place if no signs of infiltration.

Complications:

1. Infection
2. Pneumothorax
3. Hematoma
4. Infiltration / Extravasation
5. Air embolism

7.5 Combitube Tracheal Airway Insertion

Indications:

- Adult patients with significant respiratory compromise or the inability to protect their airway.
- Failed endotracheal intubation.

Contraindications:

- Responsive patients with an intact gag reflex
- Patients with known esophageal disease.
- Patients who have ingested caustic substances
- Patients under 5 ft tall, under 4 ft tall for Combitube SA (small adult)
- Caution is advised in patients with potential Cervical Spine injury. Maintain manual C-Spine restriction during insertion attempts.

Procedure:

1. Maintain C-spine immobilization as indicated.
2. Provide ventilatory support with high flow oxygen.
3. Provide suction as necessary.
4. Test cuffs by inflating 100cc and 15cc of air into the cuffs of the Combitube. The cuffs are labeled with the correct amount of cc to be inflated. Deflated cuff and prepare patient for insertion.
5. Hyperoxygenate the patient for 30 seconds prior to insertion.
6. Assure C-spine stabilization if necessary.
7. Place patient's head in neutral position.
8. Perform tongue-jaw lift.
9. Insert Combitube until the teeth are aligned between the two black lines. Avoid contact with the teeth. Limit attempt to 30 seconds or less.
10. Inflate blue port with 100cc of air.
11. Inflate white port with 15cc of air
12. Check balloons for inflation on each port.
13. Ventilate through blue tube. Listen for breath sounds over epigastric and lungs. If good lung sounds are heard and no sounds over epigastrium are heard, continue ventilating through the blue tube.
14. If breath sounds are heard in the epigastrium and none in the lungs ventilate through the clear tube.
15. Confirm breath sounds.
16. If no breath sounds are heard, deflate cuffs and move Combitube 2-3 CM out of patient's mouth.
17. Inflate cuffs and evaluate breath sounds as listed above.
18. Secure tube as needed.

7.6 RAPID SEQUENCE INTUBATION (RSI)

Personal Qualifications:

The RSI protocol may only be performed by protocol certified EMT-Paramedics that have successfully completed SVFD's Advanced Airway Management training and obtained certification to perform RSI.

Indication:

- Any adult patient requiring endotracheal intubation that is not completely relaxed.

Contraindications:

- History of malignant hyperthermia
- Spontaneous breathing patient who does not require airway protection
- Not enough personnel or equipment

Procedure:

1. Attach pulse oximeter and ECG monitor.
2. Establish good flow IV, TKO with Lactated Ringers.
3. Preoxygenate patient with 100% oxygen via non-rebreather mask. If ventilatory assistance is required, ventilate patient via bag-valve-mask and 100% oxygen while applying cricoid pressure.
4. If suspected head injury administer LIDOCAINE (100 mg IVP) (age 16 or older)
5. Administer ETOMIDATE (0.3 mg/kg IVP) for sedation.
6. Administer SUCCINYLCHOLINE (1.5 mg/kg IVP) to paralyze.
7. Monitor pulse oximeter and ECG and assess apnea.
8. Apply cricoid pressure and perform endotracheal intubation.
9. Confirm ETT placement by *direct visulation* and *listening to both lung fields and the epigastrium*.
10. Perform a secondary confirmation of the ETT placement by applying an EDD and/or end-tidal CO2 detector.
11. Secure the ETT and re-assess tube placement by repeating steps 8 and 9.

12. ***Continuously ventilate and monitor patient. Remember the patient is totally dependent on you to provide ventilation.***

7.7 EZ IO INTRAOSSEOUS INFUSION

INDICATIONS:

1. Immediate vascular access in emergencies. 2. Acute need for intravenous fluids or medications

CONTRAINDICATIONS:

- Fracture of the bone selected for IO infusion (*consider alternate sites*)
- Excessive tissue at insertion site with the absence of anatomical landmarks (*consider alternate sites*)
- Previous significant orthopedic procedures (*IO within 24 hours, prosthesis - consider alternate sites*)
- Infection at the site selected for insertion (*consider alternate sites*)

EQUIPMENT:

- One (1) EZ-IO Power Driver
- Appropriate size intraosseous Needle Set based on patient size and weight
- EZ-IO 15mm 3-39 kg, EZ-IO 25mm 40kg and greater, EZ-IO 45mm 40kg and greater with excessive tissue
- One (1) EZ-Connect (T-CONNECTOR)
- Two (2) 10 ml syringes
- One (1) sterile 2x2 or 4x4 gauze pad
- One (1) fluid administration set & One (1) (appropriate volume and type) intravenous solution
- EZ-Stabilizer
- EZ-IO wrist band

PROCEDURE: *If the patient is conscious, explain procedure*

- Cleanse site using antiseptic technique
 1. 1st site lateral aspect of the humoral head.(FOR ADULTS)
 2. 2nd site medial aspect of proximal tibia.(1st FOR PEDI'S)
 3. 3rd site medial distal tibia (Medial malleolus) (interior ankle).
- Connect appropriate Needle Set to driver
- Stabilize site, Remove needle cap, Insert EZ-IO needle into the selected site.

- Position the driver at the insertion site with the needle set at a 90-degree angle to the bone surface. Gently pierce the skin with the Needle Set until the Needle Set tip touches the bone. Visualization of at least one black line Needle Set.
- Penetrate the bone cortex by squeezing driver's trigger and applying gentle, consistent, steady, downward pressure (allow the driver to do the work)

***Do not use excessive force.** In some patients insertion may take greater than 10 seconds, if the driver sounds like it is slowing down during insertion; reduce pressure on the driver to allow the RPMs of the needle tip to do the work.

**In the unlikely event that the battery on the Driver fails you may manually finish inserting the EZ-IO Needle Set. Grasp the Needle Set and, rotate arm, while pushing the needle into the intraosseous space. This may take several minutes.*

- Release the driver's trigger and stop the insertion process when a sudden "give or pop" is felt upon entry into the medullary space or when desired depth is obtained
- Remove EZ-IO Power Driver from Needle Set while stabilizing the catheter hub
- Remove stylet from catheter by turning counter-clockwise (*immediately dispose of stylet in sharps container*)
- Secure site with EZ Stabilizer
- Connect primed EZ-Connect to exposed Luer-lock hub
- Confirm placement
- Syringe bolus: flush the catheter with 10 ml of normal saline
- Assess for potential IO complications
- Disconnect 10 ml syringe from EZ-Connect extension set
- Connect primed EZ-Connect extension set to primed IV tubing
- Begin infusion utilizing a pressure delivery system and Secure tubing .
- Continue to monitor extremity for complications
- Place EZ-IO armband on patient, document time and date

