MASSACHUSETTS
OFFICE OF EMERGENCY MEDICAL SERVICES
DEPARTMENT OF PUBLIC HEALTH

EMERGENCY MEDICAL SERVICES PRE-HOSPITAL STATEWIDE TREATMENT PROTOCOLS

OFFICIAL VERSION **2026.1**

Complete Version

June 1, 2026

MASSACHUSETTS
OFFICE OF EMERGENCY MEDICAL SERVICES
DEPARTMENT OF PUBLIC HEALTH

Commonwealth of Massachusetts Department of Public Health

Bureau of Healthcare Safety and Quality

Office of Emergency Medical Services

Statewide Treatment Protocols – Version 2026.1

Legend	Definition
FR	First Responder (FR)-- Found only in protocols 1.1, 2.2A, 2.2P, 2.9, 2.14, 3.4A, 3.4P, 3.5A, 3.5P and 4.11.
E	Emergency Medical Technician (EMT)
A	Advanced Emergency Medical Technician (AEMT)
P	Paramedic
	CAUTION – Red Flag topic
	Medical Control Orders
	Pediatric-specific protocol

Clinical notes boxes show important assessment or treatment considerations.

FR and EMT level protocols are designated by colors (see above), and labels. FR and EMTs at all levels of certification are responsible for providing Routine Care to all patients, in accordance with 1.0 Routine Patient Care, and for their level of care and those above on the protocol page.
These protocols are developed and approved by the Massachusetts Department of Public Health (Department), based on the medical literature and the recommendations of the Department's advisory committees. For the latest corrections or addenda, see the OEMS website at http://www.mass.gov/dph/oems

These are the Massachusetts Statewide Treatment Protocols: They are the standard of EMS patient care in Massachusetts.

Questions and comments should be directed to:
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Marlborough, MA 01752

Massachusetts Pre-Hospital Statewide Treatment Protocols 2026.1

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1.0 Routine Patient Care

NOTE: This protocol applies to <u>all</u> EMS calls.

<u>RESPOND TO SCENE IN A SAFE MANNER:</u>

- Review dispatch information.
- Use lights and sirens and/or pre-emptive devices when responding as appropriate per emergency medical dispatch information and local guidelines.

<u>SCENE ARRIVAL AND SIZE-UP:</u>

- Utilize Body Substance Isolation (BSI), and Personal Protective Equipment (PPE) as appropriate.
- Assess scene safety, bystander safety.
- Assess for weapons of mass destruction (WMD), odors/fumes, cultural/social factors, active shooter hostile event response (ASHER), and environmental hazards, as applicable.
- Determine number of patients.
- Determine nature of illness/mechanism of injury/illness (NOI/MOI).
- Determine need for additional/specialized resources.
- Activate air-medical transport early and if applicable to do so.
- Utilize Mass Casualty Incident (MCI) and/or Incident Command System (ICS) procedures as applicable.

<u>PATIENT APPROACH:</u>

- Bring all necessary equipment to the patient in order to function at your level of certification and up to the level of the ambulance service license.
- Begin assessment and care at the side of the patient; avoid delay.
- Determine if a valid MOLST order or Comfort Care/DNR Verification form is in place, and act accordingly.
- Form a general impression of patient acuity, determine patient priority, and request advanced life support (ALS) if appropriate.
- The presumption is, DO NOT allow sick or injured patients to walk or otherwise exert themselves. Use safe and proper lifts and carries with appropriate devices to extricate patients to the ambulance stretcher. Patient conditions which can be exacerbated with exertion include, but not limited to, cardiac, respiratory, neurological, trauma and those patients with abnormal vital signs. Unique circumstances and any deviations from this principle must be clearly described in the Patient Care Report (PCR) and the service must have an internal continuous quality improvement (CQI) process to review each such case.
- For patients who are minors: In an emergency, EMS personnel may assess and treat without consent of a parent or legal guardian. Consent to emergency medical care is implied. If the parent or guardian is on scene, EMS personnel must explain what assessment and care they are providing. Note that only a parent or legal guardian may refuse care for a patient who is a minor, unless the minor is emancipated in accordance with <u>Protocol 7.5 Refusal of Medical Care and Transportation.</u>
- There is no such regulatory concept as a “lift-assist call.” Under 105 CMR 170.345 of the EMS System regulations, each EMS call – including but not limited to those cases in which no treatment is provided, the patient refuses treatment and there is no transport – a PCR must be documented. When EMS is dispatched to a patient who is requesting a “lift assist,” EMS must complete and document an appropriate patient assessment on a PCR. If the patient is not transported, then an informed refusal must be documented, in accordance with <u>Protocol 7.5 Refusal of Medical Care and Transportation</u>, and included in the PCR.

Protocol Continues

Protocol Continues

ASSESSMENT AND TREATMENT PRIORITIES

- Determine unresponsiveness, absence of breathing and pulselessness; Initiate high quality CPR with minimal interruptions in chest compressions for patients found to be in cardiac arrest and in the absence of a MOLST/CC/DNR.
- Determine patient's hemodynamic stability, signs and symptoms, level of consciousness, vital signs to include airway, breathing, circulation, disabilities/differential diagnosis, exposure/ environmental (ABCDE).
- Identify/manage life threats, maintain an open airway and assist ventilations as needed.
- If basic life support (BLS) airway management is not sufficient, consider the use of advanced airway interventions as appropriate and if trained to do so.
- Administer supplemental oxygen using the appropriate delivery device, if indicated. When using a bag-valve mask (BVM) on pediatric patients, the BVM should deliver PEEP at 5 cm H_2O.
- Ventilation rates are to be titrated to goal end-tidal carbon dioxide ($ETCO_2$) recommendations. Avoid hyperoxygenation; oxygen administration should be titrated to patient condition and administered with evidence of hypoxemia, dyspnea, or an SpO2< 90%, especially in the presence of a suspected CVA/TIA or ACS.
- Use quantitative, recordable waveform capnography, for all patients with advanced airway interventions and consider its use with all respiratory compromised conditions. The capnography waveform must be recorded on all patients with endotracheal or supraglottic airways in place and clinically significant data attached to the patient care report for the receiving facility. EMTs that are properly trained and authorized, and AEMTs placing a supraglottic airway, also must use waveform capnography. In patients who are not in cardiac arrest, all efforts should be made to avoid $ETCO_2$ levels that have been shown to be detrimental and to ensure quality ventilation and oxygenation. In general this means $ETCO_2$ values should be kept between 35-45 mm Hg in these patients; specific exceptions should be discussed with online medical control.
- As soon as clinically appropriate (generally at first patient contact) and if within your scope of practice, apply the cardiac monitor and obtain a 12-lead ECG tracing.
- If within your scope of practice, obtain peripheral vascular access via intravenous (IV) or intraosseous (IO) on all patients exhibiting signs and symptoms consistent with shock or who are hemodynamically compromised, or have the potential to become compromised. For pediatric patients, a 20ml kg fluid bolus if applicable.
- When obtaining IO access in adult patients able to perceive pain, administer **lidocaine** 40 mg over two minutes, followed by a 10 mL fluid bolus over five seconds (may be administered in two separate bolus). In pediatrics, 1 mg kg of lidocaine to a maximum of 20 mg. IO may be placed in any generally accepted site for which the appropriate levels of provider are trained and properly equipped.
- Patients who may be in need of medications for conditions such as, but not limited to, nausea or pain should also have IV access established if possible to do so.
- Obtain venous blood samples according to receiving hospital policies.
- In a critical patient with no other vascular access, if trained to do so and with concurrent on-line medical control (OLMC) order (OLMC need not be contacted for a patient in cardiac arrest), Paramedics may access a Peripherally Inserted Central Catheter (PICC) line, tunneled and/or non-tunneled externally accessible central catheters, in order to administer fluids or medications.
- At a minimum, monitor and document vital signs every 15 minutes on stable patients and every 5 minutes for patients with critical conditions.
- Conduct a thorough assessment of the present illness or injury, onset, provocation, quality, radiation, severity, time (O-P-Q-R-S-T.)

Protocol Continues

Protocol Continues

ASSESSMENT AND TREATMENT PRIORITIES (Continued)

- Obtain a complete medical history; signs/symptoms, allergies, medication, past medical history, last in and out, events leading and risk factors (S-A-M-P-L-E-R)- associated symptoms pertinent negatives (ASPN)
- Obtain additional field diagnostic testing when clinically indicated, and if available; (not limited to) blood glucose, pulse oximetry, temperature, carbon monoxide, stroke scale. A service may use blood analyzer equipment in accordance with manufacturer recommendations.
- Administer medications in accordance with the specific patient condition and scope of practice.
- Contact medical control for all procedures outside the provisions of standing orders, which may include repeat doses of medications within the standing orders.
- Follow service or regional policies for all radio or communication failures.
- Contact the receiving hospital to provide a clear and concise report on the patient's condition, all interventions, findings, and estimated time of arrival to the receiving department.
- Continually reassess all patients, especially after any interventions and/or medication administration.
- EMS personnel should not begin or administer interventions that would require formal medical assessment and care if a patient is being brought to an environment where formal medical assessment and care will not be provided; for example, giving IV narcotics to a patient who is about to be left at home.
- Based on EMS assessment, a patient may qualify to be treated under multiple treatment protocols.
- Pediatric patients are defined as those patients who weigh up to 40 kg and are 14 years of age or younger unless specified in the particular protocol.

AMBULANCE STRETCHER OPERATIONS

- Operate the ambulance stretcher in accordance with your service training and manufacturer's specifications at all times.
- When moving a patient on the ambulance stretcher, adjust the height of the ambulance stretcher down from the "load position" to a safe position for travel.
- All EMTs moving the patient must keep both hands on the ambulance stretcher whenever it is in "load position" or in motion. Properly secure all patients using the required straps, including the over-the-shoulder harness, hip and leg restraining straps.
- If patient care requires the removal of any of the restraining straps, re-secure them as soon as practical to do so.
- Pediatric patients are to be transported in a properly secured child transport device/seat if spinal injury is not suspected (See Protocol 7.4 Pediatric Transport for more information.)The device must be secured to a rigid structure, such as the ambulance stretcher, not to another human body.

PATIENT CARE REPORTS AND DATA COLLECTION

- The EMS System regulations require an accurate, concise and properly documented PCR to be completed at the time of the call or as soon as practicable afterwards for all patient encounters. Pertinent data must be left at the receiving hospital at the time of transport. The regulations also require that PCRs include the minimum required data elements, as defined by the Administrative Requirement (A/R 5-403).
- EMS personnel dispatched to an EMS call in a certified ambulance of any class (Class I through V) must always complete an appropriately documented patient care report. This is required under 105 CMR 170.345 of the EMS System regulations. See last bullet under Patient Approach, above.
- Clinically relevant data must be conveyed to an appropriate clinical representative of the receiving institution before leaving the receiving facility, ideally using a structured hand-off method.

Protocol Continues

Protocol Continues

PATIENT CARE REPORTS AND DATA COLLECTION (CONT.)

- All patient care reports must include clinically relevant ECG monitoring tracings, 12-lead tracings, and waveform capnography tracings when obtained.
- Additional data elements may be collected as per the protocols or at the request of the Affiliate Hospital Medical Director. This data may pertain to, but is not limited to, trauma, cardiac arrest, stroke and infectious disease processes.

MEDICATION USE AND STORAGE

- Medications may be administered in divided doses up to the maximum dose noted in a protocol. Some medications have a weight-based dose maximum; divided doses up to that patient's maximum weight-based dose are permitted.
- Securely maintain and store all medications and fluids at the appropriate temperatures as designated by manufacturer's recommendations and in accordance with all Drug Control Program regulations.
- Pharmaceutical shortages and supply chain issues have become more frequent. Whenever a medication is temporarily not obtainable in typical dosage forms as called for in the Statewide Treatment Protocols, or in any form, substitute concentrations and substitute medications may be used, in accordance with Advisory 22-08-01. All such temporary substitutions must be approved by the service's affiliate hospital medical director and affiliate hospital's pharmacy director, with a date of expiration for the temporary substitution authorized, and meeting all other requirements of this Advisory.
- All EMS personnel and ambulance services must adhere to all advisories, memos and administrative requirements issued by the Department.
- IV pumps are the preferred method of administering vasoactive medications. **Norepinephrine and epinephrine** infusions must be administered via pump. If an ambulance does not have an infusion pump, consult medical control for preferred alternatives such as a fluid bolus or **Dopamine** administration. Paramedics with the equipment and training may begin using pumps immediately. Dopamine may be used until the pump is available.

EXCEPTION PRINCIPLE OF THE PROTOCOLS

- The Statewide Treatment Protocols reflect the current state of out-of-hospital *emergency medical care*, as such, should serve as the basis for EMS treatment.
- On occasion, good medical practice and the needs of patient care may require deviations from these protocols, as no protocol can anticipate every clinical situation. In those circumstances, EMS personnel deviating from the protocols should only take such actions as allowed by their training **and** only in conjunction with their on-line medical control physician.
- Any such deviations must be reviewed by the appropriate local medical director, but for regulatory purposes are considered to be appropriate actions, and therefore within the scope of the protocols, unless determined otherwise on Department review by the State EMS Medical Director.
- The Exception Principle applies only to exceptions from the Statewide Treatment Protocols, for real-time care of a specific individual patient. It does NOT apply to exceptions from the EMS statue, and regulations; Department approved point-of-entry plans, Administrative Requirements and Advisories. It does NOT apply to operational issues, such as ambulance staffing, or deployment, equipment failures, lack of par levels of medications; or transport decisions deviating from the EMS regulations or point-of-entry plan requirements. These are outside the authority of medical control.

ADVANCED AIRWAY CONFIRMATION

- Advanced EMT and Paramedic treatment protocols require that EMTs provide advanced airway management when BLS airway management is not sufficient, and is clinically indicated. Specific training and airway adjuncts are necessary and require training in accordance with scope of practice and service specific devices.
- Endotracheal tube insertion and supraglottic airway (SGA) devices are commonly used in patients that require advanced airway management. Airway devices must be secured, with depth noted as appropriate.
- In cardiac arrest only, EMTs at the basic level of certification may consider inserting a supraglottic airway when basic airway maneuvers are not sufficient. To do so EMTs must have completed skill specific training in SGA and in the use of airway adjuncts, including waveform capnography, in accordance with scope of practice and service specific devices.
- All Paramedics must be able to insert NGT/OGT for those unconscious post-intubation patients who need gastric decompression.

Protocol Continues

Protocol Continues

ADVANCED AIRWAY CONFIRMATION (Continued)

The standard of care requires specific methods of verification to be used including capnography and at least two of the following; auscultation, visualization of the chords, the presence of condensation, and other clinical signs that the advanced airway is positioned correctly.

Documentation on the PCR must include at least three evidence based methods of verification of advanced airway placement (For paramedics, one being recorded capnography) and must include at least three separate times in which verification was completed, including verification of tube placement at the time of arrival at the receiving department and staff.

For patients under 12 years old, the airway is in most cases best managed with the insertion of an appropriately sized oropharyngeal airway (OPA) with BVM ventilation with PEEP at 5 cm H2O or a SGA. In some cases, intubation may be preferred when other airway management methods are insufficient. This is at the discretion of the treating paramedic.

TRANSPORT DECISION

- Transport to the nearest appropriate health care facility as defined in EMS regulations. In rare circumstances, delayed transport may occur when treatment cannot be performed during transport.
- Request and use available advanced life support (ALS) – Paramedic resources in accordance with these protocols. Initiate transport as soon as possible, with or without ALS.
- EMS personnel shall make decisions about the destination hospital in accordance with the EMS System regulations and Department-approved point-of-entry (POE) plans.
- There are currently Department-approved condition-specific POE plans for trauma, stroke and STEMI, as well as a POE based on a patient's specific other condition or need, not covered in the specific POE plans. Department-approved regional POE plans for trauma; stroke and STEMI identify specific hospitals to be used. EMS personnel must be aware of all these POE plans affecting his/her service when choosing the appropriate hospital destination. EMS personnel should call on-line Medical Control (OLMC) if they have a question about POE.
- A patient who is in cardiac arrest, cannot be oxygenated or ventilated, or is otherwise critically unstable due to issues not amenable to EMS intervention, should be transported to the closest appropriate hospital in accordance with the EMS System regulations and Department-approved POE.
- Notify receiving facility as early as possible on a recorded phone line or recorded radio.
- The use of lights and sirens should be justified by the need for immediate medical intervention that is beyond the capabilities of the ambulance crew using available supplies and equipment.
- Hospital diversion of EMS traffic is not permitted in Massachusetts. Hospitals may only refuse an ambulance if they are completely closed to all patients including walk-in patients (see Department's "Code Black" Memorandum, issued October 16, 2020: (https://www.mass.gov/lists/emergency-department-circular-letters.) Under this "Code Black" Memorandum, hospitals are required to notify EMS in the event of certain services being unavailable, and EMS may take that unavailability into account when deciding on "nearest appropriate" health care facility.
- Unavailable Service Notification is defined in the Memorandum as a communication by a hospital to ambulance services of a temporary change in the Emergency Department capabilities. An unavailable service notification should be communicated to ambulance services if and only if any of the following operational conditions exist, closure of the operating room, lack of CT scan services, and closure of interventional cardiac catheterization lab.

CONTINUOUS QUALITY IMPROVEMENT (CQI)

- The Department's Hospital Licensure regulations for medical control service (105 CMR 130.1501-1504) require that hospital physicians providing medical direction must be knowledgeable in the communication system and its usage and must know the Statewide Treatment Protocols for each level of EMT.
- Medical directors for ambulance services must take an active role in reviewing clinical performance and competency of its EMTs at all levels in the delivery of patient care and in overseeing and conducting the ambulance service's CQI process.
- Ambulance services with their affiliate hospital medical director (AHMD) must develop and implement a comprehensive and dynamic CQI program in accordance with the ambulance service's affiliation agreement.
- An ambulance service that has AHMD approval to use certain optional diagnostic and treatment modalities must do so in accordance with Section 6: Medical Director Options and its program specific CQI requirements. The AHMD is responsible for overseeing of such programs and ensuring the ambulance service meets the CQI requirements and the Department data reporting requirements.

High Quality CPR - Adult 1.1

- Only for arrests of cardiac etiology. For primary respiratory etiology, ventilate immediately as part of CPR.
- Follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) recommendations for cardiac arrest management.

FIRST RESPONDER STANDING ORDERS

FR

- 1.0 Routine Patient Care -with focus on high quality CPR
- Immediate chest compressions at a rate of 100-120 per minute
- Use AED as soon as possible with minimal interruption of chest compressions
- Continue uninterrupted chest compressions followed by AED analysis, as per most recent AHA/ILCOR recommendations.
- Place an oral or nasal airway, when appropriate to do so.
- Ventilation / oxygenation options, as per most recent AHA/ILCOR recommendations.

EMT STANDING ORDERS

E

- After 4 cycles of HQCPR, (8 minutes) if trained and authorized, consider placement of a supraglottic airway (SGA) device.
- While resuscitation is ongoing, assess if the patient is tolerating the SGA well, by evidence of waveform capnography, good chest rise, bilateral breath sounds, and improved oxygenation. **Do not** stop or delay resuscitation to assess SGA; if in doubt, remove and continue with BVM ventilations.

ADVANCED EMT STANDING ORDERS

A

- Place IV/IO without interrupting chest compressions

PEARLS:

- It is expected, unless special circumstances are present, initial 8 minutes of resuscitation will be performed on scene.
- Early CPR and defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Recognizing the goal of immediate uninterrupted chest compressions, consider delaying application of mechanical CPR devices until after the first four cycles (8 minutes). If applied during the first 4 cycles, the goal is to limit interruptions. Mechanical devices should only be used by services that are practiced and skilled at their application.
- Switch compressors frequently to minimize fatigue.
- Hover hands over the chest: Compress when charging and resume compressions immediately after the shock is delivered.

Protocol Continues

Protocol Continues

PARAMEDIC STANDING ORDERS

P

- Monitor quantitative waveform capnography throughout resuscitation to assess CPR quality and to monitor for signs of a return of spontaneous circulation (ROSC.)
- Provide manual defibrillation as indicated, as per AHA/ILCOR.
- Consider an advanced airway such as an endotracheal intubation or alternative airway. without interrupting chest compressions.
  In accordance with protocol 6.8 Automated Transport Ventilators(ATV), Paramedics may use ATV in rate control mode with the following settings:
  Rate of 8-12 breaths per minute
  Tidal volume 300-500mL
- Start at FiO_2 1.0 (100%) then titrate to maintain SpO_2 > 94% (90% for COPD patients)
- Relief pressure should be at 45-60 cm H_2O

NOTE:
Paramedics may utilize an ATV following the initiation of the respiratory component of HQCPR at least 8 minutes after the start of resuscitation even if ROSC has occurred

Protocol Continues

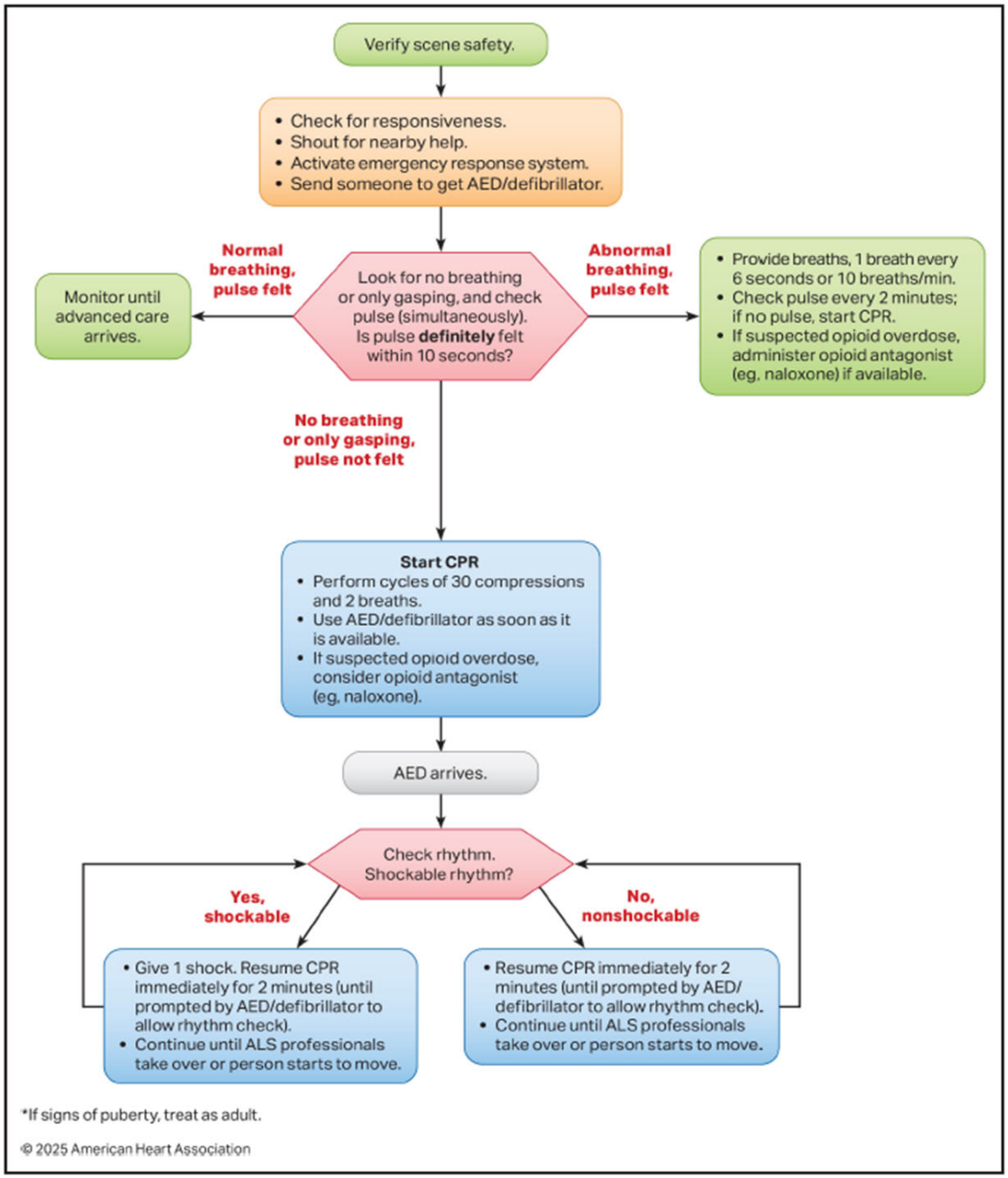


Figure 1. Adult Basic Life Support Algorithm for Health Care Professionals.
AED indicates automated external defibrillator; ALS, advanced life support; and CPR, cardiopulmonary resuscitation.

Reference: AHA/ILCOR released October 21, 2025

SECTION 2:

MEDICAL PROTOCOLS

Statewide Treatment Protocols
Version 2026.1

2.1 Adrenal Insufficiency/Adrenal Crisis Adult & Pediatric

Medical Protocol 2.1

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- 1.0 Routine Patient Care.
- Identify and treat the underlying condition.
- Consider paramedic intercept.

ADVANCED EMT STANDING ORDERS - ADULT & PEDIATRIC

A

- Obtain vascular access, if appropriate.

PARAMEDIC STANDING ORDER – ADULT & PEDIATRIC

P

Stress Dose:

- Adult: History of adrenal insufficiency; administer **hydrocortisone** 100 mg IV/IO/IM or **methylprednisolone** 125 mg IV/IO/IM.
- Pediatric: History of adrenal insufficiency; administer **hydrocortisone** 2 mg/kg, to a maximum of 100 mg IV/IM/IO or **methylprednisolone** 2 mg/kg to a maximum dose of 125 mg IV/IM/IO.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- In patients who continue demonstrating the following signs and symptoms, consult medical control for repeat stress dose orders:
  - Nausea, vomiting, weakness, dizziness, abdominal pain, muscle pain, dehydration, hypotension, tachycardia, fever, mental status changes.
- Additional Considerations:
  - Aggressive volume replacement therapy.
  - Treat other conditions according to specific protocols.
  - Normalize body temperature.

Adrenal insufficiency results when the body does not produce the essential life-sustaining hormones cortisol and aldosterone, which are vital to maintaining blood pressure, cardiac contractility, water, and salt balance.

Chronic adrenal insufficiency can be caused by a number of conditions:

- Congenital or acquired disorders of the adrenal gland.
- Congenital or acquired disorders of the pituitary gland.
- Regular use of steroids (COPD, asthma, rheumatoid arthritis, and transplant patients).

Patients who are taking chronic anti-inflammatory steroids, and then get acutely ill or injured, may suffer refractory shock unless treated with stress dose **hydrocortisone or methylpredisone.**

A "stress dose" of **hydrocortisone or methylpredisone** should be given to patients with known chronic adrenal insufficiency who have the following illnesses/injuries:

- Shock (any cause).
- Fever >100.4°F and ill-appearing.
- Multi-system trauma.
- Drowning.
- Environmental hyperthermia or hypothermia.
- Multiple long-bone fractures.
- Vomiting/diarrhea accompanied by dehydration.
- Respiratory distress.
- 2nd or 3rd degree burns >5% BSA.
- Hypoglycemia.

Allergic Reaction/Anaphylaxis Adult

2.2A

NOTE:
Mild Distress is defined by itching, urticaria, nausea, and no respiratory distress.
Severe Distress is defined by stridor, bronchospasm, severe abdominal pain, respiratory distress, tachycardia, shock, and/or edema of lips, tongue or face.

FIRST RESPONDER

FR

- 1.0 Routine Patient Care

Mild Distress

- Monitor for severe distress.

Severe Distress

- If the patient is under 65 yrs administer **epinephrine** auto injector 0.3 mg IM.

EMT/ADVANCED EMT STANDING ORDERS

E / A

Mild Distress

- Diphenhydramine 25-50 mg by liquid or oral tablets/capsule

Severe Distress

- If available, administer **epinephrine** / surfactant nasal preparation;
  For patients >30 kg, 1-spray of the 2mg preparation, as per manufacturer's instructions.
- If the first dose of **epinephrine** via nasal spray does not significantly improve anaphylaxis symptoms within 5 minutes, all subsequent **epinephrine** doses **MUST BE** via IM injection.
- Administer a dose of IM **epinephrine, either first or second dose,** by auto injector or check and inject, 0.3mg IM (0.3 ml of a 1mg/ml solution) A subsequent **epinephrine** dose may be administered in 5 minutes if signs and symptoms persist. (to a total of 3 doses)
- In the presence of wheezing, administer Albuterol 2.5mg via nebulizer; repeat every 5 minutes up to a total of 3 doses.

MEDICAL CONTROL MAY ORDER

- FRs, EMTs, Advanced EMTs and Paramedics must consult Medical Control for patients over 65 yrs of age.

PARAMEDIC STANDING ORDERS

P

- **Hydrocortisone** 100 mg IV/IO/IM, or **methylprednisolone** 125 mg IV/IO/IM.
- **If 3-doses of IM epinephrine is not effective, administer epinephrine infusion at a rate of 10-50 mcg/min by infusion pump ONLY, mixed based on your formulary/pump library.**

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Epinephrine** infusion – 10-50 mcg/min IV/IO, administration by infusion pump ONLY, mixed based on your formulary/pump library.
- **Norepinephrine** - 0.1- 0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY, titrate to goal systolic blood pressure of 90 mm Hg.
- **Dopamine** infusion - 2-20 mcg/kg/min IV/IO

2.2P Allergic Reaction/Anaphylaxis Pediatric

Clinical Criteria for Anaphylaxis:
If **one** of these criteria is fulfilled, treat for anaphylaxis with nasal or IM **epinephrine**.

1. Acute onset of skin or mucosal involvement with at least one of the following:
   a. Respiratory compromise
   b. Decreased SBP or evidence of end-organ hypoperfusion
2. Two or more of these occurring rapidly after exposure to a likely antigen:
   a. Skin or mucosal involvement
   b. Respiratory compromise
   c. Decreased SBP or evidence of end-organ hypoperfusion
   d. Persistent GI symptoms
3. Decreased BP after exposure to a known allergen for that patient

FIRST RESPONDER

FR

- 1.0 Routine Patient Care
- In anaphylaxis, if patient is over 6 months of age and under 25 kg, administer **epinephrine** 0.15 mg via IM auto-injector. If body weight is over 25 kg, administer **epinephrine** 0.3 mg via auto-injector IM.

EMT/ADVANCED EMT STANDING ORDERS

E/A

Mild Distress

- **Diphenhydramine** 1 mg/kg for patients 2 years or older up to max. single dose of 50 mg, preferably by liquid measured dose, if age appropriate by oral tablets dose.

Severe Distress

- If available, administer **epinephrine** / surfactant nasal preparation;
  For patients < 30 kg,1-spray of the 1mg nasal preparation; For the pediatric patient greater than 30 kg, 1-spray of the 2mg nasal preparation, as per manufacturer's instructions.
- If the first dose of **epinephrine** is via nasal spray, and does not significantly improve anaphylaxis symptoms within 5 minutes, the second **epinephrine** dose **MUST BE** via IM injection.
- Administer a dose of IM **epinephrine, either first or second dose,** by auto injector or check and inject, 0.15 mg IM. A subsequent **epinephrine** dose may be administered in 5 minutes if signs and symptoms persist (to a total of 3 doses.)
- In the presence of respiratory distress, administer Albuterol, up to 3 doses;
  If age is less than 2 years, 1.25 mg by nebulizer
  If age is 2 years or greater, 2.5-3 mg by nebulizer

MEDICAL CONTROL MAY ORDER

- FRs, EMTs, Advanced EMTs and Paramedics must consult with Medical Control prior to administration of **epinephrine** when a patient is under 6-months of age.

PARAMEDIC STANDING ORDERS

P

- Consider administering **hydrocortisone** 2 mg/kg to max. 100 mg IV/IO/IM, or **methylprednisolone** 2 mg/kg to max. 125 mg IV/IO/IM

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Epinephrine** infusion 0.1-1 mcg/kg/min IV/IO, administration by infusion pump ONLY,mixed based on your formulary/pump library.

CAUTION: For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

Altered Mental/Neurological Status/Diabetic Emergencies/Coma - Adult

2.3A

EMT STANDING ORDERS

- 1.0 Routine Patient Care
- If patient is unconscious or seizing, transport on left side (recovery position).
- **Glucose** or **glucagon** are indicated only for documented hypoglycemia. Obtain a blood glucose reading.
  - If glucose is known to be **less than 70** mg/dL and the patient is conscious and can speak and swallow, administer oral glucose or other sugar source as tolerated.
  - **Oral glucose.** One dose is one tube.
    - Other sugar sources are acceptable.
  - A second dose may be necessary after 10 minutes if patient remains symptomatic.

IF the patient is unconscious or unable to safely swallow and IF trained and authorized under Protocol 6.3 Glucagon for Hypoglycemia by EMT Basic**:**

- **Glucagon** 1mg IM/IN
  - Recheck glucose 15 minutes after administration of glucagon.
  - May repeat **glucagon** 1 mg IM/IN if glucose level is <70 mg/dL with continued altered mental status.

E

ADVANCED EMT/PARAMEDIC STANDING ORDERS

- For HYPOglycemic emergency:
  - **Dextrose** 12.5 grams IV/IO. Recheck glucose 5 minutes after administration of **dextrose**.
    - May repeat **dextrose** up to 25 grams IV/IO if glucose level is <70 mg/dL with continued altered mental status.
  - **Glucagon** 1 mg IV/IO/IM/IN if unable to establish IV access
    - Recheck glucose 15 minutes after administration of glucagon.
    - May repeat **glucagon** 1 mg IV/IO/IM/IN if glucose level is <70 mg/dL with continued altered mental status.
- For HYPERglycemic emergency:
  - Administer 500 mL fluid bolus, then 250 ml/hr.

A/P

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

CAUTION: If cerebrovascular accident is suspected, follow Protocol 2.18 Stroke and notify Medical Control.

***Hypoglycemic Emergency**:

- **Glucose** <70 mg/dL with associated altered mental status.
- Causes of hypoglycemia include medication misuse or overdose, missed meal, infection, cardiovascular insults (e.g., myocardial infarction, arrhythmia), or changes in activity (e.g., exercise).
- **Sulfonylureas** (e.g., glyburide, glipizide) have long half-lives ranging from 12-60 hours. Patients with corrected hypoglycemia who are taking these agents are at particular risk for recurrent symptoms and frequently require hospital admission.

****Hyperglycemic Emergency**:

- **Glucose** > 300 mg/dL with associated altered mental status.

Dextrose may be administered in any concentration (D10, D25, D50), as long as the correct dose is given.

2.3P Altered Mental/Neurological Status/Diabetic Emergencies/Coma – Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- If patient is unconscious or seizing, transport on left side (recovery position).
- Glucose is indicated only for documented **HYPOglycemia**. Obtain a blood glucose reading.
  - If glucose is known to be **less than 70** mg/dL and the patient is conscious and can speak and swallow, administer oral glucose or other sugar source as tolerated.
  - If patient <20 kg (44 lbs), **oral glucose** ½ tube PO
  - If patient >20 kg (44 lbs), **oral glucose** 1 tube PO
    - Other sugar sources are acceptable.
- A second dose may be necessary after 10 minutes if patient remains symptomatic.

IF the Patient is unconscious or unable to safely swallow and IF trained and authorized under Protocol 6.3 Glucagon for Hypoglycemia by EMT Basic**:**

- If patient <20 kg (44 lbs), **glucagon** 0.5 mg IM/IN
- If patient >20 kg (44 lbs), **glucagon** 1 mg IM/IN
  - Recheck glucose level 15 minutes after administration of **glucagon**
- May repeat **glucagon** (dose above) once if glucose level is <70 mg/dL with continued altered mental status.

ADVANCED EMT STANDING ORDERS

A

- **Treatment for specific etiologies, or coma of unknown etiology:**
  - **Known HYPOglycemia (glucose <70 mg/dL):**
    - **Dextrose** 10% 0.5 grams/kg IV/IO.
    - **Glucagon** 0.1 mg/kg IV/IO/IM/IN up to max of 1 mg
    - May repeat **glucagon** once if glucose level is <70 mg/dL with continued altered mental status
  - **Known HYPERglycemia**
    - Administer 10 mL/kg fluid bolus.

PARAMEDIC STANDING ORDERS

P

- For patients with confirmed adrenal insufficiency, see Protocol 2.1 Adrenal Insufficiency Adult/Pediatric.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

1.0 Routine Patient Care, followed by:

1. One EMT should manage the patient while the other handles scene control, but no EMT or First Responder should be left alone with the patient.
2. Avoid areas/patients with potential weapons (e.g., kitchen, workshop), and avoid areas with only a single exit; do not allow patient to block exit.
3. Keep environment calm by reducing stimuli (may need to ask family/friends to leave room, ask patient to turn off music/TV). Transport in a non-emergent mode unless the patient's condition requires lights and sirens.
4. Respect the dignity and privacy of the patient.
5. Make eye contact when speaking to the patient.
6. Speak calmly and in a non-judgmental manner; do not make sudden movements.
7. Maintain non-threatening body language (hands in front of your body, below your chest, palms out and slightly to the sides).
8. Establish expectations for acceptable behavior, if necessary.
9. Ask permission to touch the patient before taking vital signs, and explain what you are doing.
10. Assess the patient to the extent that they allow without increasing agitation, maintain a safe distance from a violent patient.
11. Stop talking with patient if they demonstrate increased agitation; allow time for them to calm down before attempting to discuss options again.
12. Provide reassurance by acknowledging the crisis and validating the patient's feelings and concerns; use positive feedback, not minimization.
13. Determine risk to self and others ("Are you thinking about hurting or killing yourself or others?").
14. Encourage patient to cooperatively accept medication in the form of oral disintegrating tablets (ODT). Transport to the hospital for a psychiatric evaluation and treatment.
15. Consider asking friends/relatives on scene to encourage patient to accept transport, if needed; but only if they are not a source of agitation.
16. Ask law enforcement or on-line Medical Control to complete a Massachusetts Department of Mental Health (MDMH) Section 12 application for uncooperative patients who acknowledge intent to self-harm or harm others, but do not delay transport in the absence of this document.
17. Use restraints in accordance with Protocol 2.5 Behavioral Emergencies: Restraint if de-escalation strategy fails and the patient is a danger to him/herself or others.

Acute risk factors for violence include:

- Male gender
- Homicidal or violent intent or plans
- Intoxication or recent substance use
- Actions taken on plans/threats
- Unconcerned with consequences
- No alternatives to violence seen
- Intense fear, anger, or aggressive speech/behavior
- Specified victim (consider proximity, likelihood of provocation)

Protocol Continues

Behavioral Emergencies Adult & Pediatric

Protocol Continued

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- Position patient to ensure breathing is not impaired, especially if in soft extremity restraints.
- If trained and authorized, under Protocol 6.9 Oral Antipsychotics administer **olanzapine** 10 mg ODT; or **risperidone** 2 mg ODT

PARAMEDIC STANDING ORDERS

P

ADULT STANDING ORDERS

- **Haloperidol** 5 mg IM ONLY; and/or
- **Midazolam** 5 mg IV/IO/IM and/or 10 mg IN
- **Ketamine** 4 mg kg IM ONLY, to a maximum dose of 400 mg IM ONLY, as a single dose.

NOTE: In patients >70 years of age, limit medication to half these doses.

PEDIATRIC STANDING ORDERS

- **Midazolam** 0.1 mg kg IV/IO/IM/IN, to maximum dose of 6 mg.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

Haloperidol is preferable for psychotic patients; but do not administer to patients with a history of seizures or prolonged QT intervals.

Haloperidol should be administered by **INTRAMUSCULAR** injection ONLY

Behavioral Emergencies: Restraint Adult & Pediatric

2.5

OVERVIEW

In accordance with M.G.L. c. 111C, §18, the following guidelines may be followed to restrain a patient only when the patient presents an immediate or serious threat of bodily harm to him/herself or others.

Adults (or emancipated minors as defined in A/R 5-610) who are competent with the functional capacity to understand the nature and effects of their actions and/or decisions have the right to refuse treatment and/or transport. Do not restrain these individuals.

Procedures:

1. Follow Protocol 2.4 Behavioral Emergencies.
2. Use the least restrictive method that assures the safety of the patient and others.
3. Use only soft restraints (leather restraints only if made with soft padding inside).
4. Remind law enforcement that for ambulance transport, patients who are handcuffed must be handcuffed in front (not behind) or to the stretcher and the key must be readily available for removal; if needed.
5. Apply restraints in a way that allows for airway, breathing, and circulation assessment.
6. Never restrain a patient in a prone position or use equipment that forms a "sandwich" around the patient.
7. Have a minimum of four (4) trained personnel coordinate the restraint effort and consider involving parents if patient is a child.
8. Secure the patient so that major sets of muscle groups cannot be used together, restraining the lower extremities to the stretcher first around the ankles and across the thighs with soft restraints and stretcher straps.
9. Restrain the patient's torso and upper extremities with one arm up and one arm down with soft restraints and stretcher straps; do not impair circulation.
10. Consider cervical-spine immobilization to minimize violent head/body movements.
11. Pad under patient's head to prevent self-harm.
12. If the patient has been secure to a backboard or scoop stretcher, remove and secure to the ambulance stretcher.
13. Transport OB patients in a semi-reclining or left lateral position.
14. Monitor/record vital signs every 5 minutes, ensuring patient's airway remains clear.
15. Consider placing a non-rebreather mask (use only at 15 lpm) or a face mask (NOT a P100/N95) on the spitting patient's face.
16. Unless necessary for patient treatment, do not remove restraints until care is transferred at the receiving facility or condition has changes to necessitate removal.
17. Notify receiving facility and tell them that patient is restrained.
18. Document restraint use details in the patient care report, including:
    a. reason for restraint use
    b. time of application
    c. type(s) of restraints used, in addition to cot straps
    d. patient position
    e. neurovascular evaluation of extremities
    f. issues encountered during transport
    g. other treatment rendered
    h. police and/or other agency assistance

E/A/P

2.6A Bronchospasm/Respiratory Distress- Adult

Medical Protocol 2.6A

EMT/ADVANCED EMT STANDING ORDERS

1.0 Routine Patient Care

E / A

- If the patient has not taken the prescribed maximum dose of their own metered dose inhaler (MDI) prior to the arrival of EMS, AND the inhaler is present:
- Encourage and/or assist patient to self-administer their own prescribed inhaler medication if indicated or if not already done. If the patient is unable to self administer their prescribed inhaler, administer patient's prescribed inhaler.
- Initiate ALS intercept early and confirm its availability.
- **Albuterol** 2.5-3 mg via nebulizer. **Ipratropium Bromide** 500 mcg may be combined with the **albuterol** treatment**.** Additional **albuterol** treatments may be administered as necessary with or without **ipratropium bromide** to a maximum of 3 doses.

NOTE: a multi-dose inhaler may be used to give albuterol or ipratropium (instead of nebulizer) if infection control is an issue (e.g. influenza like illness.)

- Initiate BiPAP/CPAP generally at a PEEP of 5 cm H_2O, if not contraindicated with nebulizer therapy, as indicated.
- **Epinephrine** 0.3mg (0.3 ml of 1mg/ml) IM via autoinjector or check and inject as a one time dose.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications, if prescribed to patient or authorized, and if maximum dose has not been administered.

PARAMEDIC STANDING ORDERS

P

- In a patient with a known diagnosis of asthma or COPD, who *does not have* history or findings concerning for congestive heart failure, consider **hydrocortisone** 100 mg IV/ IO/IM or **methylprednisolone** 125 mg IV/IO/IM.
- For Asthma only, consider **magnesium sulfate** 2-4 grams IV/IO over 20 minutes**.**

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Epinephrine** 0.1-0.5 mg IV/IO (1ml – 5ml of a 0.1mg/ml solution) very slowly.

NOTE: Not all wheezing is caused by asthma/COPD. Caution should be exercised when administering bronchodilators to a patient meeting the assistive bronchodilator inclusion criteria with a history of congestive heart failure (CHF) or presenting with signs / symptoms indicative of heart failure, as this patient may present with lung sounds that mimic asthma ("cardiac wheeze"). Clinicians are encouraged to consult Medical Control when confronted with such a patient.

CAUTION: **EMT-B and AEMT administration of an inhaler is CONTRAINDICATED, if** the maximum dose has been administered prior to the arrival of the EMT and/or the patient cannot physically use the device properly (patient cannot receive inhalation properly.)

CAUTION: The use of **epinephrine** in patients over the age of 40 or with known cardiac disease and patients who have already taken high dosage of inhalant bronchodilator medications may result in cardiac complications.

Bronchospasm/Respiratory Distress- Pediatric

2.6P

Mild distress in children is indicated by a slight increase in work of breathing while maintaining good air exchange, with no evidence of cyanosis, change in mental status, and no intercostal retractions.

Severe distress in children is evidenced by poor air entry, extreme use of accessory muscles, nasal flaring, grunting, cyanosis and/or altered mental status (weak cry, somnolence, irritability, poor responsiveness). **REMEMBER:** Severe bronchospasm may present without wheezes, if there is minimal air movement.

Respiratory Distress is defined as inadequate breathing in terms of rate, rhythm, quality and/or depth of breathing. Children who are breathing too fast or slow, or in an abnormal pattern or manner, may not be receiving enough oxygen to support bodily functions and may allow an increase in carbon dioxide to dangerous levels. Cyanosis is usually a late sign and requires immediate treatment.

Criteria for epinephrine via autoinjector or check and inject (1mg/ml solution) administration:

- Age greater than or equal to 6 months, **AND**
- Known history of asthma or reactive airway disease or bronchospasm or bronchodilators prescribed, **AND**
- Patient in respiratory arrest or approaching respiratory arrest (requiring BVM), **AND**
- Oxygen saturation less than 92% despite supplemental oxygen or unmeasurable.

EMT/ADVANCED EMT STANDING ORDERS

- 1.0 Routine Patient Care

Mild Distress

The following may be considered if the patient has not taken the prescribed maximum dose of their own inhaler prior to the arrival of EMS: and the inhaler is present:

- Encourage and/or assist patient to self-administer their own prescribed inhaler medication if indicated or if not already done.
- If patient is unable to self-administer their prescribed inhaler, administer patient's prescribed inhaler.
- Reassess vital signs.

E / A

Severe Distress

- Initiate ALS intercept as soon as possible and confirmed its availability.
- Treat bronchospasm in known Asthmatics, and confirmed Reactive Airway Disease (Asthma/ COPD), in accordance with the flowchart below, with:
  - For a patient between 6 months and 2 years of age,
    - **Albuterol** 1.25 mg in 3 ml normal saline, with or without **ipratropium bromide** 250 mcg via nebulizer, x1 dose.
  - For a patient older than 2 years of age,
    - **Albuterol** 2.5-3 mg in 3 ml normal saline, with or without **ipratropium bromide** 500 mcg via nebulizer, x1 dose.
  - If patient is over 6 months age and under 25 kg, administer **epinephrine** 0.15 mg via auto-injector or check and inject (0.15ml of a 1mg/ml solution.) If body weight is over 25 kg, administer **epinephrine** 0.3 mg via auto-injector or check and inject (0.3ml of a 1mg/ml solution.)
  - Initiate BiPAP/CPAP as trained, generally with a PEEP of 5 cm H_2O, with nebulized **albuterol** and/or **ipratropium bromide**.

MEDICAL CONTROL MAY ORDER

- Medical Control is required for a second dose of epnephrine.
- Additional doses of above medications, if prescribed to patient or authorized, and if maximum dose has not been administered.

Protocol Continues

2.6P Bronchospasm/Respiratory Distress- Pediatric

Protocol Continued

PARAMEDIC STANDING ORDERS

P

- For a child age 2 years old or more who has a known diagnosis of asthma, consider: **hydrocortisone** 2 mg kg to max. 100 mg IV/IO/IM; or **methylprednisolone** 2 mg kg to max. 125 mg IV/IO/IM.
- Consider **magnesium sulfate** 25 mg kg IV/IO over 10 min. (maximum dose 2 grams).

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

Hyperthermia (Environmental) Adult & Pediatric

2.7

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Provide rapid cooling as soon as possible, without interruption if possible Best methods are typically tub immersion in ice water, or placement in a body bag or tarp up to the neck with ice and water within the bag or tarp.
- If rectal thermometer is available, cool down to 39 °C or 102.2 °F
- If no better cooling options are available, move patient to a cool area, apply ice packs to groin and axillae, ensure air circulation, keep skin moist and transport.
- For Heat Cramps and/or Heat Exhaustion: administer water or oral re-hydration-electrolyte solution if patient is alert and has a normal gag reflex and can swallow easily. Elevate legs of supine patient with heat exhaustion.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Consider 500 mL fluid bolus for dehydration even if vital signs are normal. **Pediatrics**: 20 mL kg bolus, if indicated.

For **exertional environmental** hyperthermia at events with cooling means and thermometry on-site, it is appropriate to **cool the patient in place for 20-minutes**. Immediate transportation of the hyperthermic patient should only be done if unable to adequately cool the patient, or after adequate cooling has been verified by a core temperature, or if there is a medical need for immediate hospital care.

2.8 Hypothermia (Environmental) Adult & Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Avoid rough movement and prevent further heat loss:
  - Insulate from the ground and shield from wind/water
  - Move to a warm environment as soon as practical
  - Remove any wet clothing
  - Cover with warm blankets, particularly the head
- Determine patient's hemodynamic status: Assess pulse and respiratory rates for a period of 60 seconds to determine pulselessness or profound asystole, for which CPR would be required.
- If patient is in cardiopulmonary arrest, manage per Protocol 3.4A/P Cardiac Arrest -Asystole/Pulseless Electrical Activity and 3.5A/P Cardiac Arrest- Ventricular Fibrillation/Pulseless Ventricular Tachycardia.
  - Initiate CPR and administer oxygen using appropriate oxygen delivery device, as clinically indicated.
  - Use AED according to the guidelines or as otherwise noted in these Protocols and other advisories.
- Whenever possible, use warmed, humidified oxygen (104 °F – 107 °F, 40 °C – 42 °C) by non-rebreather mask, during resuscitation procedures for hypothermic patients.
- Manage hypoglycemia per Protocol 2.3A Altered Mental/Neurological Status/ Diabetic Emergencies/Coma - Adult and narcotic overdose per Protocol 2.14 Poisoning/Substance Abuse/Overdose/Toxicology – Adult & Pediatric.

ADVANCED EMT STANDING ORDERS

A

- Warm IV Fluids should be used.

PARAMEDIC STANDING ORDERS

P

- If pulse and breathing are absent, treat per Cardiac Arrest Protocols.
- If available and tolerated, insert esophageal temperature probe and measure core temperature.

CAUTION: Do NOT administer anything orally if patient does not have a reasonable level of consciousness and normal gag reflex.

CAUTION: Do NOT massage extremities in an attempt to actively rewarm the patient.

Nerve Agents Organophosphate Poisoning – Adult & Pediatric

2.9

FIRST RESPONDER/EMT/ADVANCED EMT STANDING ORDERS

FR/E/A

- 1.0 Routine Patient Care
- Assess for SLUDGEM (Salivation, Lacrimation, Urination, Defecation, Gastric upset, Emesis, Muscle twitching/miosis (constricted pupils)) and KILLER Bs (Bradycardia, Bronchorrhea, Bronchospasm.)
- Remove to cold zone after decontamination and monitor for symptoms.
- Antidotal therapy should be started as soon as symptoms appear.
- All antidote auto-injections must be administered IM.

Determine dosing according to the symptom assessment and guidelines table within this protocol.

PARAMEDIC STANDING ORDERS

P

- If field conditions permit, initiate cardiac monitoring and consider the administration of IV medications.
- If symptoms persist after the administration of 3 DuoDote kits:
  - Atropine 2 mg IV/IO; repeat every 5 minutes until secretions clear
  - Pralidoxime 1 – 2 grams IV/IO over 30 – 60 minutes
  - Diazepam 10 mg IM by auto-injector every 10 minutes, as needed.
    Instead of diazepam, may use :
    - Midazolam 5 mg IV/IO/IM every 5 minutes; or 10 mg IN every 10 minutes as needed.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Pralidoxime** maintenance infusion: up to 500 mg per hour (maximum of 12 grams/day).

Protocol Continues

2.9 Nerve Agents Organophosphate Poisoning – Adult & Pediatric

Protocol Continues

Severity	Cholinergic AGENT Signs & Symptoms	ADULT TREATMENT STANDING ORDERS
MILD	• Runny Nose • Cough • Pupils may be pinpoint • Eye Pain • Lacrimation	Decontaminate Administer 100% Oxygen Administer **One** kit IM OR 2 mg **atropine** IM **only** & either: 600 mg IM **pralidoximine OR** 1 gram IV **pralidoximine**
MODERATE	• Runny Nose • Cough • Sweating, localized sweating (seen with dermal exposure) • Twitching • Nausea • Abdominal cramping • Weakness • Eye pain • Trouble seeing • Wheezing, shortness of breath	Decontaminate Administer 100% Oxygen Administer **Two to Three** kits IM OR 4 mg **atropine** IM **only &** either: 600-1200 mg IM **pralidoxime OR** 1 gram IV **pralidoxime**
SEVERE	All the above, plus: • Vomiting • Diarrhea • Drooling, copious respiratory secretions • Significant weakness • Seizures • Decreased level of consciousness • Apnea	Decontaminate Administer 100% Oxygen Administer **Three** kits IM OR 6mg **atropine** IM **only &** either: 1200-1800 mg IM **pralidoxime OR** 1 gram IV **pralidoxime** **&** **Diazepam** 10 mg IM Autoinjector (CANA kit)**,OR** **Midazolam** 5 mg IV/IO/IM/ 10mg IN

NOTE: Do not administer an adult dose to a child <50 kg.

NOTE: Dermal absorption of nerve agents may lead to delayed symptom onset up to 18 hours after exposure. Initial symptoms/signs may only be local such as localized fasiculations and sweating.

PROCEDURES FOR SELF-CARE AND CARE OF AUTHORIZED PUBLIC EMPLOYEES OR FIRST RESPONDERS

Remove self or **fellow authorized public employee** from area if possible.

1. Assess degree of symptoms: Mild, Moderate or Severe.
2. Administer 1 to 3 auto-injector kits IM (each kit with **atropine** 2 mg IM and **pralidoxime chloride** 600 mg IM) as guided by degree of symptoms.
3. Seek additional medical support for further monitoring and transport of anyone receiving therapy.
4. Disrobing will significantly enhance the decontamination process. Perform decontamination, and seek assistance in further decontamination measures.

Protocol Continues

Protocol Continued

PEDIATRIC DOSING FOR NERVE AGENT EXPOSURES

Kg	Age	Atropine	Pralidoxime	Midazolam
1	Preemie	0.1 mg	20-40 mg	0.05-0.1 mg
2	Newborn	0.1 mg	40-80 mg	0.1-0.2 mg
5	3 mos	0.1-0.25 mg	100-200 mg	0.25-0.5 mg
10	12 mos	0.2-0.5 mg	200-400 mg	0.5-1 mg
15	2-3 yrs	0.3-0.75 mg	300-600 mg	2 mg
20	4-7 yrs	0.4-1 mg	400-800 mg	2.5 mg
25	6-9 yrs	0.5-1.25 mg	500 mg-1 g	3 mg
30	7-11 yrs	0.6-1.5 mg	600 mg-1 g	3.5 mg
35	8-13 yrs	0.7-1.75 mg	700 mg-1 g	4 mg
40	9-14 yrs	0.8-2 mg	800 mg-1 g	4.5 mg
45	10-16 yrs	0.9-2 mg	900 mg-1 g	5 mg
50	11-18 yrs	1-2 mg	1 g	5 mg
55	12-18 yrs	1.25-2 mg	1 g	5 mg
60	13-18 yrs	1.5-2 mg	1 g	5 mg
65	14-18 yrs	2 mg	1 g	5 mg
70	16-18 yrs	2 mg	1 g	5 mg

PEDIATRIC ATROPENS

Pediatric Atropine Dosing for Nerve Agent Toxicity Using Pediatric Atropens

Weight	Mild	Moderate	Severe
15-40 lb (7-18kg)	1 x 0.5mg Atropen	1 x 1mg Atropen	3 x 0.5mg Atropen
40-90 lb (18-41kg)	1 x 1mg Atropen	1 x 2mg Atropen	3 x 1mg Atropen
>90 lb (41kg)	1 x 2mg Atropen	2 x 2mg Atropen	3 x 2mg Atropen

Note: Pralidoxime reduced dose pediatric autoinjectors are not available

ADULT AUTOINJECTORS

Pediatric Dosing for SEVERE Nerve Agent Toxicity Using Adult Autoinjectors

(i.e. seizures, hypotension, coma, cardiac arrest)

Use only if Pediatric Atropen or when Atropine/Pralidoxime vials are not available

Approximate Age	Approximate Weight	Number of Auto-injectors (each type)	Atropine Dosing Range (mg kg)	Pralidoxime dosing range (mg kg)
3-7 yrs	13-25 kg	1	0.08-0.13	24-46
8-14 yrs	25-50 kg	2	0.08-0.13	24-46
>14 yrs	>51 kg	3	0.11 or less	35 or less

- NOTE: Mark I kits and Duodote are not approved for pediatric use, however, they should be used as initial therapy in circumstances for children with severe life-threatening nerve agent toxicity when IV therapy is not available. This assumes 0.8 inch needle insertion depth.
- NOTE: Potential high dose of **atropine** and **pralidoxime** for age/weight. However, these numbers are within the general guidelines recommended for the first 60-90 minutes of therapy after a severe exposure.
- NOTE: Administer injection in large muscle mass. Avoid deltoid. Suggest using thigh.

REFERENCE: Pediatric Preparedness for Disasters and Terrorism: A National Consensus Conference, Executive summary 2003. Markenson D, Redlener I. AHRQ, DHHS, EMSC Program of the Maternal and Child Health Resources Services Administration

2.10 Obstetrical Emergencies

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- Expose as necessary to access for bleeding/discharge, crowning, prolapsed cord, breech, limb presentation.
- Do not digitally examine or insert anything into the vagina.

  Exceptions: fingers may be inserted to manage baby's airway in breech presentation or to treat prolapsed or nuchal cord.
- Place mother in left-lateral recumbent position except as noted:

  Prolapsed cord:

  Knee-chest position or Trendelenburg position
- If only the cord has prolapsed and the presenting part has yet to go through the cervix, gently elevate the presenting part to remove pressure on the umbilical vessels to permit blood flow through cord.
- For immediate or delayed postpartum hemorrhage:

  Firmly massage the uterine fundus.

  Apply dressings and pressure to visible external perineal lacerations. DO NOT apply intravaginal dressings.

PARAMEDIC STANDING ORDERS

P

- For immediate or delayed postpartum hemorrhage:

  If available, administer oxytocin 10 mg IM. If IV is already in place administer IV, but do not delay initial dose to obtain IV access.

  If available, oxytocin IV infusion, 20 units mixed in 1 liter of IV normal saline and administered as a wide-open bolus.
- For (ONLY) immediate postpartum hemorrhage:

  If available, TXA 1 gm, over 10-20 minutes.

  If available, after 30 minutes, if hemorrhage persists, a second dose of TXA, 1 gm IV over 10-20 minutes may be given.
- Eclamptic Seizures

  Midazolam 2 - 6 mg slow IV/IO/IM or

  Midazolam 2 - 6 mg IN

  Magnesium sulfate 2 - 4 grams IV/IO over 5 minutes.

MEDICAL CONTROL MAY ORDER

- Administration of additional IV normal saline.
- **Calcium chloride or calcium gluconate 10%** 20 mg/kg IV/IO administer slowly over 5 minutes to a maximum dose of 1 gram. (Antidote for magnesium sulfate).
- Further anticonvulsant therapy.

Special Considerations in Cardiac Arrest (with additional resources)

- If the fundus height is at or above the level of the umbilicus manually displace the gravid uterus to the left to enhance venous return.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

- 1.0 Routine Patient Care—dry, warm, position, stimulate.
- For newly born requiring resuscitation, see Protocol 2.12 Resuscitation of the Newly Born.
- Reassess airway by positioning and clearing secretions (only if needed):
  - Place the newly born on back or side with head in a neutral or slightly extended position.
  - Routine suctioning is discouraged even in the presence of meconium-stained amniotic fluid. Suction oropharynx then nares only if the patient exhibits respiratory depression and/or obstruction, see Protocol 2.12 Resuscitation of the Newly Born.
- Clamp and cut the umbilical cord:
  - After initial assessment and after the cord stops pulsating.
  - Leave a minimum of 6 inches of cord.
- Prevent heat loss by rapidly drying and warming:
  - Remove wet linen, wrap newly born in blankets or silver swaddler (preferred) and cover newly born's head.
- Assess breathing by providing tactile stimulation:
  - Flick soles of feet and/or rub the newly born's back.
  - If newly born is apneic or has gasping respirations, nasal flaring, or grunting, proceed to Protocol 2.12 Resuscitation of the Newly Born.
- Assess circulation, heart rate, and skin color:
  - Evaluate heart rate by one of several methods:
    - Auscultate apical beat with a stethoscope.
    - Palpate the pulse by lightly grasping the base of the umbilical cord.
  - If the pulse is <100 bpm and not increasing, proceed to Protocol 2.12 Resuscitation of the Newly Born. Assess skin color; examine trunk and face; and mucus membranes.
- Record APGAR score at 1 minute and 5 minutes (see chart).

APGAR Scale

Feature Evaluated	2 Points	1 Point	0 Points
Activity (Muscle Tone)	Active Movement	Arms and legs flexed (Weak, some movement)	Limp or flaccid
Pulse	Over 100 bpm	Below 100 bpm	Absent
Grimace (Irritability/reflexes)	Cry, sneeze, cough, active movement	Grimace (some flexion of extremities)	No reflexes
Appearance (Skin Color)	Completely pink	Body pink, Extremities blue	Blue, pale
Respiration	Vigorous cry Full breaths	Slow, irregular, or gasping breaths, weak cry	Absent

PEARLS:

- Newly born are prone to hypothermia which may lead to hypoglycemia, hypoxia and lethargy. Aggressive warming techniques should be initiated including drying, swaddling, and warm blankets covering body and head.
- Raise temperature in ambulance patient compartment.

2.12 Resuscitation of the newly born

EMT STANDING ORDERS

- 1.0 Routine Patient Care
- For a newly born not in distress, treat according to **Protocol 2.11 Newly Born Care.**
- For the premature newly born patient, consider using additional warming techniques such as a swaddling system included in the obstetrical kit, wrap the baby in a dry blanket, apply a head covering, and turn the heat up in the ambulance, to retain body temperature.
- If the mouth or nose is obstructed or heavy secretions are present, suction the oropharynx, then nares using a bulb syringe (or if necessary mechanical suction with a soft catheter at the lowest pressure that effectively removes the secretions, not to exceed 100 mm Hg.) Suction the hypopharynx only if the newly born is not vigorous (e.g. poor muscle tone, weak respiratory effort, heart rate < 100 beats per minute.)
- Request ALS immediately for further assessment of possible need for advanced airway management.
- If ventilations are inadequate, if the chest fails to rise, or the heart rate is less than 100 beats per minute, initiate positive pressure bag-valve-mask (BVM) ventilations at a rate of 40-60 breaths per minute.

  Resuscitation should be initiated with room air.

  Inflation pressures of the BVM should be individualized to achieve an increase in heart rate and adequate chest rise with each breath. Be aware that BVMs with pop-off valves may deliver inconsistent results.
- Apply pulse oximetry monitoring; (preferably to the right hand.)
- Targeted pulse oximetry readings should be:

  1 minute: 60-65%

  2 minutes: 65-70%

  3 minutes: 70-75%

  4 minutes: 75-80%

  5 minutes: 80-85%

  10 minutes: 85-95%
- After 30 seconds of ventilations, auscultate apical heart beat with a stethoscope, and/or palpate the pulse e.g. by lightly grasping the base of the umbilical cord.
- For heart rates < 60 beats per minute after attempts to correct ventilations:

  Initiate CPR at a 3:1 ratio (for a range of 90 compressions/minute and 30 ventilations/ minute.) Minimize interruptions. Reassess every 60 seconds; if not improving continue CPR with 100% supplemental oxygen until recovery of a normal heart rate, then resume room air.
- If the heart rate is > 100 beats per minute but breathing is labored or there is persistent cyanosis and hypoxia:

  Position and clear airway.

  Continue to monitor SpO2.

  Provide supplemental oxygen as needed.

NOTE: The newly born should be evaluated for *central* cyanosis. Peripheral cyanosis is common and may not be a reflection of inadequate oxygenation. If central cyanosis is present in a breathing newly born during stabilization, early administration of 100% oxygen is important while the newly born is being assessed for need of additional resuscitative measures.

2.12 Resuscitation of the Newly Born

ADVANCED EMT STANDING ORDERS

A

- Consider inserting a supraglottic airway (SGA) for newly borns ≥ 34 weeks gestation if positioning and BVM fail to improve oxygenation and heart rate.
- Establish an IV/IO. If hypovolemia is suspected, administer 10ml/kg bolus of normal saline over 5-10 minutes.

PARAMEDIC STANDING ORDERS

P

- Consider endotracheal intubation (ETI) if BVM or SGA ventilation is inadequate or chest compressions are indicated, using a properly sized endotracheal tube (ETT.)
- For a newly born infant, born before 28 weeks gestation, consider using a 2.5 mm ETT.
- Apply waveform capnography and closely monitor the newly born's heart rate.
- Apply the cardiac monitor and manage dysrhythmias according to Protocols 3.0 Cardiac (pediatric.)
- If the heart rate fails to improve with adequate ventilations and chest compressions, administer **epinephrine** 0.01 – 0.03 mg/kg IV/IO (0.1 – 0.3 ml/kg of 0.1 mg/ml) IV/IO.
- If glucose level is < 60 mg/dL, administer **dextrose 10%** 0.5 grams/kg IV/IO in accordance with Protocol 2.3P Altered Mental/Neurological Status/Diabetic Emergencies/Coma – Pediatric.

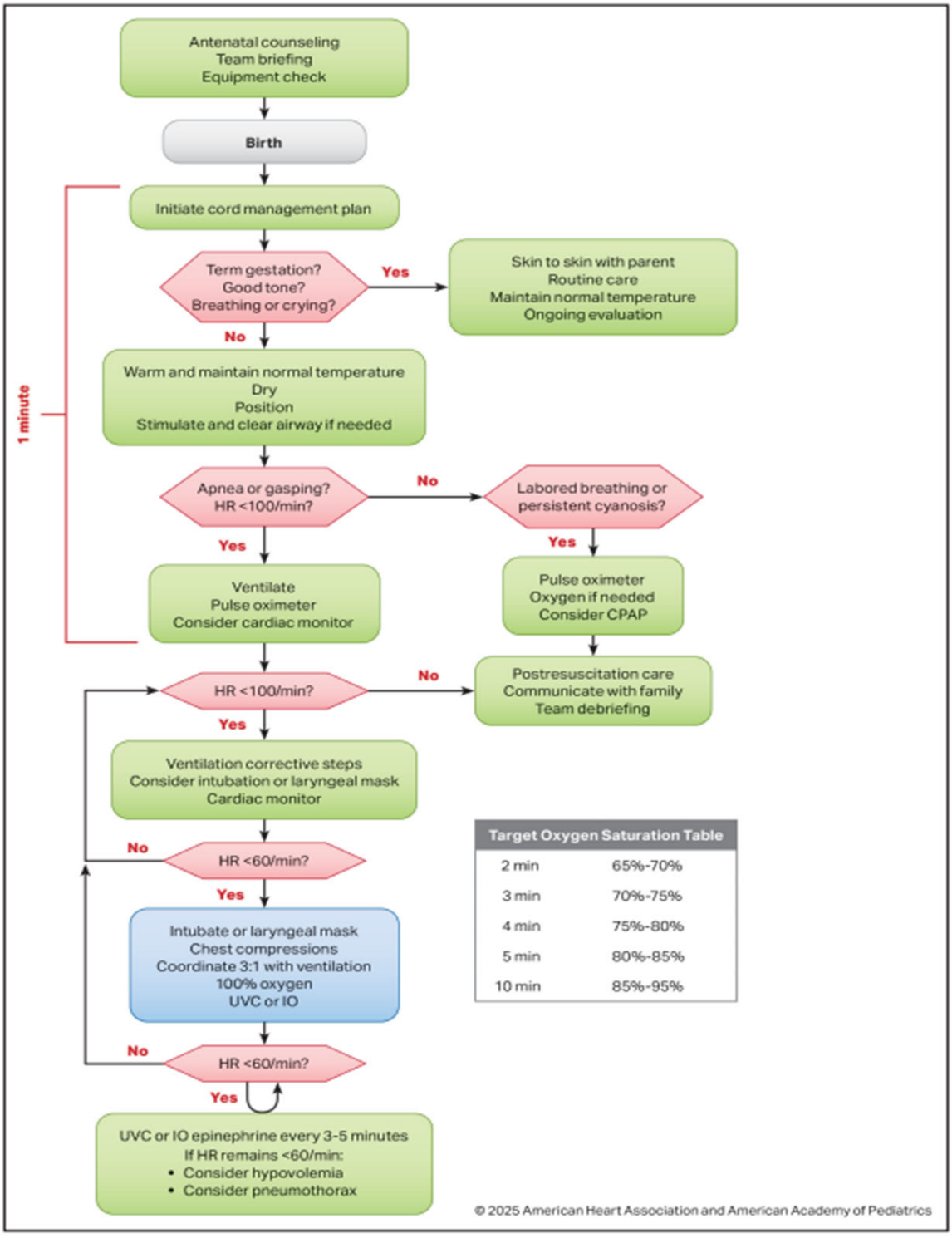
MEDICAL CONTROL MAY ORDER:

- **Epinephrine** infusion - 0.1-1 mcg/kg/min IV/IO, administration by infusion pump ONLY, mixed based on your formulary/pump library

NOTE: Paramedics should flush all medications administered intravenously with 0.5-1.0 ml of 0.9% normal saline.

NOTE: Use the pediatric reference tools to assist in determining the proper sized equipment such as ETT size and medication doses.

2.12 Resuscitation of the Newly Born



!. Neonatal Resuscitation Algorithm.

Pain & Nausea Management Adult & Pediatric

2.13

EMT STANDING ORDERS: ADULT

E

- 1.0 Routine Patient Care
- **Ibuprofen** 600 mg by liquid or oral tablets/capsules
- **Acetaminophen** 650-1000 mg by liquid or oral tablets/capsules

ADVANCED EMT STANDING ORDERS: ADULT

A

- **Ondansetron** 4 mg PO ODT (Oral Disintegrating Tablet; preferred route) or IV/IO/IM.

ADVANCED EMT STANDING ORDERS: PEDIATRIC

- **Ondansetron** for child under or up to 25 kg, 2 mg PO by ODT or IV/IM; For a child over 25 kg, 4 mg PO by ODT or IV/IM.

PARAMEDIC STANDING ORDERS: ADULT

P

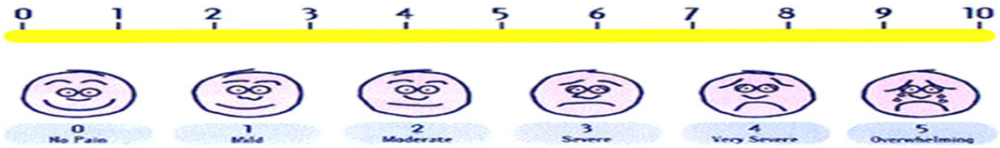
- **Acetaminophen** 650-1000 mg IV.
- **Ketorolac** 15 mg IV or 30 mg IM.
- **Fentanyl** 1 mcg/kg slow IV/IO/IM/IN (initial dose) to a max of 150 mcg; if needed, may repeat up to two additional doses, 5-minutes apart, not to exceed a total max dose of 450 mcg (including initial dose.)
- **Morphine Sulfate** 0.1mg/kg IV/IO/IM,(max 10 mg).
- **Ketamine** 0.15 mg/kg IV/IO *SLOWLY*-may repeat dose one time in 15 minutes or 0.3 mg/kg IM/IN-may repeat IM/IN dose one time in 20 minutes.
- For patients requiring electrical therapy (cardioversion or pacing) see Protocol 7.6 Sedation and Analgesia for Electrical Therapy-Adult, consider **ketamine**.

PARAMEDIC STANDING ORDERS: PEDIATRIC

- **Acetaminophen** 15 mg/kg IV or PO to max 1000 mg.
- **Ibuprofen** 10 mg/kg PO to max 600 mg.
- **Ketorolac** 0.5 mg/kg IV or IM to max 15 mg.
- **Fentanyl** 1 mcg/kg. to max. 150 mcg slow IV/IO/IM or **Fentanyl** 1 mcg/kg. to max. 150 mcg IN.
- **Morphine Sulfate** 0.1 mg/kg IV/IO/IM (maximum individual 5 mg).

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications



NOTE: Pain Management can include positioning, ice packs and other non-pharmacological treatments. Medications may be administered in divided doses up to the maximum noted in protocol.

NOTE: All pain medications have contraindications; do not administer medications in such circumstances. These contraindications include but are not limited to: **ketorolac** and **ibuprofen** are contraindicated in head injury, chest pain, abdominal pain, or in any patient with potential for bleeding, ulcer, or renal dysfunction; likely to need surgery. **Acetaminophen** is contraindicated in patients with liver failure. **Ketorolac** and **ibuprofen** are contraindicated in pregnancy.

NOTE: **Ondansetron** is contraindicated in patients with prolonged QT interval.

2.14 Poisoning/Overdose/Toxicology - Adult & Pediatric

NOTE: **Naloxone** should only be administered in suspected overdose patients with inadequate respirations and respiratory rate. Treatment should progress toward the restoration of adequate respirations. Patients with inadequate respiratory rates may need to be ventilated until their respiratory rate increases.

Poison Control may be reached at: **800-222-1222**

Medical Protocol 2.14

FIRST RESPONDER/EMT STANDING ORDERS

FR

- 1.0 Routine Patient Care
- Administer **naloxone** 0.4 mg-8 mg via Nasal Atomizer (IN) **or** auto-injector (IM).
  - If no response after 2-3 minutes, give a second dose. Dosage may not exceed a total maximum of 16 mg IM/IN.

E

- If suspected or confirmed hypoglycemia, treat per Protocol 2.3A Altered Mental/ Neurological Status/Diabetic Emergencies/Coma - Adult
- Initiate BiPAP/CPAP generally at a PEEP of 5 cm H_2O, if not contraindicated with nebulizer therapy, as indicated for suspected CO poisoning.
- **Albuterol** 2.5-3 mg via nebulizer. May be repeated as indicated.

ADVANCED EMT STANDING ORDERS

A

- **Naloxone**
  - ADULT: 0.4mg - 8mg IV/IO/IM/IN May be repeated as indicated.
  - PEDI: 0.1 mg/kg IV/IO/IM/IN May be repeated as indicated.

MEDICAL CONTROL MAY ORDER

P

- **Calcium chloride 10%** or **Calcium Gluconate** 20 mg/kg IV/IO administer slowly over 5 minutes to a maximum dose of 1 gram. (e.g., for calcium blocker toxicity).
- **Sodium bicarbonate** 0.5 – 1 mEq/kg IV/IO (e.g. TCA or Aspirin overdose).
- **Atropine**
  - ADULT: 2- 5 mg IV/IO (e.g., organophosphate poisoning management).
  - PEDI: 0.02 mg/kg IV/IO.
- **Furosemide**
  - ADULT: 40 mg IV/IO (e.g., pulmonary edema management).
  - PEDI: 0.5 mg/kg IV/IO
- **Midazolam**
  - ADULT: 2 – 6 mg IV/IO/IM/IN.
  - PEDI: 0.05 mg/kg IV/IO/IM/IN.
- **Amyl nitrite**: administer vapors of a crushed inhalant or pearl under the patients nose for 15 out of every 30 thirty seconds with intermittent 100% oxygen administration.
- **Cyanide antidote kit (if available by EMS service and/or industrial site):**
  - Two (2) **amyl nitrite** inhalants.
- **3% sodium nitrite** (stop Amyl nitrite):
  - ADULT: 10 mL slow IV/IO over 2-4 minutes.
  - PEDI: 0.2 mL/kg (up to 10 mL) slow IV/IO over 5 minutes.
- **Sodium thiosulfate 25%:**
  - ADULT: 50 mL IV/IO.
  - PEDI: 5 mL **sodium thiosulfate** per 1 mL **sodium nitrate** given.
  - **NOTE**: If hypotension develops, STOP all nitrites, treat for shock, and consider administration of **norepinephrine** or **dopamine**.
- **Hydroxocobalamin**
  - ADULT: 5 grams IV/IO over 15 minutes
  - PEDI: 70 mg/kg (to maximum 5 grams) IV/IO over 15 minutes
- **Glucagon**
  - ADULT: 1 – 5 mg IV/IO/IM for beta-blocker or calcium-channel blocker overdose.
  - PEDI: 0.5 or 1 mg IV/IO/IM (per online Medical Control).
- If suspected or confirmed nerve agent exposure, treat under Protocol 2.9 Nerve Agent Poisoning

Seizures - Adult 2.15A

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Manage hypoglycemia and narcotic overdose per Protocol 2.3A: Altered Mental/Neurological Status/Diabetic Emergencies/Coma – Adult and Protocol 2.14: Poisoning/Substance Use/Overdose/Toxicology – Adult and Pediatric, respectively.
- Consider eclampsia in a woman of childbearing age
- If a **benzodiazepine** rescue medication has been prescribed by the patient's physician, assist the patient or caregiver with administration in accordance with physician's instructions.

ADVANCED EMT STANDING ORDERS

A

- If the patient has an implanted vagus nerve stimulator (VNS), suggest that the family use the VNS magnet to activate the VNS and assist if required.
  - To use the VNS magnet, pass the magnet closely over the VNS device; if unsuccessful, repeat every 3-5 minutes for a total of 3 times.
- **NOTE:** Do not delay medication administration.

PARAMEDIC STANDING ORDERS

P

- Cardiac Monitor and if feasible 12 lead ECG – Manage dysrhythmias per Section 3.0: Cardiac Emergencies.
- If patient is in Status Epilepticus
  - **Midazolam** 5 mg slow IV/IO/IM
    OR
  - **Midazolam** 10 mg IN.
  - **Magnesium sulfate** 2-4 grams IV/IO over 5 minutes if suspect eclampsia.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

CAUTION: **Benzodiazepines** may be contraindicated in head injury or hypotension; discuss with Medical Control.

CAUTION: Do NOT administer anything orally if the patient does not have a reasonable level of consciousness and normal gag reflex.

NOTE: EMTs at all levels of certification may assist the patient or the caregiver with the administration of a patients own physician prescribed **benzodiazepine** in whatever preparation it is dispensed in. For example, the patient may have rectal or intranasal dosing preparations of **diazepam**.

NOTE:

- Post-partum patients may experience eclamptic seizures up to several weeks after giving birth.
- **Status epilepticus** is defined as any generalized seizures lasting more than 5 minutes. This is a true emergency requiring rapid airway control, treatment (including **benzodiazepines**), and transport.

2.15P Seizures - Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Prevent patient from accidental self-harm. DO NOT use a bite block.
- If Glucose is less than **70** mg/dL, treat per Protocol 2.3P Altered Mental/ Neurological Status/Diabetic Emergencies/Coma- Pediatric.
- If a **benzodiazepine** rescue medication has been prescribed by the patient's physician, assist the patient or caregiver with administration in accordance with physician's instructions.

ADVANCED EMT STANDING ORDERS

A

- If the patient has an implanted vagus nerve stimulator (VNS), suggest that the family use the VNS magnet to activate the VNS and assist if required.
  - To use the VNS magnet, pass the magnet closely over the VNS device; if unsuccessful, repeat every 3-5 minutes for a total of 3 times.
- **NOTE:** Do not delay medication administration

PARAMEDIC STANDING ORDERS

P

- **Midazolam** 0.1 mg/kg IV/IO/IM to a maximum single dose of 8 mg.

OR

- **Midazolam** 0.2 mg/kg IN to a maximum dose of 10 mg.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

CAUTION: Do NOT administer anything orally if the patient does not have a reasonable level of consciousness and normal gag reflex.

For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic. Watch for respiratory depression and support ventilation.

NOTE:

- EMTs at all levels may assist the patient or the caregiver with the administration of a patients own physician prescribed **benzodiazepine** in whatever preparation it is dispensed in. For an example, the patient may have rectal or intranasal dosing preparations of **diazepam**.

Shock - Adult 2.16A

Any patient with signs, symptoms, and history suggesting inadequate tissue perfusion should be considered to be in shock. Make every effort to determine and treat the underlying cause. Regardless of etiology, shock patients should be transported immediately to the nearest appropriate facility for definitive care.

BASIC STANDING ORDERS

- 1.0 Routine Patient Care
- Keep the patient supine.
- Prevent heat loss by covering with warm blankets if available and if the patient is not febrile.
- Physiological signs:
  - Altered mental status.
  - Radial pulse cannot be palpated.
  - Systolic blood pressure less than 100 mm Hg.

E

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
• Assess and treat for pulmonary edema and/or congestive heart failure (CHF), per Protocol 3.6 Congestive Heart Failure.	• If patient has history of adrenal insufficiency, manage according to Protocol 2.1 Adrenal Insufficiency. • If suspected anaphylaxis, manage according to Protocol 2.2A: Allergic Reaction/ Anaphylaxis - Adult	• Control active bleeding using direct pressure, pressure bandages, tourniquets (commercial tourniquets preferred), or hemostatic bandage.	

ADVANCED EMT STANDING ORDERS

A

• No fluid bolus.	• Total volume administered is to be based on hemodynamic stability. • Consider normal saline fluid bolus.	• Total volume administered is determined by hemodynamic stability. • Consider normal saline fluid bolus.	• Total volume administered is to be based on hemodynamic stability. • Consider normal saline fluid bolus.

Protocol Continues

Shock – Adult

Protocol Continued

PARAMEDIC STANDING ORDERS

- Consider fluid administration.
- If signs and symptoms of hypoperfusion persist or symptoms worsen, regardless of etiology, consider **norepinephrine**, **epinephrine** or **dopamine** administration in the absence of hemorrhagic shock, with Medical Control approval.

P

MEDICAL CONTROL MAY ORDER

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
• **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY. Titrate to goal systolic blood pressure of 90mmHg, **OR** • **Epinephrine** infusion - 2-10 mcg/min IV/IO, administration by infusion pump ONLY, **OR** • **Dopamine** 2-20 mcg/kg/min IV/IO	• **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY. Titrate to goal systolic blood pressure of 90mmHg, **OR** • **Epinephrine** infusion - 2-10 mcg/min IV/IO, administration by infusion pump ONLY, **OR** • **Dopamine** 2-20 mcg/kg/min IV/IO • For patients with confirmed or suspected Adrenal Insufficiency, treat per Protocol 2.1 Adrenal Insufficiency	• **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY. Titrate to goal systolic blood pressure of 90mmHg, **OR** • **Epinephrine** infusion - 2-10 mcg/min IV/IO, administration by infusion pump ONLY, **OR** • **Dopamine** 2-20 mcg/kg/min IV/IO	• **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY. Titrate to goal systolic blood pressure of 90mmHg, **OR** • **Epinephrine** infusion - 2-10 mcg/min IV/IO, administration by infusion pump ONLY, **OR** • **Dopamine** 2-20 mcg/kg/min IV/IO • Needle decompression, if tension pneumothorax suspected

Etiology of Shock

- **Cardiogenic Shock:** History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
- **Distributive Shock:** Anaphylaxis (see Protocol 2.2 Allergic Reaction/Anaphylaxis), neurogenic shock, sepsis. Assess for fever and signs of infection.
- **Hypovolemic Shock:** Dehydration, volume loss, or hemorrhagic shock.
- **Obstructive Shock:** Consider tension pneumothorax, pulmonary embolism, and cardiac tamponade.

For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Restrict IV fluids: Delaying aggressive fluid resuscitation until operative intervention may improve the outcome.
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.
- Several mechanisms for worse outcomes associated with IV fluid administration have been suggested, including dislodgement of clot formation, dilution of clotting factors, and acceleration of hemorrhage caused by elevated blood pressure.

Shock - Pediatric 2.16P

Any patient with signs, symptoms, and history suggesting inadequate tissue perfusion should be considered to be in shock. Make every effort to determine and treat the underlying cause. Regardless of etiology, shock patients should be transported immediately to the nearest appropriate facility for definitive care.

BASIC STANDING ORDERS

- 1.0 Routine Patient Care
- Keep the patient supine.
- Prevent heat loss by covering with warm blankets if available and if the patient is not febrile.

	CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
E		• If patient has history of adrenal insufficiency, manage according to Protocol 2.1 Adrenal Insufficiency. • If suspected anaphylaxis, manage according to Protocol 2.2P: Allergic Reaction/ Anaphylaxis - Pediatric • If neurogenic shock is suspected, manage according to Protocol 4.8: Spinal Column/Cord Injuries.	• Control active bleeding using direct pressure, pressure bandages, tourniquets (commercial tourniquets preferred), or hemostatic bandage.	

ADVANCED EMT STANDING ORDERS
A
		• Obtain vascular access. Therapeutic end-points to fluid resuscitation (in order of importance) are:
		  • Capillary refill,
		  • Normal pulses,
		  • No difference between peripheral and central pulses,
		  • Warm extremities, normal mental status, and
		  • THEN normal blood pressure.
		• Consider 20 mL/kg normal saline fluid bolus.
			• Obtain vascular access. Therapeutic end-points to fluid resuscitation (in order of importance) are:
			  • Capillary refill,
			  • Normal pulses,
			  • No difference between peripheral and central pulses,
			  • Warm extremities, normal mental status, and
			  • THEN normal blood pressure.
			• Consider 20 mL/kg normal saline fluid bolus.
				• Consider 20 mL/kg normal saline fluid bolus.

Protocol Continues

2.16P Shock – Pediatric

Protocol Continued

PARAMEDIC STANDING ORDERS

P

- Consider fluid administration
- If signs and symptoms of hypoperfusion persist or symptoms worsen, regardless of etiology, consider **norepinephrine** by infusion pump only, or **dopamine** administration via length-based resuscitation tape in the absence of hemorrhagic shock, with Medical Control approval.

MEDICAL CONTROL MAY ORDER

- **Norepinephrine** infusion 0.1 mcg/kg/min IV/IO, administration by infusion pump ONLY. Titrate to goal Systolic Blood Pressure of 90 mm Hg, **OR**
- **Dopamine** 2-20 mcg/kg/min IV/IO
- Needle decompression for tension pneumothorax

Etiology of Shock:

- **Cardiogenic Shock:** History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
- **Distributive Shock:** Anaphylaxis (see Protocol 2.2 Allergic Reaction/Anaphylaxis), neurogenic shock, sepsis. Assess for fever and signs of infection.
- **Hypovolemic Shock:** Dehydration, volume loss, or hemorrhagic shock.
- **Obstructive Shock:** Consider tension pneumothorax, pulmonary embolism, and cardiac tamponade.

For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Restrict IV fluids: Delaying aggressive fluid resuscitation until operative intervention may improve the outcome.
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.
- Several mechanisms for worse outcomes associated with IV fluid administration have been suggested, including dislodgement of clot formation, dilution of clotting factors, and acceleration of hemorrhage caused by elevated blood pressure.

Sepsis – Adult 2.17A

IDENTIFICATION OF POSSIBLE SEPTIC SHOCK

- Suspected infection – YES
- Evidence of sepsis criteria-YES (2 or more):
  - Temperature less than 96.8 °F or greater than 100.4 °F new onset.
  - Heart Rate greater than 90 beats per minute
  - Respiratory rate greater than 22 breathes per minute
  - Systolic BP less than 90 mm Hg OR mean arterial blood pressure (MAP) less than 65 mm Hg
  - New onset altered mental status OR increasing mental status change with previously altered mental status.
  - Serum Lactate level greater than 4 mmol/L - (if trained and equipment is available)
  - $ETCO_2$ less than or equal to 25 mm Hg

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Notify hospital of incoming "Sepsis Alert" prior to arrival if applicable
- Supplemental oxygen to achieve SpO_2 of 94%

ADVANCED EMT STANDING ORDERS

A

- Full ALS Assessment and treatment
- Large bore IV access
- IV 0.9% NaCl enroute: administer 500 mL boluses up to 30 cc/kg

CAUTION: Assess lung sounds frequently to ensure volume overload does not occur.

PARAMEDIC STANDING ORDER

P

MEDICAL CONTROL MAY ORDER

- **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO by infusion pump ONLY, titrate to goal systolic blood pressure of 90 mm Hg, **OR**
- **Epinephrine** infusion - 2-10 mcg/min IV/IO by infusion pump ONLY mixed based on your formulary/pump library, **OR**
- **Dopamine** - 2-20 mcg/kg/min IV/IO.
- Additional fluid boluses.

This protocol is for adult patients 18 years old or older

Medical Protocol 2.17

2.17P Sepsis - Pediatric

IDENTIFICATION OF POSSIBLE SEPTIC SHOCK

- Suspected infection – YES
- Evidence of sepsis criteria-YES (2 or more):
  - Temperature less than 96.8 °F or greater than 100.4 °F
  - Heart Rate greater than normal limit for age (heart rate may not be elevated in septic hypothermic patients) AND at least one of the following indications of altered organ function
  - Altered mental status (decreased, irritable, confused)
  - Capillary refill time < 1 second(flash) or > 3 seconds
  - Mottled cool extremities
  - Decreased urine output
- **NOTE**: Consider early consultation with Medical Control for suspected pediatric septic shock patients.

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Notify hospital of incoming "Sepsis Alert" prior to arrival, if applicable
- Monitor and maintain airway and breathing as these may change precipitously
- Administer oxygen and continue regardless of oxygen saturation levels
- Obtain blood glucose reading
- Do not delay transport

ADVANCED EMT STANDING ORDERS

A

- IV/IO fluids should be titrated to attain normal capillary refill, peripheral pulses, and level of consciousness.
- Administer fluid boluses of 20 mL/kg of 0.9% NaCl by syringe push method:
- Reassess patient immediately after completion of bolus and repeat 2 times (max 60 mL/kg) if inadequate response to boluses.
- **NOTE:** Reassessment of patient after boluses should include assessment of improving clinical signs and signs of volume overload (rales, increased work of breathing, or increased oxygen requirements).

PARAMEDIC STANDING ORDER

P

- If there is no response after 3 fluid boluses, contact Medical Control to consider additional options.

MEDICAL CONTROL OPTIONS

- **Epinephrine** infusion - 0.1 mcg/kg/min IV/IO by infusion pump only,mixed based on your formulary/pump library. Titrate to maintain perfusion with a max dose of 1 mcg/kg/min.
- Additional fluid boluses

PEARLS:

- To stabilize blood pressure-titrate infusions to maintain perfusion.
- Blood pressure can be assessed by using this formula: 70 + age in years x 2.
- Sepsis is a systemic inflammatory response due to infection. Frequent causes of septic shock include urinary, respiratory, or gastrointestinal infections and complications from catheters and feeding tubes. Patient who are immuno-compromised are also susceptible to sepsis.
- Septic shock has a high mortality and is one of the leading causes of pediatric deaths.
- Aggressive IV therapy and early antibiotic significantly reduce death.

Say "Stroke Alert" in Hospital Entry Note if patient meets the Stroke Criteria, even if symptoms have resolved.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

- 1.0 Routine Patient Care
- Perform FAST-ED Stroke Scale.
- Clearly determine last time known well.
- If the patient wakes from sleep or is found with symptoms of stroke, the time is defined as the last time the patient was observed to be normal. Notify the emergency department as soon as possible.
- If any one of the signs of the stroke scale is abnormal and onset of symptoms are **< 24 hours**, notify receiving hospital of a "Stroke Alert".
- Elevate the head of the stretcher 30 degrees.
- Do not delay transport for ALS intercept.
- Consider transporting a witness, family member, or caregiver with the patient to verify the time of the onset of stroke symptoms.
- If the onset of signs and symptoms PLUS transport time is < 24 hours, transport to a Department approved Stroke Point-of-Entry (POE) hospital.

Avoid hyperoxygenation; Oxygen administration should be titrated to patient condition, and withheld unless evidence of hypoxemia, dyspnea, or an SpO2 <90%, especially in the presence of a suspected CVA/TIA or ACS.

Protocol Continues

2.18 Stroke

This checklist is included as a resource for EMTs and receiving hospitals. If used, please leave a copy with the patient and document all elements on Patient Care Report

Date: Amb #: Pt. Age: ❑ M ❑ F
Patient's Name: DOB:

	YES	NO	Unknown
Time last known well (TLKW) < 24 hours?	☐	☐	☐
Any abnormal finding not attributable to head trauma?	☐	☐	☐
Blood Glucose >60?	☐	☐	☐

TIME LAST KNOWN WELL:
: AM/PM

BLOOD GLUCOSE LEVEL:
mg/dL

FAST-ED Stroke Scale

Item	Score
Facial Palsy	
Normal or minor paralysis	0
Partial or complete paralysis	1
Arm weakness	
No drift	0
Drift or some effort against gravity	1
No effort against gravity or no movement	2
Speech changes	
Absent	0
Mild to moderate	1
Severe, global aphasia or mute	2
Eye deviation	
Absent	0
Partial	1
Forced deviation	2
Denial/Neglect	
Absent	0
Extinction to bilateral simultaneous stimulation in only 1 sensory modality	1
Does not recognize own hand or orients only to one side of the body	2

History:

Conditions:
- ❑ Head Trauma/ Seizures
- ❑ Cardiac Arrhythmias
- ❑ Recent/current bleeding, trauma, surgery or invasive procedure
- ❑ Bleeding disorder
- ❑ Pregnancy

Medications:
- ❑ Coumadin/ warfarin
- ❑ Pradaxa/ dabigatran
- ❑ Xaralto/ rivaroxaban
- ❑ Eliquis/apixaban
- ❑ aspirin

- ❑ *Sudden* numbness, weakness or paralysis of face, arm or leg-- especially one side of the body
- ❑ *Sudden* confusion, trouble speaking or understanding speech
- ❑ *Sudden* trouble seeing in one or both eyes
- ❑ *Sudden* trouble walking, loss of balance or coordination; or
- ❑ *Sudden* severe headache with no known cause
- ❑ *Sudden* dizziness

Say "Stroke Alert" in Hospital Entry Note if patient meets the Stroke Criteria, even if symptoms have resolved.

Hyperkalemia – Adult 2.19

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care

ADVANCED EMT STANDING ORDERS

A

Acquire 12 Lead ECG if available and transmit as directed by affiliate hospital.

For known serum lab value ≥ 6 mEq/L, request a paramedic intercept if available but do not delay transport.

PARAMEDIC STANDING ORDERS

P

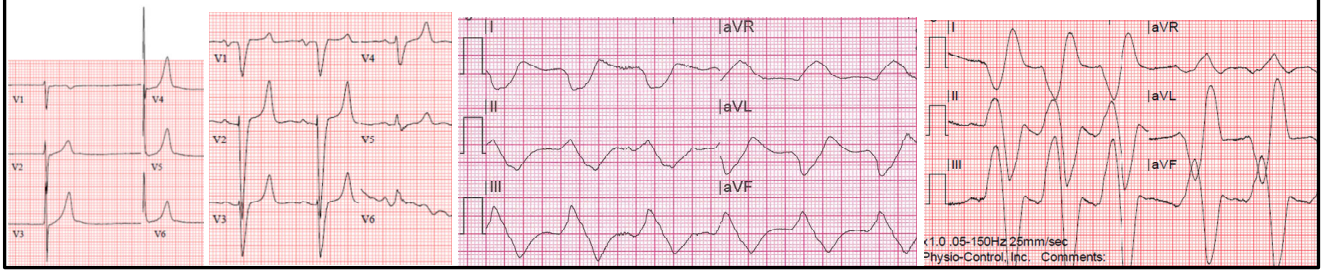
If patient presents with clinical factors predisposing him or her to hyperkalemia (see definitions below) **AND** 12 lead ECG findings are consistent with moderate to severe hyperkalemia (definitions below):

- Maintain continuous cardiac monitoring.
- Assure patient vascular access.
- Administer:
  - **Calcium chloride or calcium gluconate** 1 gram IV over at least 5 minutes
    - May repeat X1 after 5 minutes.
  - **Nebulized albuterol** (up to a max dose of 20 mg).

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

Examples of moderate (6.2 mEq/L) to very severe (≥ 8 mEq/L)hyperkalemia ECG pattern



PEARLS:

- Hyperkalemia can lead to sudden death from cardiac arrest without warning.
- Some clinical factors predisposing patients to hyperkalemia:
  - Chronic renal failure
  - Acute renal failure (may be secondary to dehydration, shock, nephrotoxins, obstruction etc.)
  - Crush injury/compartment syndrome/rhabdomyolysis
- ECG Evidence of hyperkalemia
  - **Moderate**: Peaked T waves with widening of QRS (> 120 ms), increases in the PR interval and decrease in the P wave amplitude
  - **Severe**: Very wide QRS complex (often > 240 ms) and loss of P waves. ECG pattern may develop a rounded and undulating “sine wave” pattern, especially in the limb leads.
- Ventricular fibrillation or asystole may develop without ECG evidence of hyperkalemia.
- The electrophysiological effects of hyperkalemia are proportional to both the potassium level and its rate of increase.
- For serum potassium lab value known to be ≥ 6 mEq without ECG findings of hyperkalemia, maintain continuous cardiac monitoring and consider obtaining direct Medical Control oversight.

2.20 Home Hemodialysis Emergency Disconnect

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E

OVERVIEW: Some patients are now doing UNATTENDED (i.e. solo) home hemodialysis. In the event you respond to a scene where such a patient is unable to disconnect themselves from the machine, and no one else is available who knows how to do so, follow this procedure to disconnect the patient from the machine for transport.

- 1.0 Routine Patient Care
- If time and patient conditions permit, ALS backup should be called for BLS crews.

/

A

- IF you are trained in using HD shunt clamps, and such clamps are available, it is acceptable to remove the HD needles from the patient's shunt and apply clamps. If not, this procedure should be followed, leaving the needles in as described above and below.
- The dialysis machine will be left at the home.
- If you can, note or photograph any clinically relevant values on the machine's readouts, such as liters removed.
- For a patient with an AV shunt, the result of this procedure is that the patient still has the dialysis needles in their AV fistula, ATTACHED to CLAMPED tubing, which is wrapped with gauze to keep the needles and tubing next to the patient's arm (unless HD shunt clamps are used).

Procedure:

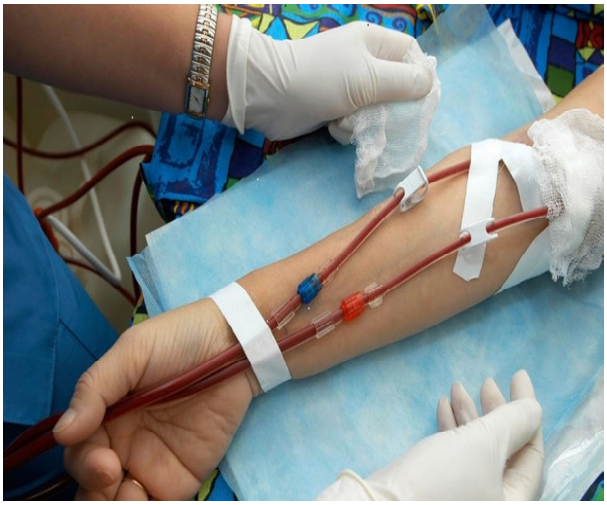
1. Push the **STOP** button on the front of the machine and unplug the machine's power cord.

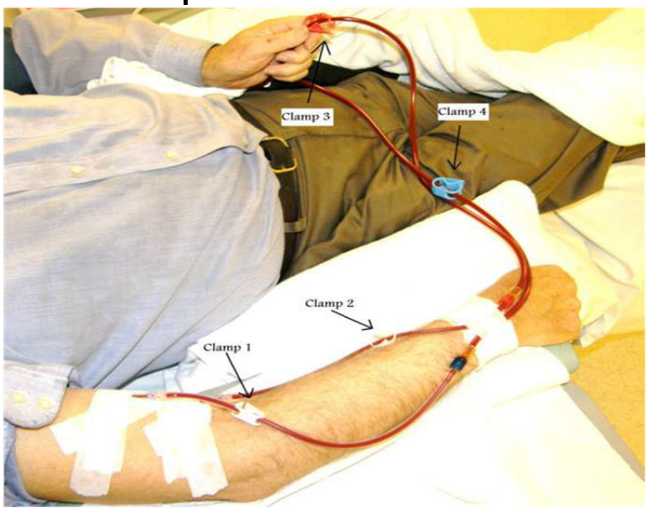
2. Identify and close the 4 clamps on the tubing. If clamps are not on the tubing, use Kelly clamps or plastic clamps (which will usually be on or near the dialysis machine) to clamp off the 2 tubes both above and below the Luer lock disconnects.

The disconnects are in the center of the pictures below.

/

P



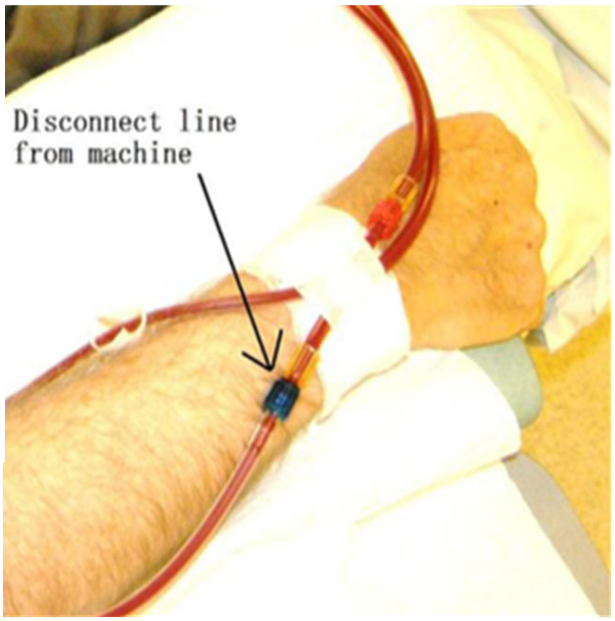


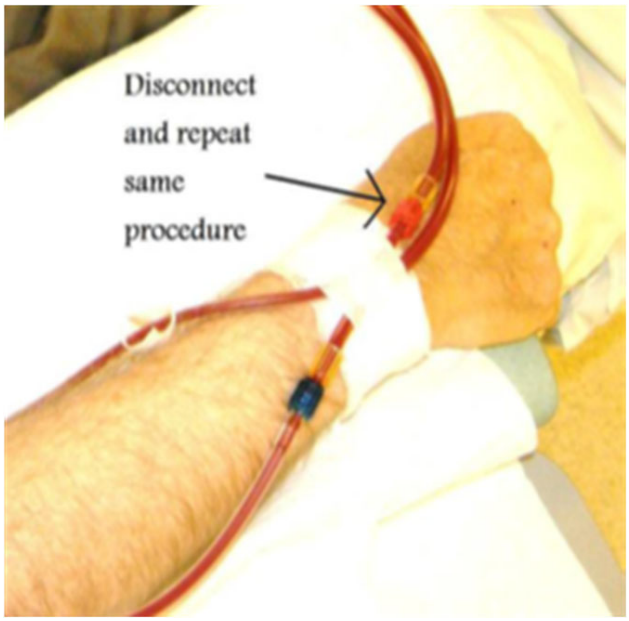
Protocol Continues

Protocol Continued

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E





/

A

Procedure continues:

3. If you are trained to do so, and you have sterile caps or sterile syringes, or they are on or near the dialysis machine, then swab each disconnect end-connector with alcohol and attach the cap or syringe.

4. You will now have two needle-tubing pieces still inserted into the patient's fistula. GENTLY tape the tubing to the patient's arm, then LOOSELY wrap gauze around the arm. DO NOT apply a pressure dressing.

If you accidentally pull a needle out of the fistula you will have to apply firm manual pressure (again, NOT a pressure dressing) to that bleeding point for 20 minutes. Call for additional personnel if needed.

/

P

SECTION 3:

CARDIAC EMERGENCIES

Statewide Treatment Protocols
Version 2026.1

3.1 Acute Coronary Syndrome - Adult

Not all patients with complaints of chest pain should be treated with aspirin, nitrates and oxygen. Consider the likelihood of ACS based on the nature of the symptoms, the patient's age, cardiac risk factors, past medical history, etc.

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- **Aspirin** 324-325 mg. Check allergy status. Check contraindications.
- **Nitroglycerin** 1 tab/spray SL every 5 minutes to a maximum 3 doses
  - SBP must be >120 mm Hg and have their own nitroglycerin; Assist the patient with administration of their own nitroglycerin, 1 tab/spray sublingual, every 5 minutes to a maximum of 3 doses, including doses self administered prior to arrival.
- **If suspected MI**, determine patient eligibility for fibrinolytic therapy (within this protocol).

ADVANCED EMT STANDING ORDERS

A

- IV must be established before administration of **nitroglycerin**
- **Nitroglycerin** 0.4 mg SL every 3–5 minutes while symptoms persist and if systolic BP remains >120 mm Hg.
  - If patient has taken their own **nitroglycerin** prior to arrival, and you have determined that the pharmacologic potency of that **nitroglycerin** was normal (based upon standard side effects of the med, e.g., headache/tingling sensation) without pain relief, contact Medical Control for other treatment options.

PARAMEDIC STANDING ORDERS

P

NOTE: A second IV line may be indicated for high-risk patient.

- Medication interventions based on risk for ACS, clinical presentation and/or diagnostic EKG changes.
- Consider pain management – refer to Protocol 2.13 Pain and Nausea Management for proper dosing of **fentanyl** or **morphine** ONLY.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

- Avoid **nitroglycerin** in ALL patients who have used a phosphodiesterase inhibitor such as: **sildenafil** (Viagra, Revatio), **vardenafil** (Levitra, Staxyn), **tadalafil** (Cialis, Adcirca) within the last **48 HOURS**. These medications are often used for erectile dysfunction and pulmonary hypertension. Also avoid use in patients receiving intravenous **epoprostenol** (Flolan) which is also used for pulmonary hypertension.
- Administer nitrates with extreme caution, if at all, to patients with inferior-wall STEMI or suspected right ventricular (RV) involvement because these patients require adequate RV preload.

Protocol Continues

Protocol Continued

If patient appears to be having a ST-elevation MI (STEMI), refer to the appropriate STEMI-Point of Entry (POE) plan, and transport accordingly.

Avoid hyperoxygenation, oxygen administration should be titrated to patient condition, and administered with evidence of hypoxemia, dyspnea, or an SpO_2 <90%, especially in the presence of a suspected CVA/TIA or ACS.

Additional signs and symptoms of an ACS patient may be:

Sudden onset of diaphoresis (cool, clammy, wet skin often profuse), anxiety, restlessness, abnormal vital signs such as an irregular pulse rate, and nausea / vomiting.

All ACS patients must be carefully monitored until a definitive diagnosis can be made at the hospital and shall have a 12-lead evaluation done by EMT-Paramedics. All patients with ACS-like symptoms of a non-traumatic etiology should be considered to be of cardiac origin, regardless of the 12-lead ECG interpretation, until proven otherwise.

Acute Coronary Syndrome (ACS) represents a spectrum of disease. There are at least three conditions identified within the spectrum of ACS: Classic anginal chest pain; atypical chest pain; anginal equivalents; Patients experiencing a myocardial infarction or an ischemic event of unknown etiology may, based on 12-lead interpretation fall into one of three categories, “injury (STEMI)” or “Ischemia” or “Non-Diagnostic.”

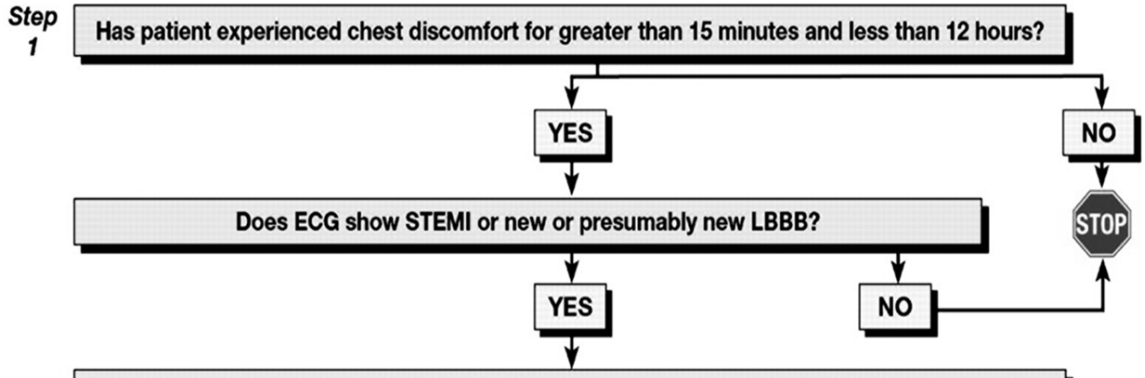
Classical Anginal Chest Pain	Atypical Chest Pain	Anginal Equivalents
Central Anterior Pain	Epigastric discomfort	Dyspnea
Chest Pressure, tightness	Musculoskeletal	Syncope
Crushing Pain	Often Unilateral	“Generally Weak”
Pain radiating to arms, neck and back	Nausea/Vomiting	Palpitations

Protocol Continues

3.1 Acute Coronary Syndrome – Adult Fibrinolytic Checklist

Protocol Continued

NOTE: This checklist is intended only as a tool for the pre-hospital identification of patients with significant contraindication(s) to the administration of fibrinolytics in the acute ST elevation M.I. (STEMI) setting. It is not intended to be a comprehensive list of all factors to be considered prior to administration of these agents. Significant contraindications may warrant the triage of these patients to facilities capable of percutaneous intervention (PCI). This list can also be used to determine if a possible ischemic stoke victim, is a candidate for ischemic stroke reperfusion.



Systolic BP >180 to 200 mm Hg or diastolic BP >100 to 110 mm Hg	◯ **YES**	◯ NO
Right vs left arm systolic BP difference >15 mm Hg	◯ **YES**	◯ NO
History of structural central nervous system disease	◯ **YES**	◯ NO
Significant closed head/facial trauma within the previous 3 weeks	◯ **YES**	◯ NO
Stroke >3 hours or <3 months	◯ **YES**	◯ NO
Recent (within 2-4 weeks) major trauma, surgery (including laser eye surgery), GI/GU bleed	◯ **YES**	◯ NO
Any history of intracranial hemorrhage	◯ **YES**	◯ NO
Bleeding, clotting problem, or blood thinners	◯ **YES**	◯ NO
Pregnant female	◯ **YES**	◯ NO
Serious systemic disease (eg, advanced cancer, severe liver or kidney disease)	◯ **YES**	◯ NO

Step 3 — **Is patient at high risk?**
If ANY one of the following is checked YES, consider transfer to PCI facility.

Heart rate ≥100/min AND systolic BP <100 mm Hg	◯ **YES**	◯ NO
Pulmonary edema (rales)	◯ **YES**	◯ NO
Signs of shock (cool, clammy)	◯ **YES**	◯ NO
Contraindications to fibrinolytic therapy	◯ **YES†**	◯ NO
Required CPR	◯ **YES**	◯ NO

†Consider transport to primary PCI facility as destination hospital.

Atrial Fibrillation/Flutter 3.2

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care

PARAMEDIC STANDING ORDERS

P

- If the rhythm appears to be amenable, e.g. “regular narrow SVT”, may attempt vagal maneuvers: “Valsalva” and/or cough.
- If the patient’s systolic blood pressure is **unstable** (less than **100 mm Hg, with signs of hypoperfusion**):
- **In Atrial Fibrillation, synchronized cardioversion** at **200J, 300J,** and **360J** or per manufacturer recommendations based on the specific cardiac monitor you are using. If unknown, use maximum energy setting.
- **In Atrial Flutter, synchronized cardioversion** beginning at **200J,** or per manufacturer recommendations based on the specific cardiac monitor you are using.
- Check rhythm and pulse between each attempted cardioversion.
- If cardioversion is warranted, consider use of Protocol 7.6 Sedation and Analgesia for Electrical Therapies.
- **Diltiazem HCL**
  - Heart rate greater than 150 and patient stable but symptomatic:
  - Initial bolus: **0.25 mg/kg slow IV/IO over two (2) minutes**.
  - If inadequate response after 15 minutes, re-bolus **0.35 mg/kg SLOW IV/IO over two (2) minutes**.
- If patient is already taking a Beta Blocker, **metoprolol** may be used as an alternative:
  - Bolus: 2.5-5 mg SLOW IV/IO over 2 minutes.
  - Repeat dosing in 5 minute intervals for a total maximum dose of 15 mg.

CAUTION: For patients with a heart rate less than 150 BPM and are stable but symptomatic, contact Medical Control for treatment options.

NOTE: CONTRAINDICATIONS - Wolff-Parkinson-White Syndrome, second or third degree heart block and sick sinus syndrome (except in the presence of a ventricular pace maker), severe hypotension or cardiogenic shock.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications
- **Amiodarone** 150 mg Slow IV/IO over 10 minutes.

CAUTION: Do not use IV **metoprolol** with IV calcium channel blockers.

3.3A Bradycardia - Adult

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care

PARAMEDIC STANDING ORDERS

P

- If patient is symptomatic (such as altered mental status or ischemia),
  - Transcutaneous Pacing (TCP).
  - **Atropine sulfate** 1.0 mg IV/IO every three (3) to five (5) minutes up to total dose 3 mg may be considered while waiting for pacer set-up.
  - If Transcutaneous Pacing (TCP) is warranted, consider Protocol 7.6 Sedation and Analgesia for Electrical Therapy.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications
- **Norepinephrine** 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY, titrate to goal Systolic Blood Pressure of 90 mm Hg, **OR**
- **Dopamine** 2-20 mcg/kg/min IV/IO
- **Epinephrine infusion** 2-10 mcg/min IV/IO, administration by infusion pump ONLY, mixed based on your formulary/pump library.
- **Glucagon** 1 - 5 mg IV/IO/IM for suspected beta blocker or calcium channel blocker toxicity.
- **Calcium chloride or calcium gluconate 10%,** 20 mg/kg IV/IO administer slowly over 5 minutes to a maximum dose of 1 gram for suspected calcium channel blocker toxicity.

Bradycardia - Pediatric 3.3P

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- If pulse is less than 60 bpm in a child, AND the patient is severely symptomatic, consider starting Cardiopulmonary Resuscitation (CPR).

PARAMEDIC STANDING ORDERS

P

- If patient is severely symptomatic:
  - **Epinephrine** 0.01 mg/kg (0.1ml/kg of a 0.1mg/ml solution) IV/IO to a maximum dose 0.5 mg (0.5ml of a 0.1mg/ml solution) **OR**,
  - **Atropine** 0.02 mg/kg IV/IO (max. single dose 0.5 mg). If increased vagal tone or AV block suspected.
  - Transcutaneous pacing, if available.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- Additional fluid boluses (10-20 mL/kg)
- **Epinephrine** 0.01-0.03 mg/kg (0.1ml/kg – 0.3ml/kg of a 0.1mg/ml solution) IV/IO to a maximum single dose of 0.5 mg. (0.5ml of a 0.1mg/ml solution.)
- **Epinephrine** infusion 0.1-1 mcg/kg/min IV/IO, administration by infusion pump ONLY, mixed based on your formulary/pump library.

3.4A Cardiac Arrest (ADULT): Asystole/ Pulseless Electrical Activity (PEA)

FR/EMT STANDING ORDERS

FR

- 1.0 Routine Patient Care
- Initiate cardiopulmonary resuscitation (CPR),in accordance with Protocol 1.1 High Quality CPR (HQCPR).
- Analyze with the AED as soon as it is attached and operable.
- Follow most recent American Heart Association/ International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines.
- If suspected opioid overdose administer **naloxone** per Protocol 2.14 Poisoning/ Overdose/Toxicology – Adult & Pediatric.

EMT STANDING ORDERS

E

- After 4 cycles of HQCPR, (8 minutes) if trained and authorized consider placement of a supraglottic airway (SGA) device.
- While resuscitation is ongoing, assess if the patient is tolerating the SGA well, by evidence of waveform capnography, good chest rise, bilateral breath sounds, and improved oxygenation. **Do not** stop or delay resuscitation to assess SGA; if in doubt, remove and continue with BVM ventilations.

ADVANCED EMT STANDING ORDERS

A

- Consider underlying causes for Asystole/PEA.
- Obtain IV/IO access, minimizing interruptions of chest compressions.

PARAMEDIC STANDING ORDERS

P

- Verify Asystole in 2 leads, if possible.
- Consider and treat underlying causes for Asystole/PEA:
- If cause is unknown and Asystole/PEA persists:
- **Epinephrine** 1 mg IV/IO (10ml of a 0.1mg/ml solution) every 3-5 minutes; may substitute **vasopressin** 40 UNITS IV/IO in place of first or second dose of **epinephrine** (10ml of a 0.1mg/ml solution.)
- For suspected hyperkalemia administer **calcium chloride or calcium gluconate 10%** 20 mg/kg IV/IO administer slowly over 5 minutes to a total maximum dose of 1 gram.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Sodium bicarbonate** 1 mEq/kg IV/IO
- **Atropine** 1 mg IV/IO, repeated to max dose 3 mg.

REVERSIBLE CAUSES OF CARDIAC ARREST INCLUDE:

- Hypothermia: initiate 2 large bore IVs (warm) normal saline
- Hyperkalemia: administer **calcium chloride** or **calcium gluconate**
- Hypoxia: provide high flow oxygen
- Hypovolemia: 250 mL fluid bolus.
- Hydrogen Ion/Acidosis: Contact Medical Control
- Toxins/Tablets: see Protocol 2.14 Poisoning/Substance Abuse/Overdose –Adult & Pediatric
- Thrombus (Coronary/Pulmonary): Contact Medical Control
- Tension Pneumothorax: Perform needle chest decompression.
- Tamponade (Pericardial): Contact Medical Control

Cardiac Arrest (PEDIATRIC): Asystole/ Pulseless Electrical Activity

3.4P

FR/EMT STANDING ORDERS

FR/E

- 1.0 Routine Patient Care—with focus on CPR, according to the most recent guidelines of the American Heart Association/International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines.
- Ventilate with 100% oxygen. If unable to ventilate child after repositioning of airway: assume upper airway obstruction per Protocol 5.1P Upper Airway Obstruction – Pediatric.
- Early AED use, in accordance with the most recent AHA/ILCOR guidelines.
- If suspected opioid overdose administer **naloxone** per Protocol 2.14 Poisoning/ Substance Abuse/Overdose – Adult & Pediatric

ADVANCED EMT STANDING ORDERS

A

- Place IV/IO without interrupting chest compressions
- Consider 20 ml/kg normal saline bolus.

PARAMEDIC STANDING ORDERS

P

- Consider treating for reversible causes.
- **Epinephrine**:
  - **For Asystole or PEA:** 0.01 mg/kg (0.1ml/kg of 0.1mg/ml solution) IV/IO every 3-5 minutes.
  - **Epinephrine** infusion: Initial dose, 0.1 mcg/kg/min, administration by infusion pump only, mix based on your formulary/pump library. Titrate to desired effect to total maximum dose of 1 mcg/kg/min.
- May consider transcutaneous pacing.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Sodium bicarbonate** 1 mEq/kg IV/IO
- **Atropine** 0.02mg/kg IV/IO (minimum single dose 0.1 mg, maximum combined doses 1 mg.)
- All other treatment modalities based on suspected etiology for cardiopulmonary arrest.

For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

REVERSIBLE CAUSES OF CARDIAC ARREST INCLUDE:

- Hypothermia: initiate 2 large bore IVs (warm) normal saline
- Hypoglycemia: Treat with D10 via IV/IO
- Hyperkalemia: Contact Medical Control
- Hypoxia: provide high flow oxygen
- Hypovolemia: 20 mL/kg fluid bolus.
- Hydrogen Ion/Acidosis: Contact Medical Control
- Toxins/Tablets: see Protocol 2.14 Poisoning/Substance Abuse/ Overdose –Adult & Pediatric
- Thrombus (Coronary/Pulmonary): Contact Medical Control
- Tension Pneumothorax: Perform needle chest decompression.
- Tamponade (Pericardial): Contact Medical Control

3.5A Cardiac Arrest (ADULT): Ventricular Fibrillation/Pulseless Ventricular Tachycardia

FR/EMT STANDING ORDERS

FR

- 1.0 Routine Patient Care
- Perform cardiopulmonary resuscitation (CPR), in accordance with Protocol 1.1 High Quality CPR (HQCPR).
- Analyze with the AED as soon as it is attached and operable.
- Follow most recent American Heart Association/International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines.
- If suspected opioid overdose administer **naloxone** per Protocol 2.14 Poisoning/ Substance Abuse/Overdose – Adult & Pediatric

EMT STANDING ORDERS

E

- After 4 cycles of HQCPR, (8 minutes) consider placement of a supraglottic airway (SGA) device.
- While resuscitation is ongoing, assess if the patient is tolerating the SGA well, by evidence of waveform capnography, good chest rise, bilateral breath sounds, and improved oxygenation. **Do not** stop or delay resuscitation to assess SGA; if in doubt, remove and continue with BVM ventilations.

ADVANCED EMT STANDING ORDERS

A

- Obtain IV/IO access, minimizing interruptions of chest compressions.

PARAMEDIC STANDING ORDERS

P

- Provide manual defibrillation as indicated with minimum interruption in chest compressions. Charge defibrillator while performing chest compressions to minimize hands-off time.
- **Epinephrine** 1 mg IV/IO (10ml of a 0.1mg/ml solution); repeat every 3 – 5 minutes. May substitute **vasopressin** 40 units IV/IO in place of first or second dose of epinephrine.
- Continue HQCPR and manual defibrillation, as per AHA/ILCOR guidelines, if ventricular fibrillation/pulseless ventricular tachycardia is persistent.
- Consider **amiodarone** 300 mg slow IV/IO push.
- **Magnesium sulfate** 2–4 grams IV/IO over 5 minutes, in torsades de pointes or suspected hypomagnesemia state or refractory ventricular fibrillation/pulseless ventricular tachycardia.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Sodium bicarbonate** 1 mEq/kg IV/IO.
- **Amiodarone** 150 mg slow IV/IO if one dose already given or 300 mg slow IV/IO if not already given.
- **Lidocaine** 1.5 mg/kg IV/IO; subsequent dosage: 0.5 to 0.75 mg/kg IV/IO every 3 – 5 minutes to a total maximum dose of 3 mg/kg IV/IO.

NOTE:

- Early HQCPR and early defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Switch compressors at least every two minutes to minimize fatigue.
- Hover hands over the chest: Compress when charging and resume compressions immediately after the shock is delivered.
- Do not hyperventilate as it increases intrathoracic pressure and decreases blood return to the heart. Ventilate at a rate of 1 breath every 6 seconds. Give 10 breaths per minute with enough volume to produce adequate chest rise.

Cardiac Arrest (PEDIATRIC): 3.5P
Ventricular Fibrillation/Pulseless Ventricular Tachycardia

FR/EMT/ADVANCED EMT STANDING ORDERS

FR/E

- 1.0 Routine Patient Care with a focus on high quality CPR (HQCPR)
- Apply AED and use as soon as possible (with minimum interruption of chest compressions). Use pediatric AED pads in accordance with weight and age guidelines for your specific AED.
- If unable to ventilate child after repositioning of airway, assume upper airway obstruction and follow protocol 5.1P Upper Airway Obstruction – Pediatric.
- Consider treatable causes.

A

- If suspected opioid overdose administer **naloxone** per protocol 2.14 Toxicology-Poisoning-Substance Abuse-Overdose.

PARAMEDIC STANDING ORDERS

P

- Defibrillate once at 2 J/kg.
- **Epinephrine**: 0.01mg/kg IV/IO (0.1mL/kg of a 0.1mg/ml solution); repeat every 3-5 minutes.
- Second and Subsequent Defibrillations at 4 J/kg (per AHA recommendations do not exceed 10J/kg per shock,) every 2 minutes.
- **Amiodarone** 5 mg/kg IV/IO

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Sodium bicarbonate** 1 mEq/kg IV/IO.
- All other treatment modalities based upon suspected cause of VF/PVT.

For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

NOTE:
The need for early defibrillation is clear and should have the highest priority. Since these patients will all be in cardiopulmonary arrest, use of adjunctive equipment should not divert attention or effort from Basic Cardiac Life Support (BCLS) resuscitative measures, early defibrillation and Advanced Cardiac Life Support (ACLS). Remember: rapid defibrillation and high quality CPR is the major determinant of survival.

NOTE:
- Early CPR and early defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compression, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Switch compressors at least every two minutes to minimize fatigue.
- Hover hands over the chest: Compress when charging and resume compressions immediately after the shock is delivered.
- Do not hyperventilate as it increases intrathoracic pressure and decreases blood return to the heart. Ventilate at an appropriate rate, with enough volume to produce adequate chest rise.

3.6 Congestive Heart Failure (Pulmonary Edema)

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- Initiate BiPAP/CPAP generally at a PEEP of 5 cm H_2O, if not contraindicated.

PARAMEDIC STANDING ORDERS

P

- **Nitroglycerin** 0.4-0.8 mg (1/150 grams) tablet/spray, sublingual
  - SBP must be >120 mm Hg
  - May be repeated every 5 minutes, as dictated by BP.
- **Nitropaste** 1 inch to chest wall if SBP >120 mm Hg.
- If properly trained and authorized, treat per Protocol 6.10 Bolus IV/IO Nitroglycerin and Infusion for Acute Pulmonary Edema

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- **Furosemide** - 20-40 mg IV/IO, or 40-80 mg IV/IO if patient is already on diuretics.
- **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY, titrate to goal Systolic Blood Pressure of 90 mm Hg, **OR**
- **Dopamine** - 2-20 mcg/kg/min IV/IO
- In patients who require emergent intubation, and cannot be intubated by conventional means, treat per Protocol 5.2 Difficult Airway Protocol.

CAUTION: Avoid **nitroglycerin** in ALL patients who have used a phosphodiesterase inhibitor within the **last 48 hours,** such as: **sildenafil** (Viagra, Revatio), **vardenafil** (Levitra, Staxyn), **tadalafil** (Cialis, Adcirca) which are used for erectile dysfunction and pulmonary hypertension. Also avoid use in patients receiving intravenous **epoprostenol** (Flolan) which is also used for pulmonary hypertension

Targeted Temperature Management – Adult 3.7

Indications:
- ≥ 16 years; If < 16, contact Medical Control
- ROSC – patient demonstrates no purposeful movement to sternal rub or response to commands 5 minutes into ROSC, and
- Palpable carotid pulse with a stable cardiac rhythm, and
- Patient does not have existing hypothermia (< 32 °C), and
- Patient is intubated or appropriate rescue airway.
- Post-cardiac arrest with return of spontaneous circulation (ROSC)
- Post-cardiac arrest in setting of STEMI

Contraindications:
- Traumatic arrest, or
- Hypothermia exists (< 32 °C) by core temperature
- Identified pregnancy, or
- Respiratory arrest

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care

MEDICAL CONTROL MAY ORDER

- Ice packs or equivalent in armpits, neck, torso and groin areas of patients that meet indications criteria.

ADVANCED EMT STANDING ORDERS

A

- Airway interventions, as appropriate, according to protocol, prior to cooling. **Do NOT hyperventilate; goal $ETCO_2$ of around 40 mm Hg.**
- Ice packs or equivalent in armpits, neck, torso and groin areas of patient.
- Obtain 1-2 points of vascular access.

PARAMEDIC STANDING ORDERS

P

- Cardiac Monitor: (12 lead ECG where appropriate) manage dysrhythmias per protocol. **If STEMI present, transport in accordance with approved POE.**
- Place esophageal thermometer probe to establish patient's baseline body temperature, **if available**.
- If patient has significant shivering, you may administer:
  - **Midazolam** 5 mg IV/IO/IM, OR 10 mg IN
  - **Fentanyl** 50 mcg IV/IO/IM/IN every 5 minutes to total maximum dose of 200 mcg OR
  - **Morphine** 0.1 mg/kg IV/IO/IM, total maximum dose of 10 mg.

CAUTION: Routine prehospital cooling of patients with ROSC with intravenous (IV) rapid infusion is not advised (class III: no benefit; level of evidence A).

NOTE: The end temperature goal is 32-36 °C (89.6-96.8 °F).

3.8 Post Resuscitative Care/ROSC – Adult & Pediatric

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care

PARAMEDIC STANDING ORDERS

- Consider treatable causes such as overdose, cardiogenic shock and STEMI.
- Consider treatable causes such as respiratory arrest.
- Bolus IV fluid at a rate of 20 mL/kg.
- Manage cardiac dysrhythmias according to Section 3.0: Cardiac Emergencies.
- If post VF/VT arrest, consider administering **amiodarone** – 150 mg slow bolus over 8-10 minutes, followed by 1 mg/min IV/IO drip, or **Lidocaine** - 1-1.5 mg/kg IV/IO followed by drip at 2-4 mg/min.
- Perform a 12-lead ECG; If STEMI is present and the patient is stable enough follow the Department – approved STEMI POE plan. Consult with Medical Control if questions arise.

P

- Begin induced therapeutic hypothermia per Protocol 3.7 Targeted Temperature Management. Do not delay transport.

Adult:

- **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY, and titrate to goal systolic blood pressure of 90 mm Hg,
  OR
- **Dopamine** - 2-20 mcg/kg/min IV/IO.

Pediatric:

- **Norepinephrine** - 0.1-0.5 mcg/kg/min IV/IO, by infusion pump ONLY, and titrate to goal systolic blood pressure of 90 mm Hg.
- **Epinephrine** infusion - 0.1 to 1 mcg/kg/min IV/IO, by infusion pump ONLY, mixed according to your formulary/pump library. Titrate to goal systolic blood pressure of 90 mm Hg.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.

Adult:

- **Epinephrine** infusion - 2 mcg to 10 mcg per minute IV/IO, by infusion pump ONLY, mixed according to your formulary/pump library.

Pediatric:

- Pediatric patients **epinephrine** infusion - 0.1 to 1 mcg/kg/min IV/IO, by infusion pump ONLY, mixed according to your formulary/pump library. Titrate to a goal systolic blood pressure of 90 mm Hg.

REMINDER: This is an extremely unstable period. The patient should be monitored closely and frequently. Recurrent dysrhythmias, hypotension and re-arrest are not uncommon occurrences. Avoid hyperthermia and hyperventilation.

Avoid hyperoxygenation; oxygen administration should be titrated to patient condition, and withheld unless evidence of hypoxemia, dyspnea, or an SpO_2 <90%, especially in the presence of a suspected CVA/TIA or ACS.

Supraventricular Tachycardia-Adult

3.9A

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care

PARAMEDIC STANDING ORDERS

P

- Vagal Maneuvers: Valsalva's and/or cough.
- If systolic blood pressure is unstable (less than 100 mm Hg) and the ventricular rate is greater than 150 beats per minute, immediate synchronized cardioversion at 100J, or the equivalent biphasic values as per manufacturer, Follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines.
- If cardioversion is warranted, treat per Protocol 7.6 Sedation and Analgesia for Electrical Therapy.
- **Adenosine** 6 mg rapid IV/IO over 1-3 seconds. If previous dose failed to resolve the rhythm disturbance, **adenosine** 12 mg rapid IV/IO over 1-3 seconds. Repeat **adenosine** 12 mg rapid IV/IO over 1-3 seconds if previous doses failed to resolve the rhythm disturbance.

NOTE: Follow all **adenosine** with a 20 mL normal saline bolus and elevate extremity.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- Administration of **diltiazem HCL:**
  - Initial bolus: 0.25 mg/kg IV/IO over two (2) minutes.
  - If inadequate response after 15 minutes, re-bolus 0.35 mg/kg IV/IO over two (2) minutes.

OR

- **Amiodarone** 150 mg IV/IO slowly over 10 minutes.

NOTE: CONTRAINDICATIONS: Wolff-Parkinson-White Syndrome, second or third degree heart block and sick sinus syndrome (except in the presence of a ventricular pace maker), severe hypotension or cardiogenic shock.

3.9P Supraventricular Tachycardia - Pediatric

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- If tachycardia is related to acute injury or volume loss, treat per Protocol 2.16P Shock - Pediatric.

PARAMEDIC STANDING ORDERS

P

- If hypovolemia is suspected, administer normal saline 20 mL/kg IV/IO bolus.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications.
- Synchronized cardioversion 0.5 J/kg for symptomatic patients. Subsequent cardioversion may be done at up to 2 J/kg. If cardioversion is warranted, treat per Protocol 7.6 Sedation and Analgesia for Electrical Therapy.
- **Adenosine** - 0.1 mg/kg rapid IV/IO. If no effect, repeat **adenosine** 0.2 mg/kg rapid IV push, maximum single dose of **adenosine** must not exceed 6 mg for the first dose, 12 mg for the second dose.
- **Consider** vagal maneuvers (see reminder below).

Synchronized cardioversion should be considered for only those children whose heart rate is in excess of 220 beats per minute, and who demonstrate one or more of the following signs of hypoperfusion: Decreased level of consciousness, weak and thready pulses, capillary refill time of more than 4 seconds, or no palpable blood pressure.

REMINDER: Vagal maneuvers may precipitate asystole and therefore should be employed with caution in the field and only in a cardiac-monitored child with IV access.

Ventricular Tachycardia with Pulses – Adult & Pediatric 3.10

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care

PARAMEDIC STANDING ORDERS

P

Adult:

- If systolic blood pressure is unstable (less than 100 mm Hg) and the ventricular rate is greater than 150 beats per minute, immediate synchronized cardioversion at 100J, or the equivalent biphasic values as per manufacturer, Follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines.
  - If Monomorphic VT – cardiovert at 100J
  - If Polymorphic VT – consider unsynchronized, high-energy shock (defibrillation)
- If systolic blood pressure is stable (greater than or equal to 100 mm Hg) administer **amiodarone** 150 mg slow IV/IO over 8-10 minutes.

Pediatric:

- Synchronized cardioversion 0.5 J/kg for symptomatic patients. Subsequent cardioversion may be done at up to 2 J/kg. Check rhythm and pulse between each attempted cardioversion.

NOTE: In Adult or Pediatric patients, if cardioversion is warranted, treat per Protocol 7.6 Sedation and Analgesia for Electrical Therapy.

MEDICAL CONTROL MAY ORDER

- Additional doses of above medications or attempts at cardioversion.
- **Magnesium sulfate** (for torsades de pointes or suspected hypomagnesemia state or severe refractory ventricular tachycardia) - 2 - 4 grams IV/IO over 5 minutes.

CAUTION: CONTRAINDICATIONS: Patients with heart block and/or renal disease.

- **Amiodarone** infusion - 1 mg/min IV/IO.
- **Lidocaine** - 1 – 1.5 mg/kg IV/IO; subsequent dosage: 0.5 – 0.75 mg/kg IV/IO every 3 – 5 minutes to a total maximum dose of 3 mg/kg. If dysrhythmia is successfully converted after administration of **lidocaine** bolus, consider 2 – 4 mg/min IV infusion.
- **Adenosine** - 6 mg or 12 mg IV push; in selected cases ONLY.

NOTE: In Pediatric patients, give medications as ordered by Medical Control.

SECTION 4:

TRAUMA PROTOCOLS

Statewide Treatment Protocols
Version 2026.1

Burns/Inhalation/Electrocution and Lightning Strike Injuries – 4.1 Adult & Pediatric

EMT STANDING ORDERS

- 1.0 Routine Patient Care

E

Thermal

- Stop burning process with water or saline.
- Remove smoldering, non-adherent clothing and jewelry. DO NOT remove skin or tissue.
- Cover burns with a CLEAN, DRY, STERILE DRESSING.
- Large thermal injuries are susceptible to hypothermia-- attempt to reduce heat loss in burn victims.

Chemical

- Determine offending agent(s) and consider HAZMAT intervention, if indicated.
- Wash with copious amounts of clean water and/or sterile normal saline for 10-15 minutes, unless contraindicated by chemical agent (i.e., sodium, potassium and/or lithium metals).

MEDICAL CONTROL MAY ORDER

- For additional options when managing a chemical agent

ADVANCED EMT STANDING ORDERS

A

- Begin fluid resuscitation for treatment of the BURN INJURY if greater than 20% BSA including second and third degree injuries (1st degree [sunburn] not included in TBSA estimation),
  - **Adults**: 500 mL normal saline
  - **Pediatrics**: 10 mL/kg normal saline

MEDICAL CONTROL MAY ORDER

- For transport times greater than 1-hour, or further fluid administration.

PARAMEDIC STANDING ORDERS

P

- After a complete patient assessment, consider initiating pain management per Protocol 2.13 Pain and Nausea Management – Adult & Pediatric
- In a patient who may have experienced enclosed space smoke inhalation (e.g. hypotension, altered mental status, seizure or other), if available, consider **hydroxocobalamin** 5 gm IV/IO over 15 minutes in an adult, and 70 mg/kg (to maximum 5 gm) IV/IO over 15 minutes in a pediatric patient.
- In patients with suspected CO poisoning, initiate high flow oxygen.

CAUTION: Primary water irrigation is contraindicated for dry lime, lye, or phenol exposure (may produce further chemical reactions.) Dry powders should be brushed off prior to flushing with large amounts of water. If chemical viscous, remove with a tongue depressor.

Protocol Continues

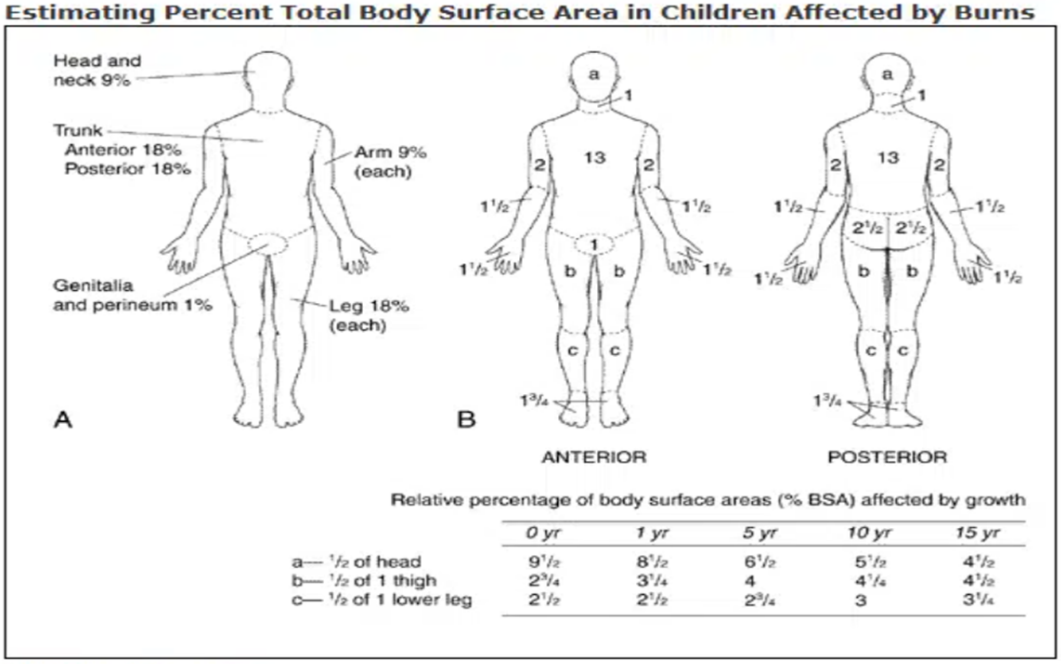
Protocol Continued

The committee on Trauma of the American College of Surgeons (ACS) and the American Burn Association (ABA) have identified certain injuries as those which generally require referral to a burn center.

The following injuries generally require referral to a burn unit:

1. Partial thickness burns greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns, including lightning injury
5. Chemical burns
6. Inhalation injury
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality. Burns in any patients with concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses a greater immediate risk than the burns, it may be necessary to stabilize the patient in a trauma center before being transferred to a burn unit. Physician judgment is necessary in such situations and should be in concert with **established** triage protocols.

Estimating Percent Total Body Surface Area in Children Affected by Burns



Relative percentage of body surface areas (% BSA) affected by growth

	0 yr	1 yr	5 yr	10 yr	15 yr
a— ½ of head	9½	8½	6½	5½	4½
b— ½ of 1 thigh	2¾	3¼	4	4¼	4½
c— ½ of 1 lower leg	2½	2½	2¾	3	3¼

(A) Rule of "nines"
(B) Lund-Browder diagram for estimating extent of burns

Estimation of Burn Size (Children)					
Area	**Age 0**	**1 yr.**	**5 yr.**	**10 yr.**	**15 yr.**
A - ½ of head	9 ½ %	8 ½ %	6 ½ %	5 ½ %	4 ½ %
B - ½ of one thigh	2 ¾ %	3 ¼ %	4 %	4 ¼ %	4 ½ %
C - ½ of one leg	2 ½ %	2 ½ %	2 ¾ %	3 %	3 ¼ %

4.2 Drowning/Submersion Injuries Adult & Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Begin resuscitation efforts while removing the patient from the water.
- Ensure spinal stabilization and immobilization if indicated(e.g. unwitnessed event, unconscious patient, diving incident, or other mechanism of injury.) Treat per Protocol 4.8 Spinal Column/Cord Injuries.
- Consider hypothermia; Treat per Protocol 2.8 Hypothermia (Environmental) Adult and Pediatric.

ADVANCED EMT STANDING ORDERS

A

- Provide advanced airway management only if the patient is not adequately oxygenating and/or ventilating and not corrected by BVM.
- Obtain IV/IO access and if the systolic blood pressure is < 90, administer a 250cc bolus normal saline.

MEDICAL CONTROL MAY ORDER

- Additional intravenous fluid.

PARAMEDIC STANDING ORDERS

P

- Consider intubation if airway is not adequately managed by other means.

For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

Conscious patients who survive any form of drowning are at high risk of deterioration and should be closely monitored during transport. ALS care should be anticipated in these cases.

Eye Emergencies Adult & Pediatric

4.3

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 1.0 Routine Patient Care
- Obtain visual history (e.g., use of corrective lenses, surgeries, use of protective equipment).
- Obtain visual acuity, if possible.
- Assist patient with the removal of contact lens, if applicable.
- Chemical irritants, including pepper spray: flush with copious amounts of water, or 0.9% NaCl.
- Thermal burns to eyelids: patch both eyes with cool saline compress.
- Impaled object: immobilize object and patch both eyes.
- Puncture wound: place rigid eye shield over both eyes. Do not apply pressure.
- Foreign body: patch both eyes.
- If the patient cannot close their eyelids, keep their eye moist with a sterile saline dressing.

PARAMEDIC STANDING ORDERS

P

- Topical anesthetic: **tetracaine** 1-2 eye drops as needed, if available.
- Use of Morgan lens for eye irrigation.

MEDICAL CONTROL MAY ORDER

- Special consideration: Sudden painless loss of vision: If suspect central retinal artery occlusion in patient with acute non-traumatic, painless loss of vision in one eye (most common in elderly patient): apply vigorous pressure using heel of hand (massage) to affected eye for three(3) to five(5) seconds, then release. The patient may perform this procedure. Repeat as necessary.

CAUTION: If tetracaine has been administered, do not apply pressure to eye.

NOTE: Cardiac (EKG) monitor (12 lead ECG) is required for this procedure (i.e., vagal stimulus: asystole).

- If chemical eye burn suspected in patients who wear contact lenses, contact medical control regarding removing contact lenses.

Chemical Irritants: Eye(s) should be flushed as soon as possible using copious amounts of water for a period of fifteen (15) minutes with a controlled stream of sterile normal saline, sterile water or tap water.
Blunt Trauma: Both eyes should be patched and protected.
Penetrating Trauma: Puncture wound with no impaled object: Both eyes should be patched and protected.

NOTE: *If object is impaled in the eye, the object must be immobilized and both eyes should be patched and protected. (Objects penetrating the eye globe should only be removed in-hospital.)

Thermal Burns: Both eyes should be patched and protected.

Securing Impaled Object in an Eye:

1. Place a roll of gauze bandage or folded gauze pads on either side of the impaled object, along the vertical axis of the head. These rolls or pads are placed so they stabilize the object.
2. Fit an eye shield around the impaled object. The protective shield should not press the impaled object.
3. Secure the dressings and shield in place with self adherent roller bandage or wrapping of gauze. **DO NOT** secure bandage over the top of the shield.
4. Patch and bandage the uninjured eye to reduce eye movements.

4.4 Head Trauma & Injuries Adult & Pediatric

Brain Injury as a result of head trauma occurs by both:
1. Primary “impact” damage as the immediate consequence of the injury; and
2. Secondary complications of impact such as blood accumulation or cerebral swelling, sometimes with herniation syndromes.

Glasgow Coma Scale (GSC) is the most reliable indicator of brain injury in the field:

GCS 13-15	Minor TBI
GCS 9-12	Moderate TBI
GCS 3-8	Severe TBI

Progressively increasing Intracranial Pressure (ICP) can lead to tentorial herniation. This condition is manifested by a decreasing level of consciousness, ipsilateral pupil dilation, contralateral hemiparesis, and decerebrate posturing. Cushing’s Reflex (bradycardia, irregular respirations, and hypertension) is a late clinical indication of herniation.

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Ensure cervical spine stabilization and immobilization, treat per Protocol 4.8 Spinal Column/Cord Injuries
- Elevate head of patient to 20° - 30° unless contraindicated.

ADVANCED EMT STANDING ORDERS

A

- Provide advanced airway management only if patient is not adequately oxygenating (defined as SpO_2 maintained at ≥ 95%) or ventilating and not corrected by BVM. Maintain $ETCO_2$ at 35 - 40 mm Hg.
- When obtaining vascular access, avoid fluid overload; give 250cc normal saline bolus IV fluids if needed to maintain **SBP ≥ 100 mm Hg**.
- In patients younger than **15 years old** exhibiting signs of tentorial herniation or Cushing’s Reflex, consider the administration of **3% hypertonic saline**.
  - 3 mL/kg (to max 250 mL) 3% saline over 20 minutes.

PARAMEDIC STANDING ORDERS

P

- In patients who require emergent intubation, and cannot be intubated by conventional means, treat per Protocol 5.2 Difficult Airway.

MEDICAL CONTROL MAY ORDER

- Further crystalloid fluid boluses.

CAUTION: Medication Safety Alert: **Hypertonic saline** is packaged very similarly to other IV fluids. **Hypertonic saline** should be stored away from crystalloids and, while maintaining package sterility, be marked in bright, contrasting colors to indicate its identity.

Multisystem Trauma Adult & Pediatric

4.5

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Control/stop any identified life threatening hemorrhage (tourniquet, direct pressure, wound packing, etc.), suspected pelvic fractures with a commercial device (preferred) or bed sheet.

ADVANCED EMT STANDING ORDERS

A

- Initiate 1-2 large bore IV(s) normal saline (KVO) while **enroute** to the hospital.

MEDICAL CONTROL MAY ORDER

- Additional fluid boluses.

PARAMEDIC STANDING ORDERS

P

- In patients who require emergent intubation who cannot be intubated by conventional means, treat per Protocol 5.2 Difficult Airway.
- If available and authorized, administer **TXA**. For a patient > 5 years of age, who has a SBP < 90 or a HR > 110 beats per minute, or if the provider determines the patient to be at high risk for significant hemorrhage, administer **TXA** :
  15mg/kg to a maximum dose of 1 gram slow IV push over 10 minutes (mix 1 gram of **TXA** in 100 ml of normal saline.)

MEDICAL CONTROL MAY ORDER

- For a patient under 5 years of age: Medical Control may order **TXA** as above.

CAUTION: For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

CAUTION: If it has been greater than 3 hours since the traumatic event or delivery, or the patient has a known allergy, **TXA** is contraindicated. If **TXA** is administered too fast, profound hypotension may occur. If too high a dose is administered, seizures may occur.

4.6 Musculoskeletal Injuries Adult & Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Manually stabilize the injury.
- Control bleeding (tourniquet, direct pressure, wound packing, etc.) and treat for shock per Protocol 2.16A/P Shock.
- Remove obvious debris, irrigate open wounds with saline solution, and cover with a dry sterile dressings.
- Assess CSMs distal to injury before and frequently after immobilization.
  - Splint extremity as required
  - Traction splinting is the preferred technique for isolated adult and pediatric closed mid-shaft femur fractures (unless contraindicated by associated injury)
- Stabilize suspected pelvic fractures with commercial device (preferred) or bed sheet.

ADVANCED EMT STANDING ORDERS

A

- Obtain IV/IO access and if the systolic blood pressure is < 90, administer a 250cc bolus of normal saline.

MEDICAL CONTROL MAY ORDER

- Additional intravenous fluid.

PARAMEDIC STANDING ORDERS

P

- After patient assessment, consider the use of pain management, per Protocol 2.13 Pain and Nausea Management.

MEDICAL CONTROL MAY ORDER

- Additional pain management if needed.

NOTE: If no palpable, distal pulse is present following suspected extremity fracture, position injured extremity in correct anatomic position. Apply gentle traction along the axis of the extremity distal to the injury until the distal pulse is palpable and immobilize in place. This does not apply to dislocations.

Soft Tissue/Crush Injuries/Crush Syndrome/Compartment Syndrome - Adult & Pediatric 4.7

Clinical Notes:

- **Soft Tissue Injury** is an injury to the soft parts of the musculoskeletal system, including muscles,tendons,ligaments, and other connective tissues. Treatment focuses on controlling bleeding, preventing further injury, and reducing contamination.
- **Crush Injury** is a hypoperfusion injury and is associated with severe trauma. It most commonly occurs in multiple casualty incidents (MCI), such as bombings, earthquakes, building collapse, train accidents and mining accidents. It is the result of compression or pressure on various parts of or all of the human body.
- **Crush Syndrome** is a reperfusion injury and may result in fatal injury or severe metabolic abnormalities that may result in death. Careful monitoring of these patients is essential.
- **Compartment Syndrome** is usually due to a crush injury and is a surgical emergency. It occurs most commonly in the forearm, leg, gluteal region, thigh, and lumbar paraspinous muscles. Compartment syndrome may result in ischemic swelling, muscle infarction, nerve injury and permanent loss of extremity function. Monitor closely for the development of compartment syndrome (characterized by pain out of proportion to clinical exam, tense swelling, pain with passive stretch, muscle weakness, absent pulses in the extremity, paresthesia.)

EMT STANDING ORDERS

E

- <u>1.0 Routine Patient Care</u>
- If there is any concern for the patient having an unstable airway and/or inadequate breathing, **extricate the patient immediately to a safe area** for immediate treatment.
- Control and stop any identified life-threatening hemorrhage (tourniquet, direct pressure, wound packing, etc.).
- If wound is grossly contaminated, irrigate with sterile water or normal saline
- Stabilize all protruding foreign bodies (impaled objects) if noted
- Place dry sterile dressing on all open wounds and bandage as needed.
- Closely monitor patients circulation, sensory, and motor function (CSM) continuously.
- For patients with < 2 hours of entrapment, consider possible crush injury.
- The key to treatment is comprehensive therapy, including thorough and rapid reduction in tension of the affected area.
- For patients with prolonged crush injury, > 2 hours of entrapment, consider crush syndrome. Consider delaying extrication until a thorough advanced life support (ALS) assessment has been completed.

AEMT STANDING ORDERS

A

- Delay extrication until the patient has been adequately fluid resuscitated.
  Adult: administer a normal saline bolus of 500-1000ml, followed by an infusion of 500ml per hour.
  Pediatric: adminster a normal saline bolus of 10-20ml per kg, followed by an infusion of 10ml per kg per hour.

Soft Tissue/Crush Injuries/Crush Syndrome/Compartment Syndrome - Adult & Pediatric 4.7

PARAMEDIC STANDING ORDERS

P

- Maintain continuous cardiac monitoring; closely monitor for dysrhythmias and treat accordingly.
- Provide pain management per Protocol 2.13 Pain and Nausea Management.
- If suspected hyperkalemia treat in accordance with Protocol 2.19 Hyperkalemia-Adult.
- For Crush Syndrome patients, administer **sodium bicarbonate** 1 mEq per kg IV/IO to a maximum dose of 50mq over 5 minutes.

MEDICAL CONTROL MAY ORDER

- Repeat boluses of above medications.

4.8 Spinal Column/Cord Injuries Adult & Pediatric

EMT STANDING ORDERS

- 1.0 Routine Patient Care
- Control and stop any identified life-threatening hemorrhage (tourniquet, direct pressure, wound packing, etc.).
- Ensure cervical spine restriction and apply a cervical collar.
- Determine presence or absence of significant neurologic signs and symptoms: decreased motor function, decreased sensory function, priapism, and loss of bladder/bowel control.
- Long backboards are NOT considered standard of care in most cases of potential spinal injury. Instead, use spinal motion restriction with a cervical collar and cot in most cases. Note that there are exceptions, such as a patient with a potential spinal injury who cannot be logrolled while being transported and may be at risk of a compromised airway.

Spinal Immobilization Procedure:

E

1. Establish manual c-spine stabilization in the position that the patient is found.
2. Assess for correct size and properly apply a cervical collar.
3. Move patient from the position found to the location of the ambulance stretcher utilizing a device such as a scoop stretcher, long spine board, or, if necessary, by having the patient stand and pivot to the stretcher. DO NOT permit the patient to struggle to their feet from a supine position.
4. Position patient on the ambulance stretcher.
5. Remove, scoop, or logroll patient off long spine board or other device (if such device was utilized).
6. A blanket roll or blocks and tape attached to the stretcher may be used to minimize lateral movement of head during transport.
7. Once on the ambulance stretcher, instruct patient to lie still.
8. The head of the stretcher may be elevated 20-30 degrees in a position of comfort.
9. Secure cross stretcher straps and over-the-shoulder belts firmly.
10. Utilize a SLIDE BOARD, if available, at the destination to move the patient smoothly to the hospital stretcher.
11. Ensure appropriate documentation of procedure in patient care report

ADVANCED EMT STANDING ORDERS

A

- Provide advanced airway management only if patient is not adequately oxygenating or ventilating and not corrected by Bag Valve Mask (BVM).
- Obtain IV/IO access and if systolic blood pressure is < 90, administer a 250cc bolus of normal saline.

MEDICAL CONTROL MAY ORDER

- Additional fluid boluses.

PARAMEDIC STANDING ORDERS

P

NOTE: Bradydysrhythmias are commonly seen in high level spinal injuries.

- Consider 12 lead ECG.

MEDICAL CONTROL MAY ORDER

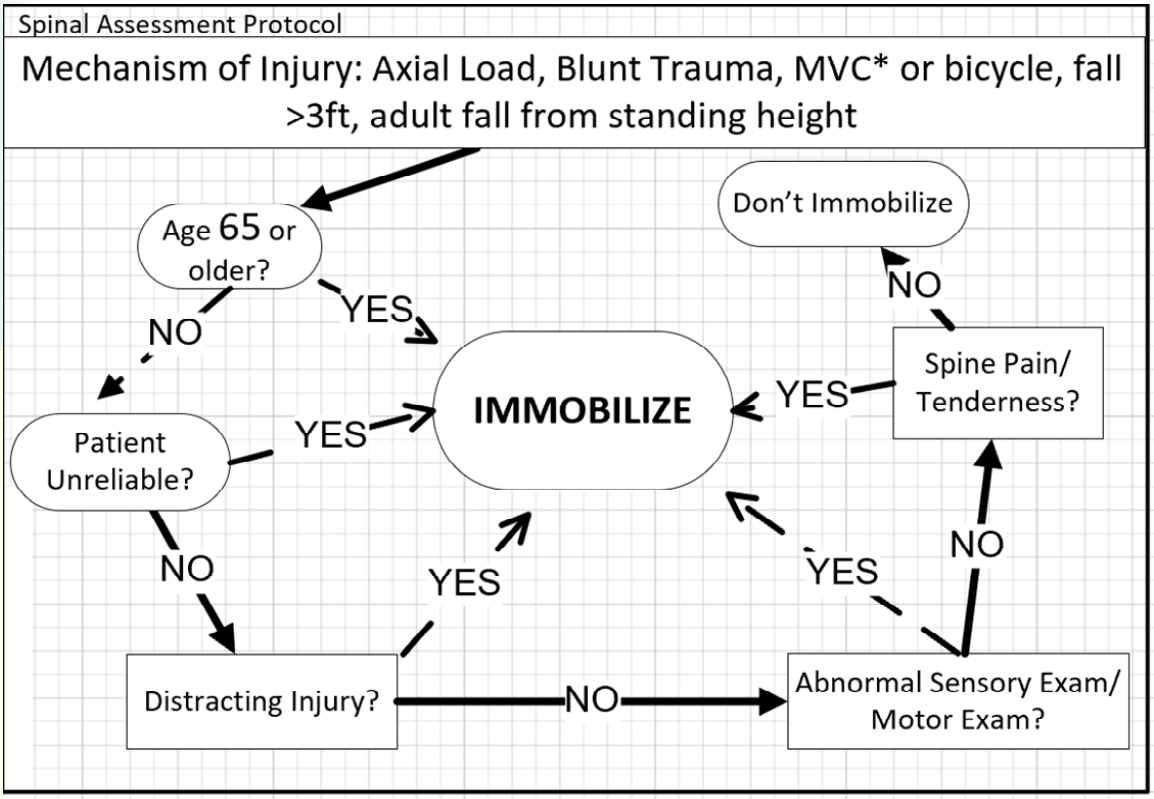
- For suspected neurogenic shock (without hypovolemia):
  - **Norepinephrine** 0.1-0.5 mcg/kg/min IV/IO, administration by infusion pump ONLY, titrate to goal systolic blood pressure of 90 mm Hg, **OR**
  - **Dopamine** 2-20 mcg/kg/min IV/IO.

Protocol Continues

Protocol Continued

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E / A / P



Abnormal Sensory/Motor Exam?
If, based on the assessment, the patient has any abnormal neurological findings (including, but not limited to, paresthesias or loss of sensation in extremities, weakness or paralysis of extremities, loss of urethral or sphincter control, etc.) **–Immobilize**

Distracting Injury?
Distracting injuries include any injury that produces clinically apparent pain that might distract the patient from the pain of a spine injury – pain would include medical as well as traumatic etiologies of pain – **If, based on the assessment, the patient has distracting injuries - Immobilize**

Complaints of Pain or Examination Tenderness?
Complete an assessment of the patient's spine for pain or tenderness. The assessment should include, but is not limited to, palpation of the entire spine (posterior, midline spine, and cervical spine), range of motion (if appropriate). – **If, based on the assessment, the patient is experiencing any pain or tenderness along the spine - Immobilize**

Patient Reliability
Is the patient intoxicated, have an altered mental status, is having an acute stress reaction, at the extremes of age or any other reason that results in an inability to either adequately perceive or communicate symptoms, etc. – **If the patient is unreliable based on the assessment - Immobilize**

CAUTION: This protocol **cannot** be used to rule out need for immobilization in any patient age 65 or older.

Thoracic Trauma
Adult & Pediatric

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Provide appropriate management for identified thoracic injuries:

Open Pneumothorax:

- Immediately apply an occlusive dressing sealing 3 sides.
- Monitor patient closely for evidence of tension pneumothorax.

Tension Pneumothorax (Respiratory distress or apnea, Difficult to ventilate with bag, distended neck veins, unilateral decreased or absent breath sounds, tracheal deviation away from the side without breath sounds):

- If present following closure of open pneumothorax, release occlusive dressing temporarily.

Flail Chest (paradoxical movement of portion of chest wall):

- Position patient with injured side down, unless contraindicated. provide manual stabilization of the flail segment.

NOTE: Assisted positive pressure ventilations using a Bag Valve Mask (BVM) device may be indicated and may also serve as an “internal splinting” of the flail segment due to lung expansion.

- Control/stop any identified life threatening hemorrhage (tourniquet, direct pressure, wound packing, etc.).
- Impaled Objects:
  - Secure in place with a bulky dressing.
- Open chest wound:
  - Cover with an occlusive dressing, sealed on 3 sides, or use a commercial device; if the patient’s condition deteriorates, remove the dressing momentarily, then reapply.
- Flail segment with paradoxical movement and in respiratory distress:
  - Consider positive-pressure ventilation.
  - Do not splint the chest.

ADVANCED EMT STANDING ORDERS

A

- Provide advanced airway management only if patient is not adequately oxygenating or ventilating and not corrected by BVM.
- Obtain IV/IO access and if systolic blood pressure is < 90, administer a 250cc bolus of normal saline.

MEDICAL CONTROL MAY ORDER

- Additional intravenous fluid.

PARAMEDIC STANDING ORDERS

P

- Needle chest decompression if indicated.
- After patient assessment, consider the use of pain management, per Protocol 2.13 Pain and Nausea Management.

MEDICAL CONTROL MAY ORDER

- Additional pain management if needed.

Traumatic Amputations Adult & Pediatric

4.10

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- Control and stop any identified life-threatening hemorrhage (tourniquet, direct pressure, wound packing, etc.).

ADVANCED EMT STANDING ORDERS

A

- Provide advanced airway management only if patient is not adequately oxygenating or ventilating and is not corrected by Bag Valve Mask (BVM) assistance.
- Obtain IV/IO access and if the systolic blood pressure is < 90, administer a 250cc bolus of normal saline.

MEDICAL CONTROL MAY ORDER

- Additional intravenous fluid.

PARAMEDIC STANDING ORDERS

P

- After patient assessment, consider the use of pain management, per Protocol 2.13 Pain and Nausea Management.

MEDICAL CONTROL MAY ORDER

- Additional pain management if needed.

4.11 Traumatic Cardiac Arrest Adult & Pediatric

CAUTION: FIRST: Focus on reversible causes prior to initiating CPR and AED use.

FIRST RESPONDER STANDING ORDERS

FR

- 1.0 Routine Patient Care
- If bleeding is evident and uncontrolled, apply an appropriate tourniquet to the injured extremity. Document the exact time of the tourniquet application.
- If bleeding is not amenable to the tourniquet or the provider is not trained, apply direct pressure. Utilize hemostatic gauze, if available and trained.
- Provide airway management to reverse airway obstruction.
- Perform CPR, in accordance with most recent American Heart Association/ International Liaison Committee on Resuscitation (AHA/ILCOR) guidelines, only after life saving interventions have been performed. **Compressions should not delay hemorrhage control.**

EMT STANDING ORDERS

E

- Continue hemorrhage control with tourniquets, direct pressure wound packing, hemostatic gauze, and pelvic splinting.
- Provide appropriate management for identified injuries:
  - Protocol 4.4 Head Trauma/Injuries
  - Protocol 4.9 Thoracic Injuries

ADVANCED EMT STANDING ORDERS

A

- Focus on reversible causes first. Rapidly identify and treat hemorrhage, airway obstruction, tension pneumothorax, tamponade, and hypovolemia. Start immediate transport to the appropriate hospital.
- Maximize oxygenation. Maintain airway patency with least-invasive means, (avoid aggressive positive pressure ventilation if severe hypovolemia or possible undiagnosed tamponade/tension pneumothorax.
- Initiate 1-2 large bore IV(s) normal saline (KVO) while **enroute** to the hospital.
- Administer a 250-500cc fluid bolus of normal saline, if indicated.

MEDICAL CONTROL MAY ORDER

- Additional intravenous fluid.

PARAMEDIC STANDING ORDERS

P

- Needle decompression, if pneumothorax is suspected.
- Consider treating according to Cardiac Arrest protocols 3.4A/P, 3.5A/P especially if a medical event was suspected prior to the traumatic injury.
- If available and trained, administer TXA 1 gm over 10-20 minutes.

CAUTION: For patients under 12 years old, the airway is in most cases best managed with a BVM or Supraglottic Airway (SGA). In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

SECTION 5:

AIRWAY PROTOCOLS AND PROCEDURES

Statewide Treatment Protocols
Version 2026.1

5.1A Upper Airway Obstruction- Adult

EMT STANDING ORDERS

E

- 1.0 Routine Patient Care
- If the obstruction due to a foreign body is complete or is partial with inadequate air exchange, follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) recommendations for Foreign Body Airway Obstruction (FBAO.)
- Initiate 5 back blows, followed by 5 abdominal thrusts. Repeat until the object is expelled or the patient becomes unresponsive.
- If **partial obstruction** due to foreign body is suspected and there is adequate air exchange, transport to appropriate medical facility. Do not attempt to remove foreign body in the field. Maintain an open airway, remove secretions, vomitus and assist ventilations as needed.
  - Consider encouraging the patient to cough.
  - Continue to check for signs of severe FBAO.
- Emergent removal of tracheostomy tube, if present, and evidence of obstruction resulting in inadequate air exchange, treat per Protocol 5.3 Tracheostomy Tube Obstruction Management.

ADVANCED EMT STANDING ORDERS

A

- Provide airway management if indicated for mechanical obstruction.
- If unable to remove obstructing foreign body, continue BLS airway management by providing positive pressure ventilations if needed.

PARAMEDIC STANDING ORDERS

P

- Perform direct laryngoscopy if foreign body suspected. If foreign body is visible and easily accessible, attempt removal with Magill forceps.
- If foreign body is removed, proceed with endotracheal intubation if necessary and perform capnography.
- If unable to clear airway obstruction, intubate, or perform positive pressure ventilations, and if properly trained and authorized, perform a needle cricothyrotomy, per Protocol 6.1 Needle Cricothyrotomy or 6.2 Surgical Cricothyrotomy

Upper Airway Obstruction- Pediatric

5.1P

EMT/ADVANCED STANDING ORDERS

- 1.0 Routine Patient Care

E

- Determine the presence of an upper airway obstruction (stridor.) If the obstruction due to a foreign body is complete or is partial with inadequate air exchange, follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) recommendations for Foreign Body Airway Obstruction (FBAO.)
- If **partial obstruction** due to a foreign body is suspected and the child has adequate air exchange, transport to appropriate medical facility. Do not attempt to remove foreign body in the field.

/

- If suspected **croup** (barking cough, no drooling) or epiglottitis (stridor, drooling), maintain an open airway, place child in position of comfort and avoid upper airway stimulation.

A

- Emergent removal of tracheostomy tube, if present, and evidence of obstruction resulting in inadequate air exchange, Treat per Protocol 5.3 Tracheostomy Tube Obstruction Management, if applicable.

PARAMEDIC STANDING ORDERS

P

- Provide advanced airway management if indicated for mechanical obstruction, perform direct laryngoscopy, if foreign body is suspected. If foreign body is visible and readily accessible, attempt removal with Magill forceps. If unable to remove obstructing foreign body, continue BLS airway management by providing positive pressure ventilations.
- If foreign body is removed, proceed with endotracheal intubation, if necessary, and perform capnography.
- If unable to clear airway obstruction, intubate as needed, or perform positive pressure ventilations, and if properly trained and authorized, perform a needle cricothyrotomy, per Protocol 6.1 Needle Cricothyrotomy.
- Administer **nebulized racemic epinephrine** 11.25 mg in 2.5 mL normal saline, for suspected **severe croup,** with stridor at rest and respiratory distress.

CAUTION: For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.

5.2 Difficult Airway - Adult

The Difficult Airway protocol is to be used only after conventional attempts at airway management have failed and the patient cannot be ventilated by ordinary means; such as with the insertion of an oral or nasal pharyngeal airway and bag valve mask (BVM) ventilation or by insertion of a supraglottic airway (SGA) device. The patient care report must include all attempts at airway management, including failed attempts in order to illustrate the need for the use of this protocol.

In all cases adjustments to technique are to be made based on training and equipment (i.e. mask size/seal, positioning, suction, and use of adjuncts). It is necessary to correct all manageable causes of inadequate ventilation prior to utilizing this protocol. When confronted with an airway that is unstable and conventional intubation is determined to be unlikely (Mallampati IV), EMTs are to use alternative equipment such as supraglottic airway devices, in accordance with your certification and training.

An unstable airway situation is defined as *unable to clear a foreign body airway obstruction, OR airway grading* (Figure 1 & 2) *suggests intubation unlikely, OR unsuccessful intubation after no more than a total of 3 attempts.*

ADVANCED EMT STANDING ORDERS

A

- 1.0 Routine Patient Care.
- Initiate transport as soon as possible.
- Follow current American Heart Association / International Liaison Committee on Resuscitation (AHA/ILCOR) guideline for management of the adult foreign body airway obstruction (FBAO):
- If BVM failure is the result of a manageable cause.
  - Apply countermeasures if applicable.
- If the patient can be ventilated, but the airway is unstable insert the SGA device.

PARAMEDIC STANDING ORDERS

P

- If the airway is unstable and the adult patient can not be ventilated, and if properly trained and authorized, treat per Protocol 6.1 Needle Cricothyrotomy or Protocol 6.2 Surgical Cricothyrotomy.

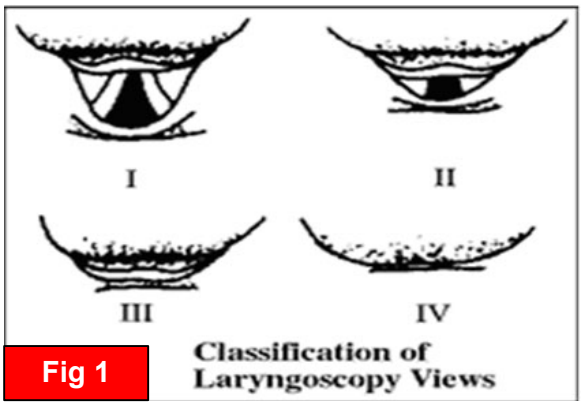


Fig 1

Figure 1 depicts the Cormack & LeHane laryngoscopy classifications.

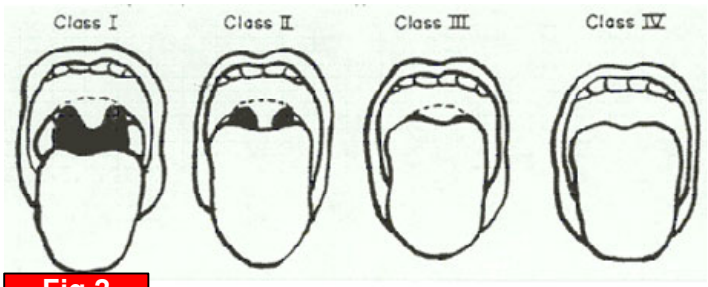


Fig 2

Figure 2 depicts the Mallampati system of airway grading, generally performed with patient sitting in full fowlers position with tongue extended.

Tracheostomy Tube Obstruction Management Adult & Pediatric

5.3

EMT/ADVANCED EMT STANDING ORDERS

E/A

In the patient with an obstructed tracheostomy tube, in whom effective ventilation or oxygenation is not possible, the following are to be considered **Standing Orders**:

- Wipe neck opening with gauze
- Attempt to suction the external aspect of the tracheostomy tube
- Remove tracheostomy tube if necessary
- Once airway is open, begin ventilations as necessary/possible
- If the tracheostomy does not look bloody or inflamed, has been in place 7-days or more, and appears plugged, remove the tracheostomy tube, clear and re-insert
- Once re-inserted, ventilate as soon as possible

PARAMEDIC STANDING ORDERS

P

- Paramedics may attempt intubation of the patient if no other means of ventilating or oxygenating the patient are possible

NOTE: Signs of inadequate oxygenation/ventilation are:

- Falling pulse oximetry
- Change in patient's color
- Change in patient's vital signs
- Inability to deliver oxygenation by all other means

5.4 Sedation for an Intubated Patient

On-line Medical Control is required for any instance when adjustment of the ventilator settings is needed.

Richmond Agitation and Sedation Scale (RASS)

Score	*Term*	*Description*
+4	Combative	Overtly combative or violent; immediate danger to staff
+3	Very agitation	Pulls on or removes tube(s) or catheter(s) or has aggressive behavior toward staff
+2	Agitated	Frequent non-purposeful movement or patient–ventilator dyssynchrony
+1	Restless	Anxious or apprehensive but movements not aggressive or vigorous
0	Alert and calm	
-1	Drowsy	Not fully alert, but has sustained (more than 10 seconds) awakening, with eye contact, to voice
-2	Light sedation	Briefly (less than 10 seconds) awakens with eye contact to voice
-3	Moderate sedation	Any movement (but no eye contact) to voice
-4	Deep sedation	No response to voice, but any movement to physical stimulation
-5	Unarousable	No response to voice or physical stimulation

PARAMEDIC STANDING ORDERS

For an intubated patient that is inadequately sedated (defined as RASS (-1) – (+4)), the following medication administration is allowed with a goal RASS of -2 and SBP >100 mm Hg:

- **Fentanyl:** 0.5 - 1 mcg/kg slow IV/IO up to 100 mcg. May administer half of the initial dose in 5-10 minutes up to 2 more times with a maximum of 200 mcg total. Titrate to adequate sedation and maintain systolic blood pressure of 100 mm Hg.

P

Unless contraindicated, pain control with fentanyl should precede use of the following sedatives:

- **Midazolam:** 0.05 mg/kg slow IV/IO up to 5 mg. May administer half the initial dose in 5-10 minutes up to 2 times with a maximum of 10 mg total. Titrate to adequate sedation and maintain systolic blood pressure of 100 mm Hg.
- **Ketamine:** 1-2 mg/kg slow IV/IO up to 100 mg. May administer half the initial dose in 5-10 minutes up to 2 times with a maximum of 200 mg total.

MEDICAL CONTROL MAY ORDER

- Additional doses of the above medications.

CAUTION: Relative contraindications to **midazolam**: Suspected or known intracranial process, need for frequent or repeat neurologic exams.

SECTION 6:

MEDICAL DIRECTOR OPTIONS

Statewide Treatment Protocols
Version 2026.1

6.0 Medical Director Options

The following conditions must be met in order for your service to provide any of the following optional treatments as listed in this section:

1. The service must have a written policy adopting use of the procedure, in accordance with the terms of this Protocol section, and such policy is signed by the service's affiliate hospital medical director.

2. The service's affiliate hospital medical director must authorized each EMT to utilize the procedures in this section, based on the EMTs level of certification.

3. The service's EMTs must be trained in accordance with the specific protocol to use the procedure, and then be authorized by the affiliate hospital medical director.

4. The service must complete a Continuous Quality Improvement (CQI) retrospective review of applicable conditions that require 100% CQI to ensure compliance with the protocol. The Department states within each protocol if 100% CQI is required. For all other medical director options where 100% CQI is not Department required the service must follow its own standard CQI process.

6.1 Needle Cricothyrotomy

Medical Director Options 6.1

P

PARAMEDIC STANDING ORDERS (For Paramedics Only)

If properly trained and authorized by the affiliated hospital medical director, paramedics may use this technique for performing needle cricothyrotomy. Due to differences in medical devices used by individual systems, the procedure may vary slightly. Refer to your local and regional guidelines for the technique and equipment used in your system. Appropriate body substance isolation precautions are required whenever caring for the trauma patient.

Indications:

1. The patient is in imminent danger of death.
2. No alternative airway device/maneuver has been successful.
3. The patient cannot be oxygenated or ventilated by any other means

Examples of types of patients potentially meeting the above criteria include (but are not limited to):

1. Patients suffering traumatic arrest
2. Patients suffering multiple traumatic injuries
3. Patients suffering an upper airway obstruction

Procedure:

1. Assemble and prepare oxygen tubing by cutting a hole toward one end of the tubing. Connect the other end of the oxygen tubing to an oxygen source, capable of delivering 50 psi or greater at the nipple, and assure free flow of oxygen through the tubing.
2. Place the patient in a supine position.
3. Assemble a #12 or 14-gauge, 8.5 cm, over-the-needle catheter to a 6 to 12 mL syringe.
4. Clean the neck with an aseptic technique, using antiseptic swabs.
5. Palpate the cricothyroid membrane, anteriorly, between the thyroid cartilage and cricoid cartilage. Stabilize the trachea with the thumb and forefinger of one hand to prevent lateral movement of the trachea during the procedure.
6. Puncture the skin midline with the needle attached to a syringe, directly over the cricothyroid membrane (i.e., mid-sagittal).
7. Direct the needle at a 45 degree angle caudally, while applying negative pressure to the syringe.
8. Carefully insert the needle through the lower half of the cricothyroid membrane, aspirating as the needle is advanced.
9. Aspiration of air signifies entry into the tracheal lumen,
10. Remove the syringe and withdraw the stylet while gently advancing the catheter downward into position, being careful not to perforate the posterior wall of the trachea.

Protocol Continues

Protocol Continued

PARAMEDIC STANDING ORDERS

P

11. Attach the oxygen tubing over the catheter needle hub (you may use a 3.0-4.0 ET tube connector), and secure the catheter to the patient's neck.
12. Intermittent ventilation can be achieved by occluding the open hole cut into the oxygen tubing with your thumb for one second and releasing it for four seconds. After releasing your thumb from the hole in the tubing, passive exhalation occurs. Adequate PaO2, can be maintained for only 30 to 45 minutes.
13. Continue to observe lung inflations and auscultate the chest for adequate ventilation.

NOTE: Criteria for participation
1. Affiliate Hospital Medical Director (AHMD) approval to participate.
2. Initial training and AHMD oversight.
3. EMT participants complete and pass a competency exam.
5. 100% standard tracking of cases with 100% CQI.
6. Ongoing training and equipment requirements are met.

This Protocol includes:
(1) criteria for performing procedure
(2) guidelines on initial and continued education and procedure competency;
(3) guidelines for quality assurance and data collection; and
(4) an updated protocol for the use of advanced airway management, necessary equipment and backup equipment, and patient monitoring guidelines.

Indications:
1. The patient is in imminent danger of death.
2. No alternative airway device/maneuver has been successful.
3. The patient cannot be oxygenated or ventilated by any other means

PARAMEDIC STANDING ORDERS

P

Surgical Cricothyrotomy Procedure:
1. Position the patient in a neutral position.
2. Identify and palpate landmarks (Palpate thyroid and cricoid cartilage then palpate cricothyroid membrane).
3. Clean area using antiseptic swabs.
4. Make a 2-3 cm midline vertical incision through the skin over the cricothyroid membrane.
5. Make a 1-2 cm horizontal incision though the cricothyroid membrane.
6. Prior to removing scalpel, insert the tracheal hook(optional) and pull it cephalad pulling against the caudal end of the thyroid cartilage.
7. Cannulate the trachea.
8. Inflate cuff.
9. Confirm placement with $ETCO_2$ and lung sounds.

1. Guideline for a Surgical Cricothyrotomy Program

Surgical Cricothyrotomy is an invasive procedure performed only when a patient is in imminent danger of death due to airway compromise which cannot be alleviated by other means. Needle cricothyrotomy is the preferred procedure in children under the age of 12 years old.

2. Quality Assurance of a Surgical Cricothyrotomy Program:

Quality assurance review will be performed by each service on every case of attempted or successful intubation, including surgical and needle cricothyrotomy. The Affiliate Hospital Medical Directors and the service's Director of CQI, or their designee, will review each case individually and keep a written record of their review. Each case and its appropriate information will be available within a standard database including: age, sex, indication for intubation (or cricothyrotomy), provider information, medications used, number of attempts, successful/ unsuccessful intubation, adjuncts/backups used, and complications of intubation (ex-failed airway, cricothyrotomy required, bradycardia, hypoxemia, esophageal intubation).

Protocol Continues

Protocol Continued

3. Requirements for Participation in a Surgical Cricothyrotomy Program:

The service and its affiliate hospital medical director are committed to the Surgical Cricothyrotomy Program and participation in the Quality Assurance program. This program includes review of each individual surgical cricothyrotomy case and the specified training requirements. The service (Director of CQI) or designee must collect required data for each surgical cricothyrotomy and entered it into a database and be available for review by the Department.

4. Contraindications:

No absolute contraindication relative to the given situation.

5. Education Requirements/Training Guidelines of a Surgical Cricothyrotomy Program:

The initial educational program for this program consists of didactic lectures, skills labs and simulation. It is expected that the initial program takes at least four hours to complete.

1. Didactic classroom
1.1. Anatomy and physiology
1.2. Advanced airway management - including:
1.2.1. Necessary equipment
1.2.2. BVM technique
1.2.3. Standard intubation technique and backup techniques (bougie, cric, BVM, video assisted laryngoscopy)
1.2.4. Difficult airway algorithms
1.2.5 Identifying correct airway placement
1.2.6. Necessary monitoring equipment, including 02 sat monitor, cardiac monitoring, continuous end-tidal C02
1.2.7. Review of recent evidence- based medicine on prehospital airway management including issues with pediatric intubation and head trauma patients.
2. Skills lab for difficult airway & surgical cricothyrotomy
2.1. Review of necessary equipment
2.2. Review of Standard BVM technique .
2.3. Review of standard direct laryngoscopy intubation technique
2.4. Animal tracheas or equivalent used for skill development
2.5. Use of case based scenarios

3. Simulation Participation for the difficult airway and surgical cricothyrotomy
3.1. Intubation technique
3.2. Airway equipment and backup equipment
3.3. Monitoring equipment
3.4. Perform advanced airway management under the supervision of simulation staff.
4. Successful signoff by the Affiliate Hospital Medical Director or designee.

6. Continuing Education for Difficult Airway and Surgical Cricothyrotomy Program:

A refresher training program for this specific skill must be conducted at minimum every six months and must have a hands-on practical component-adding simulations as well as trachea cannulations. The Affiliate Hospital Medical Director or designee must then sign off on each Paramedic's continuation in the program.

100% Continuing Quality Improvement (CQI) must be performed on all intubations and cricothyrotomies.

6.3 Glucagon for Hypoglycemia by EMT Basic

NOTE: Criteria for participation:
1. Affiliate Hospital Medical Director (AHMD) must approve EMT-Basic level use.
2. Initial training and AHMD oversight.
3. EMT-Basics must document demonstrated hands-on procedure competency.
4. Training in the use of **glucagon** is required on initial hire only. The service is responsible for maintaining training records for all its EMT Basics.

EMT STANDING ORDERS

E

ADULT:

- **Glucagon** 1mg IM, IN
  - Recheck glucose 15 minutes after administration of **glucagon**
  - May repeat **glucagon** 1 mg IM, IN if glucose level is <70 mg/dL with continued altered mental status

PEDIATRIC:

- If patient <20 kg (44 lbs), **glucagon** 0.5 mg IM, IN
- If patient >20 kg (44 lbs), **glucagon** 1 mg IM, IN
  - Recheck glucose 15 minutes after administration of **glucagon**
- May repeat **glucagon** (dose above) if glucose level is <70 mg/dL with continued altered mental status

Withholding and Cessation of Resuscitation by Paramedics

6.4

NOTE: Criteria for participation
1. Affiliate Hospital Medical Director (AHMD) approval to participate.
2. Initial training and AHMD oversight.

MEDICAL CONTROL MAY ORDER

Paramedics only may cease resuscitative efforts in an adult patient 18 years of age or older, who does not have a valid MOLST requesting full resuscitative measures, regardless of who initiated the resuscitative efforts, without finding "obvious death" criteria **only** by the following procedure, and **only** if the EMS system's AHMD has approved of use of this procedure, as follows:

a. There is no evidence of or suspicion of hypothermia; **AND**
b. Indicated standard Advanced Life Support measures have been successfully undertaken (including for example effective airway support, intravenous access, medications, transcutaneous pacing, and rhythm monitoring); **AND**
c. The patient is in asystole or pulseless electrical activity (PEA), and REMAINS SO persistently, unresponsive to resuscitative efforts, for at least twenty (20) minutes while resuscitative efforts continue; **AND**
d. No reversible cause of arrest is evident; **AND**
e. The patient is not visibly pregnant; **AND**
f. An on-line **Medical Control** physician gives an order to terminate resuscitative efforts.

6.5 12 Lead ECG Acquisition and Transmission by EMT Basic and/or Advanced EMTs

NOTE: Criteria for participation
1. Affiliate Hospital Medical Director (AHMD) approval to participate.
2. Initial training and AHMD oversight.

Indications:

- Congestive Heart Failure/Pulmonary Edema
- Dysrhythmias
- Suspected Acute Coronary Syndrome
- Syncope/near syncope
- Shortness of breath/difficulty breathing
- Stroke/CVA
- Chest pain, pressure or discomfort
- Radiating pain to neck, shoulder, back, or either arm
- Sweating incongruent with environment
- Abnormal heart rate
- Profound weakness/dizziness
- Nausea, vomiting
- Epigastric pain
- Previous cardiac history
- Other cardiac risk factors (hypertension, diabetes, history of smoking, obesity, family history of heart disease, hypercholesterolemia).

EMT/ADVANCED EMT STANDING ORDERS

E / A

Procedure:

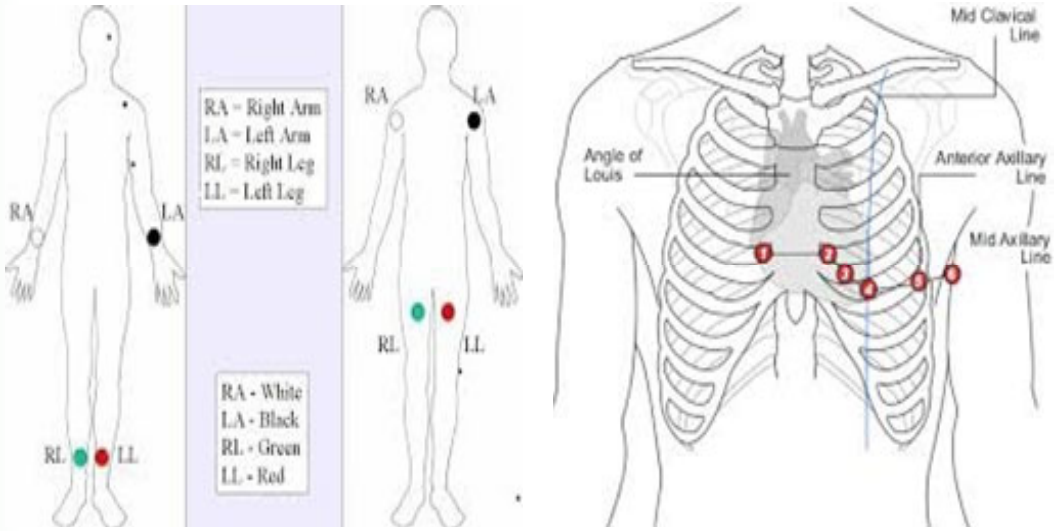
1. Prepare ECG Monitor and connect cable with electrodes.
2. Properly position the patient (supine or semi-reclined).
3. Enter patient information (e.g. age, gender) into monitor.
4. Prep chest as necessary, (e.g. hair removal, skin prep pads).
5. Apply chest and extremity leads using recommended landmarks:
   - RA – Right arm or shoulder.
   - LA – Left arm or shoulder.
   - RL – Right leg or hip.
   - LL – Left leg or hip.
   - V1 – 4th intercostal space at the right sternal border.
   - V2 – 4TH intercostal space at the left sternal border.
   - V3 – Directly between V2 and V4.
   - V4 – 5th intercostal space midclavicular line.
   - V5 – Level with V4 at left anterior axillary line.
   - V6 – Level with V5 at left midaxillary line.
6. Instruct patient to remain still.
7. Obtain the 12 lead ECG.
8. Transmit if the ambulance has this capability.
9. Copies of 12 lead ECG labeled with the patient's name and date of birth should be left with the receiving hospital.
10. Document the procedure and time of the ECG acquisition in appropriate section of the Patient Care Record.

Protocol Continues

12 Lead ECG Acquisition and Transmission by EMT Basic and/or Advanced EMTs 6.5

Protocol Continued

EMT/ADVANCED EMT STANDING ORDERS



E/A

NOTE:

- Ensure the patient's age is entered for proper interpretation.
- When transmitting either include the patient's name or notify the receiving facility of the patient's identity.
- Be alert for causes of artifact: dry or sweaty skin, dried out electrodes, patient movement, cable movement, vehicle movement, electromagnetic interference, static electricity.
- According to manufacturers, dried out electrodes are a major source of artifact; keep in original sealed foil pouches; plastic bags are not sufficient; use all the same kind of electrodes; press firmly around the edge of the electrode, not the center.
- Diaphoretic patients should be dried thoroughly. Clean the site using an alcohol prep pad, a towel or 4X4 gauze.
- Check for subtle movement as a cause of artifact: toe tapping, shivering, muscle tension (e.g. hand grasping rail or head raised to "watch").

6.6 Leave-Behind Naloxone

NOTE: Criteria for participation

1. Affiliate Hospital Medical Director (AHMD) must give approval to participate.
2. The ambulance service must have a written policy to use this protocol.
3. Initial training and AHMD oversight.
4. Retraining as needed.
5. Ambulances will be supplied with naloxone leave-behind kits that are separate from the medications they use to treat patients.

Purpose:

- An ambulance service may choose to stock its ambulance(s) with “civilian” naloxone administration kits, to be left at scenes where a potential overdose patient refuses transport.

Indication:

- Patient has recovered after successful treatment for a potential opioid overdose

EMT/ADVANCED EMT/PARAMEDIC ORDERS

E/A/P

- 1.0 Routine Patient Care
- After patient transport begins, or patient refuses transport, give the patient and/or accompanying person a naloxone administration kit, and instruct patient and/or accompanying person in its use as permitted

Ultrasound Device Use by Paramedics 6.7

NOTE: Criteria for participation

1. Affiliate Hospital Medical Director (AHMD) must approve Paramedic level use an FDA-approved ultrasound device
2. Initial training and AHMD oversight
3. Paramedic and service must document demonstrated hands-on procedure competency
4. Service required to perform 100% tracking of cases with 100% CQI and image review
5. Pertinent positive or negative images must be retained with the Patient Care Report

Indications:

- Adult patients experiencing trauma or cardiac arrest.
- Any non-arrest patient, to obtain intravenous access, without delay to transport

Treatment and transport should NOT be delayed to obtain the ultrasound. (Note that cardiac arrest work-in-place procedures are supported by the medical literature).

Services may perform ultrasound in either or both situations, as a matter of policy and practice.

PARAMEDIC STANDING ORDERS

1. 1.0 Routine Patient Care

2. Confirm that patient fits inclusion criteria

3a. In the setting of trauma, a standard E-FAST ultrasound exam, or components of the same, may be performed. This includes abdominal views for free fluid, lung views for pneumothorax, and cardiac views for pericardial fluid.

P **A positive result on the ultrasound exam may be considered a positive physiologic criterion for transport under the trauma POE plan.**

Negative findings are non-specific and should not change protocol management expectations, including POE.

3b. In the setting of cardiac arrest, ultrasound may be used to evaluate for global cardiac activity and pericardial fluid. Any findings must be reported to Medical Control immediately.

A finding of NO cardiac activity is NOT a positive finding for termination of resuscitative efforts-- note that asystole (both electrical and mechanical) is a treatable condition unless other criteria for termination are present, per protocol 6.4 Withholding and Cessation of Resuscitation.

6.8 Automated Transport Ventilators (ATV)

NOTE: Criteria for participation

- Paramedics must be adequately trained and authorized to use the ATV by their Affiliate Hospital Medical Director (AHMD).
- They must receive initial training on the use of the ATV which is to include the general mechanics and operations, its interference with other transport equipment and a review of relevant respiratory anatomy, physiology, pathology and treatment
- Skills and knowledge must be refreshed annually, or as part of IFT training.
- The AHMD must provide 100% QA/CQI for all calls that utilize the ATV.

Purpose:

Allow paramedics to use an ATV to provide respiratory support for 18+ year old patients who are either:

- Chronically vented patients who are experiencing a time sensitive emergency
- Patients that suffered cardiac arrest and treated in accordance with Protocol 1.1 High Quality CPR- Adult

Eligible Patients:

- In cardiac arrest or just obtained ROSC, in accordance with Protocol 1.1 High Quality CPR – Adult, **OR**
- Chronically or intermittently require ventilatory support and do not have a transport ventilator available to bring with them, **AND**
- Respiratory needs are met by ATV as determined by the facility's physician, respiratory therapist, equivalently trained nurse/caregiver, or on-line Medical Control, **AND**
- Experiencing a time sensitive emergency that would result in worse outcomes if further delay occurred to acclimatize to the ATV or wait for Interfacility Transport Team.

PARAMEDIC STANDING ORDERS

P

- 1.0 Routine Patient Care
- If the patient is in cardiac arrest or recently obtained ROSC, utilize ATV.
- If the patient is not in cardiac arrest, discuss with the sending facility staff the baseline ventilatory requirements of the patient and any changes related to the emergency call.
- Record a full set of vital signs and ensure that the patient is under continuous monitoring.
- Assess the tracheostomy site or equivalent for security of placement.
- Ensure that all gauges, tubing, oxygen sources, and electrical devices necessary for operation of the ATV are working if not done so at the beginning of the shift.
- Ensure that a bag valve mask (BVM) with oxygen source and suction equipment are readily available.
- With the assistance of the sending physician, respiratory therapist, equivalently trained nurse/caregiver, or Medical Control, establish the settings that will meet the needs of the patient on the ATV and make note of these settings in the patient care report (PCR).
- If possible, IV access is preferred prior to transferring the patient to the ATV.
- Transfer the patient over to the ATV with continuous end tidal CO2 monitoring and observe for any significant vital sign abnormalities or signs of distress.
- If there are any adverse effects from the transfer to the ATV, the patient should be disconnected and ventilated by BVM. If there is any question about this issue or discrepancy with the sending facility, consult Medical Control.
- Once it is determined that the patient is tolerating the ATV well, proceed with transport and record vital signs every 5 minutes.
- If any ATV malfunction or alarm occurs, troubleshoot per manufacturer recommendations and initial training, including, but not limited to, patency of tubing, adequacy of oxygen source, and patient condition. If the source of the alarm is unclear, unresolved, or represents a patient decompensation, remove from the ATV and provide respiratory support by BVM. Notify the receiving facility of any significant decompensations in transport and make note in the PCR.

NOTE: Criteria for participation
1. Affiliate Hospital Medical Director (AHMD) approval to participate.
2. Initial training and AHMD oversight.
3. 100% standard tracking of cases with 100% CQI.

Eligible Patients:

- Patients with some degree of behavioral dyscontrol
- Being transported to an Emergency Department
- Cooperative with care and transport
- No contraindications to medications below
- For adults only, defined by 18-65 years of age
- Exclude patients with organic behavioral diagnoses (autism, dementia, developmental delay)
- Either medication is acceptable, but only one should be given to a specific patient
- Medical standing orders and MDO below apply to all levels of EMT
- Have not received parenteral sedating medications in the last 4 hours

EMT/ADVANCED EMT/ PARAMEDIC STANDING ORDERS

E/A/P

- 1.0 Routine Patient Care
- **Risperidone** 2 mg PO/ODT; or
- **Olanzapine** 5-10 mg PO/ODT

MEDICAL CONTROL MAY ORDER (All Levels)

- Additional doses of above medications

Bolus IV/IO Nitroglycerin and Infusion for Acute Pulmonary Edema 6.10

NOTE: Criteria for participation

- Paramedics must be adequately trained and authorized to administer bolus/infusion nitroglycerin by their affiliate hospital medical director AHMD.
- They must receive initial training on the use of nitroglycerin in acute pulmonary edema (APE) and its effects of rapid blood pressure reduction and improvements in oxygenation. Paramedics must review relevant pathophysiology and treatment of APE and inclusion and exclusion criteria.
- The AHMD must provide 100% QA/CQI for all calls that utilize this protocol.
- Nitroglycerin must be administered by infusion pump ONLY.

Purpose:

- Allow paramedics at ambulance services to administer intravenous (IV) nitroglycerin bolus or infusion for the management of APE to reduce blood pressure and improve oxygenation in patients who are not responding to other treatments.

Eligible Patients:

- In APE on CPAP/BiPAP, in accordance with Protocol 3.6 Congestive Heart Failure (Pulmonary Edema)
- Adult patient with a history of congested heart failure (CHF) in distress and on CPAP/BiPAP.
- Historical or physical findings may include the following :
  1. History of CHF or end stage renal disease (ESRD).
  2. Currently prescribed a loop diuretic (furosemide, bumetanide, torsemide or ethacrynic acid.)
  3. Pedal edema, rales, acute dyspnea with or without exertion
  4. Oxygen saturation <94% on room air

Contraindications:

- Patients with a systolic blood pressure <160 mm/Hg (consult Medical Control).
- Use of phosphodiesterase inhibitor in the last 48 hours.

PARAMEDIC STANDING ORDERS

- 1.0 Routine Patient Care

If the patient has received, at a minimum, sublingual nitro (one tablet or one spray) or 2-inches of nitro paste:

- If the patient has a systolic blood pressure ≥ 160 mm/Hg, initiate IV nitroglycerin continuous infusion at a rate of 100 mcg/min. Titrate infusion by 25 mcg/min every 3-5 minutes to dyspnea resolution as blood pressure allows or a maximum dose of 300 mcg/min.
- Maintain a systolic blood pressure ≥ 120 mm/Hg by down titrating the nitroglycerin infusion by 25 mcg/min every 3-5 minutes.

If the patient has NOT received any form of nitroglycerin:

- If the patient has a systolic blood pressure ≥ 160 mm/Hg, administer an IV 400 mcg bolus of nitroglycerin AND,
- Initiate a nitroglycerin infusion at 100 mcg/min
- Titrate continuous infusion by 25 mcg/min every 3-5 minutes to dyspnea resolution as blood pressure allows or a maximum dose of 300 mcg/min.
- Maintain a systolic blood pressure ≥ 120 mm/Hg by down titrating the nitroglycerin infusion by 25 mcg/min every 3-5 minutes.

MEDICAL CONTROL MAY ORDER

- Consult medical control if the patient has a systolic blood pressure is 120-159 mm/Hg, in respiratory distress with oxygen saturation <94% on room air and meets other inclusion criteria as stated above, to initiate IV nitroglycerin continuous infusion at a rate of 50 mcg/min.
- Titrate continuous infusion by 25 mcg/min every 3-5 minutes to dyspnea resolution as blood pressure allows or a maximum dose of 300 mcg/min.

Medical Director Options 6.10

Buprenorphine for Opioid Withdrawal - Adult

6.11

Medical Director Options 6.11

EMT/ADVANCED EMT/EMT PARAMEDIC STANDING ORDERS

E/A/P

Purpose:

Buprenorphine has unique pharmacological properties that help diminish the effects of physical dependency to opioids such as withdrawal symptoms and cravings. Its use offers an important treatment option for opioid use disorder and provides people with a greater opportunity to sustain long term recovery.

This may be especially useful in EMS care because often a patient has just received naloxone as a rescue medication and is therefore in withdrawal. With EMS offering **buprenorphine** for immediate symptom relief, the patient will often become more willing to allow EMS to enter them into the medical care system, where they may continue the medication, and perhaps be able to reduce their opioid need. According to the Substance Abuse and Mental Health Services Administration (SAMHSA) patients receiving medication such as **buprenorphine** even in lower doses cut their risk of death in half.

- 1.0 Routine Patient Care, then

Assess Opioid Withdrawal Signs & Symptoms

Objective Signs:	Subjective Signs:
• Tachycardia • Diaphoresis • Restlessness and/or agitation • Dilated pupils • Rhinorrhea or lacrimation • Vomiting, diarrhea • Yawning • Piloerection	• Nausea • Stomach/abdominal cramps • Body aches • Achy bones/joints • Restlessness • Hot and cold • Nasal congestion

Any signs or symptoms present →

Assess For Exclusion Criteria

- Under 18 years of age
- Pregnant
- Altered mental status and unable to give consent
- Severe medical illness (sepsis, respiratory distress, etc.)
- No clinical opioid use disorder symptoms
- Unable to comprehend potential risks and benefits for any reason
- Not a candidate for buprenorphine treatment for any reason

No Exclusion Criteria ← Exclusion Criteria Present

COWS ≥ 5 (Clinical Opioid Withdrawal Scale)

No → **Not eligible for buprenorphine**

Yes

Assess interest in treatment with **buprenorphine**

Patient refuses treatment → 1. Treat other conditions 2. Transport to the hospital

Patient agrees to treatment

Standing Orders:

1. Give water to moisten mucous membranes
2. Administer 16mg **buprenorphine** SL
3. Transport to the hospital

- Re-assess COWS in 10 minutes while transporting
- If withdrawal symptoms worsen or persist, re-dose with 8mg **buprenorphine** SL

CAUTION:

1. If at any point the patient refuses transport, go through refusal process per Protocol 7.5 Refusal of Medical Care and Ambulance Transport
2. Provide leave-behind naloxone

Adapted from SAMHSA, "Buprenorphine Quick Start Guide", https://www.samhsa.gov/sites/default/files/quick-start-guide.pdf

Protocol Continues

Protocol Continued

Clinical Opiate Withdrawal Scale (COWS)

Flow-sheet for measuring symptoms for opiate withdrawals over a period of time.

For each item, write in the number that best describes the patient's signs or symptom. Rate on just the apparent relationship to opiate withdrawal. For example, if heart rate is increased because the patient was jogging just prior to assessment, the increase pulse rate would not add to the score.

Note, this checklist is required to determine COWS score when assessing patient eligibility and post-treatment

Patient's Name:_____ Date: _____

Enter scores at time zero, 10min after first dose, as needed, etc.

	Times:			
Resting Pulse Rate: (record beats per minute) *Measured after patient is sitting or lying for one minute* 0 pulse rate 80 or below 1 pulse rate 81-100 2 pulse rate 101-120 4 pulse rate greater than 120	Time Zero	10 mins	As needed	etc.
Sweating: *over past ½ hour not accounted for by room temperature or patient activity.* 0 no report of chills or flushing 1 subjective report of chills or flushing 2 flushed or observable moistness on face 3 beads of sweat on brow or face 4 sweat streaming off face				
Restlessness *Observation during assessment* 0 able to sit still 1 reports difficulty sitting still, but is able to do so 3 frequent shifting or extraneous movements of legs/arms 5 Unable to sit still for more than a few seconds				
Pupil size 0 pupils pinned or normal size for room light 1 pupils possibly larger than normal for room light 2 pupils moderately dilated 5 pupils so dilated that only the rim of the iris is visible				
Bone or Joint aches *If patient was having pain previously, only the additional component attributed to opiates withdrawal is scored* 0 not present 1 mild diffuse discomfort 2 patient reports severe diffuse aching of joints/ muscles 4 patient is rubbing joints or muscles and is unable to sit still because of discomfort				

Protocol Continues

Protocol Continued

Runny nose or tearing *Not accounted for by cold symptoms or allergies* 0 not present 1 nasal stuffiness or unusually moist eyes 2 nose running or tearing 4 nose constantly running or tears streaming down cheeks				
GI Upset: *over last ½ hour* 0 no GI symptoms 1 stomach cramps 2 nausea or loose stool 3 vomiting or diarrhea 5 Multiple episodes of diarrhea or vomiting				
Tremor *observation of outstretched hands* 0 No tremor 1 tremor can be felt, but not observed 2 slight tremor observable 4 gross tremor or muscle twitching				
Yawning *Observation during assessment* 0 no yawning 1 yawning once or twice during assessment 2 yawning three or more times during assessment 4 yawning several times/minute				
Anxiety or Irritability 0 none 1 patient reports increasing irritability or anxiousness 2 patient obviously irritable anxious 4 patient so irritable or anxious that participation in the assessment is difficult				
Gooseflesh skin 0 skin is smooth 3 piloerection of skin can be felt or hairs standing up on arms 5 prominent piloerection				
Total scores **with observer's initials**				

Score:

5-12 = mild;

13-24 = moderate;

25-36 = moderately severe;

more than 36 = severe withdrawal

Adapted from Wesson, D. R., & Ling, W. (2003). The Clinical Opiate Withdrawal Scale (COWS). J Psychoactive Drugs, 35(2), 253–9. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://nida.nih.gov/sites/default/files/ClinicalOpiateWithdrawalScale.pdf

6.12 Antibiotic Infusions for Sepsis Patients

NOTE: Criteria for Participation (For Paramedics only)

- Paramedics must be trained and authorized to administer antibiotics by their affiliate hospital medical director (AHMD) including both initial and refresher training in the use of antibiotics in sepsis.
- Paramedics must review relevant pathophysiology, treatment of the sepsis patient and inclusion and exclusion criteria.
- This protocol is intended for the administration of antibiotics selected by the AHMD, by infusion pump only.
- The service must collaborate with relevant hospital laboratories to equip and train to properly draw blood for blood cultures.
- The service and its AHMD must work collaboratively with the affiliate pharmacy to develop written policies and procedures for proper storage of antibiotics.
- The AHMD must provide 100% QA/CQI for all uses of this protocol, including monitoring of blood culture completion and contamination rates.

Purpose:
The intent of this protocol is to improve pre-hospital recognition and treatment of sepsis patients and to improve time to antibiotic administration to patients arriving by ambulance to the emergency department.

Inclusion Criteria:

- **Patients 15 years and older, with a suspected infection source AND documented temperature of either ≤ 36C (96.8F) or 38C ≥ (100.4F) AND SBP < 100 mmHg or a mean arterial pressure (MAP) < 65 AND at least one (1) of the following:**
  - **Respiratory rate > 22 breaths per minute**
  - **New onset of altered mental status**
  - **Lactate ≥ 4.0**

Contraindications:
If, by patient statement or documentation, the patient has an allergy to broad spectrum antibiotics (such as piperacillin-tazobactam,ceftriaxone, cefepime, etc.) or history of an anaphylactic reaction to penicillin antibiotics. Consult on-line medical control if the information is questionable.

PARAMEDIC STANDING ORDERS

P

- 1.0 Routine Patient Care
- Establish at least one and when possible two IV's, using aseptic technique and an antimicrobial preparation such as chlorhexidine/isopropanol at the venipuncture site. IO access can be considered if a peripheral IV cannot be established.
- Assess the patient for inclusion criteria
- Properly prepare two (2) blood culture bottles (one aerobic and one anaerobic) in accordance with training. Draw blood cultures and document draw time accordingly.
- Once blood cultures are obtained, or with real-time medical control order, administer antibiotic by infusion pump.If blood cultures are successfully obtained, administer AHMD approved antibiotic at the approved prescribed dose by IV infusion by pump only.
- Call into the hospital ED a "Sepsis Alert" according to protocol.
- At the emergency department (ED) inform the treatment team of antibiotics being administered and turn over blood cultures.

MEDICAL CONTROL MAY ORDER

- FOR PATIENTS UNDER 15 years of age, consult medical control.

Medical Director Options 6.20

Low Titer Type O+ Whole Blood (LTOWB) or Packed Red Blood Cells (PRBC) Transfusion 6.13

PURPOSE:
Blood is a very rare and valuable resource with limited but critical indications for field use. As such, use of this protocol will require a level of oversight not typical of other medical director option (MDO) protocols.

Unlike other MDO protocols, implementation of this requires a specific letter of approval from the Massachusetts Department of Public Health's Office of Emergency Medical Services (Department). Assessment of a proposed program for approval will include, but not be limited to, assessments of blood bank participation, storage protocols, training content and availability as a regional resource. Request for a letter of approval must be made by email to the OEMS Clinical Coordinator (Renee Atherton, NRP, at Renee.Atherton@mass.gov). Additionally, questions and further questions must also be sent to the Clinical Coordinator, at Renee.Atherton@mass.gov.

This protocol is intended for use in blunt and penetrating trauma. Other causes of hemorrhage may be amenable to treatment with blood products and protocols will be developed for them in the future. Under Statewide Treatment Protocol 1.0 Routine Patient Care the "Exception Principle" is available for variances.

Criteria for Participation

- Any service operating under this protocol must serve as a 24 hours a day, 7 days per week (24/7), regional resource for all ambulance services within reasonable travel distance (approximately 20-minutes by travel time). The responding blood-carrying unit must be a certified ambulance, including but not limited to, a Class 5 ambulance.
- Any service using this protocol must have tranexamic acid (TXA) available for use in accordance with Administrative Requirement (AR) 5-400 Required Medications on Ambulances as listed under optional medications.
- Any service using this protocol must train all paramedics who give blood specifically in the methods, storage, indications, use and documentation of all blood-related matters under this protocol, and maintain records of such training for review by the Department upon request.
- Ambulance service and their affiliate hospital medical directors (AHMD) must work collaboratively with an appropriate blood bank to guarantee safe obtaining, storing, monitoring, transfusing, reporting, and tracking, of all blood products used and transfusion reactions that occur, under this protocol. The relevant policies and procedures must be documented **in writing** and submitted to the Department's Clinical Coordinator as part of the review for approval noted above. The blood bank must obtain separate permission to provide blood from the Department's Division of Health Care Facility Licensure and Certification (DHCFLC) which may involve document submission. Questions may be directed to the Department's Clinical Coordinator.
- This protocol applies **only** to transfusion of packed red blood cells or low-titer O positive whole blood. O negative blood is further recommended if available to reduce the risk of Rh sensitization in potentially childbearing patients. In such a patient, RhoGAM or similar may need to be administered at the hospital. EMS personnel are required to inform the hospital staff of such and document such conversation in their patient care report.
- In the future, the Department may authorize other blood products and develop protocols for their use at that time. There are no other products authorized at this time.
- The AHMD of any service using this protocol must conduct 100% QA/CQI for all calls that utilize this protocol. Summary data must be reported to the Department's Clinical Coordinator by email or other designated means every month by the 5th business day. This data shall include, but may not be limited to, scene times (and average service trauma scene time for non-transfusing patients for comparison): whether administration was done within protocol criteria, and whether any complication of the transfusion occurred. Further data reporting methods and requirements will be issued separately by the Department.

Protocol Continues

Low Titer Type O+ Whole Blood (LTOWB) or Packed Red Blood Cells (PRBC) Transfusion 6.13

Protocol Continued

Purpose:
The intent of this protocol is to deliver blood in the field as a regional resource to trauma patients that show signs and symptoms of shock from significant blood loss.

Inclusion Criteria:
Patients with blunt or penetrating trauma with ongoing or suspected ongoing major hemorrhage based on their presenting injury or diagnosis and with clinical signs of shock.

Clinical Criteria:
Significant hemorrhage due to trauma AND one of the following;

- SBP </= 70 mmHg or
- SBP </= 90 mmHg and heart rate >/=110 or
- Traumatic arrest witnessed by EMS, **OR**
- A shock index of > 0.9

Considerations:

- When possible obtain informed verbal consent for blood transfusion prior to initiation of the infusion. In many cases, due to nature of the trauma, blood transfusion will be initiated based on **implied consent** in the emergency setting.
- All documentation and blood supplies used (tubing, bag, etc.) from the blood given must stay with the patient and be transferred to the receiving hospital staff on patient turnover.

Contraindications:

- Patient or parent/legal guardian refusal of blood transfusion for religious, social or cultural reasons must be documented accordingly. Obtain the appropriate patient or parent/legal guardian signatures when possible.
- Hypotension or hemodynamic instability solely due to EMS-administered medications (i.e. opioids) does NOT meet criteria for transfusion.

PARAMEDIC STANDING ORDERS

P

- 1.0 Routine Patient Care
- Make sufficient attempts to first control obvious hemorrhage
- Assess the patient for inclusion criteria
- Establish at least 1, and when possible, 2 large bore IV's. IO access can be considered if a peripheral IV cannot be established. Blood should be administered through the largest gauge IV possible.
- Prime blood tubing and blood warmer unit with normal saline (DO NOT use lactated ringers or D5W.) Spike one unit of LTOWB or PRBC to "y" connector on primed blood tubing and blood warmer.
- Administer 1 Unit of LTOWB or PRBC at a wide open rate with a pressure bag. Once the blood is infused, flush line with normal saline to a maximum of 250ml.
- Recheck Vital signs every 5-minutes at a minimum
- If patient continues to meet criteria for transfusion after first unit, may transfuse a second unit.
- Consider 1 Gram of Calcium Gluconate IV or equivalent dose of Calcium Chloride IV for every 1-2 Units of blood transfused
- If not already administered, administer TXA.

Protocol Continues

Low Titer Type O+ Whole Blood (LTOWB) or Packed Red Blood Cells (PRBC) Transfusion 6.13

Protocol Continued

- For patients younger than 15 years of age, who show signs of absent radial pulses, clinical signs of hemorrhagic shock, or traumatic arrest witnessed by EMS.
- SBP </= 70 + 2 times (age in years) mmHg or
- Heart rate >/= age appropriate indication for shock in proper setting.
- Pediatric patients should have a blood administration through the largest gauge IV with which it is possible to obtain access in the patient. IO access may be considered if IV access is unobtainable.
- Administer 10ml/kg of LTOWB or PRBC to a max dose of 1 Unit. If patient continues to meet criteria for transfusion after first dose, may administer a second dose of 10ml/kg.

Medical Control May Order

- For pediatric patients, consult medical control for additional doses, if indicated.
- Consult medical control for all patients of any age you have questions about for appropriateness and dosing, particularly patients younger than 15 years of age.

Closely Monitor the Patient for Symptoms of a Transfusion Reaction

Acute Hemolytic Reaction
Fever, hypotension, flushing, wheezing, dark and / or red colored urine, oozing from IV sites, joint pain, back pain, chest tightness

Nonhemolytic Febrile Reaction
Fever, chills, rigors, vomiting, hypotension

Allergic Reaction
Urticaria, hives (usually without fever or hypotension)

Anaphylactic Reaction
Dyspnea, wheezing, anxiety, hypotension, bronchospasm, abdominal cramps, vomiting, diarrhea

Volume Overload
Dyspnea, hypoxia, rales, tachycardia, jugular vein distention

Transfusion-Related Acute Lung Injury ("TRALI")
Dyspnea, hypoxia, rales (usually without fever or signs of pulmonary edema)

Actions to Take for Suspected Transfusion Reaction

1. **IMMEDIATELY STOP TRANSFUSION**
2. Disconnect tubing from infusion site; flush site with normal saline
3. Keep line open with normal saline
4. Re-initiate new transfusion if deemed clinically essential
5. Document actions taken in the patient care report

At the receiving facility, paramedics must inform the physician and nurse attending the patient that the patient received Rh positive blood products prior to departing the ED and document the information in the patient care report, including the names of the physician and nurse you provided the information to.

Protocol Continues

Medical Director Options 6.13

Protocol Continued

Note, this checklist is simply an example of a tracking form to be used when LTOWB/PRBC is administered to a patient.

Patient Name:	Run #: Paramedic Unit#	Receiving Facility Medical Record #:

Product Unit Number (Affix sticker below, or write unit number)	Product Type (Check One)	Transfusion Date & Start Time	Transfusion Complete* (Check One)	Transfusion Reaction** (Check One)	Transfusing Paramedic Initials
1. Affix Sticker Here or Write Unit #	LTOWB		o Yes o Ongoing	o Yes o No	
2. Affix Sticker Here or Write Unit #	LTOWB		o Yes o Ongoing	o Yes o No	
3. Affix Sticker Here or Write Unit #	LTOWB		o Yes o Ongoing	o Yes o No	
4. Affix Sticker Here or Write Unit #	LTOWB		o Yes o Ongoing	o Yes o No	
Name of Transfusing Paramedic:		Receiving Facility:		Call Type:	
Transfusing Paramedic Signature:		Paramedic #2 Name and Signature:			

If blood transfusion is ongoing at time of patient transfer to hospital, document "Ongoing."
Document actions taken in 'Comments' Section at the time of patient drop-off at receiving hospital

Actions to take for suspected transfusion reaction: STOP TRANSFUSION

- ✓ ***Disconnect tubing from infusion site, flush site with normal saline***
- ✓ ***Keep line open with normal saline-Re-initiate new transfusion if deemed clinically essential***
- ✓ ***Document actions taken in 'Comments' section***
- ✓ ***Complete Transfusion Reaction Form***

Mandatory Blood & Blood Product Form Tracking:

Transporting crew keep **White Copy**; give the yellow and pink copies and the blood bag to the Emergency Center /Trauma Team.

Blood Bag & Form given to: _____

Print Name:

_____

Signature:

Medical Director Options 6.13

SECTION 7:

MEDICAL POLICIES AND PROCEDURES

Statewide Treatment Protocols
Version 2026.1

7.1 Air Medical Transport

Introduction:

The use of air medical services has become the standard of care for many critically ill or injured patients who require transport to specialized medical facilities in accordance with Department-approved Statewide Point - of-Entry (POE) plans such as Trauma, Stroke, and STEMI (Percutaneous Coronary Intervention, or PCI) centers.

This protocol has been establish so that air medical support does not require Medical Control approval. However, contacting Medical Control should be considered whenever appropriate and must be contacted when the protocol requires it. The following constitutes the philosophical foundation for calling for air medical transport.

- Patients in cardiac arrest subsequent to blunt trauma, in general, should not be transported by air ambulance. In the event of cardiac arrest after the request for air ambulance, the air medical crew may be utilized for resuscitation and transport either by ground or air.
- Patients in cardiac arrest subsequent to penetrating truncal or extremity trauma MAY be appropriate for transport by air ambulance if ETA for responding aircraft is less than ground transport time to closest facility.
- Patients with an uncontrolled or compromised airway should be brought to the nearest appropriate facility unless advanced life support (ALS) service (by ground or air) can intercept in a timelier fashion.
- EMS personnel should consider requesting ground advanced life support (ALS) and air medical support when both the operational and patient conditions listed below exist:

Operational Conditions:

In general, the patient should begin movement toward the appropriate receiving facility as soon as practical. Consider landing zones located along the route of travel to minimize total field time.

Air Medical transport should be considered when:

- Ground transport time to the closest appropriate POE hospital exceeds the ETA of air medical, **OR**
- Patient location, weather, or road conditions preclude the use of ground ambulance, **OR**
- Prolonged scene patient management due to entrapment/extrication challenges, **OR**
- Multiple patients are present that will exceed the capabilities of local hospital and agencies

Patient Conditions

1. Physiologic Criteria:

a. Unstable Vital Signs

2. Anatomic Injury:

a. Evidence of Spinal Cord injury including paralysis or paresthesia.

b. Severe Blunt Trauma:

- Head injury (Glasgow Coma Scale of twelve [12] or less)
- Severe chest or abdominal injury
- Severe pelvic injury excluding simple hip fractures.

c. Two or more proximal long-bone fractures

d. Burns:

- Greater than 20% Body Surface Area (BSA) second or third degree burns;
- Evidence of airway or facial burns;
- Circumferential extremity burns; or
- Burns associated with trauma.

e. Penetrating injuries of head, neck, chest, abdomen or groin.

f. Amputation of extremities, excluding digits.

3. Cardiac Conditions

a. ST segment elevation myocardial infarction (STEMI)

b. Persistent ventricular tachycardia (unstable)

4. Stroke

a. Concern for large vessel occlusion (by FAST-ED) within 24-hours last known well

b. Pediatric patients

c. Pregnancy

Protocol Continues

Protocol Continued

Special Conditions:

The following should be considered in deciding whether to request air medical transport, for traumatically injured patients, but are **not** automatic or absolute criteria:

1. Mechanism of Injury

a. Motor Vehicle Crash:

- Patient ejected from vehicle.
- Death in same passenger compartment.

b. Pedestrian struck by a vehicle and thrown more than 15 feet, or run over by a vehicle.

2. Significant Medical History

a. Age < 8 or > 55 years of age.

b. Significant coexistent illness (such as anticoagulation).

c. Pregnancy.

7.2 Electronic Control Weapons

Purpose:
In some situations, state and local law enforcement utilize devices known as electronic control weapons (ECW), such as a TASER®, to assist with controlling persons. When used, the device discharges a wire that, at the distal end, contains an arrow-like barbed projectile that penetrates the suspect's skin and embeds itself, allowing the officer to administer an incapacitating electric shock. Current medical literature does not support routine medical evaluation for an individual after an ECW application. **In most circumstances, probes can be removed by law enforcement without further medical intervention.**

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

NOTE: When EMS is called for ECW application, barring patient refusal, the patient will be transported to the hospital

- 1.0 Routine Patient Care
- Ensure wires are disconnected from weapon.
- Secure probe with padded dressing.
- Transport to Emergency Department.

Introduction

EMS personnel at all levels are required to provide emergency care and transport patients to appropriate health care facilities. EMS personnel are further required to provide treatment to the fullest extent possible, subject to their level of certification and the level of licensure of the ambulance service for which they are working. However, more and more patients, where it is medically appropriate, are opting for limitations on life-sustaining treatments, such as cardiopulmonary resuscitation (CPR), in the event of cardiac arrest. Thus, EMS personnel may encounter a patient who has chosen such options and has either a Massachusetts Medical Orders for Life Sustaining Treatments (MOLST) or the Comfort Care/DNR Order Verification Form or bracelet (CC/DNR). These documents provide for a statewide, standardized form, approved by the Massachusetts Department of Public Health (DPH), Office of Emergency Medical Services (OEMS), that EMS personnel can instantly recognize as an actionable order (MOLST) or verification of such an order (CC/DNR) regarding the use of life sustaining treatments. This protocol governs EMS personnel response to a patient with a MOLST or CC/DNR form.

Implementation Procedures

1. Confirm the identity of the individual with the MOLST or CC/DNR Order Verification Form or bracelet;

2. Check validity:

a. CC/DNR: To assure that a DNR order is recognized in any out-of-hospital setting, an attending physician, nurse practitioner, or authorized physician assistant, who is licensed in Massachusetts, must provide a patient who has a current DNR order, with a fully executed CC/DNR Order Verification form to verify the existence of a DNR order. To be valid, the CC/DNR Order Verification Form shall contain:

i. the patient's name, and all other patient identifiers requested on the form;

ii. date of issuance;

iii. the signature and telephone number of an attending physician, nurse practitioner, or authorized physician assistant;

iv. the signature and printed name of the patient, guardian or health care agent signing the form, with the following exception; and:

v. a date of expiration, **if any,** of the underlying DNR order. If there is a date of expiration, and that date has passed, the CC/DNR is not valid.

b. MOLST: Alternatively, to assure a patient with a desire to document decisions regarding DNR and/or other life-sustaining treatments (which includes CPR, intubation with ventilation, and non-invasive ventilation, such as continuous positive airway pressure, or CPAP) has those preferences honored, a Massachusetts-licensed attending physician, nurse practitioner or authorized physician assistant can provide a patient with a MOLST form. The MOLST form represents actual medical orders to EMS personnel related to a patient's preferences for resuscitation, ventilation and hospitalization. To be valid, the MOLST form must contain:

i. patient name and appropriate identifiers as requested on the form;

ii. box D and E of the MOLST form must be fully completed for page 1 to be considered valid – which is all that is relevant for EMS personnel. The form must be signed by a patient, patient's guardian, or activated health care agent. For a patient in a licensed health care facility only, this

Protocol Continues

Protocol Continued

requirement is met if the guardian or agent cannot sign the form, and the licensed health care facility provides an alternate signature indicating that the required conversation with the guardian or agent has occurred and the form reflects the patient's wishes and goals of care as expressed to the clinician who signed Section E on the agent's behalf. If a MOLST form is presented by the licensed health care facility with such signatures in box D, EMS can assume the form is valid;

iii. A MOLST order that has an expiration date or revocation date that is in the past is not valid.

c. Revocation: A MOLST order for DNR or CC/DNR form may state it has been revoked. If that is the case, the order or form is not valid.

d. Health Care Agent with Documentation on Scene: If the patient's activated health care agent is on scene with his/her health care proxy document in hand, the health care agent may change or revoke the patient's MOLST form directions. EMS is not responsible to check the validity of the health care proxy document. If presented by a health care agent, they can assume it is valid.

3. Action of EMS if no valid CC/DNR or no valid MOLST that includes a DNR order: In accordance with standard EMS Statewide Treatment Protocols, EMS personnel will resuscitate patients without a valid CC/DNR Order Verification Form or without a MOLST that has documented a DNR order, as well as a patient who has a MOLST form indicating a preference FOR resuscitation. Remember, if there is any doubt about the current validity of a MOLST or CC/DNR Order Verification form, EMS personnel are to resuscitate and provide care in accordance with the Statewide Treatment Protocols.

4. Patient Care for confirmed valid CC/DNR or MOLST with orders for DNR:

a. If the patient is **in full respiratory or cardiac arrest**, the EMS personnel shall not resuscitate, which means:

i. do not initiate CPR,
ii. do not insert an oropharyngeal airway (OPA),
iii. do not provide ventilatory assistance,
iv. do not artificially ventilate the patient (e.g. mouth-to-mouth, bag valve mask),
v. do not administer chest compressions,
vi. do not initiate advanced airway measures,
vii. do not administer cardiac resuscitation drugs, and
viii. do not defibrillate.

b. If the patient is **not in full respiratory or cardiac arrest**, but the patient's heartbeat or breathing is inadequate, EMS personnel shall not resuscitate but shall provide, within the scope of their training and level of certification, full palliative care and transport, as appropriate, including:

i. additional interventions a patient has indicated be given on the MOLST form, including intubation with ventilation or non-invasive ventilation such as CPAP.
ii. emotional support;
iii. suction airway;
iv. administer oxygen;
v. application of cardiac monitor;
vi. control bleeding;
vii. splint;
viii. position for comfort;

Protocol Continues

Protocol Continued

ix. initiate IV line; and,

x. contact Medical Control, if appropriate for further orders, including necessary medications.

c. If the patient is not in respiratory or cardiac arrest, and the patient's heart beat and breathing are adequate, but **there is some other emergency illness or injury**, the EMS personnel shall provide full treatment and transport, as appropriate, within the scope of their training and level of certification.

5. Questions about the MOLST or CC/DNR: If EMS personnel have any questions regarding the applicability of the MOLST or CC/DNR form with regard to any specific individual, or a good-faith basis to doubt the continued validity of the MOLST or CC/DNR form, EMS personnel shall verify with the patient if the patient is able to respond. If the patient cannot respond, EMS personnel shall provide full treatment and transport, or contact Medical Control for further orders. In all cases, EMS personnel shall document the circumstances on the trip record.

6. Previously-initiated CPR: In the event of respiratory or cardiac arrest and resuscitative efforts are initiated prior to EMS confirmation of the valid DNR order on the MOLST form or a valid CC/DNR Order Verification form, EMS shall discontinue the following measures: a) CPR; b) cardiac medications, and c) advanced airway measures.

7. Documentation: EMS personnel must document the existence and validity of the MOLST order or CC/DNR form on their patient care report (PCR). For a MOLST form, EMS personnel must specifically document on the PCR all clinical information on the MOLST form regarding the patient's preferences for care. For both MOLST and CC/DNR Order Verification Form, EMS personnel must also document on the PCR all care they provided to the patient, including palliative measures.

8. Revocation on scene: The MOLST order with DNR or CC/DNR may be revoked by the patient at any time, regardless of mental or physical condition, by the destruction or affirmative revocation of the MOLST or CC/DNR Order Verification, or by the patient's direction that the MOLST or CC/DNR Order Verification not be followed by EMS personnel or be destroyed. It may also be revoked by the patient's activated health care agent who is on scene with his/her health care proxy document in hand. EMS personnel, upon witnessing or verifying a revocation, shall communicate that revocation in writing to the hospital to ensure its inclusion in the patient's medical record. EMS personnel shall also document the revocation on their PCR.

PATIENT TRANSPORT

Ambulance services must have appropriately sized child restraint system(s) readily available on all ambulances that may transport children. Additionally, EMS personnel must be initially and recurrently evaluated and trained on the correct use of those restraint systems;

1. The device(s) must cover, at minimum, a weight range of between 5 and 99 pounds (2.3 - 45 kg), supporting the safest transport possible for all persons of any age or size.

Massachusetts statute (specifically) requires that all children under the age of 8 traveling in a motor vehicle must be secured in a child passenger restraint (aka car seat), unless they are 57 inches or taller, in which case, they need to be using a seat belt. An ill or injured patient who is a child must be restrained in a manner that minimizes injury in an ambulance crash. The best location for transporting a pediatric patient is on the ambulance cot. The method of restraint will be determined by various circumstances including the child's medical condition and weight.

ANY EXCEPTIONS TO THIS PROTOCOL REQUIRE REAL-TIME MEDICAL CONTROL ORDERS. Note that exceptions to this protocol will likely result in substantially increased injury risk to the transported child, and Medical Control input will be needed to balance the risks against the risks of delay in transport.

A patient who is a child must be transported with 5-point harness in a device designed for such a purpose. Attach device securely to cot utilizing upper back strap behind cot and lower straps around cot's frame, or as per manufacturer's instructions.

- 5-point harness must rest snugly against child
- Adjust head portion of cot according to manufacturer's recommendation

Infants under 2.3 kilograms who also require temperature regulation should be transported in a transport isolette that has been designed for EMS use.

NON-PATIENT TRANSPORT

IMPORTANT NOTE: Best practice is to transport **well children** in a vehicle other than the ambulance, whenever possible, for safety. Examples of acceptable transport in another vehicle would be by police cruiser without a prisoner partition and only in the back seat, a family member's personal car, or another response vehicle, only in the back seat.

If no other vehicle is available and circumstances dictate that the ambulance must transport a well child, he/she may be transported in the following ways:

- Children who require a car seat or booster seat should be secured to the airway seat/ captain's chair in the patient compartment using a size appropriate integrated seat or a convertible safety seat that is secured safely in relationship to the orientation of the captain's chair.
- All infants and toddlers should ride in a rear facing seat until the highest weight or height allowed by their car seat manufacturer. Every effort should be made to properly secure the car seat according to manufacturer's instructions.
- Passenger seat of the driver's compartment if child is large enough (according to manufacturer's guidelines) to ride forward-facing in a child safety seat or booster seat. Airbag should be turned off. If the airbag can be deactivated, an infant, restrained in a rear-facing infant seat, may be placed in the passenger seat of the driver's compartment.

Protocol Continues

Protocol Continued

MOTHER AND NEWLY-BORN TRANSPORT

Transport the newly-born in an approved size-appropriate child restraint system that complies with the injury criteria of the Federal Motor Vehicle Safety Standard (FMVSS) No. 213 in the rear-facing EMS provider seat/captain's chair that prevents both lateral and forward movement, leaving the cot for the mother. Use a convertible seat with a forward-facing belt path. DO NOT use a rear-facing-only seat in the rear-facing EMS provider's seat. You may also use an integrated child restraint system certified by the manufacturer to meet the injury criteria of FMVSS No. 213.

USE OF PATIENT'S CHILD PASSENGER SAFETY SEAT AFTER INVOLVEMENT IN MOTOR VEHICLE CRASH

The pediatric patient's safety seat may be used to transport the child to the hospital after involvement in a minor crash if ALL of the following apply:

- It is a convertible seat with both front and rear belt paths.
- Visual inspection, including under movable seat padding, does not reveal cracks or deformation.
- Vehicle in which safety seat was installed was capable of being driven from the scene of the crash.
- Vehicle door nearest the child safety seat was undamaged.
- The air bags (if any) did not deploy.

7.5 Refusal of Medical Care and Ambulance Transport

PURPOSE:
Establish guidelines for the management and documentation of situations where patients refuse treatment or transportation.
Under the Commonwealth's EMS System regulations, at 105 CMR170.355 (A) "Responsibility to Dispatch, Treat and Transport," ambulance services and their agents may not refuse any of these responsibilities, absent a documented patient refusal. Ambulance services and their EMS personnel must be extremely cautious about accepting patient refusals.

Refusal of care
There are three components to a valid refusal of care. Absence of any of these components will most likely result in an invalid refusal. The three components are as follows:

1. Competence: In general, a patient who is an adult or a legally emancipated minor * is considered legally competent to refuse care. A parent or legal guardian who is on-scene may refuse care on his or her minor children's behalf. EMS shall not accept a refusal of treatment for a minor patient via phone.
2. Capacity: In order to refuse medical assistance a patient must have the capacity to understand the nature of his or her medical condition, the risks and benefits associated with the proposed treatment, and the risks associated with refusal of care. A health care agent who is named in a health care proxy document for the patient may refuse care on behalf of the patient only if 1) he or she is on-scene and 2) he or she has his/her health care proxy document in hand to show EMS. If the patient objects to the health care agent's decision, there is no effective refusal. If there is any doubt about the health care agent's authority, EMS is to transport the patient
3. Informed Refusal: A patient must be fully informed about his or her medical condition, the risks and benefits associated with the proposed treatment and the risks associated with refusing care.

Patients who meet criteria in this Protocol shall be allowed to make decisions regarding their medical care, including refusal of evaluation, treatment, or transport. These criteria include:

1. Initiated solely by the patient, not suggested/prompted by the EMTs.
2. Adults (≥ 18 years of age) and legally emancipated minors*
3. Orientation to person, place, time, and situation.
4. No evidence of altered level of consciousness resulting from head trauma, medical illness, intoxication, dementia, psychiatric illness or other causes.
5. No evidence of impaired judgment from alcohol or drug influence.
6. No language communication barriers. Reliable translation available (e.g., on scene interpreter, language line).
7. No evidence or admission of suicidal ideation resulting in any gesture or attempt at self-harm. No verbal or written expression of suicidal ideation regardless of any apparent inability to complete a suicide.

Definitions

Minor: A person under the age of 18, who is not an emancipated minor (see below).
Emancipated Minor: For the purpose of making decisions regarding medical care and treatment, an emancipated minor is a person under the age of 18 who is

1. married, widowed or divorced;
2. the parent of a child;
3. a member of the armed forces;
4. pregnant or believes herself to be pregnant; or
5. living separate and apart from a parent/legal guardian and is managing his or her own financial affairs.

Protocol Continues

Refusal of Medical Care and Ambulance Transport

7.5

Protocol Continued

EMS providers will make every reasonable effort to convince reluctant patients to access medical care at the emergency department via the EMS system before accepting a refusal of medical care and ambulance transport.

Contact Medical Control for all patients who present a threat to themselves, present with an altered level of consciousness or diminished mental capacity, or have history or examination findings consistent with a high-risk refusal. The physician is to be provided all relevant information and may need to speak directly with the patient by radio or preferably a recorded landline.

Although a minor cannot legally consent to medical treatment, consent is legally implied in an emergency. In assessing whether there is an emergency, particularly with regard to motor vehicle crashes, EMTs must include the mechanism of injury in their analysis.

Procedure

1. Perform an assessment of the patient's medical/traumatic condition, and, to the extent permitted by the patient, a physical exam including vital signs. Your assessment, or the patient's refusal of assessment, must be fully documented in the trip record.
2. Explain to the patient the nature and severity of his/her illness or injury, the treatments being proposed, the risks and consequences of accepting or refusing treatment, and the potential alternatives. Fully document the explanation given to the patient in your trip report.
3. Prepare and explain the refusal of medical care and ambulance transport document.
4. Documentation of refusal of medical care and ambulance transport must be signed by the patient (or, in the case of a minor patient, by the minor patient's parent, legal guardian, or authorized representative) at the time of the refusal. Documentation should include, when possible, a signature by a witness, preferably a competent relative, friend, police officer, or impartial third person.
5. The fact that the patient refused medical care and transport must be documented in the trip record, and the signed refusal of medical care and ambulance transport document must be included as part of the trip record.
6. If Medical Control was consulted for a refusal of care, obtain and document the physician's name in the patient care report.

7.6 Sedation and Analgesia for Electrical Therapy-Adult & Pediatric

PARAMEDIC STANDING ORDERS

P

- If cardioversion or pacing is warranted, consider administration of any **ONE** of the following for sedation and analgesia:
- **Midazolam**
  - ADULT: 0.5-5 mg IV/IO/IM
  - ADULT: 2-10 mg IN.
  - PEDI: 0.05 mg/kg IV/IO/IM/IN.
- **Fentanyl**
  - ADULT: 1 mcg/kg IV/IO/IM/IN weight based (kg) to a max of 150 mcg (150 kg).
- **Morphine**
  - ADULT: 0.1 mg/kg IV/IO/IM/SC (max dose 10 mg).
- **Ketamine**
  - ADULT: 0.1-0.5 mg/kg IV/IO slowly OR
  - ADULT: 1 mg/kg IM, repeat in 5 minutes as needed to max of 2 mg/kg IM.

MEDICAL CONTROL MAY ORDER

- Contact Medical Control for additional orders, especially for children.

Withholding and Cessation of Resuscitation 7.7

Purpose:
1) To clarify for EMS services and their EMTs when resuscitative measures may be withheld for patients in cardiac arrest and
2) to define when EMTs can cease resuscitative measures already initiated.

Background and EMS Services' Training/Support Services Obligations:
Emergency Medical Technicians must begin or continue resuscitative measures for all patients in cardiac arrest except as indicated in this Protocol (also issued as Administrative Requirement (A/R) 5-515). If in doubt, begin resuscitative efforts.

All EMS services must provide appropriate training on management of death in the field, including legal, procedural, and psychological aspects; and access to support services.

EMS services and EMS personnel should be aware that the nursing staff of a health care facility, such as a skilled nursing facility, may need a physician order (including a medical control physician's order, if allowed by nursing home policy) to halt resuscitation attempts, even in the case of patients meeting EMS "obvious death" criteria, as set out below. Nursing staff and EMS personnel should come to a cooperative decision on continuation or termination of resuscitation; this process may include obtaining physician input and orders. If the medical professionals at the bedside are unable to reach agreement on attempting or terminating efforts, the presumption should be to continue resuscitative efforts and transport the patient to an emergency department.

I. Exceptions to Initiation of Resuscitation
Other than in overriding circumstances such as a large mass-casualty incident or a hazardous scene, the following are the **only** exceptions to initiating and maintaining resuscitative measures in the field:

1. Current, valid DNR, verified per this protocol.
2. Health care agent who is named in a health care proxy document for the patient requests no resuscitative efforts on behalf of the patient, **but only if**
   a. he or she is on scene **and**
   b. he or she has his/her health care proxy document in hand to show EMS. If there is any doubt about the health care agent's authority, and none of the other exceptions to initiation of resuscitation are present, EMS is to resuscitate the patient.
3. Trauma inconsistent with survival
   a. Decapitation: severing of the vital structures of the head from the remainder of the patient's body
   b. Transection of the torso: body is completely cut across below the shoulders and above the hips
   c. Evident complete destruction of brain or heart
   d. Incineration of the body
   e. Cardiac arrest (i.e. pulselessness) documented at first EMS evaluation when such condition is the result of significant blunt or penetrating trauma and the arrest is obviously and unequivocally due to such trauma, EXCEPT in the specific case of arrest due to penetrating chest trauma and short transport time to definitive care (in which circumstance, resuscitate and transport).
4. Body condition clearly indicating biological death.
   a. Complete decomposition or putrefaction: the skin surface (**not** only in isolated areas) is bloated or ruptured, with sloughing of soft tissue, and the odor of decaying flesh.
   b. Dependent lividity and/or rigor: when the patient's body is appropriately examined, there is a clear demarcation of pooled blood within the body, and/or major joints (jaw, shoulders, elbows, hips, or knees) are immovable.

Protocol Continues

Protocol Continued

Procedure for Lividity and/or Rigor Mortis: All of the criteria below must be established and documented in addition to lividity and/or rigor in order to withhold resuscitation:

Exceptions to Initiation of Resuscitation, Continued

i. Respirations are absent for at least 30 seconds; **and**
ii. Carotid pulse is absent for at least 30 seconds; **and**
iii. Lung sounds auscultated by stethoscope bilaterally are absent for at least 30 seconds; **and**
iv. Both pupils, if assessable, are non-reactive to light.

II. Cessation of Resuscitation by EMTs

Emergency Medical Technicians must continue resuscitative measures for all patients in cardiac arrest unless contraindicated by one of the exceptions below.

1. EMTs at all levels of certification may cease resuscitative efforts at any time when any "Exception to Initiation of Resuscitation" as defined in I., above, is determined to be present.
2. **Paramedics only** may cease resuscitative efforts, if properly training and authorized by your AHMD as per Protocol 6.4 Withholding and Cessation of Resuscitation by EMT Paramedic as a Medical Control Option.

Special Considerations and Procedures:

1 a. If during transport, EMTs cease resuscitation of a patient in accordance with the requirements above, they shall continue to the closest appropriate hospital for pronouncement of death. This is always a special circumstance that is in the interest of public health and safety, and thus meets the requirements of 105 CMR 170.365.

1 b. During transports when resuscitative efforts have appropriately been ceased in accordance with the requirements above, EMTs must cover the person with a sheet, transport without the use of emergency vehicle audible and visual warning devices, and notify the receiving hospital in advance.

2. In all cases where EMTs have withheld or ceased resuscitative efforts in accordance with the requirements above, and left the person in the field, procedures must include notification of appropriate medical or medico-legal authorities, such as police.

3. EMS patient care report documentation must reflect the criteria used to determine obvious death or allow cessation of resuscitative efforts.

EMT/ADVANCED EMT/ PARAMEDIC STANDING ORDERS

E/A/P

PURPOSE:

To provide an overview of how a Ventricular Assist Device (VAD) works and how EMS provider assessment and treatment differs for a patient with a VAD.

Highlights of Assessing and Treating an VAD patient

- Recognize that you have a patient with a VAD
- Determine if your patient has a VAD problem, or an unrelated illness or injury
- A completely stable patient may have no palpable pulse or measurable blood pressure
- Mental status and skin color must be used to determine patient stability
- CPR should almost never be performed on a VAD patient
- Patients with a VAD should almost never be pronounced dead at the scene

Overview of an VAD

The VAD is a mechanical device that takes over some or all of the pumping function of the heart's left ventricle. This device is used for patients of any age or gender with advanced heart failure who would not otherwise survive without this device. Heart failure can result from chronic/long-term hypertension and heart disease, congenital heart defects, mechanical damage to the heart, infection, postpartum complications and many other reasons.

Some VAD patients will have an VAD while they are waiting for a heart transplant (called Bridge-to-Transplant). Other VAD patients, who are not eligible for a heart transplant for some reason, will live with the device for the rest of their lives (called Destination Therapy, or Lifetime use).

How the Heart Works versus How VAD works

The normal pumping function of the heart is achieved by the contraction of the left ventricular muscle, which pushes a bolus of blood forward in the cardiovascular system with each contraction. This contraction is what we feel when checking a pulse, and what we hear when taking a blood pressure. If the heart is not contracting, blood is not moving forward in the system, and we don't feel or hear a pulse. The VAD, in contrast, flows constantly and therefore creates no "pulse" to feel or hear.

The VAD is a tube that is about ½ -1 inch in diameter with a pump in the middle. One end of the tube (inflow) is surgically inserted into the left ventricle, and the other end (outflow) is sewn into the aorta, just above where it exits the heart.

The pump on the VAD spins constantly. The right side of the heart still pushes blood through the lungs and back to the left ventricle, but then the VAD pump pulls the blood out of the left ventricle and pumps it out to the body, taking over most or all of the failed pumping action of the left ventricle.

The drive unit for the pump, which includes the power source and programming controls, is outside of the body and connects to the VAD by a cord that exits the body through the abdomen, usually in the right upper quadrant.

NOTE: The important part to us as EMS providers is that *the pump is a constant flow pump*. There is no rhythmic pumping as there is with the ventricle, and therefore there is little to no pulse. This means you can have a perfectly stable and healthy looking person who has no palpable pulse and whom you may or may not be able to take a blood pressure.

Policy Continues

Protocol Continues

Assessing the VAD Patient

1. RECOGNIZE you have a VAD patient.
The VAD patient has a control unit attached to their waist, or in a shoulder bag. The control unit is attached to a power cord exiting from the patients' abdomen. The control unit will be attached to batteries mounted to the belt, in shoulder holsters, or in a shoulder bag. At home, it could be attached to a long cord that connects to a large power unit.

2. DECIDE if you have a patient with an VAD problem, or a patient with a medical problem who just happens to have an VAD. Patients with VADS will have all the same illnesses and injuries as any other patient you see. Their VAD may have nothing to do with the reason you were called.

3. LOOK:
Alarms on the control unit will most likely indicate an VAD problem. Follow resource guides with the patient to trouble shoot. Skin color and mental status are the most reliable indicators of patient stability for the VAD patient.

E/A/P

4. LISTEN:
Listen over the VAD pump location to make sure you can hear it running. This will be just to the left of the epigastrium, immediately below the base of the heart. You should hear a low hum with a stethoscope if the pump is running. Don't assume the pump is running just because the control unit looks OK. The patient and their family are experts on this device. Listen to what they have to say about any problems with the VAD.

5. FEEL:
Feel the control unit. A hot control unit indicates the pump is working harder than it should and often indicates a pump problem such as a thrombosis (clot) in the pump. The use of pulse and blood pressure to assess stability can be unreliable in an VAD patient, even if they are very stable.

6. VITALS:
Pulse: generally, you will be unable to feel a pulse.

Blood Pressure: you may or may not be able to obtain one, standard readings are unreliable and may vary from attempt to attempt. If NIBP machine can detect a blood pressure, adjust it to display Mean Arterial Pressure (MAP). This is a more reliable measure of perfusion and the calculation for MAP can overcome variations in standard readings. A MAP of 60-70 is normal.

Pulse-oximetry: readings seem to be fairly accurate and consistent, according to data, despite the manufacturer stating that pulse oximetry often doesn't work.

Quantitative Continuous Waveform Capnography: This should remain accurate, as it relies on respiration, not pulse. Normal (printed) waveform shape with a normal respiratory rate and low CO_2 readings (<30) can indicate low perfusion = poor pump function.

Temperature: infection and sepsis are common, check temperatures.

Policy Continues

https://www.heart.org/-/media/data-import/downloadables/d/7/c/vadems-ucm_499121.pdf?la=en

EMT/ADVANCED EMT/ PARAMEDIC STANDING ORDERS

If available, consult device specific EMS Guide

E/A/P

Assess Mental Status

Patient altered or unresponsive?

YES

Adequate Perfusion?

(Assess mental status, cap refill, MAP)

YES

If altered, assess for other causes of AMS
-Consider IV Bolus
-Assess & Treat per Protocol

NO

VAD Functioning?

-Listen for hum
-Listen for alarms

NO

- Attempt to Restart
- Expose: Controller, Power Source, Driveline
- Ensure Driveline connected
- Ensure connected to battery or main power
- Change Power Source if dead battery

If unable to restart and patient unresponsive: Begin CPR

YES

MAP > 50?

$EtCO_2$ > 20?

YES

NO

DON'T perform CPR

Follow State Protocols

Unresponsive with Poor Perfusion:
-BEGIN CPR
-Follow ACLS and State Protocols

- Notify VAD Center

-Discuss with Coordinator (if available)

-Consult Med Control as needed

Adapted from AHA

SECTION 8:

SPECIAL OPERATIONS PRINCIPLES

Statewide Treatment Protocols
Version 2026.1

8.1 Fire and Tactical EMS Rehabilitation

EMS Principles for Rehab at Emergency Incidents

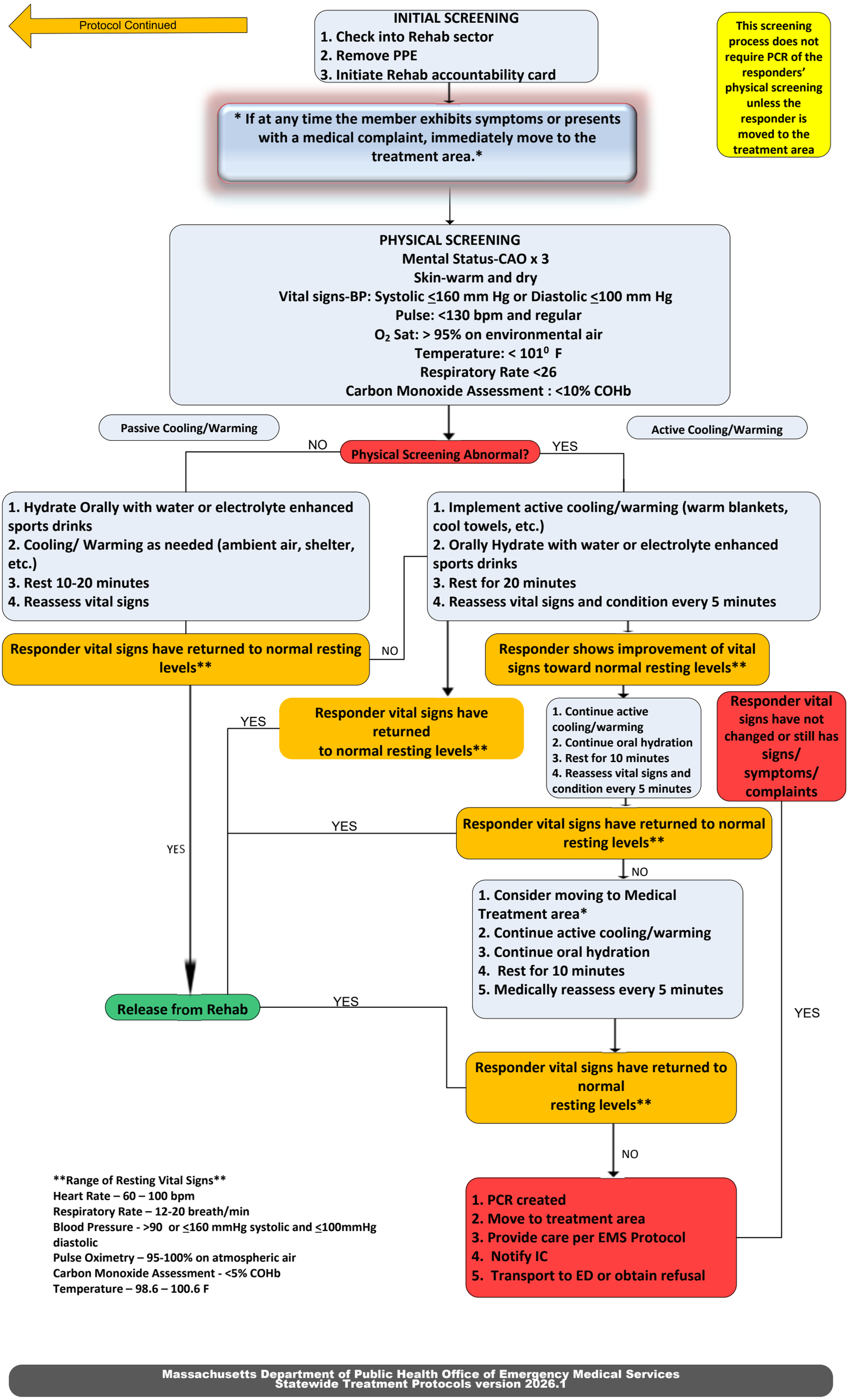
EMS personnel may be designated by the Incident Commander (IC) at the scene of an emergency or training exercise to perform the function as *rehab providers* to assure the safety and well-being of the emergency responders, and the overall integrity of the operation. The need for establishing a Rehab Sector shall be based upon the duration, complexity, intensity of the incident, and the climatic conditions, but shall not be the sole criteria for establishing REHAB.

The IC may establish a Rehab Manager as his/her designee. The Rehab Manager shall assure that all resources necessary to operate the Rehab Sector are communicated to the Logistics Officer or IC. The Rehab sector shall provide rest for the emergency responders. Adequate resources for re-hydration, cooling/warming, medical screening, and accountability shall be available. Multiple Rehab locations may be necessary based on the size of the incident. Each Rehab area shall have its own manager and identification, i.e.: Rehab 1, Rehab 2.

The Rehab Manager shall assure that adequate EMS staffing (paramedic level preferred) shall be available for responder screening and medical treatment if necessary. A dedicated ambulance (ALS level preferred) shall be assigned to the Rehab Sector for the duration of the incident. Easy access by EMS vehicles to the Rehab Sector shall be maintained at all times.

All emergency responders directed to the Rehab Sector by the IC shall be screened according to local protocol, and the attached “Rehab Flow Chart”. Any emergency responder who presents at the Rehab Sector with an acute medical condition shall be considered a patient under the definition of 105 CMR 170.020 and shall be treated in accordance with the appropriate Statewide Treatment Protocol. The Rehab Manager shall be responsible for tracking all responders entering and exiting the Rehab area, or who are transported from Rehab to a medical facility.

Protocol Continues


Protocol Continued
INITIAL SCREENING
1. Check into Rehab sector
2. Remove PPE
3. Initiate Rehab accountability card
This screening process does not require PCR of the responders' physical screening unless the responder is moved to the treatment area
* If at any time the member exhibits symptoms or presents with a medical complaint, immediately move to the treatment area.*
PHYSICAL SCREENING
Mental Status-CAO x 3
Skin-warm and dry
Vital signs-BP: Systolic ≤160 mm Hg or Diastolic ≤100 mm Hg
Pulse: <130 bpm and regular
O2 Sat: > 95% on environmental air
Temperature: < 101⁰ F
Respiratory Rate <26
Carbon Monoxide Assessment : <10% COHb
Passive Cooling/Warming
Active Cooling/Warming
NO
Physical Screening Abnormal?
YES
1. Hydrate Orally with water or electrolyte enhanced sports drinks
2. Cooling/ Warming as needed (ambient air, shelter, etc.)
3. Rest 10-20 minutes
4. Reassess vital signs
1. Implement active cooling/warming (warm blankets, cool towels, etc.)
2. Orally Hydrate with water or electrolyte enhanced sports drinks
3. Rest for 20 minutes
4. Reassess vital signs and condition every 5 minutes
Responder vital signs have returned to normal resting levels**
NO
Responder shows improvement of vital signs toward normal resting levels**
YES
Responder vital signs have returned to normal resting levels**
1. Continue active cooling/warming
2. Continue oral hydration
3. Rest for 10 minutes
4. Reassess vital signs and condition every 5 minutes
Responder vital signs have not changed or still has signs/ symptoms/ complaints
YES
Responder vital signs have returned to normal resting levels**
YES
NO
1. Consider moving to Medical Treatment area*
2. Continue active cooling/warming
3. Continue oral hydration
4. Rest for 10 minutes
5. Medically reassess every 5 minutes
Release from Rehab
YES
YES
Responder vital signs have returned to normal resting levels**
NO
1. PCR created
2. Move to treatment area
3. Provide care per EMS Protocol
4. Notify IC
5. Transport to ED or obtain refusal
Range of Resting Vital Signs
Heart Rate – 60 – 100 bpm
Respiratory Rate – 12-20 breath/min
Blood Pressure - >90 or ≤160 mmHg systolic and ≤100mmHg diastolic
Pulse Oximetry – 95-100% on atmospheric air
Carbon Monoxide Assessment - <5% COHb
Temperature – 98.6 – 100.6 F

8.2 Multiple Casualty Incidents (MCI Triage)

EMT, Advanced EMT and Paramedic MCI Procedure Summary:

All EMT level personnel will eventually be involved in the management of an MCI. It is imperative that all EMTs implement the below incident command system (ICS) in all MCI situations. Every EMT must be aware and have a thorough knowledge of their particular role and responsibilities in the rescue effort. Due to the many complexities of MCI/Disaster situations, it is recommended that all EMTs should participate and receive additional training in MCI/Disaster management.

Scene Management:

Each MCI/Disaster scene presents its own unique hazards and difficulties. This plan is a general guide to the management of MCIs. It should be understood that modifications may need to be made by command personnel on scene as such changes are needed. When the Statewide MCI plan is officially in place, nothing in this protocol shall be intended to replace or supersede the statewide plan.

A multiple casualty incident (MCI) is any situation where the number of sick or injured patients exceeds the available local, regional or state EMS system resources to provide adequate care in a timely manner to minimize injury and death. An MCI may be the result of a man made disaster or a natural event. Successful management of an MCI will require preplanning and organization of local, regional and state EMS, fire, law enforcement and emergency management resources. CMED, hospital resources and specialized care services must also be included in preparing the MCI plan.

MCI management process is defined in the Incident Command System (ICS). In general, the Fire Department or Emergency Medical Service Agency having jurisdictional authority establishes the overall command and designates the incident commander (IC) at an MCI scene.

NOTE: Other agencies may function as the IC, for example, Law Enforcement agencies at a crime scene or hostage situation. Other agencies may assist the IC. Clear precise inter-agency communication networks must be established for successful MCI management.

MCIs within the Commonwealth assessed by EMS will be classified by levels. Response to an MCI is based on the number of potential victims generated by the incident. The following levels indicate the number of potential MCI casualties, should regional EMS providers require a mutual aid response:

- **Level 1:** 1-10 potential victims
- **Level 2:** 11-30 potential victims
- **Level 3:** 31-50 potential victims
- **Level 4:** 51-200 potential victims
- **Level 5:** Greater than 200 victims
- **Level 6:** Long-Term Operational period(s)

Protocol Continues

Protocol Continued

Triage:

Triage is a special process of sorting patients by the severity of injury or illness to determine the need of emergency care and transportation. This needs to be a continuous process throughout the management of an MCI. The initial triage process should be performed by the first crew to arrive on scene and needs to be continuously reevaluated since the patient's triage status may change. Presently there are no national standard guidelines established for triage. Massachusetts services in general will be using a form of the SMART TAG system, while New England services in general use START triage and compatible tagging methods.
MCI triage and treatment priorities are generally defined as:

Zero priority (BLACK TAG):	Deceased or live patients with obvious fatal, non-resuscitatable injuries
First priority (RED TAG):	Severely injured patients requiring immediate care and transport. (e.g., respiratory distress, thoracoabdominal injury, severe head or maxillofacial injuries, shock/severe bleeding, severe burns)
Second priority (YELLOW TAG):	Patients with injuries that are determined not to be immediately life threatening. (e.g., abdominal injury without shock, thoracic injury without respiratory compromise, major fractures without shock, head injury/cervical spine injury, and minor burns)
Third priority (GREEN TAG):	Patients with minor injuries that do not require immediate stabilization. (e.g., soft tissue injuries, extremity fractures and dislocations, maxillofacial injuries

Scene Assessment and Triage Priorities:

1. Maintain universal blood and body fluid precautions.
2. The initial response team should assess the scene for potential hazards, safety and number of victims to determine the appropriate level of response.
3. Notify agency dispatch to declare an MCI and need for interagency support as defined by incident level. Agency dispatch should coordinate request for additional resources and contact local mutual aid, regional and state level agencies for assistance and notification as needed.
4. Identify and designate the following positions as qualified personnel become available: EMS Command responsible for overall command of all EMS resources and tactics; Triage Officer responsible for overseeing all triage group activities; Treatment Officer responsible for overseeing all treatment group activities; Staging Officer responsible for overseeing staging of all arriving ambulances and other mobile EMS resources; Loading Officer responsible for overseeing loading of all treated patients into ambulances, buses and helicopters and logging patient info, tag numbers and coordinating hospital destinations with CMED.
5. Identify and designate EMS sector areas of MCI including Triage, Treatment, Staging, and Loading.
6. Post incident MCI Plan.

Hazardous Materials Response by EMS 8.3

CAUTION: The EMS provider's safety is the first priority at a hazardous materials (HazMat) response incident. DO NOT PROCEED beyond the staging area or the designated cold zone unless directed to do so by the incident commander, fire department officer in charge (OIC) or HazMat response team and only after donning proper personal protective equipment (PPE.)

Prehospital teams, composed of fire and EMS first responders, are critical in ensuring the continuity of safe prehospital medical care of contaminated patients. Patients exposed to a biological, chemical, radiological, or nuclear hazard are considered contaminated until cleared by appropriate personnel. Patients encountered at HazMat incidents require emergency care with additional considerations and precautions for both the prehospital medical teams and receiving hospital. The on-scene goal is to ensure appropriate medical care of the contaminated patient while keeping all care teams and patients as safe as possible.

A well-coordinated response is critical for patient care, scene safety and scene containment. Fire department and/or HazMat response teams will typically take command of incidents of this nature. However, EMS responders must maintain a strong situational awareness to maintain the safety of responders, the patients(s) and the receiving hospital. HazMat incidents are not always immediately identified or dispatched as such, and contaminated patients may self-transport to a hospital prior to EMS arrival. **Early hospital notification by EMS is imperative to prepare to receive patients.**

Response Priorities:

1. Initiate the Incident Command System (ICS) and the Haz-Mat response plan per local protocols. In most cases the fire officer in charge (OIC) must activate the state wide Haz-Mat teams when deemed appropriate to do so.
2. Always position the ambulance uphill and upwind > 300ft from the incident.
3. Scene Assessment is a priority; Be alert for patients attempting to self-extricate from the scene. Failure to recognize this could rapidly expand the exposure area and decreases containment.
4. If appropriate to do so, declare the incident as a Mass Casualty Incident (MCI and follow Protocol 8.2 MCI.

Scene Assessment and Triage Priorities:

1. The initial response team should assess the scene for potential hazards and number of victims to determine the appropriate level of response.
2. Notify C-Med and dispatch early of a HazMat alert indicating that the incident involves contaminated patients or potentially high threat patients who may have self extricated and self transported to local hospital emergency departments. C-Med will notify the local hospitals of the possible arrival of contaminated patients.
3. Identify the hazardous material(s) involved, including as much of the following information that can be obtain while maintaining the safety of all responders. Provide this information to C-Med as soon as it is possible to do so;
    a. Specific material name
    b. State the material is in (e.g., solid, liquid, gas)
    c. How much of the material has been released and if it is contained
    d. Identify the material using one of the resources listed * to determine the specific hazards, safe isolation distance, decontamination required and required PPE for responders.
4. Determine the number of patients and activate MCI protocols if indicated.

NOTE: Exposure is when the patient is in the vicinity of a hazardous substance but does not have the hazardous substance on them of has ingested it. **Contamination** is defined as the patient has the hazardous substance on them or has ingested it.

Protocol Continues

Hazardous Materials Response by EMS

8.3

NOTE: * **HazMat material identification** – Obtain this information only when safe to do so.

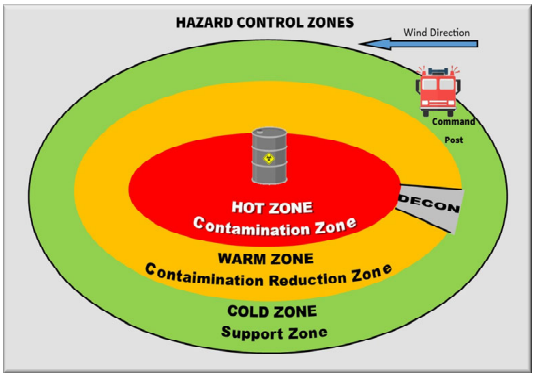
- Name and proper spelling of material, obtained from the official documentation such as the Safety Data Sheet (SDS), Bill of Lading, Waybill, or other documentation;
- Emergency Response Guide ID #(4 digits) or Chemical Abstracts Substances (CAS) number;
- Department of Transportation (DOT) classification on placard;
- Bystanders , technicians, or employees at the incident location;
- Physical description of the material such as color, and/or odor.

EMT Basic, Advanced EMT and Paramedic Procedure Summary

EMS is not typically first on a HazMat incident. However, encountering hazardous substances are becoming increasingly more frequent without prior identification on initial 9-1-1 calls by the call taker or dispatcher. EMTs at all levels of certification must maintain a high level of awareness when responding to all medical calls. If a hazardous substance is detected, notify the appropriate authorities through your communication system. EMS must also be familiar with the incident command system (ICS) and their local HazMat response and maintain an appropriate level of training in HazMat incidents.

RECORD PATIENT EXPOSURE AND TREAMENT INFORMATION

1. Name of chemical(s).
2. Amount, time, and route of exposure.
3 .Decontamination information.
4. Treatment/antidotes administered.
5. Ensure entry note includes "**Haz-Mat Alert**" and conveys this information.



NOTE:

- Treatment should take place only when clinically appropriate (not dangerous to do so) and by providers in appropriate PPE.
- Decontamination begins with the removal of outer layers of clothing which will remove up to 80% of contaminants.
- The method of decontamination will be determined appropriately by trained personnel and may include copious amounts of water (ex. Opposing low pressure hose streams.)

CAUTION: Special attention by EMS must be given to placards and notices discovered on scene, especially those scenes that do not come in as a HazMat incident. If a chemical suicide is suspected, and toxins may be present, a notice or placard of some type possibly hand written by the patient may be present. Do not attempt to rescue the patient without proper PPE.

CAUTION: Special considerations by EMS must be given to pediatric and elderly patients, especially during decontamination given their vulnerability to hypothermia. Afford all patients going through decontamination the ability to get warm afterwards and proper privacy when possible.

8.4 Urban Search and Rescue (USAR) Medical Specialist

INTRODUCTION

The Urban Search and Rescue (USAR) Medical Specialist is a paramedic (or higher medical provider) capable of delivering immediate medical response and support to urban search and rescue operations based on the FEMA National USAR Task Force medical team model. Paramedics operating under these protocols MUST have completed an approved FEMA (or equivalent) medical team training program, be a designated member of a recognized local, county or state USAR team and have the authority to function in this capacity from their agency's AHMD. The primary mission of the medical team is to maintain the health and well-being of ALL team members during technical rescue operations. The secondary mission is to provide specialized medical care to injured victims. Overall, the role of the medical team is to act as the medical conscience for the team and to always act as an advocate for the patient.

In most cases, a USAR team physician or AHMD will be on-scene to provide real time medical direction in accordance with these protocols. Medical Specialists follow the explicit orders of their agency's affiliate hospital medical director (AHMD) or designee functioning under a comprehensive set of local policies and protocols based on nationally-accepted standards. Per regulations, any EMS personnel functioning at the ALS level of care must have a qualified and designated AHMD. These protocols are intended for use only by trained Medical Specialists specifically during USAR operations. Medical Specialists are not directly responsible for any person(s) outside the immediate area of operations, whose care may safely be provided by the local EMS provider.

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One of the primary functions of the Medical Specialist is to support the tactical operations by ensuring the health and safety of critical public safety personnel as well as any victims requiring specialty care inside the perimeter of high-risk, large-scale, and extended operations that otherwise cannot be attended to by conventional EMS providers. As such, the Medical Specialist may be asked to provide sick call care for predefined service members as directed by the AHMD in order to ensure they remain healthy and operationally capable. Any other person(s) or service members who present with an acute medical issue, should be considered patients under the definition of 105 CMR 170.020. Such care will be provided in accordance with the Statewide Treatment Protocols (STP). These protocols supplement the STPs and shall be used only by Medical Specialists.

Once a victim is removed from the inner perimeter of operations, a transition of care will be made to the local ambulance service for continued patient care and transport. An exception may be made when a Medical Specialist's training is needed to manage a specific illness/injury during transport. In this instance, a Medical Specialist should accompany the transporting EMS crew with the patient to the hospital and maintain any care and/or medications not covered by the STP(s). If during transport, the Medical Specialist encounters a significant conflict between these protocols and those of the transporting ambulance service, Medical Specialist should contact their AHMD and request a dual consult with the transporting ambulance service's AHMD. If the Medical Specialist's AHMD cannot be reached, standard online medical control consultation should be initiated.

Protocol Continues

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STANDING/VERBAL MEDICAL ORDERS

Given the medical complexity of most victims of a USAR scenario, it is the expectation that all patient care activity during USAR operations have real-time medical direction established with a USAR team physician or AHMD as soon as feasibly possible. Any other on-scene EMT providing care at a special operations incident shall function in accordance with the STP and service-specific protocols.

These protocols are designed to provide supplemental guidance for patient care in the search and rescue environment. Unless otherwise specified, all medication doses have been presented in a weight-based format for use in both adult and pediatric patients. These guidelines represent the best practices drawn from current nationally accepted standards of care and evidence-based practice. Medicine is a constantly evolving practice and as such, guidelines cannot be developed for every possible clinical situation. These guidelines are NOT meant to replace good clinical judgment. Medical team members shall not act beyond their usual scope of practice (i.e. USAR or other service-specific protocols) unless trained or specifically approved to perform additional skills.

TRAINING AND QUALITY ASSURANCE/IMPROVEMENT

Given the low frequency, high risk nature of these cases, it is presumed that ALL cases requiring the use of these protocols will undergo QA/QI review by the USAR team physician or AHMD. Any deviations from these protocols will be reviewed by the AHMD and reviewed with the agency's medical team members. It is also the expectation that as part of competency maintenance and participation as a Medical Specialist, a comprehensive training program by the AHMD and sponsoring agency will occur at least annually to include a review of these protocols.

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Confined Space/Collapse Rescue Patient Medical Care

1. Perform an assessment of the scene, if not already done during the medical threat assessment:
   a. Determine scene hazards
   b. Survey the work environment for adequate oxygen levels, hazardous CO or gas levels and other hazardous materials around, lockout/tagout all utilities. Ideally, this should be done in conjunction with the incident HAZMAT team manager or Safety Officer.
   c. Assess weather and weather forecast.

2. Develop a medical care plan and prepare the appropriate needed supplies/equipment prior to entry "in the hole." Planning should be performed in conjunction with the Task Force Leader (TFL) or Incident Commander (IC) and other USAR discipline-specific team leaders (i.e. Search, Rescue, HAZMAT, etc.).

3. Perform initial assessment on the total number of victims, locations and priority of care/ extrication.

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4. Protect the patient from further injury as well as particulate inhalation – ear and eye protection, dust mask (particulate mask, N95 or P-100 mask, oxygen via NRB mask, etc.), helmet, heat/cold protection. Drop patient packs to the victim(s) if unable to access immediately.

5. Once access is gained to the victim, a Medical Specialist should perform an initial clinical assessment of general condition, vital signs and injuries. Initiate routine patient care as outlined in the Statewide Treatment Protocols.

6. Assess for any unrecognized hemorrhage and control all sources of severe bleeding. Use an approved tourniquet for life-threatening external hemorrhage that is anatomically amenable to tourniquet application or for any traumatic amputation. Apply the tourniquet over the clothing proximal to the bleeding site as high as possible, or if able to fully expose and evaluate the wound, apply directly to the skin 2-3 inches above the wound and do not apply over the joint. If a tourniquet is not needed, use other techniques to control bleeding.

7. The patient's airway and breathing status should be assessed. If necessary, perform advanced airway management utilizing direct in-line cervical spine immobilization only as needed. Consider use of the Selective Spine Assessment Program (SSAP.) A supraglottic airway device may be used in place of endotracheal tube if intubation is not possible.

8. Begin cardiac monitoring. Record and interpret a baseline 12-lead EKG as soon as possible.

Protocol Continues

Protocol Continued

Confined Space/Collapse Rescue Patient Medical Care, Continued

9. Obtain intravenous (IV) access and begin infusion of normal saline (NS).
   a. For signs and symptoms of hypovolemic shock, administer a 20 mL/kg bolus of normal salline (NS.)
   b. In the absence of signs of hypovolemia, administer 2 mL/kg/hour infusion of NS.
   c. If unable to obtain IV access, establish an IO (if indicated) and begin NS infusion.

10. Re-assess the victim for any uncontrolled hemorrhage. If any tourniquets were placed earlier, they should be re-assessed for adequate hemorrhage control. Consider use of hemostatic gauze pressure dressing for exsanguinating wounds not amenable to tourniquet use.

11. If a victim is anticipated to need significant blood transfusion (for example: presents with hemorrhagic shock, one or more major amputations, penetrating torso trauma, or evidence of severe bleeding) and is within 3 hours from time of injury, administer **tranexamic acid (TXA)**.

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12. Assess for and treat potential hypoglycemia and dehydration. Consider oral hydration so long as the patient is can follow commands, alert and oriented, and a patent airway and gag reflex is present. This should be done only if a prolonged extrication is anticipated and there are no other means of fluid administration. Limit initial hydration to

16-32 ounces of potable water.

13. Assess and manage the victim for any evidence of entrapment or crush injury. Refer to the USAR Crush Injury / Crush Syndrome management protocol.

14. Monitor patient for hyperthermia or hypothermia. Preferably, a core temperature measurement should be obtained. Treat per Protocols 2.7 Hyperthermia (Environmental) and 2.8 Hypothermia (Environmental).

15. If available and trained to do so, draw blood sample and analyze blood chemistry using point-of-care testing. Continue analyzing and consult with an AHMD for further direction.

16. For pain management of the non-isolated extremity injury refer to the USAR Sedation and Analgesia protocol.

17. Re-assess the medical care plan with the AHMD and rescue team leader as appropriate.

Protocol Continues

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Crush Injury/Crush Syndrome Management

1. Consider the use of an approved tourniquet to prevent reperfusion of a crushed limb prior to removal of compressive forces only if pre-treatment of the patient cannot be performed.

2. Initiation of fluid resuscitation with normal saline (NS) should ideally occur **prior** to any extrication or release from compressive forces. Administer fluids at an initial rate of 1 L/hr (10-15 ml/kg/hr) for up to 2 L total. Subsequent fluid administration can be delivered at a rate up to 500 ml/hr (5-7 ml/kg/hr) up to 24 hours.

CAUTION: Given the risk of hyperkalemia due to crush injury, potassium containing solutions (i.e. Lactated Ringers solution) should be avoided.

3. For victims with prolonged crush (>1-2 hour) or at high risk of crush syndrome, initiate serum alkalinization **prior** to extrication. **Sodium bicarbonate** therapy should be goal directed based on available clinical data (i.e. urine output, hemodynamic parameters, evidence of hypocalcemia, etc.) and point-of-care testing (urine and serum pH, serum electrolyte levels, etc.). Consider alternating bicarbonate-containing fluids with NS to minimize volume overload. Medical Control should be consulted for any use of bicarbonate therapy.

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a. Add 150 mEq of 8.4% (1 mEq/ml) **sodium bicarbonate** into a 1 L D_5W bag infused at a rate of 250-500 ml/hr. Remember to remove 150 ml of D_5W to accommodate the **sodium bicarbonate**. This mixture provides a near "isotonic" solution capable of alkalinizing the bloodstream.
b. If 1 L D_5W bags are not available, add 50 mEq of **sodium bicarbonate** to 1 L NS bag infused at a rate of 500 ml/hr.
c. Bolus doses of **sodium bicarbonate** at 0.5 – 2 mEq/kg IV/IO in accordance with Protocol 4.7 Soft Tissue/Crush Injury can be administered if an infusion cannot be initiated.
d. For pediatric patients, administer **sodium bicarbonate** infusion at the following rates:
   - Up to 10 kg: 8 ml/kg/hr
   - 10-20 kg: 80 ml/hr + 4 ml/kg/hr
   - >20 kg: 160 ml/hr + 2 ml/kg/hr
e. Consider placement of a urine bladder catheter to monitor urine output to a diuresis goal of >200-300 ml/hr (3-4 ml/kg/hr) or a urine pH of >6.5.

4. Re-assess the patient and coordinate extrication with technical rescue personnel. Be vigilant for sudden hypotension and hyperkalemic changes. Be prepared to control severe hemorrhage as well as the development of compartment syndrome if fluid begins to third space into injured tissue.

5. For patients with point of care values or EKG findings consistent with hyperkalemia refer to the Protocol 2.19 Hyperkalemia – Adult.

Protocol Continues

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Hyperkalemia

1. Administer 1 gram of **calcium chloride or calcium gluconate** 10% (100 mg/ml) IV/IO bolus (20 mg/kg IV/IO for pediatric patient) over 2 minutes. **Calcium chloride and calcium gluconate** should **not** be routinely given to crush patients unless there is evidence of hyperkalemia (ECG changes, i-STAT confirmed).

CAUTION: Do not administer **calcium chloride and calcium gluconate** and **sodium bicarbonate** in the same IV line as a salt may precipitate.

2. Administer **sodium bicarbonate** 0.5 – 2 mEq/kg IV bolus. However, if the patient is already receiving large volumes of sodium bicarbonate as an infusion, contact Medical Control for further guidance.

3. Administer **albuterol sulfate** 0.083% up to 10 mg via inline nebulizer.

4. Administer 10 Units of regular **insulin** IV/IO followed by 50 ml of **Dextrose 50%** (25 gm/50 ml) IV OR **Dextrose 10%** IV/IO (25gm/250ml) for adult hyperkalemic patients with Medical Control. For pediatric patients, administer 0.1 Units/kg of regular **insulin** (up to 10 units) IV/IO bolus followed by **$D_{10}W$** 0.5 g/kg (5 mL/kg) IV bolus (infants) or **$D_{25}W$** 0.5 -1 g/kg (2 – 4 mL/kg) IV/IO bolus (child). Blood glucose monitoring should be repeated in 30 minutes and treated appropriately.

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5. Contact Medical Control for **furosemide** 0.5-1 mg/kg IV/IO bolus.

Protocol Continues

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Limb Injury/Compartment Syndrome

1. Control any life-threatening hemorrhage with tourniquets, direct pressure, hemostatic dressing and, assess distal CSM function and splint any obvious deformities.

2. Consider placing an approved tourniquet (do not tighten) as distal as possible near site of injury if there is potential for severe hemorrhage upon release of an entrapped limb.

3. Depending on the degree of tissue injury, bone involvement, duration of patient rescue and overall environmental conditions, tetanus and antibiotics administration may be indicated. Consult Medical Control for treatment options on specific antibiotic type and dosing.

4. Monitor closely for the development of compartment syndrome, especially in fixed muscle compartments such as the forearm or lower leg. Compartment syndrome is typically the result of muscle tissue swelling within the non-expansive fascial compartments which pressure rises greater than tissue perfusion pressure.

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5. Palpate limbs carefully (especially where entrapped or laid upon) for firmness or functional loss. Some signs/symptoms to watch for include:
   a. PAIN out of proportion to physical examination.
   b. PALLOR of skin color
   c. PARESTHESIAS
   d. PARALYSIS
   e. PULSELESSNESS (This is often a late sign. The presence of a distal pulse does not rule out compartment syndrome)

6. Ensure adequate fluid resuscitation of the patient.

7. If compartment syndrome is recognized, immediately consult with a Medical Control regarding treatment options. Fasciotomy should NOT be routinely performed in the field due to technical difficulties, inadequate analgesia and high rates of wound infection.

Protocol Continues

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Amputation

1. Amputation of a limb should ***ONLY*** be considered if there is an immediate threat to life as a ***LAST RESORT*** for freeing an entrapped victim, trading limb for life. An extreme circumstance is when it has been assessed that an entrapped limb is the ***ONLY*** remaining impediment to extricating an entrapped victim.

2. The decision to performing a field amputation should be made by a USAR team physician or AHMD (preferably on-scene) in coordination with a trauma surgeon whenever possible and in conjunction with the TFL or IC. The procedure should be ***ONLY*** performed by an *appropriately trained physician*.

3. Properly prepare the patient as much as time allows for amputation and immediate extrication – supplemental oxygen, end-tidal CO_2 and cardiac monitoring, adequate IV access, VS monitoring. Ensure all necessary equipment is nearby.

4. Expose the entrapped extremity as distally as possible

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5. Place an approved tourniquet as distally as possibly, leaving just enough soft tissue to perform the amputation and should only be tightened prior to amputation under direction of medical control.

6. Administer the appropriate analgesia and sedation.

7. After the procedure has been completed, assess the limb for any re-bleeding (tourniquet tightening, additional tourniquet placement, bone marrow bleeding, etc.), dress the wound appropriately and consider the early administration of prophylactic antibiotics as directed by Medical Control.

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Procedural Sedation and Analgesia

Adequate pain control is an integral component in effecting a successful victim rescue.
Pharmacological agents available to the medical specialist should both be easy to titrate and have minimal impact on cardiorespiratory function.

1. Perform Confined Space/Collapse Rescue Patient Medical Care

2. Ensure that all appropriate monitoring (ECG monitoring, NIBP, pulse oximetry, $ETCO_2$, etc.) have been placed on the patient as feasibly possible given the operational environment.

3. Moderate to severe pain can be managed in accordance with Protocol 2.13 Pain and Nausea Management – Adult & Pediatric.

4. For patients in pain that cannot be adequately controlled with the above agents, **ketamine** at a sub-dissociative dose repeated every 20-30 minutes until pain is controlled or the development of nystagmus:
   a. Adult: 10-20 mg IV/IO bolus or 50 mg IM
   b. Pediatric: 0.1-0.2 mg/kg IV/IO bolus or 0.4 mg/kg IM

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5. In the event an emergent field procedure is to be performed (i.e. limb amputation, fracture/dislocation reduction, soft tissue injury repair, etc.), procedural sedation may be appropriate in order to achieve adequate operating conditions for the patient. A USAR team physician or AHMD **MUST BE** contacted prior to any sedation for procedures or extrication.

Medication	Indication	Adult Dose	Pediatric Dose	Notes
Midazolam	Sedation	2-6 mg IV/IO/IM/IN	0.1 mg/kg IV/IO/IM/IN	i.e. anxiolysis during extrication
Fentanyl Citrate	Analgesia	50-100 mcg IV/IO/IM/IN	1 mcg/kg IV/IO/IM/IN	Administer in conjunction with sedation as needed
Ketamine	Both	1-2 mg/kg IV/IO		Consider use of midazolam as a pre-treatment to reduce the occurrence of emergence reaction
		4 mg/kg IM (400 mg max)		

NOTE: All appropriate monitoring equipment must be in place and applied as the situation dictates. Airway equipment and reversal agents should be ready at the bedside.

Protocol Continues

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Medical Specialist- Medication List

The use of these medications are governed by the USAR Protocols and applied in the context of a USAR operation by an authorized Medical Specialist in conjunction with Medical Control from a designated USAR Team Physician or AHMD.

ANTIBIOTICS

Ceftriaxone

Cefazolin

Levofloxacin

Vancomycin

OTHER MEDICATIONS

Ketamine

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Insulin – Regular

Dextrose 5% in Water (D_5W)

Tranexamic Acid (TXA)

APPENDICES

Statewide Treatment Protocols
Version 2026.1

A1 IFT Guidelines and Protocols

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Part A - Minimum Standards for Interfacility Transfers (IFTs):

1. Minimum Staffing, Training Requirements

Minimum staffing at the Advanced Level requires one Advanced EMT and one EMT-Basic. Minimum staffing at the Paramedic level requires one Paramedic and one Advanced EMT/EMT-Basic, in accordance with 105 CMR 170.305(C)(2).

EMS personnel providing patient care that exceed their regular scope of practice under the Statewide Treatment Protocols during basic and advanced life support (BLS/ALS) IFTs must meet the following requirements as outlined in 105 CMR 170.000 et al:

a. current certification as an EMT in Massachusetts;

b. completion of Department approved supplemental training that is specific to and consistent with levels of certification of involved EMTs and includes
   - expanded roles and responsibilities
   - additional, approved treatment modalities, equipment, devices, and technologies; and
   - ambulance service policies and procedures regarding BLS and ALS IFT

c. has maintained current authorization to practice pursuant to the Affiliate Hospital Medical Director's review of clinical competency.

It shall be the responsibility of the transferring ambulance service to ensure and to verify appropriate training of its IFT EMS personnel. This includes ensuring that all its IFT EMS personnel successfully have successfully completed IFT Initial training, and thereafter, refresher training at a minimum whenever new IFT equipment or medication is approved for use.

2. Affiliation Agreements; Medical Control

An ambulance service must be licensed at an ALS level by the Department to provide ALS IFT care, and it must maintain an affiliation agreement, in accordance with 105 CMR 170.300, with a hospital licensed to provide Medical Control by the Department, pursuant to 105 CMR 130.1501-130.1504 of the Hospital Licensure regulations. Such affiliation agreements must designate an Affiliate Hospital Medical Director (105 CMR 170.300(A)(2) and 105 CMR 130.1502(C)), whose medical oversight functions are defined in 105 CMR 130.1503. Standards for Affiliate Hospital Medical Directors are defined in 105 CMR 130.1504.

3. Communications:

All communications by radio or phone with a Medical Control physician must be recorded.

4. Scope of Practice:

Section 170.360(A) of the EMS Regulations states, "No ambulance service or agent thereof shall transport a patient between health care facilities who is receiving medical treatment that is beyond the training and certification capabilities of the EMTs staffing the ambulance unless an additional health care professional with that capability accompanies the patient..." Depending on the patient's condition, there may be situations in which a physician or another health care professional's presence might be necessary; such determination shall be made by the Medical Control physician in consultation with the physician at the sending hospital.

Protocol Continues

Protocol Continued

The scope of practice for each EMT level is defined (1) in regulation (105 CMR 170.810, 170.820 and 170.840), (2) by the U.S. Department of Transportation's National Highway Traffic Safety Administration's (NHTSA) National EMS Scope of Practice Model and as used in its National EMS Education Standards, and (3) through established training programs approved by the Department, and through the Statewide Treatment Protocols Appendix A1.

The following are patient condition classifications and corresponding requirements for EMT personnel during ambulance transport:

a. Stable Patient - Routine, scheduled transport; Patient clearly stable for transport with no requirement for airway management and no device in place that is actively running or requires any maintenance or monitoring and at no risk for deterioration. Patient may have a device in place, but device must be locked and clamped, not require any maintenance, and not be actively running. Such inactive devices may include, but are not limited to, IVs (if disconnected from fluid and on a saline lock during transport), nasogastric tubes, feeding tubes, PICC lines, bladder irrigation, and wound vacs (wound vacs that are self-contained, gravity draining or battery powered can be transported by BLS providers). Running PCA pumps are not inactive and require ALS (for exceptions-see note below).

   Note: This is the level of care needed for a patient with any device that will NOT require active intervention or management by BLS; unless ALS is otherwise required for patient management. *If the device is being managed by the patient or accompanying caregiver*, the patient or caregiver must have been trained in actually managing the device, NOT merely in its use; for example-the patient or caregiver must have the knowledge and ability to stop a PCA pump, if the line is damaged.
   Minimum Staffing: BLS licensed ambulance service; one EMT-Basic and one person trained to the first responder level.

b. 1. Stable Patient at low risk of deterioration - Patient clearly stable for transport (as above) who has a “maintenance” IV running without additives; (e.g., cancer patient transported for radiation therapy, with unadulterated crystalloid IV solution running). Advanced EMTs may transport patients with Dextrose-containing IV solutions.

   Minimum Staffing: ALS-Advanced EMT licensed ambulance service; one Advanced EMT attending to patient care and one EMT-Basic driving

   2. Stable patient with low risk of deterioration – Patient with an acute or subacute problem, who is stabilized, with a low potential to become less stable during transport. The patient specifically does not require cardiac rhythm monitoring but may be attached to a monitor for pulse rate monitoring under medical director option in A1. Medication running must be consistent with IFT MDO Protocol Part A1 if in use; i.e. antibiotics not by pump are permissible. Examples may include a patient with a hip fracture and dysrhythmia history who is not experiencing an uncontrolled or unstable dysrhythmia; or a patient with pneumonia and stable vital signs who is receiving IV antibiotics during transport.

   Minimum Staffing: ALS-Advanced EMT licensed ambulance service; one Advanced EMT attending patient care, who must be operating with permission under IFT MDO Protocol A1, and one EMT-Basic driving.

c. Stable patient with medium risk or deterioration – Patient with an acute or subacute problem, who is either completely or, at least, to the best of a facility’s ability, stabilized; who has the potential to become less stable during transport. Instrumentation or medication running must be consistent with IFT Guidelines. This is the minimum level for running PCA pumps.

   Minimum Staffing: ALS-Paramedic licensed ambulance service; one EMT-Paramedic and one Advanced EMT or EMT-Basic, in accordance with 105 CMR 170.305(C)(2). The EMT with the highest level of certification must attend to patient care.

Protocol Continues

Protocol Continued

d. Patient with high risk of deterioration or unstable - Patient with an acute problem with high potential to become unstable or cannot be stabilized at the sending facility - Critical Care patient. Critical care patients require critical care transport (CCT). See Part B, Determining the Need for CCT.

   Minimum Staffing: CCT licensed ambulance service. In the event that CCT is unavailable, the sending facility must send appropriate additional medical personnel (per 105 CMR 170.360(A)) to accompany the patient during transfer and assume responsibility for patient care, in an ambulance staffed with a minimum two paramedics.

e. Critical Care Transports (see 105 CMR 170.000, for regulatory requirements regarding critical care transport).

   Note: The sending hospital's medical personnel, such as a nurse, physician, or respiratory therapist (the latter for ventilator management only) accompanying the patient must be able to manage all equipment and instrumentation associated with the patient's care and provide advanced resuscitative measures if needed. Such sending of hospitals additional health care professionals would be responsible for primary patient care of that patient during transport and would receive additional orders from the sending physician, since the care of the patient exceeds what the ambulance and its EMS personnel could provide.

   Note: Under no circumstances shall EMTs function or be assigned to transfers beyond, or potentially beyond, the scope of their training and level of certification. The scope of practice for all EMTs is limited to the levels of EMT certification and training and by licensure level of the ambulance service by which they are employed.

Protocol Continues

Protocol Continued

As a measure of last resort, in exceptional cases where CCT is unavailable **and** sending facility staff is unavailable, **and** the patient has a medical condition requiring time-sensitive intervention, **and** it is approved by the Medical Control physician, the patient may be transferred by any level of certified EMS personnel; provided that all interventions are within the scope of practice of the transporting EMTs and the licensed vehicle. The Medical Control physician and sending physician must be in direct communication if there are any concerning issues prior to patient transport.

In these cases, the sending facility/physician must demonstrate he/she made every effort to secure a CCT-licensed ambulance, and failing that, to send appropriate hospital personnel and the patient condition is such that it is truly time sensitive that the patient be transferred to another hospital for appropriate care. All such cases must be reported to the Affiliate Hospital Medical Director of the ambulance service that provides the transport, for quality assurance review. A hospital may NOT have a policy permitting this type of transport as a standard option. If may only be used as a real-time Medical Control decision, and reported as above.

5. Continuous Quality Assurance/Quality Improvement
   a. Ambulance services providing ALS IFT shall be required to have continuous quality assurance/quality improvement (CQI/QI) policies specific to ALS IFT in conjunction with both their affiliate hospital medical directors and their ambulance service medical directors, if any, and include at a minimum:
   - review of appropriateness of transfers, denials, and conformance with EMTALA regulations;
   - review of critical skills (e.g., intubations, cardiac arrest management, IV therapy), and other measures of system function as deemed appropriate by the Department;
   - steps for system improvement and individual remediation, available for Department review, of cases found to be deficient in critical interventions

Patient ALS Transfer Procedure

Once an ALS IFT has been deemed appropriate by the transferring ambulance service (see "Scope of Practice" above), paramedic staff, upon arrival at the transferring facility, will:

- receive a report from the staff of the transferring facility
- assess the patient; and
- in cases where the patient's care during the transfer exceeds the standing-order scope of practice for an EMT-Paramedic or is unstable or is likely to become unstable as defined previously (see "Scope of Practice" above) will provide a concise, complete and accurate patient report to an Medical Control physician, according to the EMS service's and the Affiliate Hospital's policies and procedures. When EMS personnel have a concern regarding the safety of the patient being transferred, the Paramedic will contact an Medical Control physician for guidance.

  The report should include, at a minimum, the following information:

  a. Names of transferring and receiving facilities
  b. Patient's diagnosis
  c. Reason(s) for transfer
  d. Brief history of present illness and any intervention(s) which has occurred to date
  e. Pertinent physical findings
  f. Vital signs
  g. Current medications and IV infusions
  h. Presence of or need for additional medical personnel

Protocol Continues

Protocol Continued

i. Anticipated problems during transport, if any
j. Anticipated transport time; and
k. Staffing configuration of the transporting ambulance

NOTE: Complete copies of all pertinent medical records, including X-Rays, CT Scans, consultative notes and ECGs, as available, must accompany the patient to the receiving facility either electronically or in-hand.

When necessary, the Medical Control physician and paramedic will discuss with the sending physician the orders for maintenance of existing and/or addition of new therapies according to the needs of the patient, within the scope of existing treatment protocols and EMT scope of practice. The Medical Control physician will be responsible for all actions/interventions initiated by the EMS personnel during transport unless the referring physician accompanies the patient.

If the sending physician is unavailable, or the patient is unstable, the Medical Control physician may recommend to the sending facility additional therapies prior to the transfer of the patient in the interest of patient safety and quality care.

In some situations, consistent with the intent of EMTALA, the transfer of a patient not stabilized for transport may be preferable to keeping that patient at a facility incapable of providing stabilizing care. If the transferring facility cannot provide appropriate medical care or appropriately trained and experienced personnel to accompany the patient, alternative means of transfer, including a CCT- licensed ambulance service, must be utilized. The use of a local primary ambulance service is strongly discouraged in such a situation. All such responses must be reported by the ambulance service to the Department's Division of Health Care Facility Licensure and Certification for review. It is ultimately the responsibility of the sending physician and Medical Control physician to determine the appropriate method of transferring **any** patient, including an unstable patient who needs interventions not otherwise available.

NOTE: An ambulance service may not unilaterally change the level of staffing and care provided. While the service may offer to send a lower level of ambulance staffed in accordance with this Protocol, if a sending physician ultimately requests a paramedic unit. If one is not immediately available, the service must provide an accurate estimated time of arrival of a paramedic unit, or state explicitly that they are unable to do so.

When a facility sends its own staff with the patient during transfer (additional medical personnel) and the patient's condition deteriorates during transport, EMS personnel must contact the Medical Control **p**hysician for appropriate intervention orders and notify the receiving facility of the change in patient status.

If the accompanying staff is an RN s/he will maintain patient care responsibility, functioning within his/her scope of practice and under the orders of the sending physician. The paramedic and the RN will work collaboratively in the provision of patient care. If the patient's condition deteriorates during transport, the paramedic may assume full responsibility in conjunction with their Medical Control **p**hysician for care that exceeds the RN's scope of practice and/or the transferring physician's medical orders. Prior to transfer with an RN, the paramedic will contact the Medical Control physician to discuss the sending physicians orders and rationale.

If the accompanying staff includes a physician from the transferring facility, that physician shall be in charge of patient care. Prior to transfer, the paramedic will contact the Medical Control physician to coordinate patient care between the sending physician accompanying the patient, the Medical Control Physician and the paramedic. Clear lines of command and responsibility shall be established prior to transport.

Protocol Continues

Protocol Continued

Interstate ALS IFT: During interstate IFTs, paramedics must obtain Medical Control through the normal channels of the ambulance service for which they are working. Appropriate provisions for re-contacting the Medical Control Physician during transport, if necessary, should be made prior to departure from the sending facility. If a transfer originates out of state and no contact with a Medical Control Physician is possible, the transfer should be made at the BLS level only with appropriate additional personnel provided by the sending facility.

Part A1 – Medical Director Option (MDO) for ALS IFT Staffing:

Advanced EMTs (AEMT) may be specifically trained under the supervision of their ambulance service's Affiliate Hospital Medical Director (AHMD) to add the following skills **for IFT use only**:

1. Application of a 3- or 4-lead cardiac monitor to a patient. The AEMT is **NOT** interpreting the cardiac rhythm: They may acquire recordings, transmit the rhythm strip, or otherwise maintain it for physician evaluation. The pulse rate is to be monitored as a continuous vital sign.

2. Monitoring of running IV antibiotic-containing **ONLY** solutions, not on an infusion pump.

Each service in which MDO has been adopted is responsible to maintain records of such training AND forward them in writing to OEMS, specifying the service, approving AHMD, which AEMTs have been trained, and when, by name. In addition, each service that adopts this MDO must report in writing to OEMS the start date of implementation and must report total number of uses of this MDO at the six-month mark and the one-year mark from implementation. Such records and reports must be submitted to the State EMS Medical Director and OEMS Clinical Coordinator.

Any adverse event that occurs during a transport using this IFT MDO protocol **MUST be reported within 48 hours by email to the State EMS Medical Director and the OEMS Clinical Coordinator**. Adverse events include, but are not limited to, needing a paramedic intercept; needing to change hospital destination en route for a clinical reason; patient deterioration, or patient death. Any result of transport other than an uneventful IFT is typically an adverse event.

Protocol Continues

ALS Interfacility Transfer Protocols
Part B- Determining the need for CCT

Protocol Continued

B1 – Pediatric Patients (14 years of age or younger and/or weighing no more than 40kg)

- ***Any neonate (30 days or younger) requiring transfer for evaluation and/or treatment of an UNSTABILIZED acute condition.***
- Any pediatric patient with critical illness or injury.

  NOTE: Medical Control should be involved in determining whether pediatric patients require critical care.
- Any pathology associated with the potential for imminent upper airway collapse and / or obstruction (including but not limited to airway burns, toxic inhalation, epiglottitis, retropharyngeal abscess, etc.). If any concerns whether patient falls into this category, contact Medical Control.
- ***Any pediatric patient requiring acute ventilatory support (NIV, high flow NC, ventilator, etc.) who requires an interfacility transfer.***
  - For patients 2 months or older, Paramedic transport may be indicated in place of CCT for patients requiring hi flow nasal cannula if the patient is receiving an FiO2 <50% or less and has an SpO2 of ≥ 92% and is stable on such settings for 20 minutes. Such transport must be agreed to by sending physician and Medical Control.
- All conditions that apply to adult medical patients also require CCT for the pediatric patient.

  NOTE: Medical Control should be involved in determining whether pediatric patients require critical care.

B2 – ADULT PATIENTS

- Unless approved by Medical Control, patients requiring more than three (3) medication infusions by IV pump, not including maintenance fluids must be transported by CCT.
- Unless approved by Medical Control, any patient receiving more than one IV medication being actively titrated to affect heart rate or blood pressure must be transported by CCT.
- Any patient who is being actively paced (either transvenous or transcutaneous) must be transported by CCT.
- Patients being transferred due to an issue with a ventricular assist device that may require active monitoring or management.
- Patients with an intra-aortic balloon pump.
- Any patients with a pulmonary artery catheter.

  NOTE: Central lines may be transported by ALS IFT

A-line monitoring on an uncomplicated stable patient can be transported by a paramedic level IFT crew. All paramedics doing so must be properly trained in this skill, and the AHMD must approve of the training and skill use. All such instances also must be reviewed by the AHMD for quality assurance purposes. **Patients with high potential for being unstable must be transported by CCT and not IFT.**

- Any patient with an intracranial device requiring active monitoring.

  NOTE: Except for chronic use devices, such as ventriculoperitoneal shunts, etc.
- Any pathology associated with the potential for imminent upper airway collapse and / or obstruction (including but not limited to airway burns, toxic inhalation, epiglottitis, retropharyngeal abscess, etc.).

  NOTE: If any concerns about whether patient falls into this category, contact Medical Control.
- Any patient being artificially ventilated for ARDS or Acute Lung Injury.

Protocol Continues

Protocol Continued

Part C – General Protocols for ALS IFT Care

- Vital signs should be obtained and documented every ten (10) minutes, unless otherwise required by protocol.
  - If clinically indicated, patients will have continuous monitoring of electrocardiogram (ECG) and / or pulse oximetry (SpO2).
  - All artificially ventilated patients (and all other patients where it is clinically indicated) will have continuous monitoring of waveform capnography.
- The recommended route for medication infusions in the ALS IFT setting is the peripheral intravenous (IV) line. Intraosseous (IO) lines may also be used.
  - Medications may also be administered through any central venous catheter
  - Paramedics may administer medication boluses, infusions and fluids through administration sets connected by the sending facility to subcutaneous devices (e.g., Port-a-Cath)
- ALS IFT patients should have IV access, if possible.
  - Paramedics should attempt to establish IV access if no attempts have been made at the sending facility.
  - Paramedics are authorized to establish IO access if warranted by the patient's condition.
- All monitoring and therapy will be continued until care is transferred to the receiving medical staff.
- Paramedics may not accept any medications from the sending facility for the purposes of bolus administration during transport.
- Any patient who qualifies for spinal immobilization in accordance with Protocol 4.8 Spinal Chord and Column Injuries who has not been cleared by CT scan or appropriate physician assessment must be properly immobilized for transport. If there is identification of a clinical concern of thoracic or lumbosacral spine injury, the patient should be immobilized to the stretcher to ensure minimal movement.
  - If any confusion arises regarding the need for spinal immobilization Medical Control will be contacted and the Medical Control physician and the sending physician should be in direct communication.
- Paramedics must be familiar with the treatments and interventions instituted at sending facility.
- Patient care documentation should include, at a minimum:
  - Patient's diagnosis / reason for transfer
  - Brief history of present illness / injury
  - Brief overview of interventions performed by sending facility
  - Pertinent physical examination findings and recent vital signs
  - Current medications and IV infusions
  - Presence of or need for additional medical personnel
- For all patients being transferred to an emergency department, who are critically ill, unstable, or have a change in clinical status, EMTs should notify receiving emergency department via CMED prior to arrival. If local CMED is unavailable, entry notes should be made by telephone (on a recorded line, if possible).
- Paramedics will contact Medical Control for:
  - Any intervention(s) that exceed the standing order scope of practice as defined by the current version of the Massachusetts Pre-Hospital Statewide Treatment Protocols for a Paramedic.
  - Any patient that is unstable or is likely to become unstable.
  - When there is any concern regarding the safety of the patient being transferred.
  - Any significant patient care related questions or issues prior to transfer or enroute.
- Paramedics can facilitate communication between the Medical Control and sending physician if there are any concerning issues prior to patient transport.

Protocol Continues

ALS Interfacility Transfer Protocols
Part D1 – Aortic Dissection

Protocol Continued

- ❑ It is recommended that central access and / or two large bore IV lines are in place prior to transport.

- ❑ Care during transport:
  - Administer high-flow supplemental oxygen
  - Continuous cardiac monitoring
  - Heart rate, blood pressure, neurologic evaluations documented every 5 – 10 minutes
    - Target heart rate = 60 – 80 bpm
    - Target systolic blood pressure = 90 – 100 mm Hg
    - Continually assess mentation.
    - If patient is outside of these parameters, contact Medical Control.
  - Administer **fentanyl** for analgesia, per Protocol 2.13 Pain & Nausea Management Adult & Pediatric or by orders.

- ❑ If not approved by Medical Control prior to transport, you must contact Medical Control to adjust all medication infusions:
  - Adjust vasoactive medications initiated at sending facility (until systolic blood pressure is less than 100 mm Hg and/or MAP is less than 60 mm Hg):
  - If **labetalol** infusion has been initiated by sending facility, **increase by 2 mg / minute every 10 minutes** (to a maximum of 8 mg/minute)
  - If **esmolol** infusion has been initiated by sending facility, **increase by 50 mcg / kg / minute every 4 minutes** (to a maximum of 300 mcg / kg / minute)
  - If **nitroprusside** infusion has been initiated by sending facility, **increase by 0.5 mcg / kg / minute every 5 minutes** (to a maximum of 4 mcg / kg / minute)
  - If **nicardipine** has been initiated by sending facility;
  - **Increase by 2.5 mg / hour every 5 minutes** (to a maximum of 15 mg / hour).

Discontinue drip and contact Medical Control for instructions if:

- Systolic blood pressure < 90 mm Hg, or;
- Heart rate < 60 bpm
- If no medication infusion has been initiated to control blood pressure and / or heart rate, Medical Control may order the administration of **metoprolol** 5 mg IV every 5 minutes to a maximum of 15 mg.

Protocol Continues

ALS Interfacility Transfer Protocols
Part D2- Blood Transfusion Reaction

A1

Protocol Continued

Symptoms of a Transfusion Reaction

Acute Hemolytic Reaction

Fever, hypotension, flushing, wheezing, dark and / or red colored urine, oozing from IV sites, joint pain, back pain, chest tightness

Nonhemolytic Febrile Reaction

Fever, chills, rigors, vomiting, hypotension

Allergic Reaction

Urticaria, hives (usually without fever or hypotension)

Anaphylactic Reaction

Dyspnea, wheezing, anxiety, hypotension, bronchospasm, abdominal cramps, vomiting, diarrhea

Volume Overload

Dyspnea, hypoxia, rales, tachycardia, jugular vein distention

Transfusion-Related Acute Lung Injury ("TRALI")

Dyspnea, hypoxia, rales (usually without fever or signs of pulmonary edema)

- ❑ STOP the infusion if any of the above symptoms are discovered!
- ❑ Start infusion of normal saline
- ❑ Contact Medical Control
- ❑ Treat hypotension and anaphylactic reaction with standing orders (Statewide Treatment Protocols)
- ❑ If minor allergic reaction (urticaria / wheezing) administer **diphenhydramine**, 50 mg IV
- ❑ If SpO2 is below 90% or patient experiences wheezing / rales, administer high-flow supplemental oxygen and consider positive pressure ventilation. If significant signs of volume overload, consider **furosemide**, 40 mg IV.
- ❑ Notify issuing hospital's blood bank of any suspected reaction. All documentation and blood supplies used (tubing, bag, etc.) from the blood given must stay with the patient and be transferred to the receiving hospital staff on patient turnover.

Protocol Continues

A1 ALS Interfacility Transfer Protocols Part D3 – CVA Post tPA

Protocol Continued

- ❑ Seizures (either generalized motor or nonconvulsive) should be quickly controlled.
  - ▪ After assessing airway, breathing, and applying high-flow oxygen:
    - Follow Seizure protocols: Protocol 2.15A Seizures – Adult and 2.15P Seizures - Pediatric
- ❑ For an ischemic CVA, if a tPA (tissue plasminogen activator) infusion will be continued during the transport, follow these guidelines:
  - ▪ Sending facility staff should withdraw excess tPA from the bottle, so that the bottle will be empty once the full dose has infused.

    Example: 100 mg bottle of tPA contains 100 mL of fluid when reconstituted; if the total dose being administered is 70 mg, then the facility should remove 30 mL of fluid from the bottle before departure.
  - ▪ When the pump alarm indicates that the bottle is empty, you should take the following steps to ensure that the drug contained within the administration tubing is administered to the patient:
    - Remove the IV tubing from the tPA bottle and spike a bag of 0.9% NS and restart the infusion; the pump will stop infusing when the preset volume has been administered.
- ❑ If systolic blood pressure is found to be greater than 180 mm Hg or diastolic blood pressure is found to be greater than 105 mm Hg consult Medical Control, then:
  - ▪ Adjust antihypertensive medications initiated at sending facility:
  - If **labetalol** has been initiated by sending facility;
    - ✓ **Increase by 2 mg/minute every 10 minutes** (to a maximum of 8 mg/minute) until systolic blood pressure is less than 180 mm Hg and/or diastolic blood pressure is less than 105 mm Hg
    - ✓ Discontinue drip and contact Medical Control for instructions if the reduction in MAP is greater than 30% of initial BP or SBP < 140 mm Hg, DBP < 80, or heart rate < 60 bpm
  - If **nicardipine** has been initiated by sending facility;
    - ✓ **Increase by 2.5 mg / hour every 5 minutes** (to a maximum of 15 mg / hour) until systolic blood pressure is less than 180 mm Hg and/or diastolic blood pressure is less than 105 mm Hg
    - ✓ Discontinue drip and contact Medical Control for instructions if the reduction in MAP is greater than 30% of initial BP or SBP < 140 mm Hg, DBP < 80, or heart rate < 60 bpm
- ❑ For any acute worsening of neurologic condition (e.g., acutely worsening neurological deficits, development of severe headache, acute hypertension, vomiting, etc.):
  - ▪ If patient is receiving tPA, discontinue the infusion.
  - ▪ Contact Medical Control for further instructions, including possible change in destination.
  - ▪ Contact receiving hospital emergency department with an update on patient's condition and an estimated time of arrival.

Protocol Continues

Protocol Continued

- ❑ If post-arrest targeted temperature management (TTM) therapy in progress at the time of ALS IFT arrival, it should be continued during the transport per Protocol 3.7 Targeted Temperature Management
- ❑ Pre-transport temperature should be documented, and temperature should be monitored with vital signs every five minutes.
- ❑ The temperature target for post-arrest targeted temperature management (TTM) is 32°C – 36°C (89.6°F – 96.8°F).
- ❑ If pre-transport or inter-transport temperature is less than or equal to 36°C:
  - Maintain temperature with cold packs placed in the groin, axillae, and on the chest and sides of neck.
- ❑ If pre-transport or inter-transport temperature is greater than 36°C:
  - Continue cooling with cold packs placed in the groin, axillae, and on the chest and sides of neck.
- ❑ Temperature should be monitored if possible for transport times longer than 20 minutes. Patients should be handled gently (due to risk of arrhythmias).
- ❑ ALS IFT crews will not discontinue TTM unless ordered to do so by Medical Control.
- ❑ If patient temperature is less than 31°C, contact Medical Control and utilize any external warming devices (blankets, etc.) to actively rewarm patient until the temperature is greater than 31°C.
  - If ordered by Medical Control and available, consider infusion of 250 mL IV boluses of warmed normal saline solution, until the temperature is greater than 31°C.
- ❑ If hemodynamically significant dysrhythmias or bradycardia of any type develop, or if the patient develops significant bleeding, TTM should be stopped, Medical Control contacted, and active rewarming pursued.

Protocol Continues

ALS Interfacility Transfer Protocols
Part D5 – Pregnancy Related

Protocol Continued

- ❑ Patients who are in labor with concern for imminent delivery must be accompanied by sending facility staff.
- ❑ In high-risk situations, a physician / registered nurse will accompany the patient for transport.
- ❑ If any confusion arises regarding the need for additional OB staff Medical Control will be contacted and the Medical Control physician and sending physician should be in direct communication.
- ❑ In addition to the documentation standards listed in the General ALS IFT Care Guidelines, when transporting an obstetrical patient, the following should be documented:
    - The presence of a fetal heart rate before and after transfer
    - Estimated date of confinement, maternal history of any complications
    - Condition of membranes, dilation
    - Gravida / Para
    - Timing and nature of contractions
    - Fetal Position
- ❑ Patients should be transported in a left-lateral position or sitting upright, if possible.
- ❑ Document that the fetal heart rate was evaluated prior to transport and upon arrival.
- ❑ If patient should develop eclamptic seizures:
    - After assessing airway, breathing, and applying high-flow oxygen:
    - Administer **magnesium sulfate** 2-4 grams over 5 minutes IV/IO.

Follow Protocol 2.15A – Seizures-Adult and the Protocol 2.10 Obstetrical Emergencies

Protocol Continues

Protocol Continued

- ❑ **Paramedics should be familiar with the care and treatment the patient has received.** Confirm medications administered prior to arrival.
- ❑ **Consider discontinuing or avoiding all medication infusions (except for basic IV fluids) to expedite transfer.**
- ❑ Receiving facility should be contacted to ensure rapid transfer to cardiac cath lab.
- ❑ Patients should receive appropriate supplemental oxygen therapy, only if SpO2 <90% or dyspnea, in accordance with 1.0 Routine Patient Care.
- ❑ All other interventions per the Statewide Treatment Protocols, if not already administered:
  - **Aspirin**, 324-325 mg PO
- ❑ If patient continues to experience chest discomfort:
  - **Nitroglycerine** (if systolic blood pressure is greater than 120 mm Hg), 0.4 mg SL tablet or spray; may be repeated in 5 minute intervals for a total of three (3) doses
  - **Fentanyl**, 1 mcg/kg slow IV/IO/IM/IN (initial dose) to a max. of 150mcg; if needed, may repeat up to two additional doses, 5-minutes apart, not to exceed a total max dose of 450mcg (including initial dose.)

Protocol Continues

Protocol Continued

- ❑ The transport paramedic must be familiar or become familiar through consultation (i.e., with a drug reference or discussion with hospital staff) on the following attributes of each drug the patient has received prior to and will receive during transport:
  - The type and name of medication being administered.
  - The indication and contraindications for administration of the medication.
  - The correct dose, rate, and mixture of medication.
  - Any titration indications or instructions.
  - Any specific Medical Control instructions.
  - Any patient-specific information
  - Any adverse effects of the medication being administered.
  - The seven rights of medication administration should always be considered, even when transporting patients between facilities.
    - ✓ Right patient, drug, dose, route, time, outcome, documentation.
- ❑ Paramedics may not accept any medications from the sending facility for the purposes of bolus administration during transport.

Protocol Continues

Protocol Continued

Any of the following medications or medication classes, not currently part of the Paramedic Statewide Treatment Protocols, may be maintained if initiated at the sending facility, and can only be titrated through specific IFT protocols **and** by Medical Control.

- Aminophylline
- Analgesics
- Anticonvulsants
- Antidotes
- Antidysrhythmics
- Antihypertensive agents
- Anti-infectives (e.g., antibiotics, anti-sepsis)
- Benzodiazepines
- Blood products
- Chemotherapeutic agents
- Electrolyte infusions
  - ✓ Potassium, limited to 10 mEq / hour
  - ✓ Magnesium, maintenance infusion limited to 2 g / hour
- Glycoprotein IIb / IIIa inhibitors
- Heparin
- 3% Hypertonic Saline
- Insulin infusions
- Intravenous steroids
- Inhaled or nebulized medications
- Mannitol infusions
- Octreotide
- Paralytics
- Parenteral nutrition
- Proton Pump Inhibitors
- Sedatives
- Standard IV infusion fluids (including 10% Dextrose)
- Thrombolytic agents
- Vasodilators (including all forms of Nitroglycerin)
- Vasopressors

NOTE: All medication infusions other than standard crystalloids and blood products must be administered by IV infusion pump.

Protocol Continues

Protocol Continued

- Infusion/bloodbank documentation must be transported with the patient.
- Paramedics will not initiate a blood product infusion.
- At least one additional IV line should be in place.
- Paramedic will not administer any medications through an IV line which is being used to infuse blood or a blood product.
- Ensure the blood and / or blood products are infusing at the prescribed rate.
- Monitor and record the patient's vital signs every 5 – 10 minutes.
- **If any signs and symptoms of transfusion reaction, proceed immediately to D2-Blood Transfusion Reaction of this protocol.**
- When the transfusion has finished:

  □ Record transfusion end-time and post-infusion vital signs.

  □ Disconnect infusion set tubing from primary line.

  □ Flush primary line with normal saline only.

  □ Place any used supplies into a clean biohazard marked container or bag.

  □ All documentation and blood supplies used (tubing, bag, etc) from the blood given must stay with the patient and be transferred to the receiving hospital at patient turnover.

Protocol Continues

Protocol Continued

- All artificially ventilated patients must be transferred on a ventilator.
- Consider sedation/analgesia; remember that **paralysis is not sedation.**
- All ventilators must be able to meet the demands of the patient's condition, taking into consideration all settings and features described or stipulated by the sending facility and / or physician.
- Ventilators may not be full control mode only and must be capable of meeting the patient's ventilatory needs. Ventilator settings must be documented on Patient Care Report.
- **Unless the transfer is time sensitive** in nature (e.g., STEMI, aortic dissection, acute CVA, unstable trauma, etc.), the following requirements apply to ventilator use and / or adjustment:
  - Patients must be observed, by the sending facility, for a minimum of 20 minutes after any adjustment in ventilator settings.
  - Patients should be on the transport ventilator for 20 minutes prior to departure.
  - Medical Control may waive 20 minute rule based on patient condition and needs. If waived, reason must be documented on Patient Care Report.
- Medical Control is required for any instance when adjustment of the ventilator settings is needed.

Protocol Continues

Protocol Continued

Paramedics who operate at the ALS IFT level are expected to have a thorough understanding of the functions and operations of the infusion pump they will utilize (whether property of the ambulance service or sending facility).

Paramedics are expected to not only control the basic functions of the pump, but also be able to dynamically troubleshoot pump issues. Prior to transport, paramedics must be proficient at the following:

- How to turn the pump on and off.
- How to load and safely eject the administration set into pump.
- The importance of having spare tubing.
- How to suspend pump operation.
- How to adjust the infusion rate, if necessary.
- How to clear air bubbles from the tubing.
- How to troubleshoot problems (e.g., occlusion alarms).
- How the specific service addresses low battery or power issues.

Protocol Continues

Protocol Continued

- Obtain and document the indication for placement of the pleural chest tube.
- Ensure that the chest tube is secured to the patient, and that the drainage system remains in an upright position and below the level of the patient's chest at all times.
- Regularly evaluate lung sounds and vital signs.
    - Signs and symptoms of a tension pneumothorax include: Dyspnea, tachypnea, decreased / absent lung sounds on affected side, hypotension, tachycardia, jugular venous distention, tracheal deviation (late sign)
- Tubes and connections should be evaluated following any movement of the patient to ensure leak-proof operation and chest tube patency.
- Check the following initially and after moving the patient:
    - Ensure the dressing remains dry and occlusive.
    - Ensure there are no kinks or dependent loops (e.g., a loop or turn in the tubing that forces the drainage to move against gravity to reach the collection chamber) in the tubing.
    - Amount of water in the water seal chamber; if the water level appears low ask a staff member if it requires refilling prior to departure.
- Monitor the following items after routine assessment of patient's vital signs:
    - Drainage (document the appearance and amount of fluid, at the start and at the conclusion of transport)
    - Bubbling in the water seal chamber
    - Gentle rise and fall of the water level, which corresponds with the patient's respirations is called "tidalling" and indicates that the system is functioning properly.
- Troubleshooting / problems
    - ✓ **Abnormal bubbling in the water seal chamber**
        - Remember, gentle rise and fall of the water level, which corresponds with the patient's respirations is called "tidalling" and indicates that the system is functioning properly.
        - Continuous air bubbling confirms a constant air leak from a tube connection or from the patient's chest (e.g., unresolved pneumothorax).
        - Intermittent bubbling confirms an intermittent air leak from the patient's chest.
        - No air bubbling confirms no air leak from the patient's chest and no air leak from a tube connection.
    - ✓ **If the entire chest tube is removed from the chest:** Cover with a three-sided dressing and contact Medical Control.
    - ✓ **If the chest drainage system tips over and spills:** Contact Medical Control; you may be instructed to clamp tube.
    - ✓ **If the chest drainage system is crushed or broken open, or the chest drain becomes detached from the chest tube:** Contact Medical Control immediately, do not reconnect; you may be instructed to place the end of the chest tube in a bottle of sterile water to create a seal.

Protocol Continues

A2 Adult and Pediatric Scope of Practice

Airway/Respiratory Management	EMT	AEMT	PARAMEDIC
BVM	X	X	X
Capnography	X	X	X
Chest Tube Maintenance			Δ
Cleared, Opened, Heimlich	X	X	X
CPAP	X (Adult only)	X (Adult only)	X (Adult only)
Endotracheal Intubation			X
Endotracheal Suctioning		X	X
High Flow Nasal Cannula (HFNC)	*	*	Δ
Nasogastric/Orogastric Tube			X
Nasopharyngeal Airway	X	X	X
Nasotracheal Intubation			X
Nebulizer Treatment	X	X	X
Needle Cricothyrotomy			*
Needle Decompression			X
Oral Suctioning	X	X	X
Oropharyngeal Airway	X	X	X
Oxygen Administration	X	X	X
Pulse Oximetry	X	X	X
Supraglottic Airways	X	X	X
Surgical Cricothyrotomy			*
Tracheostomy Maintenance	X	X	X
Ventilator Operation			*/Δ

Legend:

X *Skill allowed under protocol and in MA permitted Scope of Practice.*

** Skill allowed under protocol with medical director approval and training.*

Δ *Skills allowed under protocol for IFT use only*

❑ *Skills allowed only under Paramedic/Advanced-Basic/ALS-assist staffing and training.*

Protocol Continues

Adult and Pediatric Scope of Practice A2

Protocol Continued

Routes of Access/ Medication Administration	EMT	AEMT	PARAMEDIC
Auto Injector/Check & Inject	X	X	X
Blood Products			Δ/*
Inhalation	X	X	X
Intramuscular	X	X	X
Intraosseous		X	X
Intravenous		X	X
Intravenous Infusion Pump			Δ/X
Oral	X	X	X
Intranasal	X	X	X
Rectal		Assist (Diastat)	X
Subcutaneous		X	X
Sublingual	Assist	X	X
Central Line Maintenance			Δ
Peripheral Venous Access		X	X
Intraosseous Access		X	X

Legend:

X *Skill allowed under protocol and in MA permitted Scope of Practice.*

** Skill allowed under protocol with medical director approval and training.*

Δ *Skills allowed under protocol for IFT use only*

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Protocol Continues

A2 Adult and Pediatric Scope of Practice

Protocol Continued

Cardiac Management	EMT	AEMT	PARAMEDIC
Acquisition and Transmission of 12 Lead ECG	*	*	X
Application of 12 Lead ECG	❑	❑	X
Application of 3 or 4 lead ECG	❑	❑	X
CPR - Cardiopulmonary Resuscitation	X	X	X
Defibrillation - AED	X	X	X
Defibrillation - Manual			X
Interpretation of 12 Lead ECG			X
Interpretation of 3 or 4 lead			X
Synchronized Cardioversion			X
Targeted Temperature Management	X	X	X (Adult Only)
Transcutaneous Pacing			X

Legend:

X *Skill allowed under protocol and in MA permitted Scope of Practice.*

** Skill allowed under protocol with medical director approval and training.*

Δ *Skills allowed under protocol for IFT use only*

❑ *Skills allowed only under Paramedic/Advanced-Basic/ALS-assist staffing and training.*

Protocol Continues

Adult and Pediatric Scope of Practice A2

Protocol Continued

Other Skills	EMT	AEMT	PARAMEDIC
Blood Draw		X	X
Blood Glucose Analysis	X	X	X
Blood Lactate Analysis			X
Burn Care	X	X	X
Cervical Spinal Immobilization	X	X	X
Childbirth	X	X	X
Cold Pack	X	X	X
Extrication	X	X	X
Eye Irrigation (Morgan Lens)			X
Hot Pack	X	X	X
Restraints - Pharmacological			X
Restraints - Physical	X	X	X
Selective Spinal Assessment	X	X	X
Spinal Immobilization - Lying (Long board)	X	X	X
Spinal Immobilization - Seated (K.E.D.)	X	X	X
Spinal Immobilization - Standing	X	X	X
Splinting	X	X	X
Splinting - Traction	X	X	X
Temperature	X	X	X
Esophageal Temperature			X
Wound Care - Occlusive Dressing	X	X	X
Wound Care Pressure Bandage	X	X	X
Wound Packing	X	X	X
Ultrasound			*

Legend:

X *Skill allowed under protocol and in MA permitted Scope of Practice.*

*** *Skill allowed under protocol with medical director approval and training.*

∆ *Skills allowed under protocol for IFT use only*

❑ *Skills allowed only under Paramedic/Advanced-Basic/ALS-assist staffing and training.*

EMS Assessment Tool for the Deaf and Hard of Hearing

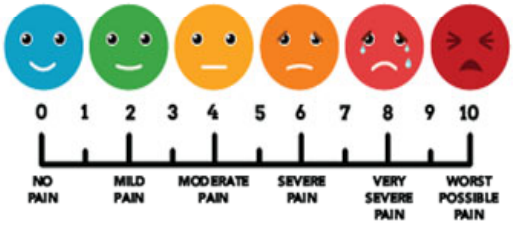
A3

EMS Assessment Tool for the Deaf and Hard of Hearing, Appendix A3

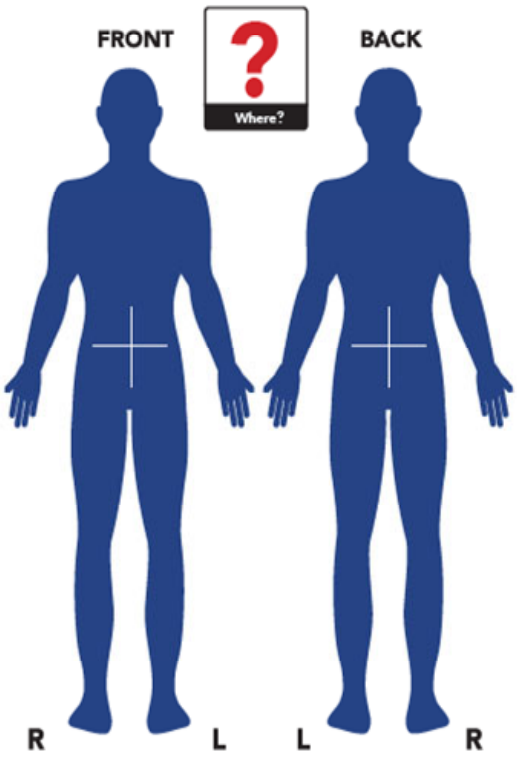
E / A / P

PAIN SYMPTOMS

YOUR LEVEL OF PAIN?



WHERE IS THE PAIN?

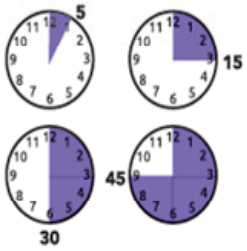


Please Note:
In an emergency situation individuals may use behaviors that you could find surprising or misunderstand. Expect to see someone use touch, intense facial expressions, sound, and gesture to communicate. These are all very typical.

TIME / DATE / NUMBERS

HOURS

MINUTES



NUMBERS: TIME/DAY

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31									

WEEK						
S	M	T	W	TH	F	S

COMMUNICATION TIPS

When communicating with me, please:
- Get my attention first.
- Make eye contact when you speak.
- Try to repeat, rephrase, write or gesture.
- Minimize number of people asking questions.
- Reduce flashing lights & visual/loud distractions.

Full Communication Access & Transporting:
- Alert receiving staff of communication needs.
- I may need a certified sign language interpreter, captioner, and/or an assistive listening device with my hearing aid or cochlear implant to hear better.
- A hearing aid or cochlear implant does NOT allow me to understand everything you say.
- Keep hearing aid/device & batteries with patient.
- Service dogs should accompany their owner.

Protocol Continues

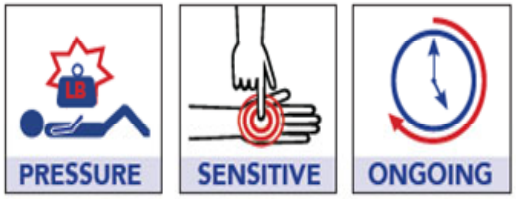
EMS Assessment Tool for the Deaf and Hard of Hearing

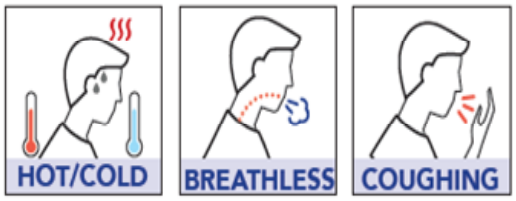
A3

Protocol Continues

E / A / P

FEELING/SYMPTOMS





MEDICAL & RECENT HISTORY

Protocol Continues

EMS Assessment Tool for the Deaf and Hard of Hearing, Appendix A3

EMS Assessment Tool for the Deaf and Hard of Hearing

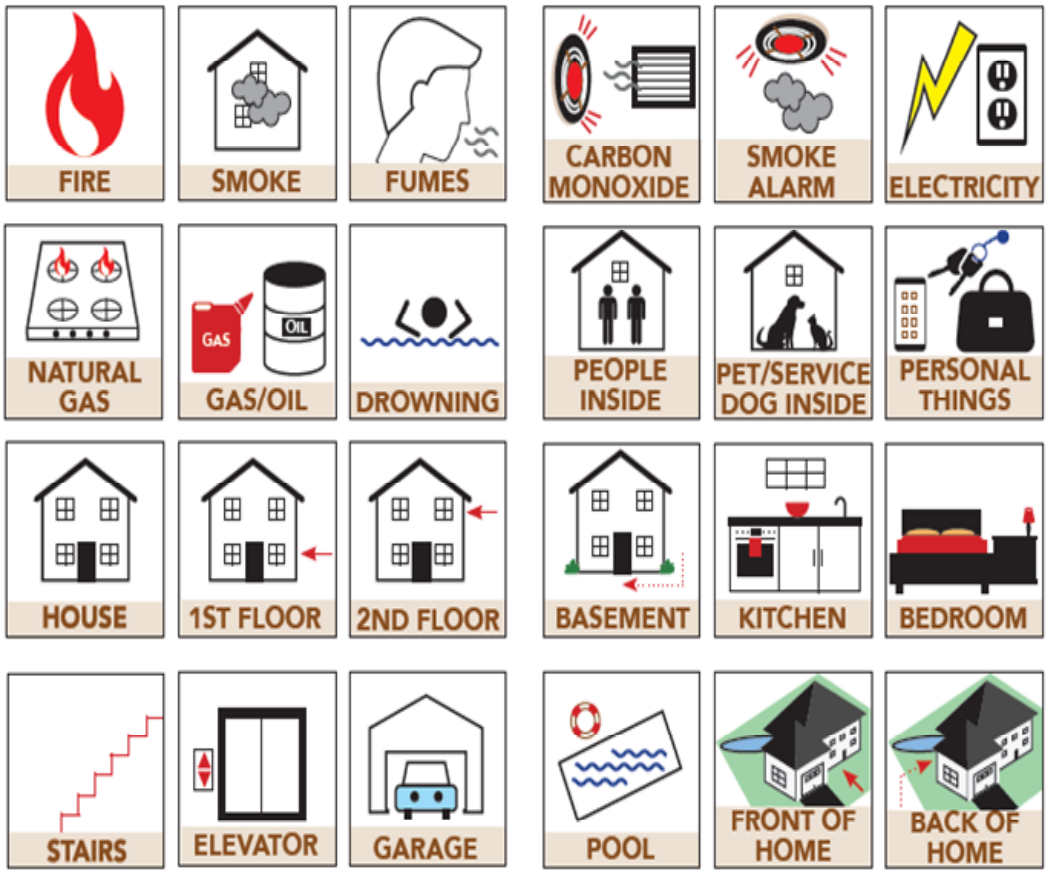
A3

EMS Assessment Tool for the Deaf and Hard of Hearing, Appendix A3

Protocol Continues

E / A / P

EMERGENCY SITUATION HOME / WORK



EMERGENCY SITUATION CAR / VEHICLE

Protocol Continues

Assessment Tool for the Deaf and Hard of Hearing

Protocol Continues

E / A / P

COMMUNICATION PREFERENCE

QUICK COMMUNICATION

ALPHABET & NUMBERS

A B C D E F G H I

J K L M N O P Q R

S T U V W X Y Z

0 1 2 3 4 5 6 7 8 9

EMERGENCY SERVICES CARD

- **Commonwealth of Massachusetts**
  https://mass.gov
- **Executive Office of Health & Human Services**
  https://mass.gov/eohhs
  call: Dial 211
- **Massachusetts Commission for the Deaf and Hard of Hearing**
  https://mass.gov/mcdhh
  email: MCDsafety@mass.gov
- **Department of Fire Services**
  https://www.mass.gov/dfs
- **Office of Emergency Medical Services**
  https://www.mass.gov/orgs/office-of-emergency-medical-services

MASSACHUSETTS
OFFICE OF EMERGENCY MEDICAL SERVICES
DEPARTMENT OF PUBLIC HEALTH

Developed in partnership by: The Massachusetts Commission For The Deaf And Hard of Hearing, The Department Of Fire Services and The Office of Emergency Medical Services.

Disclaimer: This card does not waive the user's right to effective communication under the Americans with Disabilities Act (ADA).

For more information or to provide feedback: online at www.mass.gov/MCDHH or email at MCDsafety@mass.gov

Some elements of this tool were used, with permission, by the Wisconsin Council on Physical Disabilities.