

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

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INTRODUCTION

These Protocol guidelines are provided by State of Tennessee Division of Emergency Medical Services and are designed to be used as written or as a guideline for Emergency Medical Service Medical Director's of Licensed Emergency Medical Services in Tennessee. Protocols provide direction for Emergency Medical Services Personnel to render appropriate care for the sick and injured of all ages. It is recommended that services require EMS Personnel familiarize themselves with the service approved Protocols and show successful completion by written documentation of competency in the Service Protocols to the Service Medical Director.

Note:

1. These Protocols Guidelines are in addition to the minimum guidelines for patient care as outlined in the DOT EMT- Basic, Paramedic and Tennessee Extended Skills Curriculum.
2. No EMT or Paramedic may function as such without successful completion by written documentation of competency in EMS Service Protocols by the Medical Director.
3. All EMTs have standing orders for insertion of an approved airway device for patients meeting the indications.
4. Use of Pneumatic Anti-Shock Device (PASG):
 - a. The chance of patient's survival without the use of the PASG device should be evaluated prior to utilizing the PASG device. Orders must be received from Medical Control prior to inflation when used in the treatment of hypovolemia. The use of PASG should be considered if the systolic pressure falls to 50 mmHg.
 - b. The use of the PASG as an air splint is based on the current DOT curriculum and may be used at the discretion of the EMT responsible for patient care.
 - c. Other treatments will be based on mechanism of injury and signs and symptoms of the patient.
5. The EMT-Paramedic will be in charge and will be responsible for all of the actions and or activities as it relates to the Emergency Unit. On the scene of an emergency, the EMT-Paramedic will be responsible for patient care. The EMT-Basic or EMT-IV will act within their scope of practice to any request for patient care or maintenance of the unit as directed by the EMT-Paramedic. Patient care is limited to acts within their scope of practice as defined by Protocols.
6. A complete patient assessment, vital signs, treatments and continued patient evaluation are to be initiated immediately upon contact with patient and continued until patient care is transferred to a Higher Medical Authority. Refer to Patient Assessment Flow Chart on page 104.
7. The on-going assessment times are considered:

i. High Priority	Low Priority
ii. Every 3 – 5 min.	Every 5 – 15 min.
8. It is the responsibility of the most qualified EMT to ensure transmission of all aspects of the patient assessment and care to the responding Emergency Unit or Medical Control.
9. When reporting a disposition to Medical Control or the responding unit, provide the following minimum information:
 - a. Patient's age and chief complaint.
 - b. Is patient stable (define) or unstable (define), including complete V/S & LOC
 - c. Interventions performed.
 - d. Provide other Information as requested.

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10. EMTs may administer the following medications: Aspirin, Nitroglycerine, Epinephrine for Anaphylactic reaction, Albuterol nebulizer or MDI. These medications may be given under the following circumstances: Written protocols have been established by the medical director, and the signs and symptoms exhibited by the patient are appropriate to warrant use of the medication. EMT-IV may also administer Dextrose for hypoglycemia.
11. For each and every call, the first directives are scene safety and body substance isolation precautions.
12. If glucometer readings of greater than 40 mg/dL and patient is asymptomatic, start an INT and administer oral glucose. If a glucometer reading is less than 80 mg/dL and patient is symptomatic, start an IV NS and administer 1 ampule of Dextrose. Reassess pt. every 5 min, repeat 1 amp PRN.
13. NOTE: Any administration of Dextrose must be done thru an IV line, not INTs.
 - i. Normal Blood Sugar values are 80 – 120 mg/dL.
14. For any drug administration or procedures outside these Protocols the EMT-Basic and EMT-IV must receive authorization from Medical Control. Paramedics enroute to the scene are not authorized to issue medication orders.
15. In the adult cardiac arrest:
 - a. all IV/IO drugs given are to be followed by a 10 cc NS bolus
 - b. elevate the extremity after bolus when given IV
 - c. CPR is most effective when done continuously, with minimum interruption
 - d. Consider non tracheal airway maneuvers whenever endotracheal intubation takes longer than 30 seconds.
16. The minimal equipment required for all patient calls:
 - a. When the patient is in close proximity to the unit or 1st responder : jump bag, cardiac monitor, and oxygen or other equipment as may be indicated by the nature of call.
 - b. When the patient is not in close proximity of the unit or 1st responder: the above equipment, stretcher and any other equipment that may be needed as dictated by the nature of the call.
17. The senior EMT riding on the unit has the ultimate responsibility to ensure that all records and reports are properly completed.
18. Airway maintenance appropriate for the patient's condition indicates any airway maneuver, adjunct, or insertions of tubes that provide a patent airway.
19. Although the Protocol procedures have a numerical order, it may be necessary to change the sequence order or even omit a procedure due to patient condition, the availability of assistance, or equipment. Document your reason for any deviations from protocol.
20. EMTs are expected to perform their duties in accordance with local, state and federal guidelines in accordance with the State of Tennessee statutes and rules of Tennessee Emergency Services.
21. Each patient care contact will be recorded on the EMS incident report form as completely and accurately as possible prior to leaving the station on the shift day in which the call was made. A complete copy of the patient out-of-hospital evaluation(s) and treatment(s) will be given to the emergency department personnel or staff prior to departing from the health care facility. This will ensure proper documentation of the continuity of care.
22. Blood Glucose and Stroke Screening will be performed on all patients with altered mental status.

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23. In potential crime scenes, any movement of the body, clothing, or immediate surroundings should be documented and the on scene law enforcement officer notified of such.
24. Supportive care indicates any emotional and/or physical care including oxygen therapy, repositioning patient, comfort measures and patient family education.
25. All patients should be transported to the most appropriate facility according to the patient or family request or to the facility that has the level of care commensurate with the patient's condition. Certain medical emergencies may require transport to a facility with specialized capability.
26. EMT-IVs and Paramedics may have standing orders for precautionary IV and INTs. EMT-IVs may have a standing order for the insertion of an IV or INT under the following guidelines:
 - a. The patient must have some indication that they are unstable (See Definitions # 4, page 8).
 - b. Limited to two attempts in one arm only. (Cannulation of legs or neck is not allowed).
 - c. Drug administration will be followed by a minimum of 10cc of fluid to flush the catheter.
 - d. Blood Glucose will be performed for all patients with altered mental status.
 - e. IVs should not be attempted in an injured extremity.
 - f. TKO (To Keep Open) indicates a flow rate of approximately 50 cc/hr
 - g. IVs will not be started in arms with shunts.
 - h. IVs appropriate for patient's condition indicates; if patient is hypotensive, give a bolus of fluid, if patient's BP is normal run IV TKO or convert to saline lock (INT).
 - i. A Bolus of fluid is 20cc/kg for all patients.
27. The EMT-P will work within their scope of practice dependent on available equipment.
28. In the pediatric cardiac arrest, all IV/IO drugs given should be followed by a bolus of at least 5 ml and elevation of the extremity
29. Treat the patient not the monitor.
30. Pulse Oximetry should be utilized for all patients complaining of respiratory distress or chest pain (regardless of source).
31. Esophageal Intubation detectors and End Tidal CO₂ or capnography are MANDATORY for all intubations except double-lumen airways. Reliability may be limited in patients less than 20 kg. Use other methods to assist in confirmation.
32. Defibrillation and Synchronized Cardioversion joules are based on the use of biphasic monitor/defibrillator.
33. Paramedics may transport the patient in a non-emergency status to the hospital based on local protocol.
34. The use of cervical collars post intubation (double lumen or ET) is recommended to reduce the chance of accidental extubation. This is in addition to the tube securing devices currently in use.
35. Any medication administrations or procedure not covered by these SOPs, contact Medical Control for advice.
36. If a change in cardiac rhythm occurs, provide all treatment and intervention as appropriate for the new rhythm.

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37. Upon arrival at the receiving hospital, all treatment(s) initiated in the field will be continued until patient care has been assumed by hospital personnel.
38. For external Jugular IVs attempted by paramedics, IV catheters should be 18 ga or smaller diameter based on the patient.
39. In the case of cardiac arrest where venous access is not readily available, paramedics may use the EZ IO as initial access.
40. Paramedics, when properly equipped and trained, may utilize indwelling access ports such as Port-A-Cath in an **EMERGENCY ONLY**. This procedure should be done with a Huber needle utilizing sterile technique as taught.
41. The initial blood pressure **MUST** be taken manually. If subsequent blood pressures taken by machine vary more than 15 points diastolic, then the machine reading will be verified by a manual blood pressure.

I have taken great care to make certain that doses of medications and schedules of treatment are compatible with generally accepted standards at the time of publication. Much effort has gone into the development, production, and proof reading of these standing orders and protocols. Unfortunately this process may allow errors to go unnoticed or treatments may change between the creation of these protocols and their ultimate use. Please do not hesitate to contact me if you discover any errors, typos, dosage or medication errors.

I look forward to any questions, concerns, or comments regarding these protocols. I expect all EMS personnel to follow these guidelines, but also to utilize and exercise good judgment to provide the best care for all patients.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

DEFINITIONS

1. Standing order - means that this skill or treatment **may** be initiated prior to contact with medical control.
2. Protocol - a suggested list of treatment options **requiring** you to contact Medical Control **prior** to initiation.
3. Medical Director - the physician who has ultimate responsibility for the patient care aspects of the EMS system. (Rule 1200-12-1-.14(1)(f))
4. Unstable (symptomatic) - indicates that one or more of the following are present:
 - a.) chest pain
 - b.) dyspnea
 - c.) hypotension (systolic B/P less than 90 mmHg in a 70 kg patient or greater)
 - d.) signs and symptoms of congestive heart failure or pulmonary edema
 - e.) signs and symptoms of a myocardial infarction
 - f.) altered level of consciousness
5. Stable (asymptomatic) - indicates that the patient has no or very mild signs and symptoms associated with the current history of illness or trauma.
6. First Responder - The first person(s) to arrive at an emergency scene. If first on the scene - responsible for immediately identifying and providing patient care to the level of their licensure and availability of equipment. Assist other personnel upon their arrival and ensure continuity of patient care.
7. EMT- Basic - Personnel licensed by the Tennessee Department of EMS and authorized by the Division Medical Director to provide basic emergency care according to the Standard of Care and Standing Orders and Protocols.
8. EMT- IV - Personnel licensed by the Tennessee Department of EMS and authorized by the Division Medical Director to provide limited advanced emergency care according to the Standard of Care and Standing Orders and Protocols.
9. EMT-Paramedic - Personnel licensed by the Tennessee Department of Health and authorized by the Division Medical Director to provide basic and advanced emergency patient care according to the EMS Standing Orders and Protocols.
10. Transfer of Care - Properly maintaining the continuity of care through appropriate verbal and or written communication of patient care aspects to an equal or higher appropriate medical authority.
11. Higher Medical Authority - any medical personnel that possesses a current medical license or certificate recognized by the State of Tennessee with a higher level of medical training than the one possessed by Division Personnel. (MD)
12. The following refusal situations should be evaluated by a highest level medical provider available
 - a. hypoglycemic patients who have responded to treatment.
 - b. any patient refusing transport who has a potentially serious illness or injury
 - c. patients age less than **4** years or greater than **70** years
 - d. chest pain any age or cause
 - e. drug overdose / intoxicated patients
 - f. potentially head injured patients
 - g. mental patients

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13. “False Alarm” is an archaic term and no longer used relevant to the practice of Emergency Medicine in the EMS field. The incident report should accurately reflect the clinical activities undertaken. If there is a patient refusal or dismissal of service at the scene of the incident, the incident report should reflect the dismissal as well as the party or parties responsible for the request to terminate any and all evaluations and treatment

14. Medical Control (transport) – the instructions and advice provided by a physician, and the orders by a physician that define the treatment of the patient; to access Medical Control, contact the Emergency Department physician on duty of the patient’s first choice. If the patient does not have a preference, the patient’s condition and or chief complaint may influence the choice of medical treatment facilities

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CARDIAC EMERGENCY

101 Automatic External Defibrillator (AED)

Assessment

Patient in Cardiopulmonary Arrest Basic Life Support in progress AED in use

Basic

1. If AED available, apply to patient and follow prompts.
2. 100% Oxygen and airway maintenance appropriate to patient's condition. All CPR rates of compression are 100 per minute for all ages. Ventilation rates are 8-10/min with no pause in CPR for ventilations. Utilize King Airway at earliest possible time.
3. Continue CPR according to current AHA – Healthcare Provider Guidelines, specific for patient's age.
4. If AED is in use (defibrillating) prior to arrival, allow shocks to be completed, and then evaluate pulse:
 - a. If no pulse, continue to provide CPR and basic life support
 - b. If a pulse is present, evaluate respirations and provide supportive care appropriate for the patient's condition.
5. **EMT STOP Ø**

EMT-IV

6. IV NS bolus (20 cc/kg), then TKO
7. **EMT-IV STOP Ø**

PARAMEDIC

8. Monitor patient and treat per SOP specific for the arrhythmia
9. **PARAMEDIC STOP Ø**

NOTE:

AED is **contraindicated** in the following situations:

- Patients less than 1 years of age and less than 10 kg (22 lbs).
- If the victim is in standing water, remove the victim from the water, and ensure that chest and surrounding area is dry.
- Trauma Cardiac Arrest.

Victims with implanted pacemakers, place pads 1 inch from device.

- If ICD/AICD is delivering shock to the patient allow 30 to 60 seconds for ICD/AICD to complete the treatment cycle before using the AED.

Transdermal medication patch at site of AED pads:

- If a medication patch is in the location for an AED pad, remove the medication patch and wipe the area clean before attaching the AED electrode pad.

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CARDIAC EMERGENCY

102 New Onset Atrial Fibrillation and Flutter

Assessment

Paroxysmal Atrial Tachycardia
Atrial Flutter **new onset**
Atrial Fibrillation **new onset**
Symptomatic patient
Dyspnea
Chest pain
Radiating pain
Altered mental status
Hypotension (systolic BP <90 mm/Hg)
Diaphoresis

Basic

1. Oxygen 100% and airway maintenance appropriate for the patients condition
2. Supportive care
3. Glucometer check
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO or INT
6. Administer Dextrose 50% if indicated
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG Monitor
9. Pulse oximetry
10. Valsalva maneuver, contact medical control to consider amiodarone 150 mg.
11. If patient is unstable consider synchronous cardioversion:
 - a. Atrial flutter @ 30 joules (*peds .0.5j/kg then 1j/kg*)
 - b. Atrial Fib @ 50 joules (*peds .0.5j/kg then 1j/kg*)
 - c. Pre-medicate with Valium 2-5 mg IV (*peds 0.2mg/kg*) or Versed 2-5 mg IVP (*peds 0.1mg/kg*) and/or Morphine 2-4mg (*peds 0.05- 0.2mg/kg*) if time permits.

12. PARAMEDIC STOP Ø

Immediate synchronized cardioversion (50, 75, 100, 120, 150, 200 joules) (*peds 0.5j/kg then 1j/kg*) is recommended when there is an unstable rhythm with **serious signs and symptoms**:

- chest pain
- shortness of breath
- decreased level of consciousness
- low blood pressure

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CARDIAC EMERGENCY

103 Bradycardia

Assessment

Heart rate less than 60 beats per minute and symptomatic
Decreased / altered LOC
Chest pain / discomfort
CHF/ pulmonary edema
Head trauma
Dyspnea
Hypothermia, hypoglycemia, drug overdose
Signs of decreased perfusion
Rhythm may be sinus bradycardia, junctional, or heart block
Heart rates < 80/min for infant or <60/min for child

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
 - a. If the patient will not tolerate a NRB, apply Oxygen at 6 Lpm BNC.
2. Glucometer check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS TKO
6. Administer Dextrose 50% if indicated
7. **EMT-IV STOP Ø**

PARAMEDIC

1. Cardiac monitor, 12 lead EKG, transmit if available
2. Pulse Oximetry
3. If patient is asymptomatic and heart rate is less than 60 beats per minute, transport and observe
4. Atropine 0.5 - 1.0 mg IV q 4 mins. up to 0.04 mg/kg or 3 mg if symptomatic. Place Pacing electrodes. If PVC's are present with bradycardia, do **NOT** administer Lidocaine.
5. Adults –
 - a. If systolic BP < 90 mmHg and heart rate <60/min
 - i. If 2nd and 3rd degree blocks are present apply transcutaneous pacer pads (if available), administer Atropine 0.5mg IV
 - b. If systolic BP < 90 mmHg and heart rate <60/min continues.
 - i. Administer Atropine 0.5 mg up to 0.04 mg/kg (3 mg for adults)
 - c. If systolic BP < 90 mmHg and heart rate <60/min continues
 - i. contact Medical Control
 - ii. consider Dopamine 2-20 mcg/kg/min
 - iii. continuous IV infusions to increase heart rate
6. Consider Glucagon 1-2mg IM/IV if unresponsive to Atropine, especially if taking Beta blockers

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Pediatric –

- heart rates < 60/min for infant or <60/min for child
- signs of poor perfusion, respiratory distress, or hypotension
 - Yes – start chest compression, IV/IO
 - Epinephrine 1:10,000 0.01 mg/kg IV/IO q 4 min
 - Contact Medical Control
 - ❖ consider Dopamine 2-20mcg/kg/min as a continuous IV infusion to increase heart rate.

15. PARAMEDIC STOP Ø

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CARDIAC EMERGENCY

104 Ischemic Chest Pain / Myocardial Infarction

Assessment

Determine quality, duration and radiation of pain. Substernal Oppressive Chest Pain (crushing or squeezing) Nausea and/or Vomiting Shortness of breath Cool, clammy skin Palpitations Anxiety or restlessness Abnormal pulse rate or rhythm History of Coronary Artery Disease or AMI Currently taking cardiac medications JVD Distal pulse for equality/strength to assess for Aneurysm Diaphoresis, pallor, cyanosis Breath sounds – congestion, rales, wheezing Motor deficits	P – placement of pain/discomfort (anything increase discomfort) Q – quality of pain R – radiation of pain S – severity of pain/discomfort (scale of 1-10) T – time of pain/discomfort onset, type of pain
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Basic

1. Oxygen at 2 – 6 Lpm BNC and airway maintenance appropriate to patient's condition. If the patient is in severe respiratory distress consider Oxygen 100% 12 – 15 Lpm NRB
2. Glucometer check
3. Supportive care
4. If Systolic BP is >110 and the patient is symptomatic, give patient 1 nitroglycerine tablet or spray sublingually and reassess every 5 minutes. (Refer to the medication assist procedure # 10, page 5) Maximum of three doses.
5. Give 324mg of aspirin (chewable, non-enteric coated) if patient has no contraindications, or has not already self-dosed.
6. **EMT STOP Ø**

EMT-IV

7. INT or IV Normal Saline TKO
8. Administer Dextrose 50% if appropriate
9. Contact Medical Control to request orders for additional nitroglycerine in excess of three doses.

Note:

- ❖ The maximum dosage of nitroglycerine is three. The total dosage is the total doses the patient has taken on their own combined with your subsequent dosages.

10. EMT-IV STOP Ø

PARAMEDIC

11. Cardiac monitor, obtain 12 lead, transmit if available. Patients with positive AMI should be transported to an appropriate cardiac facility as soon as possible. Treat arrhythmia appropriately.
12. Oxygen saturation
13. Aspirin (nonenteric coated), 324 mg chewed then swallowed, if not self-dosed within last 24 hr

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14. Nitroglycerine – If patient is not Hypotensive (BP <100mmHg), administer one Nitroglycerine SL spray and apply 1” of Nitroglycerine to chest wall. Repeat Nitroglycerine spray once 5 minutes after initial spray and application of paste. Continue nitrate therapy until pain relieved or systolic BP <100mmHg.
15. Systolic BP is <100mgHg give 250 ml NS bolus (assess for signs of pulmonary congestion) If PVC's >15/min – Lidocaine 1-1.5 mg/kg over 2 min, repeat to total of 3 mg/kg
16. If chest pain/discomfort continues:
 - ❖ Continue Nitrate therapy
 - ❖ Complete thrombolytic screening
 - ❖ If chest pain greater the 5 on scale of 1-10, Give Morphine 2-4 mg q 10 minutes until pain is tolerated by patient
 - ❖ Contact Medical Control and Transport.

17. PARAMEDIC STOP Ø

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

105 Chest Pain / NON Cardiac

Assessment

Determine quality, duration and radiation of pain. Atypical Chest Pain NO Nausea and/or Vomiting NO Shortness of breath NO Cool, clammy skin History of chest injury, persistent cough NO History of Coronary Artery Disease or AMI NOT Currently taking cardiac medications Distal pulse for equality/strength to assess for Aneurysm NO Diaphoresis, pallor, cyanosis Normal Breath sounds	P – placement of pain/discomfort (anything increase discomfort) Q – quality of pain R – radiation of pain S – severity of pain/discomfort (scale of 1-10) T – time of pain/discomfort onset, type of pain
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Basic

1. Oxygen at 2 – 6 Lpm BNC and airway maintenance appropriate to patient's condition. If the patient is in severe respiratory distress, consider Oxygen 100%
2. Glucometer check
3. Supportive care
4. If Systolic BP is >110 and the patient is symptomatic, give patient 1 nitroglycerine tablet or spray sublingually and reassess every 5 minutes. (Refer to the medication assist procedure on # 10 on page 5) maximum of three doses.
5. Give Aspirin (325 mg of chewable Aspirin) if patient has not self administered in last 24 hours.
6. **EMT STOP Ø**

EMT-IV

7. INT or IV Normal Saline TKO
8. Administer Dextrose 50% if appropriate
9. Contact Medical Control to request orders for additional nitroglycerine in excess of three doses.
Note: The maximum dosage of nitroglycerine is three sublingual administrations, whether before or after your arrival.

10. EMT-IV STOP Ø

PARAMEDIC

11. Cardiac monitor, obtain 12 lead, transmit if available.
12. Oxygen saturation
13. Nitroglycerine – If patient is not Hypotensive (BP <100mmHg) administer one Nitroglycerine SL spray
14. If no effect consider:
If chest pain greater the 5 on scale of 1-10, Morphine 2-4 mg q 10 minutes until pain is tolerated by patient
15. Contact Medical Control
16. Transport

17. PARAMEDIC STOP Ø

CAUTION: Patients with true cardiac disease may have subtle, atypical symptoms. Always err on the side of the patient safety.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

106 Pulseless Electrical Activity (P.E.A.)

Assessment

Presence of electrical cardiac rhythm without palpable pulse Confirm rhythm with quick look paddles or electrodes in two leads

Basic

1. Utilized AED if available
2. Oxygen 100% and airway maintenance appropriate to the patients condition
3. CPR as indicated
4. Glucometer if time allows
5. **EMT STOP Ø**

EMT-IV

6. IV NS, bolus of fluid (20cc/kg)
7. Administer Dextrose 50% if appropriate
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. IV / IO NS (large bore catheter)
11. Epinephrine 1:10,000 1.0 mg IVP/IO (*peds-Epinephrine 1:10,000 0.01 mg/kg IV/IO q 4 min*)
12. If rate is below 60/min., administer Atropine 1 mg IVP/IO, repeat q 4 mins. (max. 0.04 mg/kg or 3 mg) (*peds 0.02 mg/kg q 4 min. max dose 0.04mg/kg*)
13. Search for underlying cause of arrest and provide the related therapy:
 - a. hypoxia - ensure adequate ventilation
 - b. hypovolemia - fluid administration /fluid challenge (adult 20cc/kg, *peds 20cc/kg bolus*)
 - c. cardiac tamponade (adult up to 2 liter bolus (*peds 20cc/kg bolus*))
 - d. tension pneumothorax - needle decompression
 - e. **KNOWN** hyperkalemia - Sodium Bicarbonate 1 mEq/kg, may repeat @ 0.5 mEq/kg q 10 min (*peds 1 mEq/kg may repeat at 0.5 meq/kg q 10 min*) and CaCl 500mg IVP (*peds 20mg/kg*)
 - f. **KNOWN** Acidosis: consider Sodium Bicarbonate 1-1.5 mEq/kg IV (*peds 0.5 meq/kg*).
 - g. Drug overdose: Narcan 2 mg slow IVP/IN (*peds 0.1 mg/kg slow IVP*).
 - h. Hypothermia: initiate patient re-warming, avoid chest compressions if spontaneous circulation
14. Consider the use of: Dextrose 50% if blood glucose <80 mg/dL (*peds 2cc/kg D₂₅*)
15. PEA continues: Continue CPR, transport to appropriate facility.
16. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

107 Premature Ventricular Contractions (PVC)

Assessment

Any PVC in acute M.I. setting with associated chest pain
Multi-focal PVCs
Unifocal and >15/min
Salvo's / couplets / runs of V-Tach (three or more PVCs in a row) and symptomatic
PVCs occurring near the "T-wave"

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition.
2. Glucose check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS TKO
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor, 12 lead, transmit if available
9. Oxygen saturation
10. If PVCs are present with heart rate >60/min
 - Lidocaine 1.5mg/kg over 1 minute (*peds 1.0mg/kg*), repeat up to 3 mg/kg
 - a. if PVCs abolished, initiate Lidocaine drip @ 2-4 mg/min

**Note: Use ½ of initial dose for subsequent doses for patients > 70 yo or with history of hepatic disease

11. PARAMEDIC STOP Ø

Treatment - Protocol

Consider Amiodarone 150-300 mg IV/IO if no response to Lidocaine

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

108 Supraventricular Tachycardia (SVT)

Assessment

Adult patients with heart rates in excess of 160 bpm (*peds rate >220bpm*) (QRS width <.12 sec [3 small blocks])
Patients may exhibit symptoms of dyspnea, chest pain, radiating pain, altered mental status, hypotension
systolic BP <90 mm/Hg)

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition, pulse oximetry.
2. Glucose check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. INT or IV, NS TKO
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. 12 lead EKG, transmit if available
9. Oxygen saturation
10. Valsalva Maneuver for 10 seconds
Adenosine 6 mg rapid IV (*peds 0.1mg/kg 6 mg max*), if no conversion 12 mg rapid IV (*peds 0.2mg/kg 12 mg max*). If no conversion, repeat 12mg dose. Flush with 10cc NS after each dose.
If rhythm does not convert to <150/min, or if patient is unstable or significantly symptomatic prepare for synchronized cardioversion.
 - a. Sedate as necessary:
Valium 2-5 mg IV (*peds 0.2 mg/kg IV*) or Versed 2-5 mg IV (*peds 0.1 mg/kg IV*), and/or Morphine 2-4 mg IV (*peds 0.05- 0.2mg/kg*) Synchronized cardioversion @ 100j (*peds 0.5 j/kg, then 1j/kg*), escalate energy to 200j , cardiovert until heart rate <150/min
 - b. If rhythm converts to rate <150/min: reassess for changes, maintain systolic BP >90mmHg, transport, and contact Medical Control.

* **Note:** In heart transplant patients and those on Tegretol, patients give ½ the normal dose of Adenosine.

11. PARAMEDIC STOP Ø

NOTES:

1. Adenosine is administered thru large a bore IV in the Antecubital Fossa.
2. Other vagal maneuvers may include asking the patient to hold their breath, trendelenburg position.
3. Carotid Sinus Pressure should be applied on the right if possible. If no effect, then try the left side.
NEVER massage both sides at once.
4. Unstable SVT may be synchronized cardioverted immediately in frankly unstable patients prior to IV access. Assess the situation and make a good decision. Cardioversion hurts!
5. Significant symptoms include diaphoresis, hypotension, poor color or perfusion, mental status changes, chest pain >5/10

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

109 Torsades de Pointe

Assessment

Decreased / altered LOC
Dyspnea
Chest Pain / discomfort, suspected AMI
Hypotension (systolic BP <90mmHg)
CHF / Pulmonary edema
Heart rate >160/min with QRS > .12 sec (3 small blocks) and twisting of points

Basic

1. Oxygen 100% and airway maintenance appropriate for the patients condition, pulse oximetry
2. Glucose check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV_I

5. INT or IV NS TKO
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. 12 lead EKG, transmit if available.
9. Oxygen saturation
10. Systolic BP
 - a. If < 90mmHg – unstable / symptomatic
 - i. prepare for cardioversion at 100j, escalate as needed.
 - ii. sedation as necessary:
Valium 2-5mg IV (peds 0.2mg/kg) OR Versed 2-5mg IV (peds 0.1mg/kg) and/or Morphine 2-4 mg (peds 0.05- 0.2mg/kg)
If rhythm converts
 - a. if rate <160/min – monitor for changes, transport, Magnesium Sulfate 1-2 g IVP over 2 minutes
 - b. if rate >160/min – contact Medical Control, consider Amiodarone 150-300 mg IV/IO (peds 5mg/kg), transport
 - b. If >90mmHg – stable / asymptomatic:
 - i. Magnesium Sulfate 1-2 gram IVP over 2 min
 - ii. did rhythm convert to rate <160/min
 - a. if rate <160/min – monitor for changes, Magnesium sulfate may repeat 1-2 gram IVP over 2 minutes , transport
 - b. if rate >160/min – contact Medical Control, consider Amiodarone 150-300 mg IV/IO (peds 5mg/kg), maintain systolic BP >90mmHg, transport

11. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

110 Ventricular Asystole

Assessment

No pulse or respirations
Confirm cardiac rhythm with quick look paddles or electrodes
Record in two leads to confirm Asystole and to rule out fine V-Fib.

Basic

1. AED if available
2. Begin CPR according to AHA guidelines for patient age.
3. Oxygen 100% and airway maintenance appropriate to the patients condition.
4. Glucose check
5. **EMT STOP Ø**

EMT-IV

6. IV NS Bolus (20cc/kg bolus fluids).
7. Administer Dextrose 50% if appropriate
8. **EMT-IV STOP Ø**

PARAMEDIC

9. Epinephrine 1:10,000 1 mg IO/IVP q 3-5 mins. (*peds Epinephrine 1:10,000 0.01 mg/kg IV/IO q 5 min*)
10. Atropine 1.0 mg IO/IVP q 3 - 5 mins. up to 0.04 mg/kg or 3 mg. (Adolescent max dose is 1 mg)
(No atropine in pediatric asystolic arrests).
11. For prolonged resuscitation with known acidosis, consider: Sodium Bicarbonate 1 mEq/kg I.V/IO followed by 0.5 mEq/kg q 10 min (*peds-1 mEq/kg may repeat at 0.5 meq/kg q 10 min*)
12. Check blood sugar – treat appropriately (*peds 2cc/kg D₂₅ if hypoglycemic*)
13. Consider:
 - a. Defibrillation for possible fine ventricular fibrillation masquerading as asystole
 - b. CaCl if arrest secondary to renal failure, or history of hemodialysis adult 500mg IV (*peds 20mg/kg*)
 - c. Consider discontinuing efforts if criteria is met under Discontinuation / Withholding of Life Support standing order.
14. **PARAMEDIC STOP Ø**

Reversible Causes

Hypovolemia	Tablets (drug overdose)
Hypoxia	Tamponade (cardiac)
Hydrogen ion (acidosis)	Tension pneumothorax
Hyperkalemia/Hypokalemia	Thrombosis - heart
Hypothermia	Thrombosis - lungs

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

111 Ventricular Fibrillation / Pulseless Ventricular Tachycardia

Assessment

Ventricular Fibrillation, Ventricular Tachycardia

Pulseless, apneic

Confirm and record cardiac rhythm with quick look paddles or electrodes verified in 2 leads on monitor

Basic

1. AED if available
2. CPR (precordial thump if witnessed) according to AHA standards appropriate for patients age
3. Oxygen 100% and airway maintenance appropriate to the patients condition.
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO
6. **EMT-IV STOP Ø**

PARAMEDIC

7. Defibrillate @ 150j, if no change in rhythm perform two minutes of CPR and evaluate rhythm, if no change in rhythm, repeat defibrillation, perform two minutes of CPR and evaluate rhythm, if no change in rhythm, continue 5 cycles of CPR then defibrillation cycle. (peds begin at 2 j/kg)
8. The following is a list of preferred drug in the order of use.
 - a. Epinephrine 1:10,000; 1 mg IVP/IO q 4 mins.
(peds Epinephrine 1:10,000 0.01 mg/kg IV/IO q 4 min)
 - b. Amiodarone 300 mg IV or IO, repeat after 5 min at 150 mg (peds 5 mg/kg)
 - c. For prolonged resuscitation consider: Sodium Bicarbonate 1 mEq/kg IV/IO followed by 0.5 mEq/kg q 10 min (peds-1 mEq/kg may repeat at 0.5 meq/kg q 10 min)
9. CaCl 500mg IVP (peds 20mg/kg) if arrest secondary to renal failure, or history of hemodialysis
10. **PARAMEDIC STOP Ø**

Notes:

Defibrillation should not be delayed for any reason other than rescuer or bystander safety. Prompt defibrillation is the major determinant of survival. Time on scene should be taken to aggressively treat ventricular fibrillation. Consider transport of patient after performing CPR/defibrillation cycles, securing the airway, obtaining IV/IO access, and administering two rounds of drugs. This will provide the best chance of return of a perfusing rhythm.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

CARDIAC EMERGENCY

112 Ventricular Tachycardia with a Pulse

Assessment

Confirm and record cardiac rhythm with quick look paddles or electrodes in two leads
Check for palpable carotid pulse
Decreased / altered mental status
Dyspnea
Chest pain / discomfort, suspected AMI
Hypotension (systolic BP <90mmHg)
CHF / pulmonary edema
Heart rate >150/min and QRS >.12 sec (3 small blocks)

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition
2. Glucose check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS TKO
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor (consider 12 lead, transmit if available)
9. Oxygen saturation
10. IF RHYTHM POSSIBLY TORSADES de POINT – GO TO TORSADES de POINT PROTOCOL
11. If Systolic BP < 90mmHg, prepare for synchronized cardioversion.
 - a. administer sedative as necessary – Valium 2-5mg IV (*peds 0.2 mg/kg*) OR Versed 2-5 mg IV (*peds 0.1 mg/kg*) and/or Morphine 2-4 mg (*peds 0.05- 0.2 mg/kg, 2 mg max dose*)
 - b. synchronize cardiovert beginning at 150j, until heart rate <150/min (*peds begin at 0.5 j/kg*)
 - c. If rhythm converts, monitor for changes, transport. If rhythm does not convert, administer Amiodarone 150 mg over 10 minutes (*peds 5 mg/kg*) or Procainamide 20 mg / min IV, urgent situations up to 50 mg/min, (max 17 mg/kg) (*peds 15 mg/kg over 30 minutes*), reattempt cardioversion.
 - d. Contact Medical Control
12. If Systolic BP >90mmHg – stable / asymptomatic.
 - a. Have patient perform Valsalva maneuver for 10 sec and administer Amiodarone 150mg (*peds 5 mg/kg*) over 10 minutes
 - b. If rhythm converts, monitor for changes, transport. If rhythm does not convert, administer Amiodarone 150 mg over 10 minutes (maximum is three 150mg doses) (*peds three doses of 5 mg/kg*) or Procainamide 20 mg / min IV, urgent situations up to 50 mg/min, (max 17 mg/kg), (*peds 15 mg/kg over 30 minutes*)

**Note: May substitute Procainamide if Amiodarone not available, patient allergic

13. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ADULT CARDIAC EMERGENCY

#113 Post Resuscitation

Assessment

Completion of arrhythmia treatment

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition
2. Supportive care
3. **EMT STOP** Ø

EMT-IV

4. IV NS TKO
5. Assess BP – if systolic <90 mmHg administer 250 ml NS bolus (peds systolic BP 70 + 2 x age, 20cc/kg bolus) repeat until BP >90 mmHg or appropriate for pediatric age
6. **EMT-IV STOP** Ø

PARAMEDIC

7. Medications:
 - a. If anti-arrhythmic administered:
 - i. Amiodarone – 300mg IV (peds 5 mg/kg), if one dose given and arrhythmia persists, give second dose 150mg
 - ii. If Lidocaine administered, start infusion of drip at 2-4 mg/min
8. Check blood sugar, if low treat appropriately (peds 2cc/kg D₂₅)
9. **PARAMEDIC STOP** Ø

Treatment – Protocol

1. If patient does not tolerate ET tube, contact Medical Control for:
Valium 2-10 mg (peds 0.2 mg/kg) or Versed 2-5 mg IV (peds 0.1 mg/kg) for patient sedation

** Consider the use of soft restraints if necessary for patient safety (to prevent extubation).

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

201 Chemical Exposure

Special Note: Personnel safety is the highest priority. Do not handle the patient unless they have been decontaminated. All EMS Treatment should occur in the Support Zone after decontamination of the patient. Appropriate PPE will be utilized.

Assessment

History of exposure to chemical Identify substance and verify with documentation if possible Material Safety Data Sheets (M.S.D.S.) if available Stay within the appropriate zone for protection History of exposure to chemical Identify substance if possible
--

BASIC

IV

PARAMEDIC

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
2. Supportive care
3. IV NS TKO or INT PRN
4. Treatment - Standing Order
 - If Internal Exposure and Conscious:
 1. Treat as Drug Ingestion
 2. Contact Medical Control
 - If External Exposure:
 1. Remove victims clothing, jewelry, glasses, and contacts
 2. Decontaminate – EMS personnel must be wearing proper protective clothing prior to helping with the decontamination process.
 - Powder or like substance
 - a. Brush off of patient
 - b. Flush with copious amounts of water for at least 20 minutes; assess for hypothermia q 5 min
 - c. Transport and continue flushing if necessary and if possible
 - Liquid substance
 - a. Flush with copious amounts of water for at least 20 minutes; assess for hypothermia q 5 min
 - b. Transport and continue flushing if necessary and if possible
 - If Inhalation:
 - a. Reconsider Self Contained Breathing Apparatus
 - b. Remove victim from source ensuring there is no danger to personnel
 - c. Oxygen 100 % and airway maintenance appropriate to patients condition
 - If Ocular:
 - a. Immediately flush eye with tap water or normal saline for 15 minutes
 - b. Contact Medical Control

NOTE: Coordinate through the Haz Mat officer prior to transport

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

202 Drug Ingestion

Assessment

History of drug ingestion Level of consciousness (Alert, Verbal, Pain, or Unresponsive) Neurologic status (LOC, pupils) General appearance (sweating, dry or flushed skin, signs of trauma)
--

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
2. Ensure personnel protection from toxin and or unruly patient
3. Glucose check
4. Supportive care
5. **EMT STOP Ø**

EMT-IV

6. IV NS TKO or INT PRN
7. Administer Dextrose 50% if appropriate
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. Oxygen saturation
11. Treat Blood Sugar Level accordingly.
 - a. ½- 1 Amp D₅₀ IV (peds 2 cc/kg D₂₅ IV)
 - b. If no IV/IO, then Glucagon 1-2 mg IM/IN (peds 0.5-1 mg IM)
12. Consider Valium 2 - 5 mg IV (peds 0.2 mg/kg) or Versed 2-5mg (peds 0.1 mg/kg) IVP/IN if patient is having seizures.
13. Narcan 2mg slow IVP/IN (peds 0.1 mg/kg slow IVP/IN) if narcotic use is suspected
14. **PARAMEDIC STOP Ø**

Notes: Poison control may be contacted for **INFORMATION ONLY**. Treatment modalities are given within these protocols. Further treatments will be received through Medical Control.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

203 Electrocutation / Lightning Injuries

Assessment

Presence of electrical wiring Entry / exit wounds
--

Basic

1. Oxygen and airway maintenance appropriate to the patients condition
2. Spinal immobilization if electrocution/lightning over 1,000 volts or suspicion of spinal injury
3. Control any gross hemorrhage and dress wounds
4. Supportive care
5. Treat burn per burn protocol
6. **EMT STOP Ø**

EMT-IV

7. IV LR if signs of shock 20cc/kg bolus of fluid (peds 20cc/kg bolus)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG – follow appropriate protocol
10. Oxygen saturation
11. Consider 2nd IV en route to hospital
12. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

204 Hyperthermia

Assessment

History of exposure to warm temperature
Usually seen with increased exertion
Febrile
May have hot and dry **or** warm and moist skin
May be hypotensive
Determine history of therapeutic drug use (antipsychotics); history of substance abuse (cocaine, amphetamines, etc.)
Poor skin turgor
Signs of hypovolemic shock
History of infection or illness
Drug use
Dark urine – suggest muscle break-down and possible kidney damage
Tachycardia, hyperventilation, hypertension
Neurologic – light headedness, confusion to coma, seizures

Basic

1. Oxygen 100 % at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Remove clothing, apply wet linen or wet abdominal pads to groin and axillary areas.
 - a.) Expose to circulating air.
 - b.) DO NOT cool patient to the point of shivering
3. GENTLY massage extremities to prevent cold induced vasoconstriction
4. Move patient to protected environment (shade, AC, etc)
5. Glucose check
6. **EMT STOP Ø**

EMT-IV

7. IV NS or LR 20cc/kg bolus (*peds 20cc/kg bolus*)
 - a. repeat second bolus of fluids if needed
 - b. oral rehydration if patient able to maintain airway IV NS – rate proper for patient condition
8. Administer Dextrose 50% if appropriate
9. **EMT-IV STOP Ø**

PARAMEDIC

10. EKG monitor
11. Oxygen saturation
12. If hypoglycemic administer 1 amp D₅₀ (*peds 2 cc/kg D₂₅*)
13. **PARAMEDIC STOP Ø**

Remember: Time is of the essence in decreasing the patient's body temperature.

Note: Hyperthermia may be caused by one of the following:

Antipsychotic Medications and major tranquilizers: Phenthiazine (Thorazine®), Butyrophenones (Haldol®)
Cyclic antidepressants such as: Elavil®, Norpramin®, Tofranil®
Amphetamines
Monoamine oxidase inhibitors such as: Nardil®, Marplan®
Anticholinergic drug such as: Atropine, Cogentin, Scopolamine
Illicit drug: Cocaine, PCP, LSD, Ecstasy (MDMA)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

205 Hypothermia

Assessment

History of exposure to cold temperature including duration Drug/Alcohol use CNS depressants Examine for associated trauma Immersion in cold water Predisposing medical condition Signs – Vital signs, Bradycardia, Hypotension, Cold extremities, Neurologic (confusion, altered LOC, coma)

Basic

1. Oxygen 100 % at 12 - 15 Lpm with BVM
2. Remove the patient from the cold environment
3. Remove wet clothing and cover with warm, dry blankets
4. Evaluate pulse for one full minute (Do not perform CPR until NO PULSE is confirmed)
5. Handle patient gently. (*slightest jolt may trigger V-Fib.*)
6. Do not allow patient to walk or exert themselves
7. Do not massage extremities
8. Glucose check
9. **EMT STOP Ø**

EMT-IV

10. IV NS @ 75 cc/hr warmed if possible (*peds 4 cc/kg/hr max 150cc/hr*)
11. Administer Dextrose 50% if appropriate
12. **EMT-IV STOP Ø**

PARAMEDIC

13. EKG monitor, No CPR if bradycardic rhythm exists
14. If blood glucose is <80 mg/dL and patient is symptomatic administer 1 amp of D₅₀ (*peds 2cc/kg D₂₅*)
15. If patient in coma, Narcan 2mg IVP/IN (*peds 0.1 mg/kg slow IVP/IN*)
16. If body temperature >85 degrees F – follow normal arrest protocols
17. If body temperature <85 degrees F and patient in V-fib:
 - a. defibrillate @ 100j, if no change begin CPR *defib at 2 min intervals, increase joules at each interval until 200j max* (120j, 150j, 200j) (*peds 2 j/kg then 4 j/kg*)
 - b. withhold meds and further shocks until patient warmed to >85 degree F
 - c. continue CPR
18. **PARAMEDIC STOP Ø**

NOTE:

- If patient is alert and responding appropriately, rewarm actively:
Heat Packs or warm water bottles to the groin, axillary and cervical areas
- If the patient is unresponsive, rewarm passively:
Increase the room temperature gradually, cover with blankets

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

The following are signs and symptoms found at varying body core temperature:

95 degrees – amnesia, poor judgment, hyperventilation, bradycardia, shivering

90 degrees – loss of coordination (drunken appearance), decreasing rate and depth of respirations, shivering ceases, bradycardia

85 degrees – decreased LOC, slow respirations, atrial fibrillation, decreased BP, decreased heart rate, ventricular irritability

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

206 Near Drowning

Assessment

History compatible with near drowning Suspect hypothermia in "cold water" near drowning Suspect cervical spine injury

Basic

1. Oxygen 100% at 12 -15 Lpm NRB and airway maintenance appropriate to patient's condition
The Heimlich Maneuver may be indicated for airway obstruction
Gastric decompression may be necessary to ensure adequate respirations or ventilations.
If necessary, ventilation's may be started prior to patient's removal from the water.
2. Remove patient from the water, clear airway while protecting the C-spine ASAP
3. If patient is unconscious and pulseless - Refer to the Cardiac Arrest protocol
4. If Hypothermic - Go to Hypothermia Protocol
5. Supportive care
6. **EMT STOP Ø**

EMT-IV

7. INT or IV NS TKO, if hypotensive give 20cc/kg bolus of fluid (peds 20 cc/kg)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. E.C.G. monitor and treatment specific for the arrhythmia
10. **PARAMEDIC Ø**

Note: Reinforce the need to transport and evaluation for all patients with a submersion incident, Consider C-Spine immobilization.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

207 Nerve Agent Exposure

Special Note: Personnel safety is the highest priority. Do Not handle the patient unless they have been decontaminated. All EMS Treatment should occur in the Support Zone after decontamination of the patient. Appropriate PPE will be utilized.

Assessment

History of exposure
Hyper-stimulation of muscarinic sites (smooth muscles, glands) and nicotinic sites (skeletal muscles, ganglions)
Increased secretions – saliva, tears, runny nose, secretions in airways, secretions in GI Tract, sweating
Pinpoint pupils
Narrowing airway
Nausea, vomiting, diarrhea
Fasciculations, Flaccid paralysis, general weakness
Tachycardia, hypertension
Loss of consciousness, convulsions, apnea

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition.
2. Depending on signs and symptoms administer Mark I antidote kit
 - a) Mild – increased secretions, pinpoint pupils, general weakness
 - i. Decontamination , supportive care
 - b) Moderate – mild symptoms and respiratory distress
 - i. 1 Mark I kit
 - ii. May be repeated in 5 min prn
 - c.) Severe – unconsciousness, convulsions, apnea
 - i. 3 Mark I kits
3. Keep patient warm
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. 10 mg Valium (*peds 0.2 mg/kg*) or 2-5mg Versed IV/IN for seizures (*peds 0.1 mg/kg*)
9. Oxygen saturation
10. **PARAMEDIC STOP Ø**

Treatment - Protocol

Repeated doses of Atropine may be required after Mark 1 kits given

Note: This is for Mass-Casualty situations and is dependent on supplies available.
There is no contraindication for the use of a Mark I kit in the case of true nerve agent exposure.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

208 Poisonous Snake Bite

Assessment

Protect yourself from the exposure of snakebite. Snakes can envenomate up to one hour after death.
Determine type of snake if possible, time of bite, and changes in signs and symptoms since occurrence.
If possible, transport the **DEAD** snake in a secure vessel with the victim for identification
Parathesias (numbing or tingling of mouth, tongue, or other areas)
Local pain
Peculiar or metallic taste
Chills, N & V, headache, dysphagia
Hypotension
Fever
Local edema, blebs (blister or pustule jewel), discoloration
Bite wound configuration

Basic

1. Remove rings and bracelets from patient
2. Oxygen 100% at 12 - 15 Lpm and airway maintenance appropriate to patient's condition
3. Immobilize affected area keeping extremities in neutral position
4. Mark progression of swelling at the time of initial assessment and q 5 minutes
5. Supportive care
6. **EMT STOP Ø**

EMT-IV

7. INT or IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. Oxygen saturation
11. **PARAMEDIC STOP Ø**

Treatment - Protocol

Valium or Versed may be indicated if anxiety is overwhelming - Contact Medical Control prior to initiating therapy.

Note: DO NOT USE ice, tourniquets or constricting bands at the bite site or proximal to bite site, if already applied remove. Do NOT place IV in affected extremity if possible.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

ENVIRONMENTAL EMERGENCY

209 Radiation / Hazmat

Assessment

Extent of chemical exposure (number of victims, skin vs. inhalation exposure) Nature of exposure Symptoms exhibited by patient Neurologic status (LOC, pupil size) General appearance (dry or sweaty skin, flushed, cyanotic, singed hair) Associated injuries Decontamination prior to treatment

Basic

1. Oxygen and airway maintenance appropriate to the patient condition, pulse oximetry (keep sats >98%).
2. If eye exposure, irrigate
3. Treat associated injuries (LSB, limb immobilization, wound treatment)
4. Supportive Care
5. Treat burn per burn protocol
6. **EMT STOP Ø**

EMT-IV

7. INT or IV NS/LR, if hypotensive 20 cc/kg (peds 20 cc/kg)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. Oxygen saturation
11. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCIES

300 Medical Complaint Not Specified under other Protocols

Assessment

Pertinent history to complaint
Allergies / Medications taken or prescribed
Onset
Provocation
Quality of Pain / Discomfort
Relieved by
Signs and symptoms
Type of pain (sharp, dull, crushing,) and time of duration

Basic

1. Oxygen and airway maintenance appropriate for the patient's condition
2. Patient positioning appropriate for condition
3. Glucose check as appropriate
4. Supportive care
5. **EMT STOP Ø**

EMT-IV

10. INT or IV NS TKO unless signs of shock, then 20 cc/kg fluid bolus
11. **EMT-IV STOP Ø**

PARAMEDIC

12. EKG monitor prn
13. 12 lead EKG as appropriate for history or if questionable
13. Oxygen saturation
14. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

301 Abdominal Pain (non-traumatic)/ Complaints/ Nausea and Vomiting)

Assessment

Description of pain, onset, duration, location, character, radiation
Aggravating factors, last menstrual periods in females, vaginal bleeding in females
Recent trauma
History of abdominal surgery or problems
Blood in urine, vomitus, or stool
Nausea, Vomiting, diarrhea
Fever, diaphoresis, jaundice
Abdomen – tenderness, masses, rigidity, hernia, pregnancy, distension, guarding

Basic

1. Oxygen and airway maintenance appropriate to the patients condition
2. Allow patient to assume comfortable position or place patient supine, with legs elevated with flexion at hip and knees unless respiratory compromise or a procedure contraindicates
3. Supportive Care
4. **EMT STOP Ø**

EMT-IV

5. IV NS 20 cc/kg if signs of shock adult and (pediatric 20 cc/kg bolus)
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. Oxygen saturation
9. Phenergan 6.25 – 25 mg Slow IV (peds 0.05 – 0.1 mg/Kg) or Ondansetron (Zofran) 2-4 mg IV (peds 0.15mg/Kg IV) if intractable nausea and persistent vomiting and no signs of shock. Use lower dose initially especially in the elderly.
10. Consider second IV en route if patient continues to exhibit signs of shock
11. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

302 Acute Pulmonary Edema / CHF

Assessment

Focus Assessment on Airway, Breathing, and Circulation
Shortness of Breath
Cyanosis
Pedal Edema
Profuse Sweating, or Cool and Clammy Skin
Erect Posture
Distended Neck Veins (engorged, pulsating) - late sign
Bilateral Rales / Wheezes
Tachycardia (rapid pulse, >100bpm)
History of CHF or other heart disease, or Renal Dialysis
Lasix or Digoxin on medication list

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient condition. If respiration is less than 10/min. or greater than 30/min., consider assisting breathing with BVM and 100% Oxygen.
2. Keep patient in upright seated position
3. If Systolic BP is >110 and the patient is symptomatic, give patient 1 nitroglycerine dose sublingually and reassess every 5 minutes Maximum of three doses.
4. If the patient has Albuterol Inhalation Treatment prescribed, administer one treatment.
5. **EMT STOP Ø**

EMT-IV

6. INT
7. **EMT-IV STOP Ø**

PARAMEDIC

8. If Systolic BP >90 mmHg
 - a. Assess for crackles, wheezes, or rales, JVD, peripheral edema, cyanosis, diaphoresis, respiratory rate > 25/min or < 10/min then:
 - i. One Nitroglycerine SL spray and apply 1” of Nitroglycerine to chest wall. Repeat Nitroglycerine spray once 5 minutes after initial spray. Discontinue therapy if systolic BP < 100mmHg;
 - ii. Albuterol 2.5 mg/3 cc NS via Nebulizer q 5 min, to maximum of 3 doses;
 - iii. Lasix 40-80 mg IV, or Bumex 1.0 mg slow IVP.
9. If Systolic BP <90 mmHg
 - a. Continue oxygen and initiate rapid transport, see hypotension protocol, contact Medical Control immediately
10. If severe respiratory distress consider CPAP
11. Morphine Sulfate 2-4 mg IV
12. **PARAMEDIC STOP Ø**

Treatment - Protocol

Dopamine 400 mg/250cc D5W IV admix, begin @ 15 cc/hr (titrate) if patient is hypotensive and symptomatic. (Systolic pressure <90 mmHg)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

303 Anaphylactic Shock

Assessment

Contact with a known allergen or with substances that have a high potential for allergic reactions.
Sudden onset with rapid progression of symptoms.
Dyspnea, audible wheeze on confrontation, generalized wheeze on auscultation, decreased air exchange on auscultation.
Generalized urticaria, erythema, angioedema especially noticeable to face and neck.
Complaint of chest tightness or inability to take a deep breath.

Basic

1. Position of comfort, reassure
2. 100% Oxygen and airway maintenance appropriate for patient's condition, pulse oximetry.
3. If patient has a prescribed Epinephrine for Anaphylaxis, assist patient with administration.
4. **EMT STOP Ø**

EMT-IV

5. IV NS or LR, large bore @ TKO – if hypotensive 20 cc/kg bolus (*peds 20 cc/kg bolus.*)
6. Epinephrine 1:1000 0.3 mg IM (*peds Epinephrine 1:1000 0.01 mg/kg IM, max dose is 0.3 mg.*)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. Epinephrine 1:1000 0.3 – 0.5 mg IM (*peds Epinephrine 1:1000 0.01 mg/kg IM, max dose is 0.3 mg.*)
11. Diphenhydramine (Benadryl) 25-50 mg IV or deep IM (*peds 1 mg/kg IVP.*)
12. Adult - Solumedrol 62.5 mg (if small in stature, sensitive to steroids, on chronic steroid therapy) or 125 mg IVP (*peds contact Medical Control.*)
13. Albuterol Inhalation Treatment if wheezing is present and persists post Epinephrine IM/IV.
14. Consider Glucagon 1-2mg IM/IV/IN if unresponsive to Epinephrine, especially if taking Beta blockers.
15. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

304 Cerebrovascular Accident (CVA)

Assessment

Altered level of consciousness (coma, stupor, confusion, seizures, delirium)
Intense or unusually severe headache of sudden onset or any headache associated with decreased level of consciousness or neurological deficit unusual and severe neck or facial pain
Aphasia/Dysphasia (unable to speak, incoherent speech or difficulty speaking)
Facial weakness or asymmetry (Paralysis of the facial muscles, usually noted when the patient speaks or smiles); may be on the same side or opposite side from limb paralysis
In-coordination, weakness, paralysis, or sensory loss of one or more limbs; usually involves one half of the body particularly the hand
Ataxia (poor balance, clumsiness, or difficulty walking)
Visual loss (monocular or binocular); may be a partial loss of visual field
Intense vertigo, double vision, unilateral hearing loss, nausea, vomiting, photophobia, or phonophobia

Basic

1. Oxygen at 2 – 6 Lpm BNC and airway maintenance appropriate to patient's condition
2. Continually monitor airway due to decreased gag reflex and increased secretions.
3. Conduct a brief targeted history and physical exam. Establish time of onset. Include the Cincinnati Pre-hospital Stroke Scale. (Next Page)
4. Glucometer check, treat patient appropriately
5. Monitor airway due to decreased gag reflex and increased secretions (be prepared to intubate)
6. Maintain body heat, protect affected limbs from injury, anticipate seizures
7. Glucose check
8. If seizure present follow seizure protocol
9. If shock signs present follow shock protocol
10. **EMT STOP Ø**

EMT-IV

11. IV NS TKO (30 cc/hr) or INT
12. Administer Dextrose 50% if appropriate
13. **EMT-IV STOP Ø**

PARAMEDIC

14. EKG monitor
15. Oxygen saturation
16. If trauma suspected, spinal stabilization. Elevate head 30 degrees.
17. Narcan 2 mg IVP/IN (*peds 0.1 mg/kg slow IVP/IN*) if narcotics suspected
18. Complete Thrombolytic screening protocol
19. Complete Stroke assessment scale
20. If positive for CVA, recommend transport to stroke center
21. Blood Pressure should only be treated if SBP >220 or DBP >140, then give Nitro spray q 5 min. Goal is reduce initial blood pressure by 15%.
22. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

BASIC IV PARAMEDIC

REFERENCE

The Cincinnati Prehospital Stroke Scale

Facial droop (have patient show teeth or smile):
 Normal- both sides of face move equally well.
 Abnormal- one side of face does not move as well as the other side

Arm Drift (patient closes eyes and holds both arms out):
 Normal- both arms move the same or both arms do not move at all
 Findings, such as pronator grip, may be helpful
 Abnormal- one arm does not move or one arm drifts down compared with the other

Speech (have patient say “you can’t teach an old dog new tricks”):
 Normal- patient uses correct words with no slurring
 Abnormal- patient slurs word(s), uses inappropriate words, or is unable to speak

For evaluation of acute, non-comatose, non-traumatic neurologic complaint.

Facial / Smile or Grimace		
Have the patient show teeth or smile.	Normal- Both sides of the face move equally.	Abnormal- Left or Right side of face does not move as well.
Arm Drift		
Have the patient close both eyes and hold both arms straight out for 10 seconds.	Normal- Arms move equally or do not move.	Abnormal- Left or Right arm does not move or drifts down.
Speech		
Have the patient repeat a simple phrase such as “It is sunny outside today”.	Normal- Words stated correctly without slurring.	Abnormal- Patient slurs words or uses the wrong words, or is unable to speak.

Pre-Hospital Screen for Thrombolytic Therapy

Complete this report for all patients symptomatic for a Myocardial infarct or CVA.
 Report to the Emergency Department Physician/Nurse any positive findings. Document all findings in the patient’s ePCR .

Time of onset of symptoms:		
Systolic BP >240mmHg	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Diastolic BP >110mmHg	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Right arm vs. Left arm Systolic BP difference >15mmHg	<input type="checkbox"/> Yes	<input type="checkbox"/> No
History of recent brain/spinal cord surgery, CVA, or injury	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Recent trauma or surgery	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Bleeding disorder that causes the patient to bleed excessively	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Prolonged CPR (>10 minutes)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Pregnancy	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Taking Coumadin, Aspirin, or other blood thinners	<input type="checkbox"/> Yes	<input type="checkbox"/> No

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

305 Croup

Assessment

History –

Viral infections resulting in inflammation of larynx, trachea
Seasonal – Late fall / early winter
Children under 6 yrs old with cold symptoms for 1-3 days
Hoarseness
Barking, Seal-like cough
Stridor, NOT wheezes
Low grade fever
No history of obstruction, foreign body, trauma

Basic

1. Oxygen and airway maintenance appropriate to the patients condition.
2. Allow patient to assume comfortable position or place patient supine.
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. **EMT-IV STOP Ø**

PARAMEDIC

6. Nebulized Epinephrine 1:1.000
 - a. 1mg diluted to 2.5 – 3 cc with saline flush, nebulized (mask or blow-by)
 - b. May repeat up to 3 total doses.
 - c. If the patient has significant distress, 3 ml (3mg) diluted with 2.5 to 3 cc saline flush may be administered as an initial aerosol.
7. Contact Medical Control for subsequent aerosols.
8. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

306 Family Violence

Assessment

Fear of household member
Reluctance to respond when questioned
Unusual isolation, unhealthy, unsafe living environment
Poor personal hygiene / inappropriate clothing
Conflicting accounts of the incident
History inconsistent with an injury or illness
Indifferent or angry household member
Household member refused to permit transport
Household member prevents patient from interacting openly or privately
Concern about minor issues but not major ones
Household with previous violence
Unexplained delay in seeking treatment

BASIC

IV

PARAMEDIC

*Direct questions to ask when alone with patient and if time available.

1. Has anyone at home ever hurt you?
2. Has anyone at home touched you without your consent?
3. Has anyone ever made you do things you didn't want to?
4. Has anyone taken things that were yours without asking?
5. Has anyone scolded or threatened you?
6. Are you afraid of anyone at home?

** Signs and Symptoms

Injury to soft tissue areas that are normally protected
Bruise or burn in the shape of an object
Bite marks
Rib fracture in the absence of major trauma
Multiple bruising in various stages of healing

Treatment - Standing Order

1. Patient care is first priority
2. If possible remove patient from situation and transport
3. Police assistance as needed
4. If sexual assault follow sexual assault protocol
5. Obtain information from patient and caregiver
6. Do not judge
7. Report suspected abuse to hospital after arrival. Make a verbal and written report.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

307 Hyperglycemia Associated with Diabetes

Assessment

History of onset
Altered level of consciousness
Pulse: tachycardia, thready pulse
Respirations (Kussmaul-Kien - air hunger)
Hypotension
Dry mucous membranes
Skin may be cool (consider hypothermia)
Ketone odor on breath (Acetone smell)
Abdominal pain, nausea and vomiting
History of polyuria, or polydipsia (excessive urination or thirst)
Blood glucose determination

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition. Suction airway as needed.
2. Glucometer check, treat accordingly
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO or INT. Consider 250-500cc NS bolus only in patients with signs of dehydration, vomiting, or DKA.
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. Oxygen saturation
9. If BS >250 mg/dL, give 20cc/kg bolus of NS (peds 4 cc/kg/hr max 150cc/hr No Bolus), then reassess blood sugar
10. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

308 Hypertensive Crisis

Assessment

Decreased / altered LOC
Headache, blurred vision, dizziness, weakness.
Elevated blood pressure (systolic and/or diastolic) {if systolic BP is greater than 220 mmHg and/or Diastolic BP is greater than 140 mmHg}.
Dyspnea, peripheral or pulmonary edema.
Cardiac dysrhythmia, Neurological deficits

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
2. Position of comfort, elevation of head is preferred.
3. Keep patient calm, reassure.
4. Glucose check
5. **EMT STOP Ø**

EMT-IV

6. INT or IV NS TKO
7. Administer Dextrose 50% if appropriate
8. **EMT-IV STOP Ø**

PARAMEDIC

9. Evaluate cardiac rhythm for dysrhythmia and treat appropriately with medical direction (contact Medical Control prior to initiation of anti-arrhythmic therapy)
10. Assess for hypoglycemia; if <80 mg/dL administer 1 amp D₅₀ (*peds 2cc/kg D₂₅ IV/IO*) through IV with Fluid
11. If motor/neuro deficits present, go to stroke protocol
If no motor/neuro deficits:
 - a. If systolic BP is less than 220mm/Hg, contact Medical Control, monitor patient changes
 - b. If systolic BP is greater than 220 mmHg and /or Diastolic BP is greater than 140 mmHg, Nitroglycerine one spray SL q 3-5 min until noted decrease in BP by 15%. May use nitro Paste 1 inch to chest wall, remove if BP drops 15% from the original reading.
12. Contact Medical Control and consider:
 - a. Morphine 2-4 mg slow IVP
 - b. Lasix 0.5 - 1 mg/kg if pulmonary edema present
13. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

309 Hypoglycemia

Assessment

History of onset of event.
History of Insulin excess (overdose, missed meal, exercise, vomiting, or diarrhea)
Confusion, agitation, headaches, or comatose
Pulse Rate (normal to tachycardia)
Respirations (shallow, slow)
Skin (sweaty, often cool)
Flaccid muscle tone
Grand Mal seizures
Fecal, urinary incontinence

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition (snoring respirations is a sign of an INADEQUATE airway)
2. Glucose check
3. If patient is a known diabetic and is conscious with an intact gag reflex, administer one tube of Instant Glucose and reassess.
4. Supportive care
5. **EMT STOP Ø**

EMT-IV

6. IV NS TKO
 - a. If patient is conscious and symptomatic, one tube instant glucose
 - b. If patient is unresponsive, 10-25 grams of Dextrose 50% followed by a 20 cc flush or IV Fluids.
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. If blood sugar is less than 80 mg/dL and symptomatic: administer 10-25 grams of D₅₀, (*peds 2cc/kg D₂₅ IV/IO; if needed an admixture of D50% and Normal Saline can be obtained through mixing 1cc to 1cc for the treatment of symptomatic hypoglycemia in pediatric patients*) reassess blood sugar level q 15 min, administer 10 – 25 grams D₅₀ prn
11. If unable to establish IV access, Glucagon 1-2mg IM/IN, (*peds - Glucagon 0.5-1 mg IM*)
12. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

310A Medications At Schools

BASIC IV

1. Oxygen and airway maintenance appropriate to the patients' condition.
2. Other treatments will be in accordance with the MFD BLS / ALS SOPs.

Paramedic

3. Necessary medication(s) administration as requested by school official(s):
 - a. Schools must provide the medication(s) to be administered
 - b. Schools must provide a written copy of the physician order and care plan for attachment to the patient care report
 - c. This documentation by the patient's primary physician should list the following:
 - i. Name of the patient
 - ii. Name of primary physician
 - iii. Document must be signed by the primary physician
 - iv. Contact phone number of the primary physician
 - v. Name of medication(s)
 - vi. Signs and symptoms for which the medication(s) is prescribed
 - vii. Dosage of the medication(s)
 - viii. Number of repeat doses of the medications(s)
 - ix. Route(s) of administration(s)
 - x. Potential side-effects of medication(s)
4. Medication(s) will only be administered if the patient meets the signs and symptoms for that medication.
5. Copies of the care plan and physician order must be attached to the patient care report.
6. If the medication(s) is not administered documentation must include those reasons for withholding
7. Whenever medication is administered under these circumstances transport is mandatory

Note: If you have any additional questions or concerns please contact medical control.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

310B Non Formulary Medications

To provide authorization for the use of medications not commonly used within the current guidelines. For Emergency Use Only.

Assessment

The patient must exhibit the signs and symptoms for which the medication is prescribed.

BASIC IV

1. Oxygen and airway maintenance appropriate to the patients' condition.
2. Other treatments will be in accordance with the BLS / ALS SOPs.

Paramedic

3. Necessary medication(s) administration as requested by caregiver(s):
 - a. Caregiver must provide the medication(s) to be administered
 - b. Caregiver must provide a written copy of the physician order and care plan for attachment to the patient care report
 - c. This documentation by the patient's primary physician should list the following:
 - i. Name of the patient
 - ii. Name of primary physician
 - iii. Document must be signed by the primary physician
 - iv. Contact phone number of the primary physician
 - v. Name of medication(s)
 - vi. Signs and symptoms for which the medication(s) is prescribed
 - vii. Dosage of the medication(s)
 - viii. Number of repeat doses of the medications(s)
 - ix. Route(s) of administration(s)
 - x. Potential side-effects of medication(s)
4. Medication(s) will only be administered if the patient meets the signs and symptoms for that medication.
5. Copies of the care plan and physician order must be attached to the patient care report.
6. If the medication(s) is not administered documentation must include those reasons for withholding
7. Whenever medication is administered under these circumstances, transport is mandatory

Note: If you have any additional questions or concerns please contact Medical Control

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

311 Respiratory Distress (Asthma/COPD)

Assessment

Mild Attack:- Slight increase in respiratory rate. Mild wheezes. Good skin color.
Moderate Attack - Marked increase in respiratory rate. Wheezes easily heard. Accessory muscle breathing.
Severe Attack - Respiratory rate more than twice normal. Loud wheezes or so tight no wheezes are heard, patient anxious. Grey or ashen skin color.
Hx - COPD, Emphysema, Asthma, or other restrictive lung disease
Respiratory rate greater than 25 per minute or less than 10 per minute
Labored respiration, use of accessory muscles or tripodding
Breath Sounds: Bilaterally diminished, dry crackles, wheezing
Cyanosis/Diaphoresis
Use of short sentences
Unilateral breath sounds

Basic

1. 100% Oxygen and airway maintenance appropriate for patients condition
2. If the patient has a prescribed Albuterol Inhalation treatment, administer to the patient 2.5mg/ 3ml NS and start the oxygen flow rate at 6 Lpm or until the appropriate mist is achieved.
3. If patient uses a MDI, assist patient with one dose.
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS TKO
6. Administer to the patient Albuterol 2.5mg/ 3ml NS and start the oxygen flow rate at 6 Lpm or until the appropriate mist is achieved
7. **EMT-IV STOP Ø**

PARAMEDIC

8. O₂ Saturation
9. EKG monitor (consider 12 lead, transmit if available)
10. Albuterol Inhalation Treatment 2.5 mg / 3 mL NS q 5-15 minutes.
(peds 2.5 mg / 3ml NS q 5-15 min)
11. In severe cases consider Solumedrol 62.5 mg (if small in stature, sensitive to steroids, on chronic steroid therapy) or 125 mg IV (peds contact medical control)
12. Epinephrine 1:1000, 0.3 – 0.5 mg IM (peds Epinephrine 1:1000 0.01 mg/kg IM, max dose is 0.3 mg)
13. Consider use of CPAP
14. **PARAMEDIC STOP Ø**

Peds: consult Medical Control prior to administering Solumedrol

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

312 Seizures

Assessment

Seizure (onset, duration, type, post-seizure, level of consciousness) Medical (diabetes, headaches, drugs, alcohol, seizure history) Physical (seizure activity, level of consciousness, incontinence, head and mouth trauma, vital signs) Trauma (head injury or hypoxia secondary to trauma)

Basic

1. Oxygen 100 % at 12 - 15 Lpm and airway maintenance appropriate to patient's condition
2. Protect patient from injury during active seizures.
3. Glucometer check, treat patient appropriately
4. If patient is actively seizing, consider therapy if:
 - a. Unstable ABC's exist, patient has been actively seizing for 5 or more minutes, patient has underlying disease or condition that will be adversely affected if seizures continue (trauma, COPD, pregnancy, severely hypertensive).
5. **EMT STOP Ø**

EMT-IV

6. IV NS TKO or INT
7. Administer Dextrose 50% if appropriate
8. C-spine precaution if appropriate.
9. If febrile, cool as per hyperthermia protocol and monitor
10. **EMT-IV STOP Ø**

PARAMEDIC

11. EKG monitor – treat dysrhythmia per protocols
12. If no IV available and blood glucose levels are <80 mg/dl, Glucagon 1-2 mg IM/IN (*peds 0.5 – 1 mg IM*)
13. Adults – if actively seizing –
Valium SLOW IVP 2 – 5 mg or Versed 2-5 mg IV/IN may repeat if seizure continues.
If narcotic overdose, Narcan 2 mg IV/IO/IN
14. *Peds:*
 - a. *Valium 0.2 mg/kg IV/IO or Versed 0.1 mg/kg IV/IO/IN*
 - b. *Valium 0.5 mg/kg rectal*
 - c. *If seizure persists for 4 minutes repeat medication once*
 - d. *If seizure recurs repeat medication*
 - e. *Narcan 0.1 mg/kg up to 2 mg, titrated to effect if narcotic use is suspected*
15. **PARAMEDIC STOP Ø**

Specifically evaluate for: active bleeding, trauma, eye deviation, pupil equality, mouth or tongue bleeding, Urinary or fecal incontinence, lack of arm or leg movement or tone.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

313 Sexual Assault

Assessment

Traumatic injuries

BASIC

IV

PARAMEDIC

1. Oxygen 100% and airway maintenance appropriate to patient's condition
2. Be calm, caring and sensitive toward patient
3. DO NOT make unnecessary physical contact with patient
4. Have witness the same sex as the victim present at all time if possible
5. Wrap plastic sheet around victim if possible
6. DO NOT inspect genitals unless evidence of uncontrolled hemorrhage, trauma or severe pain is present
7. DO NOT allow patient to shower or douche
8. Collect patients clothing involved when possible
 - a. place clothing in plastic sheet or separate plastic/paper bags with ID labels and found location
 - b. leave all sheets placed in plastic/paper bag with patient at facility
 - c. notify staff of clothing samples
9. Transport patient to appropriate facility for treatment and examination

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

314 Sickle Cell Anemia

Assessment

History of Sickle Cell Anemia Signs of infection Hypoxia Dehydration Painful joint Limited movement of joints
--

Basic

1. Oxygen 100% and airway maintenance appropriate to patient's condition
2. Supportive care
3. **EMT STOP Ø**

EMT-IV

4. IV NS bolus 20 cc/kg (peds 20 cc/kg bolus)
5. **EMT-IV STOP Ø**

PARAMEDIC

6. EKG monitor
7. Oxygen saturation
8. If pain persists – Morphine 2 mg increments q 10 min up to 6 mg (peds .2 mg/kg Maximum dose 3 mg) pulse oximetry. (Keep oxygen sats >95%)
9. **PARAMEDIC STOP Ø**

NOTE:

Use caution in administering narcotic to a patient with SpO₂ <95%

ALL PATIENTS WHO RECEIVE NARCOTIC MEDICATION MUST BE TRANSPORTED FOR FURTHER EVALUATION

Note: May Substitute for Morphine: Nubain 2-10 mg IV (peds 0.2 mg/kg) **OR** Stadol 0.5-2 mg IV (no use in Pediatrics)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

315 Unconscious / Unresponsive / Altered Mental Status

Assessment

Unconscious or unresponsive with vital signs
Any patient not responding appropriately to verbal or painful stimulus
Altered level of consciousness with vital signs
Assess for head trauma
Assess for Hypo / Hyperthermia, hemiparesis, and fever, OD, Hypoglycemia
Peds – less commonly associated with intussusception (fold of one intestine into another), intracranial catastrophe, metabolic disorder

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
2. Glucose check
3. Assess for underlying causes: head trauma, hypovolemia, hypothermia, hemiparesis, and fever and treat accordingly.
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO or INT
6. If Hypoglycemic, 12.5 – 25 grams D₅₀ IVP (Peds 2 cc/kg D₂₅ IV/IO through IV with fluids.)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. Administer Narcan 2mg slow IVP/IN (peds <5 yo – 0.1 mg/kg up to 2 mg IV, >5 yo – 2 mg IV/IN)
11. If hypoglycemia and unable to maintain airway, and CVA is not suspected and the patient has a history of diabetes:
 - a. 12.5 – 25 grams D₅₀ IVP (Peds 2 cc/kg D₂₅ IV/IO through IV with fluids.)
 - b. If no IV access Glucagon 1-2 mg IM/IN, (if no IV access Glucagon 0.5-1 mg IM)
12. Contact Medical Control for further orders
 - a. 20cc/kg NS fluid challenge (peds 20 cc/kg)
13. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MEDICAL EMERGENCY

316 SYNCOPE

Assessment

Loss of consciousness with recovery Lightheadedness, dizziness Palpitations, slow or rapid pulse, irregular pulse Decreased blood pressure

Basic

1. Oxygen at 2-6Lpm and airway maintenance appropriate to patient's condition
2. Glucose Check
3. Supportive Care
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS TKO – if hypotensive 20 cc/kg bolus (peds 20 cc/kg bolus.)
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. 12-Lead EKG, treat any cardiac dysrhythmia per appropriate protocol
11. Assess neuro status; if abnormal refer to appropriate protocol
12. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

Air Ambulance Transport

401 Air Ambulance Transport

BASIC

IV

PARAMEDIC

. **Request for an Air Ambulance must be in accordance with approved service policy**

A scene flight by air ambulance MAY be indicated IF:

The Level - I trauma patient's condition warrants immediate and extreme action **and** the extrication **and/or** transport time is greater than **30** minutes **and** if patient **is not** in trauma full arrest.

Transport time is defined as the length of time beginning when the emergency unit would leave the scene transporting until time of arrival at the trauma center.

The on-scene Paramedic shall have the authority to disregard the response of an air ambulance **in accordance with approved service policy**

Additional Criteria:

- Multi-system blunt or penetrating trauma with unstable vital signs
- Greater than 25% TBSA burns
- Paralysis or spinal injury
- Amputation proximal to wrist or ankle
- Flail or crushed chest

Situational Criteria:

- High energy mechanisms
- Prolonged entrapment
- Multiple casualty incident

Patients will be categorized according to the current Tennessee Trauma Destination Determinates.

DO NOT call for air ambulance transport if patient is in traumatic cardiopulmonary arrest. If the patient has no vital signs, they are a trauma full-arrest.

The Paramedic in charge of the patient shall have the authority through approved policy to disregard the response of the air ambulance.

The Paramedic will coordinate in accordance with approved policy with dispatch air service to insure the helicopter receives patient information and landing zone location.

Note:

Medical responsibility will be assumed by the medical flight crew personnel upon arrival at the scene.

Note: Limitations of the helicopter:

- a. adults who have a traction splint applied
- b. patients over 6' 3"
- c. patients who exceed 350 lbs
- d. any splint or device that exceeds the boundary of the long spine board

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

402 Abdominal / Pelvic Trauma

Assessment

Abdominal / retroperitoneal abrasions/contusions
Penetrating injuries
Hypotension
Abdominal evisceration(s)
Abdominal pain on palpation
Hematuria, bloody stool
Altered bowel sounds
Vomiting blood
History of abdominal injury/trauma
Suspected injury secondary to mechanism of trauma

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. C-Spine stabilization
3. Stop any life threatening hemorrhaging
4. Systolic BP or peds normal for age:
 - a. If systolic BP >90mmHg place patient supine with legs elevated and flexed at knees and hips if no C-Spine, contact Medical Control
5. Patient pregnant:
 - a. If patient is not past 1st trimester: place patient supine with legs elevated and flexed at knees and hips if no C-Spine, contact Medical Control
 - b. If patient is past 1st trimester: place patient in left lateral recumbent position
6. Penetrating object:
 - a. If no penetrating object: place patient supine with legs elevated and flexed at knees and hips if no C-Spine, contact Medical Control
 - b. If penetrating object present: stabilize object(s)
7. Evisceration:
 - a. If present: place patient supine with legs elevated and flexed at knees and hips if no C-Spine, contact Medical Control, cover evisceration (s) with saline soaked trauma dressing
8. Supportive care
9. **EMT STOP Ø**

EMT-IV

10. IV NS/LR TKO
 - a. If systolic BP <90mm/Hg, IVNS/LR 20cc/kg bolus (peds 20 cc/kg bolus) target SBP is 90 - 110mmHg in adult trauma patients

11. EMT-IV STOP Ø

PARAMEDIC

12. EKG monitor
13. Oxygen saturation
14. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

403 Avulsed Teeth- Standing Order

Assessment

Avulsed teeth may be handled in much the same manner as small parts; i.e. rinse in normal saline (do not rub or scrub) and place in gauze moistened with saline.
Do not cool tooth with ice.

Basic EMT-IV

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient condition.
2. C-spine stabilization.
3. Treat other associated injuries.
4. Pay attention to the airway, bleeding and avulsed teeth may cause airway obstruction.
5. Supportive care
6. Avulsed teeth may be handled in much the same manner as small body parts; i.e. rinse in normal saline (do not rub or scrub) and place in moistened gauze, but there is no need to cool with ice.

7. EMT & EMT-IV STOP Ø

PARAMEDIC

8. Re-implantation is recommended if possible at the scene as this creates maximum possibility of reattachment as minutes count. The follow guidelines pertain to re-implantation at the scene:
 - a. Applicable only for permanent teeth (i.e., with patients over 6.5 years of age)
 - b. Applicable when only one or two teeth are cleanly avulsed and the entire root is present
 - c. Applicable only to anterior teeth (front 6, upper and lower)
 - d. The patient must be conscious
 - e. Should be attempted with the first 30 mins. (The sooner performed, the greater success rate.)
 - f. Do not force re-implantation. Gentle insertion is all that is necessary. Slight incorrect positioning can be corrected later.
9. If re-implantation is not feasible and the patient is a fully conscious adult, then the best procedure is to place the tooth in the mouth, either under the tongue or in the buccal vestibule. This is not recommended for children.

10. PARAMEDIC STOP Ø

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

404 Cardiogenic Shock

Assessment

Frequently associated with tachy/brady dysrhythmia, acute MI, or blunt chest trauma
Neck vein distention in sitting position
Moist sounding lungs (rales, rhonchi)
Peripheral edema (if chronic heart failure)
Determine if cardiac dysrhythmia exists
Consider tension pneumothorax
Consider cardiac tamponade
Increased heart rate
Decreased BP
Altered LOC

Basic

1. Semi-Fowlers or position of comfort
2. Oxygen 100% and airway maintenance appropriate to patient's condition, pulse oximetry
3. **EMT STOP Ø**

EMT-IV

4. IV NS or LR if hypotensive give 20cc/kg bolus (peds 20 cc/kg bolus)
5. **EMT-IV STOP Ø**

PARAMEDIC

6. Evaluate cardiac rhythm and treat appropriately
7. Oxygen saturation
8. **PARAMEDIC STOP Ø**

Treatment - Protocol

Contact Medical Control, consider:

Dopamine 400 mg / 250 cc D5W IV admix, begin 2-20ug/kg/min (peds 2-20 ug/kg/min)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

405 Eye Trauma

Assessment

Impaled object Inability to open eye(s) Swollen, edematous eye(s) Photophobia Visual defects, loss of vision Redness

BASIC

IV

PARAMEDIC

Treatment – Standing Order

1. Oxygen and airway maintenance appropriate for the patient's condition.
2. C-Spine stabilization if needed
3. If thermal or chemical:
 - a. flush eye(s) with NS or water for 15 min
 - b. cover both eyes
 - c. transport
4. Penetration:
 - a. stabilize
 - b. cover unaffected eye
 - c. transport
5. Blunt trauma
 - a. cover both eyes
 - b. transport
6. Is loss of vision present:
 - a. No – contact Medical Control
 - b. Yes – if loss of vision was sudden, painless and non-traumatic, consider Retinal Artery Occlusion: Contact medical control and:
 - (1) apply cardiac monitor and assess for changes
 - (2) apply vigorous pressure using heel of hand to affected eye for 3-5 seconds, then release (patient may perform this procedure and may be repeated as necessary)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

406 Hypovolemic Shock

Assessment

Blood loss due to penetrating injuries to torso or other major vessel
Fracture of femur or pelvis
G.I. bleeding, vaginal bleeding, or ruptured ectopic pregnancy
Dehydration caused by vomiting, diarrhea, inadequate fluid intake, excessive fluid loss due to fever, uncontrolled diabetes, or burns
Pulse may be greater than 120 beats per minute
Blood pressure may be less than 90 mm Hg systolic
Orthostatic (Tilt) changes in vital signs (consider possible spinal injury) pulse increase of 20 beats per minute, B/P decrease of 10 mm Hg systolic
Severe shock (hypovolemia) is defined as decreased level of consciousness, absent radial pulse, capillary refill greater than 2 seconds, no palpable blood pressure

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Consider spinal stabilization and hemorrhage control
3. Control gross hemorrhage.
4. Trendelenburg patient if no suspected spinal injury
5. **EMT STOP Ø**

EMT-IV

6. IV NS bolus (20cc/kg)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. IV NS or LR x 2 large bore titrated to restore patients vital signs (in patients with ongoing blood loss maintain patient's systolic blood pressure 90 – 110mmHg).
11. Pediatrics –
 - a. IV/IO NS 20 cc/kg bolus
 - b. Reassess patient
 - c. Repeat fluid bolus 20 cc/kg if no improvement
 - d. Place a second IV as needed
 - e. Maintain temperature >97 degrees
12. **PARAMEDIC STOP Ø**

Treatment - Protocol

Contact Medical Control, consider:

Adult & Peds - Dopamine 2-20 ug/kg/min

Note: Cervical spine immobilization is not necessary in patients suffering penetrating trauma (stab or gun shot wound) below the nipple line **AND** no evidence of spinal or head injury. Do not delay transport of patients meeting this criteria for immobilization.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

407 Major Thermal Burn

Major Burn:

- Greater than 20 % BSA, partial thickness surface involvement
- Greater than 10% BSA, full thickness burn
- Full thickness burns of the head, face, feet, or perineum
- Inhalation burns or electrical burns
- Burns complicated by fractures or other significant injury
- Elderly, pediatric, or compromised patients

Assessment

Remove clothing from affected parts
DO NOT pull material out of the burn site: Cut around it.
Look for burns of the nares, oropharyngeal mucosa, face or neck
Listen for abnormal breath sounds
Note if burn occurred in closed space
Determine extent of injury (including associated injuries)
Cardiac monitor for all major burn patients
Respiratory Distress
ETOH / drug use
Associated injuries / trauma
Hypotension
Past medical history

Basic

1. Stop the burn process with tepid water or normal saline solution and remove any smoldering clothing.
2. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
 - a. Edema may cause patient's airway to close almost instantly without warning signs.
 - b. Be prepared to Assist ventilation with BVM
3. Monitor all vital signs and continue reassessment with emphasis on the respiratory rate, peripheral pulses (circulation) and level of consciousness.
4. Remove any jewelry
5. Cover burned area with dry sterile dressing or burn sheet. Attempt to keep blisters intact.
6. DO NOT use Water-jel or any other commercially manufactured burn products. DO NOT remove if applied prior to arrival.
7. Monitor to prevent hypothermia
8. Stabilize all associated injuries (e.g. chest, potential spine injury, fractures, dislocations, etc.)
9. **EMT STOP Ø**

EMT-IV

10. INT or IV NS, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
11. **EMT-IV STOP Ø**

PARAMEDIC

12. EKG monitor
13. Oxygen saturation
14. For major burns, Morphine 2-4 mg (contact medical control in multi-system trauma/pregnancy), transport (all additional doses must be approved by Medical Control)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

15. If extremity injured, cover open fractures/lacerations/injuries with sterile dressing, splint fractures prn, avoid unnecessary movement, transport

16. PARAMEDIC STOP Ø

Administer IV fluids using the following guide:

500 mL per hour for patients over 15 years old

250 mL per hour for patients 5 - 15 years old

150 mL per hour for patients under 5 years old

Excessive or overly aggressive amounts of fluid administration may increase third-spacing shock

Note: May Substitute for Morphine: Nubain 2-10 mg IV (peds 0.2 mg/kg) **OR** Stadol 0.5-2 mg IV (no use in Pediatrics)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

408 Musculoskeletal Trauma

Assessment

Hypotension
Past medical history
Deformity, swelling, tenderness, crepitus, open or closed fractures
Hemorrhaging, lacerations, ecchymosis, instability
Decreased function, pulses
Loss of sensation of distal extremities
ETOH/drug use

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. C-Spine stabilization prn
3. Stop any life threatening hemorrhaging
4. Consider applying MAST as splint
5. Splint prn, stabilize penetrating objects
6. **EMT STOP Ø**

EMT-IV

7. INT or IV, LR TKO, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. Oxygen saturation
11. Trauma: **Isolated extremity trauma only**
 - a. If systolic BP >90mmHg or peds normal range for age, Consider Morphine 2-4mg IV (*peds .03-.05 mg/kg IV/IO*)
Cover open fractures/lacerations, check distal motor/sensory/pulse pre/post splinting, avoid unnecessary movement
 - b. If systolic BP <90mmHg, IV NS/LR 20cc/kg (*peds 20 cc/kg*)
If patient pregnant: Isolated extremity trauma only
 - (a) If past 1st trimester contact and systolic BP >90mmHg contact Medical Control.
 - (b) If systolic BP <90mmHg place patient in left lateral recumbent position, IV NS/LR 20cc/kg
12. **PARAMEDIC STOP Ø**

Note: May also utilize patient controlled Nitrous Oxide for pain Management.

May Substitute for Morphine: Nubain 2-10 mg IV (*peds 0.2 mg/kg*) **OR** Stadol 0.5-2 mg IV (*no use in Pediatrics*)

Cervical spine immobilization is not necessary in patients suffering penetrating trauma (stab or gun shot wound) below the nipple line **AND** no evidence of spinal or head injury. Do not delay transport of patients meeting this criteria for immobilization.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

409 Multi-System Trauma

Basic

1. Initiate in-line C-spine stabilization while simultaneously evaluating and controlling the patients ABC's. Incorporate the Mechanism of Injury into the patient care scheme.
2. Control any hemorrhage and simultaneously provide: Oxygen 100% at 12-15 Lpm NRB and airway maintenance appropriate to patient's condition.
3. Secure patient to LSB.
4. **EMT STOP Ø**

EMT-IV

5. INT or IV NS, if hypotensive 20 cc/kg (peds 20 cc/kg)
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. Oxygen saturation
9. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

410 Neurogenic Shock

Assessment

Associated with spinal cord injuries, closed head injuries and overdoses
Signs of hypovolemic shock without pale diaphoretic skin (warm shock)

Basic

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Establish and maintain C-spine stabilization.
3. Hemorrhage control.
4. Supportive care
5. **EMT STOP Ø**

EMT-IV

6. INT or IV NS, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. **PARAMEDIC STOP Ø**

Treatment – Protocol

Contact Medical Control to consider:

Adult & Pediatric – Dopamine at 2-20 ug/kg/min

Special Note: Consider occult bleeding and treat as Hypovolemic Shock Protocol.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

411 Septic Shock

Assessment

Hot & dry or cool & clammy skin Poor capillary refill Tachycardia / Hypotension Potential for underlying infection

Basic

1. Oxygen at 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Consider spinal stabilization appropriate to patient's condition.
3. Obtain and record an oral or axillary temperature if possible.
4. Glucose check
5. Maintain body temperature above 97 degrees F
6. **EMT STOP Ø**

EMT-IV

7. INT or IV NS, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
8. Administer Dextrose 50% if appropriate
9. **EMT-IV STOP Ø**

PARAMEDIC

10. EKG monitor
11. Oxygen saturation
12. **PARAMEDIC STOP Ø**

Treatment - Protocol

1. If no improvement after two boluses of IV fluids, contact Medical Control and consider Dopamine 2-20ug/kg/min (*peds 2-20 ug/kg/min*)

Note: Ensure Body Substance Isolation precautions.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

412 Soft tissue / Crush Injuries

Assessment

Hypotension Past medical history Deformity, swelling, tenderness, crepitus, open or closed fractures Hemorrhaging, lacerations, ecchymosis, instability Decreased function, pulses Loss of sensation of distal extremities ETOH/drug use
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Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. C-Spine stabilization prn.
3. Stop any life threatening hemorrhaging
4. Consider applying MAST as a splint
5. Other splints prn, stabilize penetrating objects
6. **EMT STOP Ø**

EMT-IV

7. INT or IV, NS/LR, if hypotensive 20 cc/kg (peds 20 cc/kg)
8. **EMT-IV STOP Ø**

PARAMEDIC

9. EKG monitor
10. Oxygen saturation
11. Trauma: **Isolated extremity trauma only**
 - a. If systolic BP >90mmHg or peds normal range for age,
Consider Morphine 2-4mg IV (peds .03-.05 mg/kg IV/IO)
Cover open fractures/lacerations, check distal motor/sensory/pulse pre/post splinting, avoid unnecessary movement
 - b. If systolic BP <90mmHg, IV NS/LR 20cc/kg (peds 20 cc/kg)
If patient pregnant: Isolated extremity trauma only
 - (a) If past 1st trimester contact and systolic BP >90mmHg contact Medical Control.
 - (b) If systolic BP <90mmHg place patient in left lateral recumbent position, IV NS/LR 20cc/kg
12. **PARAMEDIC STOP Ø**

Note: May Substitute for Morphine: Nubain 2-10 mg IV (peds 0.2 mg/kg) **OR** Stadol 0.5-2 mg IV (no use in Pediatrics)

Cervical spine immobilization is not necessary in patients suffering penetrating trauma (stab or gun shot wound) below the nipple line **AND** no evidence of spinal or head injury. Do not delay transport of patients meeting this criteria for immobilization.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

413 Spinal Cord Injuries

Assessment

Hypotension without actual volume loss Warm/flushed skin despite hypotension Paralysis Loss of reflexes Posturing Priapism Diaphragmatic breathing
--

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. C-Spine stabilization
3. Control hemorrhaging
4. Consider hyperventilation (20-24 bpm) if suspected intracranial injury
5. **EMT STOP Ø**

EMT-IV

6. IV fluid NS/LR if hypotensive bolus 20 cc/kg (repeat bolus once if needed)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. **PARAMEDIC STOP Ø**

Protocol-Contact Medical Control

- a. Consider Dopamine 2-20 ug/kg/min then titrated

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

414 Traumatic Cardiac Arrest

Assessment

Cardiac arrest secondary to trauma

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. CPR
3. **EMT STOP Ø**

EMT-IV

4. IV NS/LR give 20cc/kg bolus
5. Consider second IV Access
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. Oxygen saturation
9. Treat cardiac rhythms per specific protocols
10. If suspected pneumothorax perform needle chest decompression
11. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK / TRAUMA

415 Tension Pneumothorax

Patient must meet AT LEAST THREE of the below assessment findings to qualify for this standing order, otherwise, contact Medical Control.

Assessment

Acute Respiratory Distress, Cyanosis Unilaterally decreased breath sounds or absent breath sounds Hyper-Resonance of chest unilaterally Jugular Vein Distention Subcutaneous Emphysema Acute Traumatic chest injury, ecchymosis or obvious rib fractures History of COPD or other chronic lung disease which predisposes patient to spontaneous pneumothorax Hypotension Tracheal Deviation away from the affected side Arrhythmia Oxygen saturation - <90%

Basic

1. Oxygen 100% 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Perform frequent evaluation of the breath sounds and blood pressure.
3. Consider institution of the multiple trauma protocol, if indicated. Remember this order may be indicated for the medical patient as well.
4. Follow the trauma treatment priority reference as needed. (On page 115).
5. If the traumatic tension pneumothorax is secondary to a sucking chest wound, apply an occlusive dressing and treat appropriately.
6. Stop any life threatening hemorrhaging
7. **EMT STOP Ø**

EMT-IV

8. IV NS/LR, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
9. **EMT-IV STOP Ø**

PARAMEDIC

10. EKG monitor
11. Oxygen saturation
12. If tension pneumothorax suspected, perform needle decompression:
13. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

SHOCK/TRAUMA

416 Traumatic Amputation(s)

Assessment

Hypotension
Past medical history
Deformity, swelling, tenderness, crepitus, open or closed fractures
Hemorrhaging, lacerations, ecchymosis, instability
Decreased function, pulses
Loss of sensation of distal extremities
ETOH/drug use

Basic

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. C-Spine stabilization prn.
3. Stop any life threatening hemorrhaging
4. Consider applying MAST as a splint
5. Other splints prn
6. Amputated part: If recovered rinse with NS, wrap in moist dressing, place in plastic bag, and transport with patient.
7. **EMT STOP Ø**

EMT-IV

8. INT or IV, NS/LR, if hypotensive 20 cc/kg (peds 20 cc/kg)
9. **EMT-IV STOP Ø**

PARAMEDIC

10. EKG monitor
11. Oxygen saturation
12. Amputation
 - (a). If present and systolic BP greater than 90mmHg give Morphine 2-4mg IV (peds .03-.05 mg/kg IV/IO).
 - (b). Cover open fractures/lacerations, check distal motor/sensory/pulse pre/post splinting, avoid unnecessary movement.
13. **PARAMEDIC STOP Ø**

Note: May Substitute for Morphine: Nubain 2-10 mg IV (peds 0.2 mg/kg) **OR** Stadol 0.5-2 mg IV (no use in Pediatrics)

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE

OBSTETRICAL EMERGENCIES

BASIC

IV

PARAMEDIC

APGAR scoring

<u>Clinical Sign</u>	<u>0 Points</u>	<u>1 Point</u>	<u>2 Points</u>
Appearance	Blue/Pale	Body Pink Extremities Blue	Completely Pink
Pulse	Absent	Below 100/minute	Above 100/minute
Grimace	No response	Grimace	Cries
Activity	Limp	Some flexion of extremities	Action Motion
Respiratory	Absent	Slow/Irregular	Good strong cry

The APGAR Score should be calculated after birth of the infant. The five (5) clinical signs are evaluated according to the scoring system detailed above. Each sign is assigned points to be totaled. A total score of 10 indicates that the infant is in the best possible condition. A score of 4 to 6 indicates moderate depression and a need for resuscitative measures.

DO NOT delay resuscitation efforts to obtain APGAR score. Obtain APGAR at 1 and 5 minute after delivery.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

500 Obstetrical / Gynecological Complaints (non-delivery or gynecological only)

Assessment

Patient Para & Gravida Term of pregnancy in weeks, EDC, Multiple births expected or history Vaginal bleeding (how long and approximate amount) Possible miscarriage / products of conception Pre-natal medications, problems, and care Last menstrual cycle Any trauma prior to onset? Lower extremity edema

Basic

1. Oxygen and airway maintenance appropriate for the patient's condition
2. Patient positioning appropriate for condition
3. Glucose check
4. Control hemorrhage as appropriate
5. **EMT STOP Ø**

EMT-IV

10. INT or IV NS TKO unless signs of shock, then 20 cc/kg fluid bolus
11. **EMT-IV STOP Ø**

PARAMEDIC

12. EKG monitor prn
13. Oxygen saturation
14. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

501 Normal Delivery

Assessment

Patient Para & Gravida Term of pregnancy in weeks, EDC Vaginal bleeding Pre-natal medications, problems, and care Membrane ruptured Lower extremity edema
--

Basic

Mother:

1. Oxygen 100% and airway maintenance appropriate for the patient's condition
2. Check mother for crowning
3. Use gentle pressure to control delivery. When head delivers, suction airway and check for cord around neck.
4. After delivery, keep mother and infant on same level, clamp cord @ 8 and 10 inches from the baby and cut between clamps.
5. Dry infant and wrap to keep warm. Maintain airway
6. Check APGAR at 1 and 5 minutes post-delivery.
7. DO NOT allow mother to nurse until both have been evaluated in the Emergency Department.
8. Allow placenta to deliver
 - massage uterine fundus (lower abdomen)
 - observe and treat signs of shock with increased delivery of oxygen and IV fluids
 - be alert to the possibility of multiple births
9. Re-evaluate vaginal bleeding

Infant:

1. Protect against explosive delivery
2. When head delivers suction airway (mouth first then nose) & check for cord around neck
3. After delivery clamp cord @ 8 and 10 inches from baby and cut between clamps
4. Dry infant and wrap to keep warm (silver swaddler). Maintain airway, suction PRN
5. Oxygen 100% and airway maintenance appropriate to patient's condition
6. Check APGAR Score at 1 and 5 minutes after delivery
7. DO NOT allow infant to nurse until both have been evaluated in the Emergency Department
8. Re-evaluate cord for bleeding, if bleeding, add additional clamp and re-evaluate
9. **EMT STOP Ø**

EMT-IV

10. INT or IV LR TKO if patient in active labor defined as regular contractions q 3 - 5 mins. with 30 - 60 second duration.

11. **EMT-IV STOP Ø**

PARAMEDIC

12. EKG monitor prn
13. Oxygen saturation

14. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

Note: Considerations

1. The greatest risks to the newborn infant are airway obstruction and hypothermia. Keep the infant warm (silver swaddler), dry, covered, and the infant's airway maintained with a bulb syringe. Always remember to squeeze the bulb prior to insertion into the infant's mouth or nose.
2. The greatest risk to the mother is post-partum hemorrhage. Watch closely for signs of hypovolemic shock and excessive vaginal bleeding.
3. Spontaneous or induced abortions may result in copious vaginal bleeding. Reassure the mother, elevate legs, treat for shock, and transport.
4. Record a blood pressure and the presence or absence of edema in every pregnant woman you examine, regardless of chief complaint.

****NOTE:** Complete patient care reports on BOTH mother and child.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

502 Abruptio Placenta

Assessment

Multiparity Maternal hypertension Trauma Drug Use Increased Maternal age History Vaginal bleeding with no increase in pain No bleeding with low abdominal pain

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition
2. Position patient in left lateral recumbent position
3. **EMT STOP Ø**

EMT-IV

4. IV NS TKO, if hypotensive 20 cc/kg (*peds 20 cc/kg*)
5. **EMT-IV STOP Ø**

PARAMEDIC

6. EKG monitor
7. Oxygen saturation
8. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

503 Amniotic Sac Presentation

Assessment

Amniotic Sac visible
Membrane not broken
Fetus may or may not be visible
Pre-natal medications, problems, and care
Usually Third Trimester
Applies to greater than 20 weeks gestation
Abdominal pain
Indications of immediate delivery

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition
2. Place patient in position of comfort
3. Amniotic Sac
if no fetus visible, cover presenting part with moist, sterile dressing
if head of the fetus has delivered, tear sac with fingers and continue steps for delivery
4. Contact medical control ASAP
5. **EMT STOP Ø**

EMT-IV

6. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

504 Breech or Limb Presentation

Assessment

Patient Para & Gravida Term of pregnancy in weeks, EDC Vaginal bleeding Pre-natal medications, problems, and care Water broken Buttock, arm or leg presentation
--

Basic

Breech Presentation - Treatment - Standing Order – All EMT's

1. Oxygen 100% at 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
2. Allow the delivery to progress spontaneously - DO NOT PULL!
3. Support the infant's body as it delivers
4. If the head delivers spontaneously, deliver the infant as noted in 'Normal Delivery'
5. If the head does not deliver within **3** minutes, insert a gloved hand into the vagina to create an airway for the infant
6. DO NOT remove your hand until relieved by a Higher Medical Authority.

Limb Presentation - Treatment - Standing Order – All EMT's

7. Oxygen 100% 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition
8. Position the mother in a supine position with head lowered and pelvis elevated
9. **EMT STOP Ø**

EMT-IV

10. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
11. **EMT-IV STOP Ø**

PARAMEDIC

12. EKG monitor
13. Oxygen saturation
14. Transport ASAP
15. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

505 Meconium Stain

Assessment

Patient Para & Gravida Term of pregnancy in weeks, EDC Vaginal bleeding Pre-natal medications, problems, and care Membrane Ruptured Amniotic fluid that is greenish or brownish-yellow Fecal material expelled with the amniotic fluid
--

Basic

1. Do not stimulate respiratory effort before suctioning the oropharynx
2. Suction the **mouth then the nose** (using a meconium aspirator) while simultaneously providing Oxygen 100% by blow-by method and while maintaining the airway appropriate to the patient's condition
3. Obtain an APGAR score after airway treatment priorities. Score at one minute after delivery and at five minutes after delivery. (Time permitting)
4. Repeat initial assessment and complete vital signs until patient care is transferred to the appropriate ER staff
5. **EMT STOP Ø**

EMT-IV

6. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

506 Placenta Previa

Assessment

Painless bleeding which may occur as spotting or recurrent hemorrhage
Bright red vaginal bleeding usually after 7th month
History
Multiparity
Increased maternal age
Recent sexual intercourse or vaginal exam
Patient Para & Gravida
Term of pregnancy in weeks
Pre-natal medications, problems, and care
History of bed rest
Placenta protruding through vagina

Basic

1. Oxygen 100% and airway maintenance appropriate to the patients condition
2. Position of comfort
3. **EMT STOP Ø**

EMT-IV

4. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
5. **EMT-IV STOP Ø**

PARAMEDIC

6. EKG monitor
7. Oxygen Saturation
8. **PARAMEDIC STOP Ø**

Note: Any painless bleeding in the last trimester should be considered Placenta Previa until proven otherwise. If there are signs of eminent delivery membrane rupture is indicated followed by delivery of the baby. The diagnosis of eminent delivery depends on the visual presence of the baby's body part through the membrane.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

507 Prolapsed Umbilical Cord

Assessment

Cord emerges from the uterus ahead of the baby
With each uterine contraction the cord is compressed between the presenting part and the pelvis
Pulse on exposed cord may or may not be palpable
Patient Para & Gravida
Term of pregnancy in weeks, EDC
Vaginal bleeding
Pre-natal medications, problems, and care
Membrane ruptured

Basic

1. Palpate pulses in the cord.
2. Oxygen 100% and airway maintenance appropriate to patient's condition.
3. Position the mother with hips elevated.
 - a. Knee to chest
 - b. Hips elevated as much as possible on pillows
4. Instruct mother to pant with each contraction, which will prevent her from bearing down.
5. Check for a pulse in the cord
 - a. If no pulse - Insert a gloved hand into the vagina and gently push the infant's head off of the cord. While pressure is maintained on the head cover the exposed cord with a sterile dressing moistened in saline. Transport immediately and **DO NOT** remove your hand until relieved by hospital staff.
 - b. If pulse present – cover exposed cord with moist dressing
6. Contact Medical Control as soon as possible if time and patient condition allows.
7. **EMT STOP Ø**

EMT-IV

8. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
9. **EMT-IV STOP Ø**

PARAMEDIC

10. EKG monitor
11. Oxygen saturation
12. **PARAMEDIC STOP Ø**

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

OBSTETRICAL EMERGENCIES

508 Pre-eclampsia and Eclampsia

Assessment

Patient Para & Gravida

Term of pregnancy in weeks, EDC

Vaginal bleeding

Pre-natal medications, problems, and care

Membrane Ruptured

Usually begins after the twentieth week of pregnancy

Most often affects women during their first pregnancy

May have a history of chronic hypertension and/or diabetes

May experience hypertension and edema

May experience headaches, blurred vision, and abdominal pain

May experience seizures which indicates a progression from pre-eclampsia to eclampsia

Basic

1. Oxygen 100% 12 - 15 Lpm NRB and airway maintenance appropriate to patient's condition.
2. Place patient in left lateral recumbent position
3. Check glucose levels
4. **EMT STOP Ø**

EMT-IV

5. IV NS TKO, if hypotensive 20 cc/kg (peds 20 cc/kg)
6. **EMT-IV STOP Ø**

PARAMEDIC

7. EKG monitor
8. Oxygen saturation
9. Valium 5 mg slow IV PRN or Versed 2-5 mg IVP/IN if generalized seizure activity.
10. **PARAMEDIC STOP Ø**

Treatment - Protocol

Contact Medical Control and consider:

Magnesium Sulfate 1-2 grams IV slowly

Note: Record a blood pressure and the presence or absence of edema in every pregnant woman you examine no matter what the chief complaint.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

601 Discontinuation / Withholding of Life Support

BASIC

IV

PARAMEDIC

Once life support has been initiated in the field, Non ALS personnel **CAN NOT** discontinue resuscitative measures unless directed to do so by the on-scene physician, FF/EMT-Paramedic or presented with a valid Physician Orders for Scope of Treatment (POST).

Withholding Resuscitation Measures - Standing Orders

1. If there is no CPR in progress, CPR may be withheld if one or more of the conditions are met:
 - a. Obviously dead patients with dependent lividity, rigor mortis, or massive trauma: (i.e., evacuation of the cranial vault, crushed chest, crushed head, etc).
 - b. Obviously dead patients with tissue decomposition.
 - c. Patients without vital signs who cannot be accessed for treatment due to entrapment for prolonged time.(12 - 15 minutes or greater)
 - d. Severe blunt trauma with absence of B/P, pulse, respiratory effort, neurologic response and pupillary response
 - e. When presented a valid POST order or a copy as approved by the Tennessee Department of Health. DNR and POST orders not on the official state form can be accepted if it is documented in a medical record such as a nursing chart, hospice care, or home nursing
 - f. Instructed to do so by the on-scene Paramedic.

Discontinuing Life Support

Once life support has been initiated in the field, in order to discontinue life support, the following conditions must be met:

1. Asystole is present on the EKG monitor in two leads **and**
2. The patient had fixed, dilated pupils prior to the administration of Atropine, **and**
3. There is absence of pulse, respirations, and neurological reflexes **and** at least one of the following conditions are met:
 - a. Endotracheal intubations has been confirmed, the patient has been well ventilated with 100% oxygen and multiple (at least three) administrations of Epinephrine and Atropine have not been effective in generating an EKG complex.
 - b. Transcutaneous pacing, if available, has not been effective in generating a complex.
 - c. Obvious signs of death in the absence of hypothermia, cold water drowning, lightning strikes or induced coma.
 - d. Can document lack of C.P.R. for at least 10 minutes, **or**
 - e. Prolonged resuscitation in the field without hope for survival, **or**
 - f. massive trauma such as evacuation of cranial vault, etc., **or**
 - g. severe blunt trauma with absence of vital signs and pupillary response, **or**
 - h. end-tidal CO₂ less than 20 while performing effective CPR

Upon termination in the field any tubes, needles and IV lines will be left in place (IV lines to be tied off and cut with catheter left in place).

Note:

Personnel shall give careful consideration when utilizing this standing order. Conditions such as; overdose, electrical shock, hypothermia, and hypoglycemia may mimic some of the above signs and symptoms.

All deaths must be confirmed by a Paramedic

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

602 FIELD DETERMINATION OF DEATH

Assessment

Pulseless, non-breathing with definitive signs of death: Rigor Mortis Dependent lividity Decomposition of body tissue Devastating, un-survivable injury Decapitation Incineration Separation of vital internal organ from the body or total destruction of organs Gunshot wound to the head that crosses the midline (entrance and exit)
--

BASIC

IV

PARAMEDIC

If patient is pulseless, non-breathing without definitive signs of death:

Must receive resuscitation unless a properly executed DNR or POST form is present

Treatment-Standing Order

DNR orders:

If family member or caregiver can produce a properly executed DNR or POST order, resuscitation can be withheld.

Treat patients with known DNR orders appropriately, just do not initiate CPR if they develop cardiovascular or respiratory arrest.

When there is any doubt about what to do, begin resuscitative efforts with all skill available

Resuscitation has been initiated prior to EMS arrival:

Anytime CPR or an attempt at resuscitation has been initiated by anyone at the scene, resuscitative efforts will be continued until:

1. A physician directs the team to stop (either on line or on-scene)
2. It is determined the patient meets the criteria for “definitive signs” of death.
3. A properly executed DNR or POST form is presented.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

603 Mandatory EKG

PARAMEDIC

EKGs will be mandatory under the following conditions:

A. Patients

1. Complaining of chest pain regardless of source (trauma or illness)
2. In cardiac arrest with or without CPR in progress
3. That are non-viable (other than those exhibiting body decomposition, dependent lividity, or rigor mortis, decapitation)

B. EKGs will have the following information printed on the recording:

1. Name or report number
2. Age (if possible)
3. Unit number and date

C. EKGs will be taped to the appropriate form on all four sides

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

604 Patient Refusal of Care – Patient Non-Transport Situations

Assessment

Determine presence of injury or illness and desire for transport Identify the person who made the EMS call Reason for refusal

BASIC

IV

PARAMEDIC

Standing Orders

1. Perform and document mini-mental status exam to confirm competency to refuse care.
2. Confirm and document the absence of intoxicating substance or injury
3. Confirm patient is of legal age of majority, or emancipated minor.
4. Document mechanism of injury or circumstances of illness.
5. Document pertinent past history.
6. Perform vital signs and problem directed exam.

The following may not refuse transport:

1. Patients with impaired judgment
2. Minors (if not 18 years of age or older or emancipated)
3. All minors must have refusal from parent or guardian, not older sibling or other relative
4. Do not release minor on the scene without parent/guardian consent

Reasons for Non-Transport

1. Minor illness or injury and acceptable alternative transportation available.

MINI-MENTAL STATUS EXAM

1. Orientation to time – time of day, day, week, month year	5 Pts max
2. Orientation to place – building, street, city, state, country	5 Pts max
3. Say “boy, dog, ball” and have them repeat it	3 Pts max
4. Ask the patient to spell would backward, or do serial 3s backward from 20	5 Pts max
5. Without repeating the words, ask them to repeat the previous 3 words (boy, dog, ball)	3 Pts max
6. Ask the patient to do the following after you have completed the request “stick out your tongue and touch your right hand to your left ear”	3 Pts max
7. Ask the patient to identify your pen and watch.	2 Pts max
8. Ask the patient to read the following sentence and then does as it says “shut your eyes”	1 Pt
9. Ask the patient to write a sentence.	1 Pt
10. Ask the patient to draw two overlapping pentagons (show them an example)	1 Pt

A score of 21 or better is considered mentally competent by most psychiatrists for a patient to make reasonable decisions.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

605 Physical Restraint:

BASIC

IV

PARAMEDIC

All Patients:

1. Safety of fire department personnel is the main priority in any situation where a patient exhibits aggressive or combative behaviors and needs to be restrained.
2. Use the minimum amount of force and restraint necessary to safely accomplish patient care and transportation with regard to the patient's dignity. Avoid unnecessary force.
3. Assure that adequate personnel are present and that police assistance has arrived, if available, before attempts to restrain patient.
4. Plan your approach and activities before restraining the patient.
5. Have one fire department person talk to and reassure the patient throughout the restraining procedure.
6. Approach with a minimum of four persons, one assigned to each limb, all to act at the same time.
7. Initial take down may best be accomplished leaving the patient in the prone position. After restraint, the patient should be placed in a supine position.
8. Call for additional help if patient continues to struggle against restraint.
9. Restrain all 4 extremities with patient supine on stretcher.
10. Use soft restraints to prevent the patient from injuring him or herself or others.
11. A police officer or other law enforcement personnel shall always accompany a patient in the ambulance if the patient has been restrained.
12. Do not place restraints in a manner that may interfere with evaluation and treatment of the patient or in any way that may compromise patient's respiratory effort.
13. Evaluate circulation to the extremities frequently.
14. Thoroughly document reasons for restraining the patient, the restraint method used, and results of frequent reassessment.
15. Initial "take down" may be done in a prone position to decrease the patient's visual field and stimulation, and the ability to bite, punch, and kick. After the individual is controlled, he/she shall be restrained to the stretcher or other transport device in the supine position.
16. **DO NOT** restrain patient in a hobbled, hog-tied, or prone position.
17. **DO NOT** sandwich patient between devices, such as long boards or Reeve's stretchers, for transport. Devices like backboards should be padded appropriately.
18. A stretcher strap that fits snugly just above the knees is effective in decreasing the patient's ability to kick.
19. Padded or leather wrist or ankle straps are appropriate. Handcuffs and plastic ties are not considered soft restraints.
20. Never apply restraints near the patient's neck or apply restraints or pressure in a fashion that restricts the patient's respiratory effort.
21. Never cover a patient's mouth or nose except with a surgical mask or a NRB mask with high flow oxygen. A NRB mask with high flow oxygen may be used to prevent spitting in a patient that also may have hypoxia or another medical condition causing his/her agitation, but a NRB mask should never be used to prevent spitting without also administering high flow oxygen through the mask.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

Performance Parameters

1. Verbal techniques include:
 - a. Direct empathetic and calm voice.
 - b. Present clear limits and options.
 - c. Respect personal space.
 - d. Avoid direct eye contact.
 - e. Non-confrontational posture.
2. There is a risk of serious complications or death if patient continues to struggle violently against restraints. Chemical restraint by sedation by ALS personnel may be indicated in some dangerous, agitated patients.

EMT-IV

3. INT or IV NS/LR, if hypotensive 20cc/kg (**peds 20cc/kg**)
4. **EMT-IV STOP Ø**

PARAMEDIC

5.
 - a. Valium: 2 – 5 mg IV only, repeat once
 - b. Versed: 2-5 mg IV/IM/IN may repeat once
 - c. Additional doses must be authorized by Medical Control
6. **EMT-Paramedic STOP Ø**

Possible Medical Control Orders: **Medical Control may order restraint and transport of a patient against his/her will.**

Documentation:

- A. Review for documentation of frequent reassessment of vital signs, cardiopulmonary status, and neurovascular status of restrained extremities, reason for restraint and method used. Benchmark of documenting of these items is at least every 15 minutes.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

606 Physician On-Scene

BASIC

IV

PARAMEDIC

If private physician intervenes by phone the EMT-Basic / IV shall:

Request the physician contact Medical Control and relay any orders through them.

NO ORDERS will be taken over the phone from the private physician.

Standing Order:

1. No one will be recognized as a physician without proof of license. This must be in the form of a wallet card or visual personal recognition. NO ORDERS will be accepted until proof of license is verified.
2. Consider need for Law Enforcement if any difficulty with person occurs.
3. The EMT shall:
 - a. Inform the physician that they must contact Medical/Trauma Control.
 - b. Inform Medical /Trauma Control of the presence of a physician on the scene.
4. Medical/Trauma Control may:
 - a. Speak to the physician to determine qualifications
 - b. Request the EMT/Paramedic to verify licensure of the physician.
 - c. Relinquish total responsibility for the patient to the on-scene physician.
5. Physician (intervening) may:
 - a. Assist the EMT and allow you to operate under standing orders and protocols. Offer assistance by allowing the EMT to remain under Medical/Trauma Control: or
 - b. Request to talk to Medical/Trauma Control to offer advice and assistance: or,
 - c. Take total responsibility for the care given by the EMT if okay with Medical/Trauma Control, then physically accompany the patient to the Emergency Department where responsibility is assumed by the receiving physician; and shall,
 - d. Sign for all instructions given to the EMT
 - e. Contact should be made with Medical/Trauma Control if this happens.
6. If private physician intervenes by phone or in person the EMT shall:
 - a. Inform the physician that the EMT must contact Medical/Trauma Control.
 - b. Request the physician contact Medical Control and relay any orders through them.
 - c. NO ORDERS should be taken over the phone from the private physician. At no time should any order be taken over the telephone except from Medical/Trauma control.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

607 By-standers on the Scene

BASIC

IV

PARAMEDIC

Standing Order

By-stander participation – You may use them at your discretion. However, YOU will be responsible for their actions and treatment. Remember, YOU are responsible for the patient. If any by-stander is uncooperatively trying to take over direction of patient care, have law enforcement remove the person for “Obstruction of Emergency Services”.

MISCELLANEOUS

608 Procedure for Deviation from Standing Orders

BASIC

IV

PARAMEDIC

NEVER simply disregard a standing order or protocol.

These Standing Orders have been established so that EMTs and Paramedics may provide the best care possible for our patients. A single Standing Order will cover most of our patients. However, some patients may have signs and symptoms of illness and/or injury that are covered by more than one Standing Order or, in rare cases, following a Standing Order may not be in the best interest of the patient. In these cases you must be aware that combining Standing Orders may lead to medication errors, overdose, and medication incompatibility. You are expected to use your judgment and to always make decisions that are in the best interest of the patient.

If you use more than one standing order when treating your patient, you must document your reasoning in the NARRATIVE SECTION of the Patient Care Report.

If in your judgment, following a standing order is not in the best interest of the patient, CONTACT MEDICAL CONTROL, regarding your treatment. Document the rationale for deviation, and the name of the physician giving the order.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

609 Spinal Immobilization

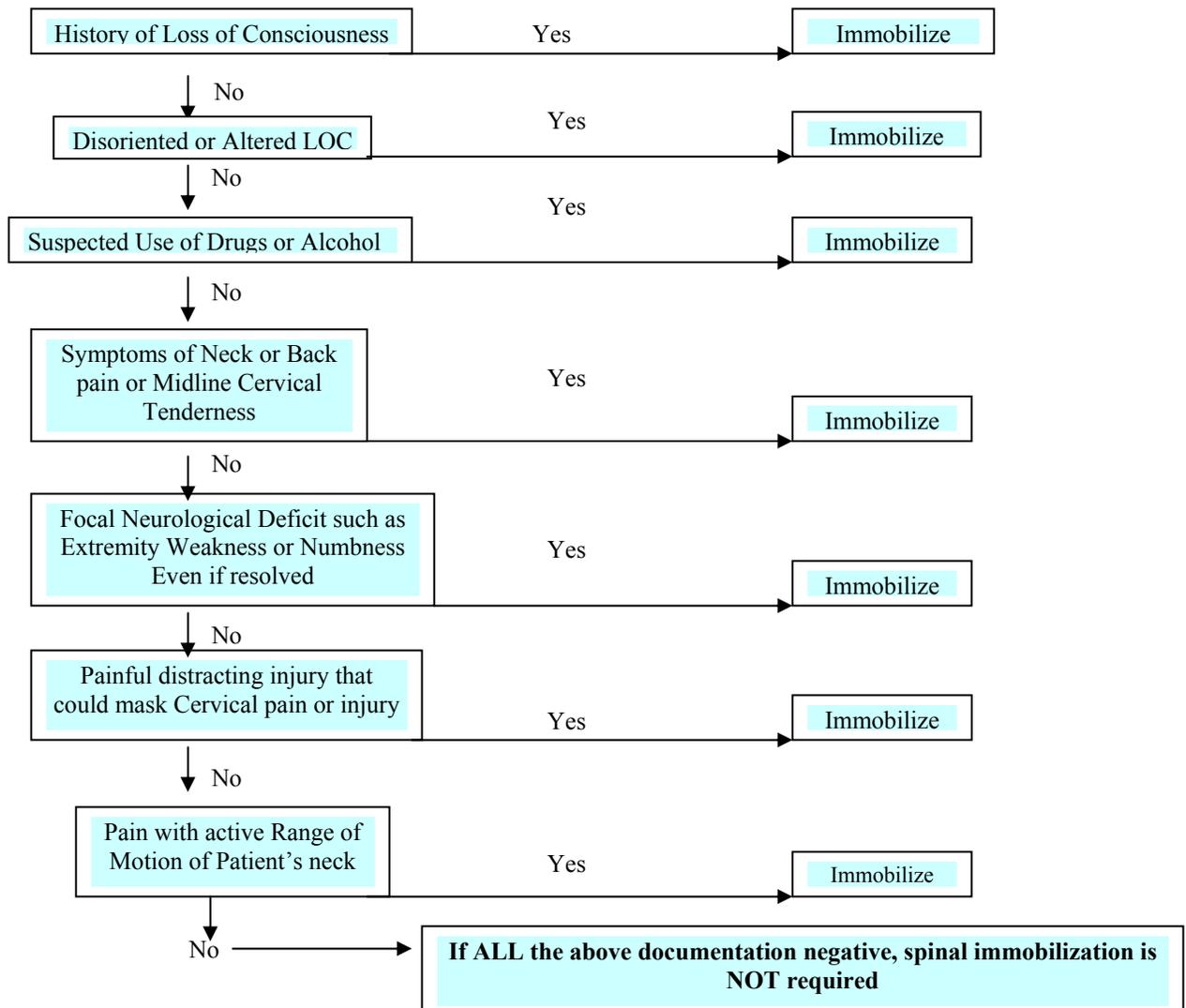
Spinal Immobilization Protocol

If the patient presents with a mechanism which could cause spinal injury ANY of the following criteria, complete Spinal Immobilization (C-spine, and back, using C-collar, head blocks, backboard, and straps) should occur

Mechanism of injury consistent with potential for spinal injury, including

- Any fall from standing or sitting with evidence of injury above the clavicles
- Fall from a height (above ground level)
- Any MVC crash (except a low speed mechanism such as a simple rear end MVC, without rollover or ejection and minimal to no vehicular damage)
- Any type trauma where victim was thrown or struck at high speed (e.g. pedestrian accident or explosion)
- Any lightning or high voltage electrical injury
- Any axial load type injury as might be sustained while swimming/diving or an acute submersion event, where diving may have been involved
- Penetrating trauma to the thorax when bullet track may involve spine **OR**

Any unknown or possible mechanism of injury when the history from the patient or bystanders does not exclude the possibility of a spine injury of a spine injury



TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

610 Stretcher Transport

PARAMEDIC

The following conditions require patients to be transported by stretcher or stair chair. Other patients may be transported ambulatory unless their condition warrants stretcher use.

1. Pregnant greater than 20 weeks
2. Possible cardiac chest pain
3. Shortness of breath
4. Asthma
5. Chronic Obstructive Pulmonary Disease
6. Stroke
7. Patients requiring spinal immobilization
8. Penetrating trauma to the torso, neck, or head
9. Lower extremity, pelvis trauma
10. Low back trauma
11. Unconscious, unresponsive patients
12. Seizures within past hour or actively seizing
13. Generalized weakness
14. Patients unable to ambulate secondary to pain or weakness
15. Altered level of consciousness, except psychiatric patients
16. Psychiatry patients requiring restraint

MISCELLANEOUS

611 Terminally Ill Patients

BASIC

IV

PARAMEDIC

Standing Order

1. Maintain a calm environment and avoid performing measures beyond basic life support.
2. Elicit as much information from persons present who are familiar with the patient's condition as possible.
3. Obtain and document the name and telephone number of the patient's physician if possible.
4. Maintain BLS procedures and contact Medical Control as soon as possible. Provide full information on the patient's present condition, history, and the name of the patient's physician and telephone number.
5. Medical Control will direct management of the call.
6. Acceptable DNR/POST forms (original or copy):
 - State approved forms
 - Signed order in patients medical records: nursing home, hospice, or home care

** If DNR/POST form is used to withhold or terminate resuscitation efforts, a copy must be attached to the PCR.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

MISCELLANEOUS

612 “Excited Delirium” / Taser Use

Assessment

Changes in LOC Ongoing disorientation Agitation Hallucination Hyperthermia Seizure Chest pain or difficulty breathing Significant injury from fall or takedown

Basic

1. 100% Oxygen and airway maintenance appropriate to patient’s condition
2. Glucose check
3. Supportive care
4. **EMT STOP Ø**

EMT-IV

5. IV LR or NS, bolus (20cc/kg)
6. Administer Dextrose 50% if appropriate
7. **EMT-IV STOP Ø**

PARAMEDIC

8. EKG monitor
9. Oxygen saturation
10. Valium 2-10 mg slow IVP PRN or Versed 2-5 mg IVP/IN if generalized seizure activity
11. **PARAMEDIC STOP Ø**

Note:

All persons subjected to use of the device should be medically evaluated and monitored regularly. Darts should be treated as biohazard, and not be removed in the field except by trained personnel. Darts to eyes, mouth, face, neck, and genitals or near indwelling medical devices or lines should not be removed in the field.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PEDIATRIC CARDIAC EMERGENCY

613 Neonatal Resuscitation

Assessment

Newborn with respiratory or circulatory distress

Basic EMT-IV

1. Dry and place in face-up head down position
2. Keep infant level with mother until cord is clamped
3. Suction airway
4. Respirations.
 - a. If spontaneous:
 1. complete clamping cord and cut between clamps
 2. cover infant head
 3. wrap and keep warm
 4. provide oxygen
 5. transport without delay
 - b. If no respirations:
 1. stimulate respirations: rub back, snap bottom of feet gently , if no change or respirations become depressed (<20bpm)
 - (a) re-suction airway
 - (b) high flow oxygen if no change ventilate with BVM at 30/min
 - (c) clamp cord and cut between clamps, transport immediately
5. Pulse:
 - a. If pulse rate is less than 60 perform CPR at rate of 120 compressions/min, transport
 - i. Continue chest compressions.

6. EMT STOP Ø

EMT-IV

7. INT or IV NS, if hypotensive bolus 20 cc/kg

8. EMT-IV STOP Ø

PARAMEDIC

9. EKG monitor
10. Oxygen Saturation
11. The dose of epinephrine is 0.01 mg/kg IV/IO (0.1 cc/kg of 1:10,000) given q 4 minutes and give repeated doses of epinephrine every 4 minutes until heart rate is above 60 / minute.
12. If pulse rate is >60 keep warm, ventilate with BVM if necessary, transport

13. PARAMEDIC STOP Ø

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE

CHEST DECOMPRESSION

PARAMEDIC

1. Cleanse skin on affected side using aseptic technique
2. Using a 14 or 16 gauge 2 ¼" angiocath, insert between the 2nd/3rd mid-clavicular or 4th/5th mid-axillary spaces
3. Advance needle until "pop" is felt while the needle is entering the pleural space
4. Advance catheter until hub contacts skin
5. Cover catheter hub with Asherman Chest Seal (ensure one way valve effect)
6. Reassess patient or breath-sound changes
7. If signs of tension reoccur check chest seal, consider repeating chest decompression per above steps
8. Contact Medical Control
9. Transport

Use the same procedure for pediatric patients: use 18 or 20 gauge angiocath

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

PARAMEDIC

Continuous Positive Airway Pressure has been shown to rapidly improve vital signs, gas exchange, reduce the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from shortness of breath from asthma, COPD, pulmonary edema, CO poisoning, Near Drowning, CHF, and pneumonia. In patients with CHF, CPAP improves hemodynamics by reducing left ventricular preload and afterload.

1. INDICATIONS

- A. Any patient who is in respiratory distress for reasons other than trauma or pneumothorax, and;
 - 1) Are awake and able to follow commands
 - 2) Are over 12 years old and is able to fit the CPAP mask
 - 3) Have the ability to maintain an open airway
 - 4) Has a systolic blood pressure above 90 mmHg
 - 5) Uses accessory muscles during respirations
 - 6) Sign and Symptoms consistent with asthma, COPD, pulmonary edema, CHF, or pneumonia
- B. AND who exhibit **two or more** of the following;
 - 1) A respiratory rate greater than 25 breaths per minute
 - 2) Pulse Oximetry of less than 94% at any time
 - 3) Use of accessory muscles during respirations

2. CONTRAINDICATIONS

- 1) Patient is in respiratory arrest/apneic
- 2) Patient is suspected of having a pneumothorax or has suffered trauma to the chest
- 3) Patient has a tracheostomy
- 4) Patient is actively vomiting or has upper GI bleeding
- 5) Patient has decreased cardiac output, obtundation and questionable ability to protect airway (e.g. stroke, obtundation etc.), penetrating chest trauma gastric distention severe facial injury, uncontrolled vomiting and hypotension secondary to hypovolemia.

PRECAUTIONS:

Use care if patient:

- A. Has impaired mental status and is not able to cooperate with the procedure
- B. Had failed at past attempts at noninvasive ventilation
- C. Has active upper GI bleeding or history of recent gastric surgery
- D. Complains of nausea or vomiting
- E. Has inadequate respiratory effort
- F. Has excessive secretions
- G. Has a facial deformity that prevents the use of CPAP

3. PROCEDURE

- A. **EXPLAIN THE PROCEDURE TO THE PATIENT**
 - 1) Ensure adequate oxygen supply to ventilation device
 - 2) Place the patient on continuous pulse oximetry
 - 3) Place the patient on cardiac monitor and record rhythm strips with vital signs
 - 4) Place the delivery device over the mouth and nose

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

- 5) Secure the mask with provided straps or other provided devices. Be sure to Select a sealing face mask and ensure that the mask fits comfortably, seals the bridge of the nose, and fully covers the nose and mouth.
- 6) Use 5 cm H₂O of PEEP to start, may increase to 7.5 cm H₂O. Higher levels of pressure are rarely needed and associated with more complications.
- 7) Check for air leaks
- 8) Monitor and document the patient's respiratory response to treatment
- 9) Check and document vital signs every 5 minutes.
- 10) Administer appropriate medication as certified (continuous nebulized Albuterol for COPD/Asthma and repeated administration of nitroglycerin spray or tablets for CHF)
- 11) Continue to coach patient to keep mask in place and readjust as needed
- 12) Contact medical control to advise them of CPAP initiation
- 13) If respiratory status deteriorates, remove device and consider intermittent positive pressure ventilation via BVM and/or placement of non-visualized airway or endotracheal intubation.

4. REMOVAL PROCEDURE

- 1) CPAP therapy needs to be continuous and should not be removed unless the patient can not tolerate the mask or experiences respiratory arrest or begins to vomit.
- 2) Intermittent positive pressure ventilation with a Bag-Valve-Mask, placement of a non-visualized airway and/or endotracheal intubation should be considered if the patient is removed from CPAP therapy.

5. SPECIAL NOTES

- 1) Do not remove CPAP until hospital therapy is ready to be placed on patient.
- 2) Watch patient for gastric distention that can result in vomiting.
- 3) Procedure may be performed on patient with Do Not Resuscitate Order.
- 4) Due to changes in preload and afterload of the heart during CPAP therapy, a complete set of vital signs must be obtained every 5 minutes.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE

EZ IO

PARAMEDIC

Indications:

1. Intravenous fluid or medications needed AND
2. Peripheral IV cannot be established in 2 attempts or 90 seconds AND the patient exhibits one or more of the following:
 - Altered mental status (GCS of 8 or less)
 - Respiratory compromise (SaO₂ of 80% or less following appropriate oxygen therapy, and/or respiratory rate <10 or >40/min)
 - Hemodynamically unstable (Systolic BP <90)
3. IV access is preferred, however, IO may be considered prior to peripheral IV attempts in the following situations:
 - Cardiac Arrest (Medical or Trauma)
 - Profound hypovolemia with altered mental status

Contraindications:

1. Fracture of the tibia or femur (for tibia insertion) – consider alternate tibia
2. Fracture of the humerus (for humeral head insertion) – consider alternate humerus
3. Previous orthopedic procedures (ex.: IO within previous 24 hrs, knee replacement, shoulder replacement)
4. Infection at insertion site
5. Significant edema
6. Excessive tissue at insertion site
7. Inability to locate landmarks

Considerations:

1. Flow Rates: Due to the anatomy of the IO space you will note flow rates to be slower than those achieved with IV access.
 - Ensure the administration of 10 ml rapid bolus with syringe.
 - Use a pressure bag or pump for fluid challenge
2. Pain: Insertion of the IO device in conscious patients causes mild to moderate discomfort and is usually no more painful than a large bore IV. However, fluid infusion into the IO space is very painful and the following measures should be taken for conscious patients:
 - Prior to IO bolus or flush on a conscious adult patient, SLOWLY administer 20 – 50 mg of 2% Lidocaine.
 - Prior to IO bolus or flush on a conscious pediatric patient, SLOWLY administer 0.5mg/kg 2% Lidocaine

Adult Patient: Defined as a patient weighing 40kg or greater
The adult (blue cap) needle set shall be used for adult patients

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

Primary Insertion Site: Tibial Plateau

- If IO access is warranted the tibia shall be the insertion site of choice if possible

Alternate Insertion Site: Humeral Head or Medial Malleolus (adult pt. only)

- If IO access is not available via the tibia insertion site due to contraindications or inability to access the site due to patient entrapment and vascular access is imperative the IO may be placed in the humeral head or medial malleolus

Do Not attempt insertion medial to the Intertubercular Groove or the Lesser Tubercle

Pediatric Patient: Defined as a patient weighing 3 – 39kg

- The pediatric needle set (pink cap) shall be used for pediatric patients
- Use the length based assessment tape to determine pediatric weight
- The only approved site for pediatric IO insertion is the tibial plateau

Standing Order: The EZ IO may be used if the Indications are met and no Contraindications exist.

Precautions:

1. The EZ IO is not intended for prophylactic use
2. The EZ IO infusion system requires specific training prior to use

Proper identification of the insertion site is crucial.

Landmarks: Tibial Plateau

There are three important anatomical landmarks – the Patella, the Tibial Tuberosity (if present) and the Flat Aspect of the Medial Tibia.

Important: The tibial tuberosity is often difficult or impossible to palpate on very young patients! The traditional approach for IO insertions in small patients - where the tibial tuberosity cannot be palpated - is to identify the insertion site - “TWO FINGER WIDTHS BELOW THE PATELLA and then medial along the flat aspect of the TIBIA.”

The traditional approach to IO insertion in slightly larger patients - where the tuberosity can be appreciated - generally suggests “One finger width distal to the tibial tuberosity along the flat aspect of the medial tibia.”

The EZ-IO should be inserted two finger widths bellow the patella (kneecap) and one finger medial (toward the inside) to the tibial tuberosity.

For the morbidly obese patient – consider rotating the foot to the mid-line position (foot straight up and down). With the knee slightly flexed, lift the foot off of the surface allowing the lower leg to “hang” dependant. This maneuver may improve your ability to visualize and access the tibial insertion site.

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Landmarks: Humerus

Place the patient in a supine position.

Expose the shoulder and place the patient's arm against the patient's body.

Rest the elbow on the stretcher with the forearm on the abdomen. Palpate and identify the mid shaft humerus and continue palpating toward the humeral head. As you near the shoulder you will note a small protrusion. This is the base of the greater tubercle insertion site. With the opposite hand "pinch" the anterior and inferior aspects of the humeral head confirming the identification of the greater tubercle. This will ensure that you have identified the midline of the humerus itself. The insertion site is approximately two finger widths inferior to the coracoid process and the acromion.

Landmarks: Medial Malleolus

The insertion site is two finger widths proximal to the Medial Malleolus and positioned midline on the medial shaft.

Procedure:

Inserting the EZ IO

1. Determine that the EZ IO is indicated
2. Ensure that no contraindications are present.
3. Locate the proper insertion site.
4. Clean the insertion site with alcohol.
5. Prepare the EZ IO driver and needle set.
6. Stabilize the leg (or arm).
7. Position the driver at the insertion site with the needle at a 90 degree angle to the surface of the bone.
8. Power the needle set through the skin until you feel the tip of the needle set encounter the bone. Apply firm steady pressure on the driver and power through the cortex of the bone. Stop when the needle flange touches the skin or a sudden resistance is felt. **Stop on the POP.** This indicates entry into the bone marrow cavity.
9. Grasp the hub firmly with one hand and remove the driver from the needle set.
10. While continuing to hold the hub firmly, rotate the stylet counter clockwise and remove it from the needle set. Dispose of the stylet properly in a sharps container.
11. Confirm proper placement of the EZ IO catheter tip:
 - a. The catheter stands straight up at a 90 degree angle and is firmly seated in the tibia.
 - b. Blood is sometimes visible at the tip of the stylet
 - c. Aspiration of a small amount of marrow with a syringe.
12. Attach a primed extension set to the hub and flush the IO space with 10 cc of Normal Saline.

NO FLUSH – NO FLOW

13. If the patient is conscious, administer Lidocaine 2% 20-50 mg slowly **PRIOR** to the initial bolus.
14. Initiate the infusion per standing orders. Use of a pressure infuser or blood pressure cuff is recommended to maintain adequate flow rates.
15. Apply the wrist band and a dressing.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE Vascular Access

EMT-IV

1. The preferred site for an IV is the hand followed by the forearm and antecubital and is dependent on the patient's condition and treatment modality.
2. **EMT-IV STOP Ø**

PARAMEDIC

3. In the event that an IV cannot be established, and the IV is considered critical for the care of the patient, other peripheral sites may be used, i.e. external jugular, feet, legs.
4. External Jugular Veins should never be the first line attempted unless the patient has no limbs for the initial attempts. INTs **SHOULD NOT** be used in External Jugular access.
5. The intraosseous site may be used in patients in whom IV access cannot be established within 2 attempts or 90 seconds **when IV access is critical**. (REFER TO THE EZ IO PROCEDURE)

Intravenous Fluid Administration

EMT-IV

PARAMEDIC

Any patient having a condition that requires an IV or INT may receive it if the EMT-IV or Paramedic deems it necessary. Weigh the transport time against the time it would take to start an IV and make a good decision.

Trauma:

Minimize on scene time. IVs are to be started while en route to the hospital unless the patient is pinned in vehicle or a prolonged scene time is unavoidable.

IV Lactated Ringers is for trauma patients. The rate is based on patient condition and shall be to maintain the patient's systolic blood pressure 80 - 100 mmHg.

Medical:

INT or IV Normal Saline for chest pain, cardiac arrest or other medical conditions requiring possible IV access. If IV access is all that is needed, the INT is preferred.

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PROCEDURE

Rapid Sequence Paralysis and Intubation

PARAMEDIC

Assessment and Indications

Acutely head injured patients that are combative, unable to effectively control airway, need hyperventilation to control intracranial pressure or that are having difficulty breathing
Severely combative patients that cannot be controlled without injury to the patient or caregivers
Prophylaxis for airway burns, inhalation injuries
Patients who need ventilatory assistance or airway protection

AND

All standard attempts to establish an airway have failed

Contraindications

Malignant hyperthermia
Known allergy to agents
Hyperkalemia
Severe burns greater than 12 hours

Precautions

Pregnancy
Dehydration
Respiratory disease
Penetrating eye injury
Fractures & crush injury
Cardiac disease
Neuromuscular disease
Severe burns
Glaucoma
**multiple facial fractures or facial instability

Equipment

all equipment should be age appropriate
endotracheal tube and stylet
laryngoscope handle and appropriate blade
10cc syringe
Lubricant such as xylocaine jelly
Magill forceps
tape or securing device
RSI medications
Suction equipment --
#11 bladed scalpel
betadine
curved sharp hemostat
large bore IV needle
adapter
manual resuscitator device, O2 delivery system
oral airways

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Prepare the patient

- Provide in line stabilization of the head and neck in the trauma patient
- Consider removing the anterior portion of the cervical collar
- Position the patient for optimal visualization
- Provide high flow O₂, utilize method appropriate to patient condition
- Establish IV access and assure patency
- Attach cardiac and oxygen saturation monitors
- Preoxygenate the patient with 100% oxygen for 2 minutes. This will result in a washout of normal nitrogen reserve and establish an oxygen reserve which will allow for several minutes of after apnea.
- Avoid positive pressure ventilation if possible in order to prevent gastric insufflation and increase the likelihood of emesis and aspiration
- Assist the patient with a manual resuscitator only if spontaneous ventilation is inadequate or absent

PROTOCOL

1. administer lidocaine IVP
< 12 years of age: 1.0 mg/kg
* adult patient: 1.5 mg/kg
2. administer atropine IVP -
<10 years of age: 0.02 mg/kg with discretion in the child with existing tachycardia
adult patient: 1 mg if necessary, use discretion and may be necessary with heart rate <60 /minute
3. administer versed IVP
pediatric patient: 0.1 mg/kg titrate over 2 - 5 minutes until slurring of speech, eyelids close, eyelid reflex disappears; with a maximum dose of 5 mg
adult patient: 1 mg per minute, titrate to desired effects of slurring of speech, eyelids close, eyelid reflex disappears; with a maximum dose of 7.5 mg

Maintain systolic pressure of 90 or greater.
Evaluate the patient for versed assisted intubation at this time
If consciousness is lost, apply cricoid pressure (Sellick Maneuver)

4. Administer anectine (succinylcholine) IVP
pediatric patient: < 12 years 1.5 - 2.0 mg/kg over 30 seconds
adult patient: 1.0 - 1.5 mg/kg IVP over 30 seconds
5. Intubate when patient is apneic and fasciculations have stopped.

If unable to intubate within **20** seconds, halt attempts, provide ventilatory assistance for 30 – 60 seconds, and reattempt intubation.
If intubation is unsuccessful and ventilatory assistance with a manual resuscitator is ineffective consider performing a surgical cricothyroidotomy on patients > 12 years of age utilizing a # 6 - 7 ETT; or a needle cricothyroidotomy on adults; and patients 12 years and younger.

Should intubation induced bradycardia occur, temporarily halt the intubation procedure. Hyperventilate with manual resuscitator and high flow oxygen. If bradycardia continues, administer atropine.

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Verify correct ETT placement

1. Visualize vocal cords during **ETT** placement
2. Auscultate thorax and abdomen to determine if air entry is adequate and symmetrical to all lung fields and absent over the epigastrium -
3. Observe for symmetric chest wall expansion with ventilation
4. ****apply an adjunct for airway placement**
5. secure **ETT** at appropriate **CM** mark at lips in accordance with **ETT** size

Documentation

Indication for intubation

Tube size

Pre-oxygenation prior to intubation and oxygen saturation

Classification and condition of airway: clear, emesis, blood, etc

Confirmation of tube placement, auscultation of lung fields and abdomen, use of ETCO₂ device -

Difficulty with the procedure, including number of attempts

Depth of insertion and how the tube is secured

Who performed the procedure

Cricoid pressure

Manual in-line immobilization of c-spine for trauma patients

Means by which patient was ventilated **after** intubation and oxygen delivered

Cardiac rhythm

Status of ETT after each movement of patient .

Status of tube at receiving facility; breath sounds, oxygen saturation, End tidal CO₂, clinical improvement/stability

Document physician who confirms tube placement and initial **ABGs** on patient record

Head and neck immobilized on all pediatric patients (medical and trauma) for tube security

Complete required QA sheet

NOTE: RSI/Drug assisted intubation may **ONLY** be performed by paramedics who have documented competency in this skill via written confirmation with the medical director.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE INTRANASAL MEDICATION

PARAMEDIC

Medication administration in a certain subgroup of patients can be a very difficult endeavor. For example, an actively seizing or medically restrained patient may make attempting to establish an IV almost impossible which can delay effective drug administration. Moreover, the paramedic or other member of the medical team may be more likely to suffer a needle-stick injury while caring for these patients.

In order to improve prehospital care and to reduce the risks of accidental needle-stick, the use of the Mucosal Atomizer Device (MAD) is authorized in certain patients. The MAD allows certain IV medications to be administered into the nose. The device creates a medication mist which lands on the mucosal surfaces and is absorbed directly into the bloodstream.

Indications:

Emergent need for medication administration and IV access unobtainable or presents high risk of needlestick injury due to patient condition.

- Seizures / Behavioral Control: Midazolam (Versed) may be given intranasally until IV access is available.
- Altered Mental Status from Suspected Narcotic Overdose: Naloxone (Narcan) may be given intranasally until IV access is available
- Symptomatic Hypoglycemia (Blood sugar less than 80mg/dl): Glucagon may be given intranasally until IV access is available.

Medications administered via the IN route require a higher concentration of drug in a smaller volume of fluid than typically used in the IV route. In general, no more than 1 milliliter of volume can be administered during a single administration event.

Contraindications:

- Bleeding from the nose or excessive nasal discharge
- Mucosal Destruction

Technique:

- Draw proper dosage (see below)
- Expel air from syringe
- Attach the MAD device via LuerLock Device
- *Briskly* compress the syringe plunger

Complications:

- *Gently* pushing the plunger will not result in atomization
- Fluid may escape from the nares
- IntraNasal Dosing is less effective than IV dosing (Slower onset, incomplete absorption)
- Current patient use of nasal vasoconstrictors (Neosynephrine/ Cocaine) will significantly reduce the effectiveness of IN medications. Absorption is delayed, peak drug level is reduced, and time of drug onset is delayed.

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Midazolam

Patient age (yr)	Weight (kg)	IN Midazolam volume in ml (assuming 5mg/ml concentration) Midazolam volume dose (mg)
Neonate	3	0.12 ml 0.6 mg
<1	6	0.24 ml 1.2 mg
1	10	0.40 ml 2.0 mg
2	14	0.56 ml 2.8 mg
3	16	0.64 ml 3.2 mg
4	18	0.72 ml 3.6 mg
5	20	0.80 ml 4.0 mg
6	22	0.88 ml 4.4 mg
7	24	0.96 ml 4.8 mg
8	26	1.04 ml 5.2 mg
9	28	1.12 ml 5.6 mg
10	30	1.20 ml 6.0 mg
11	32	1.28 ml 6.4 mg
12	34	1.36 ml 6.8 mg
Small teenager	40	1.60 ml 8.0 mg
Adult or full grown teenager	50 or more	2.0 ml 10.0 mg

Precautions:

- Midazolam may cause hypoventilation and potential respiratory depression/arrest. Have equipment and help readily available to manage the airway when administering this medication.
- If hypotension develops after the administration of midazolam, administer a 20ml/kg bolus of normal saline.

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Naloxone

Adult

- Naloxone 0.4 mg every 5 minutes until the respiratory rate improves and the patient can maintain a pulse oximetry reading of 96% OR until 2 mg has been given.
- Split dose equally between each nostril

Pediatric

- naloxone 0.1 mg/kg (max single dose 0.4 mg) until the respiratory rate improves and the patient can maintain a pulse oximetry reading of 96% OR until 2 mg has been given.
- Split dose equally between each nostril

Glucagon

Intranasal lyophilized Glucagon may be given to Hypoglycemic adults in the same dose as IM or IV routes. The dose should be split evenly between each nostril.

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PROCEDURE

INDUCED HYPOTHERMIA FOLLOWING ROSC

PARAMEDIC

Criteria for Induced Hypothermia

- Age Greater than 18
- **Return Of Spontaneous Circulation** (regardless of blood pressure) following cardiac arrest (all non-traumatic causes)
- Patient remains comatose (GCS<8 and/or no purposeful responses to pain)
- Intubated or needs airway management (King Airway is acceptable)
- Systolic Blood Pressure can be maintained at 90 mm/Hg spontaneously or with fluids and pressors.

Patient Exclusion Criteria:

- Pregnant female with obviously gravid uterus
- Systolic Blood Pressure cannot be maintained at 90 mmHg or greater spontaneously or with fluids and pressors
- Coagulopathy or thrombocytopenia.

PROCEDURE

1. Patient meets criteria for Induced Hypothermia?
If No, proceed to Post-Resuscitation protocol
If Yes, Is the ET Tube placed?
If No, proceed with Intubation. King Airway is acceptable.
(Once airway is controlled, follow remaining steps)
2. Perform Neuro Exam to confirm meets criteria
3. Expose patient – Apply ice packs to Axilla, Neck, and Groin
4. Administer Cold Saline bolus (IV/IO) 20-30 mL/kg to max of 2 liters
5. Administer Versed 0.15 mg/kg to max 10 mg, if needed to control agitation or shivering.
6. If necessary, Administer Dopamine 10-20 mcg/kg/min for MAP 90-100

SPECIAL NOTES

- If patient meets other criteria for induced hypothermia and is not intubated, then intubate according to protocol before inducing cooling. If unable to intubate, use of King Airway is acceptable.
- When exposing patient for purpose of cooling, undergarments may remain in place. Be mindful of your environment and take steps to preserve the patient's modesty.
- Do not delay transport for the purpose of cooling.
- Reassess airway frequently and with every patient move.
- Patients develop metabolic alkalosis with cooling. Do not hyperventilate.
- If there is loss of ROSC after cooling is initiated please document on PCR, discontinue cooling, and proceed with appropriate resuscitation protocol.
- Transport patient to Hypothermia capable center.

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PROCEDURE

EXTERNAL TRANSCUTANEOUS CARDIAC PACING

PARAMEDIC

Non-invasive cardiac pacing, also referred to as external or transcutaneous pacing, involves the temporary application of externally applied electrodes to deliver an adjustable electrical impulse directly across an intact chest wall for the purpose of rhythmically stimulating the myocardium to increase the mechanical heart rate.

Indications:

- (1) It is indicated for the treatment of hemodynamically compromised patients in settings where cardiac output is compromised due either to the complete failure of cardiac rhythm or to an insufficient rate of the patient's intrinsic pacemaker.
- (2) Bradycardia with a systolic BP of less than 80 mmHg with shocklike signs or symptoms.
- (3) Patients who experience provider-witnessed cardiopulmonary arrest and who present with asystole, or patients whose EKG converts to asystole while the EKG is being monitored.
- (4) Prompt application of the transcutaneous cardiac pacemaker is appropriate prior to the administration of epinephrine and atropine when a patient converts to asystole as a primary rhythm during EKG monitoring by a EMT-P.
- (5) Pediatric patients (40 kg or less) with profound symptomatic bradycardia unresponsive to optimal airway management, oxygenation, epinephrine, and atropine.

NOTE: Medical consultation is required for pacing pediatric patients.

Contraindications:

- (1) Non-witnessed cardiopulmonary arrest with asystole
- (2) Patient not meeting blood pressure criteria

Technique:

Start at a pacemaker heart rate of 70 beats per minute and the milliamperes (m.a.) as low as possible and gradual increase m.a. until palpable pulse confirmed capture or 200 m.a

POTENTIAL ADVERSE EFFECTS/COMPLICATIONS

Patients may experience mild to moderate discomfort.

If patient is conscious and has adequate blood pressure consider:

Morphine 1-2 mg/min IVP/IO

And/or

Diazepam 2.5-10 mg slow IV/IO or Versed 2-4 mg IV/IO

Musculoskeletal twitching in upper torso may occur during pacing.

PRECAUTIONS

When properly applied, chest compressions can be performed directly over the insulated electrodes while the pacer is operating

DO NOT USE EXTERNAL PACING ON A HYPOTHERMIC PATIENT.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PROCEDURE Indwelling IV Port Access

PARAMEDIC

Indications:

Intravenous fluid or medications **emergently** needed AND

Peripheral IV cannot be established AND the patient exhibits one or more of the following:

- Presence of Indwelling Port
- Altered mental status (GCS of 8 or less)
- Respiratory compromise (SaO₂ of 80% or less following appropriate oxygen therapy, and/or respiratory rate <10 or >40/min)
- Hemodynamically unstable

Contraindications:

1. Infection at insertion site
2. Significant edema
3. Excessive tissue at insertion site
4. Inability to locate landmarks

Considerations:

1. Port-A-Cath access in the field should only be utilized in **EMERGENCY** situations.
2. Access should only be attempted under sterile conditions by those who have documented competency.
3. You may utilize the patient's supplies if necessary and appropriate.
4. **DO NOT FORCE FLUSH INDWELLING CATHETERS**

Procedure for accessing the Implanted Port:

Assemble Supplies:

10cc NS Syringe
Chloraprep
Masks
Sterile gloves
Huber needle
Tegaderm

1. Peel open one corner of the Huber needle package only; Extend end of extension tubing only out the opening
2. Cleanse hands
3. Attach 10cc NSS syringe to extension tube.
4. Prime tubing and needle with NSS
5. Place Huber needle package on a secure flat surface and peel back package open. **Do NOT touch Huber needle until sterile gloves are on**
6. Caregiver applies mask; the patient has the option of putting on a mask or turning their head away from the port area
7. Put on sterile gloves
8. Prep site from center of port and work outward in a circular motion to include a 2"-3" area; repeat three times

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9. Pick up Huber needle with NS syringe attached; touch only the Huber needle as this is sterile and the syringe is not.
10. Fold wings of Huber needle back and hold securely; remove clear protective sheath from the needle
11. Locate and stabilize the port site with your thumb and index finger; creating a "V" shape.
12. Access the port by inserting the Huber needle at a 90° angle into the reservoir
13. Once accessed, the needle must not be twisted; excessive twisting will cut the septum and create a drug leakage path
14. Flush the port with 2-5cc NS and then attempt to aspirate a blood return; this confirms proper placement; If the port is difficult to flush **DO NOT FORCE FLUSH**.
15. Slowly inject the remaining 10cc NS; observe for resistance, swelling or discomfort; if present, assess needle placement; if still present, remove the Huber and re-access.
16. Remove empty NS syringe and attach IV Solution tubing and initiate flow.
17. Hold slight pressure with a 2 x 2 until bleeding, if any, stops; there should never be excessive bleeding

Dressing the Port Site

Assemble Supplies

- CVC dressing kit
- Flat clean work surface

1. Open the package of 2 x 2's if extra padding is needed
2. Place one 2 x 2 under the wings to provide padding on the skin if Huber is not flush with chest
3. Tear a piece of tape approximately 3" long; split tape lengthwise; tape over Huber wings in a "X" format
4. Cover site with Tegaderm
5. Secure the extra tubing with tape to prevent catching on clothes

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REFERENCE

Consent Issues

BASIC

IV

PARAMEDIC

Tennessee law, under a legal doctrine known as "implied consent", allows EMTs and Paramedics to treat and transport minors when a parent or legal guardian is not available to provide consent IF a medical emergency exists. Simply stated, a Court will imply that reasonable parents would want someone to help their child in their absence if the child develops an emergent medical condition. However, implied consent only becomes legally effective after a reasonable effort is made under the circumstances to contact a parent or legal guardian to obtain their consent to treat the minor.

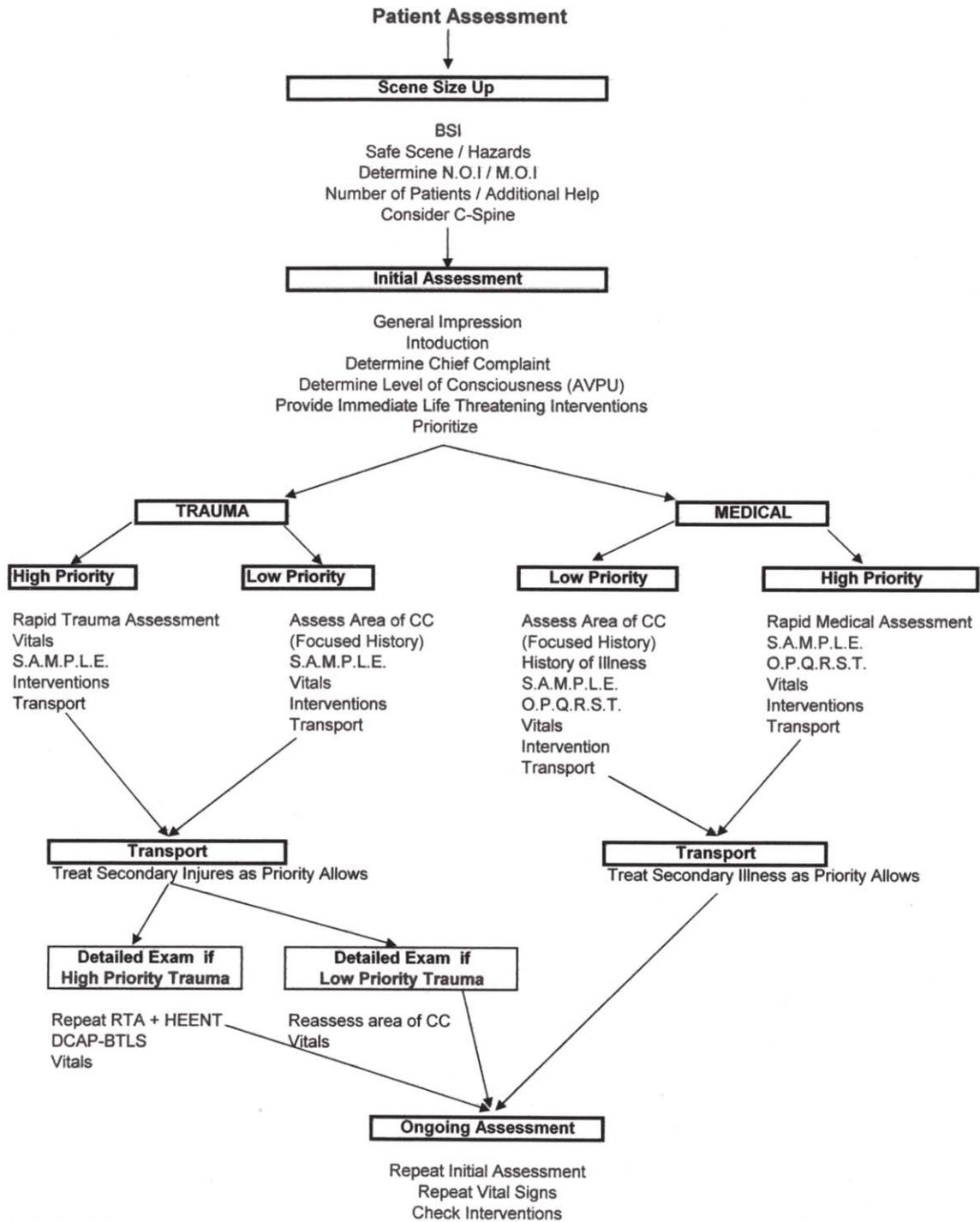
In non-emergent situations, "mature" minors are generally presumed to be legally competent to give consent. Whether or not a minor is "mature" depends upon multiple factors articulated by the Tennessee Supreme Court. Since it would be difficult, if not impossible, for an EMT or Paramedic to adequately assess the factors in the field, it is highly recommended that you obtain the consent of a parent or legal guardian before treating or transporting a non-emergent minor.

Obtaining the consent of a parent or legal guardian before treating or transporting a minor with either an emergent or non-emergent condition is usually not necessary when the minor is married or legally emancipated as married or emancipated minors are generally deemed to be legally competent.

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REFERENCE Patient Assessment Flow Chart

BASIC IV PARAMEDIC



Added to BLS SOP's Sept 2005

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PEDIATRIC SHOCK / TRAUMA

Pediatric Points to Remember-

BASIC

IV

PARAMEDIC

1. An infant is less than one year old.
2. A child is from one to eight years old.
3. Remember that few pediatric arrests are primary cardiac events. Most stem from respiratory (airway) problems, dehydration/metabolic, or hypothermia. Ensure that a child that arrests or is pending arrest is well oxygenated, well hydrated and warm.
4. Prognosis is extremely poor for a child that arrests.
5. Treat children aggressively before they arrest.
6. When in doubt contact Medical Control
7. The use of a length based assessment tape is **required** for all pediatric patients as a guide for medications and equipment sizes.
8. Treat children aggressively before they arrest.
9. Remember that with children the Intraosseous drug route is quick to establish and may be easier than gaining IV access.
10. When administering medications through the endotracheal tube:
 - the medication should be diluted with normal saline to a volume of 3 - 5 mL and instilled into the endotracheal tube.
 - alternatively, the medication may be delivered beyond the tip of the endotracheal tube by instillation through a suction catheter followed by a 3 - 5 mL flush of normal saline.
 - following endotracheal medication administration, several positive-pressure breaths (hyperventilation with BVM) must be provided.
 - medications administered via IV should be followed by at least 5 mL NS bolus and extremity elevated.
11. Children may be effectively ventilated using a BVM. This is the preferred method of ventilation in respiratory or cardiac arrest.

If in doubt always contact Medical Control.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PEDIATRIC

REFERENCE Pediatric Trauma Score

BASIC IV PARAMEDIC

(14 yrs. of age & under)

Component	+ 2 points	+ 1 point	- 1 point
Size	Greater than 20 kg	10-20 Kg	Less than 10 kg
Airway	Normal	Oral/Nasal Airway	Unmaintainable/Intubated
Systolic B/P	Greater than 90 mm Hg	50-90 mm Hg	Less than 50 mm Hg
CNS	Awake	Obtunded/LOC	Coma
Open Wound	None	Minor	Major/Penetrating
Skeletal	None	Closed Fractures	Open/Multiple Fractures

Total Point Values from Physical Presentation or Injury
 Trauma Score _____ Sum of Points

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE Physician Orders for Scope of Treatment (POST)

BASIC IV PARAMEDIC

COPY OF FORM SHALL ACCOMPANY PATIENT WHEN TRANSFERRED OR DISCHARGED										
<p style="text-align: center;">Physician Orders for Scope of Treatment (POST)</p> <p style="font-size: small;">This is a Physician Order Sheet based on the medical conditions and wishes of the person identified at right ("patient"). Any section not completed indicates full treatment for that section. When need occurs, <u>first</u> follow these orders, <u>then</u> contact physician.</p>		<p>Patient's Last Name</p> <hr/> <p>First Name/Middle Initial</p> <hr/> <p>Date of Birth</p>								
Section A	<p>CARDIOPULMONARY RESUSCITATION (CPR): Patient has no pulse <u>and/or</u> is not breathing.</p> <p><input type="checkbox"/> Resuscitate (CPR) <input type="checkbox"/> Do Not Attempt Resuscitate (DNR/no CPR)</p> <p style="font-size: x-small;">When not in cardiopulmonary arrest, follow orders in B, C, and D.</p>									
Check One Box Only	<p>Section B</p> <p>MEDICAL INTERVENTIONS. Patient has pulse <u>and/or</u> is breathing.</p> <p><input type="checkbox"/> Comfort Measures Treat with dignity and respect. Keep clean, warm, and dry. Use medication by any route, positioning, wound care and other measures to relieve pain and suffering. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Do not transfer to hospital for life-sustaining treatment. Transfer <u>only</u> if comfort needs cannot be met in current location.</p> <p><input type="checkbox"/> Limited Additional Interventions Includes care described above. Use medical treatment, IV fluids and cardiac monitoring as indicated. Do not use intubation, advanced airway interventions, or mechanical ventilation. Transfer to hospital if indicated. Avoid intensive care.</p> <p><input type="checkbox"/> Full Treatment. Includes care above. Use intubation, advanced airway interventions mechanical ventilation, and cardioversion as indicated. Transfer to hospital if indicated. Include intensive care.</p> <p style="font-size: x-small;">Other Instructions: _____</p>									
Check One Box Only	<p>Section C</p> <p>ANTIBIOTICS – Treatment for new medical conditions:</p> <p><input type="checkbox"/> No Antibiotics</p> <p><input type="checkbox"/> Antibiotics</p> <p style="font-size: x-small;">Other Instructions: _____</p>									
Check One Box Only in Each Column	<p>Section D</p> <p>MEDICALLY ADMINISTERED FLUIDS AND NUTRITION. Oral fluids and nutrition must be offered if medically feasible.</p> <p><input type="checkbox"/> No IV fluids (provide other measures to assure comfort) <input type="checkbox"/> No feeding tube</p> <p><input type="checkbox"/> IV fluids for a defined trial period <input type="checkbox"/> Feeding tube for a defined trial period</p> <p><input type="checkbox"/> IV fluids long-term if indicated <input type="checkbox"/> Feeding tube long-term</p> <p style="font-size: x-small;">Other Instructions: _____</p>									
Must be Completed	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <p>Discussed with:</p> <p><input type="checkbox"/> Patient/Resident</p> <p><input type="checkbox"/> Health care agent</p> <p><input type="checkbox"/> Court-appointed guardian</p> <p><input type="checkbox"/> Health care surrogate</p> <p><input type="checkbox"/> Parent of minor</p> <p><input type="checkbox"/> Other: _____ (Specify)</p> </td> <td style="width: 50%; padding: 5px;"> <p>The Basis for These Orders Is: (Must be completed)</p> <p><input type="checkbox"/> Patient's preferences</p> <p><input type="checkbox"/> Patient's best interest (patient lacks capacity or preferences unknown)</p> <p><input type="checkbox"/> Medical indications</p> <p><input type="checkbox"/> (Other) _____</p> </td> </tr> <tr> <td style="padding: 5px;">Physician Name (Print)</td> <td style="padding: 5px;">Physician Phone Number</td> <td rowspan="2" style="width: 10%; text-align: center; vertical-align: middle; font-size: x-small;">Office Use Only</td> </tr> <tr> <td style="padding: 5px;">Physician Signature (Mandatory)</td> <td style="padding: 5px;">Date</td> </tr> </table>			<p>Discussed with:</p> <p><input type="checkbox"/> Patient/Resident</p> <p><input type="checkbox"/> Health care agent</p> <p><input type="checkbox"/> Court-appointed guardian</p> <p><input type="checkbox"/> Health care surrogate</p> <p><input type="checkbox"/> Parent of minor</p> <p><input type="checkbox"/> Other: _____ (Specify)</p>	<p>The Basis for These Orders Is: (Must be completed)</p> <p><input type="checkbox"/> Patient's preferences</p> <p><input type="checkbox"/> Patient's best interest (patient lacks capacity or preferences unknown)</p> <p><input type="checkbox"/> Medical indications</p> <p><input type="checkbox"/> (Other) _____</p>	Physician Name (Print)	Physician Phone Number	Office Use Only	Physician Signature (Mandatory)	Date
<p>Discussed with:</p> <p><input type="checkbox"/> Patient/Resident</p> <p><input type="checkbox"/> Health care agent</p> <p><input type="checkbox"/> Court-appointed guardian</p> <p><input type="checkbox"/> Health care surrogate</p> <p><input type="checkbox"/> Parent of minor</p> <p><input type="checkbox"/> Other: _____ (Specify)</p>	<p>The Basis for These Orders Is: (Must be completed)</p> <p><input type="checkbox"/> Patient's preferences</p> <p><input type="checkbox"/> Patient's best interest (patient lacks capacity or preferences unknown)</p> <p><input type="checkbox"/> Medical indications</p> <p><input type="checkbox"/> (Other) _____</p>									
Physician Name (Print)	Physician Phone Number	Office Use Only								
Physician Signature (Mandatory)	Date									
COPY OF FORM SHALL ACCOMPANY PATIENT WHEN TRANSFERRED OR DISCHARGED										

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

HIPAA PERMITS DISCLOSURE OF POST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY

Signature of Patient, Parent of Minor, or Guardian/Health Care Representative

Significant thought has been given to life-sustaining treatment. Preferences have been expressed to a physician and/or health care professional(s). This document reflects those treatment preferences.

(If signed by surrogate, preferences expressed must reflect patient's wishes as best understood by surrogate.)

Signature	Name (print)	Relationship (write "self" if patient)
-----------	--------------	--

Contact Information

Surrogate	Relationship	Phone Number	
Health Care Professional Preparing Form	Preparer Title	Phone Number	Date Prepared

Directions for Health Care Professionals

Completing POST

Must be completed by a health care professional based on patient preferences, patient best interest, and medical indications.

POST must be signed by a physician to be valid. Verbal orders are acceptable with follow-up signature by physician in accordance with facility/community policy.

Photocopies/faxes of signed POST forms are legal and valid.

Using POST

Any incomplete section of POST implies full treatment for that section.

No defibrillator (including AEDs) should be used on a person who has chosen "Do Not Attempt Resuscitation".

Oral fluids and nutrition must always be offered if medically feasible.

When comfort cannot be achieved in the current setting, the person, including someone with "Comfort Measures Only", should be transferred to a setting able to provide comfort (e.g., treatment of a hip fracture).

IV medication to enhance comfort may be appropriate for a person who has chosen "Comfort Measures Only".

Treatment of dehydration is a measure which prolongs life. A person who desires IV fluids should indicate "Limited Interventions" or "Full Treatment".

A person with capacity, or the surrogate of a person without capacity, can request alternative treatment.

Reviewing POST

This POST should be reviewed if:

- (1) The patient is transferred from one care setting or care level to another, or
- (2) There is a substantial change in the patient's health status, or
- (3) The patient's treatment preferences change.

Draw line through sections A through E and write "VOID" in large letters if POST is replaced or becomes invalid.

Approved by Tennessee Department of Health, Board for Licensing Health Care Facilities, February 3, 2005

COPY OF FORM SHALL ACCOMPANY PATIENT WHEN TRANSFERRED OR DISCHARGED.

DO NOT ALTER THIS FORM !

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE Pulse Oximetry

PARAMEDIC

A. Pulse Oximetry – Assessment

Pulse Oximetry is not without limits and must NOT be used to supersede other assessments.

The Paramedic shall treat the patient and NOT the pulse oximeter's display. The patient's other key signs and symptoms must be assessed and evaluated so that the oximeter's readings are interpreted within the context of the patient's overall condition.

The percentage of oxygen saturation measured by an oximeter only reflects the supplied pulmonary oxygenation and is not an indicator or measure of cellular oxygenation. Furthermore, it is useful both in the assessment of the patient and as an adjunct for evaluating the effectiveness of the airway management, ventilation, and oxygen enrichment provided.

Oxygen saturation pressure (SpO₂) is a different measurement than the partial pressure of oxygen (PaO₂) which is commonly measured by laboratory blood gas analysis.

Pulse Oximetry should be deferred until more urgent assessment and care priorities have first been resolved.

Pulse oximetry is a diagnostic tool that, along with the patient's vital signs, chief complaint, mental status, and other considerations, may assist us in determining the patient's respiratory status.

The pulse rate determined by the pulse oximeter is not an accurate indicator of the patient's pulse rate.

Falsely low readings may occur in the following:

- a. patients with cold extremities or hypothermic patients
- b. patients with hemoglobin abnormalities
- c. patients without a pulse
- d. hypovolemic patients
- e. hypotensive patients

Falsely normal or high oxygen saturation readings may occur in the following patients:

- a. anemic patients, carbon monoxide poisoning
- b. cyanide toxicity which is being treated with the antidote
- c. very bright lighting (direct sunlight or nearby strong lamp)

Other factors affecting accurate readings:

- a. patient movement
- b. action of vasopressor drug
- c. peripheral vascular disease
- d. elevated bilirubin levels
- e. abnormal hemoglobin values
- f. IV diagnostic dye has been administered in the last 24 hours

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

B. Pulse Oximetry Values

1. Normal
 - a. 96 - 100%
 - b. Treatment - non-rebreather mask (12-15 Lpm) or nasal cannula (4-6 Lpm) if patient can not tolerate a mask and based on patient's chief complaint

2. Mild Hypoxia
 - a. 91 – 95%
 - b. immediate need to increase the FiO₂
 - c. Treatment - non-rebreather mask, 12 – 15 Lpm
 - d. Consider use of CPAP if available

3. Moderate Hypoxia
 - a. 86 – 90%
 - b. immediate need to increase the FiO₂
 - c. consider possible loss of airway patency
 - d. Treatment - non-rebreather mask, 12 – 15 Lpm, consider airway adjunct and bag-valve-mask @15 Lpm, on assist
 - e. Consider use of CPAP if available

4. Severe Hypoxia
 - a. $\leq 85\%$
 - b. Treatment - assist ventilations with adjunct and bag-valve-mask @15 Lpm, call Medical Control for order to intubate.
 - c. Consider use of CPAP if available

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE

Quality Improvement Documentation Criteria

Documentation on all patients must include the following and any other information pertinent to patient care:

- OPQRST and SAMPLE are the acronyms for the United States DOT EMS and Paramedic patient assessment curriculum.
- O**- Circumstances surrounding the **onset** of complain
- P**- What **provoked** (or provokes) the complaint?
- Q**- Describe the **quality** (sharp, burning, stabbing etc.) of the complaint?
- R**-Where does the pain **radiate**?
- S**- Describe the **severity** of the pain on a 1-10 scale
1(minimal) – 10 (maximum)
- T**- **Time** of onset?
- S** signs, symptoms, physical exam findings
- A** allergies to medications or the environment
- M** medications, prescription or over the counter
- P** past medical history
- L** last oral intake
- E** event, what happened to the patient?

All patients transported by EMS should have at least two sets of vital signs assessed and documented. Initial set of vitals will include blood pressure (systolic/diastolic), pulse rate, respiratory rate, pulse oximetry and blood glucose if indicated, and the time they were assessed must be recorded.

- All medications taken by the patient should be listed on the report. If medications are taken to ER document in narrative who the medications were left with.
- When documenting the presumed presence of alcohol that is based solely upon breath odor, do so in the following manner: “Patients breath has the odor that is commonly associated with the consumption of alcohol.”

ABDOMINAL PAIN/PROBLEMS

1. Location of pain
2. Distension
3. Tenderness / Radiation
4. Nausea / Vomiting / Diarrhea
5. Urinary complaints
6. LMP if applicable
7. Vaginal bleeding / discharge if applicable
8. Treatment / reassessments
9. Report given and Signature of RN

ALCOHOL INTOXICATION

1. Patients breath has odor of ETOH
2. Patient admits to drinking (type, amount, time frame)
3. Speech (normal, slurred)
4. Gait (normal, unsteady)
5. Any obvious injuries noted
6. Blood glucose level
7. Level of consciousness
8. Treatment / reassessments
9. Report given and Signature of RN

ALTERED MENTAL STATUS

1. OPQRST, Sample as appropriate
2. ETOH / Substance use
3. Any obvious injuries noted
4. Blood glucose level
5. Normal mental status
6. EKG and strip attached
7. Treatment / reassessments
8. Report given and Signature of RN

ASSAULT / FIGHT

1. OPQRST, Sample as appropriate
2. Method of assault
3. Any obvious injuries or pain
4. Loss of consciousness How long
5. Treatment / reassessments
6. Report given and Signature of RN

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

AIRWAY OBSTRUCTION

1. Can patient speak / forcibly cough
2. Is patient moving air
3. Inspiratory stridor
4. What caused obstruction
5. Duration of obstruction
6. Treatment / reassessments
7. Report given and Signature of RN

ANIMAL BITE / STING

1. Type of animal or insect
2. Location of bite(s) / sting
3. Edema at site
4. Rabies / immunization status of animal if appropriate
5. Treatment / reassessments
6. Report given and Signature of RN

BURN

1. Burn source (flame, chemical, electricity)
2. Environment (enclosed, outside)
3. Entrance / exit wounds if appropriate
4. Burn surface area and thickness)
5. Facial, oral, nasal area singed
6. Chest pain / dyspnea
7. Treatment / reassessments
8. Report given and Signature of RN

CHEST PAIN

1. OPQRST and Sample as appropriate
2. Factors relieving or increasing pain
3. Dyspnea, cough
4. Nausea, vomiting
5. Diaphoresis
6. Aspirin within past 12 hours
7. Treatments / reassessments
8. Report given and Signature of RN

DEATH

1. Last time patient seen or talked to
2. Position / location of body
3. Any movement of body made by EMS
4. Any injuries noted
5. Dependant lividity / rigor mortis
6. EKG strip in two leads attached
7. Released to

ALLERGIC REACTION

1. Cause of reaction
2. Dyspnea
3. Facial / airway edema
4. Chest Pain
5. Rash / itching
6. Urticaria / hives
7. Treatment / reassessments
8. Report given and Signature of RN

ATRAUMATIC GI BLEED

1. Nausea, vomiting, diarrhea, constipation
2. Active bleeding
3. Bloody emesis / stool How long
4. Color of emesis / stool
5. Abdominal pain, location and quality
6. Treatment / reassessments
7. Report given and Signature of RN

CARDIAC ARREST

1. Events prior to onset
2. Description / location of patient on arrival
3. Estimated down time
4. Treatment / reassessments
5. Report given and Signature of RN

CHF / PULMONARY EDEMA/SOB

1. Chest pain
2. Dyspnea
3. Nausea, vomiting
4. Diaphoresis
5. JVD / lower extremity edema
6. Treatment / reassessments
7. Report given and Signature of RN

DIABETIC

1. OPQRST and Sample as appropriate
2. Nausea / vomiting / recent illness
3. Pre/Post treatment of blood glucose level
4. Treatment / reassessments
5. Report given and Signature of RN

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

HYPERTENSION

1. Chest pain / dyspnea
2. Nausea / vomiting
3. Headache / mental status
4. Neuro Assessment
5. Treatments / reassessments
6. Report given and Signature of RN

INHALATION INJURY (TOXIC GAS/SMOKE)

1. Type of gas
2. Duration of exposure
3. Area of exposure (enclosed room)
4. Heated environment
5. Burns / singeing (oral, nasal, facial area)
6. Treatments / reassessments
7. Report given and Signature of RN

PREGNANCY / OB DELIVERY

Separate report required for mother and each delivery

Non-Delivery

1. Abdominal pain, contractions (duration & frequency)
2. Gravida / Para / Abortion
3. Length of gestation / estimated due date
4. Edema (pedal) / BP / Headache / Visual disturbance
5. Vaginal bleeding / discharge If yes describe
6. Treatments / reassessments
7. Report given and Signature of RN
8. Time since last fetal movement

Delivery

1. Multiple fetuses
2. Mucous plug resented
3. Membranes ruptured / if yes is amniotic fluid clear
4. Crowning as appropriate

HYPER / HYPO THERMIA

1. Approximate ambient air temperature
2. Estimate exposure time
3. Type of environment (inside, outside, wet)
4. Loss of consciousness
5. Fluid intake
6. Skin turgor / condition
7. ETOH / substance abuse
8. Treatments / reassessments
9. Report given and Signature of RN

POISONING / DRUG INGESTION

1. Name of substance
2. Amount
3. Route of intake
4. How long ago
5. Vomiting since ingestion as appropriate
6. Intentional vs. Unintentional
7. ETOH / substance use
8. Oral mucosa burns if appropriate
9. Treatments / reassessments
10. Report given and Signature of RN

SEIZURES

1. OPQRST and Sample as appropriate
2. Obvious injuries (mouth, head, tongue)
3. Duration and number of events
4. Incontinence
5. Level of Consciousness (postictal)
6. Treatments / reassessments
7. Report given and Signature of RN

STROKE / CVA / TIA

1. OPQRST and Sample as appropriate
2. onset and duration of symptoms
3. Headache / vision disturbances
4. Thrombolytic screening and stroke screen
5. Treatments / reassessments
6. Report given and Signature of RN

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

NEONATE

1. Time of birth
2. Thoroughly dried and warmed
3. Oral and nasal suctioning
4. Meconium present
5. APGAR at 1 and 5 minutes
6. General appearance
7. Treatments / reassessments
8. Report given and Signature of RN

SYNCOPE/FAINTING/WEAKNESS

1. OPQRST and Sample as appropriate
2. Injuries, chest pain, dyspnea, nausea
3. Vertigo / postural / TILT changes
4. New or changed medications
5. Last meal
6. Blood glucose level
7. EKG
8. ETOH / Substance use
9. Treatments / reassessments
10. Report given and Signature of RN

TRAUMA

1. OPQRST and Sample as appropriate
2. Description of event
3. Weapon (size, caliber, depth of penetration) if applicable
4. Description of damage, estimated speed, airbag deployment as applicable
5. Patient protection as applicable
6. Level of or Loss of consciousness
7. Obvious Injuries and area of pain
8. Palpation / assessment of injured areas
9. Disability (PMS/SMC intact)
10. Treatments / reassessments
11. Report given and Signature of RN

REFUSALS

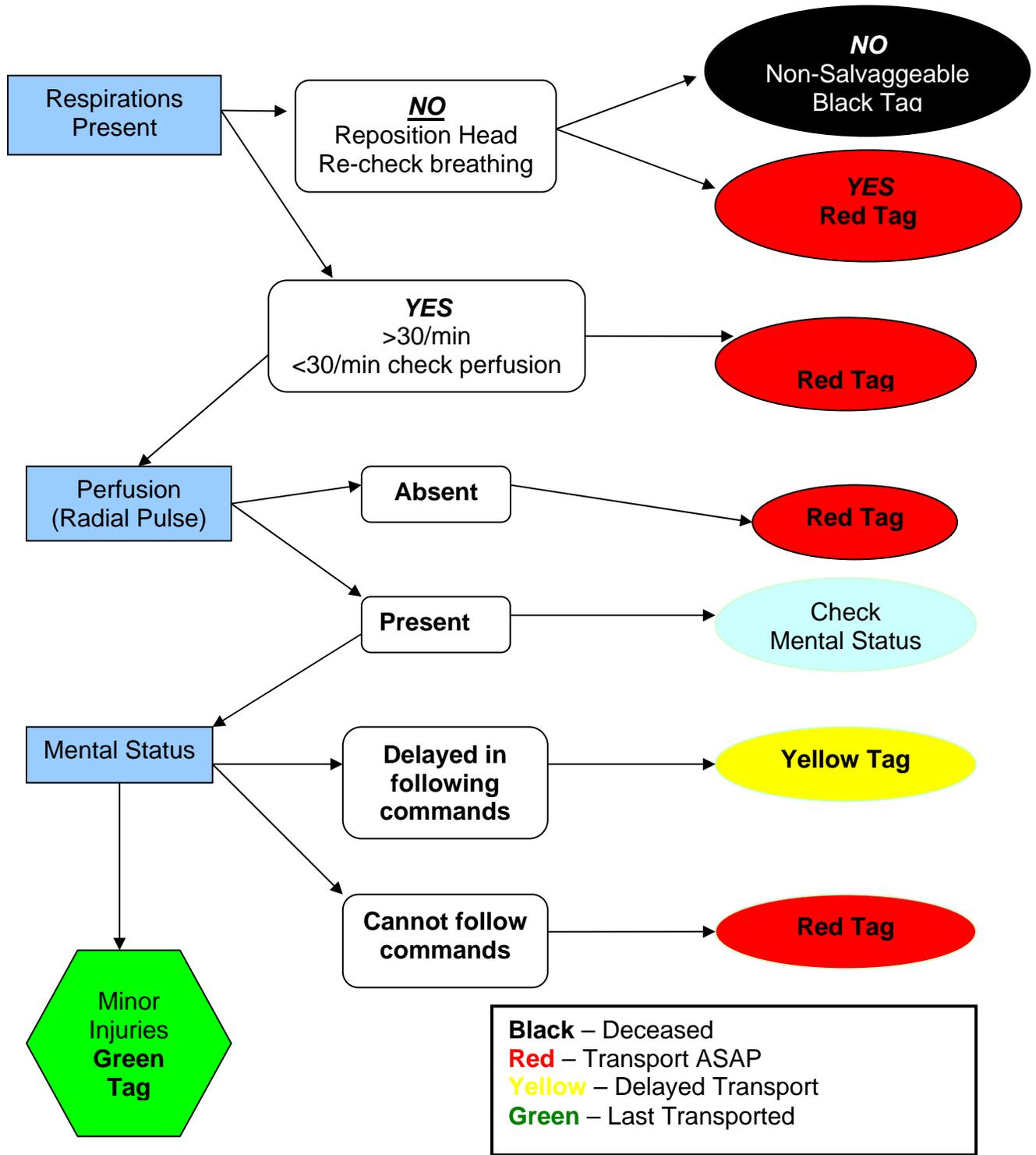
Documentation of:

1. Competency
2. MMSE
3. Lack of Trauma
4. Situation
5. Ability to make good decisions
6. Safety of patient is assured by caretakers, family, etc.

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE S.T.A.R.T. Triage

BASIC **IV** **PARAMEDIC**
S.T.A.R.T Triage



TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE

Trauma Treatment Priorities

BASIC

IV

PARAMEDIC

1. If multiple patients, initiate the S.T.A.R.T. and Multiple Casualty Incident System
2. Oxygen 100% and airway maintenance appropriate for the patient's condition
3. Consider, if available, PASG. Treat for shock appropriate to patients condition
4. Certain situations require rapid transport. Non-lifesaving procedures such as splinting and bandaging must not delay transport. Contact the responding emergency unit when any of the following exist:
 - a. Airway obstructions that cannot be quickly relieved by mechanical methods such as suction, or jaw-thrust maneuver
 - b. Traumatic cardiopulmonary arrest
 - c. Large open chest wound (sucking chest wound)
 - d. Large flail chest
 - e. Tension pneumothorax
 - f. Major blunt chest trauma
 - g. Shock
 - h. Head injury with unconsciousness, unequal pupils, or decreasing level of consciousness
 - i. Tender abdomen
 - j. Unstable pelvis
 - k. Bilateral femur fractures

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE TRAUMA SCORE

BASIC IV PARAMEDIC

Revised Trauma Score

RESPIRATORY RATE	10-24/min	4
	24-35/min	3
	>36/min	2
	1-9/min	1
	None	0
RESPIRATORY EXPANSION	Normal	1
	Retractive	0
Systolic Blood Pressure	>90 mmHg	4
	70-89 mmHg	3
	50-69 mmHg	2
	0-49 mmHg	1
	No Pulse	0
Capillary Refill	Normal	2
	Delayed	1
Points to add to the RTS based on the GCS		
14-15		5
11-13		4
8-12		3
5-7		2
3-4		1

Glasgow Coma Scale

Eye Opening	
Spontaneous	4
Opening to voice	3
Response to pain	2
None	1
Verbal	
Oriented	5
Verbal confused	4
Inappropriate words	3
Incomprehensible sounds	2
None	1
Motor	
Obeys command	6
Localizes pain	5
Withdraws (pain)	4
Flexion	3
Extension	2
None	1

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

PEDIATRIC

REFERENCE Triage Decision Scheme

BASIC IV PARAMEDIC

(14 yrs. of age & under)

Pediatric Trauma Score of 8 or less: Refer to Destination Determinates see Pediatric Shock / Trauma Protocol.

YES	NO
Transport to Level I Pediatric Trauma Center Advise Medical Control	Assess anatomy of injury
Penetrating injury proximal to elbow, and knee, including head and neck	
Flail chest	
Traumatic Respiratory Arrest	
Pelvic fracture with shock	
Amputation proximal to wrist & ankle	
Combination trauma with burns of 15% BSA, or to the face or airway	
2 or more proximal long bone fractures	
Limb paralysis	

YES	NO
Contact Medical Control for consideration of transfer to Level I or II Pediatric Trauma Center. If Medical Control is unavailable, then transport to highest level Trauma Center	Assess anatomy of injury
Evidence of High Impact	Re-evaluate with Medical Control
Ejection from automobile	
Death of vehicle occupant (particular if unrestrained)	
Fall greater than 20 feet	
Velocity change greater than 20 mph	
Passenger intrusion greater than 12 inches	
Pedestrian impact (significant) 5-20 + MPH	
Motorcycle accident greater than 20 MPH or with separation of rider and bike	
Bicycle accident with significant impact	

YES	NO
Contact Medical Control for consideration of transfer to Level I or II Pediatric Trauma Center. If Medical Control is unavailable, then transport to highest level Trauma Center	

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE

Common Medical Abbreviations

a = before	gtt. = drop
AED = automated external defibrillator	GU = genitourinary
AOX3 = alert, and oriented to person, place, and time	GYN = gynecologic
abd. = abdomen	h, hr. = hour
Ab. = abortion	H/A = headache
ac = antecubital	Hg = mercury
AF = atrial fibrillation	H & P = history and physical
ARDS = Adult Respiratory Distress Syndrome	Hx = history
AT = atrial tachycardia	ICP = intracranial pressure
AV = atrioventricular	JVD = jugular venous distention
b.i.d. = twice a day	KVO = keep vein open
BSA = body surface area	LAC = laceration
BS = blood sugar and/or breath sounds	LBBB = left bundle branch block
c = with	MAEW = moves all extremities well
CC or C/C = chief complaint	NaCl = sodium chloride
CHF = congestive heart failure	NAD = no apparent distress/no acute distress
CNS = central nervous system	NPO = nothing by mouth
c/o = complains of	NKA = no known allergies
CO = carbon monoxide	OD = overdose
CO² = carbon dioxide	O.D. = right eye
D/C = discontinue	O.S. = left eye
DM = diabetes mellitus	PERL = pupils equal and reactive to light
DT's = delirium tremens	PID = pelvic inflammatory disease
DVT = deep venous thrombosis	p.o. = by mouth
Dx = diagnosis	1° = primary, first degree
ECG – EKG = electrocardiogram	PTA = prior to arrival
EDC = estimated date of confinement	pt. = patient
EJ = external jugular	q = every
ENT = ear, nose and throat	q.h. = every hour
ETOH = alcohol by definition is any chemical compound containing the Hydroxyl group OH. ETOH is the abbreviation of Ethanol (grain alcohol)	q.i.d. = four times a day
fl = fluid	RBBB = right bundle branch block
fx = fracture	R/O = rule out
GB = gall bladder	ROM = range of motion
Gm – g = gram	Rx = take, treatment
gr. = grain	s = without
GSW = gun shot wound	S/S = signs and symptoms
	TIA = transient ischemic attack
	t.i.d. = three times a day
	V.S. = vital signs
	y.o. = years old

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE PEDIATRIC

BASIC IV PARAMEDIC

Age	Weight (kg)	Normal Diastolic BP	Normal Systolic BP	Heart Rate Per Minute	Respiratory Rate Per Minute
Birth	3.5	56 - 70	66 - 90	110 – 160	30 - 60
6 mos	7.0	56 - 70	70 - 104	100 – 140	30 - 50
1 yr	10.0	56 - 76	80 - 104	100 – 140	24 - 34
2 yr(s)	13.0	56 - 76	80 - 104	90 – 110	20 - 30
3 yr(s)	15.0	56 - 76	80 - 104	90 – 110	20 - 30
4 yr(s)	17.0	56 - 76	90 - 110	80 – 110	20 - 30
5 yr(s)	19.0	56 - 76	90 - 110	80 – 110	20 - 30
6 yr(s)	23.0	56 - 76	90 - 110	70 – 100	16 - 30
7 yr(s)	25.0	56 - 76	90 - 110	70 – 100	16 - 30
8 yr(s)	28.0	60 - 76	90 - 110	70 – 100	16 - 30
9-10yr(s)	30.0	64 - 76	90 - 114	70 – 90	10 - 20
11-12yr(s)	37.0	64 - 80	90 - 120	70 – 90	10 - 20
13-15yr(s)	50.0	64 - 80	110 - 124	60 – 80	10 - 20
16-18yr(s)	65.0	64 - 90	110 - 134	60 – 80	10 - 20

Size ETT = $\frac{16 + (\text{age in years})}{4}$

REFERENCE PEDIATRIC

BASIC IV PARAMEDIC

Age- and Weight - Related Pediatric Equipment Guidelines

	Premature 3 kg	Newborn 3.5 kg	6 Months 7 kg	1 - 2 Years 10 - 12 kg	5 Years 16 - 18 kg	8 - 10 Years 24 - 30 kg
C-collars			Small	Small	Small	Medium
O2 Masks	Premature or Newborn	Newborn	Pediatric	Pediatric	Pediatric	Adult
BVM	Infant	Infant	Pediatric	Pediatric	Pediatric	Pediatric or Adult
Laryngoscopes	0	1	1	1	2	2 - 3
ET Tubes	2.5 - 3.0	3.0 - 3.5	3.5 - 4.5	4.0 - 4.5	5.0 - 5.5	5.5 - 6.5
Suction Catheters	6 - 8 Fr	8 Fr	8 - 10 Fr	10 Fr	14 Fr	14 Fr
Oral Airways	Infant	Infant or Small	Small	Small	Medium	Medium or Large
IV Equipment	22 - 24 angio	22 - 24 angio	22 - 24 angio	20 - 22 angio	20 - 2 angio	20 - 22 angio
BP Cuffs	Newborn	Newborn	Infant or Child	Child	Child	Child or Adult

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE MEDICATION DOSAGE

BASIC	IV	PARAMEDIC
Drug:	Adenocard	
Trade Names	Adenosine	
Dosage:	1 st dose - 6mg rapid IVP with flush 2 nd dose – 12mg rapid IVP with flush <i>Pediatric – 1st dose - 0.1mg/kg max dose 6mg. 2nd dose 0.2mg/kg max dose 12mg.</i>	
Drug:	Albuterol Sulfate	
Trade Names	Proventil, Ventolin, Albuterol Sulfate	
Dosage:	Aerosol Nebulization : 2.5mg in 3cc NS q 5 min if heart rate is <150 Peds- Aerosol Nebulization : 2.5mg in 3cc normal saline q 5 min if heart rate <200	
Drug:	Amiodarone	
Trade Names	Cardarone	
Dosage:	300mg then 150mg <i>Peds 5mg/kg</i>	
Drug:	Aspirin	
Trade Names:	Aspirin	
Dosage:	162-324 mg Chewed and then swallowed Peds—NO Pediatric Dosing	
Drug:	Atropine Sulfate	
Trade Names	Atropine	
Dosage:	1mg IVP q 4 min max dose 0.04mg/kg <i>Peds 0.02mg/kg q 4 min max dose 0.04 mg/kg</i>	
Drug:	Calcium Chloride	
Trade Names		
Dosage:	500 mg IVP Peds-20mg/Kg	
Drug:	Dextrose 50%	
Trade Names	D ₅₀ , D ₅₀ W	
Dosage:	½ -1 Amp (12.5-25 gram) IVP No Peds Dosing	
Drug:	Dextrose 25%	
Trade Names	D ₂₅ , D ₂₅ W	
Dosage:	2cc/kg (D ₅₀ mixed 50/50 with Normal Saline)	
Drug:	Diazepam	
Trade Names	Valium	
Dosage:	2-10 mg slow IVP, titrated to effect <i>Peds 0.2mg/kg slow IVP, titrated to effect or 0.5 mg/kg rectal</i>	

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

Drug:	Dopamine
Trade Names	
Dosage:	2-20 mcg/kg/min Peds 2-20mcg/kg/min

Drug:	Diphenhydramine
Trade Names	Benadryl
Dosage:	25-50mg IM or slow IVP <u>Peds 1mg/kg</u>

Drug:	Epinephrine
Trade Names	Adrenaline
Dosage:	Cardiac Arrest 0.5-1mg of 1:10,000 solution IVP q 4 min, ET 2-2.5 mg of 1:10,000 solution q 4 min Anaphylaxis 0.3 – 0.5mg of 1:1000 solution IM <u>Peds</u> <u>Cardiac Arrest- Epinephrine 1:10,000 0.01 mg/kg IV/IO q 5 min</u> <u>Anaphylaxis- Epinephrine 1:1000 0.01 mg/kg IM, max dose is 0.3 mg</u> <u>Croup- Nebulized Epinephrine 1:1000 diluted to 2.5-3 cc saline flush may repeat up to 3 doses.</u>

Drug:	Furosemide
Trade Names	Lasix
Dosage:	In CHF- 40-80mg IVP slow In Hypertensive Crisis- 0.5-1.0 mg/kg if pulmonary edema is present.

Drug:	Glucagon
Trade Names	Glucagen
Dosage:	1-2mg IM/IN <u>Peds 0.5-1mg IM</u>

Drug:	Lidocaine
Trade Names	Xylocaine
Dosage:	1-1.5mg/kg max dose 3mg/kg <u>Peds-1.0 mg/kg</u>

Drug:	Lidocaine Drip
Trade Names	Xylocaine
Dosage:	2-4mg/min <u>Peds 2-4 mg/min</u>

Drug:	Magnesium Sulfate
Trade Names	
Dosage:	Torsades only – 1-2gm IVP over 2 min Pre-eclampsia or Eclampsia: 2-4 g slow IVP over 2 min/g Drip – 4g in 250ccD ₅ W (16mg/ml) run at 30-60gtts/min

Drug:	Midazolam HCL
Trade Names	Versed
Dosage:	2-5 mg IV/IM/IN <u>Peds 0.2mg/kg</u>

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

Drug:	Morphine
Trade Names	Morphine Sulfate, MS Contin, MSIR
Dosage:	2-4 mg IVP see standing orders for repeat doses <i>Peds- sedation dose- 0.05- 0.2mg/kg</i> <i>- Pain management-0.03-.05mg/kg IV/IO</i>

Drug:	Nitroglycerin
Trade Names	
Dosage:	Oral 0.4 mg SL or spray q 5 min for pain Transdermal – 1” on chest wall NTG Therapy --1 spray sl and apply 1” paste repeat SL spray once after 5 min. Continue therapy until pain is relieved or systolic b/p <100 mmHg

Drug:	Naloxone
Trade Names	Narcan
Dosage:	2 mg slow IVP/IN Peds 0.1mg/kg slow IVP/IN

Drug:	Nitrous Oxide
Trade Name	NitroNox
Dosage	Patient Self administered

Drug:	Promethazine
Trade Names	Phenergan
Dosage:	6.25-25 mg slow IVP Peds-0.05-0.1mg/kg

Drug:	Procainamide
Trade Names	Procan
Dosage:	50-100mg slow IVP <i>15mg/kg slow IVP</i>

Drug:	Sodium Bicarbonate
Trade Names	
Dosage:	1 mEq/kg I.V/IO followed by 0.5 mEq/kg q 10 min <i>(peds-1 mEq/kg may repeat at 0.5 mEq/kg q 10 min)</i>

Drug:	Methylprednisolone
Trade Names	Solu-Medrol
Dosage:	62.5 or 125 mg <i>Peds- contact medical control</i>

Defibrillation:	Adult 200j Biphasec Peds – 2j/kg then 4j/kg
Cardioversion	Adults- refer to specific SOP Peds-0.5j/kg then 1j/kg

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

REFERENCE DRUG INFUSION ADMIX DOSAGE GUIDELINES

PARAMEDIC

Lidocaine -

2 gram medication / 500 mL D₅W = 4 mg/mL (always use 60 gtt. set)

1 mg / min = 15 gtt / min

2 mg / min = 30 gtt / min

3 mg / min = 45 gtt / min

4 mg / min = 60 gtt / min

Procainamide - For maintenance infusion only. Refer to Specific Standing Order for Initial Dose.

2 gram medication / 500 mL D₅W = 4 mg/mL or 1 gm / 250cc D₅W
(always use 60 gtt. set)

1 mg / min = 15 gtt / min

2 mg / min = 30 gtt / min

3 mg / min = 45 gtt / min

4 mg / min = 60 gtt / min

Magnesium Sulfate -

4g in 250ccD₅W (16mg/ml) run at 30-60gtts/min

Dopamine

400mg / 250cc D₅W or 800mg/ 500cc D₅W = 1600 ug/mL (always use 60 gtt/set)

50 kg patient = 110 lbs

2.5 ug/kg/min = 5gtt/min

5 ug/kg/min = 12gtt/min

10 ug/kg/min = 19gtt/min

20 ug/kg/min = 38gtt/min

70 kg patient = 154 lbs

2.5 ug/kg/min = 7 gtt/min

5 ug/kg/min = 13 gtt/min

10 ug/kg/min = 27 gtt/min

20 ug/kg/min = 53 gtt/min

100 kg patient = 220 lbs

2.5 ug/kg/min = 10 gtt/min

5 ug/kg/min = 19 gtt/min

10 ug/kg/min = 38 gtt/min

20 ug/kg/min = 75gtt/min

Ped dose 2-20ug/kg/min

TENNESSEE EMERGENCY MEDICAL SERVICES PROTOCOL GUIDELINES

AUTHORIZATION FOR PROTOCOLS

These Emergency Medical Services (EMS) Standing Orders and Protocols (revision project completed March 2010) are hereby adopted. They are to be initiated by EMS personnel within their scope of licensure whenever a patient presents with injury or illness covered by the protocols. Where indicated to contact Medical Control, the EMS Provider should receive voice orders from Medical Control before proceeding. Other orders may be obtained from Medical Control when the situation is not covered by the protocols or as becomes necessary as deemed by the EMT-Paramedic.

Effective date of these SOPs: _____

"Signature on File"

Medical Director

Date