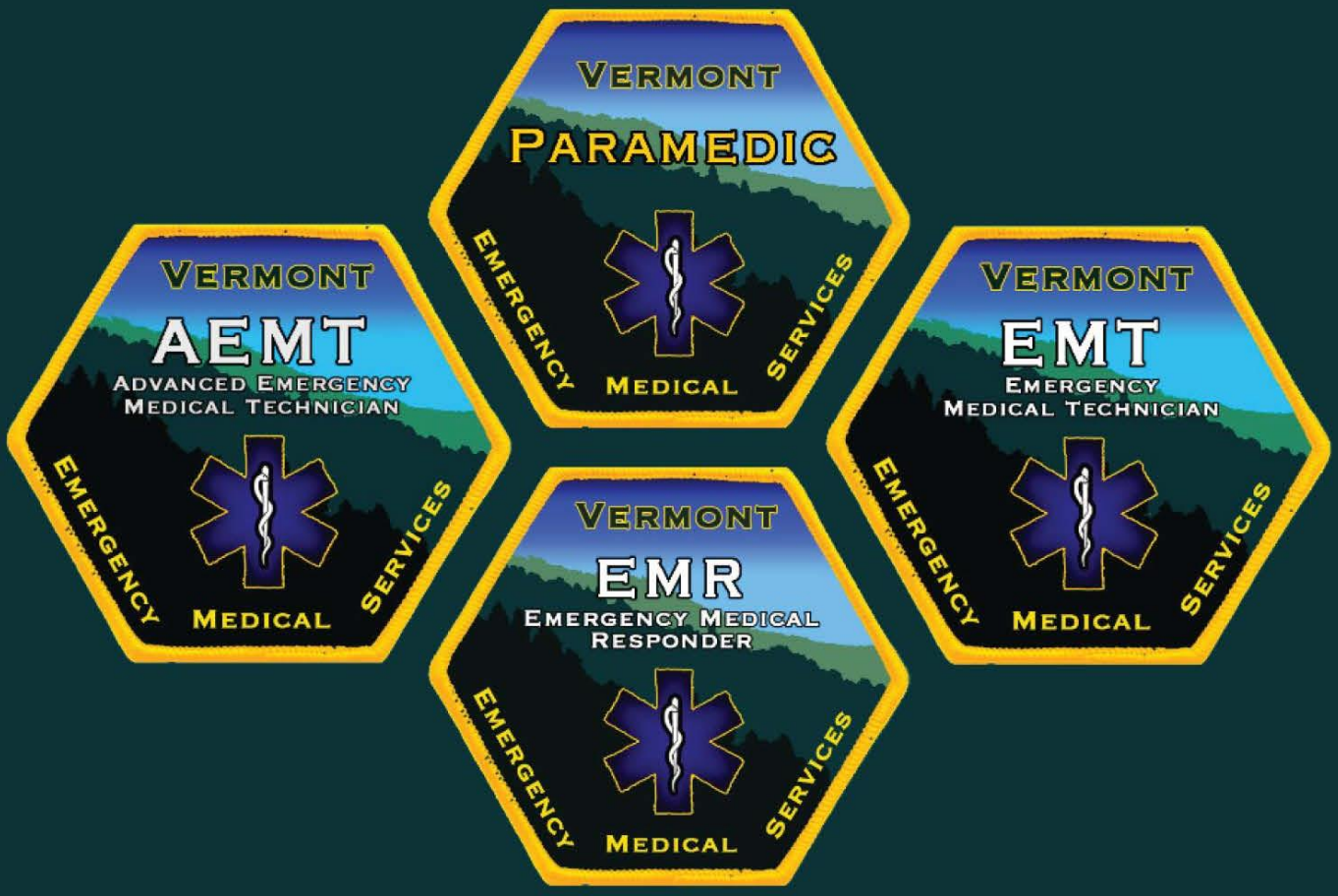
Vermont Statewide **Emergency Medical Services** Protocols

2025



VERMONT
DEPARTMENT OF HEALTH

Vermont Department of Health

Office of Public Health Preparedness and Emergency Medical Services

Vermont Statewide EMS Protocols – 2025 (replaces 2023 version)

Legend	Definition
VEFR	Vermont Emergency First Responder (VEFR)
EMR	Emergency Medical Responder (EMR)
E	Emergency Medical Technician (EMT)
A	Advanced Emergency Medical Technician (AEMT)
P	Paramedic
X	Extended Care Protocol
	CAUTION – Red Flag topic
	Contact Medical Direction

Blue underline – text formatted as a hyperlink

These protocols are a living document developed and drafted by the EMS Protocol Technical Advisory Group, which is comprised of EMS professionals and stakeholders of the Vermont Emergency Medical Services system.

These 2025 Vermont Statewide EMS Protocols were reviewed, edited, and approved of by all of Vermont's District Medical Advisors and other stakeholders. Any deviation from these protocols must be approved in writing by the Vermont EMS Office.

Please note, for visual clarity, trademark and registered symbols have not been included with drug, product, or equipment names.

Questions and comments should be directed to:

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DISCLAIMER: Although the authors of this document have made great efforts to ensure that all the information is accurate, there may be errors. The authors cannot be held responsible for any such errors. For the latest corrections to these protocols, see the Vermont EMS website at: http://www.vermontems.org

Vermont Statewide EMS Protocols 2025 – Table of Contents

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Preface

We welcome you to the 2025 Statewide Vermont EMS Protocols. These protocols represent the work of many people across the state and the continued evolution of prehospital medicine in Vermont. In this process, these protocols have been reviewed by and specific feedback has been received and incorporated from:

Members of the EMS Protocol Technical Advisory Group
All 13 physicians who serve as District Medical Advisors
Department of Mental Health
Department of Children and Families
Vermont State Police
Office of the Chief Medical Examiner
Howard Center
Disability Rights Vermont
Vermont Ethics Network
Vermont Stroke Task Force
Vermont American Heart Association
Northern New England Poison Control
Over 80 other EMS providers, agencies, and districts

The Vermont Department of Health Division of Emergency Preparedness, Response and Injury Prevention, has attempted to ensure that all information in these protocols is accurate and in accordance with the best medical evidence available and relevant professional guidelines as commonly practiced at the time of publication. Use of these protocols is intended for Vermont licensed EMS organizations and their affiliated licensed personnel functioning under Medical Direction. EMS District Medical Advisors may restrict but not expand the scope of practice at each level as outlined in these protocols. On occasion, drug shortages may require substitutions as communicated by the State EMS Medical Director. Vermont EMS personnel, instructors, and organizations are free to reproduce this document in whole or in part for educational, QA/QI, field guidance, or similar purposes.

We continually scan for errors of all types (medication dosing, spelling, grammar, or punctuation), clarify wording that may be confusing, incorporate feedback from EMS providers, and monitor medical literature to keep abreast of current EMS practice. Please contact the EMS office with any suggestions for future revisions or corrections at: vtems@vermont.gov

All licensed providers functioning within the Vermont EMS system are required to be familiar with the contents of this document pertinent to their level of training and licensure. Updates to these protocols prior to the next full revision will be posted on the Vermont EMS website and sent via email to all agency heads, district chairs, and district medical advisors. Agency heads are responsible for assuring that any updates are provided to their affiliated personnel and any required training and credentialing occurs. Any updates will also be sent to all licensed EMS providers that have provided Vermont EMS with a valid email address and are on the Vermont EMS listserv. Contact the office to add your email address to this listserv if you do not already receive periodic updates.

When using an electronic version of this document, you will find hyperlinks to each referenced protocol.

(Continued)

Preface

IMPORTANT CLARIFICATIONS AND EXPLANATIONS

Protocol Implementation
These protocols are written for the National EMS Scope of Practice Model levels: EMR, EMT, AEMT, Paramedic, and for the Vermont Emergency First Responder (VEFR) certification. When an entire agency has completed training on these protocols, they may begin to use these new protocols. Appendix A.6 contains the scope of practice matrix.

VEFR Scope of Practice
For the Vermont Emergency First Responder (VEFR) certification, the scope of practice is based upon the American Heart Association HeartSaver First Aid, CPR & AED course. The primary focus of the Vermont Emergency First Responder is to initiate immediate lifesaving care to critical patients. This individual possesses the basic knowledge and skills necessary to provide lifesaving interventions while awaiting additional EMS response and to assist higher level personnel at the scene and during transport. Vermont Emergency First Responders function as part of a comprehensive EMS response, under medical oversight. Vermont Emergency First Responders perform basic interventions with minimal equipment.

The skills and interventions of the VEFR scope of practice are described in the VEFR Routine Patient Care section of this document.

EMR Scope of Practice
The skills and interventions of the EMR scope of practice are described in the EMR Routine Patient Care section of this document.

Protocol Labeling
Protocols that are labeled #.A or #.P indicate the adult and pediatric versions of that protocol when appropriate. If no designation is listed and it is not obvious (such as newborn resuscitation), the protocol applies to both adult and pediatric patients.

Standing Orders Are Cumulative
Standing orders are those orders that may be carried out by an EMS provider – at their discretion – without the need for on-line Medical Direction. However, EMS providers at any level of training are encouraged to contact on-line Medical Direction in cases where they believe treatment beyond standing orders is warranted, cases where there is uncertainty regarding treatment or in cases involving medicolegal or jurisdictional issues.

The standing orders for AEMTs and Paramedics inherently include the standing orders of the lower levels. The sequence of standing orders as they appear in these protocols is not necessarily the order in which they might be executed by a provider.

Medical Direction
EMS medical direction refers to the guidance and oversight provided by a licensed physician to Emergency Medical Services (EMS) personnel in the delivery of prehospital care. This direction is crucial to ensure that EMS practitioners deliver appropriate and effective treatment to patients in the field. Medical direction is typically outlined in a protocol book, which serves as a comprehensive reference guide for EMS practitioners.

(Continued)

Preface

Online medical direction involves real-time communication between EMS personnel and a designated medical director using telecommunication technologies. This allows for immediate consultation and guidance on patient care decisions, especially in situations where time is critical.

Offline medical direction, on the other hand, involves predetermined protocols and standing orders provided by the medical director. These protocols are established based on best practices and evidence-based medicine, allowing EMS practitioners to initiate certain treatments without direct real-time communication with a physician.

In cases where an EMS agency is transporting a patient across district lines, it is important to note that medical direction may shift to the medical director at the receiving hospital once the transport destination is chosen that is not the local facility. This ensures continuity of care and allows the receiving hospital's medical director to provide guidance and oversight during the transport and upon arrival. Local DMA restrictions will remain in place for the transporting ambulance.

The protocol book serves as a valuable tool for EMS personnel, containing a detailed set of guidelines, procedures, and protocols approved by the medical director. It provides a standardized approach to patient care, ensuring consistency and adherence to established medical practices. Both online and offline medical direction contribute to the overall quality and safety of prehospital care provided by EMS agencies.

Calling for Advanced Life Support

Throughout the protocols, in any case where an AEMT or Paramedic can provide interventions beyond those of an EMT, the protocol indicates, “Call for paramedic intercept, if available. If paramedic intercept is not available, call for AEMT intercept, if available.” When the protocol says call for Paramedic or AEMT intercept, it means consider obtaining an intercept based upon the clinical situation and availability. The intent of this statement is to indicate those clinical situations where a paramedic can provide assessment and interventions beyond those of an AEMT and those situations where an AEMT can provide assessment and interventions beyond those of an EMT. Nothing in these protocols should be interpreted as requiring paramedic level care on certain calls or statewide. When paramedic care is available in the system that has been established locally whether through that agency’s own personnel or through mutual aid or intercept agreement, the protocols indicate which clinical situations should receive that level of care. The same principle applies to the statement of when to call for an AEMT.

Transfer of Care

When transferring care of a patient, an on-duty EMS provider must ensure the receiving caregiver is licensed at an equal or higher level unless the patient’s condition and reasonably anticipated complications can be effectively managed by a lower level provider’s scope of practice. For example, a paramedic who is a member of a first responder agency may transfer care of a patient with an uncomplicated ankle injury to an EMT for transport. On the other hand, a patient who receives interventions at a higher level on the scene shall only have care transferred to the same or higher level provider.

> **Example 1:** A Paramedic with a first responder agency treats a patient with an uncomplicated broken toe, but does not administer any narcotic analgesia or provide other paramedic-level interventions beyond assessment. There is no reasonable expectation that the patient may need advanced interventions during transport. Care may be transferred to an AEMT- or EMT-level crew on the ambulance service which responds.

(Continued)

Transfer of Care (continued)

Example 2: An AEMT that is off-duty and outside of their normal response area assists as a bystander on a patient that has a seizure. Since this provider is off-duty and does not carry medications or other devices which require a physician order on their person, they have provided no AEMT-level care to the patient beyond assessment. The care of this patient may be transferred to the EMT-level crew that is responsible for the jurisdiction.

Example 3: An AEMT that responds with a first-responder agency arrives on the scene of a cardiac arrest and begins treatment including starting an IV or IO. The ambulance service that responds has EMT-level providers. Care may not be transferred to the EMT crew. The AEMT or higher provider must transport with the patient to the hospital.

Requests for Out-of-Scope Procedures

Please note that while Medical Direction may have some variation from facility to facility, on-line Medical Direction may not direct providers to practice outside their scope of practice. Likewise, providers should not ask to perform procedures outside their scope of practice as defined within these protocols. Providers that perform a procedure outside their scope of practice risk the loss of their EMS licensure.

Medication and Equipment Options

Multiple medications are sometimes listed within a protocol and multiple options for some medical equipment are provided (eg. LMA, i-gel, King-LT, different types of Intraosseous devices, etc.). This is intended to provide Medical Direction and agencies with options for treatment and help deal with inevitable medication shortages. This should not be interpreted as requiring agencies to stock all of the medications or devices listed in a given classification. As an example, agencies may choose to stock only one benzodiazepine or may choose to stock multiple options. When a medication becomes unavailable to an agency and there is no alternative listed in these protocols, the agency head or designee should contact the Vermont EMS office in a timely fashion. The state Medical Director will work with the agency, hospital, and other parties to identify and approve appropriate alternatives and any training that may be required for a medication not usually listed or approved.

Extended Care Protocols

Throughout the document you will find sections in relevant protocols identified with an “X” in blue. These are intended to be used in remote settings where transport will be significantly delayed or impossible due to wilderness or disaster settings. These are not intended for transports of normal travel distance and time.

Incident Command

Incident command will be structured in accordance with the Incident Command System (ICS) of the National Incident Management System (NIMS).

Off-Duty EMS Personnel

These protocols apply statewide. EMS providers that are bystanders when off duty outside the normal response area of their affiliated agency should provide BLS care and notify 911. Once the agency with jurisdiction arrives, care should be transferred.

(Continued)

Preface

On-Duty EMS Crews Outside of Normal Response Area
These protocols apply statewide and therefore cover mutual aid responses as well as incidental patient contact regardless of where in Vermont it occurs.

Example 1: ABC Rescue squad comes across a car crash while returning to their station after transporting to a hospital that is in a different EMS district. ABC Rescue follows these statewide protocols.

Example 2: XYZ Fire/Rescue is called to provide mutual aid into a different EMS district on a mass-casualty call. XYZ Fire/Rescue follows these statewide protocols.

Protocol Determination Regarding State Borders
Ambulance services that are licensed in Vermont and a bordering state shall follow the protocols of the state where patient contact is made, regardless of the destination.

Ambulance services that are licensed in Vermont only shall follow these Vermont protocols at all times.

Continuous Quality Improvement
Quality improvement permeates every aspect of our lives… we strive for a better outcome with each decision. The Vermont Statewide EMS Protocols are no different. With each edition, we endeavor to make them better than they were before, knowing that we will improve and refine them in the future as evidence, experience and technology dictate.

The Vermont Department of Health wishes to thank the entire Vermont EMS community for its involvement in updating the Vermont Statewide EMS Protocols. The continued quality of this document comes from your thoughtful suggestions and feedback.

We would like to thank the members of the Protocol Workgroup, who made an outstanding contribution to the development of these protocols. These are truly *your* protocols.

Thank you to Donna Jacob for the countless hours editing the document.

We would also like to thank New Hampshire Bureau of EMS for providing an excellent model for these protocols.

Be safe,

Will Moran, NRP, Division Director
Ray Walker, EMT, Interim Chief of Emergency Medical Services
Courtney Newman, NRP, Emergency Medical Services Training Administrator
Daniel Wolfson, MD, Statewide Emergency Medical Services Medical Director

Division of Emergency Preparedness, Response and Injury Prevention
Vermont Department of Health

Return to TOC

Routine Patient Care VEFR 1.0

RESPOND TO SCENE IN A SAFE MANNER
- Review dispatch information.
- Use lights and sirens when responding, as appropriate per emergency medical dispatch information and local guidelines (Safe Response and Transportation Guidelines – 8.18).
- Use Incident Command System (ICS) for all responses and scene management.

SCENE ARRIVAL AND SIZE-UP
- Standard precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety.
- Call for additional resources and update responding units on scene assessment.

PATIENT APPROACH
- Determine mechanism of injury / nature of illness.
- If patient is in cardiac arrest refer to the Cardiac Arrest – 3.2A or Cardiac Arrest – 3.2P.
- Establish responsiveness.
- Determine if DNR/COLST protocol applies (Do Not Resuscitate (DNR) & Clinical Orders (COLST) – 8.7).

AIRWAY AND BREATHING
- Assesses if patient is breathing.
- Perform Heimlich if patient is choking on a foreign-body obstruction and unable to cough or speak (Foreign-Body Obstruction – 5.6)

CIRCULATION ASSESSMENT
- Assess patient's circulation including pulse.
- Control serious bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandages (Hemorrhage Control – 4.4).

DISABILITY ASSESSMENT
- Assess level of consciousness appropriate for age.
- Provide manual spinal stabilization if patient has a mechanism of injury that could cause a spinal injury.

SECONDARY/FOCUSED ASSESSMENT AND TREATMENT
- Dress and bandage lacerations and abrasions.
- Maintain normal body temperature.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Assess for signs of stroke.

CIRCUMSTANCES NOT COVERED UNDER STATEWIDE EMS PROTOCOLS
- It is impossible to write a protocol for every potential situation. In rare instances where the patient's best interests may not be specifically addressed in a protocol, contact on-line Medical Direction.
- Please note that while Medical Direction can have some variation from facility to facility, on-line Medical Direction may not direct providers to practice outside their scope of practice, and likewise, providers should not ask to perform procedures outside their scope of practice as defined within these protocols.

VEFR SCOPE OF PRACTICE

It is understood that Vermont Emergency First Responders will function up to their scope of practice outlined by the American Heart Association guidelines for Heartsaver First Aid, CPR & AED.
- Airway Management (Airway Management Protocol – 5.1A, or Airway Management Protocol – 5.1P).
  - Naloxone Intranasal
  - Assist patient with use of patient's own MDI.
- Cardiac Arrest (Cardiac Arrest – 3.2A or Cardiac Arrest – 3.2P).
  - CPR – Cardiopulmonary Resuscitation
  - Defibrillation – AED

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VEFR SCOPE OF PRACTICE (CONTINUED)

- Other Skills
  - Anaphylaxis: May assist patient with use of patient's own epinephrine auto injector
  - Burn Care (Burns/Electrocution/Lightning – Adult & Pediatric 4.0)
  - Cold / Hot Pack (Musculoskeletal Injuries – Adult & Pediatric 4.5)
  - Hypoglycemia: May assist patient with sugary drink, 2 tablespoons of maple syrup, or candy
  - Extremity Hemorrhage (Hemorrhage Control – 4.4)
  - Splinting (manual and simple) (Musculoskeletal Injuries – Adult & Pediatric 4.5)
  - Wound Care (Musculoskeletal Injuries – Adult & Pediatric 4.5)
  - VEFR may not complete a VT EMS Refusal Form.
  - VEFR may not cancel an ambulance unless no patient is present or found.

Signs and Symptoms of Pediatric Respiratory Distress or Failure	
Respiratory Distress	Respiratory Failure
• Able to maintain adequate oxygenation by using extra effort to move air. • Symptoms include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.	• Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children < 6 years old; less than 12 breaths per minute for children < 16 years old; and > 60 breaths per minute for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, mottling, and depressed mental status.

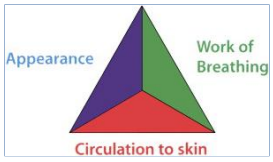
Return to TOC

Routine Patient Care EMR 1.1

RESPOND TO SCENE IN A SAFE MANNER
- Review dispatch information.
- Use lights and sirens when responding, as appropriate per emergency medical dispatch information and local guidelines (Safe Response and Transportation Guidelines – 8.18).
- Use Incident Command System (ICS) for all responses and scene management.

SCENE ARRIVAL AND SIZE-UP
- Standard precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety.
- Initiate Mass Casualty Incident procedures as necessary.
- Call for Paramedic intercept, if available, for patients with unstable vital signs, respiratory distress or other life-threatening conditions. If Paramedic intercept is not available, call for AEMT intercept, if available.

PATIENT APPROACH
- Determine mechanism of injury / nature of illness.
- If patient is in cardiac arrest refer to Cardiac Arrest – 3.2A, or Cardiac Arrest – 3.2P.
- Determine if pediatric protocols apply. "Pediatric Patient" is defined as a child who fits on a length-based resuscitation tape up to 36 kg (79 lbs) or 145 cm (57 in). Vermont EMS strongly encourages the use of a pediatric reference system when treating pediatric patients. Agencies should adopt and train with a system that uses weight, length, or age to identify normal ranges of vital signs and appropriate equipment sizes. The system should also identify pediatric medication doses by volume and minimize the need for medication math.
- Establish responsiveness.
- General Impression.



Comparison of Adult and Pediatric Assessment Triangle

	Appearance	Work of Breathing	Circulation to Skin
Adult	Awake, speaking, eye opening, agitated, limp, unresponsive	Labored, noisy, fast, slow, equal chest rise	Pink, flushed, pale, ashen, cyanosis
Pediatric	Muscle tone, interactiveness, consolability, gaze/look, speech/cry	Airway sounds, body position, head bobbing, chest wall retractions, nasal flaring, grunting	Pallor, mottling, cyanosis

- Determine if DNR/COLST protocol applies (Do Not Resuscitate (DNR) & Clinical Orders (COLST) – 8.7).

AIRWAY AND BREATHING
- Airway
  - Assess the patient for a patent airway. If the airway is not patent, take immediate action to correct it.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - If breathing is inadequate, ventilate with 100% oxygen using bag-valve-mask.
  - Administer oxygen to address signs of hypoxia.
  - Assess lung sounds and chest.

CIRCULATION ASSESSMENT
- Assess patient's circulation including pulse, skin signs and capillary refill time.
- Control serious bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandages (Hemorrhage Control – 4.4).

DISABILITY ASSESSMENT
- Assess level of consciousness appropriate for age.
- Utilize spinal motion restriction if patient has a mechanism of injury that could cause a spinal injury (Spinal Trauma and Assessment – 4.6).

SECONDARY/FOCUSED ASSESSMENT AND TREATMENT
- Obtain chief complaint, history of present illness, and prior medical history.
- Complete a physical assessment as appropriate for the patient's presentation.
- Refer to appropriate protocol(s) for further treatment options.
- Determine level of pain.

(Continued)

SECONDARY/FOCUSED ASSESSMENT AND TREATMENT (CONTINUED)

- Dress and bandage lacerations and abrasions.
- Cover evisceration with a sterile dressing to prevent heat loss.
- Maintain normal body temperature.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Monitor vital signs at least every 15 minutes (at least every 5 minutes if the patient is unstable).
- Perform basic splinting as indicated.

MAJOR MULTIPLE SYSTEM TRAUMA

- See Traumatic Emergencies – 4.12.

CIRCUMSTANCES NOT COVERED UNDER STATEWIDE EMS PROTOCOLS

- It is impossible to write a protocol for every potential situation. In rare instances where the patient's best interests may not be specifically addressed in a protocol, contact **Medical Direction**.
- Please note that while Medical Direction can have some variation from facility to facility, on-line **Medical Direction** may not direct providers to practice outside their scope of practice, and likewise, providers should not ask to perform procedures outside their scope of practice as defined within these protocols.

EMR SCOPE OF PRACTICE

It is understood that emergency medical responders will function up to their scope of practice outlined by the National EMS Scope of Practice Model using the Vermont EMT-level protocols and American Heart Association guidelines for Healthcare Provider CPR.

- Airway Management – (Airway Management Protocol – 5.1A or Airway Management Protocol – 5.1P).
  - BVM
  - Cleared, Opened
  - Oral Suctioning
  - Oropharyngeal Airway
  - Oxygen Administration
  - Naloxone Intranasal
  - Pulse Oximetry
- Cardiac Management (Cardiac Arrest – 3.2A, or Cardiac Arrest – 3.2P).
  - CPR – Cardiopulmonary Resuscitation
  - Defibrillation – AED
- Other Skills
  - Anaphylaxis: May assist patient with use of patient's own epinephrine auto injector.
  - Assist patient with use of patient's own MDI.
  - Burn Care (Burns/Electrocution/Lightning – Adult & Pediatric 4.0)
  - Childbirth (Obstetrical Emergencies – 2.19)
  - Cold / Hot Pack (Musculoskeletal Injuries – Adult & Pediatric 4.5)
  - Cervical Spine Stabilization – Manual Stabilization Only
  - Hypoglycemia: May assist patient with sugary drink, 2 tablespoons of maple syrup, or candy
  - Spinal Motion Restriction – (Spinal Trauma and Assessment – 4.6)
  - Extremity Hemorrhage (Hemorrhage Control – 4.4)
  - Nerve Agent Autoinjectors (Nerve Agent/Organophosphate Poisoning – 2.15A, or Nerve Agent/ Organophosphate Poisoning – 2.15P)
  - Splinting (Musculoskeletal Injuries – Adult & Pediatric 4.5)
  - Wound Care (Musculoskeletal Injuries – Adult & Pediatric 4.5.)
  - EMR may cancel an ambulance only when no patient is present or found.

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RESPIRATORY REFERENCE TABLES

Bag-Valve-Mask Ventilation (BVM) Rates		
Patient	Basic Airway	Supraglottic/ETT*
Adult	10 – 12 breaths per minute	6 – 10 breaths per minute
Child	12 – 20 breaths per minute	8 – 10 breaths per minute
Infant	20 – 30 breaths per minute	8 – 10 breaths per minute

Ventilation rates should be titrated to goal $EtCO_2$, if available, or patient conditions (e.g. severe asthma, aspirin overdose, traumatic brain injury).

Signs and Symptoms of Pediatric Respiratory Distress or Failure	
Respiratory Distress	Respiratory Failure
• Able to maintain adequate oxygenation by using extra effort to move air. • Symptoms include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.	• Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children < 6 years old; less than 12 breaths per minute for children < 16 years old; and > 60 breaths per minute for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, mottling, and depressed mental status.

Age	Heart Rate	Resp Rate	Systolic BP	Temp (°C)
0 d - 1 m	> 205	> 60	< 60	< 36 or > 38
1 m - 3 m	> 205	> 60	< 70	< 36 or > 38
3 m - 1 yr	> 190	> 60	< 70	< 36 or > 38.5
1 yr - 2 yrs	> 190	> 40	< 70 + (age in yrs x 2)	< 36 or > 38.5
2 yrs - 4 yrs	> 140	> 40	< 70 + (age in yrs x 2)	< 36 or > 38.5
4 yrs - 6 yrs	> 140	> 34	< 70 + (age in yrs x 2)	< 36 or > 38.5
6 yrs - 10 yrs	> 140	> 30	< 70 + (age in yrs x 2)	< 36 or > 38.5
10 yrs - 13 yrs	> 100	> 30	< 90	< 36 or > 38.5
≥ 13 yrs	> 100	> 25	< 90	< 36 or > 38.5

When a child tires and is unable to maintain adequate oxygenation, respiratory failure occurs followed by cardiac arrest.

Return to TOC

RESPOND TO SCENE IN A SAFE MANNER

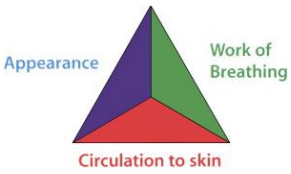
- Review dispatch information.
- Use lights and sirens when responding, as appropriate per emergency medical dispatch information and local guidelines (Safe Response and Transportation Guidelines – 8.18).
- Use Incident Command System (ICS) for all responses and scene management.

SCENE ARRIVAL AND SIZE-UP

- Standard precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety.
- Initiate Mass Casualty Incident procedures as necessary.
- Call for Paramedic intercept, if available, for patients with unstable vital signs, respiratory distress or other life-threatening conditions. If Paramedic intercept is not available, call for AEMT intercept, if available.

PATIENT APPROACH

- Determine mechanism of injury / nature of illness.
- If patient is in cardiac arrest, refer to the Cardiac Arrest – 3.2A, or Cardiac Arrest – 3.2P.
- Determine if pediatric protocols apply. "Pediatric Patient" is defined as a child who fits on a length- based resuscitation tape up to 36 kg (79 lbs) or 145 cm (57 in). Vermont EMS strongly encourages the use of a pediatric reference system when treating pediatric patients. Agencies should adopt and train with a system that uses weight, length, or age to identify normal ranges of vital signs and appropriate equipment sizes. The system should also identify pediatric medication doses by volume and minimize the need for medication math. Contact **Medical Direction** in case any uncertainty exists regarding drug dosing.
- Establish responsiveness.
- General impression.



Comparison of Adult and Pediatric Assessment Triangle			
	Appearance	**Work of Breathing**	**Circulation to Skin**
Adult	Awake, speaking, eye opening, agitated, limp, unresponsive	Labored, noisy, fast, slow, equal chest rise	Pink, flushed, pale, ashen, cyanosis
Pediatric	Muscle tone, interactiveness, consolability, gaze/look, speech/cry	Airway sounds, body position, head bobbing, chest wall retractions, nasal flaring, grunting	Pallor, mottling, cyanosis

- Determine if DNR/COLST protocol applies (Do Not Resuscitate (DNR) & Clinical Orders (COLST) – 8.7).

AIRWAY AND BREATHING

- Airway
  - Assess the patient for a patent airway. If the airway is not patent, take immediate action to correct it.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - Ensure a patent airway using appropriate positioning and adjuncts (OPA/NPA). Ensure adequate oxygenation (94 – 98%) and ventilation using supplemental oxygen and bag-valve mask (BVM) when appropriate. If possible, elevate patient's head 30 degrees and prepare suction to avoid aspiration.
  - Consider waveform capnography (i.e., $EtCO_2$) and/or CO-oximetry, if available.
  - Assess lung sounds and chest.

CIRCULATION ASSESSMENT

- Assess patient's circulation including pulse, skin signs and capillary refill time.
- Control serious bleeding using direct pressure, pressure bandages, tourniquets, and/or hemostatic bandages. See Hemorrhage Control – 4.4.
- Establish IV access and fluid resuscitation as appropriate for the patient's condition.
  - For adult patients, administer fluids to maintain systolic blood pressure (Shock – 2.24A).
  - For pediatric patients, administer fluids based on physiological signs and therapeutic end-points (Shock –2.24P). Administer IV fluid using a volume-controlled device/method such as an inline 3-way stopcock or similar device.
  - Consider obtaining a blood sample, per receiving hospital's preference. Note: An AEMT may draw a blood sample during an IV initiation, but must first be trained and credentialed by their agency and hospital.

NOTE: An IV for the purposes of these protocols is a saline lock or intravenous line with 0.9% NaCl (normal saline), unless otherwise specified in an individual protocol. Routes of medication administration when written as "IV" can also include "IO". Lactated Ringers may be used as a direct substitute for Normal Saline, except when administering certain medications. See Vermont Adult Medication Reference – A4.

(Continued)

DISABILITY ASSESSMENT

- Assess level of consciousness appropriate for age; use Glasgow Coma Scale for trauma.
- If altered level of consciousness, check finger stick blood glucose via glucometer.
- Utilize spinal motion restriction if indicated by assessment, see Spinal Trauma and Assessment - 4.6.
- For pediatric patients requiring spinal motion restriction, see Pediatric Transportation - 8.13.

Glasgow Coma Scale						
Best Motor Response	Score	Best Verbal Response	Verbal - Infants	Score	Eye Opening	Score
Obeys commands/spontaneous	6	Oriented	Babbles	5	Open	4
Localizes pain	5	Disoriented	Irritable	4	To voice	3
Withdraws from pain	4	Inappropriate words	Cries to pain	3	To Pain	2
Decorticate posturing/flexion	3	Moans, unintelligible	Moans	2	No response	1
Decerebrate posturing/extension	2	No response	No response	1		
No response	1					

TRANSPORT DECISION

- In general, patients should be transported to the closest appropriate hospital. Operational needs and/or patient preference should be considered.
- The destination hospital and mode of transport are determined by the EMS provider with the highest medical level providing patient care.
- Regionalized systems of care for STEMI, stroke and trauma patients may necessitate transport to a hospital beyond the nearest facility.
- Notify receiving facility as early as possible.
- 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. Use of lights and sirens should be documented on the patient care report. Exceptions can be made under extraordinary circumstances.
- Consider aeromedical transportation when indicated by patient acuity and ground transport time (Air Medical Transport - 8.0, and Trauma Triage and Transport Decision - 4.9).

SECONDARY/FOCUSED ASSESSMENT AND TREATMENT

- Obtain chief complaint, history of present illness, and prior medical history.
- If indicated, perform single question Drug Use Screening Test by asking:
  - "In the past year, have you used substances or prescription medications for non-medical or recreational reasons?"
  - If the answer is yes, the patient is an At-Risk Person (Naloxone Leave-Behind Overdose Rescue Program - 8.11)
- Complete a physical assessment as appropriate for the patient's presentation.
- Refer to appropriate protocol(s) for further treatment options.
- Determine level of pain.
- Consider field diagnostic tests including: cardiac monitoring, obtain and transmit 12-lead ECG, blood glucose, temperature, stroke assessment, pulse oximetry, waveform capnography, point-of-care ultrasound, etc.
- Dress and bandage lacerations and abrasions.
- Cover evisceration with a sterile dressing to prevent heat loss.
- Maintain normal body temperature.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Monitor vital signs at least every 15 minutes (at least every 5 minutes if the patient is unstable).

MAJOR MULTIPLE SYSTEM TRAUMA

- Traumatic Emergencies - 4.12.

CIRCUMSTANCES NOT COVERED UNDER STATEWIDE EMS PROTOCOLS

- It is impossible to write a protocol for every potential situation. In rare instances where the patient's best interests may not be specifically addressed in a protocol, contact **Medical Direction**.
- Please note that while Medical Direction can have some variation from facility to facility, on-line Medical Direction may not direct providers to practice outside their scope of practice, and likewise, providers should not ask to perform procedures outside their scope of practice as defined within these protocols.

(Continued)

RESPIRATORY REFERENCE TABLES

Bag-Valve-Mask Ventilation (BVM) Rates		
Patient	Basic Airway	Supraglottic/ETT*
Adult	10 – 12 breaths per minute	6 – 10 breaths per minute
Child	12 – 20 breaths per minute	8 – 10 breaths per minute
Infant	20 – 30 breaths per minute	8 – 10 breaths per minute

Ventilation rates should be titrated to goal $EtCO_2$, if available, or patient conditions (e.g. severe asthma, aspirin overdose, traumatic brain injury). Note: In children, pulse oximetry may identify clinically significant hypoxia that may be missed through evaluation of skin signs alone.

Pulse Oximetry Readings and Oxygen Administration		
Percent O2 Saturation	Ranges	General Patient Care
≥ 94%	Normal	Usually indicate adequate oxygenation; validate with clinical assessment (see below)
90% – 93%	Mild hypoxia	Consider O_2 to maintain 94 - 98% saturation (88 – 92% in COPD patients).
Less than 90%	Moderate to severe hypoxia	Give oxygen to maintain saturation 94 - 98%, as needed.

Notes:
- If pulse oximeter's heart rate is not the same as ECG monitor's heart rate, oxygen saturation reading may not be reliable.
- If patient is profoundly anemic or dehydrated, oxygen saturation may be 100%, but patient may be hypoxemic.
- False pulse oximetry readings may occur in the following: hypothermia, hyperthermia, acidosis, alkalosis, hypoperfusion, carbon monoxide poisoning, hemoglobin abnormality (sickle cell anemia), vasoconstriction, and in the presence of nail polish.

$ETCO_2$ Readings and Ventilatory Rates		
$EtCO_2$ Reading	Ranges	General Patient Care
35 mmHg – 45 mmHg	Normal	Usually indicate adequate ventilation; validate with clinical assessment (see below)
Greater than 45 mmHg	Hypercarbia	Consider increasing ventilatory rate, assess adjuncts for occlusions
Less than 35 mmHg	Hypocarbia	Consider slowing ventilatory rate.

Signs and Symptoms of Pediatric Respiratory Distress or Failure

Respiratory Distress	Respiratory Failure
• Able to maintain adequate oxygenation by using extra effort to move air. • Symptoms include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.	• Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children < 6 years old; less than 12 breaths per minute for children < 16 years old; and > 60 breaths per minute for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, mottling, and depressed mental status.

Abnormal Pediatric Vital Signs

Age	Heart Rate	Resp Rate	Systolic BP	Temp (°C)
0 d - 1 m	> 205	> 60	< 60	< 36 or > 38
1 m - 3 m	> 205	> 60	< 70	< 36 or > 38
3 m - 1 yr	> 190	> 60	< 70	< 36 or > 38.5
1 yr - 2 yrs	> 190	> 40	< 70 + (age in yrs x 2)	< 36 or > 38.5
2 yrs - 4 yrs	> 140	> 40	< 70 + (age in yrs x 2)	< 36 or > 38.5
4 yrs - 6 yrs	> 140	> 34	< 70 + (age in yrs x 2)	< 36 or > 38.5
6 yrs - 10 yrs	> 140	> 30	< 70 + (age in yrs x 2)	< 36 or > 38.5
10 yrs - 13 yrs	> 100	> 30	< 90	< 36 or > 38.5
≥ 13 yrs	> 100	> 25	< 90	< 36 or > 38.5

When a child tires and is unable to maintain adequate oxygenation, respiratory failure occurs followed by cardiac arrest.

Return to TOC

Extended Care Guidelines 1.3

When Vermont's EMS providers treat patients in remote or difficult environments and ambulance transport to hospital care is significantly delayed, it may be necessary to provide extended patient care. Extended care applies to any low resource setting where access to definitive care is delayed or impossible. This may be due to a remote location or infrastructure destruction.

Extended care patients may require repeat administration of medications beyond what is specified in regular protocols or assistance with administration of the patient's prescribed medication.
In an extended care environment, EMS providers will follow the following guidelines:

1. Every effort should be made to contact **Medical Direction** for guidance.

2. If Medical Direction is unavailable, it is reasonable to administer repeat medication dosing at the same intervals as prescribed in protocol or as prescribed for patient's own medications. Caution must be used due to cumulative effects that may result in over-sedation, hypotension, respiratory depression, etc.

3. If changes to regular protocol are necessary for medication use in extended care situations, these changes appear in the specific protocol under a separate Extended Care Section denoted by an: X

4. Interventions performed during extended care circumstances must remain within the provider's scope of practice.

Special circumstances to consider in an extended care environment:

- Protecting the patient from the environment while awaiting extrication and/or transport. This may require an improvised shelter and insulation to protect the patient and providers from rain, snow and wind.
- Requesting additional resources/personnel early if an extended care call is suspected.
- Oral fluids to maintain a patient's hydration and high energy foods to maintain caloric requirements, if the patient is conscious and able to swallow.
- Limited resources due to difficulty accessing patient and/or transporting equipment to the patient's location. These resources may include:
  - Oxygen
  - Suction
  - Cardiac Monitor/AED
  - Pulse Oximetry
  - Capnography
  - Glucose Meter
  - BP Cuff and Stethoscope
  - Intravenous access
  - Medications
  - Communication with online Medical Direction

Return to TOC

Abdominal Pain (Non Traumatic) 2.0
Adult & Pediatric

EMT STANDING ORDERS

E

- Routine Patient Care..
- Maintain the patient NPO (nothing by mouth).
- Allow patient to assume a position of comfort.
- Acquire and transmit 12-lead ECG, if available, for patients age ≥40.
- Minimize scene time.
- If patient has uncontrolled pain, unstable vital signs, or signs and symptoms of an acute abdomen, call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access
- Nausea/Vomiting – Adult & Pediatric 2.14.
- If patient is hypotensive, assess for shock (Shock – 2.24A, or Shock – 2.24P).
- Pain Management – 2.20A, or Pain Management - 2.20P.
- Contact **Medical Direction** for additional fluid orders.

PARAMEDIC STANDING ORDERS

P

- Pain Management – 2.20A, or Pain Management - 2.20P.
- Assess and monitor the cardiac rhythm, treat as indicated.

PEARLS:

- Common causes of acute abdominal pain may be appendicitis, cholecystitis, bowel perforation, diverticulitis, abdominal aortic aneurysm, ectopic pregnancy, pelvic inflammatory disease and pancreatitis.
- It is important to remember that abdominal pain can be caused by a number of different disease processes. Pain may originate from the esophagus, stomach, intestinal tract, liver, gall bladder, pancreas, spleen, kidneys, male or female reproductive organs or urinary bladder. Referred pain from the chest may involve the heart, lungs and pleura.
- Lower abdominal pain in women of child bearing age should be treated as an ectopic pregnancy until proven otherwise.
- Myocardial infarction can present with upper abdominal pain especially in the diabetic and elderly.
- DKA may present with abdominal pain, nausea and vomiting.

Return to TOC

Adrenal Insufficiency
Adult & Pediatric

2.1

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care.
- Obtain history of underlying condition.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

A

- Establish IV access.
- Assist the patient/caregiver in giving the patient their own medications, as prescribed.

PARAMEDIC STANDING ORDER – ADULT & PEDIATRIC

P

- Administer stress dose glucocorticoid to patient that meets criteria below:
  - **Adult:** History of adrenal insufficiency; administer:
    - Hydrocortisone 100 mg IV/IO/IM (preferred), **OR**
    - Methylprednisolone 125 mg IV/IO/IM, **OR**
    - Dexamethasone 10 mg IV/IO/IM
  - **Pediatric:** History of adrenal insufficiency; administer:
    - Hydrocortisone 2 mg/kg IV/IO/IM (max dose 100 mg) (preferred), **OR**
    - Methylprednisolone 2 mg/kg IV/IO/IM (maximum dose 125 mg), **OR**
    - Dexamethasone 0.6 mg/kg IV/IO/IM/PO (maximum dose 10 mg)

PARAMEDIC EXTENDED CARE ORDERS – ADULT & PEDIATRIC

X

- After the stress dose, continue to administer glucocorticoid every 6 hours:
  - **Adult:** 100 mg IV/IO/IM every 6 hours
  - **Pediatric:** 2 mg/kg IV/IO/IM every 6 hours to a maximum single dose of 100mg
- In patients with the following signs and symptoms consider the need for repeat stress dosing:
  - Nausea, vomiting, weakness, dizzy, abdominal pain, muscle pain, dehydration, hypotension, tachycardia, fever, mental status changes
- Additional considerations:
  - Aggressive volume replacement therapy
  - Vasopressors may be needed to treat refractory hypotension (Shock – 2.24A, or Shock – 2.24P
  - Treat for hypoglycemia (Diabetic Emergencies (Hypoglycemia) – 2.8A, or Diabetic Emergencies (Hypoglycemia) – 2.8P)
  - Normalize body temperature

PEARLS:

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.
- Long-term use of steroids (COPD, asthma, rheumatoid arthritis, and transplant patients).

Acute adrenal insufficiency can result in refractory shock or death in patients on a maintenance dose of hydrocortisone (SoluCortef)/prednisone who experience illness or trauma and are not given a stress dose and, as necessary, supplemental doses of a glucocorticoid.

PEARLS:

A stress dose of glucocorticoid 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.
- Submersion injury.
- Environmental hyperthermia or hypothermia.
- Multiple long-bone fractures.
- Vomiting/diarrhea accompanied by dehydration.
- Respiratory distress.
- 2nd or 3rd degree burns > 5% BSA
- RSI (Etomidate may precipitate adrenal crisis).

Return to TOC

Allergic Reaction/Anaphylaxis
Adult

2.2A

EMT STANDING ORDERS

E

- Routine Patient Care.
- For anaphylaxis administer: (anterolateral thigh preferred administration site)
  - Adult epinephrine autoinjector 0.3 mg IM, **OR**
  - Epinephrine (1 mg/mL): Administer 0.3 mg (0.3 mL) IM. If signs and symptoms do not resolve in 5 minutes, may repeat dose x 1.
    - Contact **Medical Direction** for additional dosing.
- Do not delay transport (patients receiving epinephrine must be transported).
- To administer Epinephrine via syringe, EMTs must be credentialed through the Ready-Check-Inject Program.
- For bronchospasm, consider the administration of albuterol 2.5 mg via nebulizer. May repeat every 5 minutes for continued symptoms, **OR**
- Ipratropium 0.5 mg and albuterol 2.5 mg via nebulizer (DuoNeb). May repeat every 5 minutes (maximum 3 doses). Contact **Medical Direction** for additional dosing.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- May repeat epinephrine 0.3 mg IM every 5 – 15 min as needed for continued symptoms (maximum 3 doses.) For additional dosing, contact **Medical Direction**.
- Establish IV/IO access.
- Rapidly administer 0.9% NaCl up to 30 mL/kg bolus to maintain MAP ≥ 65 (systolic blood pressure ≥ 90 mmHg) (Shock – 2.24A).

PARAMEDIC STANDING ORDERS

P

- For anaphylaxis refractory to IM epinephrine, consider epinephrine infusion 2 – 10 mcg/min, titrated to effect (infusion pump required) (Adult Drip Rate Charts – A.2).
  - Consider push dose epinephrine (10 mcg/mL) for short transport times or as bridge to infusion. Prepare 10 mcg/mL by adding 1 mL 0.1 mg/mL epinephrine to 9 mL normal saline, then administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical)
- Diphenhydramine 25 – 50 mg IM/IV/IO to treat pruritus.

PARAMEDIC EXTENDED CARE ORDERS

X

- If symptomatic, consider:
- Methylprednisolone 1 mg/kg IV (max 125 mg) every 6 hours, **OR**
- Dexamethasone 0.6 mg/kg IV/IO/IM/PO (maximum dose 10 mg)
- Diphenhydramine 25 – 50 mg PO. May repeat every 4-6 hours as needed (maximum dose of 300 mg/24 hours).

CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.
In anaphylaxis, epinephrine should not be delayed by taking the time to administer second-line medications such as albuterol or diphenhydramine.

PEARLS:

- Known/likely allergen exposure and hypotension or respiratory compromise, **OR**
- Systemic allergic reaction (multi-system), including two or more of the following:
  - Respiratory distress
  - Airway compromise/impending airway compromise
    - Wheezing/stridor, swelling of lips/tongue, any airway structures, throat tightness or difficulty/inability swallowing
  - Widespread hives, itching, swelling, flushing
  - Gastrointestinal symptoms: vomiting, abdominal pain
  - Altered mental status, syncope, cyanosis, delayed capillary refill or decreased level of consciousness associated with known or suspected allergic reaction
  - Signs of shock (Shock – 2.24A)
- Do not delay transport for other than epinephrine administration.
- Patients can present with anaphylaxis without a prior history of allergy.
- Consider patients with history of asthma as having a high risk of anaphylaxis.

(Continued)

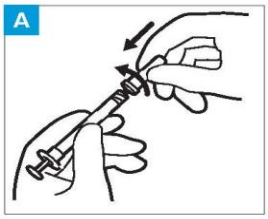
Anaphylaxis/Allergic Reaction
Adult

2.2A

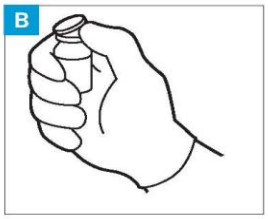
1. READY

* Adult Dose: 0.3 mL
** Pediatric Dose (<55lbs/<25kg): 0.15 mL

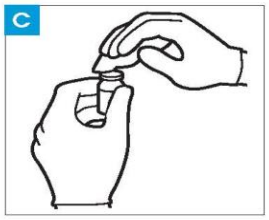
- Don gloves.
- Use 1mL syringe with 1" needle.
- Use only 1mg/1mL epinephrine.



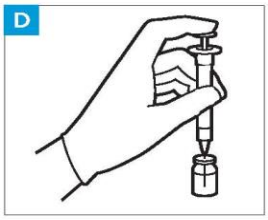
Attach needle to syringe.



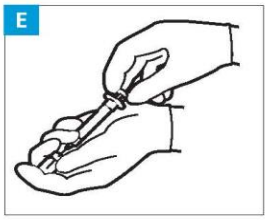
Remove cap from epinephrine vial.



Wipe top of vial with alcohol prep pad.



Remove cap from needle and then carefully insert needle into top of epinephrine vial.

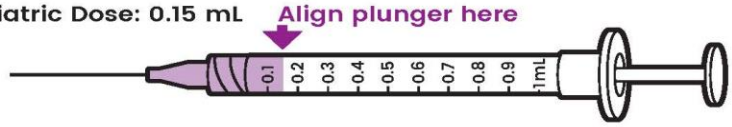


Withdraw correct amount of medication by pulling back on syringe plunger. Refer to numbers on side of syringe.

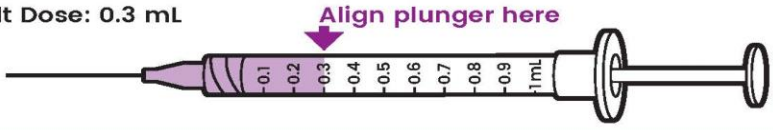
2. CHECK

Check volume of medication in syringe by comparing to diagram below. (Diagram to scale)
Use Cross Check, with another person if possible, to confirm the proper dose. **(SEE REVERSE)**

Pediatric Dose: 0.15 mL Align plunger here

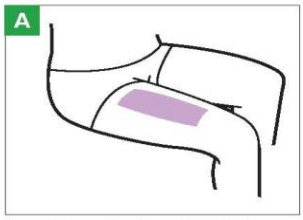


Adult Dose: 0.3 mL Align plunger here

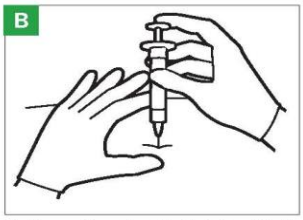


3. INJECT

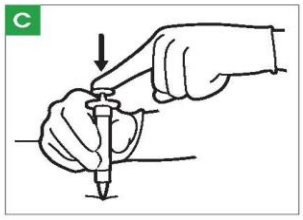
* Inject medication intramuscularly only.



Identify patient's mid-thigh. Expose skin if possible.



Flatten skin of mid-thigh with thumb and forefinger. Insert needle quickly at a 90° angle to mid-thigh.



Depress plunger slowly to inject entire dose of medication.

Remove syringe and dispose in proper sharps container.

Return to TOC

Allergic Reaction/Anaphylaxis
Pediatric
2.2P

EMT STANDING ORDERS
E

- Routine Patient Care.
- For anaphylaxis, administer: (anterolateral thigh preferred administration site)
  - Epinephrine Autoinjector:
    - Patients < 25 kg: Pediatric epinephrine autoinjector 0.15 mg IM
    - Patients ≥ 25 kg: Adult epinephrine autoinjector 0.3 mg IM, **OR**
  - Epinephrine (1 mg/mL):
    - Patient < 25 kg: Administer 0.15 mg (0.15 mL) IM
    - Patient ≥ 25kg: Administer 0.3 mg (0.3 mL) IM
    - Contact **Medical Direction** for additional dosing

- For bronchospasm, consider administration of albuterol 2.5 mg via nebulizer x 1 dose, **OR** ipratropium 0.5 mg and albuterol 2.5 mg via nebulizer (DuoNeb). May repeat every 5 – 15 minutes (maximum 3 doses). Contact **Medical Direction** for additional dosing.

- To administer Epinephrine via syringe, EMTs must be credentialed through the Ready-Check-Inject Program.
- Do not delay transport. (Patients who receive epinephrine must be transported.)
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS
A

- May repeat epinephrine every 5 – 15 min as needed for continued symptoms (Maximum 3 doses.); contact **Medical Direction** for additional dosing

- Establish IV access. Administer 20 mL/kg bolus 0.9% NaCl if hypotension. May repeat x 2 as needed (Shock – 2.24P).

PARAMEDIC STANDING ORDERS
P

- For anaphylaxis refractory to IM epinephrine, consider epinephrine infusion. Infuse 0.1 – 1 micrograms/kg/minute via pump until symptoms resolve.
- Diphenhydramine 1 mg/kg IV/IM/IO to treat pruritis (maximum dose 50 mg).

PARAMEDIC EXTENDED CARE ORDERS
X

If symptomatic, consider:

- Methylprednisolone 1 mg/kg IV (max 125 mg) every 6 hours if symptomatic, **OR**
- Dexamethasone 0.6 mg/kg IV/IO/IM/PO (maximum dose 10 mg).
- Diphenhydramine 1 mg/kg PO. May repeat every 4 – 6 hours as needed (maximum dose of 50 mg).

CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.
In anaphylaxis, epinephrine should not be delayed by taking the time to administer second-line medications such as albuterol or diphenhydramine.

PEARLS:

- Known/likely allergen exposure and hypotension or respiratory compromise, **OR**
- Systemic allergic reaction (multi-system), including two or more of the following:
  - Respiratory distress
  - Airway compromise/impending airway compromise
    - Wheezing/stridor, swelling of lips/tongue, any airway structures, throat tightness or difficulty/inability swallowing
  - Widespread hives, itching, swelling, flushing
  - Gastrointestinal symptoms: vomiting, abdominal pain
  - Altered mental status, syncope, cyanosis, delayed capillary refill or decreased level of consciousness associated with known or suspected allergic reaction
  - Signs of shock (Shock – Pediatric 2.24P).
- Do not delay transport for other than epinephrine administration.
- Patients can present with anaphylaxis without a prior history of allergy.
- Consider patients with history of asthma as having a high risk of anaphylaxis.

(Continued)

Anaphylaxis/Allergic Reaction
Pediatric

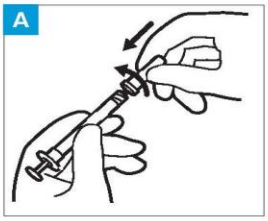
2.2P

1. READY

* Adult Dose: 0.3 mL
** Pediatric Dose (<55lbs/<25kg): 0.15 mL

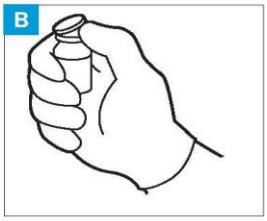
- Don gloves.
- Use 1mL syringe with 1" needle.
- Use only 1mg/1mL epinephrine.

A



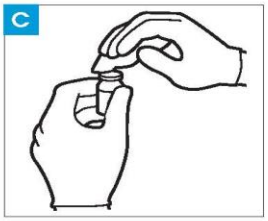
Attach needle to syringe.

B



Remove cap from epinephrine vial.

C

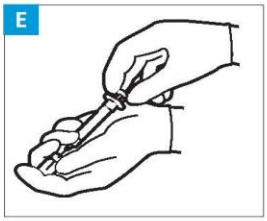


Wipe top of vial with alcohol prep pad.

D

Remove cap from needle and then carefully insert needle into top of epinephrine vial.

E

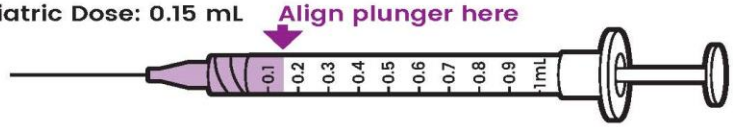


Withdraw correct amount of medication by pulling back on syringe plunger. Refer to numbers on side of syringe.

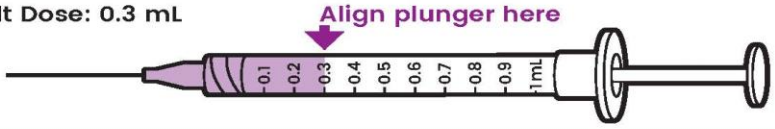
2. CHECK

Check volume of medication in syringe by comparing to diagram below. (Diagram to scale)
Use Cross Check, with another person if possible, to confirm the proper dose. **(SEE REVERSE)**

Pediatric Dose: 0.15 mL Align plunger here



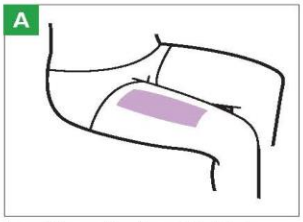
Adult Dose: 0.3 mL Align plunger here



3. INJECT

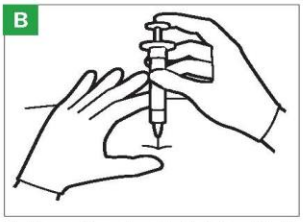
* Inject medication intramuscularly only.

A



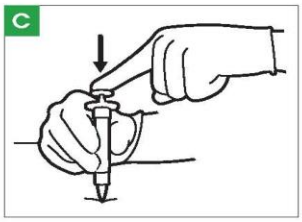
Identify patient's mid-thigh. Expose skin if possible.

B



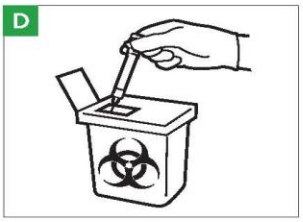
Flatten skin of mid-thigh with thumb and forefinger. Insert needle quickly at a 90° angle to mid-thigh.

C



Depress plunger slowly to inject entire dose of medication.

D



Remove syringe and dispose in proper sharps container.

Return to TOC

Altered Mental Status
Adult

2.3A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Ensure a patent airway using appropriate positioning and adjuncts(OPA/NPA). Ensure adequate oxygenation (94 – 98%) and ventilation using supplemental oxygen and BVM when appropriate. If possible, elevate patient's head 30 degrees and prepare suction to avoid aspiration.
- Obtain glucose reading via glucometer.
  - If blood glucose < 60, refer to Diabetic Emergencies (Hypoglycemia) – 2.8A.
- If the patient's mental status and respiratory effort are severely depressed, administer:
  - A single spray of NARCAN® Nasal Spray (4mg) into one nostril. May repeat every 3 – 5 minutes if no response or if patient relapses to a maximum of 12 mg, **OR**
  - Naloxone 1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 12 mg.
  - Patients given naloxone should be transported to emergency department for further evaluation.
- Consider acquiring and transmitting 12-lead ECG if available.
- If trauma can be excluded, transport patient in the coma/recovery position. If trauma suspected, see Spinal Trauma and Assessment 4.6.
- Perform stroke assessment. Refer to Stroke – 2.26 as indicated.
- See Poisoning/Substance Abuse/Overdose – 2.21A.
- If patient is violent or agitated, consider restraint. See Behavioral Emergencies Including Suicide Attempts & Threats - 2.5, and Restraints - 6.6.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- For severe respiratory depression, administer naloxone 0.4 – 2 mg IV/IM/IO/SQ/ intranasal
  - Titrate to response
  - If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg
- If hypoglycemia, administer dextrose. See Diabetic Emergencies (Hypoglycemia) – 2.8A.
- If hyperglycemic, give 500 mL bolus 0.9% NaCl IV/IO (Diabetic Emergencies (Hyperglycemia) - Adult & Pediatric 2.7).
- If hypotensive (SBP <90), administer fluid bolus 1,000 mL 0.9% NaCl IV/IO. Contact **Medical Direction** for additional fluid orders (Shock – 2.24A).
- For airway management (Airway Management Protocol – 5.1A).

PARAMEDIC STANDING ORDERS

P

- Consider advanced airway management.
- Assess and monitor cardiac rhythm. Treat as indicated per appropriate protocol.
- If suspect toxicology, refer to Poisoning/Substance Abuse/Overdose - 2.21A.
- If hypotension persists, contact **Medical Direction** to consider vasopressors (Shock – 2.24A)

PEARLS:

- Altered mental status may be caused by many factors including the following: stroke, drug overdose, infection, hypoglycemia, hyperglycemia or trauma.
- AEMT or Paramedic may titrate use of naloxone in patients with respiratory depression to avoid transition to combative behavior by patient.
- Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemic patients after administration of dextrose, or opiate overdose cases after administration of naloxone.

Return to TOC

Altered Mental Status
Pediatric

2.3P

EMT STANDING ORDERS

E

- Routine Patient Care.
- Ensure a patent airway using appropriate positioning and adjuncts (OPA/NPA). Ensure adequate oxygenation (94 – 98%) and ventilation using supplemental oxygen and BVM when appropriate. If possible, elevate patient's head 30 degrees and prepare suction to avoid aspiration.
- Obtain glucose reading via glucometer:
  - If blood glucose < 60, refer to Diabetic Emergencies (Hypoglycemia) – Pediatric 2.8P
- If the patient's mental status and respiratory effort are severely depressed:
  - Administer a single spray of NARCAN® Nasal Spray (4mg) into one nostril, **OR**
  - Administer via atomizer:
    - **Infant & Toddler:** Naloxone 0.5 mg (0.5 mL) per nostril for a total of 1 mg
    - **Small Child and Larger:** Naloxone 1 mg (1 mL) per nostril for a maximum dose of 2 mg
  - For both, may repeat every 3 – 5 minutes if no response to a maximum of 12 mg
  - Patients given naloxone should be transported to emergency department for further evaluation
- If trauma can be excluded, transport patient in the coma/recovery position. If trauma suspected, see Spinal Trauma and Assessment - 4.6.
- See Poisoning/Substance Abuse/Overdose – Pediatric 2.21P.
- If patient is violent or agitated, consider restraint (Behavior Emergencies Including Suicide Attempts & Threats - 2.5, and Restraints - 6.6).
- Call for Paramedic intercept, if available. If unavailable, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- If hypoglycemia, administer dextrose (Diabetic Emergencies (Hypoglycemia) – 2.8P)
- If hyperglycemia, administer 10 mL/kg bolus of 0.9% NaCl IV/IO (Diabetic Emergencies (Hyperglycemia) – Adult & Pediatric 2.7).
- For severe respiratory depression, administer naloxone 0.1 mg/kg IV/IO/IM/SQ/ intranasal, maximum dose 2 mg:
  - If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg
- For airway management, see Airway Management Protocol – 5.1P.
- If hypotensive per age-based tables, administer fluid bolus 20 mL/kg 0.9% NaCl IV/IO. May repeat x 2:
  - Contact **Medical Direction** for additional fluid orders

PARAMEDIC STANDING ORDERS

P

- Consider advanced airway management.
- Assess and monitor cardiac rhythm. Treat as indicated per appropriate protocol.
- If suspect toxicology (Poisoning/Substance Abuse/Overdose – 2.21P).
- If hypotension persists, contact **Medical Direction** to consider vasopressors (Shock – 2.24P).

PEARLS:

- Altered mental status may be caused by many factors including the following: stroke, drug overdose, infection, hypoglycemia, hyperglycemia, or trauma.
- AEMT or Paramedic may titrate use of naloxone in patients with respiratory depression to avoid transition to combative behavior by patient.
- Use appropriate discretion regarding immediate intubation of patients who may quickly regain consciousness, such as hypoglycemic patients after administration of dextrose, or opiate overdose cases after administration of naloxone.

Return to TOC

Asthma/COPD/RAD
Adult
2.4A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Allow patient to assume position of comfort.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation; increase the oxygen rate with caution and observe for fatigue, decreased mentation, and respiratory failure.
- Consider:
  - Albuterol metered-dose inhaler (MDI) 2-4 puffs (with spacer, if available). May repeat every 5 minutes for continued symptoms, **OR**
  - Ipratropium bromide 0.5 mg and albuterol 2.5 mg (DuoNeb) via nebulizer. May repeat every 5 minutes for continued symptoms (maximum 3 doses), **AND/OR**
  - Albuterol 2.5 mg via nebulizer. May repeat every 5 minutes for continued symptoms
- For patients who do not respond to treatments, or for impending respiratory failure, continue nebulizers and consider CPAP up to a maximum of 10 – 15 cm H_2O pressure support. See Continuous Positive Airway Pressure (CPAP) - 5.4.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- $ETCO_2$ waveform capnography to monitor respiratory status.
- For patients who do not respond to treatments, or for impending respiratory failure, consider epinephrine autoinjector 0.3 mg IM (preferred), **OR** epinephrine **(1 mg/mL)** 0.3 mg (0.3 mL) IM. Contact **Medical Direction** for additional doses.
- Consider IV access.

PARAMEDIC STANDING ORDERS

P

- Consider steroid:
  - Methylprednisolone 125 mg IV/IO/IM, **OR**
  - Dexamethasone 10 mg IV/IO/IM/PO
- For patients with severe symptoms, consider:
  - Magnesium sulfate 2 g in 50 mL D5W or 0.9% NaCl IV/IO over 10 mins

EXTENDED CARE ORDERS

X

- Albuterol metered-dose inhaler (MDI) 2 – 4 puffs. May repeat every 5 minutes for continued symptoms.

Exercise caution when administering beta-agonists (albuterol) to patients with coronary artery disease. Obtain and transmit ECG if possible and consult with **Medical Direction**.

PEARLS:

- IVs should only be placed when there are clinical concerns of dehydration, in order to administer fluids, or when administering IV medications.
- Beware of patients with a “silent chest” (absence of breath sounds) as this may indicate severe reactive airway disease (RAD) with bronchospasm and impending respiratory failure.
- Remember that not all wheezing is caused by asthma and that not all asthmatics wheeze.
- Patients with congestive heart failure may present with lung sounds that mimic asthma (“cardiac wheeze”).

Return to TOC

Asthma/Bronchiolitis/RAD/Croup 2.4P
Pediatric

EMT STANDING ORDERS

E

- Routine Patient Care.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Assist inadequate ventilations with BVM.
- For patients ≤ 2 years old who present with increased work of breathing and rhinorrhea, provide nasal suctioning with saline drops and bulb syringe.
- Call for Paramedic intercept. If not available, call for AEMT intercept.

Wheezing in patients ≥ 2 years old or history of asthma

Yes

ASTHMA – EMT STANDING ORDERS

E

- Consider:
  - Albuterol metered-dose inhaler (MDI) 2-4 puffs (with spacer, if available). May repeat every 5 minutes for continued symptoms, **OR**
  - Ipratropium 0.5 mg and albuterol 2.5 mg (DuoNeb) via nebulizer. May repeat dose every 5 minutes for continued symptoms (maximum 3 doses), **AND/OR**
  - Albuterol 2.5 mg via nebulizer every 5 minutes

Yes

ASTHMA – ADVANCED EMT STANDING ORDERS

A

- For impending respiratory failure, continue nebulizers and consider CPAP (Continuous Positive Airway Pressure (CPAP) - 5.4).
- For patients who do not respond to treatments, or for impending respiratory failure, consider: (anterolateral thigh preferred administration site)
  - Epinephrine Autoinjector:
    - Patients < 25 kg: Pediatric epinephrine autoinjector 0.15 mg IM
    - Patients ≥ 25 kg: Adult epinephrine autoinjector 0.3 mg IM, **OR**
  - Epinephrine (1 mg/mL):
    - Patient < 25 kg: Administer 0.15 mg (0.15 mL) IM
    - Patient ≥ 25kg: Administer 0.3 mg (0.3 mL) IM
- Contact **Medical Direction** for additional dosing

Yes

No

ASTHMA – PARAMEDIC STANDING ORDERS

P

- Consider:
  - Dexamethasone 0.6 mg/kg PO/IV/IO/IM (PO preferred) (maximum dose 10 mg), **OR**
  - Methylprednisolone 2 mg/kg IV/IO/IM (maximum dose 125 mg)
- For patients with severe symptoms, consider:
  - Magnesium sulfate 40 mg/kg IV/IO in 50 – 100 mL D_5W over 20 minutes (maximum single dose 2 grams)

Wheezing in patients < 2 years old

Yes

BRONCHIOLITIS – PARAMEDIC STANDING ORDERS

P

- Consider suctioning.
- For patients who do not respond to suctioning or for impending respiratory failure, consider epinephrine (1 mg/mL concentration) 3 mg (3 mL) added to 3 mL 0.9% NaCl, administer via nebulizer.
  - Contact **Medical Direction** for additional dosing
- Consider high-flow nasal cannula, if available.

No

History of stridor or barky cough

Yes

CROUP – PARAMEDIC STANDING ORDERS

P

- Consider dexamethasone 0.6 mg/kg IV/IO/IM/PO. PO preferred. Maximum dose 10 mg.
- Croup with stridor at rest:
  - Epinephrine (1 mg/mL concentration) 3 mg (3 mL) added to 3 mL 0.9% NaCl, administer via nebulizer. Repeat every 5 – 15 minutes for continued symptoms (maximum 3 doses.) Contact **Medical Direction** for additional dosing.

(Continued)

Asthma/Bronchiolitis/RAD/Croup 2.4P
Pediatric

CONSIDER DIFFERENTIAL DIAGNOSIS:
- Asthma.
- Pneumonia Continuous Positive Airway Pressure (CPAP) - 5.4 for respiratory failure.
- Bronchiolitis.
- Anaphylaxis (Allergic Reaction/Anaphylaxis - 2.2P).
- Croup.
- Sepsis (Sepsis – 2.23P).
- Foreign body airway obstruction (Foreign-Body Obstruction - 5.6).

Respiratory distress in children must be promptly recognized and aggressively treated.
Respiratory arrest is the most common cause of cardiac arrest in children.
Child with a “silent chest” may have severe bronchospasm with impending respiratory failure.

PEARLS
- The IV formulation of dexamethasone may be given by mouth.

Epiglottitis
- A potentially life-threatening swelling of the supraglottic structures, which may result in sudden, complete upper airway obstruction.
- Signs and symptoms include severe sore throat, difficulty breathing, which may improve when leaning forward, stridor, and a high temperature (fever).
- For suspected epiglottitis, transport the patient in an upright position and limit your assessment and interventions.

Bronchiolitis
- Incidence peaks in 2-6 month old infants.
- Frequent history of low-grade fever, runny nose, and sneezing.
- Signs and symptoms include: tachypnea, rhinorrhea, wheezes and / or crackles.

Croup
- Incidence peaks in children over age 6 months.
- Signs and symptoms include: hoarseness, barking cough, inspiratory stridor, signs of respiratory distress.
- Avoid procedures that will distress child with severe croup and stridor at rest.

Pneumonia
- Signs and symptoms include: tachypnea, fever, intercostal retractions, cough, hypoxia and chest pain.

Tachypnea in children is defined as:
- < 1 year: > 60 bpm
- 1 – 4 years: > 40 bpm
- 5 – 13: > 30 bpm
- > 13 years: > 16 bpm

Return to TOC

Behavioral Emergencies
Including Suicide Attempts & Threats

2.5

Behavioral responses are complex incidents. Patients experiencing a mental health crisis present with a variety of symptoms and affective changes. While most situations are not dangerous, providers should always be mindful of scene safety, particularly when caring for patients who have expressed an intent to harm themselves or others.

EMT / ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

- Routine Patient Care.
- Scene safety is paramount. Consider needed resources and request law enforcement and local mental health crisis agency as necessary prior to arrival. If the scene is not safe, stage equipment and personnel a safe distance away.
- Approach patient using a SAFER model. Sometimes what is best is to slow down and assess.

S	**Stabilize:** Stabilize the situation by lowering stimuli, including calm and empathetic voice.
A	**Assess:** Assess RASS and acknowledge crisis by validating feelings and not minimizing them.
F	**Facilitate:** Facilitate identification and activation of resources (clergy, family, friends, local mental health crisis agency or law enforcement).
E	**Encourage:** Encourage patient to use resources and take actions in their best interest.
R	**Recovery/Referral:** Leave patient in the care of a responsible person, professional, or transport to appropriate medical facility. Do not leave the patient alone when EMS clears.

E/A

- Provide continuous observation and document the patient's behavior and living conditions.
- Consider causes & determine capacity:
  - Causes include but are not limited to: hypoxia, hypoglycemia, alcohol or drug intoxication, delirium with agitation, stroke, seizures, and brain trauma.
- Use diligent care to treat the patient with compassion, patience, privacy and dignity.
- Determine and record if the patient has been in contact with mental health professionals.
- Consider associated domestic violence or child abuse (Victims of Violence - 8.19).
- Ask patient directly if they have considered harming self or others, or have thoughts of suicide.
- If the patient endorses suicidal or homicidal ideation or appears to be an immediate threat to harming self or others, they should be encouraged to accept transport to an appropriate medical facility.
  - If the patient is cooperative and receptive, transport them safely to the local medical facility.
  - If the patient is uncooperative, consult with law enforcement and local mental health crisis agency to determine most appropriate course of action, such as detention and pursuing a warrant and certificate for emergency examination (18 V.S.A. § 7505). (See Police Custody – 8.14 and/or Refusal of Care – 8.15.)
- If physical restraint is required, call for Paramedic intercept, if available. (Restraints – 6.6)

988 SUICIDE & CRISIS LIFELINE

(Continued)

Behavioral Emergencies
Including Suicide Attempts & Threats

2.5

EMT / ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC (CONTINUED)

- If the patient is severely anxious, agitated, uncooperative, violent, assaultive, or has delirium with agitation, notify receiving hospital early to prepare appropriate resources for EMS arrival.
- If the patient does not appear to be an immediate threat to self or others and refuses transport:
  - Collaborate with local mental health crisis agency. Encourage patient to seek mental health evaluation
  - Provide the National 988 Suicide and Crisis Lifeline.
  - Avoid leaving the patient alone, if possible. Assist in contacting responsible family/friend
- It may not be possible to transport all patients. Should it appear that the patient will not allow for transport, contact **Medical Direction**.
- If unable to transport patient, document circumstances clearly in the narrative. Include outreach to law enforcement, mobile crisis, and discussion with **Medical Direction**

E/A

Management of Anxiety: (Anxious, apprehensive, but not aggressive)

- Provide calm emotional support and medical care as required.
- Minimize external stimuli (e.g., loud noises, lights).
- For significant anxiety that cannot be managed with BLS interventions, consider Paramedic intercept for pharmacological intervention.

Management of Resistant or Aggressive Behavior: (Resisting necessary treatment/ interventions)

- Utilize de-escalation techniques.
- Consider Paramedic intercept for pharmacological intervention. (Restraints - 6.6)

Management of Violent/Combative Behavior, or Delirium with Agitation: (Immediate danger to self/others)

- Utilize de-escalation techniques.
- Consider physical restraints as a last resort if the patient is in immediate danger to self or others. (Restraints - 6.6).
- Request Paramedic intercept, if available, to consider pharmacological intervention. (Restraints - 6.6).

PARAMEDIC STANDING ORDERS – ADULT

P

Management of Anxiety: (Anxious / Apprehensive / Not Aggressive / RASS of +1)

- Attempt non-pharmacological interventions first. Assess RASS.
- For severe symptoms and with patient's consent, contact **Medical Direction** to consider:
  - Lorazepam 1 mg PO or IV, **OR**
  - Midazolam 2.5 mg IM/IN, **OR**
  - Midazolam 1.25 mg IV, **OR**
  - Diazepam 5 mg IV
- Goal is to achieve RASS of 0.

PARAMEDIC STANDING ORDERS – PEDIATRIC

P

Management of Anxiety: (Anxious / Apprehensive / Not Aggressive / RASS of +1)

- Attempt non-pharmacological interventions first. Assess RASS.
- For severe symptoms and with parental/guardian consent, contact **Medical Direction** to consider:
  - Lorazepam 0.025 mg/kg PO or IV (preferred), maximum dose 1 mg, **OR**
  - Midazolam 0.1 mg/kg mg IM/IN, maximum dose 2.5 mg.
- Goal is to achieve RASS of 0.

(Continued)

Behavioral Emergencies
Including Suicide Attempts & Threats

2.5

Delirium with Agitated Behavior is a condition with a potential of higher mortality and morbidity. It is a combination of severe psychological and medical emergencies displaying extreme violent behavior regardless of perceived pain or their environment. It can be defined by a patient presenting with the following constellation of symptoms:

- ○ Exceptional / abnormal pain tolerance
- ○ Inappropriate clothing for environment
- ○ Tactile hyperthermia
- ○ Unusual strength
- ○ Rapid & fluctuating periods of calm/delirium
- ○ Lack of tiring against restraint
- ○ Tachypnea
- ○ Violent and paranoid behavior
- ○ Rapid development of symptoms

The symptoms may be caused by a number of intoxicants, including, but not limited to, alcohol, sympathomimetics, (cocaine, methamphetamine, MDMA), and dissociative agents (PCP, LSD, dextromethorphan, K2/Spice, Bath Salts, DMT, etc.)

Richmond Agitation-Sedation Scale (RASS)

Target RASS Value		RASS Description
+ 4	Violent/Combative	Combative,; Violent; Immediate danger to self and responders
+ 3	Agitated/Careless	Agitated; Aggressive; Threatening statements or behaviors;
+ 2	Disorderly/Boisterous	Frequent non-purposeful movements; Loud; Disruptive
+ 1	Anxious/Restless	Anxious; Restless; Apprehensive but cooperative
0	Alert & Calm	
- 1	Drowsy	Not fully alert, but has sustained awaking w/ eye contact (>10 sec)
- 2	Light sedation	Brieftly awakens to voice w/ eye contact (<10 sec)
- 3	Moderate sedation	Movement or eye opening to voice, but no eye contact
- 4	Deep sedation	No response to voice; moves to physical stimulation
- 5	Unarousable	No repsonse to voice or physical stimulation

SUICIDE RISK / SELF-HARM ASSESSMENTS

Assess patients for suicide risk by using a C-SSRS to assess the level of risk for suicide. Assess all patients with an injury that may be self-inflicted, expressed suicidal ideation, or recent suicide attempt(s).

Risk Identification with the **Columbia-Suicide Severity Rating Scale (C-SSRS)** is directive enough that you have an immediate indication of level of risk and flexible enough that interventions can be modified using clinical judgment.

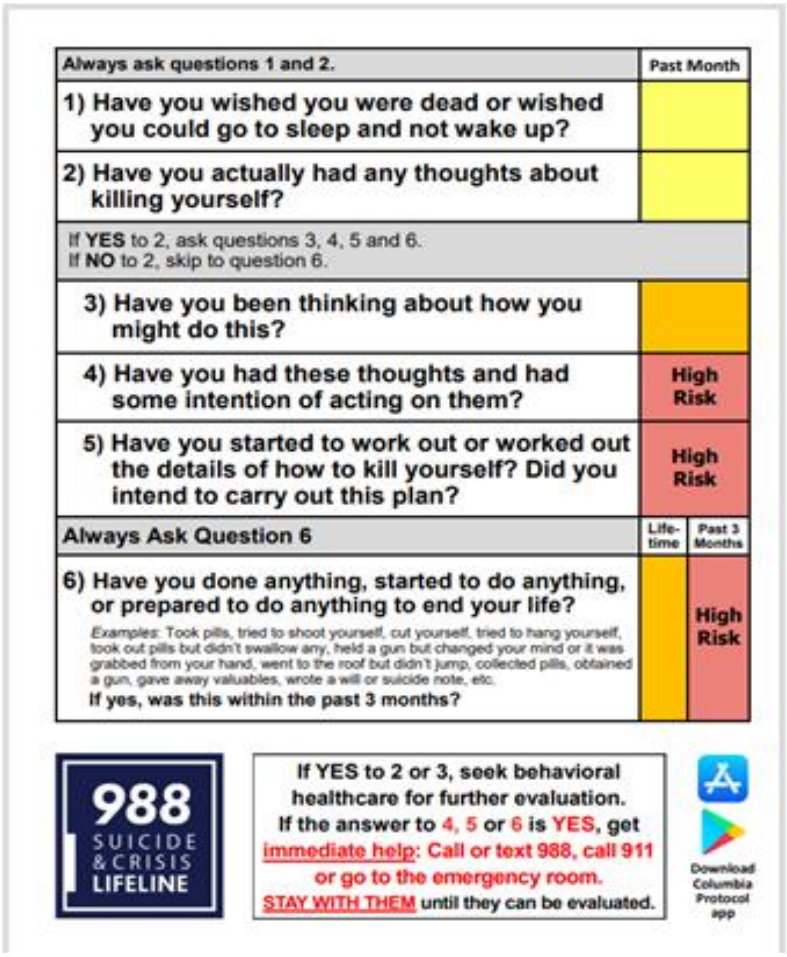
If the person answers YES to 2 or 3, encourage patients to seek mental health for further evaluation including, 988, or the Mobile Crisis Community Mental Health Agencies at https://gethelpvt.org/.

The patient may be at an increased risk of suicide or self-harm if they **answer to 4, 5 or 6 is YES, get immediate help:** Call or text 988, strongly encourage transport appropriate facility.

It may not be possible to transport all patients. Should it appear that the patient will not be transported, contact **Medical Direction.**

If unable to transport patient, document circumstances clearly in the narrative. Include outreach to law enforcement, mobile crisis, and discussion with **Medical Direction.**

(Continued)



Always ask questions 1 and 2.	Past Month
1) Have you wished you were dead or wished you could go to sleep and not wake up?	
2) Have you actually had any thoughts about killing yourself?	
If **YES** to 2, ask questions 3, 4, 5 and 6. If **NO** to 2, skip to question 6.	
3) Have you been thinking about how you might do this?	
4) Have you had these thoughts and had some intention of acting on them?	High Risk
5) Have you started to work out or worked out the details of how to kill yourself? Did you intend to carry out this plan?	High Risk

Always Ask Question 6	Life-time	Past 3 Months
6) Have you done anything, started to do anything, or prepared to do anything to end your life? *Examples*: Took pills, tried to shoot yourself, cut yourself, tried to hang yourself, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump, collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, etc. **If yes, was this within the past 3 months?**		High Risk

988 SUICIDE & CRISIS LIFELINE

If YES to 2 or 3, seek behavioral healthcare for further evaluation. If the answer to 4, 5 or 6 is YES, get immediate help: Call or text 988, call 911 or go to the emergency room. STAY WITH THEM until they can be evaluated.

Download Columbia Protocol app

IMMEDIATE RESPONSE AFTER A SUICIDE DEATH

For family members and loved ones on scene: When efforts to resuscitate are not initiated or are terminated following a suicide death family members can be deeply impacted by the loss of their loved ones. Providing initial support and resources during this critical time can reduce the overall distress of loss survivors.

- Refer to appropriate protocols in regards to Resuscitation Initiation and Termination – 8.17, Crime Scene/ Preservation of Evidence – 8.6, and Victims of Violence- 8.19.
- Approach the family members on scene to offer support.
- Identify a point person to be on the scene who is coherent and can provide assistance and comfort to the people on scene (loss survivors).
- Utilize the point person for assistance if the survivors are unable to respond.
- Ask if they have questions and answer all questions honestly.
- Be there and Listen. It's okay if you don't know what to say. Just say you are sorry. Your calm and supportive presence can be comforting and reassuring. Be prepared for a wide range of physical and emotional reactions.
- Assist with providing resources/supports. Consider contacting Victim's service, local mental health crisis teams, or call/text 988 with the family members to help provide support to the family members and bystanders.

FOR FIRST RESPONDERS AND THEIR CREWS

Offer mental health supports and resources for first responders involved in the incident. First responders can request services through the SECURE program the toll-free number, available 24/7 at **1-855-EAP1-NOW (1-855-327-1669)**.

SECURE Vermont Peer Network

Return to TOC

Brief Resolved Unexplained Event (BRUE)
Pediatric 2.6P

A BRUE involves a frightening episode in a child less than 1 years old that is sudden and brief (< 1 minute but typically < 20 – 30 seconds), and now resolved and involves some combination of apnea, color change, limpness, or choking. This condition was first referenced as ALTE – Acute Life-Threatening Event.

EMT/ADVANCED/PARAMEDIC STANDING ORDERS

E/A/P

- Routine Patient Care.
- Obtain glucose reading via glucometer and manage as indicated (Diabetic Emergencies (Hyperglycemia) – Adult & Pediatric 2.7, or Diabetic Emergencies (Hypoglycemia) – 2.8A, or Diabetic Emergencies (Hypoglycemia - 2.8P.
- Obtain history of event with particular attention to:
  - Activity at onset and history of the event
  - State during the event (color change or cyanosis, tone (limp or tense), apnea, coughing, gagging, vomiting)
  - End of the event (duration, gradual or abrupt cessation, treatment provided)
  - Infant's condition after the event (normal, not normal)
  - Recent history (illness, injuries, exposure to others with illness, use of OTC medications, recent immunizations, new or different formula)
  - Past medical history (gestational age, pre-/perinatal history, GERD, seizures, previous BRUE)
  - Family history (sudden unexplained deaths, prolonged QT, arrhythmias)
- Medications present in the residence.
- Sleeping position:
  - Co-sleeping with parent in the same bed
- Perform a comprehensive physical exam including neurological assessment.
- Measure and record temperature (rectal temperature preferred).
- Keep the child warm and transport to hospital.
- Always consider non-accidental trauma in any infant who presents with BRUE (Victims of Violence - 8.19).
- Contact **Medical Direction** for assistance if the parent/guardian refuses medical care and/or transport.

Although children who experience BRUE have a normal physical exam, they should be transported to the emergency department for further assessment and treatment as they often have a serious underlying condition. Assume history provided by the family/witness is accurate.

Return to TOC

Diabetic Emergencies (Hyperglycemia) Adult & Pediatric 2.7

Hyperglycemic emergency is defined as blood glucose greater than or equal to 250 mg/dL with associated signs and symptoms, such as altered mental status, increased respiratory rate, or dehydration.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Obtain glucose reading via glucometer.
- Obtain and transmit 12-lead ECG for patients ≥ 40.
- Evaluate for possible sepsis and septic shock (Sepsis – 2.23A, or Sepsis – 2.23P).
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Establish IV access.
- **Adult:** Administer 1,000 mL bolus of 0.9% NaCl IV/IO. Reassess and administer an additional 1,000 mL of 0.9% NaCl IV/IO, if indicated.
- **Pediatric:** Administer 10 mL/kg bolus of 0.9% NaCl IV/IO.
  - Contact **Medical Direction** for additional fluid orders.
- For nausea/vomiting (Nausea/Vomiting – Adult & Pediatric 2.14).

EMT/ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- If the patient is not vomiting, provide oral hydration with water.
  - Patient must be alert enough to swallow and protect their own airway

PEARLS:

- In pediatric patients, use 10 mL/kg fluid bolus to avoid potential risk of cerebral edema.
- New onset DKA in pediatric patients commonly presents with nausea, vomiting, abdominal pain, and/or urinary frequency.
- Diabetic ketoacidosis is a life-threatening emergency defined as uncontrolled hyperglycemia with the signs and symptoms of ketoacidosis.
- Signs and symptoms of diabetic ketoacidosis include uncontrolled blood glucose greater than 250 mg/dL, weakness, altered mental status, abdominal pain, nausea, and vomiting, polyuria (excessive urination) polydipsia (excessive thirst), a fruity odor on the breath (from ketones) and tachypnea.
- Common causes of diabetic ketoacidosis include infection, acute coronary syndrome and medication non-compliance.
- Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNS) is characterized by blood glucose levels greater than 600 mg/dL and profound dehydration with significant neurologic deficits (e.g., coma, altered mental status). Treatment is the same in the field as it is for DKA.
- Hyperglycemia may be detrimental to patients at risk for cerebral ischemia such as victims of stroke, cardiac arrest and head trauma.
- Overly aggressive administration of fluid in hyperglycemic patients may cause cerebral edema or dangerous hyponatremia. Closely monitor for signs of altered mental status, increased intracranial pressure, and immediately discontinue IV fluids and elevate head of bed if signs of increased ICP develop.
- If patient has continuous glucose monitor, EMS should confirm glucose measurement with own equipment.

Return to TOC

Diabetic Emergencies (Hypoglycemia)
Adult 2.8A

Hypoglycemic emergency is defined as blood glucose less than 60 mg/dL and associated altered mental status.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Obtain glucose reading.
- Consider Oral glucose: administer 1 – 2 tubes of commercially prepared glucose gel, or 15 – 30 mL (1 – 2 tablespoons) of Pure Vermont Maple Syrup, or equivalent, for standard dose of 15 – 30 grams sugar. Patient must be alert enough to swallow and protect their own airway.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- For patients with an insulin pump who are hypoglycemic and have an altered mental status (GCS < 15):
  - Stop the pump or remove catheter at insertion site if patient cannot ingest oral glucose or ALS is not available.
  - Leave the pump connected and running if able to ingest oral glucose or receive ALS interventions.
- **Do not treat and release** hypoglycemic patients without contacting **Medical Direction** to discuss cause of hypoglycemic episode, interventions taken and plan for follow-up.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Establish IV access.
- Administer up to 25 grams dextrose 10% (preferred) or dextrose 50% IV. Recheck glucose 5 minutes after administration.
  - May repeat up to 25 grams dextrose 10% or 50% IV if glucose level is < 60 mg/dl with continued altered mental status.
  - If unable to establish IV access, administer glucagon 1 mg IM. Recheck glucose 15 minutes after administration of glucagon.
    - May repeat glucagon 1 mg IM if glucose level is < 60 mg/dl with continued altered mental status.

AEMT/Paramedic: If patient has a severe hypoglycemic emergency with altered mental status or seizures and the provider is unable to establish IV access, the provider may administer dextrose via intraosseous (IO), Intraosseous Access - 6.4.

Dextrose 10% is the preferred formulation for administration. A sterile IV bag containing 250 mL of D10W will deliver the standard dose of 25 grams of glucose IV. Bolus up to the entire 250 mL bag as quickly as possible, stopping when patient's mental status returns to baseline and glucose level is ≥ 60 mg/dl. Often only 100 – 200 mL of dextrose 10% is necessary.

PEARLS:

- There are no statistically significant differences in the median recovery time to a GCS score of 15 following administration of D10% versus D50%. D10% could benefit patients in controlling their post-treatment high blood sugar levels.
- 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).
- Diabetics are not the only persons who become hypoglycemic. Alcoholics, some poisoned patients, and others may develop problems of glucose metabolism.
- Oral anti-hyperglycemic toxicity can last up to 72 hours, especially sulfonylurea (e.g., glyburide, glipizide). Patients with corrected hypoglycemia who are taking these agents are at particular risk for recurrent hypoglycemia and frequently require hospital admission. These patients should be evaluated in the Emergency Department.
- When administering dextrose, monitor IV site for signs of extravasation.

Return to TOC

Diabetic Emergencies (Hypoglycemia)
Pediatric 2.8P

Hypoglycemic emergency is defined as blood glucose less than 60 mg/dl with associated altered mental status.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Obtain glucose reading via glucometer.
- Oral glucose: administer 1 tube of commercially prepared glucose gel, or 15 mL (1 tablespoon) of Pure Vermont Maple Syrup, or equivalent. Patient must be alert enough to swallow and protect airway.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- For patients with an insulin pump who are hypoglycemic with associated altered mental status (GCS < 15):
  - Stop the pump or remove catheter at insertion site if patient cannot ingest oral glucose or ALS is not available.
  - Leave the pump connected and running if able to ingest oral glucose or receive ALS interventions.
- Do not treat and release hypoglycemic patients without contacting **Medical Direction** to discuss cause of hypoglycemic episode, interventions taken and plan for follow-up.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Establish IV access.
- Administer 10% dextrose IV, dosing per length-based resuscitation tape or 5 mL/kg. Recheck glucose 5 minutes after administration of dextrose.
  - May repeat dextrose dose if glucose level is < 60 mg/dl with continued altered mental status
  - If unable to obtain IV access, administer glucagon IM. Recheck glucose 15 minutes after administration of glucagon:
    - Patients < 20 kg (44 lb), give glucagon 0.5 mg IM
    - Patients > 20 kg (44 lb), give glucagon 1 mg IM

Pediatric Dextrose Dosing Chart

Length (cm)	Weight (kg)	Color (Age)	Volume of Dextrose 10% (mL)
< 59.5	3 to 5	Gray (0 – 3 months)	20
59.5 – 66.5	6 to 7	Pink (3 – 6 months)	35
66.5 – 74	8 to 9	Red (7 – 10 months)	43
74 – 84.5	10 to 11	Purple (11 – 18 months)	50
84.5 – 97.5	12 to 14	Yellow (19 – 35 months)	70
97.5 – 110	15 to 18	White (3 – 4 years)	80
110 – 122	19 to 22	Blue (5 – 6 years)	100
122 – 137	23 to 29	Orange (7 – 9 years)	135
137 – 150	30 to 36	Green (10 – 12 years)	180

AEMT/Paramedic: If patient has a severe hypoglycemic emergency with altered mental status or seizures and the provider is unable to establish IV access, the provider may administer dextrose 10% via intraosseous (IO), Intraosseous Access - 6.4.

PEARLS:

- Causes of hypoglycemia include medication misuse or overdose, missed meal, infection, cardiovascular insults, trauma, traumatic brain injury, hypothermia, adrenal insufficiency, or changes in activity (e.g., exercise).
- When administering dextrose, monitor IV site for signs of extravasation.

Return to TOC

Epistaxis / Nosebleed
Adult & Pediatric

2.9

This protocol is intended to address medical caues of epistaxis (nosebleeds). Epistaxis in the context of mulitsystem trauma, include considerations for facial injuries (Traumatic Brain Injury – Adult & Pediatric 4.10)

EMT STANDING ORDERS

E

- Routine Patient Care.
- Inspect anterior nares and posterior pharynx for drainage of blood:
  - Squeeze nose for 10 – 15 minutes continuously; if no evidence of cervical spine injury, tilt head forward, and place patient in position of comfort
  - Manage bleeding into the posterior pharynx with suctioning
- If the patient is hypotensive or bleeding is not controlled, call for a Paramedic intercept, if available. If not available, call for AEMT intercept.
  - Transport patient to nearest emergency department

ADVANCED EMT STANDING ORDERS

A

- If hypotensive, assess for shock (Shock - 2.24A, or Shock – 2.24P):
  - Establish IV access.
  - **ADULT:** Administer 250 mL boluses of 0.9% NaCl to maintain mental status and peripheral perfusion, and to maintain a MAP ≥ 65 mmHg (systolic blood pressure ≥ 90 mmHg). Total volume should not exceed 2,000mL.
    - Contact **Medical Direction** after first 1,000mL.
  - **PEDIATRIC:** Administer 20 mL/kg of 0.9% NaCl to maintain mental status, peripheral perfusion, and capillary refill. May repeat up to a total of 60 mL/kg.
    - Contact **Medical Direction** for additional doses.
- Treat nausea/vomiting (Nausea/Vomiting – Adult & Pediatric 2.14).

PARAMEDIC STANDING ORDERS

P

- If direct pressure does not control the bleeding, have the patient blow their nose, administer 2 sprays of oxymetazoline (Afrin) or phenylephrine (Neo-Synephrine) into the affected nostril, then re-apply direct pressure.

PEARLS

- Avoid oxymetazoline or phenylephrine in patient who has a blood pressure of greater than 110 mmHg diastolic, known coronary artery disease, or pregnant patients.
- It is often difficult to quantify blood loss with epistaxis.
- Ninety percent (90%) of nosebleeds are anterior in etiology, with blood draining from one or both nares. However, posterior bleeding may be present.
- Posterior epistaxis is identified by blood draining into the posterior pharynx.
- Risk factors for severe epistaxis include use of anticoagulants (such as warfarin (Coumadin), heparin , enoxaparin (Lovenox), rivaroxaban (Xeralto), and apixaban (Eliquis)), use of antiplatelets (such as ASA, clopidogrel (Plavix), and tricagrelor (Brilinta), and use of over-the-counter headache relief medications. Therefore, it is essential to obtain a complete medical history.

Return to TOC

Exertional Heat Stroke
Adult & Pediatric

2.10

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Exertional Heat Stroke (EHS) is a unique and emergent hyperthermic condition that occurs in individuals performing intense physical activity, typically not limited to warm environments.

INDICATION

Consider EHS in any intensely-exercising individual, such as athletes, laborers, firefighters, law enforcement or EMS personnel with altered mental status.

PROTOCOL

E/A/P

1. Perform rapid routine assessment (<5 minutes). Assess for other causes of AMS, including but not limited to hypoxia, hypoglycemia, inadequate perfusion, head injury or seizure.
2. Consider EHS in any intensely-exercising athlete, laborer, fire, police or EMS personnel with altered mental status.
3. If EHS has been confirmed and appropriate cooling has been initiated by an appropriate onsite medical team, athletic trainer, coach, or instructor, do not interrupt cooling for assessment or transport.
4. If care has not been initiated and EHS is suspected, immediately perform a rectal temperature (T_{REC}).
5. If T_{REC} is at or above 40ºC (104ºF), initiate immediate rapid cooling to a temperature less than 40ºC, even if it means a delay in transport.
   a. Best practice for cooling an EHS patient is whole-body cold water immersion from the neck down.
   b. Immersion in ice water-filled body bag or tarp may also yield acceptable cooling rates.
   c. If whole-body cold water immersion is not feasible, utilize ice packs, fans, cold water dousing or shower. Rotating ice water towels covering as much of the body surface area as possible should be considered a minimum cooling modality enroute.
6. Discontinue cooling at 39ºC (102ºF). If a T_{REC} is not available, cooling should not be interrupted or delayed in cases of suspected EHS. Cool for a minimum of 20 minutes / clinical improvement if resources available on scene, or transport with best available active cooling method (body bag with ice water or rotating ice water-soaked towels).
7. Do not interrupt cooling for diarrhea, emesis, combativeness, or seizures. IV/IM medications are rarely needed.
8. Transport to closest receiving facility and notify that EHS is suspected.

For events with medical personnel and cooling means on-site, the only appropriate standard is to cool the EHS patient in place. Transportation of an EHS patient should only be done if it is impossible to adequately cool the patient, or after adequate cooling has been verified by a rectal temperature.

The only accurate or acceptable body temperature measurement in exercising individuals is a rectal temperature (T_{REC}).

EMS must ensure early pre-notification to hospitals if they will be receiving an inadequately-cooled EHS patient, or suspect EHS in a scenario where treatment has not been initiated.

Return to TOC

Hyperkalemia & Renal Failure
Adult

2.11

History	Signs and Symptoms	Differential
• Kidney/renal failure • Hyperkalemia • Fistula, shunt or port access • Dialysis ○ Any upcoming or missed appointments • Anemia	• Weakness and/or fatigue • Electrolyte imbalances • Altered mental status • Nausea and/or vomiting • Hypotension • Bradycardia • Seizure • Arrhythmia	• CHF • Sepsis • Cardiac arrhythmia (other cause) • Diabetic emergency • Toxicology

EMT STANDING ORDERS- ADULT

E

- Obtain and transmit 12-lead ECG. Repeat ECGs with any change in patient vitals and/or presentation.
- Routine patient care
- Call for paramedic intercept, if available. If not available, call for AEMT intercept.
- Even if patient appears stable consider, call intercept early.

ADVANCED EMT STANDING ORDERS- ADULT

A

- Establish IV access.
- If SBP < 90, administer NS in 250 mL bolus, evaluating lung sounds after each bolus, to a maximum of 1000 mL.
  - Contact **Medical Direction** for additional dosing.

PARAMEDIC STANDING ORDERS- ADULT

P

- While cardiac monitoring, obtain serial 12-lead ECGs to compare QRS/T-wave measurements.
- If bradycardic, peaked T-waves, wide QRS (>0.12 sec), and/or absent p-waves, contact **Medical Direction** to consider:
  - Calcium gluconate 2,000 mg mixed in 50 mL NS or D_5W IV/IO over 5 – 10 minutes (preferred for patients with a pulse); may repeat dose in 10 minutes, **OR**
  - Calcium chloride 500 – 1000 mg mixed in 50 mL NS or D_5W over 10 minutes; may repeat dose in 10 minutes
  - Albuterol continuous 10 – 20 mg nebulized
  - Sodium bicarbonate 1 mEq/kg (max dose 50 mEq) IV/IO, slow IV push over 5 minutes
    - Flush line after calcium administration, or administer through second IV site

Calcium chloride is irritating to veins and must not be injected into tissues, as severe necrosis and sloughing may occur. Administer slowly, taking great care to avoid extravasation or accidental injection into perivascular tissues.

PEARLS

- Do not take blood pressure or start IVs in same extremity with fistula.
- Consider hyperkalemia in patients with wide-complex bradycardia.
- Hyperkalemia patients may deteriorate rapidly. Consider calling for ALS early and prepare for cardiac arrest if bradycardia is present.

Return to TOC

Hyperthermia (Environmental)
Adult & Pediatric

2.12

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care.
- Consider exertional heat stroke in any intensely-exercising athlete, laborer, fire, police or EMS personnel, etc. with altered mental status (Exertional Heat Stroke - 2.10).
- Move victim to a cool area and shield from the sun or any external heat source.
- Remove as much clothing as is practical and loosen any restrictive garments.
- If alert and oriented, give small sips of cool liquids.
- Monitor and record vital signs and level of consciousness. If altered mental status, check blood glucose level.
- Determine patient's core temperature, if possible (rectal temperature preferred). If thermometer not available, assume heat stroke if altered mental status present. Diagnosis of hyperthermia is based on clinical signs.
- If temperature is ≥ 40ºC (104ºF) or if altered mental status is present, begin active cooling by:
  - Whole-body cold water immersion from the neck down.
  - Continually misting the exposed skin with tepid water while fanning patient
  - Rotating ice water towels covering as much of the body surface area as possible.
- Discontinue active cooling if shivering occurs that cannot be managed by Paramedics (see below) or temperature is < 38.9ºC (102º F).
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS – ADULT

A

- Establish IV access.
- Administer 500 mL 0.9% NaCl room temperature or chilled IV fluid bolus for dehydration even if vital signs are normal.

PARAMEDIC STANDING ORDERS – ADULT

P

- If uncontrolled shivering occurs during cooling:
  - Midazolam 2.5 mg IV/intranasal, may repeat once in 5 minutes, **OR** 5 mg IM may repeat once in 10 minutes, **OR**
  - Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR** 2 mg IM, may repeat once in 10 minutes, **OR**
  - Diazepam 2 mg IV, may repeat once in 5 minutes

PARAMEDIC STANDING ORDERS – PEDIATRIC

- Administer 20 mL/kg 0.9% NaCl room temperature or chilled IV fluid bolus for dehydration even if vital signs are normal.
- If uncontrolled shivering occurs during cooling:
  - Midazolam 0.1 mg/kg IV (single maximum dose 1 mg), **OR** 0.2 mg/kg intranasal/ IM (5 mg/mL concentration is recommended for intranasal administration), **OR**
  - Lorazepam 0.1 mg/kg IV/IM (single maximum dose 1 mg), **OR**
  - Diazepam 0.2 mg/kg IV, **OR** 0.5 mg/kg PR (single maximum dose 2 mg IV, **OR** 4 mg PR)

PEARLS:

- Elderly patients are less able to withstand sudden shocks, so begin with less aggressive cooling measures like misting or cool wet cloths. When you reassess the patient, if there is little or no improvement, use more aggressive measure

Return to TOC

Hypothermia (Environmental)
Adult & Pediatric

2.13

Consider hypothermia if patient has a history of cold exposure or a disease that predisposes them to hypothermia, the patient's trunk feels cold on examination, or the core temperature is < 35°C (95°F). Hypothermia can occur year round both indoors and outdoors, especially in frail, elderly and pediatric patients.

ALL PATIENTS

- Routine Patient Care. Ensure scene safety.
- Assess patient for signs of life and pulse carefully for a minimum of 60 seconds to confirm respiratory arrest or cardiac arrest.
  - Rigor mortis, lividity, or fixed and dilated pupils are not signs of death in hypothermia.
- Handle all hypothermic patients gently.
- Move patient to a warm, sheltered environment.
- Warm patient by:
  - Gently removing any and all wet or cold clothing or blankets, and dry patient.
  - Place heat packs at neck, axilla and groin. Wrap packs in towels; do not place directly on skin.
  - Wrap patient in blankets, with emergency/space blanket as outer layer to help retain heat.
- Warm ambulance to 24°C (75.2°F) if possible.
- Classify hypothermia clinically on the basis of vital signs, level of consciousness, and intensity of shivering. Core temperature, if available, provides additional information.

ALERT, RESPONSIVE PATIENTS / LOCALIZED INJURY

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

	Generalized	Localized

E	• Limit activity and movement of mildly hypothermic patients as much as possible while evacuating to a warm environment/ shelter.
	• Obtain blood glucose and treat hypoglycemia. (See Diabetic Emergencies (Hypoglycemia) – 2.8A or Diabetic Emergencies (Hypoglycemia) – 2.8P.)
	• Provide calorie replacement if alert and able to swallow.
	• Mildly hypothermic patients should not be allowed to stand or walk for 30 minutes, while being kept as warm as possible with calorie replacement and shelter.
		• Expose affected area and remove any jewelry or clothing.
		• Apply loose, dry sterile dressing to affected area, placing gauze between fingers/toes.
		• Continue gentle rewarming of patient (see next section), except do not warm affected area.
		• Do Not:
		  ○ Apply heat or attempt to rewarm affected area
		  ○ Rub affected area or break any blisters
		  ○ Submerge in hot water or in snow

A		
P		

ALTERED MENTAL STATUS, UNRESPONSIVE PATIENTS

EMT STANDING ORDERS

E

- Monitor pulse and breathing closely.
  - Basic airway support as needed
  - Obtain 12-lead EKG
- Maintain patient in horizontal position.
- Actively warm patient (see generalized guidance for warming instructions).
- Contact **Medical Direction** to determine appropriate destination facility.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

(Continued)

Hypothermia (Environmental)
Adult & Pediatric

2.13

ALTERED MENTAL STATUS, UNRESPONSIVE PATIENTS (CONTINUED)

ADVANCED EMT STANDING ORDERS

A

- Administer warm IV 0.9%NaCl 40 - 42ºC (104º – 107.6ºF):
  - **Adult**: 500 mL bolus
  - **Pediatric**: 20 mL/kg bolus
  - May repeat bolus if MAP is < 65 mmHg; assess for fluid overload
- Administer dextrose IV/IO if hypoglycemic. See Diabetic Emergencies (Hypoglycemia) – 2.8A & Diabetic Emergencies (Hypoglycemia) – 2.8P.

PARAMEDIC STANDING ORDERS

P

- Provide airway management as required. With advanced airway, ventilate at half standard rate.
- Continuous cardiac monitoring:
  - Patients with MAP < 65 (SBP < 90 mmHG), ventricular arrhythmias, or cardiac arrest should be transported directly to a center capable of providing cardiopulmonary bypass (CPB) or extracorporeal membrane oxygenation (ECMO), if feasible

PULSELESS PATIENTS – CARDIAC ARREST

EMT STANDING ORDERS

E

- Assess for pulse and breathing for minimum of 60 seconds to confirm respiratory arrest or cardiac arrest.
- If pulse is absent, start CPR unless one of the following contraindications exist:
  - Obvious signs of irreversible death, chest wall is not compressible as whole body is frozen solid, a valid DNR is provided, avalanche burial > 35 minutes and airway packed with snow, or rescuers exhausted or in danger
  - Rigor mortis, lividity, or fixed and dilated pupils are not a contraindication to CPR in hypothermia
- AED/defibrillation:
  - If < 30ºC (90ºF) in VT/VF or AED advises shock: one shock at maximum power
- Warm 1 - 2ºC or > 30ºC prior to any additional shocks.
- Continue resuscitation. TOR may not be considered until core temperature has been rewarmed to 32ºC (90ºF) with no ROSC.
  - If necessary to accomplish evacuation, CPR may be delayed or performed intermittently by alternating 5 minutes of CPR with 5 minutes without CPR during evacuation
- Initiate transport as soon as possible. Patients with MAP < 65 (SBP < 90 mmHG), ventricular arrhythmias, or cardiac arrest should be transported directly to a center capable of providing cardiopulmonary bypass (CPB) or extracorporeal membrane oxygenation (ECMO), if feasible. Contact **Medical Direction** to determine appropriate destination facility.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A

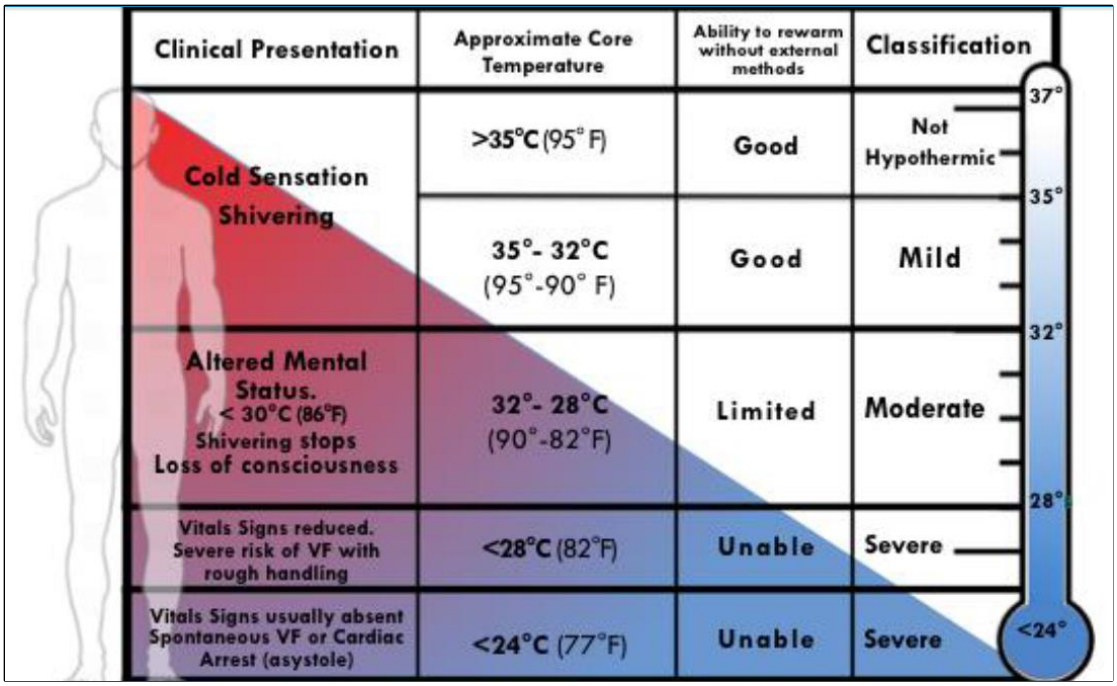
- Provide airway management as required. With advanced airway, ventilate at half standard rate.
- Administer warm fluids.
- Medications:
  - Follow Cardiac Arrest – 3.2A or Cardiac Arrest – 3.2P for medication and dosing guidance with following changes to frequency:
    - Do not administer any vasoactive drugs (including epinephrine) until > 30ºC (86ºF)
    - From 30 - 35ºC, increase dosing intervals to twice as long as normal

P

(Continued)

Hypothermia (Environmental)
Adult & Pediatric

2.13



PEARLS:

- A hypothermic patient should be assessed for coexisting injuries or illnesses that may mimic or conceal the signs and symptoms of hypothermia. The use of vital signs, mental status and presence or absence of shivering may be unreliable if the patient has another condition that coexists with hypothermia.
  - Many conditions such as hypoglycemia, alcohol intoxication and exhaustion can cause altered mental status and can decrease or abolish shivering.
  - A heart rate higher than expected for a given level of hypothermia may be due to another cause such as traumatic blood loss.
- A rapid assessment of the patient's core temperature may be performed by placing a warm ungloved hand against the skin of a patient's back, or chest. If the skin feels warm, hypothermia is unlikely.
- Due to the extremely low metabolic needs in severe hypothermia a heart rate of just a few beats per minute is enough to provide adequate perfusion to vital organs.
  - It is best to attempt to maintain this amount of cardiac activity rather than to start CPR and cause ventricular fibrillation (VF).
- Rough handling of hypothermic patients may cause cardiac arrhythmias, including VF
- Hypothermic patients are often significantly dehydrated and may require repeat fluid boluses.
- Owing to the decrease in cerebral oxygen requirements with cooling, survival without neurologic impairment may be possible even when it is necessary to perform CPR for hours. Transportation to CPB/ECMO capable facilities with continuing CPR may be justified if hypothermia is present or suspected. Contact destination hospital in advance to ensure availability of CPB/ECMO.
- Patients with MAP < 65 (SBP < 90mmHg) or ventricular arrhythmias, or cardiac arrest should be transported directly to a center capable of providing cardiopulmonary bypass (CPB) or extracorporeal membrane oxygenation (ECMO) if feasible.

Return to TOC

Nausea/Vomiting
Adult & Pediatric

2.14

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care.
- Obtain and transmit 12-lead ECG, if available for patients ≥ 40.
- Isopropyl alcohol – Allow patient to inhale vapor from isopropyl alcohol wipe 3 times every 15 minutes as tolerated.

ADVANCED EMT STANDING ORDERS – ADULT

A

- Consider Ondansetron 4 mg PO/ODT/IV/IM. May give IV solution by oral route.
- Establish IV access if patient appears dehydrated.
- **Adult:** Consider 500 mL 0.9% NaCl IV fluid bolus for dehydration.
  - May repeat 250 mL IV bolus if transport exceeds 15 minutes and patient's condition has not improved.
- **Pediatric:** Consider 20 mL/kg IV fluid bolus. May repeat once as needed.

PARAMEDIC STANDING ORDERS – ADULT

P

- Ondansetron 4 mg IV/IM, **OR**
- Prochlorperazine 5 – 10 mg slow IV push over 1 – 2 minutes or 10 mg IM, **OR**
- Metoclopramide 5 – 10 mg slow IV push over 1 – 2 minutes, or 10 mg IM, **OR**
- Droperidol 0.625 – 1.25 mg slow IV push over 1 – 2 minutes or IM. Do not use in patients with known or suspected QT interval prolongation > 450 msec.
  - Monitor ECG for arrhythmias or QT prolongation
  - If patient has prolonged QT may contact Medical Direction to consider benzodiazepine
- May repeat any of the above medications once after 10 minutes if nausea/vomiting persists.

For akathisia or dystonic reactions, administer diphenhydramine 25 – 50 mg slow IV push over 1 – 2 minutes or 10 mg IM. Use lower doses of anti-emetics for elderly or smaller patients.

PARAMEDIC STANDING ORDERS – PEDIATRIC

- Ondansetron 2 mg ODT for patient 8 – 15 kg, 4 mg ODT patient ≥ 16 kg, **OR**
- Ondansetron 0.1 mg/kg IV (maximum single dose 4mg).

PARAMEDIC EXTENDED CARE ORDERS – ADULT & PEDIATRIC

X

- For motion sickness: consider diphenhydramine:
  - **Adult:** 25 mg PO
  - **Ages 2 – 5 years:** 6.25 mg PO
  - **Ages 6 – 11 years:** 12.5 – 25 mg PO
- **Paramedic only:** May repeat IM prochlorperazine or metoclopramide every 4 – 6 hours as needed.

Nausea, vomiting and epigastric abdominal pain may be signs of acute coronary syndrome in adults. Consider obtaining and transmitting ECG, if available.

PEARLS:

- To reduce incidence of akathisia or dystonic reactions, administer prochlorperazine, metoclopramide or droperidol slowly, over 1 – 2 minutes.
- Consider other causes of nausea such as the following: cardiac, GI bleeding, pregnancy, toxicologic, diabetes.
- Nausea/vomiting is a common finding associated with acute coronary syndrome. Consider obtaining 12-lead ECG when appropriate.
- Do not administer ondansetron or droperidol if patient has known, prolonged QT > 440 msec on ECG.

Return to TOC

Nerve Agents/Organophosphate Poisoning
Adult 2.15A

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Consider contacting Poison Control at (800) 222-1222 as soon as practical for consultation.
- 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
- Auto-injectors consist of atropine and pralidoxime and are often referred to as DuoDote or Mark I kits.

Determine dosing according to the following symptom assessment and guidelines.

Category	Description/Examples	Autoinjector Dose
Mild	If TWO (2) or more of the following are present: Blurred vision/ miosis (pupil constriction), excessive teary eyes, excessive runny nose, increased salivation, chest tightness/dyspnea, tremors/twitching, nausea/vomiting, wheezing/coughing/ secretions, acute stomach cramps, tachycardia, bradycardia	1 atropine/ pralidoxime auto-injector; Monitor patient every 10 minutes
Worsening	If at any time after the first dose the patient develops any additional symptoms, or if symptoms worsen	2 atropine/pralido-xime autoinjectors; Monitor patient every 10 minutes.
Severe	If **ANY** of the following are present: Strange/confused behavior, severe difficulty breathing/copious airway secre-tions, severe muscle twitching, involuntary urination/defeca-tion, convulsions, loss of consciousness, respiratory arrest	3 atropine/ pralidoxime auto-injectors AND 1 diazepam 10 mg auto-injector.

PARAMEDIC STANDING ORDERS

P

- If symptoms persist after the administration of 3 atropine/pralidoxime autoinjectors, **OR** if autoinjectors are not available and field conditions permit:
  - Initiate cardiac monitoring
  - Establish IV access
  - Atropine 2 mg IV/IO; repeat every 5 minutes until excess secretions cease (stop)
  - Pralidoxime 1 – 2 gram IV
    - Reconstitute pralidoxime 1 gram vial with 20 mL sterile water for injection
    - Dilute reconstituted pralidoxime 1 gram to 100 mL of 0.9% NaCl (may dilute 1-2 grams in this manner)
    - Infuse over 5 minutes (1 gram dose) to 10 minutes (2 gram dose)
  - Diazepam 5 mg IV every 5 minutes, **OR** 10 mg IM, **OR** diazepam auto-injector (10 mg) every 10 minutes, as needed
    Instead of diazepam, may use either:
    - Lorazepam 1 mg IV may repeat once in 5 minutes, **OR** 2 mg IM, may repeat once in 10 minutes, **OR**
    - Midazolam 2.5 mg IV/intranasal every 5 minutes, **OR** 5 mg IM every 10 minutes as needed

PARAMEDIC MEDICAL DIRECTION – MAY CONSIDER:

- Pralidoxime maintenance infusion:
  - Reconstitute pralidoxime 1 gram vial with 20 mL of sterile water for injection (SWFI) or 0.9% NaCl
  - Dilute reconstituted pralidoxime 1 gram to 100 mL of 0.9% NaCl
  - Infuse 1 gram over 15-30 minutes, followed by a continuous infusion at 500 mg/hr, to a maximum of 12 grams/day

Return to TOC

Nerve Agents/Organophosphate Poisoning
Pediatric 2.15P

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Consider contacting Poison Control at (800) 222-1222 as soon as practical for consultation.
- 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 following symptom assessment and guidelines.

Length (cm)	Weight (kg)	Color (Age)	Atropine Dose -- MILD and SEVERE	Pralidoxime Dose MILD	Pralidoxime Dose SEVERE
< 59.5	3 to 5	Gray (0 - 3 months)	0.25 mg IM	60 mg IM	Give 3 MILD doses in rapid succession IM. If symptoms persist, may repeat series 1 hour after last IM injection.
59.5 to 66.5	6 to 7	Pink (3 - 6 months)		100 mg IM	
66.5 to 74	8 to 9	Red (7 - 10 months)	0.5 mg IM	125 mg IM	
74 to 84.5	10 to 11	Purple (11 - 18 mos)		150 mg IM	
84.5 to 97.5	12 to 14	Yellow (19 - 35 mos)		200 mg IM	
97.5 to 110	15 to 18	White (3 - 4 years)		250 mg IM	
110 to 122	19 to 22	Blue (5 - 6 years)	1 mg IM	300 mg IM	
122 to 137	24 to 30	Orange (7 - 9 years)		400 mg IM	
137 to 150	30 to 40	Green (10 - 12 years)		500 mg IM	

Adult atropine/pralidoxime autoinjectors may be used for pediatric patients < 1 year old in a life-threatening situation with exposure symptoms when no pediatric doses of atropine or pralidoxime chloride are available.

PARAMEDIC STANDING ORDERS

P

- If field conditions permit, follow weight-based dosing and treatment guidelines:
  - Initiate cardiac monitoring
  - Establish IV access
  - Atropine 0.05 – 0.1 mg/kg IV or IM (minimum dose of 0.1 mg, maximum single dose 5mg); repeat every 2 – 5 minutes as needed
  - Pralidoxime 25 – 50 mg/kg IV (maximum dose 1 gram) or IM (maximum dose of 2 grams), may repeat within 30 – 60 minutes as needed, then again every hour for 1 – 2 doses as needed
  - Diazepam 0.3 mg/kg IV (0.5 mg/kg per rectum) (maximum dose 10 mg), repeat every 5 – 10 minutes as needed
    Instead of diazepam, may use either:
    - Lorazepam 0.1 mg/kg IV/IM (maximum dose 4 mg), repeat every 5 – 10 minutes as needed, **OR**
    - Midazolam 0.2 mg/kg IM/intranasal/IV, repeat every 5 – 10 minutes as needed

PARAMEDIC MEDICAL DIRECTION – MAY CONSIDER:

- Pralidoxime maintenance infusion:
  - Reconstitute pralidoxime 1 gram vial with 20 mL of sterile water for injection (SWFI) or 0.9% NaCl
  - Dilute reconstituted pralidoxime 50 mg/kg (maximum 1 gram) to 100 mL of 0.9% NaCl
  - Infuse entire volume over 15 – 30 minutes

Return to TOC

Newborn Care 2.16

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

- For newborns requiring resuscitation (Newborn Resuscitation - 2.17).
- Routine Patient Care—dry, warm, position, stimulate.
- Assess airway by positioning and clearing secretions (only if needed):
  - Place the newborn 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 (Newborn Resuscitation - 2.17)
- Clamp and cut the umbilical cord:
  - Following the initial assessment and after the cord stops pulsating but no less than 1 minute, if baby is vigorous. If baby is not vigorous, clamp and cut the cord earlier and move on to resuscitation
  - Place the umbilical clamps approximately 8 and 10 inches from the baby
- Prevent heat loss by rapidly drying and warming:
  - Remove wet linen, wrap newborn in blankets or silver swaddler (preferred) and cover the newborn's head
  - Consider placing newborn skin-to-skin on the mother's chest or abdomen
- Assess breathing and stimulate by providing tactile stimulation:
  - Flick soles of feet and/or rub the newborn's back
  - If newborn is apneic or has gasping respirations, nasal flaring, or grunting, proceed to Newborn Resuscitation Protocol 2.17
- 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 Newborn Resuscitation -2.17
  - Assess skin color; examine trunk and face; and mucus membranes
- Record APGAR score at 1 minute and 5 minutes (see chart) only if newborn does not require resuscitation. APGAR score is less important than assessment and intervention.
- See Pediatric Color Coded Appendix - A.5 for vital signs.
- When possible, transport newborn in child safety seat (Pediatric Transportation - 8.13).

APGAR Scale

Feature	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:

- Newborn infants 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.

Return to TOC

Newborn Resuscitation 2.17

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care (Newborn Care - 2.16).
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- For premature infants, consider additional warming techniques, including newborn heating pad or wrapping the torso and extremities of the baby in food-grade or medical-grade plastic wrap.
- If the mouth or nose is obstructed or heavy secretions are present, suction oropharynx then nares using a bulb syringe or mechanical suction using the lowest pressure that effectively removes the secretions, not to exceed 120 mmHg.
- If ventilations are inadequate, or if the chest fails to rise, or the heart rate is less than 100, initiate positive pressure (bag-valve-mask) ventilations at 40 – 60 breaths per minute.
  - Note: Resuscitation should be initiated with room air. Use oxygen if newborn is premature or low birth weight. If no response to resuscitation after 90 seconds, supplement with 100% oxygen
  - Inflation pressures should be individualized to achieve an increase in heart rate or chest rise with each breath. Be aware that bag-valve-mask pop-off valves may deliver inconsistent results. Apply pulse oximeter to infant's right wrist. Oxygen saturation varies by minute from 60 – 95% and should be > 90% by 10 minutes
- After 30 seconds of ventilations, assess heart rate:
  - Auscultate apical beat with a stethoscope or palpate the pulse by lightly grasping the base of the umbilical cord
- For heart rate < 100, reassess ventilatory technique and continue ventilations.
- For heart rate <60 after attempts to correct ventilations:
  - Initiate CPR at a 3:1 ratio (for a rate of 90 compressions/minute and 30 ventilations/minute). Minimize interruptions. Reassess every 60 seconds; if not improving, continue CPR with 100% oxygen until recovery of a normal heart rate, then resume room air

PARAMEDIC STANDING ORDERS

P

- If bag valve mask ventilation is inadequate or chest compressions are indicated, intubate the infant using a cuffed 3.0 mm to 4.0 mm endotracheal tube. (For an infant born before 28 weeks gestation, a 2.5 mm endotracheal tube should be used.)
  - Meconium aspiration may be indicated if airway is obstructed.
  - After direct visualization, improvement in heart rate and $EtCO_2$ are the best indicators of whether the tube is properly placed in the trachea.
- Establish IV/IO access. Obtain blood sample if possible.
  - If hypovolemia is suspected, administer 10 mL/kg bolus 0.9% NaCl over 5 –10 minutes.
  - If the heart rate fails to improve with chest compressions, administer epinephrine (0.1 mg/mL concentration) 0.03 mg/kg IV (0.3 mL/kg) IV/IO.
  - IV/IO is preferred route for epinephrine—if there is a delay in establishing access, may administer via ETT (0.1 mg/mL concentration) 0.1 mg/kg .
  - If glucose level is < 60 mg/dl:
    - Administer dextrose per Pediatric Color Coded Appendix - A.5.

PEARLS:

- Flush all meds with 1.0 mL 0.9% NaCl or follow all ETT meds with positive-pressure ventilation.

Return to TOC

Normal Labor and Delivery 2.18

EMT STANDING ORDERS

E

This protocol should be used for an imminent delivery prior to arrival at the hospital. Imminent delivery is evidenced by crowning at the vaginal opening.

- Routine Patient Care. Obtain OB history.
- Check for crowning. If there are no signs of crowning proceed with transport. If crowning is present prepare for delivery. Notify receiving facility.
- Uncomplicated labor and delivery does not require emergent transport.
- Place the mother in a comfortable, supine position. Place sterile drapes about the perineum.
- Prepare the OB kit and pediatric resuscitation equipment.
- Gently and carefully assist expulsion of the newborn from the birth canal in its natural descent. Do not pull or push the newborn. Prevent explosive delivery of the baby's head by placing your gloved hand on the baby's head.
- Upon complete presentation of newborn's head:
  - Instruct the mother to stop pushing.
  - Support the head. Bulb-suction the mouth then nostrils if obstructed.
  - Check to be certain the umbilical cord is not wrapped about the neck. Unwrap if necessary or if unable to remove apply two umbilical clamps and cut between the clamps to release the cord.
  - Once the newborn's airway is clear and the cord is free from around its neck, instruct the mother to push on their next contraction to complete delivery.
- For care of newborn (Newborn Care Protocol 2.16), for newborns requiring resuscitation (Newborn Resuscitation Protocol 2.17).
- Following delivery of the newborn, the mother's vagina may continue to ooze blood. **Do not pull on the umbilical cord.**
- Apply firm continuous massage manually to the mother's lower abdomen (uterine fundus) to help reduce postpartum hemorrhage. Encourage breastfeeding if the mother prefers, as this will aid in the contraction of the uterus which will help stop the bleeding and facilitate delivery of the placenta.
- Do not attempt to examine the patient internally. Never pack the vagina to stop bleeding. Apply a sanitary napkin to the vaginal opening.
- If the placenta does deliver, preserve it in a plastic bag and transport it with the mother. Do not delay transport to wait for the placenta to deliver.

AEMT/PARAMEDIC STANDING ORDERS

A/P

- After completion of fetal delivery(s), consider oxytocin 10 Units IM .

PEARLS:
- OB assessment:
  - Length of pregnancy.
  - Number of pregnancies.
  - Number of viable births.
  - Number of non-viable births.
  - Last menstrual period.
  - Due date.
  - Prenatal care.
  - Number of expected babies.
  - Stimulant or depressant drug use.

PEARLS:
- Signs of imminent delivery:
  - Membrane rupture or bloody show.
  - Contractions.
  - Urge to move bowels.
  - Urge to push.

Return to TOC

Obstetrical Emergencies 2.19

Recognition:
- 3rd trimester bleeding: vaginal bleeding occurring ≥ 28 weeks of gestation.
- Preterm labor: onset of labor/contractions prior to the 37th week of gestation.
- Malpresentation: presentation of the fetal buttocks or limbs.
- Prolapsed umbilical cord: umbilical cord precedes the fetus.
- Shoulder dystocia: failure of the fetal shoulder to deliver shortly after delivery of the head.
- Postpartum hemorrhage: active bleeding after uterine massage and oxytocin administration.
- Pre-eclampsia/Eclampsia: BP > 160/100, severe headache, visual disturbances, edema, RUQ pain, seizures.

EMT STANDING ORDERS- ADULT

E

- Routine Patient Care.
- Do not delay transport for patients with obstetrical emergencies, provide early notification to the receiving facility.
- If gestational age is known to be < 20 weeks, transport to closest hospital.
- If gestational age is known to be > 20 weeks or fundus is palpable at or above the umbilicus, contact **Medical Direction** regarding destination determination.

For third trimester bleeding
- Suspect placenta previa (placenta is implanted in the lower uterine segment).
- Suspect placental abruption (placenta is separated from the uterine wall before delivery); because hemorrhage may occur into the pelvic cavity, shock can develop despite relatively little vaginal bleeding.
- Do not perform digital examination.
- Place patient in the left lateral position.
- Monitor hemodynamic stability (Shock – 2.24A).

For breech birth (presentation of buttock):
- Do not pull on newborn; support newborn and allow delivery to proceed normally.
- If the legs have delivered, gently elevate the trunk and legs to aid delivery of the head.
- If the head is not delivered within 30 seconds of the legs, place two fingers into the vagina to locate the infant's mouth. Press the vaginal wall away from the infant's mouth to maintain the fetal airway.

For limb presentation:
- Place mother in knee-chest or Trendelenberg position.
- Do not attempt delivery; transport emergently as surgery is likely.

For prolapsed cord:
- Discourage pushing by the mother
- Place mother in knee-chest or Trendelenberg position.
- Place a gloved hand into the mother's vagina and decompress the umbilical cord by elevating the presenting fetal part off of the cord.
- Wrap cord in warm, sterile saline soaked dressing.

For shoulder dystocia:
- Suspect if newborn's head delivers normally and then retracts back into perineum because shoulders are trapped.
- Discourage pushing by the mother
- Support the baby's head, do not pull on it.
- Suction the nasopharyx and oropharynx, as needed
- Position mother with buttocks dropped off end of stretcher and thighs flexed upward (McRobert's position). Apply firm pressure with an open hand immediately above pubic symphysis (McRobert's maneuver).
- If the above method is unsuccessful, consider rolling the patient to the all-fours position.

(Continued)

EMT STANDING ORDERS *Continued*

E

For postpartum hemorrhage:

- Vigorously massage fundus until uterus is firm.
- If possible, initiate breast feeding

For cardiac arrest in the pregnant patient (regardless of etiology)

- Cardiac Arrest – 3.2A.
- For patient ≥ 20 week gestation or if the fundus is palpable at or above the level of the umbilicus, apply left lateral uterine displacement (LUD) with the patient in the supine position to decrease aortocaval compression. LUD should be maintained during CPR. If ROSC is achieved, the patient should be placed in the left lateral position.
- Transport to nearest emergency department.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access above the diaphragm.
- For preterm labor:
  - 20 mL/kg 0.9% NaCl, may repeat once
- After completion of fetal delivery(s), consider oxytocin 10 Units IM.

PARAMEDIC STANDING ORDERS

P

- After delivery, if continued hemorrhage after 5 minutes of uterine massage and oxytocin administration (or blood loss is greater than 1,000 mL), consider Tranexamic Acid (TXA):
  - Mix 1 gram of TXA in 50 – 100 mL of 0.9% NaCl or LR; infuse via wide open IV/IO bolus over approximately 10 minutes
  - Notify receiving facility of TXA administration prior to arriving

PEARL:

- The amount of bleeding is difficult to estimate. Consider transporting the soiled linen to the hospital to help estimate blood loss.

EMT STANDING ORDERS

E

Pre-Eclampsia / Eclampsia:

Pre-eclampsia/Eclampsia is most commonly seen in the last 10 weeks of gestation, during labor, or up to 48 hours post-partum. It may also occur up to several weeks post-partum.

- Routine Patient Care.
- Ensure quiet environment / dim lights.
- If pregnant, place patient in left lateral recumbent position.

ADVANCED EMT STANDING ORDERS

A

- Establish vascular access.

PARAMEDIC STANDING ORDERS

P

For patients in the third trimester of pregnancy or postpartum who are seizing or who are post-ictal, consider:

- Magnesium sulfate, 4 grams in 50 mL D5W or 0.9% NaCl over 5 minutes. (See Seizures – 2.22A).
- Consider benzodiazepine for seizures not responding to magnesium (see Seizures – 2.22A).

Return to TOC

Pain Management
Adult
2.20A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Have the patient rate their pain from 0 to 10, or use another appropriate pain scale. Document value each time pain is assessed.
- Non-pharmacological pain control: Use ample padding when splinting musculoskeletal injuries; consider the application of a cold pack for 30 minutes.
- If not contraindicated, consider:
  - Acetaminophen 325 – 1000 mg PO, no repeat **OR**
  - Ibuprofen 600 mg PO, no repeat.
- For moderate to severe pain, call for Paramedic intercept, if available. If not, call for AEMT intercept.

Contraindication of acetaminophen:
Hypersensitivity to acetaminophen or any component of the formulation; severe hepatic impairment or severe active liver disease. Avoid acetaminophen in patients with a history of alcohol abuse or who have taken medications containing acetaminophen within the past 4 hours.
Contraindication of ibuprofen:
Hypersensitivity to ibuprofen; cerebrovascular bleeding or other bleeding disorders, active gastric bleeding; administration of a medication containing ibuprofen within last 6 hours.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Consider the following for pain control:
  - Acetaminophen 1000 mg IV over 10 minutes if not given or taken PO.
  - Nitrous oxide:
    - Appropriate for patients with pain from isolated extremity injuries (suspected fractures) or global soft tissue injuries (e.g., burns or road rash) or non-traumatic back/flank pain or renal colic (kidney stone)
- Nitrous oxide is contraindicated for the following patients and conditions:
  - Any altered mental status/ inability to follow instructions
  - Pregnancy
  - Abdominal pain
  - Chest pain
  - Headache/migraine
  - Pneumothorax
  - Head injury, including concussion
  - Head or facial trauma preventing proper seal
  - Chest/thoracic trauma
  - Abdominal trauma
  - Diving injury

  Note: Nitrous oxide may only be used if the patient has not received an opiate.
  - Use of nitrous oxide requires approval of local Medical Direction, additional training, and use of scavenger/ventilation fan
  - The patient must be able to self-administer this medication

PARAMEDIC STANDING ORDERS

P

- For mild or moderate pain, consider ketorolac 15 mg IV **OR** 30 mg IM (no repeat).
  - See contraindications.
  - Consider as first-line agent for renal colic. Avoid in hypotension
- For severe pain or pain refractory to above, consider one of the following:
  - Fentanyl (preferred first-line narcotic agent):
    - 25 – 100 mcg slow IV push, every 2 – 5 minutes to a total of 300 mcg titrated to pain relief, **OR**
    - 50 – 100 mcg IM/IN, every 5 minutes to a total of 300 mcg titrated to pain relief, **OR**
  - Morphine:
    - 2 –5 mg IV/IM every 10 minutes to a total of 20 mg titrated to pain relief, **AND/OR**
  - Ketamine: (next page)

Contraindications to fentanyl or morphine includes a GCS < 15 or mentation not appropriate for age, hypotension SBP < 100, SpO_2 < 90% on 15L O_2, hypoventilation, allergy, or condition preventing administration (blocked nose or no IV). If no contraindications and pain scale ≥ 4, may consider fentanyl or morphine.

(Continued)

Pain Management
Adult
2.20A

PARAMEDIC STANDING ORDERS

P

- Ketamine:
  - 0.25 mg/kg IV infusion (in 50 – 100 mL bag 0.9% NaCl over 10 minutes). May be administered via bolus. Consider lower 0.15 mg/kg IV dose for frail or elderly patients, **OR**
  - 0.5 mg/kg IM/IN.
  - May repeat ketamine dose every 15 – 20 minutes to a total of 1 mg/kg. Contact **Medical Direction** for additional dosing.

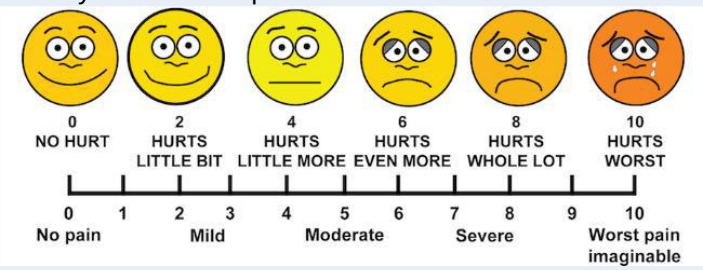
Antidote: For dysphoria (emergence reaction) caused by ketamine administer midazolam 1 - 2 mg IV/IM every 5 minutes as needed.
Antidote: For hypoventilation from opiate administration by EMS personnel, assist ventilations and administer naloxone 0.4 to 2.0 mg SQ/IV/IO/IM or 2.0 – 4.0 intranasal as needed.

- For nausea (Nausea/Vomiting – 2.14).
- Contact **Medical Direction** for guidance in patients with**:**
  - Altered mental status, **OR**
  - Additional doses of a medication, **OR**
  - Benzodiazepines administration alone or in conjunction with narcotic administration for patients with musculoskeletal spasms

- Medications should be administered cautiously in frail, debilitated, or patients over 65 years of age; lower doses should be considered.
- Use caution for altered mental status, hypoventilation, hypotension, or allergy.
- Avoid ketorolac in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, hypotension, or known peptic ulcer disease.
- Ketamine should be considered in patients with severe pain, hemodynamic compromise, pain refractory to opiates, patients on chronic opiate treatment, patients unresponsive to other medications and patients with history of substance use disorder and receiving medication assisted treatment (e.g. methadone, buprenorphine).
- Ketamine contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, and aortic aneurysm, and those that cannot tolerate hypertension.
- Avoid ketamine in patients with known schizophrenia.
- Ketamine may cause appearance of intoxication at higher doses. Dysphoria (emergence reaction) may occur as the medication effects wear off.

PEARLS:

- Place the patient in a position of comfort, if possible.
- Give reassurance, psychological support, and distraction.
- Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 – 10, where 0 is no pain at all and 10 is the worst pain they have ever experienced.



- Reassess and document the patient's pain level and vital signs every 5 minutes.
- Narcotics are not recommended for first-line treatment of headache. Consult **Medical Direction**.
- EMS professionals should not attempt to differentiate between pain and drug-seeking behavior, which could lead to undertreatment of pain.

Return to TOC

Pain Management
Pediatric

2.20P

EMT STANDING ORDERS

E

- Routine Patient Care.
- Assess pain severity. Consider all patients as candidates for pain management regardless of transport time.
- Have the patient rate their pain from 0 to 10, or Wong-Baker "faces" scale (appropriate for chidren ages 4 – 12):

- Document pain scale value each time assessed.
- Consider Paramedic intercept for moderate to severe pain (scale ≥ 4), if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Consider acetaminophen 15 mg/kg PO (maximum 1000 mg) (Pediatric Color Coded Appendix - A.5).
- Consider nitrous oxide:
  - Appropriate for patients age ≥ 9 years with pain from isolated extremity injuries (suspected fractures) or global soft tissue injuries (e.g., burns or road rash)
  - The patient must be able to self-administer this medication
- Nitrous oxide is contraindicated for the following patients and conditions:
  - Any altered mental status/ inability to follow instructions
  - Pregnancy
  - Abdominal pain
  - Chest pain
  - Headache/migraine
  - Pneumothorax
  - Head injury, including concussion
  - Head or facial trauma preventing proper seal
  - Chest/thoracic trauma
  - Abdominal trauma
  - Diving injury
- Note: Nitrous oxide may only be used if the patient has not received an opiate.
- Use of nitrous oxide requires approval of local Medical Direction, additional training, and use of scavenger/ventilation fan.
- Contact **Medical Direction** for guidance for patients under the age of 9 who do not meet any other contraindications.

PARAMEDIC STANDING ORDERS

P

- Consider acetaminophen (Ofirmev) 15 mg/kg IV (maximum 1000 mg) over 10 minutes. Remove excess volume from bottle prior to IV administration.

Broselow	Weight Range	Av kg	Dose (mg)	Volume to ADMINISTER	Volume to DISCARD (1000mg/100mL)
Pink	6-7kg	6.5	97.5	9.8	90.3
Red	8-9kg	8.5	127.5	12.8	87.3
Purple	10-11kg	10.5	157.5	15.8	84.3
Yellow	12-14kg	13	195	19.5	80.5
White	15-18kg	16.5	247.5	24.8	75.3
Blue	19-22kg	20.75	311.3	31.1	68.9
Orange	23-29kg	27	405	40.5	59.5
Green	30-36kg	33	495	49.5	50.5

(Continued)

Pain Management
Pediatric

2.20P

PARAMEDIC STANDING ORDERS

P

- Assess patient for contraindications: GCS < 15 or mentation not appropriate for age, hypotension, SpO_2 < 90% on 15L O_2, hypoventilation, allergic to narcotics, condition preventing administration (blocked nose or no IV). If no contraindications may consider:
  - Fentanyl 1 mcg/kg IV/IM/IO/Intranasal (maximum initial dose 100 mcg) Administer slow over 2-3 minutes; fentanyl is preferred narcotic agent, **OR**
  - Morphine 0.1 mg/kg IV/IO (maximum initial dose 10 mg). Administer slow over 2 – 3 minutes, **AND/OR**
  - Contact **Medical Direction** and consider Ketamine 0.25 mg/kg IV/IO infusion (in 50-100 mL bag 0.9% NaCl over 10 minutes) or 0.5 mg/kg IM/IN, may be administered via bolus
    - May repeat ketamine dose every 15 – 20 minutes to a total of 1 mg/kg. Contact **Medical Direction** for additional dosing
  - Reassess patient every 5 minutes; if no contraindications and patient still in moderate to severe pain may redose fentanyl or morphine at 5 – 10 minute intervals at half the original dose to a total of 3 doses
- Contact **Medical Direction** for guidance with all patients with multi-systems trauma or for requests to provide additional doses of a medication.



Antidote: For hypoventilation from opiate administration by EMS personnel, administer naloxone 0.1 mg/kg IV/IO/IM/SQ up to 2 mg total dose, **OR** 2.0 – 4.0 mg intranasal.

Face, Legs, Activity, Cry, Consolability (FLACC) Behavioral Scale
Appropriate for children age 4 and below

Categories	Scoring		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs, frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to, distractable	Difficult to console or comfort

Each of the five categories is scored from 0 to 2, which results in a total score between 0 and 10.

Return to TOC

Poisoning/Substance Abuse/Overdose
Adult 2.21A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Assist inadequate ventilations with BVM ventilation.
- If patient is in cardiac arrest, start CPR (Cardiac Arrest – 3.2A).
- For suspected opioid overdose with severe respiratory depression, administer:
  - A single spray of NARCAN® Nasal Spray (4mg) into one nostril. May repeat every 3 – 5 minutes if no response or if patient relapses to a maximum of 12 mg, **OR**
  - Naloxone 1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg; may repeat every 3 – 5 minutes if no response to a maximum of 12 mg
  - Patients given naloxone should be transported to emergency department for further evaluation
  - Consider restraints (Restraint - 6.6)
  - Naloxone Leave Behind Opioid Overdose Rescue Program - 8.11
- For suspected CO toxicity or isolated cyanide poisoning, apply 100% non-rebreather oxygen (Smoke Inhalation - 2.25A).
- For decontamination/hazardous materials exposure, see Hazardous Materials Exposure - 9.0.
- For hypoglycemia, see Diabetic Emergencies (Hypoglycemia) - 2.8A.
- For seizures (Seizure - 2.22A).
- Acquire and transmit 12-lead ECG if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- Consider contacting Poison Control at (800) 222-1222 as soon as practical for consultation.

ADVANCED EMT STANDING ORDERS

A

- For severe respiratory depression, administer naloxone 0.4 – 2 mg IV/IM/IO/ SQ/intranasal:
  - Establish IV access
  - Titrate to response
  - If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg
- Ingested Poison:
  - Contact **Medical Direction** to consider activated charcoal 25 – 50 grams PO if ingestion is non-caustic substance, occurred within last 60 minutes, if patient is awake/alert, and protecting airway

PARAMEDIC STANDING ORDERS

P

- Beta Blocker and Ca Channel Blocker (Bradycardia – 3.1A).
- Dystonic Reaction:
  - Diphenhydramine 25 – 50 mg IV/IM
- Organophosphates (Nerve Agent/Organophosphate – 2.15A).
- For severe agitation, seizures or hyperthermia:
  - Midazolam 2.5 mg IV/intranasal, may repeat once in 5 minutes, **OR** 5 mg IM, may repeat once in 10 minutes, **OR**
  - Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR** 2 mg IM may repeat once in 10 minutes, **OR**
  - Diazepam 2 mg IV, may repeat once in 5 minutes
- Tricyclic with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 110 ms):
  - Sodium bicarbonate 1 to 2 mEq/kg IV/IO

(Continued)

Poisoning/Substance Abuse/Overdose
Adult 2.21A

This protocol is designed to provide general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line Medical Direction. Consultation with Poison Control is encouraged.

PEARLS:
- If possible, bring container/bottles, and/or contents
- Pulse oximetry may NOT be accurate for toxic inhalational patients.
- To reduce post overdose agitation:
  - Fix hypoxia first through rescue breathing
  - Utilize only enough naloxone to restore ventilations, titrate to effect when possible.
  - Allow 3 to 5 minutes between naloxone doses.
  - Provide therapeutic environment (reduce number of people/uniforms in room upon awakening)

HISTORY:
- Route, time, quantity and substance(s)
- Patient weight, medications, past medical history.
- Reason if known: intentional or accidental.

Signs & Symptoms
- **Acetaminophen**: Initially normal or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **Anticholinergic**: Tachycardia, fever, dilated pupils, mental status changes.
- **Aspirin:** Abdominal pain, vomiting, pulmonary edema, tachypnea, fever, tinnitus and/or altered mental status. Renal dysfunction, liver failure, and/or cerebral edema among other things can take place later. Consider in elderly with altered mental status.
- **Cardiac Medications**: Dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Carbon Monoxide (CO) Poisoning**: A colorless, oderless gas causing headache, dizziness, weakness, nausea, mental changes, seizure, coma, death.
- **Sedatives/Depressants**: Bradycardia, hypotension, decreased temperature, decreased respirations, pinpoint or non-specific pupils (miosis).
- **Dystonic Reaction:** Neurological movement disorder, in which sustained muscle contractions cause twisting and repetitive movements or abnormal postures. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Akathisia:** May consist of feelings of anxiety, agitation, and jitteriness, as well as inability to sit still / pacing. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Opioids:** Respiratory arrest or hypoventilation, evidence of opioid use (bystander report, drug paraphernalia, opioid prescription bottles), linear scarring and discoloration observed suggestive of prior vascular access, depressed mental status, miosis (constricted or “pinpoint” pupils).
- **Organophosphates**: Bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils, SLUDGEM, BBB (Nerve Agent/Organophosphate Poisoning – 2.15A).
- **Solvents**: Nausea, coughing, vomiting, and mental status change.
- **Sympathomimetic/Stimulants**: Tachycardia, hypertension, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples are bath salts, cocaine, caffeine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), albuterol.
- **Tricyclic (Cyclic):** Seizures, dysrhythmias, hypotension, decreased mental status or coma.

Return to TOC

Poisoning/Substance Abuse/Overdose
Pediatric 2.21P

EMT STANDING ORDERS

E

- Routine Patient Care.
- Assist inadequate ventilations with BVM ventilation.
- If patient is in cardiac arrest, start CPR (Cardiac Arrest – 3.2P).
- For suspected opioid overdose with severe respiratory depression, administer
  - Administer a single spray of NARCAN® Nasal Spray (4mg) into one nostril, **OR**
  - Administer via atomizer:
    - **Infant & Toddler:** Naloxone 0.5 mg (0.5 mL) per nostril for a total of 1 mg
    - **Small Child and Larger:** Naloxone 1 mg (1 mL) per nostril for a maximum of 2 mg
  - For both, may repeat every 3 – 5 minutes if no response to a maximum of 12 mg
  - Consider restraint (Restraint - 6.6)
  - Patients given naloxone should be transported to emergency department for further evaluation
- For suspected CO toxicity or isolated cyanide poisoning, apply 100% non-rebreather oxygen (Smoke Inhalation/Carbon Monoxide Poisoning - 2.25).
- For decontamination/hazardous materials exposure (Hazardous Materials Exposure - 9.0)
- For hypoglycemia (Diabetic Emergencies (Hypoglycemia) – 2.8P).
- For seizures (Seizures – 2.22P).
- Call for Paramedic intercept if available. If not available, call for AEMT intercept.
- Consider contacting Poison Control at (800) 222-1222 as soon as practical for consultation.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- For severe respiratory depression, administer naloxone 0.1 mg/kg IV/IO/IM/SQ/ intranasal. Maximum initial dose 2 mg. Minimum initial dose 0.4 mg.
  - If no response, may repeat initial dose every 3 - 5 minutes to a total of 12 mg
- Ingested Poison:
  - Contact **Medical Direction** to consider activated charcoal per length-based resuscitation tape if ingestion is non-caustic substance and occurred within last 60 minutes and if patient is awake/alert and protecting airway

PARAMEDIC STANDING ORDERS

P

- Beta Blocker and Ca Channel Blocker (Bradycardia – 3.1P).
- Dystonic Reaction:
  - Diphenhydramine 0.5 mg/kg IV/IM up to maximum dose 50 mg
- Opioid:
  - Naloxone 0.1 mg/kg IV/IO/IM/SQ/intranasal, maximum initial dose 2 mg; repeat every 2 minutes as needed (maximum dose 12 mg)
- Organophosphates (Nerve Agent/Organophosphate – 2.15P).
- Tricyclic with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 110 ms):
  - Sodium bicarbonate 1 to 2 mEq/kg IV

This protocol provides general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line **Medical Direction**. Consultation with Poison Control is encouraged.

(Continued)

Poisoning/Substance Abuse/Overdose
Pediatric 2.21P

PEARLS:
- Possible, bring container/bottles, and/or contents
- Pulse oximetry may NOT be accurate for toxic inhalation patients.

HISTORY:
- Route, time, quantity and substance(s)
- Patient weight, medications, past medical history.
- Reason if known: intentional, accidental or criminal.

Signs & Symptoms
- **Acetaminophen**: initially normal or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **Anticholinergic**: tachycardia, fever, dilated pupils, mental status changes.
- **Aspirin:** abdominal pain, vomiting, pulmonary edema, tachypnea, fever, tinnitus and/or altered mental status. Renal dysfunction, liver failure, and/or cerebral edema among other things can take place later.
- **Cardiac Medications**: dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Carbon Monoxide (CO) Poisoning**: A colorless, oderless gas causing headache, dizziness, weakness, nausea, mental changes, seizure, coma, death.
- **Sedatives/Depressants**: bradycardia, hypotension, decreased temperature, decreased respirations, pinpoint or non-specific pupils (miosis).
- **Dystonic Reaction:** Neurological movement disorder, in which sustained muscle contractions cause twisting and repetitive movements or abnormal postures. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Akathisia:** May consist of feelings of anxiety, agitation, and jitteriness, as well as inability to sit still / pacing. This may be induced by antipsychotics, such as haloperidol, or anti-emetics such as prochlorperazine or metoclopramide.
- **Opioids:** respiratory arrest or hypoventilation, evidence of opioid use (bystander report, drug paraphernalia, opioid prescription bottles), linear scarring and discoloration observed suggestive of prior vascular access, miosis (constricted or pinpoint pupils).
- **Organophosphates**: bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils), SLUDGEM, BBB. See Nerve Agent/Organophosphate Poisoning Protocol – Pediatric 2.15P.
- **Solvents**: nausea, coughing, vomiting, and mental status change.
- **Sympathomimetic/Stimulants**: tachycardia, hypertension, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples are bath salts, cocaine, caffeine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), albuterol.
- **Tricyclic (Cyclic):** seizures, dysrhythmias, hypotension, decreased mental status or coma.

Return to TOC

Seizures
Adult

2.22A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Check finger stick glucose by glucometer. If the blood glucose reading is < 60 mg/dl, treat patient for seizures (Diabetic Emergencies (Hypoglycemia) Protocol – Adult 2.8A).
- If anti-seizure rescue medications have been prescribed by the patient's physician and seizure lasting > 5 minutes, may assist the patient or caregiver with administration by buccal/oral, rectal or intranasal route in accordance with physician's instructions.
- If the patient has an implanted vagus nerve stimulator (VNS), recommend the use of the VNS magnet to activate the VNS and assist if necessary.
  - To activate the VNS, move the magnet across the skin directly on the VNS device 2 – 3 times, then remove the magnet. If unsuccessful, repeat every 3 – 5 minutes for a total of 3 times
- Do not delay medication administration.
- Obtain and transmit 12-lead ECG, if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.

PARAMEDIC STANDING ORDERS

P

- Do not delay administration of medications to start IV.

If vascular access (IV or IO) is absent:

  - For seizure lasting > 5 minutes (status epilepticus), administer:
    - Midazolam 10 mg IM (preferred) or intranasal, may repeat 10 mg IM or intranasal every 10 minutes (maximum dose 20 mg) Note: a 5 mg/mL concentration is required for IM/intranasal administration.

If vascular access (IV or IO) is present:

  - For seizure lasting > 5 minutes (status epilepticus), administer:
    - Midazolam 5 mg IV repeated every 5 minutes until seizure activity is resolved (maximum dose 20 mg), **OR**
    - Lorazepam 1 – 2 mg IV, every 5 minutes (maximum dose 8 mg), **OR**
    - Diazepam 5 – 10 mg IV, then 2.5 mg every 5 minutes (maximum dose 20 mg).
- Consider magnesium sulfate, 4 grams in 50 mL D5W or 0.9% NaCl over 5 minutes, in the presence of seizures in the third trimester of pregnancy or post partum.
- Contact **Medical Direction** for additional dosing.

PEARLS:

- Do not attempt to restrain the patient; protect the patient from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, infection, seizure history, trauma, hypoglycemia, alcohol/substance abuse, third-trimester pregnancy or post partum).
- Post partum patients may experience eclamptic seizures up to several weeks after giving birth.
- Status epilepticus is defined as any generalized seizure lasting more than 5 minutes. This is a true emergency requiring rapid airway control, treatment (including benzodiazepines), and transport.
- If no vascular access is present, the preferred initial dose of benzodiazepine is midazolam IM/intranasal. After initial dose, establish an IV in case additional medication doses are needed. If an IV is already established, administer benzodiazepine IV.

Return to TOC

Seizures
Pediatric
2.22P

EMT STANDING ORDERS

E

- Routine Patient Care.
- If the blood glucose reading is < 60 mg/dl, treat patient for seizures (Diabetic Emergencies (Hypoglycemia) – 2.8P).
- Obtain the patient's temperature for suspected febrile seizure (rectal route preferred, as appropriate).
- If anti-seizure rescue medications have been prescribed by the patient's physician and seizure lasting > 5 minutes, may assist the patient or caregiver with administration by buccal/oral, rectal or intranasal route in accordance with physician's instructions.
- If the patient has an implanted vagus nerve stimulator (VNS), suggest that family use the VNS magnet to activate the VNS and assist if required.
  - To activate the VNS, move the magnet across the skin directly on the VNS device 2 – 3 times, then remove the magnet; if unsuccessful, repeat every 3 – 5 minutes for a total of 3 times
- Note: Do not delay medication administration.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- If febrile ≥ 38 C (100.4F), consider acetaminophen 15 mg/kg PO, maximum 1000 mg, refer to the Pediatric Color Coded Appendix - A.5, for dosing.

PARAMEDIC STANDING ORDERS

P

- Do not delay administration of medications to start IV.
- For seizure lasting > 5 minutes (status epilepticus), administer:
  - Midazolam 0.2 mg/kg IM (preferred if no IV access established) or intranasal (single maximum dose 10 mg) (Note: a 5 mg/mL concentration is recommended for IM/intranasal administration), **OR**
  - Midazolam 0.1 mg/kg IV (single maximum dose 4 mg), **OR**
  - Lorazepam 0.1 mg/kg IV (single maximum dose 4 mg), **OR**
  - Diazepam 0.1 mg/kg IV (single maximum dose 10 mg IV)
  - Any of the above may be repeated once after 5 minutes
  - Contact **Medical Direction** for additional dosing

- Consider acetaminophen (Ofirmev) 15 mg/kg IV (maximum 1000 mg) over 10 minutes. Remove excess volume from bottle prior to IV administration.

Broselow	Weight Range	Av kg	Dose (mg)	Volume to ADMINISTER	Volume to DISCARD (1000mg/100mL)
Pink	6-7kg	6.5	97.5	9.8	90.3
Red	8-9kg	8.5	127.5	12.8	87.3
Purple	10-11kg	10.5	157.5	15.8	84.3
Yellow	12-14kg	13	195	19.5	80.5
White	15-18kg	16.5	247.5	24.8	75.3
Blue	19-22kg	20.75	311.3	31.1	68.9
Orange	23-29kg	27	405	40.5	59.5
Green	30-36kg	33	495	49.5	50.5

(Continued)

Seizures
Pediatric

2.22P

PEARLS:

- Do not attempt to restrain the patient; protect the patient from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, infection, trauma, hypoglycemia, poisoning).
- Status epilepticus is defined as any generalized seizure lasting more than 5 minutes. This is a true emergency requiring rapid airway control, treatment (including benzodiazepines), and transport.
- Any seizure still present upon EMS arrival and/or lasting more than 5 minutes should be treated with benzodiazepines.
- The preferred initial dose of benzodiazepine is midazolam IM/intranasal. After initial dose, establish an IV in case additional medication doses are needed. If an IV is already established, administer benzodiazepine IV.

Return to TOC

Sepsis
Adult

2.23A

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected infection – YES
- Evidence of sepsis criteria – YES (2 or more):
  - Temperature < 36°C or > 38.3°C (< 96.8°F or > 101°F)
  - Heart rate > 90 bpm
  - Respiratory rate > 20 bpm
  - Systolic blood pressure (SBP) < 90 mmHg, **OR** mean arterial pressure (MAP) < 65mmHg
  - New onset altered mental status, **OR** increasing mental status change with previously altered mental status
  - Lactate ≥ 2
  - $ETCO_2$ < 25 mmHg

IF POSITIVE SEPSIS SCREEN, NOTIFY RECEIVING FACILITY OF A SEPSIS ALERT.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Check finger stick glucose by glucometer.
- Do not delay transport.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access, do not delay transport to start IV/IO.
- Rapidly administer 0.9% NaCl up to 30 mL/kg bolus to maintain MAP ≥ 65 (systolic blood pressure ≥ 90 mmHg).
- Reassess patient after each 500 mL administration, with special attention given to lung examination to ensure volume overload does not occur.

PARAMEDIC STANDING ORDERS

P

- Obtain serum lactate level (if available and trained)
- While initial fluid is infusing, prepare norepinepherine infusion. If there is no response after 1,000 mL IV fluid infused, administer:
  - Norepinephrine 1 – 30 mcg/min IV/IO via pump (preferred 1st line agent):
    - Consider push dose epinephrine (10 mcg/mL) for short transport times or as bridge to infusion; prepare 10 mcg/mL by adding 1 mL 0.1 mg/mL epinephrine to 9 mL normal saline, then administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible; switch to infusion as soon as practical
  - If inadequate response to norepinephrine, consider adding second agent:
    - Epinephrine infusion 2 – 10 mcg/min infusion via pump IV/IO
  - Continue fluid administration concurrently with pressor administration, titrate to MAP ≥ 65 (systolic bp ≥ 90)

PEARLS:

- Sepsis is a systemic inflammatory response due to infection, often resulting in significant morbidity and mortality. Septic shock is diagnosed if there is refractory hypotension that does not respond to fluid therapy.
- Severe septic shock has a 50% mortality rate and must be treated aggressively.
- Suspect infection in patients with cough, an indwelling catheter, open wounds, paralysis, recent antibiotic use, or bedridden or immuno-compromised individuals.
- IV fluid administration and early antibiotics reduces mortality in septic patients.
- Notifying Emergency Departments of patients with possible septic shock may improve outcomes.
- When administering vasopressors, monitor IV site for signs of extravasation.

Return to TOC

Sepsis
Pediatric

2.23P

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected infection – YES.
- Temperature < 36 °C or > 38.3°C (< 96.8°F or > 101°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
  - Capillary refill time < 1 second (flash) or > 3 seconds
  - Mottled cool extremities
  - Lactate ≥ 2 or $ETCO_2$ < 25 mmHg, if available

IF YES TO ALL SEPSIS ALERT CRITERIA, CONTACT RECEIVING HOSPITAL AND REPORT SEPSIS ALERT

Upper Limit of Pediatric HR

Age	Heart Rate
0 d - 1 m	> 205
≥ 1 m - 3 m	> 205
≥ 3 m - 1 y	> 190
≥ 1 y - 2 y	> 190
≥ 2 y - 4 y	> 140
≥ 4 y - 6 y	> 140
≥ 6 y - 10 y	> 140
≥ 10 y - 13 y	> 100
> 13 y	> 100

EMT STANDING ORDERS

E

- Routine Patient Care.
- Monitor and maintain airway and breathing as these may change precipitously.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Check finger stick glucose by glucometer.
- Do not delay transport.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access. Do not delay transport to start IV/IO.
- IV fluids should be titrated to attaining normal capillary refill, peripheral pulses, and level of consciousness:
  - Administer fluid bolus of 20 mL/kg of 0.9% NaCl by syringe push method; reassess patient immediately after completion of bolus
    - If inadequate response to initial fluid bolus, administer a second 20 mL/kg bolus of 0.9% NaCl by syringe push method; reassess patient immediately after completion of bolus
    - If inadequate response to second fluid bolus, administer a third 20 mL/kg bolus of 0.9% NaCl by syringe push method; reassess patient immediately after completion of bolus

Note: Reassess patient after each bolus for improving clinical signs and signs of fluid overload (rales, increased work of breathing, or increased oxygen requirements.

PARAMEDIC STANDING ORDERS

P

- Obtain serum lactate level (if available and trained).
- If there is no response after 3 fluid boluses, contact **Medical Direction** and consider:
  - Additional fluids
  - Norepinephrine 0.1 – 1 mcg/kg/min via pump, titrated to effect (preferred), maximum dose of 2 mcg/kg/min, **OR**
  - Epinephrine 0.1 – 1 mcg/kg/min via pump, titrated to effect

PEARLS:

- 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. Patients who are immuno-compromised are also susceptible to sepsis.
- Septic shock has a high mortality and is one of the leading causes of pediatric mortality.
- Aggressive IV fluid therapy and early antibiotics significantly reduces mortality.
- When administering vasopressors, monitor IV site for signs of extravasation.

Return to TOC

Shock
Adult

2.24A

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. Provide advanced notification to hospitals on all patients with suspected shock.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Keep the patient supine, do not elevate feet.
- 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
Assess for pulmonary edema and/or congestive heart failure (CHF). • Obtain and transmit ECG. • If CHF is suspected refer to Congestive Heart Failure (Pulmonary Edema) - 3.3A.	• If patient has history of adrenal insufficiency refer to Adrenal Insufficiency - 2.1. • If anaphylaxis is suspected refer to Allergic Reaction/ Anaphylaxis - 2.2A. • If septic shock is suspected refer to Sepsis Protocol - 2.23A. • If neurogenic shock is suspected, consider spinal motion restriction.	• Control severe bleeding using direct pressure, pressure bandages, tourniquets (commercial tourniquets preferred), or hemostatic bandage. • Refer to Hemorrhage Control – 4.4.	

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- Administer fluids warmed to 104F, if feasible. IV fluid administration should be based on physiologic signs rather than routine IV fluid administration in all patients.
- Physiological signs:
  - Altered mental status
  - Radial pulse cannot be palpated
  - MAP < 65 (systolic blood pressure is < 90 mmHg)

Assess for signs of pulmonary edema and consider: • Establish IV 0.9% NaCl to keep vein open. • Contact **Medical Direction** to consider 0.9% NaCl fluid bolus. 	• Rapidly administer 0.9% NaCl up to 30 mL/kg bolus to maintain MAP ≥ 65 (systolic blood pressure ≥ 90 mmHg). Contact **Medical Direction** after the first 1,000 mL.	• Administer 0.9% NaCl to maintain mental status and peripheral perfusion and to maintain MAP ≥ 65 (systolic blood pressure ≥ 90 mm Hg) in 250 mL boluses. Total volume should not exceed 2,000 mL. Contact **Medical Direction** after first 1,000 mL. 	

(Continued)

Shock
Adult

2.24A

PARAMEDIC STANDING ORDERS

P

- Obtain serum lactate level (if available and trained)

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
Contact **Medical Direction** and consider: (An infusion pump is required for the use of these vasopressor agents) • Norepinephrine infusion 1 – 30 mcg/ min (preferred agent), **OR** • Epinephrine infusion 2 – 10 mcg/min titrated to effect, **OR** • Consider push dose epinephrine (10mcg/ mL) for short transport times or as bridge to infusion. Administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes. Consider additional 250 mL 0.9% NaCl fluid bolus.	• Norepinephrine 1 - 30 mcg/min (preferred agent), **OR** • Epinephrine infusion 2 – 10 mcg/min titrated to effect, **OR** • Consider push dose epinephrine (10mcg/ mL) for short transport times or as bridge to infusion. Administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes. • For patient with history of adrenal insufficiency, administer stress dose of hydrocortisone 100 mg IV/IO/IM (preferred) or other injectable steroid.		• If tension pneumothorax suspected (Needle Decompression Thoracostomy (NDT) - 6.5).

EXTENDED CARE

X

- A tourniquet may be used temporarily to slow major bleeding while treating other life threatening concerns or to identify the best location for direct pressure. The tourniquet can be left in place for at least an hour. If direct pressure does not control bleeding, the tourniquet will need to be reapplied and left in place during evacuation.

Etiology of Shock

- **Cardiogenic Shock:** History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
  - Signs & Symptoms of cardiogenic shock: chest pain, shortness of breath, crackles, JVD, hypotension, tachycardia, diaphoresis
- **Distributive Shock:** Anaphylaxis (Allergic Reaction/Anaphylaxis – 2.2A), neurogenic shock, sepsis, (Sepsis – 2.23A). Assess for fever and signs of infection.
  - Signs & Symptoms of neurogenic shock: sensory and/or motor loss, hypotension, bradycardia versus normal heart rate, warm, dry skin
- **Hypovolemic Shock:** Dehydration, volume loss, or hemorrhagic shock.
  - Signs & Symptoms of hypovolemic shock: tachycardia, tachypnea, hypotension, diaphoresis, cool skin, pallor, flat neck veins
- **Obstructive Shock:** Consider tension pneumothorax, pulmonary embolism, and cardiac tamponade.
  - Signs and symptoms of tension pneumothorax: asymmetric or absent breath sounds, respiratory distress or hypoxia, signs of shock including tachycardia and hypotension, JVD, possible tracheal deviation upon palpation above the sternal notch (late sign)

PEARLS:
For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Restrict IV fluids to maintain BP of 80-90 systolic. Delaying aggressive fluid resuscitation until operative intervention may improve the outcome. Operative intervention must be available within 30-45 minutes to utilize this strategy. In rural areas with longer transport times restricting fluid may result in exsanguination and irreversible shock.
- 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.

Return to TOC

Shock
Pediatric

2.24P

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. Provide advanced notification to hospitals for all patients with suspected shock.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Keep the patient supine, do not elevate feet.
- Prevent heat loss, cover with warm blankets if available and if the patient is not febrile.

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
	• If patient has history of adrenal insufficiency refer to Adrenal Insufficiency – 2.1. • If anaphylaxis is suspected refer to Allergic Reaction/ Anaphylaxis – 2.2P. • If septic shock is suspected, refer to Sepsis – 2.23P. • If neurogenic shock is suspected, consider spinal motion restriction.	• Control severe bleeding using direct pressure, pressure bandages, tourniquets (commercial tourniquets preferred), or hemostatic bandage (Hemorrhage Control – 4.4).	

ADVANCED EMT STANDING ORDERS

A

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
• Establish IV 0.9% NaCl to keep vein open. • Contact **Medical Direction** to consider 0.9% NaCl in 10 mL/kg bolus over < 15 min and repeat as tolerated.	• Administer 0.9%NaCl in 20 mL/kg bolus over < 15 min to improve clinical condition. May repeat to a max of 60 mL/kg. Contact **Medical Direction** when possible. • Therapeutic end-points (in order of importance) are: ○ Normal mental status, ○ Capillary refill, ○ Normal pulses and heart rate, ○ No difference between peripheral and central pulses, ○ Warm extremities, and ○ THEN normal blood pressure, see (Pediatric Color Coded Appendix - A.5)	• Administer 0.9%NaCl in 20 mL/kg bolus over < 15 min to improve clinical condition. May repeat to a max of 60 mL/kg. Contact **Medical Direction** when possible. • Therapeutic end-points (in order of importance) are: ○ Normal mental status, ○ Capillary refill, ○ Normal pulses and heart rate, ○ No difference between peripheral and central pulses, ○ Warm extremities, and ○ THEN normal blood pressure, see Pediatric Color Coded Appendix - A.5)	

(Continued)

Shock
Pediatric

2.24P

PARAMEDIC – Contact MEDICAL DIRECTION and consider:

P

- Check serum lactate (if available and trained).
- Consider fluid administration via infusion pump.
- If signs and symptoms of hypoperfusion persist or symptoms worsen, regardless of etiology, contact **Medical Direction** and consider norepinepherine administration via length-based resuscitation tape in the absence of hemorrhagic shock.

CARDIOGENIC SHOCK	DISTRIBUTIVE SHOCK	HYPOVOLEMIC SHOCK	OBSTRUCTIVE SHOCK
If hypotensive consider: (An infusion pump is required for the use of these vasopressor agents) • Norepinephrine infusion 0.1 – 2 mcg/kg/min titrated to effect, (max dose 30 mcg/min), **OR** • Epinephrine 0.1 – 1 mcg/kg/min titrated to effect (max dose 10 mcg/min).	If hypotensive consider: (An infusion pump is required for the use of these vasopressor agents) • Norepinephrine infusion 0.1 – 2 mcg/kg/min titrated to effect (max dose 30 mcg/min), **OR** • Epinephrine 0.1 – 1 mcg/kg/min titrated to effect (max dose 10 mcg/min), **OR** • For patient with history of adrenal insufficiency, administer stress dose of hydrocortisone 2 mg/kg IV/IO/IM (max dose 100 mg) or other injectable steroid.		• If tension pneumo-thorax suspected (Needle Decompression Thoracostomy (NDT) - 6.5).

EXTENDED CARE

X

- A tourniquet may be used temporarily to slow major bleeding while treating other life threatening concerns or to identify the best location for direct pressure. The tourniquet can be left in place for at least an hour. If direct pressure does not control bleeding, the tourniquet will need to be reapplied and left in place during evacuation.

Etiology of Shock

- **Cardiogenic Shock:** History of cardiac surgery, rhythm disturbances, or post cardiac arrest. Assess for acute MI and pulmonary edema.
  - Signs & Symptoms of cardiogenic shock: chest pain, shortness of breath, crackles, JVD, hypotension, tachycardia, diaphoresis
- **Distributive Shock:** Anaphylaxis (Allergic Reaction/Anaphylaxis – 2.2P), neurogenic shock, sepsis (Sepsis – 2.23P). Assess for fever and signs of infection.
  - Signs & Symptoms of neurogenic shock: sensory and/or motor loss, hypotension, bradycardia versus normal heart rate, warm, dry skin
- **Hypovolemic Shock:** Dehydration, volume loss, or hemorrhagic shock.
  - Signs & Symptoms of hypovolemic shock: tachycardia, tachypnea, hypotension, diaphoresis, cool skin, pallor, flat neck veins
- **Obstructive Shock:** Consider tension pneumothorax, pulmonary embolism, and cardiac tamponade.
  - Signs and symptoms of tension pneumothorax: asymmetric or absent unilateral breath sounds, respiratory distress or hypoxia, signs of shock including tachycardia and hypotension, JVD, possible tracheal deviation above the sternal notch (late sign)

PEARLS:
For patients with uncontrolled hemorrhagic or penetrating torso injuries:

- Contact **Medical Direction** to discuss restriction of IV fluids. Delaying aggressive fluid resuscitation until operative intervention may improve the outcome. Operative intervention must be available within 30-45 minutes to utilize this strategy. In rural areas with longer transport times restricting fluid may result in exsanguination and irreversible shock.
- 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.

Return to TOC

Smoke Inhalation/Carbon Monoxide Poisoning Adult & Pediatric 2.25

EMT STANDING ORDERS

E

- Routine Patient Care. Remove patient from toxic environment.
- Oxygen 100% via non-rebreather mask or BVM.
- Decontamination concurrent with initial resuscitation.
- If a CO oximeter is available, consider obtaining carbon monoxide levels.
- If a measuring device is available, obtain atmospheric levels of CO and cyanide (CN). Consider use on "first-in" bags to assist in detection of occult CO toxicity.
- Acquire and transmit 12-lead ECG if available.
- If wheezing, consider albuterol 2.5 mg via nebulizer. May repeat every 5 minutes for continued symptoms.
- Adult only: Consider CPAP for respiratory distress (Continuous Positive Airway Pressure (CPAP) – 5.4).
- If altered mental status, check finger stick glucose by glucometer.
- Burn/Electrocution/Lightning – Adult & Pediatric 4.0.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Consider CPAP for respiratory distress (Continuous Positive Airway Pressure (CPAP) – 5.4).

PARAMEDIC STANDING ORDERS

P

- Consider early advanced airway control in patients with suspected upper or lower airway burns or severe smoke inhalation (Airway Management Protocol – 5.1A).
  - Consider epinephrine 3 mg (3 mL) in 3 mL 0.9% NaCl via nebulizer for symptomatic patients, especially if unable to obtain advanced airway
- For patients with a history of smoke exposure and an altered level of consciousness and/or hemodynamic or respiratory compromise, establish IV access and administer, if available:
  - Hydroxocobalamin via use of Cyanokit:
    - Reconstitute: Place the vial of hydroxocobalamin in an upright position; add 0.9% NaCl to the vial (200 mL for 5 grams vial or 100 mL for 2.5 grams vial) using the transfer spike; fill to the line
    - Rock vial for at least 60 seconds (do not shake)
    - **Adult:** Using vented intravenous tubing, administer IV over 15 minutes
    - **Pediatric**: Using vented intravenous tubing, infuse 70 mg/kg as per Pediatric Color Coded Appendix – A.5 over 15 minutes
    - Depending on clinical response, a second dose may be required
  - Consider regional plan for centralized storage of Cyanokit and means to deliver emergently to fire scene

Oxygen saturation may be inaccurate in patients exposed to carbon monoxide or cyanide.
CO oximeter devices may yield inaccurate low/normal results for patients with CO poisoning. All patients with probable or suspected CO poisoning should be transported to the nearest appropriate hospital, based on their presenting signs and symptoms.
Do not administer other drugs concurrently in same IV as hydroxocobalamin.

Symptoms: Headache, confusion, dyspnea, chest tightness, nausea.
Signs: Soot in the nose or mouth, change in level of consciousness, seizure, dilated pupils, coughing, tachypnea and hypertension (early), bradypnea and hypotension (late), shock, vomiting.

Percent CO in Blood	Typical Symptoms
<10	None
10-20	Slight headache
21-30	Headache, slight increase in respirations, drowsiness
31-40	Headache, impaired judgment, shortness of breath, increasing drowsiness, blurring of vision
41-50	Pounding headache, confusion, marked shortness of breath, marked drowsiness, increasing blurred vision
>51	Unconsciousness, eventual death if victim is not removed from source of CO

PEARLS:

- Smoke is a combination of many dangerous toxins produced by incomplete combustion. Patients exposed to smoke should be considered for carbon monoxide (CO) and hydrogen cyanide (HCN) poisoning.

Return to TOC

Stroke – Adult
Northern New England Unified Guideline 2.26A

SUSPECT STROKE: with any of the following new or sudden symptoms and/or complaints:

- Unilateral motor weakness or paralysis to face, limb or side of body, including facial droop.
- Unilateral numbness.
- Dizziness/vertigo.
- Acute visual disturbance, loss of vision in one eye or one side of vision.
- Difficulty with balance or uncoordinated movements of a limb, gait disturbance.
- Difficulty with speech understanding or production (slurred or inappropriate use of words).
- Severe headache for no obvious reason.
- Altered mental state.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Complete the Prehospital Stroke Screening Tool
  - If Prehospital Stroke screen is positive, complete stroke severity score (e.g., FAST-ED) to determine probability of a large vessel occlusion (LVO).
- Establish Stroke Alert Criteria and notify receiving hospital of "Stroke Alert" with findings from the screening tools, thrombolytic checklist and time last known well (TLKW).
  - Stroke Alert should be called within 10 minutes of recognition.
- For symptomatic:
  - Administer oxygen as appropriate with a target of achieving 94 – 98% saturation
  - Elevate head of stretcher to 30° (unless patient requires spinal motion restriction)
  - Minimize on-scene time; do not delay for ALS intercept
  - Acquire and transmit 12-lead ECG, if available
  - Correct glucose if < 60 mg/dL (Diabetic Emergencies (Hypoglycemia) – 2.8A)
  - Rapid transport to the most appropriate facility based on the destination guidance utilizing your local stroke plan

AEMT & PARAMEDIC STANDING ORDERS

A/P

- Establish IV (18 gauge catheter & right AC preferred site) and administer 250 mL 0.9% NaCl bolus.

Prehospital Stroke Screening Tool

Stroke screen is positive if any abnormal finding in FAST below.

Witness: *Best contact number for witness:* ( ) -

Prehospital Stroke Scale Examination	Please check: Normal	Abnormal
F **Facial Droop:** *Have the patient smile and show teeth.* Normal: Both sides of the face move equally well.. Abnormal: One side of the face does not move as well as the other.	Normal	Abnormal
A **Arm Drift:** *Have the patient close their eyes and hold arms extended for 10 seconds.* Normal: Both arms move the same, or both arms don't move at all. Abnormal: One arm doesn't move, or one arm drifts down compared to the other.	Normal	Abnormal
S **Speech:** *Ask the patient to repeat a phrase such as, "You can't teach an old dog new tricks".* Normal: Patient says the correct words without slurring. Abnormal: Patient slurs words, says the wrong word, or is unable to speak.	Normal	Abnormal
T **Time ~~Last Known~~ Well:** *What time did symptoms start?* *What time was patient last known well?*		
Blood Glucose: *(Treat blood glucose < 60 mg/dl)*		

If your local stroke plan utilizes BEFAST, See BEFAST Appendix A.8.

(Continued)

Stroke – Adult
Northern New England Unified Guideline 2.26A

If stroke screening scale is positive, calculate stroke severity score using FAST-ED.

Stroke Severity Score (FAST-ED)

A FAST-ED greater than or equal to 4 is considered high probability for an LVO

Assessment	Points	Score
Facial Palsy (ask the patient to smile)		
No facial droop or only minor paralysis on one side of the face	0	
Partial or complete paralysis of one side of the face	1	
Arm Weakness (arms out with palms up for 10 secs)		
No drift, or both arms slowly move down equally	0	
Arm drift or some effort to lift the affected arm against graivity	1	
No effort against gravity or no movement in one or both arms	2	
Speech Change (ask the patient to name 3 common items; ask them to show you 2 fingers)		
Able to name at least 2 of 3 objects and follow command	0	
Names none, or only 1 of the 3 items correctly	1	
Unable to "show two fingers" to command	1	
Time - when was patient last known well?		
Eye Deviation		
Able to look to both sides without difficulty	0	
Able to move eyes horizontally in both directions but with clear difficulty	1	
Gaze is fixed to one side and does not move	2	
Denial/Neglect (only do if there is arm weakness AND commands followed)		
Recognizes weakness in their weak arm and recognizes their weak arm	0	
Unable to recognize weakness when asked "Are you weak anywhere"	1	
Does not recognize own arm when asked "Whose arm is this?"	1	
Total		

Establish Stroke Alert Criteria

Stroke Alert Criteria – Please check Yes or No:

Yes	No	
☐	☐	Blood glucose is or has been corrected to greater than 60 mg/dL?
☐	☐	Deficit unlikely due to head trauma or other identifiable causes?
☐	☐	Positive Prehospital Stroke Screen:

- and time last known well is less than 4.5 hours, **OR**
- FAST-ED score is greater than or equal to 4 AND time last known well is less than 24 hours

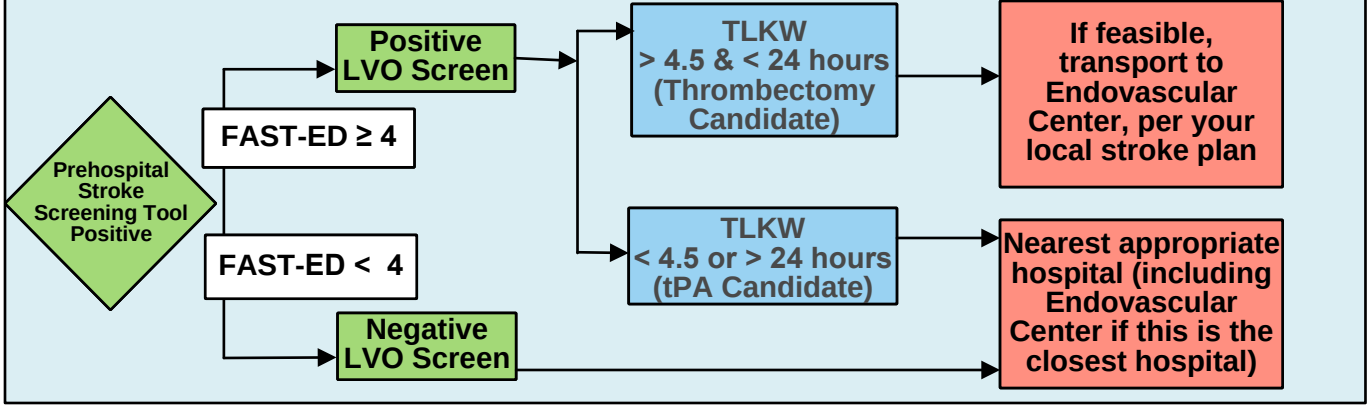
Stroke Alert Criteria – If yes to all criteria, determine and contact the appropriate receiving hospital and report a STROKE ALERT. Include the time last known well, FAST-ED score and thrombolytic checklist results.

Stroke Alert should be called within 10 minutes of recognition.

(Continued)

Stroke – Adult
Northern New England Unified Guideline 2.26A

Destination Guidance for Possible Large Vessel Occlusive Stroke Patients



Work with your regional endovascular center when developing your local stroke plan.
If transport time >60 minutes, transport to the closest Emergency Department.

Thrombolytic Checklist for patients eligible for thrombolytics (t-PA), try to complete the following:

YES	NO	Has the patient had any of the following:
☐	☐	1. Severe head trauma or intracranial or spinal surgery within the past 3 months?
☐	☐	2. Major non-cranial surgery or trauma within 14 days with internal bleeding?
☐	☐	3. Spontaneous (non-traumatic) intracranial hemorrhage at any time in the past?
☐	☐	4. Is the patient taking any anticoagulants, including oral or injectable mediations? If yes, clarify when last dose was taken (see PEARLS below)

PEARLS for Anticoagulants:

- Patients may recognize anticoagulants as "blood thinners". Ask about anticoagulants including warfarin (Coumadin or Jantoven), Heparin (IV/IM - including Lovenox), dabigatran (Pradaxa), rivaroxaban (Xarelto), apixaban (Eliquis), betrixaban (Bevyxxa) or edoxaban (Savaysa) and immediately communicate to hospital staff.
- Please note, medication manufacturers are producing new anticoagulants frequently.

PEARLS:

- Stroke requires time sensitive interventions. Time = Brain
- Every minute of acute stroke = about 2 million neurons lost.
- Transport witness, family or caregiver or obtain witness best phone number for hospital staff to verify time of symptom onset or Time Last Known Well (TLKW).
- TLKW is the last time patient known to be at their neurological baseline. If patient awakes with symptoms, TLKW is time patient was last known to be at their neurological baseline – Ask if patient got up during the night and was at baseline!
- Conditions that mimic a stroke include: migraine, hypoglycemia, seizures, intoxication, sepsis, cerebral infectious process, toxic ingestion, neuropathies (Bell's palsy), neoplasms, hypertensive encephalopathy or previous stroke.
- **Posterior Circulation Stroke (PCS):** Unlike anterior strokes, PCS often evades detection with standard stroke screens like CPSS and FAST-ED. Key signs include sudden visual disturbances, loss of balance or coordination, dizziness, or nausea and vomiting. **Balance:** Perform bilateral finger-to-nose and heel-to-shin tests to assess sudden loss of balance, coordination issues, or trouble walking. **Eyes:** Assess trouble seeing out of one or both eyes or sudden double vision by evaluating 4 quadrants of the visual field, having the patient locate your index finger in each quadrant. For patients with concerning PCS symptoms and negative stroke screens, contact **Medical Direction** to consider a stroke alert.

Return to TOC

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Syncope
Adult & Pediatric

2.27

EMT STANDING ORDERS

E

- Routine Patient Care.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Attempt to determine the cause of syncope.
- Acquire and transmit 12-lead ECG, if available. If acute coronary syndrome is suspected (Acute Coronary Syndrome – 3.0).
- Obtain blood glucose analysis (Diabetic Emergencies (Hyperglycemia) – Adult & Pediatric 2.7, or Diabetic Emergencies (Hypoglycemia) – 2.8A, or Diabetic Emergencies (Hypoglycemia) - 2.8P).
- Patients with ongoing mental status changes or coma should be treated per the Altered Mental Status - 2.3A or Altered Mental Status - 2.3P.
- Perform stroke screening exam (Stroke Protocol - 2.26)
- Assess for trauma either as the cause of the syncope or as a consequence of the syncopal event (Spinal Trauma and Assessment - 4.6, Traumatic Emergencies -4.12, or Traumatic Brain Injury - 4.10).
- Prevent and treat for shock (Shock – 2.24A, or Shock 2.24P).
- Consider ALS intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Consider fluids (Shock – 2.24A, or Shock - 2.24P).

PARAMEDIC STANDING ORDERS

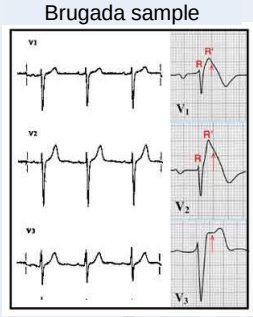
P

- Perform cardiac monitoring.
- Observe for and treat dysrhythmias as indicated.

PEARLS:

- Syncope is defined as a loss of consciousness accompanied by a loss of postural tone with spontaneous recovery.
- In near syncope the patient feels like they are about to pass out but does not have an actual loss of consciousness.
- Consider all syncope to be of cardiac origin until proven otherwise.
- While often thought as benign, syncope can be the sign of more serious medical emergency. All patients with syncope deserve emergency department evaluation, even if they appear normal with few complaints on scene.
- Syncope that occurs during exercise often indicates an ominous cardiac cause. Patients should be evaluated at the ED. Syncope that occurs following exercise is almost always vasovagal and benign.
- Prolonged QTc (generally > 500ms), Brugada Syndrome (incomplete RBBB pattern in V1/V2 with ST segment elevation), Delta waves and hypertrophic obstructive cardiomyopathy should be considered in all patients.
- Syncope can be indicative of many medical emergencies including:
  - Myocardial infarction
  - Pulmonary embolism
  - Cardiac arrhythmias,
  - Vasovagal reflexes
  - Diabetic emergencies
  - Aortic stenosis
  - TIA
  - Poisoning/drug effects
  - Dehydration
  - Hypovolemia
  - Seizures
  - Ectopic pregnancy
  - Stroke

Brugada sample



Return to TOC

Acute Coronary Syndrome
Adult

3.0

Not all patients that complain of chest pain should be treated with aspirin and nitrates. 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

- Routine Patient Care.
- Acquire and transmit 12-lead ECG with baseline vitals within 10 minutes if available. (Do not delay scene time.) Perform serial 12-lead ECG especially when clinical changes are noted (ECG Acquisition, Transmission and Interpretation - 6.2)
  - If 12-lead ECG indicates a STEMI, transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements; notify receiving facility of a "STEMI Alert"
- Administer oxygen only to patients with dyspnea, hypoxia (O_2 saturation < 94%), or signs of heart failure at a rate to keep O_2 saturation 94 – 98%.
- Administer aspirin 324 mg PO (chewable):
  - If patient has taken a partial dose within the last hour, administer additional aspirin dose to equal 324 mg
  - If more than one hour since the patient took any dose of aspirin, administer 324 mg aspirin (chewable)
- Facilitate administration of the patient's own nitroglycerin every 3 – 5 minutes while symptoms persist and systolic BP remains ≥100 mmHg, to a total of 3 doses; contact **Medical Direction** for additional dosing.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access. IV access must be established before administration of nitroglycerin.
- Nitroglycerin 0.4 mg SL every 3 – 5 minutes while symptoms persist and if systolic BP remains ≥ 100 mmHg (MAP ≥ 65).

PARAMEDIC STANDING ORDERS

P

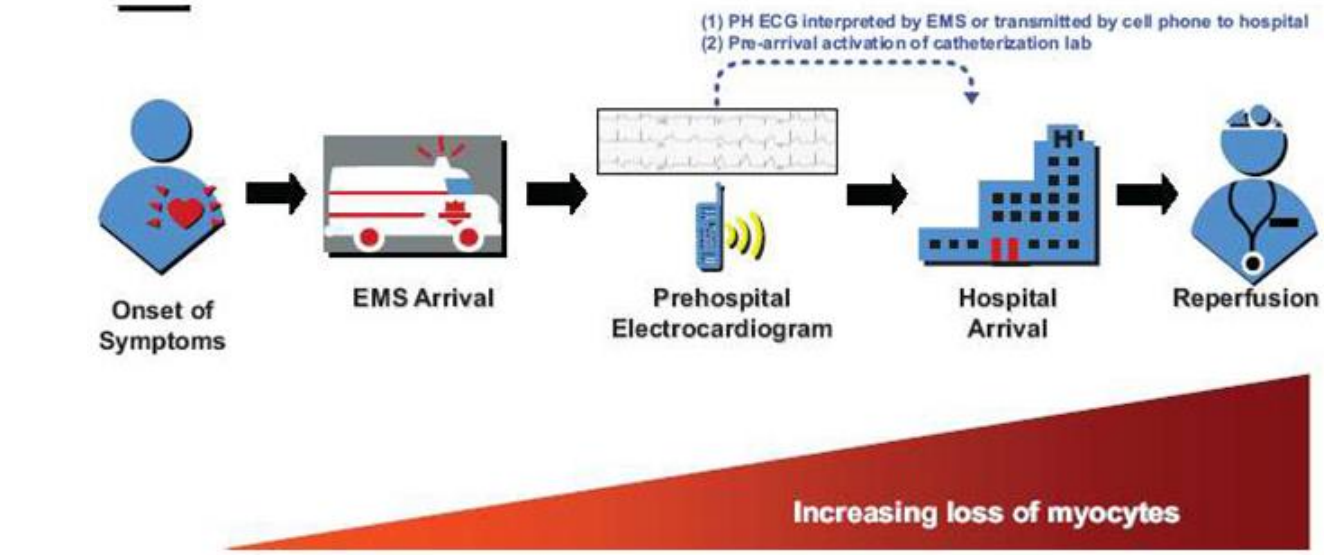
- Monitor ECG rhythm.
- Consider IV nitroglycerin at 10 – 30 mcg/min, increasing by 10 mcg/min every 5 minutes while symptoms persist and systolic BP remains ≥ 100 mmHg. Maximum rate 200 mcg per minute:
  - Two (2) IV lines or equivalent are recommended and the IV nitroglycerin must be on an infusion pump
- If IV nitroglycerin is not available, consider the application of nitroglycerin paste 1 – 2 inches transdermally.
- For chest discomfort unresponsive to nitrates, consider analgesia:
  - Consider fentanyl 25 – 50 mcg slow IV push every 5 minutes up to 300 mcg and systolic BP remains ≥ 100 mmHg (preferred agent), **OR**
  - Consider morphine 2 – 4 mg IV/IM every 5 minutes to a maximum of 15 mg titrated to pain and systolic BP remains ≥ 100 mmHg
- Treat dysrhythmias as needed; refer to the appropriate protocol.

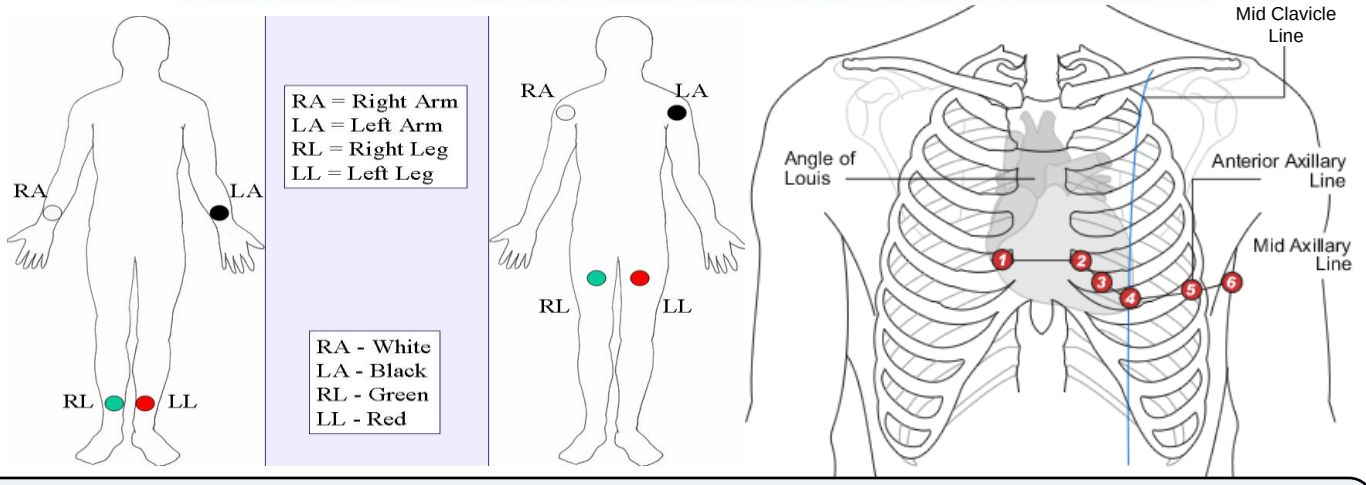
Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypertension, such as sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours, or tadalafil (Cialis, Adcirca) within 48 hours. Also avoid use in patients receiving intravenous prostacyclins 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.
Morphine should be used with caution due to an increased association with mortality.

(Continued)

Acute Coronary Syndrome
Adult

3.0





PEARLS:

- Transmission of 12-lead ECG and/or communication with receiving facility is critical to the activation of a STEMI system.
- If Paramedic interpretation or automated interpretation states: "Acute MI" **or** "Meets ST Elevation MI Criteria," notify the receiving facility of a "STEMI ALERT."
- Obtain 12-lead ECG in all patients with the following signs and symptoms:
  - Chest, jaw or arm discomfort; or
  - Shortness of breath; or
  - Epigastric discomfort; or
  - Syncope, general malaise, or palpitations; or
  - Self-administered nitroglycerin; or
  - After sudden cardiac arrest with return of cardiac activity.
- Administration of aspirin has been shown to decrease mortality in Acute Coronary Syndrome.
- Administer aspirin to every patient with suspected acute coronary syndrome unless they have:
  - History of anaphylaxis to aspirin, NSAIDs, or
  - Evidence of active gastrointestinal or other internal bleeding.
- Any patient with acute coronary syndrome (especially women, patients with a history of diabetes, and the elderly) may present with signs and symptoms other than chest pain including diaphoresis, shortness of breath, weakness, syncope and nausea.

Return to TOC

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Bradycardia
Adult

3.1A

Consider serious/symptomatic bradycardia in adults with heart rates <50 beats per minute. Symptoms may include hypotension, altered mental status, syncope, chest pain, dizziness, or other signs of shock.

EMT STANDING ORDERS

E

- Routine Patient Care.
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Consider the underlying causes of bradycardia (e.g., hypoxia, hypoglycemia, toxicologic and hypothermia, shock, heart block, increased ICP, electrolyte disorder).
- Acquire and transmit 12-lead ECG, if available.
- Obtain glucose reading via glucometer.
- Call for Paramedic intercept, or AEMT if Paramedic not available.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access. Consider IO access if hemodynamically unstable.
- Consider and treat hypovolemia. Administer 500 mL 0.9% NaCl fluid bolus.

PARAMEDIC STANDING ORDERS

P

If Serious Signs or Symptoms (hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure):

- Consider atropine 1 mg IV/IO every 3 – 5 minutes to a total of 3 mg. If atropine is ineffective, transition to transcutaneous pacing.
- Transcutaneous pacing:
  - Consider procedural sedation prior to or during pacing, if feasible:
    - Midazolam 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR** 5 mg IM, may repeat once in 10 minutes, **OR**
    - Lorazepam 1 mg IV/IO, may repeat once in 5 minutes, **OR** 2 mg IM, may repeat once in 10 minutes, **OR**
    - Diazepam 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes
  - Consider analgesia prior to or during transcutaneous pacing, if feasible:
    - Fentanyl 25 – 50 mcg slow IV push, may repeat every 5 minutes to a total of 300 mcg, **OR**
    - Morphine 2 – 4 mg IV every 10 minutes to a total of 15 mg and systolic BP ≥100 mmHg, **OR**
    - Ketamine 0.25 mg/kg IV/IO every 15 minutes prn analgesia
- Consider epinephrine infusion at 2 – 10 mcg/min IV/IO, titrated to effect:
  - Consider push dose epinephrine (10 mcg/mL) for short transport times or as bridge to infusion; prepare 10 mcg/mL by adding 1 mL 0.1 mg/mL epinephrine to 9 mL normal saline, then administer 10-20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical), titrate to effect

Other Causes:

- Contact **Medical Direction** and consider:
  - For symptomatic beta blocker or calcium channel blocker overdose, consider glucagon 2 – 5 mg IV/IO over 3 – 5 minutes. May repeat up to 10 mg; if effective, place on infusion 1 – 5 mg/hr IV/IO via pump
  - For symptomatic calcium channel blocker overdose, hyperkalemia/renal failure, or wide-complex bradycardia, consider:
    - Calcium gluconate 2,000 mg mixed in 50 mL NS or D_5W IV/IO over 10 minutes (preferred if patient not in arrest), may repeat in 10 minutes, **OR**
    - Calcium chloride 1,000 mg (10 mL of a 10% solution) mixed in 50 mL NS or D_5W IV/IO over 10 minutes, may repeat in 10 minutes
  - May repeat as needed. Contact **Medical Direction**

For calcium chloride administration, ensure IV patency and do not exceed 1 mL per minute. Flush with 0.9% NaCl before and after administration.

PEARLS:

- Hyperkalemia should be suspected in dialysis or renal failure patients with ECG changes such as tall peaked T waves, loss of P waves, QRS widening and bradycardia (Hyperkalemia – 2.11A).
- When pushed too quickly, glucagon can cause nausea and vomiting.

Return to TOC

Bradycardia
Pediatric

3.1P

EMT STANDING ORDERS

E

- Routine Patient Care. Administer 100% oxygen.
- Consider and treat the underlying causes of bradycardia (e.g., hypoxia, hypoglycemia and hypothermia).
- Begin/continue CPR if heart rate is <60 bpm **AND** the child shows signs of poor systemic perfusion with hypoperfusion despite adequate ventilation and oxygenation.
- Acquire and transmit 12-lead ECG, if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access. Consider IO access if hemodynamically unstable.
- Consider and treat hypovolemia. Administer 20 mL/kg 0.9% NaCl IV fluid bolus.

PARAMEDIC STANDING ORDERS

P

For Bradycardia With Serious Signs and Symptoms:

- Epinephrine 0.01 mg/kg IV/IO slow push (0.1 mL/kg of 1:10,000) every 3 – 5 minutes (max single dose 1 mL). If no IV/IO access, may give ET dose 0.1 mg/kg (0.1 mL/kg of 1:1,000).
- Consider atropine 0.02 mg/kg IV/IO for increased vagal tone or AV blocks, may repeat once (maximum single dose 0.5 mg).
- Consider transcutaneous pacing.
- Consider procedural sedation prior to or during pacing, if feasible:
  - ***Midazolam 0.05 mg/kg IV/IM or 0.1 mg/kg IN (maximum dose 3 mg); may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV/IM (maximum dose 1 mg); may repeat once in 5 minutes, **OR**
  - Diazepam 0.01 mg/kg IV (max dose 5 mg); may repeat once in 5 minutes.
- Consider analgesia prior to or during transcutaneous pacing, if feasible:
  - Fentanyl 1 mcg/kg IV/IM/IO/intranasal (maximum initial dose 100 mcg). Administer slow over 2 – 3 minutes, **OR**
  - Morphine 0.1 mg/kg IV/IO (maximum initial dose 10 mg); administer slow over 2 – 3 minutes, **OR**
  - Contact **Medical Direction** and consider Ketamine 0.25 mg/kg IV/IO every 15 minutes prn analgesia; administer slow over 2 – 3 minutes
- Reassess patient every 5 minutes. If no contraindications and patient is still in moderate to severe pain, may re-dose fentanyl and morphine at 5 – 10 minute intervals at half the original dose to a total of 3 doses

Other Causes:

- Contact **Medical Direction** and consider:
  - For hypoglycemia (Diabetic Emergencies (Hypoglycemia) – 2.8P)
  - For symptomatic beta blocker overdose or calcium channel blocker overdose, consider glucagon:
    - 1 mg IV/IO (25-40 kg) every 5 minutes as necessary
    - 0.5 mg IV/IO (less than 25 kg) every 5 minutes as necessary
  - For suspected hyperkalemia with ECG changes or symptomatic calcium channel blocker/ beta blocker overdose consider:
    - Calcium gluconate (10% solution) 100 mg/kg IV/IO (maximum dose 2 gm) over 10 minutes (preferred in patient with pulse); may repeat in 10 minutes if clinical indication persists, **OR**
    - Calcium chloride (10% solution) 20 mg/kg IV/IO (maximum dose 1 gm) over 10 minutes, repeat 10 minutes. Contact **Medical Direction** for additional dosing

For IN administration of midazolam use a 5 mg/mL concentration.
For calcium chloride administration, ensure IV patency and do not exceed 1 mL per minute.
Flush with 0.9% NaCl before and after administration.

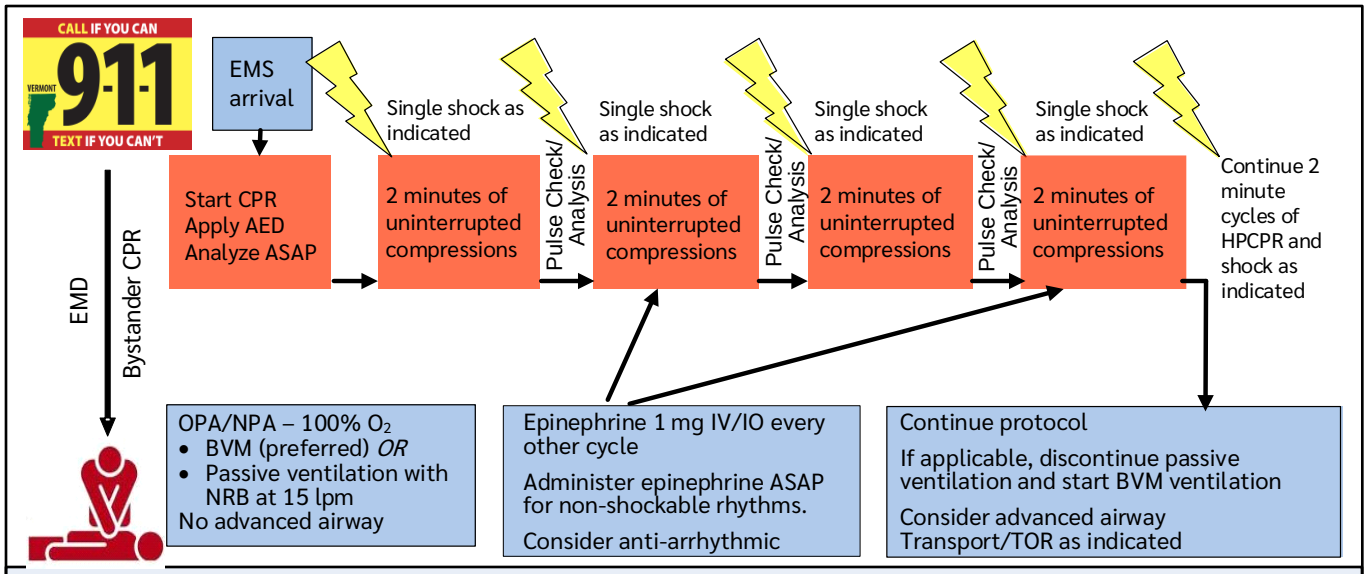
PEARLS:

- In children, bradycardia almost always reflects hypoxia, rather than a primary cardiac problem. It is a pre-arrest rhythm, and the prognosis is poor if left untreated. Immediate delivery of high-flow oxygen and assisted ventilation are essential. Untreated bradycardia will quickly cause shock, hypotension and death.
- Combine age-specific heart rates with signs of respiratory failure and shock while assessing. If child is asymptomatic, consider supportive treatment.

Return to TOC

Cardiac Arrest
Adult

3.2A



- For arrests of non-cardiac etiology, prioritize use of BVM ventilation or advanced airway:
  - Consider immediate transport if unable to clear airway obstruction
- Perform 2 minute cycles of uninterrupted chest compressions.
- Interrupt chest compressions only for rhythm/pulse check and defibrillation.
- Ventilation / Oxygenation options:
  - BVM ventilation (preferred) 1 breath every 10 chest compressions without interrupting compressions, **OR**
  - If resource-limited, apply high flow oxygen via non-rebreather mask (NRB) for passive ventilation

EMT STANDING ORDERS - ADULT

E

- **Immediate care:** High performance CPR with minimal interruptions. (Use metronome if possible.) Administer 100% O_2.
- **Apply AED as soon as possible, analyze rhythm and shock as indicated.** (See AED Algorithm in Appendices.)
- **First 4 cycles:**
  - Continue 2 minute cycles of uninterrupted chest compressions followed by AED analysis and shock for 4 cycles (8 minutes)
  - Place an oral or nasal airway
  - Ventilation / oxygenation options during 4 cycles:
    - BVM ventilation 1 breath every 10 chest compressions during recoil and without interrupting compressions (avoid hyperventiliation), **OR**
    - If resource-limited, apply high flow oxygen via NRB
  - If cardiac arrest is due to suspected opioid overdose, administer naloxone 4 mg IN (Poisoning/Substance Abuse/Overdose – 2.21A)
- **After 4 cycles (8 minutes):**
  - Continue 2 minute cycles of uninterrupted chest compressions
  - If passive ventilation was used, switch to BVM ventilation
- **After 10 cycles (20 minutes):**
  - Assess transport versus Termination of Resuscitation (TOR) Criteria:
    - Arrest not witnessed by emergency medical services personnel
    - NO return of spontaneous circulation after 20 minutes of either BLS alone or combined BLS and ALS in the absence of hypothermia
    - No shock was delivered or advised by the AED
      - ❑ If **ALL** criteria are present, contact **Medical Direction** to consider termination of resuscitation
      - ❑ If **ANY** criteria are missing, contact **Medical Direction** to consider termination of resuscitation **OR** continued resuscitation and transport
      - ❑ If ROSC, continue resuscitation and transport **AND** contact **Medical Direction**

(Continued)

EMT STANDING ORDERS – ADULT (CONTINUED)

E

- If traumatic arrest (Traumatic Cardiac Arrest – 4.11).
- If hypothermic arrest (Hypothermia (Environmental) Adult & Pediatric – 2.13).
- If ROSC occurs, provide post resuscitative care (Post Resuscitative Care – 3.4A).
- Consider termination of efforts or not attempting resuscitation (Do Not Resuscitate (DNR) & Clinician Orders (COLST) – 8.7, and/or Resuscitation Initiation & Termination – 8.17.
- Call for Paramedic intercept. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Do not interrupt chest compressions for advanced airway, IV/IO placement or epinephrine administration.
- During first 4 cycles, consider advanced airway only if airway patency cannot be maintained using basic maneuvers and adjuncts.
- Establish IV/IO access (IV preferred when possible; use IO if IV access cannot be established promptly). Administer 500 mL bolus 0.9% NaCl IV/IO in the absence of pulmonary edema.
- Administer epinephrine 1 mg (0.1mg/mL) IV/IO; repeat every other cycle:
  - For shockable rhythms: Administer epinephrine after first 2-minute cycle
  - For non-shockable rhythms: Administer epinephrine as soon as possible
- After 4 cycles (8 minutes), consider placement of a supraglottic airway without interrupting chest compressions.
- Monitor waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of return of spontaneous circulation (ROSC).
- Consider and correct treatable causes: hypoxia, overdose/poisoning, hypothermia and hypovolemia; treat accordingly.
  - If cardiac arrest is due to suspected opioid overdose, administer naloxone 2 – 4 mg IV/IO/intranasal (Poisoning/Substance Abuse/Overdose – 2.21A)

PARAMEDIC STANDING ORDERS - ADULT

P

- Follow AHA ACLS guidelines unless otherwise specified in these protocols (Cardiac Algorithms – A1).
- After 4 cycles (8 minutes), consider placement of a supraglottic airway or intubation without interrupting chest compressions:
  - During first 4 cycles, consider advanced airway only if airway patency cannot be maintained using basic maneuvers and adjuncts

For ventricular fibrillation (VF)/pulseless ventricular tachycardia (VT):

- Defibrillation when available, with minimum interruption in chest compressions. Use manufacturer's recommendations.
- If no response after second defibrillation, administer:
  - Amiodarone 300 mg IV/IO, repeat dose 150 mg, **OR**
  - Lidocaine 1 – 1.5 mg/kg IV/IO, repeat dose 0.5 – 0.75 mg/kg (maximum total dose 3 mg/kg)
  - For Torsades de Pointes: Magnesium sulfate 1 – 2 g IV/IO over 1 – 2 minutes
  - For refractory VF/VT, consider:
    - Changing pad placement from anterior-apex to anterior-posterior, or vice versa.
    - If second manual defibrillator available, consider double sequential defibrillation procedure. See Double Sequential Defibrillation – 6.1.
    - Consider resuscitation for up to 60 minutes from the time of dispatch, including transport, for potential reversible causes if no return of spontaneous circulation (ROSC) after initial efforts

(Continued)

PARAMEDIC STANDING ORDERS – ADULT (CONTINUED)

P

Narrow complex PEA is often due to a mechanical cause including hemorrhage / hypovolemia, tension pneumothorax, massive MI and pulmonary embolism. Consider causes and treat appropriately including:

- IV fluid boluses for suspected hypovolemia
- Needle decompression for suspected tension pneumothorax (See Needle Decompression Thoracostomy (NDT) - 6.5)
- Consider resuscitation for up to 60 minutes from the time of dispatch, including transport for potential reversible causes if no Return of Spontaneous Circulation (ROSC) after initial efforts

Wide complex PEA is often due to a metabolic cause including hyperkalemia and sodium-channel blocker toxicity. For wide complex PEA, consider:

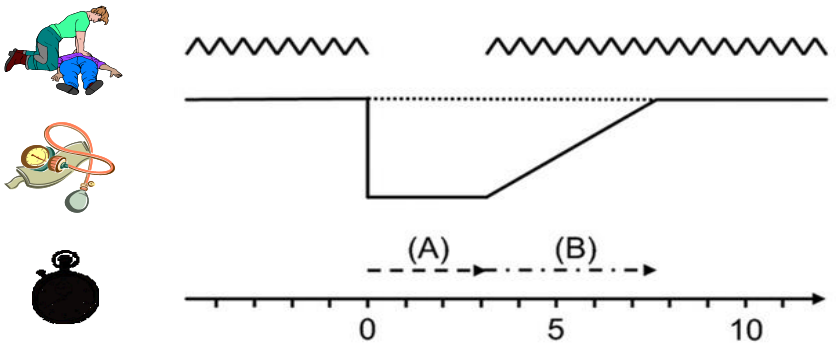
- Calcium chloride (10%) 1,000 mg IV/IO **OR** calcium gluconate 2,000 mg IV/IO; **AND**
- Sodium bicarbonate 1 - 2 mEq/kg IV/IO

For suspected pre-existing metabolic acidosis, consider:

- Sodium bicarbonate 1 - 2 mEq/kg IV/IO

EMS agency should use a “pit crew” approach to ensure the most effective and efficient cardiac arrest care.

EFFECT OF INTERRUPTIONS TO CPR ON CORONARY PERFUSION PRESSURE



PEARLS:

- 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.
- Delay application of mechanical CPR devices until after the first four cycles (8 minutes) of CPR and decision to transport. Mechanical devices should only be used by services that are practiced and skilled at their application, with minimal interruption to compressions.
- Switch compressors every two minutes to minimize fatigue.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered to avoid excessive interruptions in CPR.
- When possible, use live CPR feedback devices and voice recorder to facilitate high-quality CPR.
- Naloxone generally has no role in the management of cardiac arrest. However, if the cardiac arrest is due to a suspected opioid overdose, administer a trial dose of naloxone, as it can be difficult to discern true cardiac arrest from an opioid overdose patient with deep CNS and cardiovascular depression. Do not delay or defer other treatments such as CPR, ventilation and oxygenation.
- Consider limiting doses of epinephrine for refractory ventricular fibrillation/tachycardia to avoid hyperstimulation of myocardium. Contact **Medical Direction** for guidance.

Return to TOC

Cardiac Arrest
Adult

3.2A

ADULT CPR CHECKLIST

☐ **Identify** code commander

- *Name of code commander:* _____

☐ **Ability** to work code?

☐ *Scene* ***safe****?* ☐ ***Move*** *patient?* ☐ *Call for* ***additional resources****?*
☐ ***Update*** *incoming resources, hospital, dispatch, etc.* ☐ ***DNR****?*

☐ Initiate **continuous compressions**

☐ ***Switch compressors*** *every two minutes at* ***pulse check***

☐ Apply **AED**

☐ ***Analyze*** *immediately* ☐ ***Position*** *monitor visibly*

☐ Place **OPA / NPA** @ _____

☐ **High Flow O_2** via **BVM** or **NRB**

- ***Ventilate*** *every 10 compressions*
- *Consider need for* ***suctioning*** *or* ***advanced airway***

☐ Connect **SPO_2** ☐ Connect **End Tidal CO_2**

- ***Enable*** *end tidal monitoring*

☐ Obtain **history** *(prior symptoms?)*

- Time last known well: _____
- Bystander CPR? YES | NO

☐ Secure **IV/IO** access, initiate 500 ml bolus

- *Obtain two points of access,* ***IV*** *preferred*

☐ *For IO - apply* ***pressure bag*** *to Normal Saline*

☐ *Administer* ***Cardiac Epi*** *(1 ampule, (0.1 mg/mL) 1 mg IV/IO)*

- ***Repeat*** *every three to five minutes*
  - ☐ *Dose 1 @* _____ ☐ *Dose 2 @* _____ ☐ *Dose 3 @* _____
  - ☐ *Dose 4 @* _____ ☐ *Dose 5 @* _____ ☐ *Dose 6 @* _____

Analysis	Time	Shock	ROSC?
Analysis 1		Y | N	☐
Analysis 2		Y | N	☐
Analysis 3		Y | N	☐
Analysis 4		Y | N	☐
Analysis 5		Y | N	☐
Analysis 6		Y | N	☐
Analysis 7		Y | N	☐
Analysis 8		Y | N	☐
Analysis 9		Y | N	☐
Analysis 10		Y | N	☐

☐ Consider **treatable causes of cardiac arrest**

	Hypoxia	Asthma/COPD	Hypovolemia	Overdose	Environmental
Assess:	SPO_2: $EtCO_2$:	SPO_2/$EtCO_2$, Breath Sounds: *mg/dL*	Bleeding, vomiting, diarrhea, shock prior to arrest.	Pupils, signs of drug use, Rx drug OD:	Surroundings, skin temp
Treat:	☐ *High flow O_2*	☐ *Nebulizers*	☐ ***Fluid bolus***	☐ *Naloxone*	☐ *Warm/cool*

Paramedic *– consider epi, bicarb, antiarrhythmics, calcium gluconate/chloride, needle chest decompression*

☐ **Discuss** with crew

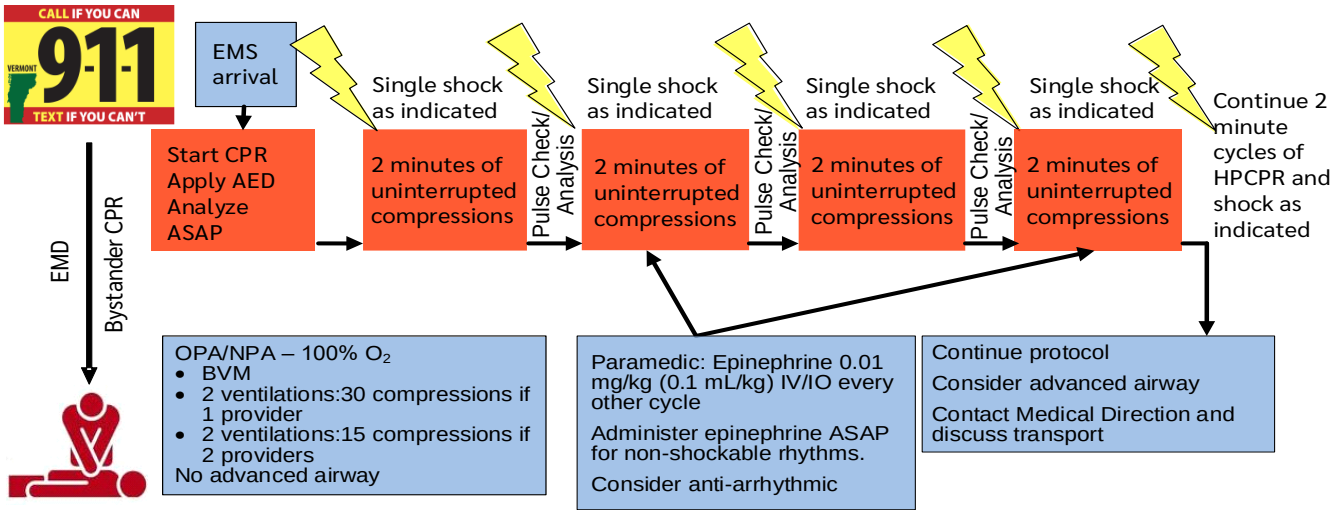
- *Consider additional causes, interventions and transport decision/destination*

☐ ***Designate*** *a responder as a bystander liaison*

Return to TOC

Cardiac Arrest
Pediatric

3.2P



- Perform 2-minute cycles of high performance CPR.
- Rhythm/pulse check and defibrillation occur between cycles.
- Ventilation / Oxygenation options:
  - One provider: 2 breaths every 30 compressions
  - Two providers: 2 breaths every 15 compressions
  - Advanced airway in place: continuous chest compressions with one BVM ventilation every 5 compressions interposed asynchronously.

EMT STANDING ORDERS

E

- Immediate high performance CPR with minimal interruptions (use metronome if possible). Administer 100% oxygen.
- **Apply AED and use as soon as possible.** From birth to age 8 years, use pediatric AED pads.
- If pediatric AED pads are unavailable, providers may use adult AED pads, provided the pads do not overlap.
- If return of spontaneous circulation occurs, treat accordingly (Post Resuscitative Care – 3.4P).
- Consider immediate transport for airway obstruction.
- If cardiac arrest is due to suspected opioid overdose, administer naloxone (Poisoning/ Substance Abuse/Overdose – 2.21P).
- If hypothermic arrest (Hypothermia (Environmental) Adult & Pediatric – 2.13).
- After 10 cycles (20 minutes), transport or contact Medical Direction to consider termination of efforts (Resuscitation Initiation and Termination - 8.17, and Do Not Resuscitate (DNR) Clinician Order (COLST) - 8.7).
- Call for Paramedic intercept. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Do not interrupt chest compressions for advanced airway or IV/IO placement.
- Establish IV/IO access (IV preferred when possible; use IO if IV access cannot be established promptly).
- BVM ventilation is the preferred method of ventilation for pediatric population. However, if unsuccessful, consider placement of supraglottic airway.
  - Once an advanced airway is in place, perform continuous chest compressions with one ventilation every 5 compressions interposed asynchronously
- Monitor waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of return of spontaneous circulation (ROSC).

(Continued)

Cardiac Arrest
Pediatric

3.2P

ADVANCED EMT STANDING ORDERS

A

- Consider and correct treatable causes: hypoxia, overdose/poisoning, hypothermia, hypoglycemia, and hypovolemia—treat as per specific protocol.
- Administer 0.9% NaCl 20 mL/kg fluid bolus IV/IO.

PARAMEDIC STANDING ORDERS

P

- If ventilation is adequate with BVM, routine placement of advanced airway can be delayed.
- Placement of an advanced airway during cardiac arrest should not interrupt chest compressions. In this setting, supraglottic airways and ETTs can be considered equivalent. ETT placement, if used, should be limited to 1 attempt of 10 seconds or less, as long as BVM or alternate airway provides adequate chest rise.
- Consider tension pneumothorax and treat with needle decompression if indicated (Needle Decompression Thoracostomy (NDT) - 6.5).
- For suspected pre-arrest metabolic acidosis, suspected or known hyperkalemia (dialysis patient), or known tricyclic antidepressant overdose, consider sodium bicarbonate 1 mEq/kg IV/IO. Do not mix with any resuscitation drugs. Flush IV tubing with 0.9% NaCl before and after drug administration. Do not use routinely in cardiac arrest.
- For known or suspected hyperkalemia or symptomatic calcium channel blocker/ beta blocker overdose consider:
  - Calcium gluconate (10% solution) 100 mg/kg IV/IO (maximum dose 2 gm) with a maximum 2 gm/dose over 5 minutes; may repeat in 10 minutes if clinical indication persists, **OR**
  - Calcium chloride (10% solution) 20 mg/kg IV/IO (maximum dose 1 gm) over 5 minutes, repeat 10 minutes; if effective consider IV infusion 20 mg/kg/hour
    - Do not mix with or infuse immediately before or after sodium bicarbonate without intervening flush. Do not use routinely in cardiac arrest.

For Ventricular Fibrillation (VF)/Pulseless Ventricular Tachycardia (VT):

- Use manufacturer's recommendations for joule settings. In general, defibrillate at 2J/kg; perform CPR for 2 minutes and recheck rhythm; if still a shockable rhythm, defibrillate at 4J/kg; perform CPR for 2 minutes; reassess every 2 minutes and continue to defibrillate at 4J/kg.
- If no response after first defibrillation, administer epinephrine 0.01 mg/kg (0.1 mL/ kg) IV/IO **OR** 0.1 mg/kg (0.1 mL/kg) via ETT; repeat every other cycle.
- If no response after second defibrillation, consider:
  - Amiodarone 5mg/kg (maximum 300 mg) IV/IO. May repeat up to 2 times for refractory VF/VT, **OR**
  - Lidocaine 1 mg/kg IV/IO (maximum dose 100 mg)
  - For Torsades de Pointes: Magnesium sulfate 25 – 50 mg/kg (maximum 2 grams) IV/IO over 1 – 2 minutes

(Continued)

Cardiac Arrest
Pediatric

3.2P

PARAMEDIC STANDING ORDERS (CONTINUED)

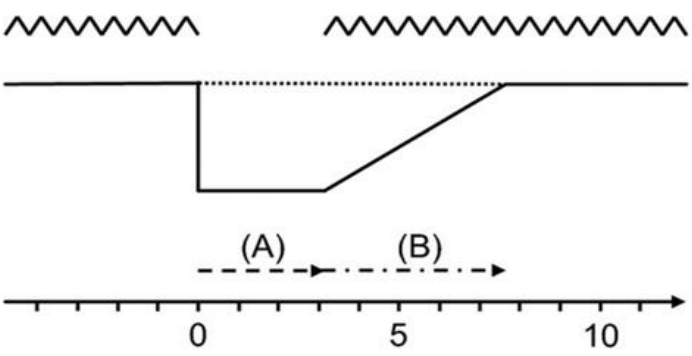
P

For Asystole or Pulseless Electrical Activity (PEA):

- Administer epinephrine as soon as possible:
  - 0.01 mg/kg (0.1 mL/kg) IV/IO, may repeat every other cycle, **OR**
  - 0.1 mg/kg (1 mg/mL) via ETT, may repeat every other cycle
- Give 2 minutes of CPR, then check rhythm:
  - If asystole or PEA, continue epinephrine and 2 minutes of CPR until:
  - Pulse obtained, **OR**
  - Shockable rhythm obtained, **OR**
  - Decision made to discontinue further efforts. Contact **Medical Direction** for guidance.

EMS agency should use a "pit crew" approach to ensure the most effective and efficient cardiac arrest care. Except as indicated in this protocol, follow applicable AHA ACLS and BLS guidelines.

EFFECT OF INTERRUPTIONS TO CPR ON CORONARY PERFUSION PRESSURE



Compressions

Coronary perfusion pressure – note the interval of interruption [A] as well as the interval until the restoration of coronary perfusion pressure [A+B]

Time in Seconds

PEARLS:

- Optimize oxygenation, ventilation and volume status. Cardiac arrest in children typically results from progressive deterioration in respiratory or cardiovascular function.
- 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. Check rhythm and pulse during switch to avoid excessive interruptions in CPR.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered to avoid excessive interruptions in CPR.Avoid excessive ventilation.
- Do not use mechanical CPR devices on children.

Return to TOC

Congestive Heart Failure (Pulmonary Edema) Adult

3.3

EMT STANDING ORDERS

E

- Routine Patient Care.
- Place the patient in a semi-sitting or full sitting position.
- Contact **Medical Direction** for online order to facilitate administration of the patient's own nitroglycerin, while symptoms persist and systolic BP is ≥ 140 mmHg.
- Acquire and transmit 12-lead ECG, if available.
- Consider Continuous Positive Airway Pressure (CPAP) with maximum 10 – 15 cm H_2O pressure support (Continuous Positive Airway Pressure (CPAP) - 5.4).
  - Consider CPAP for patient with moderate to severe respiratory distress concurrent with the following signs and symptoms:
    - Oxygen saturation < 94%
    - Respiratory rate > 25/minute
    - Retractions or accessory muscle use
- SBP must be ≥ 100 mmHg (MAP ≥ 65) to utilize CPAP
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Contact **Medical Direction** to consider nitroglycerin (standing order for Paramedics):
  - For systolic BP of 140 – 160 mmHg: nitroglycerin 0.4 mg SL
  - For systolic BP of 160 – 200 mmHg: nitroglycerin 0.8 mg SL (2 tabs/sprays)
  - For systolic BP > 200 mmHg: nitroglycerin 1.2 mg SL (3 tabs/sprays)
  - The above doses may be repeated every 5 minutes until symptomatic improvement or systolic BP is 140 mmHg.

PARAMEDIC STANDING ORDERS

P

- Titrate until symptomatic improvement or systolic BP of 140 mmHg:
  - For systolic BP of 140 – 160 mmHg - IV nitroglycerin start at 50 mcg/min
  - For systolic BP of 160 – 200 mmHg - IV nitroglycerin start at 100 mcg/min
  - For systolic BP > 200 mmHg – IV nitroglycerin start at 200 mcg/min

  Note: It is recommended to have two (2) IV lines in place and the IV nitroglycerin must be on an infusion pump. Maximum dose of 400 mcg/min
- If patient improves after SL nitroglycerin, may apply nitroglycerin paste 1" – 2" transdermally.
- Confirm pulmonary edema using point-of-care ultrasound, if available and credentialed.

Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypertension, such as: sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours, or tadalafil (Cialis, Adcirca) within 48 hours. Also avoid use in patients receiving intravenous prostacyclins 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.

PEARLS:

- Nitroglycerin is the first-line medication for congestive heart failure.
- Furosemide and Narcotics have NOT been shown to improve the outcomes of EMS patients with pulmonary edema.
- If patient has taken nitroglycerin without relief, consider loss of potency due to age.
- If Nitropaste is used, do not continue to use Nitroglycerin SL unless symptoms worsen.
- Allow the patient to be in their position of comfort to optimize their breathing effort.

Return to TOC

Post Resuscitative Care
Adult

3.4A

EMT STANDING ORDERS

E

- Optimize ventilation and oxygenation:
  - Initial ventilation rate of 10 – 12 breaths/min
  - Administer oxygen as appropriate with a target of achieving 94 – 98% saturation
- Acquire and transmit a 12-lead ECG, if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- If advanced airway is present, start ventilations at 10 breaths/min.
- Titrate ventilation rate to waveform capnography of 35 to 45 mmHg.
- When feasible, titrate FiO_2 to minimum necessary to achieve SpO_2 of 94 – 98%.
- If SBP < 90 mmHg (MAP < 65) administer 0.9% NaCl 500 mL fluid bolus IV/IO. Contact **Medical Direction** for additional fluid dosing.

PARAMEDIC STANDING ORDERS

P

- Maintain systolic blood pressure of ≥ 90 mmHg (MAP ≥ 65).
- Secure advanced airway if indicated (Orotracheal Intubation - 5.9).

If cardiac arrest was the result of VF or VT, manage the patient as follows:

- If amiodarone/lidocaine was administered during resuscitation, do not administer additional doses. However, if the patient is having frequent PVCs or runs of VT, or if the transport time will exceed 30 minutes, start an antidysrhythmic:
  - Amiodarone maintenance infusion of 1 mg/min IV/IO, **OR**
  - Lidocaine maintenance infusion 1 – 4 mg/min IV/IO (30 – 50 mcg/kg/min)
- Do not use amiodarone if the patient has heart block or profound bradycardia (heart rate < 60, second-degree type II AV block, or third-degree AV block).
- Do not use lidocaine if CHF, cardiogenic shock, heart block or WPW.

For post-resuscitation hypotension:

- Administer 0.9% NaCl in 250 – 500 mL boluses. Total volume should not exceed 2,000 mL.
- Consider: (An infusion pump is required for the use of these pressor agents)
  - Norepinephrine infusion 1 to 30 mcg/min IV/IO titrated to effect (preferred agent), **OR**
  - Epinephrine infusion 2 – 10 mcg/min IV/IO titrated to effect, **OR**
  - Consider epinephrine push dose (10 mcg/mL) for short transport times or as bridge to infusion. Prepare 10 mcg/mL by adding 1 mL 0.1 mg/mL epinephrine to 9 mL normal saline, then administer 10 – 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical)
- Consider nasogastric or orogastric tube for the intubated patient.

PEARLS:

- Recognition and treatment of a STEMI are critical in the post-cardiac arrest patient. Consider transport of patient to the most appropriate facility in accordance with local STEMI guidelines/agreements. Notify receiving facility of a "STEMI ALERT" **(**Acute Coronary Syndrome – 3.0A).

- Avoid hyperventilation as it increases intrathoracic pressures, potentially worsening hemodynamic instability. Hyperventilation may also cause hypocarbia and elevated arterial oxygen levels (hyperoxia) and increased hospital mortality post-resuscitation from cardiac arrest.
- Monitor patient closely for recurrent cardiac arrest or seizures.

Return to TOC

Post Resuscitative Care
Pediatric

3.4P

EMT STANDING ORDERS

E

- Optimize ventilation and oxygenation:
  - Initial ventilation rate of 12 – 20 breaths/min
  - Administer oxygen as appropriate with a target of achieving 94 – 98% saturation
- Acquire and transmit a 12-lead ECG, if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- If advanced airway is present, ventilation rate is 8 – 10 breaths/min.
- Titrate ventilation rate to waveform capnography of 35 – 45 mm Hg.
- When feasible, titrate FiO_2 to minimum necessary to achieve SpO_2 of 94 – 98%.
- Maintain systolic blood pressure 70 mmHg + (2 x age). Administer fluid bolus of 20 mL/kg of 0.9% NaCl (use syringe push method for infants and small children). May repeat to a maximum 60 mL/kg.

PARAMEDIC STANDING ORDERS

P

- Secure advanced airway if indicated (Orotracheal Intubation - 5.9).

If cardiac arrest was the result of VF or VT, manage the patient as follows:

- If amiodarone/lidocaine was administered during resuscitation, do ***not*** administer additional doses. However, if the patient is having frequent PVCs or runs of VT, or if the transport time will exceed 30 minutes, start an antidysrhythmic:
  - Amiodarone maintenance infusion of 0.005 – 0.01 mg/kg/min IV/IO via pump, **OR**
  - Lidocaine 20 – 50 mcg/kg/min IV/IO via pump
- Do not use amiodarone if the patient has heart block or profound bradycardia (heart rate < 60, second-degree type II AV block, or third-degree AV block).

For post-resuscitation hypotension:

- Administer fluid bolus of 20 mL/kg of 0.9% NaCl by syringe push method (may repeat to a maximum **60** mL/kg), **AND/OR**
- Consider: (*An infusion pump is required for the use of these vasopressors*)
  - Epinephrine 0.1 – 1 mcg/kg/min IV/IO titrated to effect (preferred agent), **OR**
  - Norepinephrine infusion 0.1 – 2 mcg/kg/min IV/IO titrated to effect
- Consider nasogastric or orogastric tube for the intubated patient.

PEARLS:

- Avoid hyperventilation as it increases intrathoracic pressures, potentially worsening hemodynamic instability. Hyperventilation may also cause hypocarbia and elevated arterial oxygen levels (hyperoxia) and increased hospital mortality post-resuscitation from cardiac arrest.
- Monitor patient closely for recurrent cardiac arrest or seizures.

Return to TOC

Tachycardia
Adult

3.5A

EMT STANDING ORDERS

E

- Routine Patient Care. Confirm Tachyarrythmia: heart rate typically ≥ 150/min.
- Acquire and transmit 12-lead ECG, if available.
- Administer oxygen as appropriate, with a target of achieving 94 – 98% saturation.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access (preferably no more distal than AC fossa). Consider IO access (proximal humeral preferred) if hemodynamically unstable and unable to obtain IV access.

PARAMEDIC STANDING ORDERS

P

Follow AHA ACLS guidelines unless otherwise specified in this protocol. Utilize continuous cardiac monitoring. Search for underlying causes.

SIGNS OF HEMODYNAMIC INSTABILITY: hypotension, acutely altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure.

- **Regular narrow complex tachycardia:**
  - Consider adenosine 6 mg rapid IV/IO push, followed by rapid flush (may dilute adenosine with 20 mL of 0.9% normal saline and give as rapid IV push):
    - May repeat at dose of 12 mg if no conversion
    - May repeat successful dose if dysrhythmia recurs after conversion
    - If adenosine is not successful, proceed to synchronized cardioversion
- **Synchronized cardioversion:**
  - Use the following initial energy doses, then escalate to the next higher energy level if no conversion. Biphasic devices: follow manufacturer's recommendations for dosing:
    - **Regular narrow complex tachycardia (SVT)**: 50 – 100J biphasic or 200J monophasic
    - **Irregular narrow complex tachycardia**: 120 – 200J biphasic or 200J monophasic
    - **Regular wide complex tachycardia**: 100J biphasic or monophasic
    - **Irregular/polymorphic wide complex tachycardia (VT)**: 120 – 200J biphasic or 360J monophasic, using unsynchronized defibrillation doses if unable to sync
- **Procedural sedation:**
  - Administer procedural sedation prior to or during cardioversion, if feasible. Do not delay cardioversion:
    - Midazolam 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR** 5 mg IM may repeat once in 10 minutes, **OR**
    - Lorazepam 1 mg IV/IO, may repeat once in 5 minutes, **OR** 2 mg IM, may repeat once in 10 minutes, **OR**
    - Diazepam 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes

IF HEMODYNAMICALLY STABLE

- **Regular narrow complex tachycardia:**
  - Attempt Valsalva vagal maneuver
    - If vagal maneuvers fail:
      - ❑ Adenosine 6 mg rapid IV push, followed by rapid flush (may dilute adenosine with 20 mL of 0.9% normal saline and give as rapid IV push)
      - ❑ If tachycardia continues, give adenosine 12 mg rapid IV push, followed by rapid flush
      - ❑ May repeat successful dose if rhythm recurs after conversion
      - ❑ If SVT persists, consider diltiazem 0.25 mg/kg slow IV over 2 minutes (maximum dose 20 mg).
        - ❖ For elderly patient or patient with low BP, consider 10 mg maximum initial dose and 20 mg maximum second dose.
        - ❖ May repeat diltiazem in 15 minutes at 0.35 mg/kg (maximum dose 25 mg), if necessary.

(Continued)

Tachycardia
Adult

3.5A

PARAMEDIC STANDING ORDERS

P

IF HEMODYNAMICALLY STABLE (continued from previous page)

- **Irregular narrow complex tachycardia:**
  - Diltiazem 0.25 mg/kg slow IV over 2 minutes (maximum dose 20 mg).
    - For elderly patient or patient with low BP, consider 10 mg maximum initial dose and 20 mg maximum second dose.
    - May repeat diltiazem in 15 minutes at 0.35 mg/kg IV (maximum dose 25 mg), if necessary.
    - Consider maintenance infusion at 5 – 15 mg/hour IV, **OR**
  - Metoprolol 5 mg IV over 2 – 5 minutes
    - May repeat every five minutes to a maximum of 15 mg as needed to achieve a ventricular rate of 90 – 100 BPM
- **Wide complex tachycardia:**
  - If **regular and monomorphic,** consider:
    - Adenosine 6 mg rapid IV push, followed by rapid flush
    - If tachycardia continues, give adenosine 12 mg rapid IV push, followed by rapid flush
    - If unsuccessful, consider (infusion pump required):
      - Procainamide 10 mg/kg IV, dilute in 100 mL 0.9% NaCL (1500 mg max dose), administer over 20 minutes until arrythmia suppressed, hypotension ensues, or QRS duration increases > 50%. Avoid if prolonged QT or CHF, **OR**
      - Amiodarone 150 mg IV/IO mixed with 50 – 100 mL D5W or 0.9% NaCl over 10 minutes. May repeat once in 10 minutes. If successful, consider a maintenance infusion of 1 mg/min
      - Lidocaine (considered second-line therapy) 1 – 1.5 mg/kg IV. May repeat once in 5 minutes to maximum of 3 mg/kg. If successful, consider a maintenance infusion of 1 – 4 mg/minute.
  - If **irregular and monomorphic**, consider (infusion pump required):
    - Procainamide 10 mg/kg IV, dilute in 100 mL 0.9% NaCL (1500 mg max dose), administer over 20 minutes until arrythmia suppressed, hypotension (SBP <90), or QRS duration increases > 50%. Avoid if prolonged QT or CHF, **OR**
    - Amiodarone 150 mg IV/IO mixed with 50 – 100 mL D5W or 0.9% NaCl over 10 minutes. May repeat once in 10 minutes. If successful, consider a maintenance infusion of 1 mg/min
- **Polymorphic Ventricular Tachycardia/Torsades de Pointes:**
  - If pulse present, consider magnesium sulfate 2 gm IV/IO diluted in 50 mL D_5W or 0.9% NaCl over 10 minutes

Diltiazem, metoprolol, amiodarone, lidocaine and adenosine are contraindicated in patients with a history of or suspected Wolff-Parkinson-White (WPW) syndrome.
Medications should be administered cautiously in frail or debilitated patients; lower doses should be considered.
Be cautious in rate controlling patients in rapid atrial fibrillation (A Fib) who may be compensating for another disease process such as sepsis or pulmonary embolism.
Avoid procainamide or amiodarone in patients currently on dofetilide (Tikosyn) or soltalol (Betapace) as administration of procainamide may further prolong the QT interval and lead to torsades de pointes.

PEARLS:

- Consider and treat potential underlying causes, e.g., hypoxemia, dehydration, fever.
- Wide complex tachycardia should be considered Ventricular Tachycardia until proven otherwise.
- Do not administer Diltiazem to wide complex tachycardia.
- If ventricular rate is > 150/min, prepare for cardioversion. May give brief trial of medications based on specific arrhythmias. Cardioversion is generally not needed if heart rate is ≤150.
- Adenosine should be administered rapidly though a proximal (e.g., antecubital) vein site followed by a rapid saline flush.
- For best results of vagal maneuver: start with patient's head of bed elevated by 30 degrees. After patient performs vagal maneuver sustained over 15 seconds, lay the patient flat and elevate their legs.

Return to TOC

Tachycardia
Pediatric

3.5P

EMT STANDING ORDERS

E

- Routine Patient Care.
- Acquire and transmit 12-lead ECG, if available.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access. Consider IO access if hemodynamically unstable.

PARAMEDIC STANDING ORDERS

P

Follow AHA PALS guidelines unless otherwise specified in this protocol. Search for underling causes, utilize continuous cardiac monitoring.

SIGNS OF HEMODYNAMIC INSTABILITY: altered mental status, hypotension, signs of shock.

IF HEMODYNAMICALLY UNSTABLE

- N**arrow complex/probable SVT**:
  - Adenosine 0.1 mg/kg rapid IV/IO not to exceed 6 mg (first dose), followed by rapid flush
    - Repeat once at 0.2 mg/kg not to exceed 12 mg (subsequent dose)
  - If adenosine is ineffective or for wide complex, perform synchronized cardioversion:
    - 0.5 – 1J/kg; if unsuccessful, increase to 2J/kg
  - Administer procedural sedation prior to or during cardioversion, if feasible:
    - Midazolam 0.05 mg/kg IV/IO/intranasal, **OR**
    - Diazepam 0.05 mg/kg IV/IO

IF HEMODYNAMICALLY STABLE

- **Narrow complex, probable supraventricular tachycardia, or regular wide complex tachycardia (monomorphic QRS ONLY)**:
  - Adenosine 0.1 mg/kg IV/IO not to exceed 6mg (first dose)
    - May repeat once at 0.2 mg/kg IV/IO not to exceed 12 mg (subsequent dose)
- **For wide complex tachycardia:**
  - Contact **Medical Direction** and consider amiodarone 5 mg/kg IV/IO (maximum 300 mg) over 20-60 minutes
- **For polymorphic ventricular tachycardia/Torsades de Pointes:**
  - Magnesium sulfate 25 – 50 mg/kg IV/IO in 10 to 50 mL NS or D_5W, over 10 – 20 minutes (maximum dose 2 grams)

PEARLS:

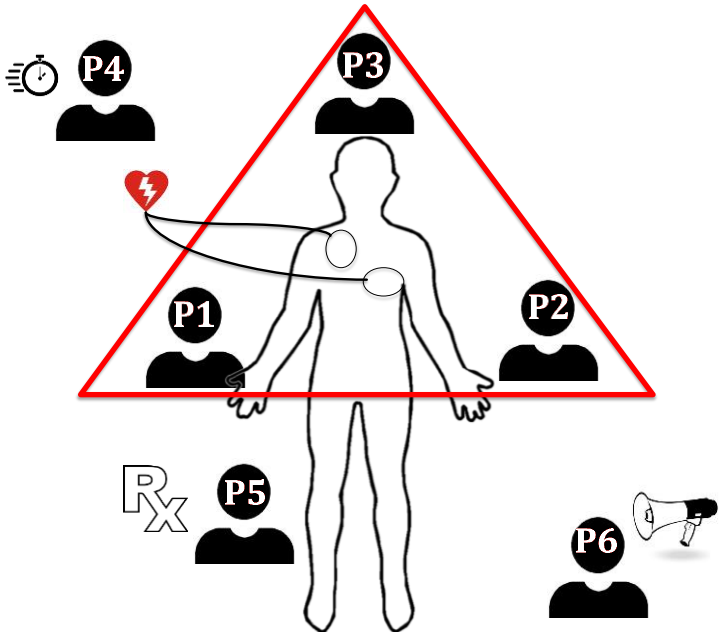
- Consider and treat potential underlying causes, e.g., hypoxemia, dehydration, fever.
- Probable Sinus Tachycardia
  - Compatible history consistent with known cause
  - P waves are present and normal
  - Variable R-R and constant P-R interval
  - Infants: rate usually < 220/min
  - Children: rate usually < 180/min
- Probable Supraventricular Tachycardia
  - Compatible history (vague, nonspecific); history of abrupt onset / rate changes
  - P waves absent / abnormal
  - Heart-rate is NOT variable
  - Infants: rate usually > 220/min
  - Children: rate usually > 180/min

Return to TOC

Team Focused CPR
Adult & Pediatric

3.6

EMS agency should use a “pit crew” approach when using this protocol to ensure the most effective and efficient cardiac arrest care. Training should include teamwork simulations integrating BLS, and ALS crew members who regularly work together. EMS systems should practice teamwork using “pit crew” techniques with predefined roles and crew resource management principles. For example:



POSITION #1-**Compressor 1** (right side of patient):
- Sets up defibrillator.
- Alternates 2 minutes of chest compressions with Position 2.
- Assists Position 3 with ventilations in off cycle.

POSITION #2-**Compressor 2** (left side of patient):
- Initiates 2 minutes of chest compressions at rate of 100 – 120 / min.
- Assists Position 3 with ventilations in off cycle.

POSITION #3-**Airway** (At patient’s head):
- Opens airway and inserts OPA.
- Assembles BVM or if resource limited, assemble NRB.
- If using BVM, provide 2-handed mask seal.
- Inserts advanced airway after 8 minutes/4 cycles (or sooner if BVM ventilations are inadequate).

POSITION #4-**Team Leader** (Outside CPR triangle):
- Coaches appropriate rate and depth of compressions.
- Calls for compressor change every two minutes.
- Calls for rhythm analysis every 2 minutes, immediate shock if indicated.
- Monitor CPR quality and use of metronome at 100 – 120 bpm.
- Assumes duties of Position 5/6 if limited to four rescuers throughout resuscitation.

POSITION #5-**Vascular/Meds** (Outside CPR triangle):
- Initiates IV/IO access (IV access preferred).
- Administers medications per protocol.

POSITION #6-**Code Commander** (Outside CPR triangle):
- Ideally highest level provider.
- Communicates/interfaces with CPR Team Leader.
- Coordinates patient treatment decisions.
- Communicates with family/loved ones.
- Completes Cardiac Arrest Check List.

(Continued)

Team-Focused CPR
Adult & Pediatric

3.6

- If feasible and the scene is safe, immediately upon arrival, one member of the crew should rapidly enter the scene without equipment (other than gloves) to begin chest compressions.
- Clear some space to optimize your working environment. Move furniture or get the patient in a position that will allow a rescuer space to kneel on both sides of them, and where there is sufficient room at the head. Effectiveness of chest compressions decreases during patient movement. Therefore resuscitate the patient as close to the scene as operationally feasible.
- Position 1 and 2 are ideally set up on opposite sides of patient's chest and perform continuous chest compressions, alternating every 2 minutes to avoid fatigue.
- REMEMBER: Effective chest compressions are one of the most important therapies for the pulseless patient. Effective is defined as:
  - A rate of at least 100 and less than 120 compressions/minute - Use of metronome or CPR feedback device is essential. (e.g. built into monitor or smart phone app)
  - A depth of 2 – 2.4 inches (Infant**:** 1½-inch depth; Child: 2-inch depth)
  - Allow for complete chest recoil (avoid leaning on chest)
  - Do not interrupt compressions to obtain IV access or perform airway management.
  - Do not hyperventilate as it increases intrathoracic pressure and decreases blood return to the heart. Ventilate 1 breath every 10 compressions without interrupting chest compressions.
    - Pediatric: Ventilate at a ratio of 15:2, with one breath delivered after the 14th and 15th compressions)
- Chest compressions should only be interrupted during rhythm check (AED analysis or manual) and defibrillation shocks. Continue compressions when AED/ defibrillator is charging, if device allows.
- During interruptions compressor's hands should hover over chest.
- Perform pulse check simultaneously with rhythm check.
- With the goal of immediate uninterrupted chest compressions, if a mechanical device is used, it should not lead to delay or interruption in chest compressions; consider delayed application.
- Pre-charge manual defibrillators prior to rhythm check to ensure rapid defibrillation if a shockable rhythm is present. If no shock is indicated, disarm the device (dump the charge)
- Utilize $ETCO_2$ to assess CPR quality and monitor for signs of ROSC.
- Use of a CPR checklist to ensure that all best practices are followed during CPR.

Example Cardiac Arrest Check List

- ❑ Code commander and pit crew roles identified
- ❑ Chest compression interruptions minimized
- ❑ Compressors rotated at minimum every 2 minutes
- ❑ Metronome set between 100 and 120 beats per minute
- ❑ AED/defibrillator applied
- ❑ OPA/NPA placed
- ❑ O_2 flowing and attached to NRB/BVM
- ❑ $ETCO_2$ waveform present
- ❑ IV/IO access established
- ❑ Possible causes considered
- ❑ Gastric insufflation limited and gastric decompression considered
- ❑ Family present and ongoing communication provided

Reversable Causes

Hypovolemia	Tablets/toxins
Hypoxia	Tamponade
Hydrogen Ions (acidosis)	Tension pneumothorax
Hypothermia	Thrombosis (MI)
Hyper/hypokalemia	Thrombosis (PE)

Return to TOC

Burns/Electrocution/Lightning
Adult & Pediatric

4.0

EMT STANDING ORDERS

E

- Routine Patient Care.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- Assess for evidence of smoke inhalation or burns; soot around mouth or nostrils, singed hair, carbonaceous sputum.
- If the patient has respiratory difficulty, altered level of consciousness and /or hemodynamic compromise (Airway Management Protocol - 5.1A, or Airway Management Protocol - 5.1P, and Smoke Inhalation/Carbon Monoxide Poisoning - Adult &Pediatric 2.25).

Thermal

- Stop burning process with water or normal saline
- Cut/remove non-adherent clothing and jewelry. Do not remove skin or tissue.
- To protect from infection, cover burns with clean dry sterile dressing or sheets.
- Keep patient warm and prevent hypothermia due to large thermal injuries.

Chemical

- Identify agent(s) and consider HAZMAT intervention, if indicated (Hazardous Material Exposure - 9.0)
- Consider contacting Poison Control at 800-222-1222.
- Decontaminate the patient as appropriate.
  - Brush off dry powders if present, before washing.
  - Scrape viscous material off with rigid device, e.g., tongue depressor
  - Flush with copious amounts of clean water or sterile saline for 10 – 15 minutes, unless contraindicated by type of chemical agent (e.g., sodium, potassium or dry lime and/or phenols).

Electrical/Lightning

- Ensure your own safety; disconnect power source, if feasible.
- Obtain and transmit ECG.
- For MCI associated with lightning, cardiac arrest patients should receive first priority.
- Consider spinal motion restriction for burns due to electric flow across the body.

Assess Extent of Burn

- Determine extent of the burn using Rule of Nines (see next page).
- Determine depth of injury.
- Do not include 1st degree burns in burn surface area (BSA) percentage.

Pain Control

- If a partial thickness burn, 2nd degree) is < 10% body surface area:
  - Apply room-temperature water or room-temperature wet towels to burned area for a maximum of 15 minutes. Prolonged cooling may result in hypothermia.

(Continued)

Burns/Electrocution/Lightning
Adult & Pediatric
4.0

ADVANCED EMT STANDING ORDER

A

- Establish IV/IO access:
  - Establish a large bore IV through unburned skin, if possible. IVs may be placed through burned skin if that is the only option. IOs may be placed through burned skin so long as underlying bone is not compromised. Burns greater than 20% Total Body Surface Area (TBSA) should have 2 large bore IV/IOs established
- Administer warmed LR (preferred, if available) or 0.9% NaCl intravenous fluids as below -

Transport time less than one hour:

- Prior to calculating TBSA burned, the initial fluid rates for patients with visibly large burns are based on patient age:
  - Adults and children 14 years and older: 500ml LR per hour
  - 6-13 years old: 250ml LR per hour
  - 5 years old and younger: 125ml LR per hour

Transport time greater than one hour:

- Perform secondary survey to determine:
  - Patient's weight in kg
  - Percent TBSA second and third-degree burns
- Adjust fluid rates for patients with 20% and greater TBSA burns (TBSA is based only on second and third-degree burns. First degree burns are not used in TBSA calculations) as follows:
  - Adult Thermal and chemical burns:
    - 2 ml LR x patient's weight in kg x % TBSA (2nd & 3rd degree burns), with half of the 24-hr total (in mLs) infused over the first 8 hrs
  - Pediatric Patients (13 yrs and younger)
    - 3 ml LS X child's weight in kg X % TBSA (2nd & 3rd degree burns), with half of the 24-hr total (in mLs) infused over the first 8 hrs
  - All aged patients with high voltage electrical injuries with evidence of myoglobinuria (dark red-tinged urine):
    - 4 mL LR x patient's body weight in kg x TBSA (2nd & 3rd degree burns), with half of the 24-hr total (in mLs) infused over the first 8 hrs

PARAMEDIC STANDING ORDERS

P

Refer to:

- Airway Management Protocol – 5.1A, or Airway Management Protocol – 5.1P.
- Pain Management – 2.20A, or Pain Management – 2.20P.

(Continued)

Burns/Electrocution/Lightning
Adult & Pediatric

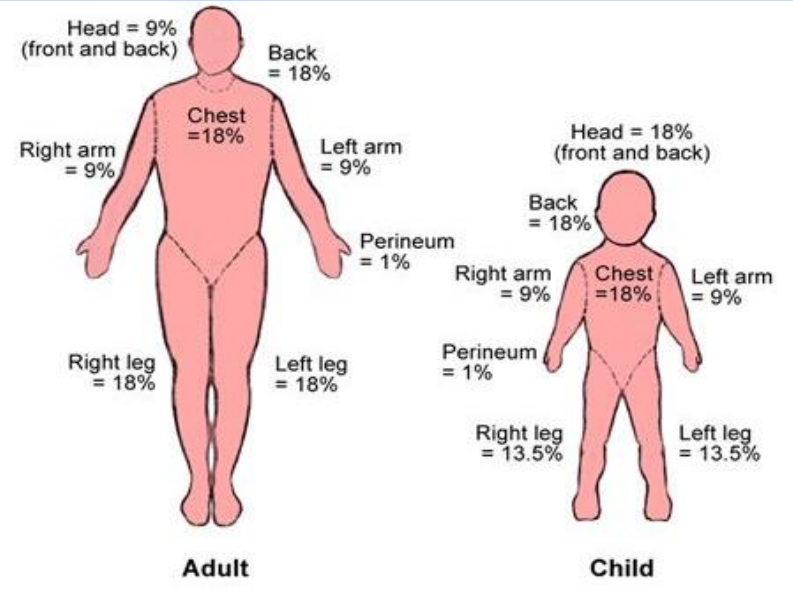
4.0

Transport Decision

- Consider air medical transport for major burns with greater than 20% BSA and/or inhalation injury with risk of airway compromise.
- Electrocution injuries with loss of consciousness, arrhythmia or any respiratory abnormality.

Rule of Nines

	Adult	Pediatric
Head & Neck	9%	18%
Left arm	9%	9%
Right arm	9%	9%
Chest	9%	9%
Abdomen	9%	9%
Upper back	9%	9%
Lower back	9%	9%
Left leg	18%	13.5%
Right leg	18%	13.5%
Genital region	1%	1%



PEARLS:

- Apnea may last longer than asystole in lightning injuries. Provide ventilatory support.
- Electrocution/lightning burns can occur anywhere along the path a current travels through the body. Evident surface burns may only comprise a small portion of the overall burn injury, and an injury's full extent may not be immediately apparent.
- Chemical burns - If 0.9% NaCl or sterile water is not readily available, do not delay; use tap water for flushing the affected area. Flush the area as soon as possible with the cleanest readily available water using copious amounts of water.

Return to TOC

Crush/Suspension Injury
Adult & Pediatric

4.1

EMT STANDING ORDERS – ADULT AND PEDIATRIC

E

- Routine Patient Care. Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Initiate spinal motion restriction if indicated.
- Acquire and transmit 12-lead ECG if available. If extrication is prolonged, obtain multiple ECGs.
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- Patients who have experienced suspension or vertical entrapment injuries should be rapidly extricated to a supine position to restore blood flow to heart and brain.
- Assess and treat for traumatic injury (Traumatic Emergencies – 4.12).
- Reference Shock – 2.24A, and Shock – 2.24P, and Trauma Triage and Transport Decision – 4.9, and Hyperkalemia & Renal Failure – 2.11, as indicated.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Establish IV/IO access. Do not delay transportation to initiate IV/IO access, however if patient is entrapped it is preferable that IV/IO access be initiated and fluid bolus of 1,000 – 2,000 mL 0.9% NaCl be administered prior to extrication.
- Assess pain level and consider pain management (Pain Management – 2.20A).

ADVANCED EMT STANDING ORDERS – PEDIATRIC

- Establish IV/IO access. Do not delay transportation to initiate IV/IO access, however if patient is entrapped it is preferable that IV/IO access be initiated and fluid bolus of 20 mL/kg 0.9% NaCl) be administered prior to extrication.
- Assess pain level. Consider pain control measures (Pain Management – 2.20P).

PARAMEDIC STANDING ORDERS - ADULT

P

- For significant crush injuries or prolonged entrapment/suspension, consider:
  - Sodium bicarbonate 1 mEq/kg (maximum dose 50 mEq) IV/IO bolus over 5 minutes
- Consider the following:
  - Monitor for dysrhythmias or signs of hyperkalemia before and after extrication
  - If ECG suggestive of hyperkalemia, consider administering the following:
    - Calcium gluconate (10% solution) 2 grams mixed in 50 mL NS or D_5W IV/IO over 10 minutes, may repeat in 10 minutes, **OR**
    - Calcium chloride (10% solution) 1 gram mixed in 50 mL NS or D_5W IV/IO over 10 minutes, may repeat in 10 minutes
    - Albuterol continuous 10 – 20 mg nebulized

(Continued)

Crush/Suspension Injury
Adult & Pediatric

4.1

PARAMEDIC STANDING ORDERS - PEDIATRIC

P

- For significant crush injuries or prolonged entrapment/suspension, consider:
  - Sodium bicarbonate 1 mEq/kg (maximum dose 50 mEq) IV/IO slow IV push over 5 minutes
- Consider the following:
  - Monitor for dysrhythmias or signs of hyperkalemia before and after extrication.
  - If ECG suggestive of hyperkalemia, consider administering the following:
    - Calcium gluconate (10% solution) 100 mg/kg IV/IO (maximum dose 2 gm slow IV push over 20 minutes)
    - Albuterol continuous nebulized (weight-based)

Weight	Albuterol
< 25 kg	2.5 mg
25 - 50 kg	5 mg
> 50 kg	10 mg

EMT/ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- Secondary to initial bolus, consider sodium bicarbonate infusion (**Paramedic**):
  - 150 mEq in 1000 mL D5W at a rate of 250 mL/hr or 4 mL/min (**Adult**)
- In the event that adequate fluid resuscitation is not available, consider applying a tourniquet on the affected limb and do not release until adequate IV fluids and/or medications are available.
- If extrication is prolonged > 1 hour, contact online **Medical Direction** for additional considerations prior to extricating the patient.

PEARLS

- *Compression syndrome* - An indirect muscle injury due to a simple, slow compression of a group of muscles leading to ischemic damage and release of toxic substances into the circulatory system. (For example, a patient who fell and has been on the floor for 2 days)
- *Compartment syndrome* - A localized rapid rise of tension within a muscle compartment, which inevitably leads to metabolic disturbances akin to rhabdomyolysis.
- *Crush syndrome* - Involves a series of metabolic changes produced due to an injury of the skeletal muscles of such a severity as to cause a disruption of cellular integrity and release of its contents into the circulation.
- *Suspension syndrome* - A state of shock caused by blood pooling in dependent lower extremities while the body is held upright without any movement for a period of time. May lead to a relative hypovolemic state and cardiovascular collapse.
- Causes of mortality in untreated crush syndrome:
  - Immediate: severe head injury, traumatic asphyxia, torso injury with intrathoracic or intra-abdominal organ injury
  - Early: hyperkalemia, hypovolemia/shock,
  - Late: renal failure, coagulopathy, hemorrhage and sepsis
- Suspect hyperkalemia if T waves become peaked, QRS prolonged > 0.12 seconds, absent P waves, or prolonged QTc. Hyperkalemia may be delayed up to 24 hours after extrication.
- A patient with a crush injury may initially present with very few signs and symptoms, therefore, maintain a high index of suspicion for any patient with a compressive mechanism of injury.

Return to TOC

Drowning/Submersion Injuries
Adult & Pediatric

4.2

EMT STANDING ORDERS

E

- Routine Patient Care.
- Victims with only respiratory arrest usually respond after a few artificial breaths are given.
  - Give a few breaths and check for a pulse; anticipate vomiting
- For patients in cardiac arrest, provide immediate CPR.
  - Start with airway and breathing before compressions
- Routine stabilization of the cervical spine in the absence of circumstances that suggest a spinal injury is not recommended.
  - If c-spine injury is suspected (Spinal Trauma and Assessment – 4.6)
- Obtain specific history: time, temperature, associated trauma, etc.
- Begin resuscitation efforts while removing the patient from the water.
- Adult only: Consider CPAP to supplement the patient's own spontaneous respiratory effort (Continuous Positive Airway Pressure (CPAP) – 5.4).
- Consider hypothermia (Hypothermia – Adult & Pediatric – 2.13).
- Remove wet clothes and warm the patient.
- All patients with history of submersion should be transported to the hospital.
- Reassure anxious patient.
- If water temperature is estimated to be less than 6°C (43°F) and submerged:
  - Less than 90 minutes: Initiate full resuscitation
  - Greater than 90 minutes: Consider not initiating resuscitation or termination of efforts, contact **Medical Direction** for guidance

- If water temperature is estimated to be greater than 6°C (43°F) and submerged:
  - Less than 30 minutes: Initiate full resuscitation
  - Greater than 30 minutes: Consider not initiating resuscitation or termination of efforts; contact **Medical Direction** for guidance

- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- Consider CPAP to supplement the patient's own spontaneous respiratory effort (Continuous Positive Airway Pressure (CPAP) – 5.4).

PARAMEDIC STANDING ORDERS

P

- Consider advanced airway or intubation as indicated.

Do not attempt water or ice rescues unless properly trained and equipped. When operating on scenes involving water, use extreme caution and wear a PFD.

PEARLS:

- There is no need to clear the airway of aspirated water; only a modest amount of water is aspirated by most drowning victims, and aspirated water is rapidly absorbed into the central circulation.
- Unnecessary cervical spine immobilization can impede adequate opening of the airway and delay delivery of rescue breaths.
- Patients with severe hypothermia may benefit from treatment at a facility capable of ExtraCorporeal Membrane Oxygenation (ECMO) or CardioPulmonary Bypass (CPB). Consider air medical transport.
- In hypothermic patients, low levels of ETCO2 may not be a useful predictor of outcome, due to reduced metabolism.
- Oral and tympanic thermometers do not yield an accurate core temperature for severely hypothermic patients.
- Cold water offers enhanced survival only where the patient becomes cold prior to cardiac arrest.
  SUBMERSION: When a patient goes under the water immediately, has a hypoxic cardiac arrest and then cools down. Prognosis considered dismal.
- IMMERSION: Patients are in the water with head above water and they continue to breathe while they cool down before they eventually arrest. Prognosis can be good with patients surviving after prolonged CPR.

Return to TOC

Eye Injuries
Adult & Pediatric

4.3

EMT/ADVANCED EMT STANDING ORDERS

E/A

- 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, alkali, acid or other chemical exposure:
  - Flush with copious amounts of water, or 0.9% NaCl for a minimum of 20 minutes
  - Consider contacting Poison Control at (800) 222-1222 as soon as practical for consultation
- Thermal burns to eyelids: patch both eyes with cool saline compress.
- Impaled object: immobilize object and patch both eyes. Do not apply pressure. Do not attempt to remove object.
- Puncture wound: place rigid protective device over both eyes (e.g., eye shield). Do not apply pressure.
- Foreign body: Minor foreign objects like dust or grit may be flushed with water or 0.9% NaCl. Patch both eyes.
- If the patient cannot close their eyelids, keep their eye moist with a sterile saline dressing.
- An anti-emetic is strongly recommended for penetrating or blunt eye trauma (Nausea/Vomiting – Adult & Pediatric 2.14).
- Refer to Pain Management – 2.20A, or Pain Management – 2.20P.

PARAMEDIC STANDING ORDERS

P

- Proparacaine **OR** tetracaine:
  - Apply 2 drops to affected eye; repeat every 5 minutes as needed
- Consider use of Morgan lens for irrigation.

PEARLS:
- For chemical exposure to eye position patient with the affected eye downward so irrigation does not run into the unaffected eye.

Dental Injuries
Adult & Pediatric

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

- Routine Patient Care.
- Dental avulsions should be placed in an obviously labeled container with saline-soaked dressing, milk, or cell-culture medium (example: Save-a-tooth®).
- Do not place in tap water.

EMT/ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- If definitive treatment is expected to be greater than 4 hours, an attempt to reinsert the avulsed tooth in its socket should be made after rinsing tooth in water or normal saline. If multiple teeth require reinsertion, use the shape and size of dentition on the opposing side to guide you in proper placement.

PEARLS:
- Handle the tooth carefully. Avoid touching the root of the tooth (the part of the tooth that was embedded in the gum) because it can be damaged easily. Primary (baby) teeth should not be reimplanted.

Return to TOC

Hemorrhage Control
Adult & Pediatric

4.4

INDICATIONS

- Life threatening hemorrhage that cannot be controlled by other means (direct pressure).
- Serious or life threatening hemorrhage and operational considerations prevent the use of standard hemorrhage control techniques.

EMT STANDING ORDERS

E

- Routine Patient Care
- Apply direct pressure, using manual control and/or pressure bandage.
- Apply limb tourniquet, if direct pressure is ineffective or impractical and for any traumatic amputation:
  - Use a commercially-produced, windlass, pneumatic, or ratcheting device, which has been demonstrated to occlude arterial flow and avoid narrow, elastic, or bungee-type devices. Utilize improvised tourniquets only if no commercial device is available.
    - Place tourniquet 2 – 3" proximal to wound.
    - Tighten per manufacturer instructions until hemorrhage stops.
    - Secure tourniquet per manufacturer instructions.
    - Note time of tourniquet application and communicate this to receiving providers.
    - Dress wounds.
  - Do not release a properly-applied tourniquet until the patient reaches definitive care.
  - If delayed or prolonged transport and tourniquet application time ≥ 5 hours, contact **Medical Direction**.
  - Consider application of a second tourniquet just proximal to the first for failure to control bleeding.
  - Apply a junctional tourniquet where indicated. Follow manufacturer's instructions.
  - Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- Trauma Triage and Transport Decision – 4.9 and/or Traumatic Emergencies – 4.12.
- Pack Wounds in anatomical areas where tourniquets cannot be applied and sustained direct pressure alone is ineffective or impractical (junctional/torso injury or proximal extremity location where tourniquet application is not practical).
  - Only utilize a topical hemostatic bandage in a gauze format that supports wound packing
- Junctional tourniquet
  - If the bleeding site is amenable to use of a junctional tourniquet, immediately apply device following manufacture's guidelines, if available

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- Administer fluids per Shock – 2.24A, or Shock – 2.24P.
- Assess pain level and consider pain control measures, see Pain Management – 2.20A or Pain Management – 2.20P.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

X

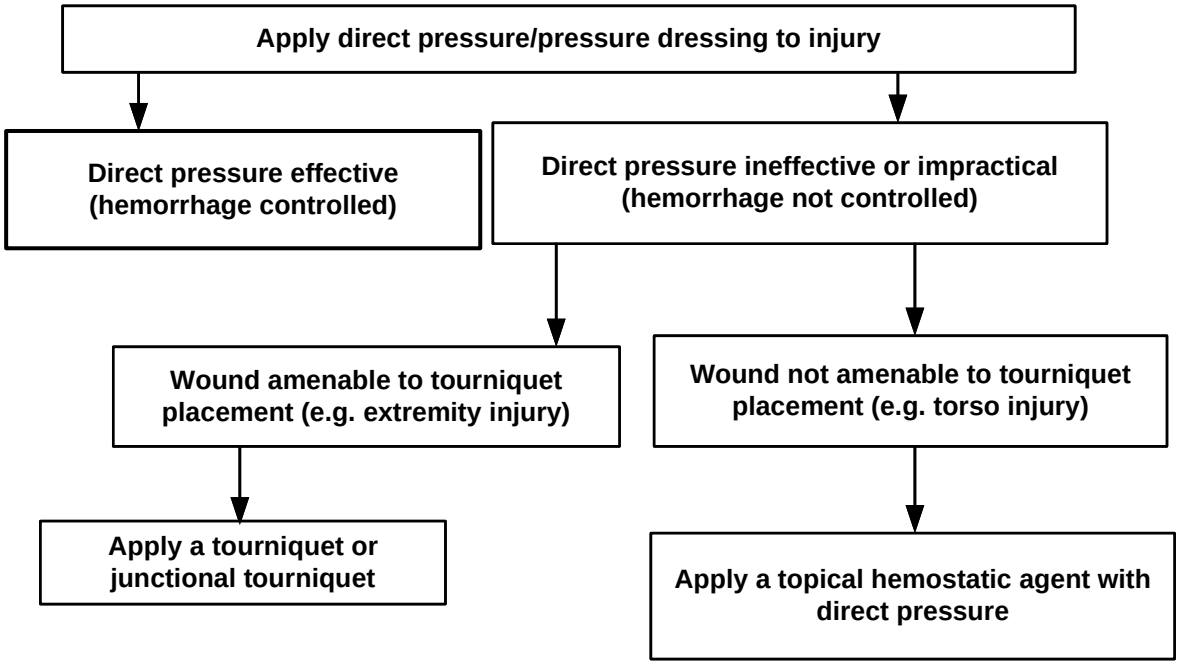
- Consult **Medical Direction**, if feasible, to consider tourniquet conversion or long term management.

(Continued)

Hemorrhage Control
Adult & Pediatric

4.4

Prehospital External Hemorrhage Control Protocol



Amputations: Rinse severed part briefly and gently with sterile saline to remove debris then wrap severed part in sterile saline gauze, moisten with sterile saline (do not soak) and place in water-tight container. Place container on ice (do not use dry ice). Do not put part directly on ice. If necessary, use ice packs to provide some level of cooling.

In the event of diminished scene safety (indirect threat, warm zone etc.), limb tourniquets should be placed as high on the limb as possible and over clothing.
In the absence of a commercial tourniquet (preferred), an improvised device e.g., cravat with windlass, blood pressure cuff could be used. The device must be a minimum of 2 inches wide, otherwise it can cut through the skin.

PEARLS:
- Tourniquets applied prior to EMS arrival should be evaluated for effectiveness and appropriateness. If tourniquet can be safely removed, remove the tourniquet and apply pressure dressing.
- Do not apply tourniquet over joints.
- Reassess for re-bleeding frequently, especially after any patient movement.
- Delay in placement of a tourniquet for life threatening hemorrhage significantly increases mortality. Do not wait for hemodynamic compromise to apply a tourniquet.
- If feasible, transport patients directly to a trauma center and provide earliest possible notification / trauma alert.
- Damage to the limb from tourniquet application is unlikely if removed in several hours.

Return to TOC

Musculoskeletal Injuries
Adult & Pediatric

4.5

EMT STANDING ORDERS

E

- Routine Patient Care.
- Manually stabilize the injury.
- Control bleeding and treat for shock (Hemorrhage Control – 4.4, Shock – 2.24A, or Shock – 2.24P.
- Remove obvious debris, irrigate open wounds with saline solution, and cover with moist sterile dressing.
- For significantly-angulated fractures, attempt to reposition to anatomical position of function, so long as the fracture is not at/near a joint.
- Assess CSMs distal to injury before and reassess every 15 minutes after immobilization:
  - Splint extremity as required
  - Traction splinting is preferred technique for isolated adult and pediatric mid-shaft femur fractures
- In a patient with a high-risk mechanism of injury (Spinal Trauma and Assessment – 4.6).
- Stabilize suspected pelvic fractures with commercial device (preferred) or bed sheet:
  - It is preferable to use a scoop stretcher rather than to log-roll a patient with a suspected pelvic fracture
  - Amputations should be dressed with bulky dressings and assessed for uncontrolled bleeding (Hemorrhage Control – 4.4)
- See Trauma Triage and Transport Decision - 4.9, and Pain Management – 2.20A, or Pain Management – 2.20P.
- Minimize scene time.
- Call for Paramedic intercept. If not available, call for AEMT intercept.

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- Administer fluids (Shock – 2.24A, or Shock – 2.24P).

PARAMEDIC STANDING ORDERS

P

- For Patella dislocation, contact **Medical Direction** to consider reduction by exerting medially-directed pressure on lateral patellla while extending knee (VT approved training required). Consider pain control prior to procedure.

PEARLS:

- Use ample padding when splinting possible fractures, dislocations, sprains, and strains. Remove and secure all jewelry. Elevate injured extremities, if possible. Consider the application of a cold pack for 30 minutes.
- Musculoskeletal injuries can occur from blunt and penetrating trauma. Fractures of the pelvis and femur, as well as fractures or dislocations involving circulatory or neurological deficits, take priority over other musculoskeletal injuries.
- Hip dislocations, pelvic, knee, and elbow fractures / dislocations have a high incidence of vascular compromise.
- Do not manipulate pelvis once fracture is suspected. Repeated manipulation can increase internal hemorrhage.

Return to TOC

Spinal Trauma and Assessment 4.6

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

PURPOSE: This protocol provides guidance regarding the assessment and care of patients who have a possible spinal injury.

- Routine Patient Care.
- Perform advanced spinal assessment to determine if patient requires spinal motion restriction.
- Maintain manual in-line stabilization during assessment, unless patient is alert and spontaneously moving neck.
- Minimize spinal movement during assessment and extrication.
- A long backboard, scoop stretcher, vacuum mattress, or other appropriate full length extrication device may be used for extrication if needed. Do not use short board or KED device, except for vertical extrication or other special situations.
- Apply adequate padding to prevent tissue ischemia and minimize discomfort.

Advanced Spinal Assessment: Spinal motion restriction is required when ANY of the following conditions apply:

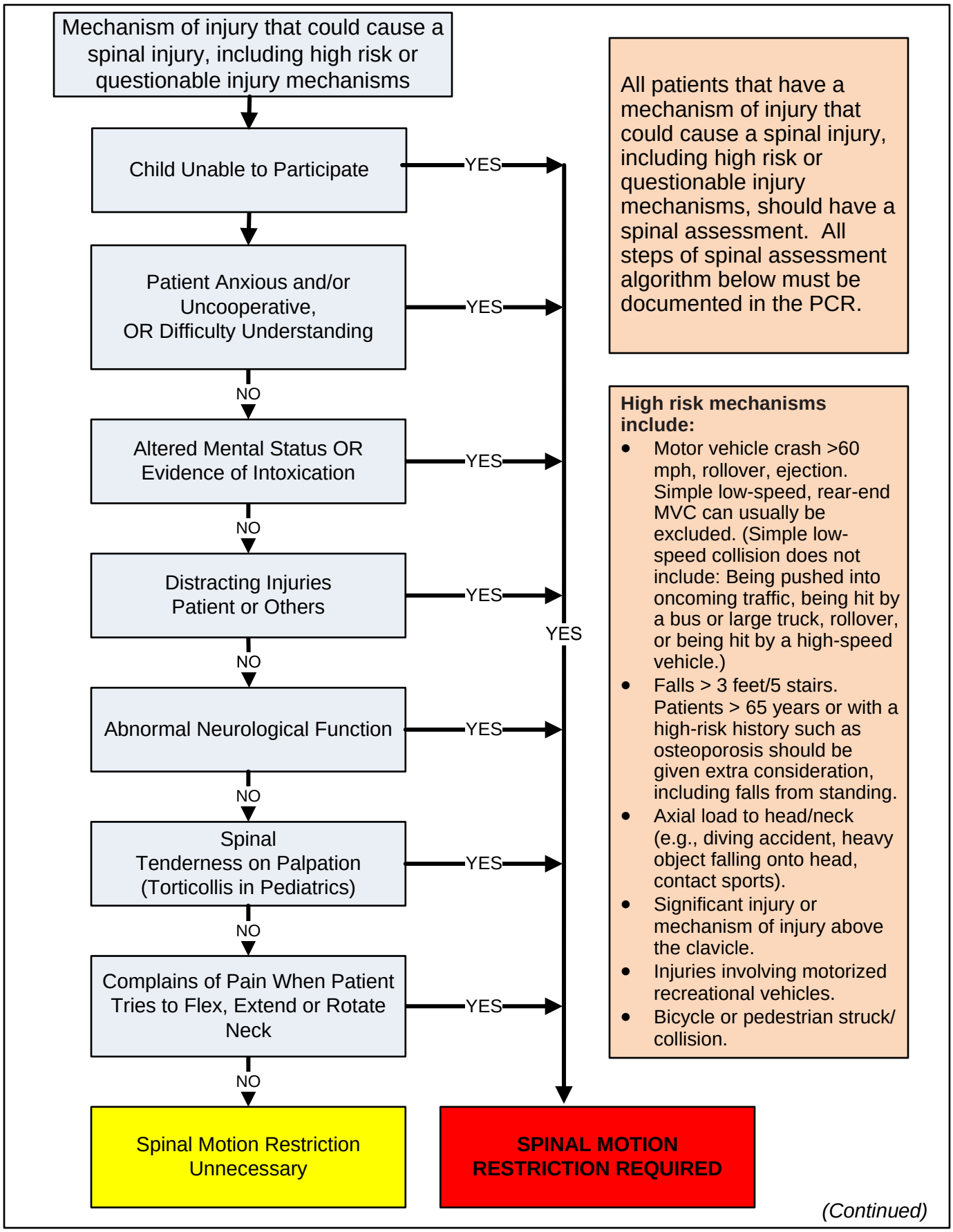
E/A/P

- Unreliable patient:
  - Child who cannot participate in assessment
  - Anxious and/or uncooperative
  - Communication barriers (e.g., deafness, hard of hearing, language, understanding)
  - Altered mental status (not alert and oriented x 3)
  - Evidence of alcohol or drug intoxication
  - Distracted by circumstances or injuries to self or others (ie, any other injury capable of producing significant pain in this patient)
- Any abnormal neurological function in extremities (check all 4 extremities):
  - Numbness or tingling (paresthesia)
  - Motor strength not full and symmetrical
  - Sensation not intact and symmetrical
- Midline tenderness on palpation:
  - Explain to the patient the actions that you are going to take, ask the patient to immediately report any pain, and to answer questions with a “yes” or “no” rather than shaking the head
  - With the patient’s spine supported to limit movement, begin palpation at the base of the skull at the midline of the spine
  - Palpate the vertebrae individually from the base of the skull to the bottom of the sacrum
  - On palpation of each vertebral body, look for evidence of pain and ask the patient if they are experiencing pain; if evidence of pain along the spinal column is encountered, utilize spinal motion restriction
- Pain with movement of neck (cervical flexion, extension and rotation).
  - If the capable patient is found to be pain free, ask the patient to turn their head first to one side (so that the chin is pointing toward the shoulder on the same side as the head is rotating) then, if pain free, to the other. If there is evidence of pain, utilize spinal motion restriction
  - With the head rotated back to its normal position, ask the patient to flex and extend their neck. If there is evidence of pain, utilize spinal motion restriction. Do not assist patient in attempts to rotate neck

All patients that have a mechanism of injury that could cause a spinal injury, including high risk or questionable injury mechanisms, should have an advanced spinal assessment.

(Continued)

Spinal Trauma and Assessment 4.6



All patients that have a mechanism of injury that could cause a spinal injury, including high risk or questionable injury mechanisms, should have a spinal assessment. All steps of spinal assessment algorithm below must be documented in the PCR.

High risk mechanisms include:

- Motor vehicle crash >60 mph, rollover, ejection. Simple low-speed, rear-end MVC can usually be excluded. (Simple low-speed collision does not include: Being pushed into oncoming traffic, being hit by a bus or large truck, rollover, or being hit by a high-speed vehicle.)
- Falls > 3 feet/5 stairs. Patients > 65 years or with a high-risk history such as osteoporosis should be given extra consideration, including falls from standing.
- Axial load to head/neck (e.g., diving accident, heavy object falling onto head, contact sports).
- Significant injury or mechanism of injury above the clavicle.
- Injuries involving motorized recreational vehicles.
- Bicycle or pedestrian struck/ collision.

(Continued)

Spinal Trauma and Assessment 4.6

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Spinal motion restriction is defined as application of a cervical collar and maintenance of the spine in neutral alignment. Determination that immobilization devices should be used should be made by the highest level EMS practitioner. All steps of spinal assessment algorithm below must be documented in the PCR.

If patient requires Spinal Motion Restriction:

- Apply a rigid cervical collar.
- Self-extrication by patient is allowable if patient is capable.
- Allow ambulatory patients to sit on stretcher and then lie flat.
- Position backboarded patient on stretcher then remove backboard by using log roll or lift-and-slide technique.
- Situations or treatment priorities may require patient to remain on rigid vacuum mattress or backboard, including the multi-trauma patient, combative patient, elevated intracranial pressure (Traumatic Brain Injury – Adult & Pediatric 4.10), or rapid transport of unstable patient. Head immobilization may be appropriate for patients unable to control their own movements.
- With the patient lying flat, secure patient firmly with all stretcher straps and leave the cervical collar in place. Instruct the patient to avoid moving head or neck as much as possible.
- Elevate stretcher back only if necessary for patient compliance, respiratory function, or other significant treatment priority.
- If patient poorly tolerates collar (e.g., due to anxiety, shortness of breath, torticollis), replace with towel roll and/or padding.
- Patients with nausea or vomiting may be placed in a lateral recumbent position. Maintain neutral head position with manual stabilization, padding/pillows, and/or the patient's arm. (Nausea/Vomiting - 2.14).

Pediatric Patients Requiring a Child Safety Seat -

For pediatric patients requiring spinal motion restriction, transport in a child safety seat (Pediatric Transportation - 8.13):

- Apply padding and cervical collar as tolerated to minimize the motion of the child's spine. Rolled towels may be used for very young children or those who do not tolerate a collar.
- Patient may remain in own safety seat after motor vehicle crash if it has a self-contained harness with a high back and two belt paths and is undamaged. If all criteria are not met, use ambulance's safety seat.
- If the patient requires significant care (e.g. airway management) that cannot be adequately performed in a car seat, remove the patient and secure them directly to the stretcher.

Long backboards do not have a role for patients being transported between facilities. If the sending facility has the patient on a long backboard or is asking EMS to use a long backboard for transport, EMS providers should discuss not using a long backboard with the sending facility physician before transporting a patient. If a long backboard is used, it should be padded to minimize patient discomfort. Patients with only penetrating trauma do not require spinal motion restriction.

Caution should be exercised in older patients (e.g., 65 years or older) and in very young patients (e.g., less than 3 years of age), as spinal assessment may be less sensitive in discerning spinal fractures in these populations.

High risk mechanisms include:

- Motor vehicle crash >60 mph, rollover, ejection. Simple low-speed, rear-end MVC can usually be excluded. (Simple low-speed collision does not include: Being pushed into oncoming traffic, being hit by a bus or large truck, rollover, or being hit by a high-speed vehicle.)
- Falls > 3 feet/5 stairs. Patients > 65 years or with a high-risk history such as osteoporosis should be given extra consideration, including falls from standing.
- Axial load to head/neck (e.g., diving accident, heavy object falling onto head, contact sports).
- Significant injury or mechanism of injury above the clavicle.
- Injuries involving motorized recreational vehicles.
- Bicycle or pedestrian struck/collision.

Return to TOC

Strangulation 4.7

Strangulation is defined as asphyxiation caused by closure of blood vessels and or air passageways of the neck due to external pressure. External pressure can be manual via a body part such as hands, arms, knees, etc., or can be by an object such as a belt, rope, etc.

Patients are at risk of delayed death due to internal swelling, anoxia, hematoma or structural damage that cannot be identified externally. Patients should be encouraged to seek medical care; if transported, communicate reported strangulation attempt to hospital staff.

Although often described as 'choking' by patients, it should be distinguished as strangulation when being documented by providers (as opposed to choking, i.e., foreign body obstruction). Include all information and observations regarding attempted strangulation in documentation provided to receiving hospital.

Assessment:

How was the patient strangled:

- Left, right, or both hands; forearm; knee or foot; ligature or smothered; other, describe

Was patient shaken, beaten or held against wall, ground:

- Quantify grip strength and level of pain using 1-10 scale; duration in min/sec.
- Prior incidents of strangulation, domestic violence, or threats?

Signs and symptoms:

- Petechiae on face, eyes/eyelids, nose, ears, head.
- Deformity of or bleeding from nose, ears; bruising, swelling of mouth/lips.
- Redness, scratches, abrasions, bruising under chin, on neck, shoulders, chest.
- Ligature marks, swelling, fingernail impressions (offensive or defensive) on neck.
- Missing hair, fracture, or swelling/bruising on head, signs of concussion.
- Difficulty breathing or speaking; coughing, hoarse or raspy voice; drooling, difficulty or pain swallowing.
- Vision disturbances or changes (spots, light flashes, tunnel vision, etc.).
- Hearing disturbances or changes (buzzing or ringing in the ears, etc.).
- Headache.
- Subcutaneous emphysema.
- Incontinence.

Behavioral signs:

- Agitation, amnesia, hallucinations, dizziness, fainting, or combativeness due to hypoxia.

Documentation and Reporting Responsibilities

Per 13 VSA 1021, 33 VSA 4912, and 33 VSA 4913, it must be reported to the police unless the patient age 18 or older refuses to have the information released.

Strangulation is also an indicator of increasing lethality in a violent relationship. Every effort should be made to connect patient with support services.

- 24-Hour Domestic Violence Crisis Line: 1-800-228-7395
- 24-Hour Sexual Assault Crisis Line: 1-800-489-7273
- Vermont Adult Protective Services Program 800-564-1612 (after hours at 800-649-5285)
- Emergency shelter and transportation
- Hospital and court accompaniment; legal advocacy
- Information about public assistance.

PEARLS:

- Patient's spouse/partner, caregiver or parent may be the perpetrator; their presence may hinder patient's disclosure of information.
- Providers' reactions can impact patient recovery and strengthen or hinder prosecution of the perpetrator. Non-judgmental and compassionate care and thorough documentation and preservation of evidence are essential.

Return to TOC

Thoracic and Abdominal Injuries
Adult & Pediatric

4.8

EMT STANDING ORDERS

E

- Routine Patient Care.
- If patient is in shock (Shock – 2.24A, or Shock – 2.24P).
- Impaled objects:
  - Do not attempt to remove an impaled object; instead, stabilize it with a bulky dressing or other means
  - If the impaled object is very large or unwieldy, attempt to cut object to no less than 6 inches from the patient
- Open chest wound/penetrating injuries to chest or upper back:
  - Cover with an occlusive dressing, or use a commercial device
  - Monitor for tension pneumothorax; 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 for severe distress
  - Apply no weight to flail segment; do not splint the chest
- Abdominal penetrating injuries:
  - Apply an occlusive dressing
  - For evisceration, cover the organs with a saline-soaked sterile dressing and then cover it with an occlusive dressing. Do not attempt to put the organs back into the abdomen
- Minimize scene time.
- Call for Paramedic intercept. If not available, call for AEMT intercept.
- Trauma Triage and Transport Decision - 4.9.

ADVANCED EMT STANDING ORDERS

A

- Establish IV/IO access.
- Administer fluid bolus 500 mL (20 mL/kg for pediatric) 0.9% NaCl IV/IO.
- For traumatic asphyxia, support ventilations with BVM, establish two large bore IVs and infuse at least 1,000 mL 0.9% NaCl before or immediately after removal of compressive force.
- Consider pain management (Pain Management – 2.20A, or Pain Management – 2.20P.
- Consider Traumatic Emergencies Protocol – 4.12.

PARAMEDIC STANDING ORDERS

P

- In presence of tension pneumothorax, perform needle decompression on the affected side (Needle Decompression Thoracostomy (NDT) - 6.5).
- For massive flail chest with severe respiratory compromise, consider endotracheal intubation and then assist ventilations.

SIGNS AND SYMPTOMS OF TENSION PNEUMOTHORAX:

- Increasing respiratory distress or hypoxia, AND
- Increasing signs of shock including tachycardia or hypotension, AND one or more of the following:
  - Diminished or absent unilateral breath sounds
  - JVD (neck vein distension)
  - Possible tracheal deviation above the sternal notch away from the side of the injury (late sign)
  - Tympany (hyperresonance) to percussion on the affected side

PEARLS:

- Open chest wounds occur when the chest wall is penetrated by some object or the broken end of a fractured rib.
- Chest pain due to blunt trauma may be an indication of underlying injury.
- For blunt chest injuries, consider acquiring and transmitting 12-lead ECG, if available.
- If occlusive dressing is not available, consider using a bulky dressing to seal open chest wounds.

Return to TOC

Trauma Triage and Transport Decision 4.9

Injury Patterns

- Penetrating injuries to head, neck, torso, and proximal extremities.
- Skull deformity, suspected skull fracture.
- Chest wall instability, deformity, or suspected flail chest.
- Suspected pelvic fracture.
- Suspected fracture of two or more proximal long bones.
- Amputation proximal to wrist or ankle.
- Active bleeding requiring a tourniquet or wound packing with continuous pressure.

YES →
- If feasible, and transport time ≤ 60 minutes, consider transport directly to closest Level 1 Trauma Center (UVMMC, DHMC, AMC) by ground or air and notify receiving hospital of a TRAUMA ALERT.
- If above is not feasible, OR transport time > 60 minutes, OR patient requires immediate airway or other stabilization not possible in field, transport to closest Emergency Department for initial management and then transfer to Level 1 Trauma Center. Notify receiving hospital of a TRAUMA ALERT.

NO ↓

Mental Status & Vital Signs

- **All Patients:**
  - Unable to follow commands (motor GCS < 6)
  - RR < 10 or > 29 breaths/min
  - Respiratory distress or need for respiratory support
  - Room-air pulse oximetry < 90%
- **Age 0-9 years:**
  - SBP < 70 mmHg + (2 x age years)
- **Age 10-64 years:**
  - SBP < 90 mmHg or
  - HR >SBP
- **Age >= 65 years:**
  - SBP < 110 mmHg or
  - HR > SBP

YES →
- If feasible, and transport time ≤ 60 minutes, consider transport directly to closest Level 1 Trauma Center (UVMMC, DHMC, AMC) by ground or air and notify receiving hospital of a TRAUMA ALERT.
- If above is not feasible, OR transport time > 60 minutes, OR patient requires immediate airway or other stabilization not possible in field, transport to closest Emergency Department for initial management and then transfer to Level 1 Trauma Center. Notify receiving hospital of a TRAUMA ALERT.

NO ↓

Mechanism of Injury

- **High-Risk Auto Crash:**
  - Partial or complete ejection
  - Significant intrusion (including roof)
    - > 12 inches occupant site, **OR**
    - > 18 inches any site, **OR**
    - Need for extrication for entrapped patient
  - Death in passenger compartment
  - Child (age 0-9) unrestrained or in unsecured child safety seat
- Rider separated from transport vehicle with significant impact (eg, motorcycle, ATV, horse, etc.).
- Pedestrian/bicycle thrown, run over, or with significant impact.
- Fall from height > 10 feet (all ages).

YES →
- Transport to the closest appropriate facility.
- Consider contacting **Medical Direction** about destination determination.
- Provide early patient notification
- Consider TRAUMA ALERT.

NO ↓

EMS Judgement

Consider risk factors, including:
- Low-level falls in young children (age <= 5 years) or older adults (age >=65 years) with significant head impact.
- Anticoagulant use.
- Suspicion of child abuse.
- Special, high-resource healthcare needs.
- Pregnancy > 20 weeks.
- Burns in conjunction with trauma.
- Children should be triaged preferentially to pediatric capable centers.

If concerned, take to a trauma center.

YES →
- Transport to the closest appropriate facility.
- Consider contacting **Medical Direction** about destination determination.
- Provide early patient notification including presence of high risk factors.

NO ↓

Transport to Closest Hospital

Return to TOC

Traumatic Brain Injury
Adult & Pediatric

4.10

INDICATIONS OF MODERATE OR SEVERE TBI DEFINED AS:

Anyone with physical trauma and a mechanism consistent with the *potential* to have induced a brain injury, **AND**:

- Any injured patient with loss of consciousness, especially those with GCS < 15 or confusion, **OR**
- Multisystem trauma requiring intubation, whether the primary need for intubation was from TBI or from other potential injuries, **OR**
- Post-traumatic seizures, whether they are continuing or not.

EMT STANDING ORDERS

E

PREVENT and/or CORRECT
- Hypoxia
- Hyperventilation
- Hypotension

- Routine Patient Care (Spinal Trauma and Assessment Protocol – 4.6).
- Continuously monitor oxygen saturation via pulse oximetry.
- Administer continuous, high-flow oxygen via NRB for all moderate or severe TBI cases.
- If breathing is inadequate, ventilate with 100% oxygen via BVM, utilizing normal ventilation parameters, maintaining SpO_2 > 94%:
  - Adult: 10 breaths per minute
  - Child: 12 – 20 breaths per minute
  - Infant: 20 – 30 breaths per minute
- Utilize Pressure-Controlled BVM (PCB) and Ventilation Rate Timer (VRT), if available.
- If staffing allows, assign a ventilation monitor.
- Target tidal volume is 7 cc/kg (utilize 2-finger bagging technique for adult patients; 1-finger bagging technique for pediatric patients).
- Check systolic blood pressure (SBP) every 3 – 5 minutes.
- If the patient is not hypotensive (systolic BP > 100 mmHg), elevate the head of the stretcher 30 degrees (12 to 18 inches), if possible.
- Check blood glucose (Diabetic Emergencies (Hypoglycemia) – Adult 2.8A, or Diabetic Emergencies (Hypoglycemia) – 2.8P).
- Call for Paramedic intercept, if available. If not available, call for AEMT intercept.
- Trauma Triage and Transport Decision – 4.9.

ADVANCED EMT STANDING ORDERS

A

- Maintain systolic BP, avoid hypotension:
  - Adult – maintain SBP:
    - Age > 10 years: ≥ 110 mmHg
  - Pediatric - maintain SBP:
    - Age < 1 month: > 60 mmHg
    - Age 1 – 12 months: > 70 mmHg
    - Age 1 – 10 years: > 70 + 2x age in years.
- Establish IV/IO access.
- To prevent hypotension, administer IV fluid for any SBP < 90 or any signs of downtrending SBP:
  - Adult**:** Fluid bolus 1,000 mL 0.9% NaCl IV (Shock – 2.24A)
  - Child and Infant: Fluid bolus 20 mL/kg 0.9% NaCl IV (Shock – 2.24P)
- Administer 20 mL/kg 0.9% NaCl IV fluid bolus in a pediatric patient with normal systolic blood pressure and who has other signs of decreased perfusion including tachycardia, loss of peripheral pulses, and delayed capillary filling time of >2 seconds (Shock – 2.24P).
- If continuous waveform capnography is available:
  - Ventilate to *strictly* maintain an $ETCO_2$ level of 35 – 45 mmHg (target = 40)

(Continued)

Traumatic Brain Injury
Adult & Pediatric

4.10

PARAMEDIC STANDING ORDERS -- ADULT

P

- Consider supraglottic airway (SGA) or intubation if GCS is < 8 and unable to maintain airway with BVM.
- Utilize continuous waveform capnography to *strictly* maintain an $ETCO_2$ level of 35 – 45 mmHg (target = 40).
- Consider sedation for patients that are combative and may cause further harm to self and others:
  - Ketamine 4 mg/kg (maximum dose 500 mg) administered by intramuscular (IM) injection only. Contact **Medical Direction** for additional dosing, **OR**
  - Midazolam 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes, **OR** 5 mg IM, may repeat once in 10 minutes, **OR**
  - Lorazepam 1 mg IV/IO, may repeat once in 5 minutes, **OR** 2 mg IM, may repeat once in 10 minutes, **OR**
  - Diazepam 5 mg IV/IO, may repeat once in 5 minutes
- For seizures (Seizure – 2.22A).

PARAMEDIC STANDING ORDERS -- PEDIATRIC

- Consider sedation for patients that are combative and may cause further harm to self and others:
  - Midazolam 0.1 mg/kg IV/IO (maximum dose 2.5 mg) or 0.2 mg/kg IM/ intranasal (maximum single dose 5 mg); may repeat once in 5 minutes, **OR**
  - Lorazepam 0.1 mg/kg IV/IO (maximum dose 1 mg), may repeat once in 5 minutes, **OR**
  - Diazepam 0.1 mg/kg IV (maximum dose 5 mg), may repeat once in 5 minutes
- For seizures (Seizure – 2.22P).

Most patients with severe head injury retain airway reflexes. Rapid transport to hospital without intubation is appropriate when possible.

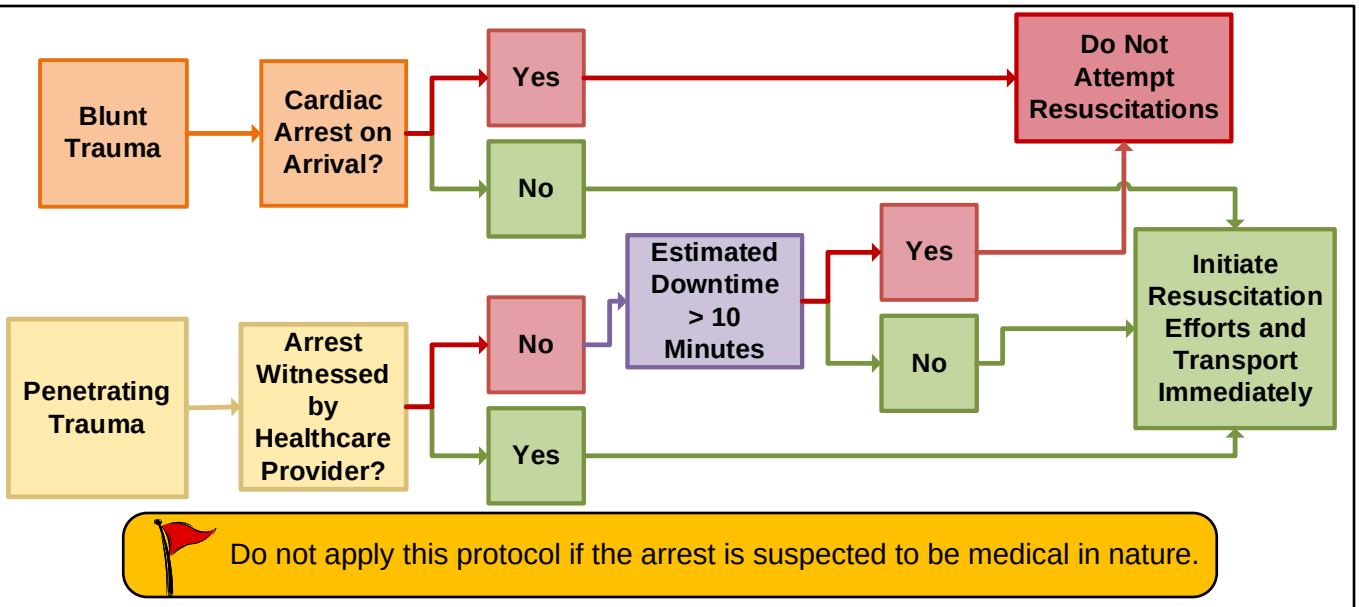
PEARLS:

- Prevention of hypoxia and hypotension are imperative to prevent secondary brain injury.
- Intubation should be approached with extreme caution as it has been associated with worse outcomes when performed in the out-of-hospital environment for patients with traumatic brain injury.
- A *single* non-spurious O_2 sat of < 90% is *independently* associated with a *doubling* of mortality.
- Hyperventilation is *independently* associated with at least a doubling of mortality and some studies have shown that *even moderate* hyperventilation can increate the risk of dying by *six* times.
- A single episode of SBP < 90 mmHg is *independently* associated with *at least a* doubling of mortality. Repeated episodes of hypotension can increase the risk of dying by as much as *eight* times.
- Implementation of this practice bundle has been shown to *double the survival rate* of severely head injured patients and *triple* the rate of survival for intubated patients.

Return to TOC

Traumatic Cardiac Arrest (TCA)
Adult & Pediatric

4.11



Do not apply this protocol if the arrest is suspected to be medical in nature.

EMT STANDING ORDERS

E

- Determine if resuscitation is indicated per above flowchart. If resuscitation is initiated, transport immediately and limit scene time to < 10 minutes if possible.
- Routine Patient Care with focus on continuous manual chest compressions and AED use:
  - Ventilate with BVM, 1 breath every 10 compressions
- Provide early airway intervention using oral and/or nasal airways and suction
- Control internal and external hemorrhage:
  - Traumatic Emergencies – 4.12, and Hemorrhage Control – 4.4
  - Apply pelvic binder as indicated
  - Align long bone fractures, splint as indicated
- Attempt to maintain spinal motion restriction by minimizing head movement, do not apply a cervical collar before ROSC.
- If ROSC occurs (Post Resuscitative Care – 3.4A or Post Resuscitative Care – 3.4P
- Reference Trauma Triage and Transport Decision – 4.9.
- Consider activation of Air Medical Transport. Request paramedic intercept. If not available, call for AEMT intercept.
- Alert receiving facility of a trauma alert and a patient in cardiac arrest.
- Consider not initiating resuscitation or early termination of efforts if there are obvious signs of death, injuries that are not compatible with life, or if there has been a prolonged downtime (Resuscitation Initiation and Termination – 8.17.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Place IV/IO without interrupting chest compressions
- Administer 500 mL – 1000 mL of 0.9% NaCl, repeat as needed. Warmed fluids should be used if available and when treating shock.
- Administer epinephrine (Cardiac Arrest – 3.2A).
- Consider placement of supraglottic airway and ensure quality of ventilation with waveform capnography.

ADVANCED EMT STANDING ORDERS - PEDIATRIC

- Administer fluid bolus 20mL/kg of 0.9% NaCl by syringe method (may repeat to a maximum 60 mL/kg). Warmed fluids should be used where available to aid in shock treatment.
- Consider placement of supgraglottic airway and ensure quality of ventilation with waveform capnography.

(Continued)

Traumatic Cardiac Arrest (TCA)
Adult & Pediatric

4.11

PARAMEDIC STANDING ORDERS

P

- Consider early placement of an endotracheal tube without interrupting chest compression (Airway Management Procedure - 5.0, Orotracheal Intubation - 5.9, Percutaneous Cricothyrotomy - 5.10, or Surgical Cricothyrotomy - 5.13).
- Consider leaving supraglottic airway in place, if effective. Monitor placement with capnography.
- Perform bilateral needle chest decompression (Thoracic and Abdominal Injuries - 4.8, and Needle Decompression Thoracostomy (NDT) - 6.5.
- If Return of Spontaneous Circulation (ROSC) occurs, consider tranexamic acid (Hemorrhage Control - 4.4).
- Administer epinephrine (Cardiac Arrest – Adult 3.2A).
- Apply cardiac monitor and treat displayed rhythm. Confirm with point-of-care ultrasound, if available and trained:
  - Asystole or PEA with rate < 40:
    - Terminate Resuscitation (Resuscitation Initiation and Termination - 8.17)
  - PEA with rate > 40:
    - Rapid transport to nearest appropriate facility, with ongoing resuscitation
  - VFib/VTach
    - Defibrillate, and initiate rapid transport to nearest facility, with ongoing resuscitation

PEARLS:

- Use warmed fluids when administering fluid bolus to patients in TCA, as shock management is crucial.
- Cardiac arrest as a result of blunt force trauma has a nearly 100% mortality rate. Cardiac arrest from penetrating trauma has a higher likelihood of survivability with recent advancements in trauma care.
- Due to the nature of traumatic cardiac arrest, patients may not always meet the criteria for TOR. This protocol is designed to be a decision making guide; if in doubt, start resuscitation.
- A medical cardiac arrest can lead to a traumatic injury (e.g., a cardiac arrest while driving).

Return to TOC

Important History Elements	Relevant Signs and Symptoms	Differential (Life Threatening)
• Time and mechanism of injury • Damage to structure or vehicle • Patient location in structure or vehicle • Others dead or injured • Speed and details of traffic accident • Restraints and protective equipment present or absent • SAMPLE	• Hypotension or shock • Hypoxia • Cardiac or respiratory arrest • Pain and swelling • Deformity, lesions, bleeding • Altered mental status or unconsciousness	• Chest: pneumothorax (hemo- / tension-), flail chest, cardiac tamponade, open chest wound • Spine fractures / spinal cord injury • Intra-abdominal bleeding • Pelvic / femur fracture • Head injury • Foreign body airway obstruction / laryngeal fracture • Hypothermia, hyperthermia, environmental exposure

STANDING ORDERS – ADULT & PEDIATRIC

- Routine Patient Care.
- Perform advanced spinal assessment (Spinal Trauma and Assessment – 4.6) to determine if patient requires spinal motion restriction.
- During primary survey, providers should follow the MARCH algorithm, continually reassessing patient status:
  - **M:** Massive Hemorrhage - Control life threatening bleeding. (Shock – 2.24A, & Shock – 2.24P, Hemorrhage Control – 4.4).
    - If pelvic instability is suspected, apply pelvic binder
  - **A:** Airway Control - If the patient is unable to maintain their own airway, insert an adjunct or advanced airway (Airway Management Procedure – 5.0, Airway Management Protocol – 5.1A & Airway Management Protocol – 5.1P)
  - **R:** Respiratory Support - Ensure adequate ventilatory status is attained and SpO_2 is kept above 94% using a bag valve mask or other appropriate ventilatory assistance
  - **C:** Circulation - Assess for adequate circulation and perfusion, and treat for shock (Shock – 2.24A, & Shock – 2.24P)
  - **H:** Hypothermia – During transport, use bulky blankets, warmed IV fluids, and active warming as indicated
- Obtain baseline vital signs and determine level of consciousness

IF NORMAL FINDINGS ABOVE

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

E/A/P

- Routine patient care and control hemorrhage. Complete detailed secondary assessment. Treat disability - splint any suspected fractures, consider pelvic binding and treatment of any hemorrhage, evaluate for presence of traumatic brain injury.
- Transport to appropriate destination (Trauma Triage & Transport Decision - 4.9).
- Reassess for changes in patient status.

(Continued)

IF ABNORMAL FINDINGS ABOVE

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care.
- Treat disability - splint any suspected fractures, consider pelvic binding and treatment of any hemorrhage, evaluate for presence of traumatic brain injury.
- Consider treatment for hypothermia in shock management.

- Limit scene time to <10 minutes and provide early notification to receiving facility.
- Rapidly transport to appropriate destination (Trauma Triage & Transport Decision - 4.9).

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

A

- Obtain IV/IO access.
- Consider administration of warmed 0.9% normal saline bolus to treat hypovolemic shock:
  - Adult: 500 mL bolus to maintain a MAP > 65 mmHg (systolic > 90 mmHg)
  - Pediatric: 20 mL/kg bolus to improve clinical condition (capillary refill time ≤ 2 seconds, equal peripheral and distal pulses, improved mental status, normal breathing)
  - Total volume administered should not exceed 2,000 mL for adults, and 60 mL/kg for pediatric patients (Shock – 2.24A or Shock – 2.24P)
- Consider an antiemetic for nausea/vomiting.

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

- Consider chest decompression if tension pneumothorax is present (Needle Decompression Thoracostomy (NDT) - 6.5).
- Consider pain management (Pain Management – 2.20A, or Pain Management – 2.20P).
- If MAP remains < 65 mmHg following fluid administration, consider use of vasopressors (Shock – 2.24A, or Shock – 2.24P).
- Perform point-of-care ultrasound E-FAST exam if available and credentialed.

PARAMEDIC STANDING ORDERS – ADULT

- Consider tranexamic acid (TXA) (must have approval of District Medical Advisor):
  - Mix 1 gram of TXA in 50 - 100 ml of 0.9% NaCl; infuse over approximately 10 minutes IV or IO
  - Notify receiving facility of TXA administration prior to arriving

TXA Indications

- Evidence of significant trauma, **AND**
- Evidence or concern for severe external and/or internal hemorrhage, **AND**
- Presence of one or more markers of hemodynamic instability:
  - Sustained systolic blood pressure < 90 mmHg
  - Sustained heart rate > 110 after pain adequately treated, **AND**
- Injury occurred within past 3 hours

TXA Contraindications

- < 15 years of age
- Previous allergic reaction to TXA
- Isolated head injury
- Patients who have received or will receive prothrombin complex concentrate (PCCs), factor VIIa, or factor IX complex concentrates.
- Women who are known or suspected to be pregnant with a fetus of viable gestational age (> 24 weeks).

Notify receiving hospital as soon as reasonable possible for patients that meet Trauma Alert criteria.

(Continued)

PEARLS:

- Scene time should not be delayed for procedures and interventions which can be performed en route.
- BVM ventilation is an acceptable method of airway management if pulse oximetry can be maintained above 94%.
- Rapid transport destination determination and notification of the receiving facility in the event of a Trauma Alert are critical for severely-injured patients.
- Geriatric patients should be evaluated with a high index of suspicion, as age related factors may reduce their ability to sense pain, and their ability to compensate effectively in traumatic injury.
- Mechanism is the most reliable indicator of serious injury in many settings.
- TXA in multi-system trauma must be given within 3 hours of injury. Rapid bolus administration of TXA can cause hypotension, so care should be taken in administration.

Return to TOC

ASSESSMENT

Each patient presents unique problems that cannot be fully outlined in any algorithm. As such, the provider must rely on thorough assessment techniques and consider each of the following:

Airway Patency: Assess for airway obstruction or risk of impending obstruction due to facial injuries, mass, foreign body, swelling, etc. Assess for presence/absence of gag reflex.

Ventilatory Status: Assess for adequate respiratory effort and impending fatigue/failure/apnea. Assess for accessory muscle use, tripod positioning, the ability of the patient to speak in full sentences. If available, assess waveform capnography.

Oxygenation: Any oxygen saturation <90% represents relatively severe hypoxia and should be considered an important warning sign. In addition to oxygen saturation, assess for cyanosis.

Airway Anatomy: Before attempting airway maneuvers or endotracheal intubation, especially with the use of RSI, assess patient anatomy to predict the probability of success and the need for backup device or technique.

- First, assess for difficulty of mask seal. Patients with facial hair, facial fractures, obesity, extremes of age, and pathologically stiff lungs (COPD, acute respiratory distress syndrome, etc.) may require special mask techniques or alternatives.
- Next assess for difficulty of intubation. Patients with a short neck, the inability to open their mouth at least three finger widths (or other oral issues such as a large tongue or high arched palate), less than three finger-widths of thyromental distance (or a receding jaw), reduced atlanto-occipital movement (such as in suspected c-spine injury), obesity or evidence of obstruction (such as drooling or stridor) may be difficult to intubate.

DEVISE A PLAN

1. Each patient will present unique challenges to airway management. Therefore, before any intervention is attempted, the provider should contemplate a plan of action that addresses the needs of the patient, and anticipates complications and how to manage them.

2. Airway management is a continuum of interventions, not an “all or none” treatment. Frequently patients may only need airway positioning or a nasal or oral airway to achieve adequate ventilation and oxygenation. Others will require more invasive procedures. The provider should choose the least invasive method that can be employed to achieve adequate ventilation and oxygenation.

3. Continually reassess the efficacy of the plan and change the plan of action as the patient’s needs dictate.

4. In children, a graded approach to airway management is recommended. Basic airway maneuvers and basic adjuncts followed by bag-valve-mask (BVM) ventilation are usually effective.

5. Patient positioning can significantly impact respiratory mechanics. Patients with severe bronchospasm should be left in the position of comfort (perhaps tripod) whenever possible. Elevating the head or padding (shoulders, occiput) can assist with opening airway and respiratory mechanics. This can both improve the ability to ventilate and limit aspiration.

(Continued)

BASIC SKILLS

Mastery of basic airway skills is paramount to the successful management of a patient with respiratory compromise. Ensure a patent airway with the use of:

- Chin-lift/jaw-thrust
- Nasal airway
- Oral airway
- Suction
- Removal of foreign body.

OPA/NPA: Oropharyngeal airways (OPA) or nasopharyngeal airways (NPA) can be placed if needed to maintain a patent airway and make BVM ventilation more effective.

- OPA are used for patients **without** gag reflex.
- NPA are used for patients **with** gag reflex. Note NPAs are relatively but not absolutely contraindicated in trauma. Use clinical judgement.

BVM: Provide ventilation with a bag-valve-mask. Using a PEEP valve set at 5 – 15 cmH_2O is recommended. Proper use of the BVM includes appropriate mask selection and head positioning so sternal notch and ear are at the same level, to ensure a good seal. Elevate the stretcher to at least 30º when appropriate. If possible, utilization of the BVM is best accomplished with two people: one person uses both hands to seal the mask and position the airway, while the other person provides ventilation, until chest rise. If the patient has some respiratory effort; synchronize ventilations with the patient's own inhalation effort. Utilize disposable bacteriostatic filter.

ADVANCED AIRWAY SKILLS

Only after basic procedures are deemed inappropriate or have proven to be inadequate should more advanced methods be used. Procedures documenting the use of each device/technique listed below are found elsewhere in this manual.

NIV: Non-invasive ventilation with continuous positive airway pressure (CPAP), bilevel positive airway pressure (BiPAP), or high-flow nasal cannula has been shown to be effective in eliminating the need for intubation and in decreasing mortality in properly-selected patients with acute respiratory distress.

ETT: The endotracheal tube is considered the optimal method of securing the airway in patients with significant respiratory distress and/or airway compromise. However, the incidence of complications is unacceptably high when intubation is performed by inexperienced providers or monitoring of tube placement is inadequate. The optimal method for managing an airway will, therefore, vary based on provider experience, emergency medical services (EMS) or healthcare system characteristics, and the patient's condition. Use capnography continuously for placement and CO2 monitoring. Use video laryngoscopy, if available and trained.

ETT Introducer – "Bougie": All providers who attempt ETT placement should become intimately familiar with the use of a Bougie. It is the device used most often by anesthesiologists and emergency physicians for helping guide placement when a difficult airway is encountered. Bougie must be available for all intubations performed.

SALAD (**S**uction **A**ssisted **L**aryngoscopy and **A**irway **D**econtamination) Procedure: Utilize for difficult airway with liquid contaminants present in adult.

Supraglottic Airways: Utilization of supraglottic airways is an acceptable alternative to endotracheal intubation as both a primary device or a back-up device when previous attempt(s) at ETT placement have failed. Each device has its own set of advantages/disadvantages and requires a unique insertion technique. Providers should have access to, and intimate knowledge of, at least one supraglottic airway.

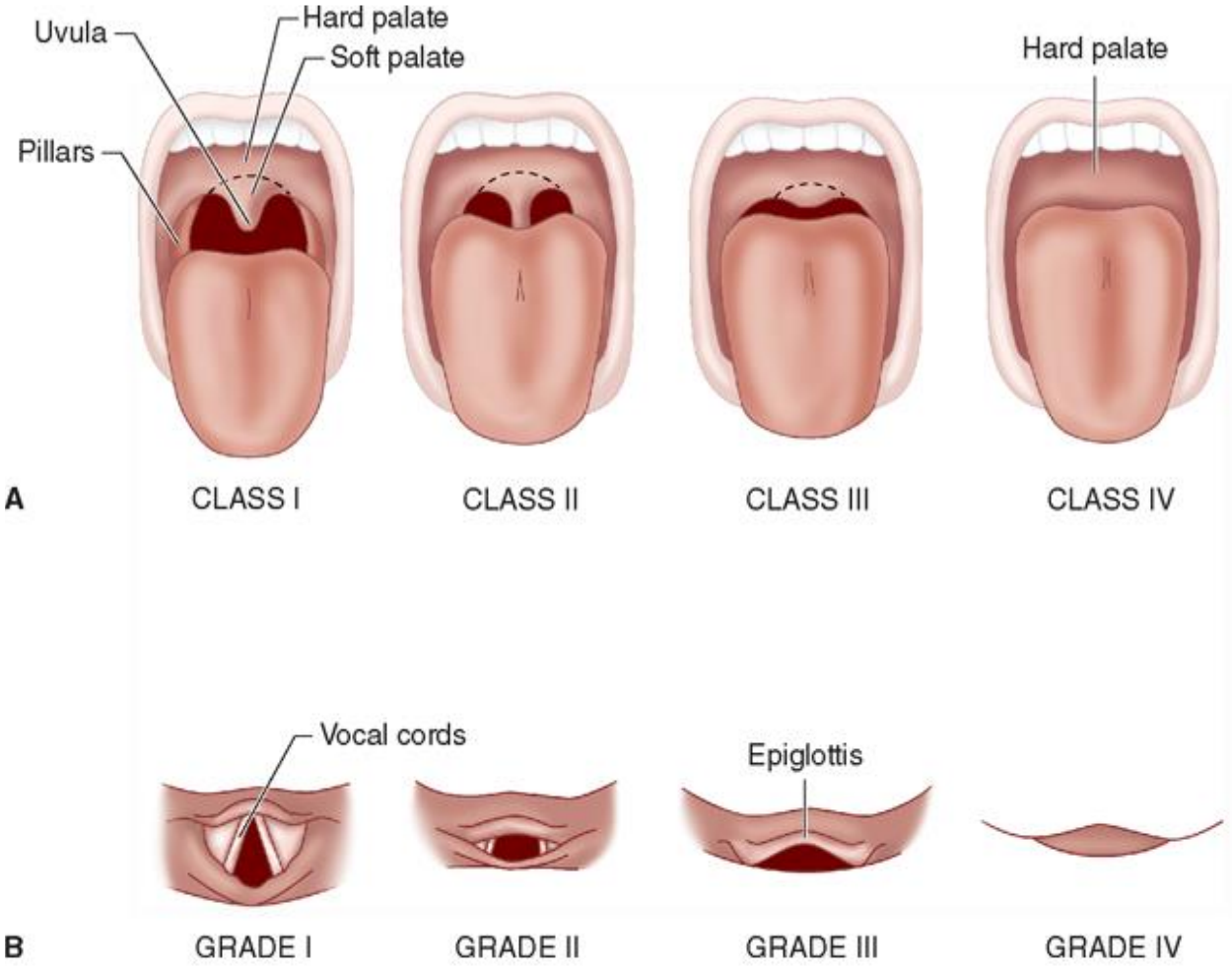
Cricothyrotomy: This procedure is indicated only when all other measures fail or you are presented with a situation in which intubation is contraindicated or in which you cannot intubate or otherwise ventilate the patient. Examples include massive facial trauma or upper airway obstruction due to edema, mass or foreign body.

(Continued)

DOCUMENTATION

All efforts toward airway management should be clearly documented and, at the minimum, should include the following:

- Pre/post intervention vital signs including oxygen saturation as well as capnography (if available).
- Procedures performed/attempted, including number of failed attempts and who performed each attempt/procedure.
- Size of device(s) placed, depth of placement (if applicable).
- Placement confirmation: methods should include auscultation, symmetrical chest wall rise, and waveform capnography, if available.



Source: Butterworth JF, Mackey DC, Wasnick JD: *Morgan & Mikhail's Clinical Anesthesiology*, 5th Edition: www.accessmedicine.com

Return to TOC

Airway Management
Adult

5.1A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Establish airway patency:
  - Open and maintain the airway
  - Suctioning as needed
  - Clear foreign body obstructions
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- Consider inserting an oropharyngeal or nasopharyngeal airway adjunct.
- If patient has a tracheostomy tube (Tracheostomy Care – Adult & Pediatric 5.14).
- For apnea or hypoventilation and decreased level of consciousness with possible opioid overdose, administer naloxone (Poisoning/Substance Abuse/Overdose – 2.21A).
- Assist ventilations with a bag-valve-mask device and supplemental oxygen as needed.
- For adults in severe respiratory distress secondary to pulmonary edema, COPD, asthma, pneumonia, near drowning or undifferentiated respiratory distress, consider use of CPAP (Continuous Positive Airway Pressure (CPAP) – Adult & Pediatric 5.4.

ADVANCED EMT STANDING ORDERS

A

- In cardiac arrest, consider insertion of a supraglottic airway (Supraglottic Airway – Adult & Pediatric 5.12.

PARAMEDIC STANDING ORDERS

P

- The appropriate method of airway management should be determined based on patient condition. If basic procedures are deemed inappropriate or have proven to be inadequate, then more advanced methods should be used.
- Consider Bilevel Positive Airway Pressure (BiPAP) Procedure – Adult 5.3A.
- Consider high-flow nasal canula if appropriate administration system is available.
- For impending respiratory failure with intact gag reflex or trismus: consider nasotracheal intubation (Nasotracheal Intubation - 5.8).
- For apnea/respiratory failure or impending respiratory failure with impaired or absent gag reflex: consider supraglottic airway device or orotracheal intubation (Orotracheal Intubation - 5.9, and Supraglottic Airway – Adult & Pediatric 5.12.
- For adults with severe airway compromise where respiratory arrest is imminent and other methods of airway management are ineffective: consider Rapid Sequence Intubation (Rapid Sequence Intubation (RSI) - 7.3).
  - Note: This procedure is only to be used by paramedics who are trained and credentialed to perform RSI in accordance with local Medical Direction policy and actively enrolled in an approved Vermont EMS RSI Program
- If feasible, place an orogastric tube to decompress the stomach.
- If unable to establish an airway or ventilate, consider cricothyrotomy (Percutaneous Cricothyrotomy - 5.10, or Surgical Cricothyrotomy - 5.13).

Return to TOC

Airway Management
Pediatric
5.1P

EMT STANDING ORDERS

E

- Routine Patient Care.
- Establish airway patency:
  - Open and maintain airway
  - Suction as needed
  - Clear foreign body obstructions
  - Consider inserting an oropharyngeal or nasopharyngeal airway adjunct
- Administer oxygen as appropriate with a target of achieving 94 – 98% saturation.
- If patient has a tracheostomy tube (Tracheostomy Care – Adult & Pediatric 5.14).
- For respiratory distress:
  - Administer high concentration oxygen (preferably humidified) via mask positioned on face or if child resists, held near face
  - Administer oxygen as appropriate with a target of achieving 94 – 98%
  - For children with chronic lung disease or congenital heart disease, ask caregivers about patient's history, including home oxygen level or patient's target oxygen saturation. Maintain target saturation, and contact **Medical Direction** to discuss oxygenation and appropriate transport destination
    Note: Do not rely exclusively on pulse oximetry. If child continues to exhibit signs of respiratory distress despite high oxygen saturation levels, continue oxygen administration

- For apnea or hypoventilation and decreased level of consciousness with possible opioid overdose, administer naloxone. (Poisoning/Substance Abuse/Overdose – 2.21P)
- For respiratory failure or for distress that does not improve with oxygen administration:
  - Assist ventilations with BVM at rate appropriate for child's age (Pediatric Color Coded Appendix – A.5).
  - If unable to maintain an open airway through positioning, consider placing an oropharyngeal or nasopharyngeal airway.
- Determine if child's respiratory distress/failure is caused by a preexisting condition
  - For Allergic Reaction/Anaphylaxis (Allergic Reaction/Anaphylaxis – 2.2P)
  - For Asthma/Reactive Airway Disease/Croup (Asthma/Bronchiolitis/RAD/Croup – 2.4P)

ADVANCED EMT STANDING ORDERS

A

- For respiratory distress, consider CPAP (Continuous Positive Airway Pressure (CPAP) - 5.4).
- For respiratory failure, support airway with BVM ventilation:
  - In cardiac arrest: consider insertion of a supraglottic airway (Supraglottic Airway – Adult & Pediatric 5.12)

PARAMEDIC STANDING ORDERS

P

- Consider high-flow nasal canula if appropriate administration system is available.
- Consider an advanced airway if airway cannot be maintained through positioning.
- Prolonged transport time alone should not warrant more invasive interventions.
- Orotracheal Intubation - 5.9 or Supraglottic Airway Procedure – 5.12).
- If feasible, place an orogastric tube to decompress stomach.

Pediatric Respiratory Distress	Pediatric Respiratory Failure
• Hallmarks of respiratory failure are respiratory rate less than 20 breaths per minute for children <6 years old; less than 12 breaths per minute for children <16 years old; and >60 breaths per minutes for any child; cyanosis, marked tachycardia or bradycardia, poor peripheral perfusion, decreased muscle tone, and depressed mental status.	• Child is able to maintain adequate oxygenation by using extra effort to move air. • Signs include increased respiratory rate, sniffing position, nasal flaring, abnormal breath sounds, head bobbing, intercostal retractions, mild tachycardia.

Respiratory distress in children and infants must be aggressively treated as the patient may rapidly decompensate.

Return to TOC

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

INDICATIONS

- Resuscitative efforts:
  - Can only adjust rate, tidal volume, and adult vs. child setting if applicable
- Any patient requiring ventilatory assistance in conjunction with advanced airway adjuncts.
- Any patient requiring ventilatory assistance in conjunction with basic airway maintenance.
- Any patient requiring ventilatory assistance in conjunction with manual airway maintenance.

CONTRAINDICATIONS

- Airway obstruction.
- Resistance.
- Poor lung compliance.
- Pneumothorax – tension pneumothorax.
- Pulmonary over-pressurization (blast injury, water ascent injury, etc.).
- Children less than 5 years of age or 16 kg (35 lbs). Check manufacturer's recommendations.

PROCEDURES

1. Determine that a need for the automated transport ventilator (ATV) exists. Follow manufacturer's instructions for the device.
2. Assure that all tubing is free from kinks.
3. Determine the proper tidal volume setting. This is done by determining the patient's ideal weight (approx. weight for any physically fit patient having the same sex, height, frame) and multiplying it by 6 – 8 mL/kg. Begin with the lowest tidal volume limit.

MALE		
Height in Ft/In	6 mL/kg	8 mL/kg
5' 0"	300	400
5' 1"	314	418
5' 2"	328	437
5' 3"	341	455
5' 4"	355	474
5' 5"	369	492
5' 6"	383	510
5' 7"	397	529
5' 8"	410	547
5' 9"	424	566
5' 10"	438	584
5' 11"	452	602
6' 0"	466	621
6' 1"	479	639

FEMALE		
Height in Ft/In	6 mL/kg	8 mL/kg
5' 0"	273	364
5' 1"	287	382
5' 2"	301	401
5' 3"	314	419
5' 4"	328	438
5' 5"	342	456
5' 6"	356	474
5' 7"	370	493
5' 8"	383	511
5' 9"	397	530
5' 10"	411	548
5' 11"	425	566
6' 0"	439	585
6' 1"	452	603

(Continued)

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

PROCEDURES (continued)

4. Set Breaths per Minute (BPM) control to rate of 8 – 15 per minute.
5. Check alarm by occluding the patient valve assembly outlet. The audible pressure limit alarm should sound as the ventilator cycles through the delivery phase.
6. Assess lung compliance and chest rise with a bag valve device. Tidal volume may be adjusted lower if poor lung compliance is found.
7. Attach the patient valve assembly to the airway device or mask used on the patient.
8. Assess ventilation. Listen for bilateral lung sounds. Observe for proper chest rise. Chest rise should be symmetrical and patient condition should improve.
9. Count the number of complete ventilator cycles for a full minute. The number should be the same as the setting (+/- 1).
10. Assess and manage the airway as you normally would for any patient with controlled ventilation.
11. If spontaneous breathing begins, it may be desirable to turn the BPM down as long as patient's spontaneous rate is 10 – 12 per minute.
12. Check oxygen cylinder pressure level frequently. This device will deplete a "D" cylinder rapidly.

SPECIAL CONSIDERATIONS

- Due to COPD, chest rise may not appear full Do not increase tidal volume (TV) past upper TV limit.
- If lung sounds are absent or on one side only: rule out airway obstruction, improper tube placement, or pneumothorax, and check tidal volume ml/bpm settings.
- If chest expansion is not adequate, the rescuer should slowly increase tidal volume until chest expansion is adequate, or the uppermost limit (for the patient's ideal weight) is reached.
- If chest appears to over expand, decrease tidal volume.

Return to TOC

Bilevel Positive Airway Pressure (BiPAP)
Adult 5.3A

PARAMEDIC STANDING ORDERS

P

INDICATIONS

- Spontaneously breathing patient in severe respiratory distress due to Asthma/COPD, Congestive Heart Failure / Pulmonary Edema, Pneumonia or Drowning.

ABSOLUTE CONTRAINDICATIONS (Do not use)

- Cardiac/Respiratory arrest.
- Agonal respirations.
- Unable to maintain their own airway.
- Vomiting and/or active upper GI bleed.
- Respiratory distress secondary to trauma.
- Suspicion of pneumothorax.
- Not having a ventilator that is capable of delivering NPPV.

RELATIVE CONTRAINDICATIONS (Use cautiously)

- Unable to follow commands.
- Agitated or combative behavior.

PROCEDURE

1. Ensure adequate oxygen supply for the BiPAP device.
2. Explain the procedure to the patient. Be prepared to coach the patient for claustrophobia or anxiety.
3. Place the patient in an upright position.
4. Monitor the patients SpO_2, Capnography, ECG and Blood pressure.
5. Choose the appropriate sized mask for the patient.
6. Set the ventilator to the patient appropriate setting.
7. IPAP: Set pressure to 10 cm H2O and titrate to work of breathing not to exceed 20 cmH_2O (see chart).
8. EPAP: Set to 5cmH2O and titrate of SpO2 of 94% - 98%; not to exceed 14 cmH_2O.
9. Pressure support to be no less than 5 cmH_2O (Difference between IPAP/EPAP).
10. Set back-up ventilatory rate of no less than 8 BPM.
11. Set FiO_2 to appropriate level to maintain an SpO_2 of 94 – 98%.
12. Recheck the mask for leaks and adjust as needed.
13. If the patient deteriorates and meets one or more of the contraindications above then discontinue the use BiPAP.

- Supraglottic Airway - 5.11, Nasotracheal Intubation - 5.8, Orotracheal Intubation - 5.9, Rapid Sequence Intubation - 7.3 (if trained and credentialed)
- Consider administering anxiolytic, contact **Medical Direction**:
  - Midazolam 2.5 mg IV/IN, may repeat once in 5 minutes **OR** 5 mg IM, may repeat once in 10 minutes, **OR**
  - Lorazepam 0.5 – 1 mg IV, may repeat once in 5 minutes **OR** 1 – 2 mg IM, may repeat once in 10 minutes, **OR**
  - Diazepam 5 mg IV, may repeat once in 5 minutes.

Keep in mind BiPAP uses large volumes of oxygen.
For IN administration of midazolam, use a 5mg/mL concentration.
Administer benzodiazepines with caution in elderly patients or those with signs of hypercarbia or respiratory fatigue.

	Height in Ft/In	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.1	5.11	6	6.1
MALE	6 mL/kg	314	320	328	341	355	369	383	397	410	424	438	452	466	479
	8 mL/kg	418	426	437	455	474	492	510	529	547	566	584	602	621	639

	Height in Ft/In	5	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9	5.1	5.11	6	6.1
FEMALE	6 mL/kg	286	293	300	314	328	342	356	370	383	397	411	425	439	452
	8 mL/kg	382	390	400	406	438	456	474	493	511	530	548	566	585	603

Return to TOC

Continuous Positive Airway Pressure (CPAP)
Adult & Pediatric 5.4

EMT STANDING ORDERS – ADULT ONLY

E

INDICATIONS
- Spontaneously breathing patient in moderate to severe respiratory distress due to congestive heart failure/pulmonary edema, asthma/COPD, pneumonia, drowning or undifferentiated respiratory distress, concurrent with the following signs and symptoms:
  - Oxygen saturation < 94%.
  - Retractions or accessory muscle use.
  - Adult respiratory rate > 25.

ABSOLUTE CONTRAINDICATIONS (Do Not Use)
- Cardiac or respiratory arrest/apnea.
- Unable to maintain own airway.
- Vomiting and/or GI bleed.
- Respiratory distress secondary to trauma.
- Suspicion of pneumothorax.
- Facial trauma with impossible face seal.

RELATIVE CONTRAINDICATIONS (Use Cautiously)
- Unable to follow commands.
- Agitated or combative behavior.
- Hypotension with MAP < 60 (SBP < 90).

PROCEDURE
1. Ensure adequate oxygen supply for CPAP device.
2. Explain the procedure to the patient, coach the patient through claustrophobia and/or anxiety.
3. Place patient in upright position. Apply pulse oximetry.
4. Choose the appropriate sized mask for the patient, assemble the CPAP device, attach to oxygen supply, and insure oxygen is flowing (follow manufacturers directions for preparation for your particular device).
5. Place the mask over the patient's face and secure with straps until minimal air leakage.
6. Adjust pressure to 5 – 15 cm H_2O for adults to effect for patient condition.
7. Recheck mask for leaks and adjust the straps as needed to minimize air leaks.
8. Monitor vital signs and symptoms, and pulse oximetry.
9. If patient's condition improves, maintain CPAP for duration of transport and notify receiving hospital to prepare for a CPAP patient.
10. If patient begins to deteriorate, discontinue CPAP and assist respirations by BVM.
11. Document CPAP procedure, including time and provider. Document serial pulse oximetry values.
12. If a commercial devise is not available, you may consider using a BVM with PEEP valve:
13. Call for Paramedic intercept. If not available, call for AEMT intercept.

(Continued)

Continuous Positive Airway Pressure (CPAP)

Adult & Pediatric 5.4

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

A

INDICATIONS (Continued)

- Adult respiratory rate > 25.
  - See chart for pediatric respiratory rate.

Pediatric Respiratory Distress		
	Age	Resp Rate
Infant	0 - 1 year	> 60
Toddler	1 - 4 years	>40
Preschooler	4 - 6 years	>34
School Age	6 - 12 years	>30
Teen	13 and older	>25

ABSOLUTE CONTRAINDICATIONS (Continued)
(Do Not Use)

- Facial trauma with impossible face seal or pediatric patient too small for available mask sizes.

RELATIVE CONTRAINDICATIONS (Continued)
(Use Cautiously)

- Hypotension with MAP < 60 (SBP < 90).
  - Pediatric SBP < 70 + (age in yrs x 2).

PROCEDURE (Continued)

- Apply capnography. (Waveform Capnography – 6.9)
- Adjust pressure to 5 – 15 cm H_2O for adults to effect for patient condition.
  - Maximum of 5 cm H_2O for pediatric.
- Document serial pulse oximetry and capnography readings.

PARAMEDIC MEDICAL DIRECTION ORDERS – ADULT ONLY

P

INDICATIONS (Continued)

- Interstitial syndrome/consolidation confirmed on POCUS (Paramedic).

PROCEDURE (Continued)

- Consider administering anxiolytic, contact Medical Direction:
  - Midazolam 2.5 mg IV/intranasal, may repeat once in 5 minutes, OR 5 mg IM may repeat once in 10 minutes, OR
  - Lorazepam 0.5 – 1 mg IV, may repeat once in 5 minutes, OR 1 – 2 mg IM, may repeat once in 10 minutes, OR
  - Diazepam 5 mg IV, may repeat once in 5 minutes.

Note: For pediatric dosing, contact **Medical Direction**.

Administer benzodiazipines with caution in patients with signs of hypercarbia.

Return to TOC

Endotracheal Tube Introducer (Bougie)
Adult 5.5A

PARAMEDIC STANDING ORDERS – ADULT

P

INDICATIONS
To facilitate routine placement of endotracheal tube.
Unable to fully visualize vocal cords during an intubation attempt.

LIMITATIONS
Adult Bougies should not be used on less than 6.0 ETT.

PROCEDURE
1. Endotracheal tube may be preloaded on bougie if provider is familiar with technique being used. Always lubricate cuff of endotracheal tube with water-based lubricant.
2. Using techniques described in the Orotracheal Intubation - 5.9 attempt to visualize the vocal cords. Always use all techniques necessary to optimize laryngeal view before trying to pass the bougie.
3. If the vocal cords are partially visualized, pass the bougie through the cords while attempting to feel signs of tracheal placement (see below). Gently advance bougie until holdup is felt. If the bougie does not stop advancing the bougie is likely in the esophagus.
4. If the vocal cords are not visualized, pass the bougie behind the epiglottis, guiding the tip of the bougie anteriorly toward the trachea and assess for signs of tracheal placement (see below). Do not attempt to pass the bougie if the epiglottis is not visualized. Gently advance bougie until holdup is felt. If the bougie does not stop advancing the bougie is likely in the esophagus.
5. With laryngoscope still in place, advance preloaded tube off bougie or have assistant load the tube onto the bougie and advance it to the lip line.
6. Advance the ETT over the Bougie, rotating the ETT about 1/4 turn counterclockwise so that the bevel is oriented vertically as the ETT passes through the vocal cords. This maneuver allows the bevel to gently spread the arytenoids with a minimum of force, thus avoiding injury. If resistance is felt, withdraw the ETT, rotating it in a slightly more counterclockwise direction, and advance the tube again. Advance the tube to a lip-line of 24 cm in an adult male, and 22 cm in an adult female or until cuff is seen passing through cords.
7. Holding the ETT firmly in place, have an assistant remove the Bougie.
8. Remove the laryngoscope.
9. Inflate the cuff with 5 – 10 ml of air.
10. Follow the procedures outlined in Orotracheal Intubation - 5.9 to confirm placement, secure the ETT, monitor and document placement of the ETT.

SIGNS OF TRACHEAL PLACEMENT
- The Bougie is felt to “hold up” as the airway narrows and is unable to be advanced further. This is the most reliable sign of proper Bougie placement. If the Bougie enters the esophagus, it will continue to advance without resistance.
- It may be possible to feel the tactile sensation of “clicking” as the Bougie tip is advanced downward over the rigid cartilaginous tracheal rings.
- The Bougie can be felt to rotate as it enters a mainstem bronchus. Usually it is a clockwise rotation as the Bougie enters the right mainstem bronchus, but occasionally it will rotate counterclockwise if the Bougie enters the left mainstem bronchus.
- If the patient is not paralyzed, he/she may cough.

Return to TOC

Foreign-Body Obstruction
Adult & Pediatric

5.6

EMT/ADVANCED EMT STANDING ORDERS

E/A

INDICATIONS

- Sudden onset of respiratory distress often with coughing, wheezing, gagging or stridor due to a foreign-body obstruction of the upper airway.

PROCEDURE

- Routine Patient Care:
  - Assess the degree of foreign body obstruction
  - Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing
  - In severe foreign-body obstructions, the patient may not be able to make a sound; the victim may clutch their neck in the universal choking sign
- **For an infant -** Deliver 5 back blows followed by 5 chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive.
- **For a child -** Perform subdiaphragmatic abdominal thrusts (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive.
- **For adults -** A combination of maneuvers may be required:
  - First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved
  - If abdominal thrusts are ineffective, chest thrusts should be used (chest thrusts should be used primarily in morbidly obese patients and in patients who are in the late stages of pregnancy)
- If the victim becomes unresponsive, begin CPR immediately but look in the mouth before administering any ventilations. If a foreign-body is visible, remove.
- Do not perform blind finger sweeps in the mouth and posterior pharynx. This may push the object farther into the airway.

PARAMEDIC STANDING ORDERS

P

- If basic foreign body airway maneuvers fail, consider any of the following:
  - In unresponsive patients, visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign-body using Magill forceps
  - If obstruction is secondary to trauma or edema, or if uncontrollable bleeding into the airway causes life-threatening ventilation impairment, perform endotracheal intubation (see Orotracheal Intubation Procedure - 5.9)
  - Consider forced right mainstem intubation (with pullback) to allow for ventilation of left lung in the extreme event of lower tracheal foreign body obstruction and inability to ventilate
  - If unable to intubate and the patient cannot be adequately ventilated by other means, perform cricothyrotomy (see Percutaneous Cricothyrotomy Procedure - 5.10, or Surgical Cricothyrotomy - 5.13)

PEARLS

If air exchange is adequate with a partial airway obstruction, do not interfere; instead, encourage the patient to cough up the obstruction. Continue to monitor the patient for adequacy of air exchange. If air exchange becomes inadequate, continue with the protocol.

Return to TOC

High Flow Nasal Cannula
Adult & Pediatric

5.7

PARAMEDIC STANDING ORDERS

BACKGROUND
High Flow Nasal Cannula (HFNC) is a mode of noninvasive respiratory support that delivers high flows of heated and humidified blended air and oxygen through an unsealed nasal interface. The use of HFNC is associated with improved physiological outcomes including respiratory rate (RR), heart rate (HR), work of breathing, and oxygenation (Sp02).

INDICATIONS
Severe respiratory distress PLUS persistent Sp02 < 92% on maximum low-flow NC in patient who can maintain their airway (alert and able to swallow). HFNC is ideally suited for hypoxic respiratory distress as might be seen in bronchiolitis in infants and children. HFNC may also be used for adult patients.

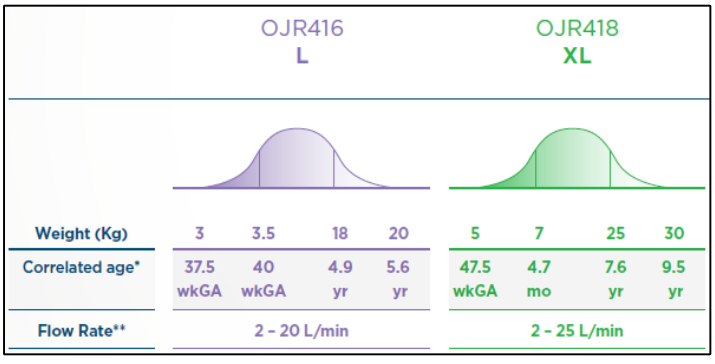
EXCLUSION CRITERIA
Patient needing advanced respiratory support (CPAP, BiPAP or Intubation). Properly sized equipment unavailable or poor fit. Recent GI, airway, or tracheal surgery. Tracheotomy. Significant neck or facial trauma. Foreign body aspiration.

SPECIAL CONSIDERATIONS
Primary dx of pneumonia, asthma, or croup. Born prematurely < 34 weeks (if < 6 months). Complex medical history, cardiac or lung disease. Infants < 8 weeks old.

PROCEDURE
- Set up equipment (refer to Airvo 2 & Optiflow Junior 2 user manual or quick guide).
- Choose appropriately sized nasal cannula using recommended nare occlusion of 50%.
- Suction nares just prior to initiation of treatment.
- Set appropriate mode (pediatric or adult) and temperature (34C pedi or 37C adult).
- Start HFNC at 2 L/kg/min for infants up to 12 kg. Start flow rates for those over 12 kg using weight-based flow rates as per table below.
- Start FiO2 at 30-40% and titrate to Sp02 92% with target of 92-96%.
- Consider NG or IVF hydration.

WEIGHT BASED FLOW RATE

Weight	Flow Rate
Up to 12 kg	2 L/kg/min
13–15 kg	30 L/min
16–30 kg	35 L/min
31–50 kg	40 L/min
>50 kg	50 L/min



(Continued)

High Flow Nasal Cannula
Adult & Pediatric

5.7

PARAMEDIC STANDING ORDERS

TRANSPORT TEAM CONFIGURATION

In the hospital setting, re-assess patient after 60 minutes for response to treatment and stability based on improvement in RR, HR, work of breathing, and level of alertness. Consider transport team configuration as below. For HFNC consider 2 providers with patient. See Interfacility Transport Protocol - 7.0.

- **Paramedic** - Patient is stable and meets all three of the following criteria:
  - Flow at ≤ 2 L/kg/min or as per Weight Based Flow Chart
  - FiO2 ≤ 40%
  - Child < 5 kg has appropriate restraint and warming system
- **Critical Care Transport Team** - Patient has continued respiratory distress or hypoxia or requires increased flow or 02 settings. Patients with medical complexity or sending physician discretion.

ESTIMATED OXYGEN CYLINDER CAPACITY IN MINUTES FOR AIRVO2 HFNC

This chart lists the estimated time in minutes an M or H oxygen cylinder can flow at, when the staring pressure is 2,000 psi, and the FiO2 is set to 50%:

M Tank Oxygen flow rate	Flow time	H Tank Oxygen flow rate	Flow time
60 LPM……....	102 min	60 LPM……....	210 min
50 LPM……..	120 min	50 LPM……..	240 min
40 LPM……..	150 min	40 LPM……..	300 min
30 LPM……..	187 min	30 LPM……..	420 min
25 LPM……..	240 min	25 LPM……..	510 min
20 LPM……..	300 min	20 LPM……..	640 min
15 LPM……..	390 min	15 LPM……..	850 min
10 LPM……..	600 min	10 LPM……..	1200 min

This chart is for reference only. The paramedic should complete their own calculations based on your patient's needs, the oxygen cylinder pressure at time of transport, and your expected transport time.

Return to TOC

Nasotracheal Intubation

Adult

5.8

PARAMEDIC STANDING ORDERS – ADULT

P

INDICATIONS

- Impending respiratory failure with intact gag reflex, or jaw is clenched and unable to be opened in spontaneously breathing patient.

CONTRAINDICATIONS INCLUDE:

- Apnea.
- Nasal obstruction.
- Suspected basilar skull fracture.
- Severe facial trauma or suspected facial fractures.
- Patient fits on a pediatric length-based resuscitation tape.

PROCEDURE

1. Pre-medicate nasal mucosa with 2% lidocaine jelly and vasoconstricting nasal decongestant spray such as neo-synephrine, if available.
2. Pre-oxygenate the patient.
3. Select the larger and less obstructed nostril and insert a lubricated nasal airway.
4. Lubricate the ETT with water-based lubricant.
5. Remove the nasal airway and gently insert the ETT with continuous waveform capnography monitoring, keeping the bevel toward the septum (a gentle rotation movement may be necessary at the turbinates).
6. Continue to advance the ETT while listening for maximum air movement and watching for capnography waveform. Consider use of BAAM device to aid in listening to airflow.
7. At the point of maximum air movement, indicating proximity to the level of the glottis, gently and evenly advance the tube through the glottic opening on inspiration.
   - If resistance is encountered, the tube may have become lodged into the pyriform sinus and you may note tenting of the skin on either side of the thyroid cartilage. If this happens, slightly withdraw the ETT and rotate it toward the midline and attempt to advance tube again with the next inspiration.
8. Upon entering the trachea, the tube may cause the patient to cough, buck, strain, or gag. This is normal. Do not remove the ETT. Be prepared to control the cervical spine and be alert for vomiting.
9. Placement depth should be from the nares to the tip of the tube: approximately 28 cm in males and 26 cm in females.
10. Inflate cuff with 5 – 10 mL of air.
11. Confirm appropriate placement by waveform capnography, symmetrical chest-wall rise, auscultation of equal breath sounds over the chest, a lack of epigastric sounds with bagging.
12. Secure the ETT, consider applying a cervical-collar and securing patient to a long backboard (even for the medical patient) to protect the placement of the ETT.

(Continued)

PARAMEDIC STANDING ORDERS

P

13. Ongoing monitoring of ETT placement and ventilation status using waveform capnography is required for all patients.

14. Document each attempt as a separate procedure in SIREN. An attempt is defined as placement of the tube into the patient's nostril. For each attempt, document the time, provider, placement success, pre-oxygenation, ETT size, placement depth, placement landmark (e.g. cm at the naris), and confirmation of tube placement including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO_2 readings.

POST INTUBATION CARE

- Consider sedation:
  - Ketamine 1 mg/kg ideal body weight (IBW) IV every 5 – 15 minutes
  - Fentanyl 50 – 100 mcg slow IV/IO push, may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg), **AND**
  - Midazolam 2.5 – 5 mg IV/IO every 5 – 10 minutes (maximum 20 mg), **OR**
  - Lorazepam 1 – 2 mg IV/IO every 15 minutes (maximum 10 mg)
- Contact **Medical Direction** for additional dosing.

Return to TOC

Orotracheal Intubation
Adult & Pediatric

5.9

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

INDICATIONS
- Apnea/respiratory failure. Impending respiratory failure. Impaired or absent gag reflex.
- Inadequate ventilation/oxygenation with basic airway procedures:
  - Only after basic procedures are deemed inappropriate or have proven to be inadequate should more advanced methods be used.

CONTRAINDICATION
- Epiglottitis.
- Facial or neck injuries that prohibit visualization of airway anatomy (relative).

CAUTIONS
- Pediatric patients should, at least initially, be managed with BVM/SGA.
- Patients with CHF should be managed with trial of CPAP/BiPAP, if possible.
- Avoid intubating patients with severe TBI and asthmatics, if possible.

PROCEDURE
1. Prepare all equipment. Have suction and Bougie ready.
2. Pre-oxygenate the patient with high-concentration oxygen. Three-minute minimum of BVM ventilation or if patient is breathing, assure 8 vital capacity breaths with NRB. Apply continuous nasal cannula at 15 LPM.
3. Assess for difficult airway. Have fallback plan and equipment ready (reinforced by a checklist):
   - Utilize a modified LEMON mnemonic; Look externally, Evaluate airway anatomy, Mallampati (minimal use in prehospital environment), Obstruction or Obesity, Neck mobility.
   - Perform HEAVEN assessment - (H) hypoxia, (E) extremes of size, (A) anatomic disruption, obstruction, (V) vomiting, blood, secretions, (E) exsanguination, (N) neck mobility.
   - Positioning goal of patient's ear canal level with the sternal notch.
   - Use ramping of patients as necessary.
   - Consider first pass Bougie/Flex Guide approach with predicted difficult airways.
   - If a difficult airway with liquid contaminants is present in the adult; consider the SALAD (Suction Assisted Laryngoscopy and Airway Decontamination) procedure for oral decontamination using a wide bore suction catheter (such as DuCanto Catheter) as a tongue depressor/lifter followed by laryngoscope blade insertion. Insert Bougie through catheter to facilitate ETT placement as needed.
4. Open the patient's airway. While holding the laryngoscope in the left hand, insert the blade into the right side of the patient's mouth, sweeping the tongue to the left. Use video laryngoscopy, if available and trained.
5. Use the blade to lift the tongue and the epiglottis, either directly with the straight (Miller) blade, or indirectly with the curved (Macintosh) blade.
6. Once the glottic opening is visualized, insert the tube through the vocal cords and continue to visualize while passing the cuff through the cords.
7. Remove the laryngoscope and then the stylet from the ETT.
8. Inflate the cuff with 5 – 10 mL of air (for pediatric, inflate just enough to obtain seal).

(Continued)

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

PROCEDURE (CONTINUED)

9. Confirm appropriate proper placement with waveform capnography and also document symmetrical chest-wall rise, auscultation of equal breath sounds over the chest and a lack of epigastric sounds with ventilations using bag-valve-mask
10. Secure the ETT with a commercial device. Consider applying a cervical collar to minimize head and neck motion during movement and transport.
11. Reassess tube placement frequently, especially after movement of the patient.
12. Ongoing monitoring of ETT placement and ventilation status using waveform capnography is required for all patients. Look for capnograms that suggest:
    - Obstruction/dislodgement.
    - Breath stacking/rebreathing.
    - Inverse slope in Phase 3.
13. Document each attempt as a separate procedure so it can be time stamped in the PCR. An attempt is defined as placement of the blade into the patient's mouth. For each attempt, document the time, provider, placement success, pre-oxygenation, airway grade, ETT size, placement depth, placement landmark (e.g. cm at the patient's lip), and confirmation of tube placement including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO_2 readings.

    If intubation attempt is unsuccessful, ETT placement cannot be verified or ETT becomes dislodged:
    - Remove tube, monitor oxygen saturation and end-tidal CO_2, **AND**
    - Ventilate the patient with 100% oxygen via a BVM until ready to attempt intubation again.

    If continued intubation attempts are unsuccessful (maximum of 3 attempts for cardiac arrest) or BVM ventilation is not adequate, consider placing a supraglottic airway. For a viable patient whose airway cannot be successfully managed by any other means (Percutaneous Cricothyrotomy - 5.10, or Surgical Cricothyrotomy - 5.13).

POST INTUBATION CARE

Sedation:

- Option 1:
  - Ketamine 1 mg/kg ideal body weight (IBW) IV every 5 – 15 minutes, as needed
- Option 2:
  - **Adult:**
    - Fentanyl 50 – 100 mcg slow IV/IO push; may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg), **AND**
    - Midazolam 2.5 – 5 mg IV/IO every 5 – 10 minutes as needed for sedation (maximum 20 mg), **OR**
    - Lorazepam 1 – 2 mg IV/IO every 15 minutes as needed (maximum 10 mg)
  - **Pediatric:**
    - Fentanyl 1 mcg/kg slow IV/IO push; may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg), **AND**
    - Midazolam 0.1 mg/kg IV/IO every 5 – 10 minutes as needed for sedation (maximum 20 mg), **OR**
    - Lorazepam 0.1 mg/kg IV/IO every 15 minutes as needed (maximum 10 mg).

Contact **Medical Direction** for additional dosing.

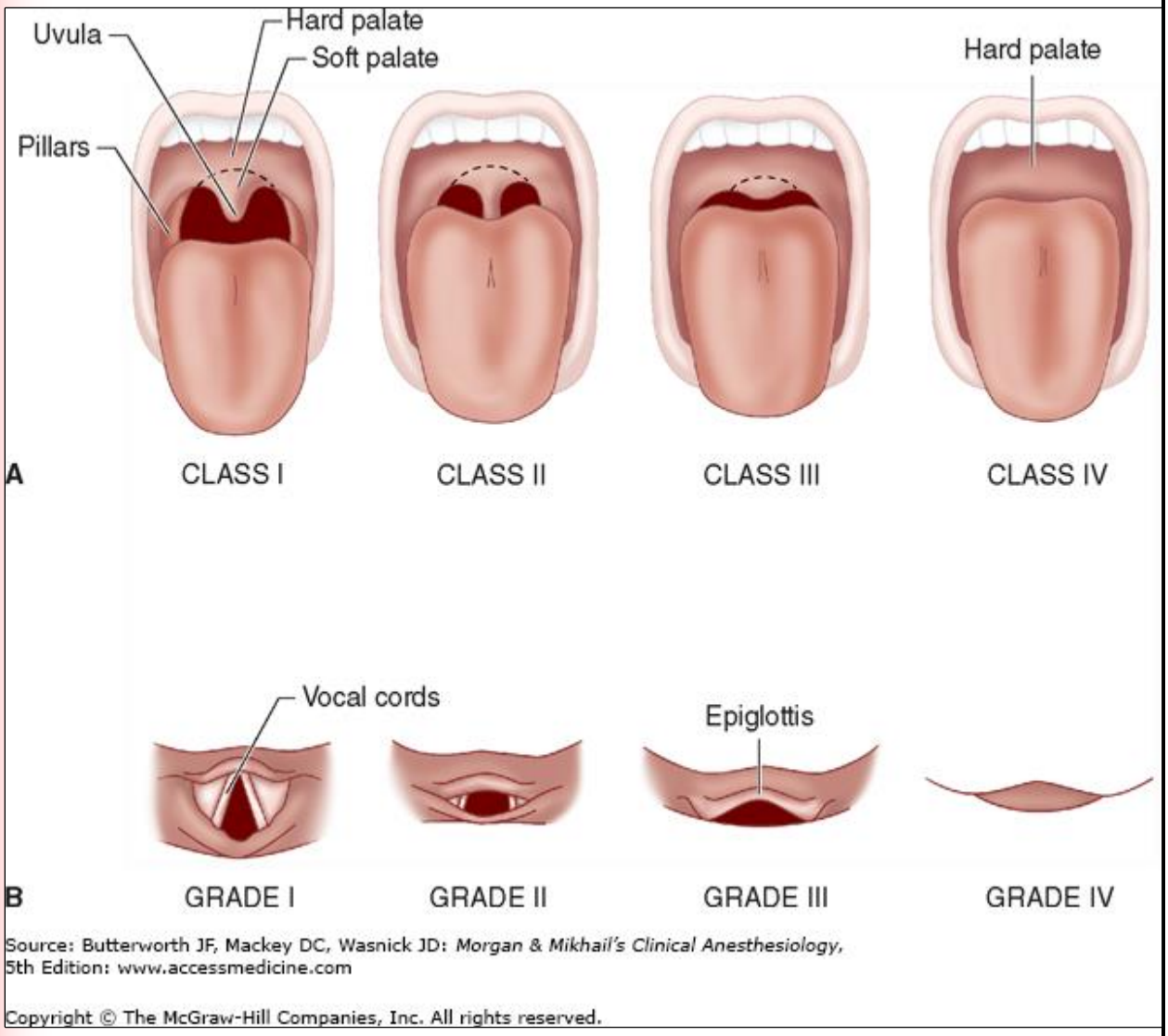
(Continued)

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

Video-Laryngoscope: If available and trained, use video laryngoscope instead of manual laryngoscope. Video-laryngoscopy has been shown to have better success rates than manual laryngoscopy and should be used if available.

Classifications of Oropharyngeal and Laryngoscopy Views



Source: Butterworth JF, Mackey DC, Wasnick JD: *Morgan & Mikhail's Clinical Anesthesiology*, 5th Edition: www.accessmedicine.com

Return to TOC

Percutaneous Cricothyrotomy

Adult & Pediatric

5.10

PARAMEDIC STANDING ORDERS

P

INDICATIONS

- Failed airway: Patient whose airway cannot be successfully managed by any other means.
  - All other methods have been exhausted including BVM, blind airway device, and intubation attempts;
  - Massive mid-face trauma precluding use of BVM, obstruction, trismus (clenching);
  - Inability to control the airway using less invasive measures;
  - Last Resort: All other airway management techniques have failed. Unable to ventilate or oxygenate patient.

Devices may be utilized on patients of any age for which they are designed and appropriate sizes are available.
If anatomical landmarks cannot be identified the procedure should not be performed.

PROCEDURE

1. Can use Rusch QuickTrach or other approved device. Choose appropriate sized device.
2. Pre-oxygenate patient when possible.
3. Assemble all available additional personnel.
4. Locate cricothyroid membrane at the inferior portion of the thyroid cartilage (with head in neutral position, membrane is approximately 3 finger widths above the sternal notch). May be difficult to locate in obese patients.
5. Hold skin taut over membrane and locate the midline.
6. Prep area, preferably with betadine.
7. Hold the needle bevel up at a 90-degree angle, aimed inferiorly as you approach the skin.
8. Puncture the skin with the needle and continue with firm, steady pressure while aspirating for air with the syringe.
9. As soon as air is aspirated freely, stop advancing the needle/airway assembly.
10. Modify the angle to 60 degrees from the head and advance to level of the stopper.
11. Remove the stopper while holding the needle/airway assembly firmly in place.
12. Do not advance the needle further.
    NOTE: if the patient is obese and no air can be aspirated with the stopper in place, you may remove the stopper and continue advancing until air is aspirated. Be aware that without the stopper, risk of perforating the posterior aspect of the trachea is greatly increased.
13. Hold the needle and syringe firmly and slide only the plastic cannula along the needle into the trachea until the flange rests on the neck. Carefully remove the needle and syringe.
14. Secure the cannula with the neck strap.
15. Apply the $EtCO_2$ detector.
16. Confirm placement with the use of breath sounds, pulse ox, $EtCO_2$ and waveform capnography.
17. Ensure 100% FiO_2 to BVM via supplemental 0_2.

Return to TOC

Suctioning of Inserted Airway 5.11

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

INDICATIONS

- Obstruction of the airway (secondary to secretions, blood, and/or any other substance) in a patient currently being assisted by an inserted airway such as an endotracheal tube, supraglottic airway or tracheostomy tube.

CONTRAINDICATIONS

- None.

PROCEDURE

1. Ensure the suction device is operable.
2. Pre-oxygenate the patient.
3. While maintaining aseptic technique, attach the suction catheter to the suction unit.
4. If applicable, remove ventilation device from the airway.
5. Insert the sterile end of the suction catheter into the tube without suction. Insert to proper depth so that suction catheter does not extend past the tube/ device.
6. Once the desired depth is met, apply suction by occluding the port of the suction catheter and slowly remove the catheter from the tube using a twisting motion.
7. Suctioning duration should not exceed 10 seconds, using lowest pressure that effectively removes secretions.
8. Saline flush may be used to help loosen secretions and facilitate suctioning.
9. Re-attach the ventilation device to the patient.

Return to TOC

Supraglottic Airway
Adult & Pediatric

5.12

This protocol applies to commercially available supraglottic airway devices. These airways must be used as directed by the manufacturer's guidelines. They may be used in all age groups for which the devices are designed. Providers must be trained on and competent with the airway device they will be using.

ADVANCED EMT STANDING ORDERS

A

INDICATIONS

- Cardiac Arrest.

RELATIVE CONTRAINDICATIONS

- Severe maxillofacial or oral trauma.
- For devices inserted into the esophagus:
  - The patient has known esophageal disease
  - The patient has ingested a caustic substance
  - The patient has burns involving the airway

PROCEDURE

- Insertion procedure should follow manufacturer guidelines as each device is unique.
- Confirm appropriate placement by symmetrical chest-wall rise, auscultation of equal breath sounds over the chest and a lack of epigastric sounds with bag valve mask ventilation, and waveform capnography, if available.
- Secure the device.
- Document the time, provider, provider level and success for the procedure. Complete all applicable airway confirmation fields including chest rise, bilateral, equal breath sounds, absence of epigastric sounds and end-tidal CO_2 readings.
- Reassess placement frequently, especially after patient movement.

PARAMEDIC STANDING ORDERS

P

INDICATIONS

- Inability to adequately ventilate a patient with a bag-valve-mask or longer EMS transports requiring a more definitive airway.
- Back up device for failed endotracheal intubation attempt.

POST TUBE PLACEMENT CARE – ADULT AND PEDIATRIC

Sedation -

- Option 1:
  - Ketamine 1 mg/kg ideal body weight (IBW) IV/IO every 5 – 15 minutes, as needed
- Option 2:
  - **Adult:**
    - Fentanyl 50 – 100 mcg slow IV/IO push; may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg), **AND**
    - Midazolam 2.5 – 5 mg IV/IO every 5 – 10 minutes as needed for sedation (maximum 20 mg), **OR**
    - Lorazepam 1 – 2 mg IV/IO every 15 minutes as needed (maximum 10 mg).
  - **Pediatric:**
    - Fentanyl 1 mcg/kg slow IV/IO push; may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg), **AND**
    - Midazolam 0.1 mg/kg IV/IO every 5 – 10 minutes as needed for sedation (maximum 20 mg), **OR**
    - Lorazepam 0.1 mg/kg IV/IO every 15 minutes as needed (maximum 10 mg).
- Contact **Medical Direction** for additional dosing.

Return to TOC

Surgical Cricothyrotomy
Adult & Pediatric

5.13

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC (8 YEARS AND OLDER)

P

INDICATIONS

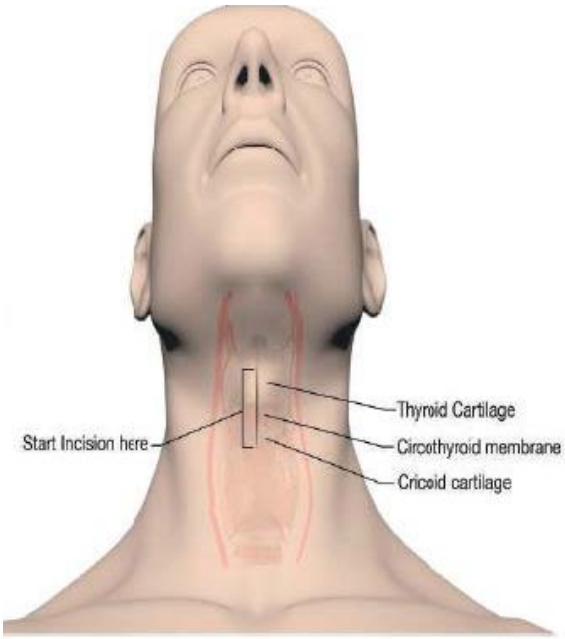
- Failure to maintain airway (including oxygenation, ventilation and protection) through other less invasive means.
- Patient 8 years or older with palpable landmarks.

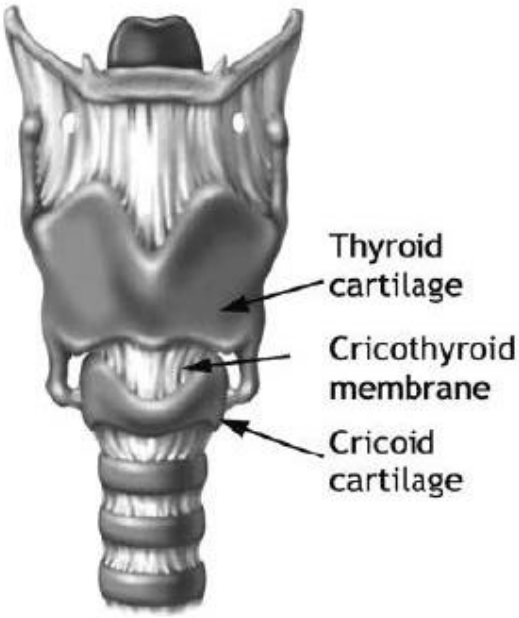
The following protocol is an effort to maintain awareness of a procedure that occurs rarely in the Vermont EMS system, predominantly in trauma cases with disruption of the face and normal airway anatomy and in choking patients. Even in some dramatic facial injuries, the airway may be adequately managed by sitting the patient up and leaning forward, as long as the other injuries allow. Ultimately, this procedure should be practiced on a regular basis to maintain proficiency.

This protocol describes a generally acceptable open cricothyrotomy and will differ from services that employ percutaneous kits. The inclusion of this protocol does not mandate that all providers use this exact procedural description. Providers should employ the procedure they are trained, practiced and most comfortable with. This protocol is one of multiple acceptable means to perform this procedure. Regardless of the procedure type, it is essential that Vermont paramedics are familiar with the available supplies and materials.

MATERIALS/EQUIPMENT

1. Cuffed tracheostomy tube or 6.0 - 7.0 ETT
2. Tracheal hook or bougie
3. Trousseau dilator (if available)
4. Syringe to inflate cuff
5. Scalpel
6. Swabs/skin prep
7. Securing device or tape





(Continued)

Surgical Cricothyrotomy

Adult & Pediatric

5.13

PARAMEDIC STANDING ORDERS

P

PROCEDURE

1. Extend the neck when possible to ensure best access to the trachea. Swab/cleanse the area.
2. Immobilize the trachea with your non-dominant thumb and middle finger while palpating the cricothyroid membrane with your non-dominant index finger. **NOTE:** The cricothyroid membrane is immediately BELOW the thyroid cartilage.
3. Make a 3 – 5 cm **vertical** incision over the cricothyroid membrane through the skin and subcutaneous tissues. **NOTE:** Severe bleeding is possible with this procedure and may occur at this or the following steps. Be prepared to suction and provide direct pressure to control bleeding.
4. Palpate the membrane through the incision to confirm anatomy.
5. Make a small (1 cm or less) incision **horizontally** through the cricothyroid membrane.
6. Insert the tracheal hook or bougie in the opening of the membrane and rotate toward the head while maintaining hold of the thyroid cartilage with your non-dominant hand.
7. If Trousseau dilator available, insert into the incision site and spread vertical then rotate 90 degrees until the dilator is parallel with the neck.
8. Insert the cuffed tracheostomy tube or ETT tube into the incision site. Advance until the flanges rest on the skin of the neck (when using tracheostomy tube).
9. Carefully remove the dilator (if used), tracheal hook and obturator of the tracheostomy tube.
10. Inflate the balloon of the tracheostomy tube/ETT.
11. Ventilate and confirm position by physical exam and $ETCO_2$.
12. Secure the tube in place.
13. Dress incision site.

Return to TOC

Tracheostomy Care
Adult & Pediatric

5.14

EMT/ADVANCED EMT STANDING ORDERS

E/A

INDICATIONS

- An adult or pediatric patient with an established tracheostomy in respiratory distress or failure.

PROCEDURE

1. Consult with the patient's caregivers for assistance.
2. Assess tracheostomy tube. Look for possible causes of distress (DOPES) which may be easily correctable, such as a detached oxygen source.
3. If the patient's breathing is adequate but exhibits continued signs of respiratory distress, administer high-flow oxygen via non-rebreather mask or blow-by, as tolerated, over the tracheostomy.
4. If patient's breathing is inadequate, assist ventilations using bag-valve-mask device with high-flow oxygen.
5. If on a ventilator, remove the patient from the ventilator prior to using bag valve mask device as there may be a problem with the ventilator or oxygen source.
6. Suction if unable to ventilate via tracheostomy or if respiratory distress continues.
7. Use no more than 100 mmHg suction pressure.
8. If the tracheostomy tube has a cannula, remove it prior to suctioning.
9. Determine proper suction catheter length by measuring the obturator.
10. If the obturator is unavailable, insert the suction catheter approximately 2 – 3 inches into the tracheostomy tube. Do not use force.
11. 2 – 3 mL saline flush may be used to help loosen secretions.
12. If the patient remains in severe distress, continue ventilation attempts using bag valve mask with high-flow oxygen via the tracheostomy. Consider underlying reasons for respiratory distress and refer to the appropriate protocol for intervention.

PARAMEDIC STANDING ORDERS

P

INDICATIONS

- An adult or pediatric patient with an established tracheostomy, in respiratory distress or failure where EMT and Advanced EMT tracheostomy interventions have been unsuccessful.
- Dislodged tracheostomy tube.

CONTRAINDICATIONS

- None.

PROCEDURE

1. If the patient remains in severe respiratory distress, remove tracheostomy tube and attempt bag valve mask ventilation.
2. If another tube is available from caregivers, insert into stoma and resume ventilation (a standard endotracheal tube may be used or the used tracheostomy tube, after being cleaned).
3. If unable to replace tube with another tracheostomy tube or endotracheal tube, assist ventilations with bag valve mask and high-flow oxygen.

Return to TOC

Children with Special Healthcare Needs

6.0

Nearly 1 out of every 5 children in the United States has a special healthcare need. Children with special healthcare needs can include physical, intellectual, and developmental disabilities, as well as chronic medical conditions. Emergency care for children with special healthcare needs is often more complex because of their various health conditions and extra care requirements.

EMT STANDING ORDERS

E

Routine Patient Care: Understanding the child's baseline presentation and routine interventions will assist in determining the significance in altered physical findings.

- Utilize parents and caregivers as the best source of information on medications, baseline vital signs, functional level/normal mentation, likely medical complications, equipment operation and troubleshooting, and emergency procedures.
- Communicate with the child in an age-appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the child.
- Refer to child's emergency care plan formulated by their medical providers (if available).
- Be prepared for differences in airway anatomy, physical development, cognitive development and possibly existing surgical alterations or mechanical adjuncts.

Monitor and Support: Closely monitor and support ABCDEs and vitals, especially airway, RR, HR, and mental status.

- Technology-assisted children may experience an emergency if equipment fails to function. Use EMS equipment to support child if needed.
- Airway: Be alert for excessive oral secretions (as with cerebral palsy) and be prepared to suction nose, mouth, and/or tracheostomy tube as needed.
- Breathing: Provide O2 when indicated, using blow-by O2 or by placing a NRB at no less than 6 LPM over child's nose and mouth.
  - If an infant receives home O2 of ≤ 2 LPM via NC and presents in respiratory distress, do not give more than 2 LPM.
  - If child normally has a bluish color or SPO2 < 90%, use extreme caution in giving supplemental O2 just enough to return to normal baseline.
- Circulation:
  - Flashing ambulance lights can trigger a seizure in a child with a seizure disorder. Cover their eyes or turn off lights, if safety allows, when moving child in and out of the ambulance.
  - Avoid placing defib pads over internal pacemaker generator (usually found in upper chest).
- Vitals: If patient has uncontrolled pain or unstable vital signs, call for a paramedic intercept, if available. If not available, call for an AEMT intercept.

Comfort Measures: Allow patient to assume a position of comfort.

- If "*tet spell*" from tetralogy of Fallot, position patient on side with knees pulled to chest to increase systemic resistance.
- If shunt failure; sit child up, if possible, to decrease ICP.
- Protect weak or paralyzed limbs. Do not attempt to straighten contracted extremities. Support with pillows or towels in a position of comfort.
- Most respond best to slower movements and secure contact.
- Try to minimize the number of sensory inputs you're utilizing at any one time. For example, talking to the patient while looking at them and touching them can be overwhelming.

(Continued)

Children with Special Healthcare Needs

6.0

ADVANCED EMT STANDING ORDERS

A

- Obtain vascular access if IV meds or fluids are needed.
- If chronic cardiac condition: administer intravascular fluids only after consulting with online medical direction.
- If hypoperfused: NS 20 mL/kg IVF bolus.
- For patients in shock, refer to Shock Protocol - Pediatric 2.24P.
- If on anticoagulant, use caution when starting IV or when handling child as they bruise easily and may have difficulty clotting.

PARAMEDIC STANDING ORDERS

P

- Consider use of inopressors (norepinephrine/epinephrine) for severe hypotension unresolved with fluid boluses. For patients in shock, refer to Shock Protocol - Pediatric 2.24P.
- Treat seizures per protocol (Seizure Protocol - Pediatric 2.22P) and monitor ECG as arrhythmias may be present in CSF shunt failure.
- Decompress stomach by venting (opening) feeding tube if abdomen is distended.

PEARLS

Autism: Be aware that for the autistic individual, there is a low threshold for sensory input. Work with the patient and caregivers to understand and reduce triggers to sensory stimuli (flashing lights, bright lights in ambulance, siren). Do not interrupt or attempt to stop repetitive behaviors unless there is a clear risk to the patient's wellbeing or the safety of others in the area. Ensure the child has access to their communication system(s) (PECCs binder, iPad, etc.) prior to leaving the scene for the hospital.

Down Syndrome: Any complaint of chest pain should involve assessing for the possibility of dissection. All Down syndrome patients, of any age, who complain of chest pain or a possible anginal equivalent event, should receive a 12-lead ECG. Due to their smaller mouth openings, shortened hard palates, short necks and supraglottic stenosis with smaller tracheal diameter, intubation of the Down syndrome patient may be extremely difficult. If intubation is attempted the tube should be at least two sizes smaller than the care provider would normally use in a patient of the same size.

Cystic Fibrosis: Mortality in CF usually results from pneumonia, hypoxia, or respiratory failure. EMS may encounter very sick CF patients due to them undergoing home therapy instead of in-hospital therapy because of the risk of nosocomial infections. Low bone densities can lead to osteoporosis, increasing the likelihood of fracture from injuries that may not appear significant. Malabsorption of vitamin K may create coagulation issues. Inhaled hypertonic saline and CPAP/BIPAP should be considered for CF patients in respiratory distress, when appropriate. Opioids should be used modestly and EMS should be prepared to secure the patient's airway. Excess salt excretions through the skin can lead to electrolyte imbalances, which can cause dysrhythmias, heat exhaustion in weather that others may not define as "hot,", and increase the likelihood of shock, especially in younger children.

Hemophilia: Bleeding will not stop with conventional methods. Child needs missing clotting factors at the hospital.

Leukemia: Fever is an emergency; immune system is suppressed. Wear masks and gloves when caring for the patient.

(Continued)

PEARLS (continued)

Muscular Dystrophy: Severe scoliosis is associated with patients with MD. Lung function is decreased with untreated scoliosis, and EMS should place the patient into a position that maximizes lung expansion during transport. Patients with MD are incapable of compensating for hypovolemia due to fixed cardiac output. Succinylcholine and other polarizing neuromuscular blocking agents should never be used on MD patients to facilitate rapid sequence induction due to hyperkalemia. Non-polarizing neuromuscular blocking agents can be used if absolutely necessary but should be avoided.

Osteogenesis Imperfecta: Use extreme caution when moving child or taking BP. Use a draw sheet to move. Hare traction splint is contraindicated. Pad between stretcher straps and child. Drive cautiously; avoid sudden jolts that could cause a fracture.

Sickle cell disease: A vaso-occlusive crisis is very painful. Place warm compress over swollen joints. Contact medical direction for orders for pain management. These children are very susceptible to infection due to malfunctioning spleen. Check for fever, abdominal pain, and signs/symptoms of stroke as these are medical emergencies. Vascular access may be challenging. Give 20 mL/mg IVF bolus if signs/symptoms of shock.

Return to TOC

Double Sequential Defibrillation – Adult

6.1

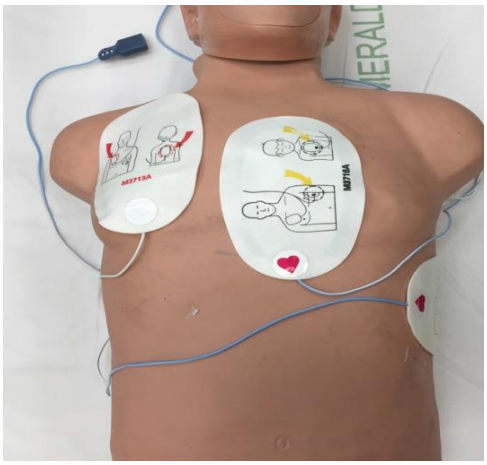
PARAMEDIC STANDING ORDERS – ADULT

INDICATION: Refractory Ventricular Fibrillation / Tachycardia after 3 unsuccessful shocks and a second manual defibrillator is available.

- **Recurrent ventricular fibrillation/tachycardia** is defined as SUCCESSFULLY CONVERTED by standard defibrillation techniques but subsequently returns. It should NOT be treated by double sequential external defibrillation. It is managed by treatment of correctable causes and use of anti-arrhythmic medications in addition to standard defibrillation
- **Refractory ventricular fibrillation/tachycardia** is defined as NOT CONVERTED by standard defibrillation. It is initially managed by treating correctable causes and with antiarrhythmic medications. If these methods fail to produce a response, double sequential external defibrillation may be beneficial.

PROCEDURE:

1. Prior to attempting Double Sequential Defibrillation, at least one shock should be given using a different vector. Change pad placement from anterior-apex to anterior-posterior, or vice versa.
2. Ensure quality CPR and minimally interrupted chest compressions during pad application and procedure.
3. Apply a new set of external defibrillation pads adjacent to, but not touching the pad set currently in use.
4. Assure that controls for the second manual defibrillator are accessible to the team leader
5. Verify that both cardiac manual defibrillators are attached to the patient, that all pads are well adhered, and simultaneously charge both manual defibrillators.
6. When both monitors are charged to maximum energy settings and all persons are clear, push both shock buttons as synchronously as possible.
7. May repeat procedure every 2 minutes as indicated if refractory ventricular fibrillation/tachycardia persists



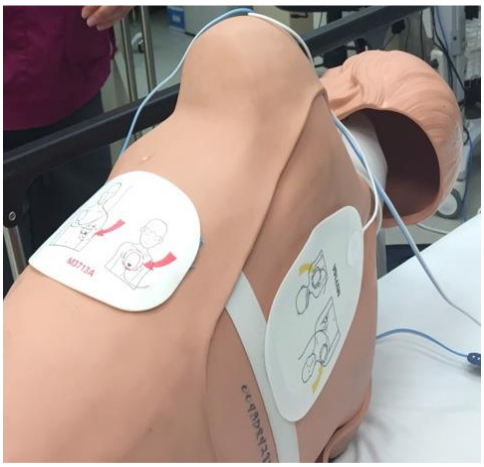


Photo Courtesy of Emergency Medicine Reviews and Prespectives

PEARLS

- Continue compressions when defibrillators are charging.
- During interruptions compressor's hands should hover over chest.
- Pre-charge manual defibrillators prior to rhythm check to ensure rapid defibrillation if a shockable rhythm is present. If no shock is indicated, disarm the device (dump the charge)
- Depending on your local hospital resources, some refractory ventricular fibrillation patients may benefit from emergent cardiac catheterization. For this small patient population, transportation (ideally with a mechanical CPR device) may be indicated. Transporting these patients directly to the cath lab should be done in collaboration with on-line **Medical Direction** and inter-ventional cardiology.
- Caution: There are case reports of monitors being damaged by this procedure.

Return to TOC

ECG Acquisition, Transmission and Interpretation 6.2

ECG interpretation in the prehospital environment can be performed only by paramedics. 12-lead ECG acquisition and transmission may be performed by EMTs, AEMTs and paramedics.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Obtain 12-lead ECG with baseline vitals within 10 minutes for potential ACS if available and practical and transmit per local guidelines.

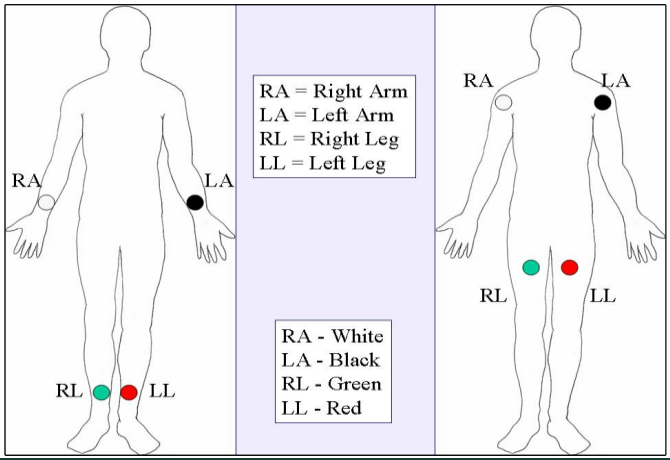
INDICATIONS

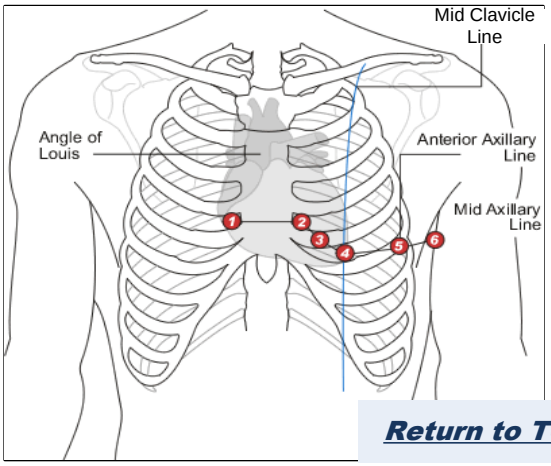
- Congestive Heart Failure/Pulmonary Edema.
- Dysrhythmias, palpitations.
- Suspected Acute Coronary Syndrome (chest, jaw, arm, or epigastric discomfort, diaphoresis, weakness).
- Syncope.
- Shortness of breath.

PROCEDURE

E/A/P

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, read computer interpretation, and transmit if possible.
8. **EMT/AEMT:** If the computer interpretation reads, ***Acute MI*** or ***Acute MI Suspected***, or other similar message, transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements and notify receiving facility of a STEMI ALERT.
   Paramedic: If Paramedic interprets the ECG to be an acute ST-elevation myocardial infarction (STEMI), transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements and notify receiving facility of a STEMI ALERT.
9. For patients with continued symptoms consistent with acute coronary syndrome, perform repeat ECGs during transport to evaluate for evolving STEMI.
10. Copies of 12-lead ECG labeled with the patient's name and date of birth should be left with the receiving hospital and incorporated into the patient's SIREN record.





Return to TOC

High Consequence Pathogen
Maintenance & Considerations

6.3

This protocol is designed to provide basic guidance to EMS crews surrounding the screening, precautions, and post-call safety procedures related to certain viral and bacterial illnesses that are highly contagious and carry significant likelihood of morbidity and mortality. This document is expected to be a living document, with revisions implemented as new diseases become the focus of infection prevention and more is learned about the appropriate precautions.

ROLE OF E911 DISPATCH

Under certain circumstances, Vermont 911 dispatchers may receive directives to screen callers with emergencies requiring EMS for symptoms and history questions which suggest someone may present with a pandemic-based or other high-risk infectious disease. Whenever possible, dispatchers should relay this information to responding public safety agencies so further precautions can be taken. EMS practitioners are responsible for performing their own clinical assessments if they self-identify a situation where further precautions may need to be taken. Guidance on such screenings can be found in the table below.

Pathogen:	**Viral Respiratory Infection (Influenza, COVID-19, SARS, MERS)**
Screening Criteria	**Exposure**
	Known exposure to person with condition in past 14 days?
	Symptoms
	• Respiratory (Cough, sore throat, dyspnea)
	• Fever
	• Influenza-like symptoms (body aches, fatigue)
	If yes to **exposure** or **any symptoms**, proceed to PPE precautions
PPE Precautions	**Contact, Droplet, and Airborne**
	• Fitted N95 respirator
	• Eye protection
	• Gown
	• Gloves
	• Patient wears surgical mask (if able to tolerate)
Treatment Considerations	• ***Widespread cases of COVID-19 exist in Vermont. N95 respirator, eye protection and gloves are standard for every call, regardless of symptoms.***
	• When feasible, limit use of aerosol-generating procedures (AGPs), including BVM, CPAP use, nebulizers, advanced airway placement, and deep suctioning. Use of viral filters when possible is encouraged.
Other Considerations	• An exposure is considered high-risk if a practitioner encounters a patient in the absence of appropriate PPE (minimum surgical mask and eye protection for non-aerosolizing procedures; eye protection and N95 for AGPs)
	• Separate the driver's compartment from patient care compartment; otherwise, the driver should also observe PPE precautions
	• Use exhaust fan when providing care
	• Leave doors open while unloading patient and disinfecting ambulance

(Continued)

High Consequence Pathogen
Maintenance & Considerations

6.3

Pathogens	Ebola Virus Disease (EVD)
Screening Criteria	**Travel:** • Travel to area with widespread EVD transmission in last 21 days? **Exposure:** • Known exposure to blood or body fluids of someone suspected of having EVD in last 21 days? **If Yes to exposure:** **Symptoms:** • Fever • Headache • Weakness • Unexplained bleeding/bruising • Vomiting/diarrhea • Abdominal pain If yes to **exposure** and **any symptoms**: PPE Precautions.
PPE Precautions	**No Bleeding, Vomiting, Diarrhea:** • Surgical mask • Face shield and surgical hood • Gown or coveralls • Double gloves (inside pair tucked under cuff of gown/coveralls **Active Bleeding, Vomiting, Diarrhea** • PPE should be upgraded to include coverall, coverall hood and N95 respirator, and impermeable boots. • A trained observer should be present with to ensure PPE is properly donned/doffed Patient should wear a surgical mask, put on a coverall, if cooperative and able. Wrap patient in sheet if unable to get patient into coverall
Treatment Considerations	• When feasible, limit use of aerosol-generating procedures (AGPs), including BVM, CPAP use, nebulizers, advanced airway placement, and deep suctioning. • Consider deferring IV access/phlebotomy if patient is stable • Do not withhold treatment from critically ill patients
Other Considerations	**Notify the receiving hospital before transport and the Vermont Department of Health at 802-863-7240** • Keep the patient separated from other persons as much as possible. • Minimize number of EMS personnel directly caring for the patient • Consider additional resources or mutual aid for transport personnel and PPE resources. Recommended configuration is 2 patient care providers and one driver • Illness can cause delirium and erratic behavior which can place EMS personnel at risk for infection • Patients being monitored by VDH and inter-facility transfers will be transported by designated ground units (UVM HealthNet, DHART) • Practitioners who come in contact with blood or body fluids from suspect patient should provide first aid per (standard precautions protocol) and follow up with occupational health, supervisor, and VDH.

(Continued)

High Consequence Pathogen
Maintenance & Considerations

6.3

Pathogens	Measles
Screening Criteria	**Symptoms:** • Fever with • Maculopapular rash, often starting in the face • Other symptoms include conjunctivitis, runny nose, cough, etc. • May not have vaccination **Suspect Measles**? --> PPE Precautions
PPE Precautions	**Standard, Droplet, and Airborne** • Gloves • Fitted N95 respirator • Patient wears surgical mask (if able to tolerate)
Treatment Considerations	• When feasible, limit use of aerosol-generating procedures (AGPs), including BVM, CPAP use, nebulizers, advanced airway placement, and deep suctioning
Other Considerations	• Separate the driver's compartment from patient care compartment; otherwise, the driver should also observe PPE precautions • Use exhaust fan when providing care • Leave doors open while unloading patient and disinfecting ambulance • Ambulance should be taken out of service for two hours after transport

Pathogens	Enteric Illness (C. Diff, Norovirus)
Screening Criteria	**Symptoms:** • Diarrhea • Vomiting • Fever **Context:** • Recent antibiotic use • Exposure to norovirus • Congregate living setting **Any symptoms + context** --> PPE Precautions
PPE Precautions	**Contact Precautions** • Gloves • Gown • Handwashing with soap and water is required following doffing of PPE
Treatment Considerations	• Be sure that bodily fluids are contained in a biohazard bag. This includes vomit and soiled linens
Other Considerations	• Disinfect patient care equipment, door handles, and countertops with bleach-containing disinfectant. • Soap and water are effective against diarrheal illnesses. Alcohol-based hand sanitizers are not.

(Continued)

High Consequence Pathogen
Maintenance & Considerations

6.3

Other general considerations for EMS providers:

- Keep log of all EMS personnel who are involved in patient care and follow up with the Vermont Department of Health on any further post-exposure steps that should be taken by EMS personnel,
- If blood or other body fluids come in contact with the skin or mucous membranes of EMS personnel, they should provide immediate decontamination in accordance with the procedures laid out in the standard precautions protocol. The incident should be reported to the provider's EMS supervisor, occupational health clinician, and/or the Vermont Department of Health,
- When you identify a patient who may require special isolation precautions, contact **Medical Direction** and advise them of an incoming ISOLATION ALERT.

Return to TOC

Intraosseous Access
Adult & Pediatric

6.4

ADVANCED EMT/PARAMEDIC STANDING ORDERS– ADULT & PEDIATRIC

DEFINITION

Intraosseous insertion establishes access in a critically ill patient where venous access cannot be rapidly obtained. The bone marrow space serves as a non-collapsible vein and provides access to the general circulation for the administration of fluids and resuscitation drugs. This protocol applies to all appropriate IO insertion sites.

INDICATION

- Drug or fluid resuscitation of a patient in profound shock or other critical illness and in need of immediate life-saving intervention and unable to rapidly obtain peripheral IV access.
- In cardiac arrest, IV preferred when possible; use IO if IV access cannot be established promptly.

A/P

CONTRAINDICATIONS

- Fracture of bone or trauma to selected site
- Active soft tissue infection at insertion site
- Previous attempt at the same bone within 48 hours
- Inability to identify landmarks
- Prosthetic bone or joint at insertion site (suspect if surgical scar)

COMPLICATIONS

- Infusion rate may not be adequate for resuscitation of ongoing hemorrhage or severe shock, extravasation of fluid, fat embolism, and osteomyelitis (rare).

EQUIPMENT

- 15 – 19 gauge bone marrow needle or FDA-approved commercial intraosseous infusion device.
- Gloves and povidone-iodine, chlorhexidine solution or alcohol wipes.
- Primed IV tubing, IV stopcock.
- 10 mL syringe with 0.9% NaCl.
- Pressure pump/bag or 60 mL syringe for volume infusion or slow push.
- Paramedic only - 1 vial of 2% lidocaine (preservative free).
- 5 mL syringe.

IO access is not indicated simply for inability to start an IV, but rather is reserved for patients with profound shock or other critical illness.

(Continued)

Intraosseous Access
Adult & Pediatric

6.4

A/P

PROCEDURE

1. Identify the bony landmarks as appropriate for device.
2. Choose correct needle size based on size of patient, generally:
   Adult:
   - 45 mm proximal humerus or distal femur
   - 25 mm anterior tibial

   Pediatric:
   - 25 mm anterior tibial or distal femur
   - 15 mm anterior tibial (thin or small child)
   - Do not use the proximal humeral site in pediatric patients.
3. Prep the site. Scrub site with alcohol wipe or other cleaning solution and allow to dry.
4. Insert IO needle.
5. Needle is appropriately placed if the following are present:
   - If appropriate, aspiration with syringe yields blood with marrow particulate matter.
   - Infusion of saline does not result in infiltration at the site.
   - Needle stands without support.
6. Attach IV tubing, with or without stopcock.
7. Paramedic only: Prior to IO syringe bolus (flush) or continuous infusion in alert patients:
   - Ensure that the patient has no allergies or sensitivity to lidocaine.
   - SLOWLY administer lidocaine 2% (preservative free) through the IO device catheter.
   - Allow 2 – 5 minutes for anesthetic effects, if possible:
     - **Adult:** 20 – 50 mg (1 – 2.5 mL) 2% lidocaine
     - **Pediatric:** 0.5 mg/kg 2% lidocaine (maximum 50 mg)
8. Flush with 10 mL of 0.9% NaCl rapid bolus x 3 prior to use:
   - Recommend use of a stop cock inline with syringe for bolus infusions.
   - Use a pressure bag for continuous 0.9% NaCl infusions.
9. Stabilize needle:
   - Consider utilizing a commercially available stabilization device as recommended by the manufacturer, OR
   - Stabilize needle on both sides with sterile gauze and secure with tape (avoid tension on needle).
10. Apply ID bracelet to indicate patient has had an IO placed or attempted.

May only attempt one IO needle insertion per site. Notify emergency department staff of missed site(s) and document in the patient care report.

PEARLS

- Any fluid or medication that can be administered through an IV may be administered through an appropriately-placed IO device.
- Use caution for distal femur IO placement. Excess soft tissue may cause insufficeent needle length. Insure at least one black line is visible on the needle after bone contact, prior to drilling.

Return to TOC

Needle Decompression Thoracostomy (NDT) 6.5

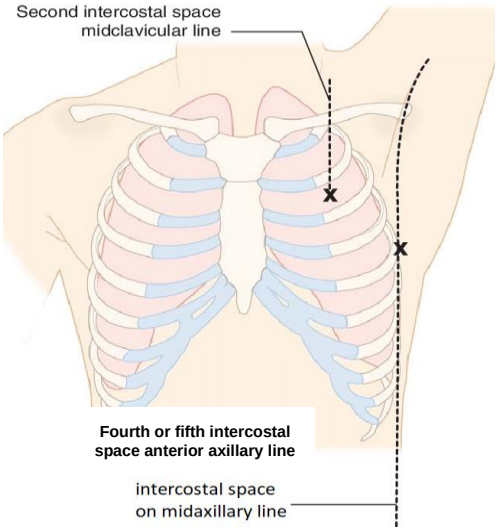
PARAMEDIC STANDING ORDERS

P

INDICATIONS

Patients who are assessed as having an immediate life threat due to tension hemothorax or pneumothorax with absent breath sounds, jugular vein distension, and/or tracheal shift, and evidence of hemodynamic compromise should be rapidly decompressed.

Needle decompression is indicated in patients who have experienced cardiac arrest secondary to blunt or penetrating trauma (Traumatic Cardiac Arrest - 4.11). Once catheters have been placed in these patients, they should not be removed.



PROCEDURE

1. Size Equipment (catheters for NDT are preferred)
    - Adult 10 – 14 ga. 3-¼" catheter
    - Pediatric 16 – 18 ga. 1½" – 2" catheter
2. Select Site
    - **Adult:**
        - Lateral site: 4th or 5th intercostal space (ICS) at the anterior axillary line (AAL) preferred, or
        - Anterior site: 2nd ICS at the mid-clavicular line (MCL).
    - **Pediatric:**
        - 4th ICS at the AAL preferred.
3. Confirm proper placement site.
4. Cleanse insertion site using aseptic technique.
5. Insert the needle/catheter unit at a perpendicular angle to the chest wall all the way to the hub, then hold the needle/catheter unit in place for 5 – 10 seconds before removing the needle in order to allow for full decompression of the pleural space to occur.
6. Observe for signs of a successful NDC, using specific metrics such as an observed hiss of air escaping from the chest during the NDC process, a decrease in respiratory distress, an increase in hemoglobin oxygen saturation, and/or an improvement in signs of shock that may be present.
7. Look for air rush, plunger movement, or aspirated fluid.
8. Stablilize insertion site.
9. Reassess ventilatory status.
10. Continually monitor patient status.

CONTRAINDICATION

Patients whose tension pneumothorax can be relieved by occlusive dressing management / removal from an open chest wound.

PEARLS

- Catheter patency should be reassessed during transport, and a second decompression may be needed to maintain ventilatory status if reaccumulation, catheter occlusion, or dislocation occur.
- Anterior axillary line preferred in pediatric population due to anatomic and chest wall thickness differences.
- Any blood aspirated should be noted and recorded for the receiving facility.

Return to TOC

Restraints
Adult & Pediatric
6.6

EMT/ ADVANCED EMT STANDING ORDERS

E/A

INDICATIONS

Physical restraint and pharmacologic sedation is only indicated to protect a patient, the public, and emergency responders from further injury; facilitate necessary clinical assessment; allow for treatment of life-threatening injury or illness; and/or enable safe transport. Restraint must be performed in a humane manner and as a last resort, utilizing the least restrictive technique.

PROCEDURE

1. Scene and EMS safety, first.
2. Request law enforcement assistance and mental health services, as necessary.
3. Although EMS practitioners work closely in the field with co-responders and frequently assist with or are assisted by law enforcement officers, EMS practitioners must not initiate physical restraint and/or pharmacological sedation to solely facilitate an arrest or to assist law enforcement to take a person into custody. Decisions for EMS practitioners to physically restrain and/or involuntarily sedate a patient must be made by their independent clinical assessment and judgement.
4. When appropriate, attempt less restrictive means of managing the patient, including de-escalation techniques and strategies. If physical restraint is required, call for Paramedic intercept.
5. Ensure that there are sufficient personnel available to physically restrain the patient safely. Initially restrain all 4 extremities.
6. Restrain the patient in a lateral or supine position. No devices such as backboards, splints, or other devices may be placed on top of the patient. Never constrain the patient with their arms and/or legs secured behind their back. To gain control, the patient may need to be in a prone position, but must be moved to supine or lateral position as soon as possible.
7. The patient must be under constant observation by the EMS crew at all times. This includes direct visualization of the patient as well as cardiac, pulse oximetry, and waveform capnography monitoring, if available.
8. The extremities that are restrained must have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible.
9. Documentation in the PCR should include the reason for the use of restraints, the type of restraints used, the time restraints were placed, circulation checks, and any injuries resulting from restraints.
10. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel cannot remove, a law enforcement officer should accompany the patient to the hospital in the transporting ambulance. If this is not feasible, the officer MUST follow directly behind the transporting ambulance to the receiving hospital. (See Police Custody – 8.14.)
11. Once applied, physical restraint should not be removed in the field unless medically necessary to provide care or the subsequent administration of medication rendering physical restraint no longer necessary.
12. If the patient is physically restrained and/or involuntarily medicated, notify the receiving hospital early to prepare appropriate resources on EMS arrival.

(Continued)

PARAMEDIC STANDING ORDERS – ADULT

PROCEDURE

If physical restraints are used and patient continues to be violent/agitated, pharmacological sedation should be administered as soon as possible to assist in control of patient and to help prevent the patient from harming themselves or others during transport.

P

Management of Resistant or Aggressive Behavior (Patient is resisting necessary treatment/interventions and has RASS of +2 to +3):

- Contact **Medical Direction** to consider medication to help the patient de-escalate behavior::
  - Option 1 – Droperidol 5mg IM/IV
    If inadequate sedation in 10 minutes after Droperidol administration, contact **Medical Direction** to consider benzodiazepine.
  - Option 2 – Midazolam 5mg IM/IN, **OR** 2.5 mg IV, **OR** Lorazepam 2 mg IM, **OR** 1 mg IV, **OR** Diazepam 5 mg IV
  - Option 3 - Combination of a benzodiazepine and Haloperidol:
    Midazolam 5 mg IM, **OR** Lorazepam 2 mg IM,
    AND Haloperidol, 5 mg IM,
- Goal is to achieve RASS of -1 to -2.
- Contact **Medical Direction** if additional dosing is needed

Management of Violent/Combative Behavior, OR Delirium with Agitated Behavior (Patient is an immediate danger to self/others and has RASS of +4):

- Contact **Medical Direction** and consider medication to help the patient de-escalate behavior::
  - Option 1 - Ketamine 4 mg/kg IM rounded to nearest 25 mg, maximum dose 500 mg (use 100 mg/mL concentration), may repeat 2 mg/kg IM dose once in 10 minutes if first dose unsuccessful.
  - Option 2 - Droperidol 10 mg IM
    If inadequate sedation in 10 minutes after Droperidol administration, contact **Medical Direction** to consider benzodiazepine.
  - Option 3 - Combination of a benzodiazepine and Haloperidol:
    Midazolam 5 mg IM, **OR** Lorazepam 2 mg IM,
    AND Haloperidol, 5 mg IM. (May combine benzodiazepine and Haloperidol in one syringe)
- Goal is to achieve RASS of -2 to -3.
- Contact **Medical Direction** if additional dosing is needed.
- Continuously monitor ECG, vitals, oxygen saturation and $EtCO_2$.
- Once sedated & secured to stretcher, establish IV access and give 1000 mL 0.9% NS IV bolus.
- EMS transport is required for any patient that receives pharmacological sedation.
- After pharmacological sedation, re-evaluate whether the patient continues to meet criteria for physical restraint. Remove the restraints if they are no longer necessary while ensuring the safety of the patient, providers or both. Take into consideration transport times, the depth of sedation (RASS) and the need to transfer the patient at destination.
- For acute dystonic reaction to Droperidol/Haloperidol:
  - Diphenhydramine 25-50 mg IV or 50 mg IM
- If cardiac arrest occurs, consider additional fluid boluses, calcium chloride/gluconate, and sodium bicarbonate early (Cardiac Arrest – 3.2A).
- Treat hyperthermia (Hyperthermia (Environmental) – Adult & Pediatric 2.12).

(Continued)

Restraints
Adult & Pediatric
6.6

PARAMEDIC STANDING ORDERS – PEDIATRIC (15 years of age or younger, regardless of patient's weight).

P

Management of a Pediatric Patient with Resistant or Aggressive Behavior - Patient is resisting necessary treatment/interventions and has RASS of +2 to +3

- Contact **Medical Direction** to discuss treatment options.

Management of a Pediatric Patient with Violent/Combative Behavior, or Delirium with Agitation (Patient is an immediate danger to self/others and has RASS of +4):

- Contact **Medical Direction** and consider (IM preferred route):
  - Ketamine 4 mg/kg IM rounded to nearest 25 mg, maximum dose 250mg (use 100 mg/mL concentration), may repeat half dose once in 5 – 10 minutes, **OR**
  - Midazolam 5 mg/mL concentration (IM or IN preferred):
    - 0.2 mg/kg IM/IN (single maximum dose 8 mg), **OR**
    - 0.1 mg/kg IV (single maximum dose 4 mg), **OR**
  - Lorazepam 0.1 mg/kg IV (single maximum dose 2 mg), **OR**
  - Diazepam 0.1 mg/kg IV (single maximum dose 5 mg IV)
- Goal is RASS of -1 to -3.
- Contact **Medical Direction** if additional dosing is needed.
- Continuously monitor ECG, vitals, oxygen saturation and $EtCO_2$.
- Once sedated & secured to stretcher, establish IV access and give 20 mL/kg 0.9% NS IV bolus.
- EMS transport is required for any patient that receives pharmacological sedation.
- After pharmacological sedation, re-evaluate whether the patient continues to meet criteria for physical restraint. Remove the restraints if they are no longer necessary while ensuring the safety of the patient, providers or both. Take into consideration transport times, the depth of sedation (RASS) and the need to transfer the patient at destination.
- If cardiac arrest occurs with suspected delirium with agitated behavior, consider early administration of: fluid bolus, sodium bicarbonate, calcium chloride/gluconate (Cardiac Arrest Protocol - 3.2P)

Haloperidol can lower the seizure threshold and should be used with caution. Medications should be administered cautiously in frail or debilitated patients; lower doses should be considered.

Medical Direction is required for all sedation of adults with combative behavior. Every effort should be made to contact **Medical Direction** prior to medication administration. For emergent situations with high risk of injury to patient or EMS practitioners and if unable to contact **Medical Direction** prior to administration, notify **Medical Direction** as soon as feasible after medication administration.

Pearls

- Causes of combativeness may be due to comorbid medical conditions or due to hypoxia, hypoglycemia, drug and/or alcohol intoxication, drug overdose, brain trauma or delirium with agitated behavior.
- De-escalation techniques may be effective and should be attempted when possible.
- Delirium with agitated behavior, a presentation marked by both disorientation and severe agitation or combativeness, is associated with hyperthermia, hyperkalemia, rhabdomyolysis, and cardiac arrest. In these severely impaired patients, rapid pharmacologic management/sedation may prevent these adverse and life-threatening conditions and maximize patient safety.
- Droperidol offers rapid single drug therapy for control of both psychosis and agitation without causing respiratory depression often associated with other agents. It is an ideal agent for the agitated with alcohol or other CNS depressant ingestions.
- While Droperidol generally works well as a single agent, if not providing adequate sedation, may add midazolam cautiously while monitoring for respiratory depression.
- Ketamine is reserved for the most severe patients exhibiting violent/combative behavior or delirium with agitation, often associated with methamphetamine or other stimulant drug ingestions.

Return to TOC

Taser (Conducted Electrical Weapon) Probe Removal and Assessment 6.7

State and local law enforcement may use a conducted electrical weapon (CEW), also referred to as a Taser. 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 a 5-second incapacitating electric shock. Medical literature does not support routine medical evaluation for an individual after a CEW application. In most circumstances probes can be removed by law enforcement without further EMS or other medical intervention.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

EMS should be activated and transport the patient following Taser application in the following circumstances:

- The probe is embedded in the eye, genitals, or bone.
- Seizure is witnessed after CEW application.
- There is excessive bleeding from probe site after probe removal.
- Cardiac arrest, complaints of chest pain, palpitations.
- Respiratory distress.
- Altered mental status.
- Pregnancy.
- Developmental or physical disability and unable to assess the above.

E/A/P

INDICATIONS FOR REMOVAL

- Patient with uncomplicated conducted electrical weapon (Taser) probes embedded subcutaneously in non-vulnerable areas of skin.

CONTRAINDICATIONS TO REMOVAL

- Patients with probe penetration in vulnerable areas of the body as mentioned below should be transported for further evaluation and probe removal.
- Genitalia, female breast, or skin above level of clavicles.
- Suspicion that probe might be embedded in bone, blood vessel, or other sensitive structure.
- Any condition listed above that requires transport to the emergency department.

PROCEDURE

1. Ensure wires are disconnected from weapon.
2. Stabilize skin around probe using non-dominant hand.
3. Grasp probe by metal body using dominant hand.
4. Remove probe by pulling straight out in a single quick motion.
5. Insure that the probes and barbs are intact.
6. Removed probes should be handled and disposed of like contaminated sharps in a designated sharps container, unless requested as evidence by police.
7. Rinse wound with sterile water or saline and apply dressing.
8. If last tetanus immunization was greater than 5 years, advise the patient that they may need one.
9. Obtain a refusal of care for patients refusing transport.

Return to TOC

Vascular Access Via Pre-Existing Central Catheter 6.8

PARAMEDIC STANDING ORDERS – ADULT ONLY

P

PROVIDER LEVEL:
- Paramedic

INDICATIONS
- In the presence of a life-threatening condition, a patient with a pre-existing central catheter with clear indications for immediate use of medication or fluid bolus. (Not for prophylactic IV access.)

CONTRAINDICATIONS
- Suspected infection at skin site.

PROCEDURE
Determine the type of catheter present: PICC, Broviac, Hickman, Groshong, Mediport, etc.

Procedure For Peripherally Inserted Central Catheter (Cook, Neo-PICC, Etc.) And Tunneled Catheter (Broviac, Hickman, Groshong, Etc.)

1. Prepare equipment:
   - 10 mL syringe (empty).
   - 10 mL syringe 0.9% NaCl.
   - Sterile gloves (if available).
2. If more than one lumen is available (PICCs and Boviacs can have one, two, or three lumens), select the largest lumen available.
3. Vigorously prep the cap of the lumen with chlorhexidine.
4. Unclamp the catheter lumen and using a 10 mL syringe, (after unclamping the lumen) aspirate 3 – 5 mL of blood with the syringe and discard. If unable to aspirate blood, re-clamp the lumen and attempt to use another lumen (if present). If clots are present, contact **Medical Direction** before proceeding.
5. Flush the lumen with 3 – 5 mL 0.9% NaCl using a 10 mL syringe. If catheter does not flush easily (note that a PICC line will generally flush more slowly and with greater resistance than a typical intravenous catheter), re-clamp the selected lumen and attempt to use another lumen (if present).
6. Attach IV administration set and observe for free flow of IV fluid.
7. Run fluid at rate of 10 mL/hour to prevent the central line from clotting.

The maximum flow rates for a PICC line are 125 mL/hour for < 2.0 Fr sized catheter and 250 mL/hour for > 2.0 Fr sized catheters.
Avoid taking a blood pressure reading in the same arm as the PICC.

(Continued)

Vascular Access Via Pre-Existing Central Catheter 6.8

PARAMEDIC STANDING ORDERS – ADULT ONLY

P

Procedure For Implanted Catheter (Port-A-Cath, P.A.S. Port, Medi-Port)

1. Prepare all necessary equipment:
   - Non-coring, right angle (Huber/Haberman) needle specific for implanted vascular access ports.
   - 10 mL syringe (empty).
   - Two 10 mL syringes 0.9% NaCl.
   - Sterile gloves (if available).
2. Identify the access site; usually located in the chest.
3. Clean the access site with chlorhexidine solution.
4. Prime the non-coring needle tubing with saline.
5. Palpate the port to determine the size and center of the device. If not utilizing sterile gloves, re-clean the skin.
6. Secure the access point port firmly between two fingers and firmly insert the non-coring needle into the port, entering at a direct 90^{o} angle. Attach a 10 mL syringe to haberman/huber needle.
7. Aspirate 3 – 5 mL of blood with the syringe. If unable to aspirate blood, re-clamp the catheter and do not attempt further use. If clots are present, contact **Medical Direction** before proceeding.
8. Flush the catheter with 3 – 5 mL 0.9% NaCl using a 10 mL syringe. If catheter does not flush easily, do not attempt further use.
9. Attach IV administration set and observe for free flow of IV fluid.
10. If shock is not present, allow fluid to run at rate of KVO to prevent the central line from clotting.

Only non-coring, right angle needles specific for implanted ports are to be used for vascular access devices that are implanted in the patient. These are generally not carried by EMS units but may be provided by the patient.
Priming the tubing of the non-coring needle is essential to prevent air embolism.
In case of cardiac arrest, implanted ports may be accessed with a standard needle, if a non-coring needle is unavailable.

Return to TOC

Waveform Capnography 6.9

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

INDICATIONS

Routine monitoring of ventilation status and indirectly circulatory and metabolic status in adults and children with:

- Respiratory distress (e.g., CHF, COPD, asthma, pulmonary embolus).
- Altered mental status.
- Traumatic brain injury.
- Diabetic ketoacidosis.
- Circulatory shock.
- Sepsis.
- Cyanide and/or carbon monoxide poisoning.
- Administration of sedative medication.

ADVANCED AIRWAY DEVICES

- Confirm and document placement of advanced airway devices (Airway Management Procedure - 5.0,and Airway Management Protocol 5.1A, or Airway Management Protocol - 5.1P).
  - Confirm continued placement of advanced airway devices after every patient move and at transfer of care
- Monitor CPR quality and for signs of return of spontaneous circulation (ROSC).
- High-quality chest compressions are achieved when the $ETCO_2$ is at least 20 mmHg. If $ETCO_2$ abruptly increases, it is reasonable to consider that this as an indicator of ROSC.
- Assist with termination of resuscitation efforts when:
  - $ETCO_2$ is < 20 mmHg despite adjusting the quality of chest compressions
  - $ETCO_2$ < 10 mmHg after 20 minutes of effective CPR is a predictor of mortality
  - Resuscitation Initiation & Termination - 8.17

PROCEDURE

1. Attach the sensor to endotracheal tube, supraglottic airway, BVM or apply cannula with $ETCO_2$ mouth scoop or bi-cannula.
2. Assess $ETCO_2$ numeric levels and waveform:
   - Normal $ETCO_2$ range 35 – 45 mmHg.
   - Elevated $ETCO_2$ may indicate hypoventilation/CO_2 retention.
   - Low $ETCO_2$ may indicate hyperventilation, low perfusion, pulmonary embolus, sepsis.
3. With abnormal $ETCO_2$ levels consider adjusting rate and depth of ventilations.

Any abrupt loss of ETCO2 detection or loss of continuous waveform may indicate a catastrophic failure of the airway, apnea, drug overdose, deep sedation and/or cardiac arrest warranting assessment of the airway, breathing, circulation, and/ or airway device.

PEARLS

- Colorimetric CO_2 detectors are not an approved alternative to quantitative waveform capnography. Airway device placement confirmation and device monitoring should always be confirmed using quantitative waveform capnography.
- Numeric capnometry and capnography waveform morphology should be documented in the SIREN.

Return to TOC

Interfacility Transfer 7.0

INTRODUCTION
The purpose of this section is to ensure interfacility transfers (IFT) comply with current VT law, licensure, and EMS protocols. It is intended to promote efficiency in IFT while maintaining patient safety.

INTERFACILITY TRANSFER
An IFT is defined as any EMS ambulance transport from one healthcare facility to another facility, including emergency departments (ED). In general, transports from a non-hospital healthcare facility and 911 calls to a hospital ED by EMS should not be regarded as interfacility transfers.

EMS personnel should follow their standard scope of practice, unless specific restrictions are included in the transferring facility provider's written orders for transport.
If at any time during transport a patient develops new signs/symptoms or has a change in status, EMS personnel shall refer to the appropriate VT EMS Protocol.
If there is a conflict between VT EMS Protocols and the transferring facility provider's written orders for transport, EMS should follow the written orders, so long as they are within the EMS practitioner's scope of practice.

Transferring Facility Responsibilities
- Certify benefits of transfer outweigh all expected risks.
- Ensure that patient has an accepting provider and bed assignment at destination facility.
- Transferring provider must ensure ongoing care will be sufficient and appropriate, and provide resources as necessary.
- Transferring provider remains responsible and available to serve as medical direction for transporting agency during transfer.
- Provide complete set of patient care orders for the transporting agency.
- In any case where the number of patients requiring transport exceeds the number of available EMS resources, the transferring institution shall decide the order in which patients are transported.

Transporting Agency Responsibilities
- Assign personnel and resources that are most appropriate (consider training/experience, environmental factors, equipment needs).
- Decline transports when proper resources cannot or will not be provided and/or their level of training/experience is not compatible with patients acuity.
- Consult medical direction as necessary during transport.
- Seek education or information about therapies, transport equipment, or medications outside of normal formulary as necessary.

Shared Responsibilities
- Assign the appropriate transport agency level for patient transport including sending hospital staff, if necessary (see following pages).
- Receive and relay a complete patient care report.
- Ensure every effort has been made to mitigate risk, including environmental factors.

Medical Direction Responsibilities
According to EMTALA, patient care during transport until arrival at the receiving facility is the responsibility of the transferring provider unless other arrangements are made with appropriate medical direction.

In certain Air Medical Transport services or ground critical care units, the transport unit may function as an extension of a tertiary care center and operate under that facility's medical direction and on-line medical direction.

(Continued)

Medical Direction Responsibilities (continued)
In the prehospital setting, EMS operates under VT EMS protocols. During IFT, written transfer orders that are within the scope of the EMS practitioner's or other healthcare provider's level of licensure are also required to be authored by the transferring provider. The combination of protocols and transfer orders provide off-line medical direction.

Transfer orders must be specific, appropriate to the patient being transferred, and reasonably anticipate potential complications enroute. Transfer orders may reference the use of VT EMS protocols where they are applicable. If patients develop new signs and/or symptoms during transport, beyond their initial transfer diagnosis, EMS personnel may treat the new signs and/or symptoms according to VT EMS protocols. If transfer orders and VT EMS protocols are in conflict, transfer orders take precedence assuming they are within the scope of the EMS practitioner's or other healthcare provider's level of licensure. The transferring provider should be available to review transport orders and provide medical direction during the transport.

Transport Agency Levels

- EMT
- AEMT
- Paramedic
- Critical Care Paramedic (CCP)
- Critical Care Transport Team (CCT)

At a minimum, 2 licensed EMS practitioners in the vehicle, of which 1 may be the driver, **OR** 1 licensed EMS practitioner providing patient care and a VT-certified VEFR driver.

Interfacility transfers that are appropriate for EMT, AEMT, or Paramedic levels of care do not require additional levels of credentialing beyond training requirements defined in the VT EMS protocols.

National Scope of Practice allows non-critical care Paramedics to provide IFT for appropriately selected patients. However, there are still several important procedures and medications vital to the safe interfacility transfer of critically ill or injured patients that are beyond the scope of practice for a Paramedic for which advanced critical care knowledge and skills will be required.

The Vermont CCP endorsement provides an expanded scope of practice for numerous procedures and medications vital to the safe transport of the critically ill or injured patient. The CCP endorsement is outlined in the Appendix A.7. Procedures or medications in Appendix A.7 labeled as "W" require an additional waiver from VT EMS.

Some critically-ill patients will have a level of acuity and/or complexity that requires a more advanced Critical Care Transport team (CCT)—either by air or ground. If that level of resource is not readily available, it is an acceptable practice to supplement the EMS crew with hospital staff that is qualified to provide the level of care the patient requires. EMS practitioners must decline to transport patients that have a level of acuity and/or medication regimen outside of their scope of practice, and work with the sending facility to acquire optimal staffing (such as sending nursing staff or other provider).

The transferring physician/provider is responsible for determining the level of EMS practitioner and resources that are appropriate to meet the patient's current and anticipated condition and needs. In the interfacility transfer environment, all patient care delivered must be within the scope of the EMS practitioner's or other healthcare provider's protocols and licensure. (EMS practitioners may need to educate sending/receiving facility staff about their respective scopes of practice and any limitations contained therein.)

(Continued)

INTERFACILITY TRANSPORT TEAM SCOPES OF PRACTICE

EMT

E

- Care and treatment of stable patients.
- Therapies within the EMT scope of practice (IFT Scope of Practice – A.7).
- Medications within EMT scope of practice (IFT Scope of Practice – A.7).
- Non-invasive monitoring (BP, HR, RR, SpO_2, temperature).
- Previously inserted Foley catheter, suprapubic tube, established feeding tube (NG, PEG, J-tube not connected to infusion or suction).
- Saline lock permitted (no infusion).
- Maintenance of stable, long term ventilated patients with any mode of ventilation so long as the patient is familiar and capable of operating the equipment, OR patient is accompanied by a care provider who is capable of the same.
- Adult only: CPAP (Continuous Positive Airway Pressure – 5.4).

ADVANCED EMT

A

- Care and treatment of stable patients.
- Therapies within the AEMT scope of practice (IFT Scope of Practice – A.7).
- Medications within AEMT scope of practice (IFT Scope of Practice – A.7).
  - May be administered orally (PO) per patient care transfer orders
- Any isotonic or balanced crystalloid IV infusion (no pump).
- Cardiac monitoring for cardiac arrest arrhythmias only and correlated with physical assessment findings (no palpable pulses). If cardiac monitoring is indicated due to suspected or anticipated non-cardiac arrest arrythmias, the patient is not appropriate for transport by an AEMT.
  - Monitor all of the following vital signs:
    - Heart rate, respirations, non-invasive blood pressure, SpO_2, $ETCO_2$
    - 4 lead ECG as a vital sign ONLY, non-interpretive
    - Alarm when rates are above or below limits set by the operator
      - ❑ The AEMT should be familiar with and configure visual and audible cardiac monitor alarm settings for each patient transport
  - Semiautomatic mode for defibrillation of patients in cardiac arrest
  - 12-lead analysis and transmission (computer interpretation)
- CPAP (Continuous Positive Airway Pressure – 5.4).

PARAMEDIC

P

- Care and treatment of potentially unstable patients.
- Therapies within the Paramedic scope of practice (IFT Scope of Practice – A.7).
- Medications within Paramedic scope of practice (IFT Scope of Practice – A.7).
  - Any medication on the EMS formulary that was started as an infusion prior to departure may be continued
  - Continuation of potassium-containing maintenance fluids
  - Initiation of previously ordered antibiotic or insulin infusion
  - May be administered orally (PO) per patient care transfer orders
- HFNC
- BiPAP
- Maximum 1 vasopressor infusion.
- Cardiac monitoring of 4 lead ECG with anticipated need for ACLS intervention.
- Chest tube maintenance.
- Invasive monitoring equipment if capped/locked and labeled for transport.
- Epidural catheter if secured, capped, and labeled.
- For massive hemorrhage, administer 1 gm calcium chloride or 2 gm calcium gluconate after the first 2 units of blood products. Repeat dosing after each additional 4 units of blood products

The following require a *SECOND* provider in the patient compartment:

- Active transcutaneous pacing at time of transfer.
- Anticipated cardioversion.
- Anticipated deep suctioning.
- Automated Transport Ventilator (stable intubated patient, may only adjust rate, tidal volume, and adult vs. child settings, if applicable.
- RSI/DSI (agency & providers must be credentialed).

(Continued)

CRITICAL CARE PARAMEDIC, including but not limited to:

P

- Care and treatment of unstable patients.
- Greater than one vasopressor infusions.
- Initiation of additional blood products.
- Managing uncorrected shock.
- Initiation of additional antibiotics or antivirals.
- Initiation of insulin infusion.
- Continuation of invasive monitoring.
- Continuation of balloon pump/impella pump. (Requires CCP waiver.)
- HFNC in a complex patient.
- Transvenous pacing.
- NPPV (BiPAP) which may require complex adjustments or conversion back to PPV mode.
- Rapid sequence or delayed sequence induction. (Requires RSI credentialing.)
- Intubated/ventilated patients. (Complex vent settings may require additional team members.)

CRITICAL CARE TRANSPORT TEAM CONFIGURATION

It is preferred that complex patients be managed by a Critical Care Transport (CCT) team. If a CCT is not available, consider the following alternatives. (Exercising any of the following alternative crew configurations does not expand the scope of practice of the assigned crew.)

Preference: Critical Care Transport (CCT) Team.

Alternative 1: Critical Care Paramedic (CCP) and one of the following:

- CFRN/CTRN/CCRN/CEN (with appropriate adjunctive certifications e.g., ACLS, NRP etc.)
- FP-C, CCP-C (CCP)
- Respiratory Therapist
- Physician Assistant
- Nurse Practitioner
- Physician

Alternative 2: Paramedic and one of the following:

- CFRN/CTRN/CCRN/CEN (with appropriate adjunctive certifications e.g., ACLS, NRP etc.)
- FP-C, CCP-C (CCP)
- Respiratory Therapist
- Physician Assistant
- Nurse Practitioner
- Physician

Alternative 3: As a measure of last resort, in cases where CCT providers are unavailable AND delay in transfer would have a significant negative impact on patient outcome, crew configurations not listed above may be utilized provided that:

- The sending facility makes reasonable effort to send appropriate personnel.
- An occurrence report is sent via email Vermont EMS and to the local District Medical Advisor (DMA) within 24 hours.
- All interventions are within the scope of practice of the assembled crew.
- Nothing shall preclude the transferring facility or transporting agency from sending additional providers not listed above if they feel it is appropriate for continuing patient care.

(Continued)

Interfacility Transfer 7.0

Definitions

Unstable Patient: A critically ill or injured patient who cannot be stabilized at the transporting facility, who is deteriorating or likely to deteriorate during transport. (From “Guide for Interfacility Patient Transfer,” NHTSA.)

Potentially Unstable: A critically ill or injured patient who is currently stable (as defined below) but whose disease process will likely lead to instability or an acute change in condition enroute.

Stable Patient: Hemodynamically stable patient with a secure airway and who is **NOT** in acute distress or likely to deteriorate during transport

Resources: Could refer to personnel, equipment, medications or therapies.

Sufficient & Appropriate: Transferring facilities are responsible for the coordination of ongoing care during transfer until the patient arrives at the destination facility. In certain Air Medical Transport services or ground critical care units, the transport unit may function as an extension of a tertiary care center and operate under that facility’s medical direction and on-line medical direction. Patient must continue receiving care that is commensurate with their condition and potential for deterioration throughout transfer within the limits of the system. This may mean providing additional transferring facility or transporting agency personnel, up to and including physicians if necessary.

(Continued)

Interfacility Transfer 7.0

Transport Levels			
EMT Stable	**AEMT** Stable	**Paramedic** Potentially Unstable	**Critical Care Paramedic** Unstable
❑ EMT therapies ❑ EMT medications ❑ Vital signs ❑ Temperature monitoring ❑ Foley catheter ❑ Suprapubic catheter ❑ Feeding tube with no need to access or adjust ❑ Saline lock ❑ Maintenance of stable, long term ventilated patients with any mode of ventilation so long as the patient is familiar and capable of operating the equipment OR patient is accompanied by a care provider who is capable of the same ❑ CPAP (Adult only)	❑ AEMT therapies ❑ AEMT Medications ❑ Any crystalloid infusion ❑ Patient-controlled analgesic (PCA) pump that is locked ❑ Cardiac monitoring for cardiac arrest arrythmias only (See AEMT section of this protocol.) ❑ $ETCO_2$ ❑ CPAP	❑ Paramedic therapies ❑ Paramedic medications ❑ Any medication on the EMS formulary that was started as an infusion prior to departure may be continued, including antibiotics, insulin, or potassium-containing maintenance fluids ❑ HFNC ❑ BiPAP ❑ Max 1 vasopressor ❑ Continuation of blood or blood products ❑ Cardiac monitoring of 4 lead ECG with anticipated need for ACLS intervention ❑ Serial 12 leads ❑ Chest tube maintenance ❑ Invasive monitoring equipment which has been capped/locked and labeled for transport ❑ Epidural catheter if secured, capped, and labeled ❑ For massive hemorrhage, administer 1 gm calcium chloride or 2 gm calcium gluconate after the first 2 units of blood products. Repeat dosing after each additional 4 units of blood products **The following require a SECOND provider in the patient compartment:** ❑ Active transcutaneous pacing ❑ Automated Transport Ventilator (stable intubated patient, may only adjust rate, tidal volume, and adult vs. child settings, if applicable) ❑ Cardioversion ❑ Deep suctioning ❑ RSI/DSI (requires credentialing)	❑ Multiple vasoactive medications/pressors ❑ Initiation of additional blood products ❑ Initiation of additional antibiotics or antivirals ❑ Initiation of insulin infusion ❑ Managing uncorrected shock. ❑ Continuation of invasive monitoring. ❑ Continuation of balloon pump/impella pump (requires waiver) ❑ Transvenous pacing. ❑ Percutaneous Cricothyrotomy (Paramedic and CCP) ❑ NPPV (BiPAP) complex ❑ HFNC in complex pt ❑ Intubated/ventilated patients ❑ Complex patients may require additional staffing resources Critical Care Transport Team Options: • CCT (Air/Ground) • CCP & at least one of the following: ○ 1 CFRN/CTRN **or** ○ 1 CCRN/CEN **or** ○ 1 NP/PA **or** ○ 1 FP-C/CCP-C **or** ○ 1 Respiratory Therapist **or** ○ 1 Physician • Paramedic & at least one of the following: ○ 1 CFRN/CTRN **or** ○ 1 CCRN/CEN **or** ○ 1 NP/PA **or** ○ 1 FP-C/CCP-C **or** ○ 1 Respiratory Therapist **or** ○ 1 Physician • Last resort ○ Any other appropriate crew

Return to TOC

Interfacility Transport of Patients With IV Heparin by Paramedics 7.1

PURPOSE

The purpose of this section is to provide a mechanism for paramedics to be permitted to monitor pre-existing infusions of heparin during interfacility transfers.

POLICY

a. Only those paramedics who have successfully completed a training program approved by Vermont EMS on heparin infusions will be allowed to administer and monitor heparin infusions during interfacility transports.
b. Transporting ambulance service must be licensed at the paramedic level.
c. Patients that are candidates for paramedic transport will have pre-existing intravenous heparin drips. Prehospital personnel will not initiate heparin drips or bolus. Patient must not have any contraindications to use of heparin (below).

INDICATIONS

Acute myocardial infarction, unstable angina, DVT (deep vein thrombosis), DIC (disseminated intravascular coagulation), pulmonary embolism, atrial fibrillation, arterial embolism.

PROCEDURE

a. The patient must have at least one functioning IV, preferably two (2). Patient must be placed on continuous cardiac monitoring.
b. Medication pump and tubing supplied by the transporting ambulance agency. Pump may also be supplied by the hospital, provided the paramedic has been previously trained in the use of the hospital pump.
c. The paramedic shall receive a report from the nurse/physician caring for the patient and continue the existing medication drip rate.
d. If medication administration is interrupted by infiltration or disconnection, the paramedic may restart or reconnect the IV line.
e. All medication drips will be in the form of an IV piggyback monitored by a mechanical pump familiar to the paramedic who has received training and is familiar with its use.
f. In cases of pump malfunction that cannot be corrected, the medication drip will be discontinued and the receiving hospital notified.
g. Paramedics are allowed to transport patients on heparin drips within the following parameters:
    i. Infusion fluid will be D5W or NS. Medication concentration will be 100 units/mL of IV fluid (25,000 units/250mL or 50,000 units/500 mL). The heparin drip will be prepared and supplied by the sending facility. Ensure sufficient volume is taken to complete the transfer.
    ii. Drip rates will remain constant during transport. No regulation of the rate will be performed except to turn off the infusion completely.
    iii. Drip rates will not exceed 18 units/kg/hr (based on adjusted body weight); max rate may be exceeded ONLY per **Medical Direction** orders.
    iv. Patient will be on continuous cardiac monitor. Monitor the patient for dysrhythmias, bleeding (petechial or bruising, bleeding from the gums, epistaxis, GI bleeding), hypotension (which can be a sign of internal bleeding), change in neurological exam concerning for intracranial hemorrhage (altered mental status, headache, numbness, weakness, seizure), or anaphylaxis.

(Continued)

Interfacility Transport of Patients With IV Heparin by Paramedics 7.1

PROCEDURE (CONTINUED)

v. Vital signs and neuro exam will be assessed every 10 minutes.

vi. For bleeding, signs of intracranial hemorrhage (altered mental status, abnormal neuro exam), hypotension (shock) or anaphylaxis, contact **Medical Direction** to consider stopping the heparin infusion. Treat hypotension or bleeding as per standard protocols.

ADDITIONAL INFORMATION

a. **Mechanism of Action:** Heparin is an anticoagulant. Heparin inhibits the mechanisms that induce the clotting of blood and the formation of stable fibrin clots at various sites in the normal coagulation system. When heparin is combined with antithrombin III (heparin cofactor), thrombosis is blocked through inactivation of activated Factor X and inhibition of prothrombin's conversion to thrombin. This also prevents fibrin formation from fibrinogen during active thrombosis. Heparin has an almost immediate onset of action after IV administration, with an average plasma half-life of 1 to 2 hours. Anticoagulation is primarily due to neutralization of thrombin. In addition, clotting secondary to stasis and the extension of existing thrombi are also prevented. Heparin may interact with other drugs. In general, concurrent use of oral anticoagulants, salicylates, IIb/IIIa antagonists, or thrombolytics can increase the risk of bleeding or severe hemorrhage (internal or external).

b. **Complications:** Bleeding complications occur in approximately 1.5 to 2% of patients on heparin including the potential for severe hemorrhage or intracranial bleeding. Patients may also have anaphylaxis. Patients must be monitored for hypotension which may be secondary to acute blood loss or anaphylaxis. If complications of bleeding, altered mental status, hypotension or anaphylaxis occur, contact **Medical Direction** and consider stopping the heparin infusion. Treat the patient with standard existing EMS protocols (control external bleeding, treat for shock). In severe cases a heparin reversal agent, protamine sulfate, may be given at the hospital, BUT IS NOT GIVEN IN THE PREHOSPITAL SETTING.

c. **Contraindications:** Severe thrombocytopenia, active bleeding (except DIC), suspected intracranial bleeding.

Return to TOC

Point of Care Ultrasound 7.2

This prerequisite protocol is only to be used by EMS practitioners who are authorized by their District Medical Advisor.

This protocol provides guidelines on scope and use of prehospital POCUS but is not comprehensive of all ultrasound procedures. For full prehospital POCUS guidelines and training/quality assurance standards, refer to the Vermont Prehospital POCUS Manual. The guidelines in the manual are part of the prehospital POCUS protocol and are incorporated in this protocol by reference.

PARAMEDIC – PREREQUISITE REQUIRED

P

Exam Types

- Extended Focused Assessment with Sonography in Trauma (eFAST).
- Focused Pulmonary Exam.
- Focused Echocardiography in Cardiac Arrest.

Procedures

- Ultrasound - Guided Peripheral IV Access.

Decision Support

- Ultrasound should be used to help rule-in (e.g., identify likely potential for) dangerous or actionable conditions when the time and situation are appropriate. Ultrasound may be used to support decisions already indicated per protocol.
- Ultrasound should not be used to deviate from existing protocols, or to rule out potentially dangerous conditions when there is a concerning clinical picture.
- Contact **Medical Direction** as needed for assistance with interpreting and applying POCUS findings.

General Procedure

1. Identify time and setting when POCUS will not significantly impact on scene time (e.g., during transport, during other interventions on scene).
2. Prepare ultrasound device for use, select appropriate window, apply gel to probe/ patient.
3. Capture, record, and interpret the exam as outlined in the POCUS manual.
4. Document exam in the patient care report as outlined in the POCUS manual.

eFAST Exam

Indications:

- Blunt or penetrating trauma to the chest/abdomen/pelvis.
- Suspected pneumothorax.

Contraindications:

- Do not perform an ultrasound exam if it will delay treatment and/or transport of a critical patient.

(Continued)

Point of Care Ultrasound 7.2

This prerequisite protocol is only to be used by EMS providers who are authorized by their District Medical Advisor

PARAMEDIC – PREREQUISITE REQUIRED (CONTINUED)

eFAST Exam (Continued)

Procedure:

1. Obtain and capture all eFAST views with patient in supine position
   - Fluid Views: RUQ, LUQ, pelvis, pericardial.
   - Bilateral apical lung views to identify lung sliding.
2. Interpret imaging and appropriately apply findings.

Decision Support:

eFAST is a useful decision aid to support determination of appropriate care for trauma patients, including receiving facility choice, pre-arrival alert, and transport modality (ground vs. air ambulance).

- Presence of abdominal, intrathoracic or pericardial free fluid is a rule in finding only and may support decisions. Consider volume resuscitation and administration of TXA when indicated per Hemorrhage Control Protocol 4.4 and/or Thoracic and Abdominal Injuries Protocol 4.8 and/or Traumatic Emergencies – 4.12.
- Always use eFAST findings in conjunction with the clinical picture. Positive findings may support transport decisions indicated by the Trauma Triage and Transport Decision Protocol 4.9**.**
- Use lung findings in conjunction with history, exam, and Thoracic and Abdominal Injuries Protocol 4.8.
- Absence of lung sliding does not confirm tension pneumothorax or act as an indication for needle thoracostomy in the absence of other signs and symptoms.
- Contact **Medical Direction** with difficulty applying eFAST findings or if findings do not align with the clinical context.

PEARLS:

- The absence of free fluid does not rule out potential pathology and may not be used to inform decisions.
- Chest needle decompression is contraindicated if lung sliding is present apically.
- There are circumstances where free fluid is present not due to trauma (e.g., ascites, ovulation and pediatrics).
- Be cautious with findings that do not fit the clinical context. When in doubt rely on conventional tools.

Focused Pulmonary Exam

Indications:

- Undifferentiated respiratory distress in adults.

Contraindications:

- Do not perform an ultrasound exam if it will delay treatment and/or transport of a critical patient.

Procedure:

1. Examine anterior, lateral, and posterior lung fields for A or B - line patterns.
2. Interpret imaging and appropriately apply findings.

(Continued)

Point of Care Ultrasound 7.2

This prerequisite protocol is only to be used by EMS providers who are authorized by their District Medical Advisor.

PARAMEDIC – PREREQUISITE REQUIRED (CONTINUED)

Focused Pulmonary Exam (Continued)

P

Decision Support:
The lung exam is a useful decision aid when you suspect CHF or COPD and need additional information to differentiate the two.

- Presence of diffuse, bilateral B-lines with consistent clinical picture of CHF is a rule-in finding for cardiogenic pulmonary edema. Appropriately use lung findings in conjunction with Congestive Heart Failure Protocol 3.3A.
- Presence of A-lines and lung sliding and absence of B-lines with consistent clinical picture is a rule-in finding for COPD/Asthma/RAD. Appropriately use lung findings in conjunction with Asthma, COPD, RAD Protocol 2.4A.

PEARLS:
- Always use B-Line pattern findings in conjunction with history, conventional findings, and clinical presentation.
- B-Lines are not specific to cardiogenic pulmonary edema and may be present in other conditions (e.g., pneumonitis, pulmonary contusion).

Focused Echocardiography in Cardiac Arrest

Non-Shockable Arrest

Indications:
- Evaluation for organized cardiac activity in non-shockable cardiac arrest once initial ACLS interventions are complete [high-quality CPR, IV/IO access, airway management, 1st dose of epinephrine (if indicated)] as per Cardiac Arrest Protocol 3.2A.

Contraindications:
- POCUS should not be used during cardiac arrest with a shockable rhythm (V Fib, V Tach).
- POCUS should not be used outside of ACLS rhythm checks and must not increase the duration of rhythm checks.
- Minimum crew configuration for ultrasound in cardiac arrest is 1 POCUS-trained paramedic and 2 additional providers or 1 additional provider and automated compression device in place and actively compressing. Do not use ultrasound while task-saturated or when crew configuration is not met.

PEA Procedure:
1. Confirm: ✅ non-shockable arrest ✅ crew configuration met ✅ initial ACLS complete.
2. Obtain adequate window during compressions without interrupting compressions.
3. Capture and record clip during rhythm check without extending rhythm check.
4. Resume CPR, review and interpret clip during CPR and apply findings.

Decision Support:
- See Cardiac Arrest POCUS algorithm.

PEARLS:
- Early identification of pseudo-PEA is associated with significantly higher rates of survival.

(Continued)

This prerequisite protocol is only to be used by EMS providers who are authorized by their District Medical Advisor.

PARAMEDIC – PREREQUISITE REQUIRED (CONTINUED)

Focused Echocardiography in Cardiac Arrest (Continued)

Termination of Resuscitation

Indication:
- Confirmation of cardiac standstill/agonal motion prior to termination of resuscitation (TOR) when TOR criteria are met per Resuscitation Initiation and Termination Protocol 8.17.

Contraindications:
- POCUS should not be used during cardiac arrest with a shockable rhythm (V Fib, V Tach).
- POCUS should not be used outside of ACLS rhythm checks and must not increase the duration of rhythm checks.

Minimum crew configuration for ultrasound in cardiac arrest is 1 POCUS-trained paramedic and 2 additional providers or 1 additional provider and automated compression device in place and actively compressing. Do not use ultrasound while task-saturated or when crew configuration is not met.

TOR Procedure:
1. Confirm TOR criteria are met.
2. Obtain a subxiphoid or parasternal long axis view and confirm standstill/agonal motion.
3. Use findings in conjunction with conventional information (ECG, EtCO2, pulse check).

Decision Support:
- Use echo for decision support when TOR criteria are met by confirming cardiac standstill/ agonal motion for 15 - 30 seconds.

Ultrasound-Guided Peripheral IV Access

Indications:
- Any situation where peripheral IV access is indicated per protocol.
- Patients with known or expected difficult vascular access using conventional cannulation techniques.

Contraindications:
- Do not perform ultrasound-guided IV access if it will delay treatment and/or transport of a critical patient.
- Do not perform ultrasound-guided IV access when indications for intraosseous access are met and there is need for rapid vascular access.

Procedure:
1: Prepare IV supplies prior to ultrasound use.
2: Scan appropriate access site for a target vein, use doppler as needed.
3: Confirm target is a vein with compression.
4: Depending on provider comfort with techniques:
- Perform guided venipuncture using the short or long axis technique while maintaining site sterility, OR
- Perform conventional venipuncture after selecting site with ultrasound.

Return to TOC

Rapid Sequence Intubation (RSI) 7.3

PARAMEDIC - PREREQUISITES REQUIRED

P

This procedure is only to be used by paramedics who are trained and credentialed to perform RSI with oversight by local Medical Direction and agency participation in an RSI educational and CQI program approved by Vermont EMS. Either 2 RSI paramedics or 1 RSI paramedic and 1 RSI assistant must be present.

INDICATION

- Immediate, severe airway compromise in the adult patient where respiratory arrest is imminent and other methods of airway management are ineffective.

PROCEDURE: THE SEVEN P'S

PREPARATION "SOAPME": T minus 5 minutes.

- Suction set up.
- Oxygen: 100% non-rebreather mask, with bag-valve mask ready. Apply nasal cannula at 6 – 15 LPM in addition to non-rebreather or bag-valve mask preoxygenation. Do not remove nasal cannula during intubation attempt(s).
- Assessment: Evaluate airway difficulty based on patient anatomy (e.g., short neck, obesity, decreased thyromental distance and Class III or IV oropharyngeal views on observation). Have fallback plan and equipment ready.
- Pharmacology: IV/Medications drawn.
- Monitor: Cardiac / O_2 saturation/ $ETCO_2$.
- Equipment : ETT (check cuff) / Stylet / BVM / Laryngoscope / Blades / Suction / Bougie / Back-up devices.

PREOXYGENATION: T minus 5 minutes.

- When possible, use a non-rebreather mask for at least 3 minutes to effect nitrogen washout and establish an adequate oxygen reserve. In emergent cases, administer 8 vital capacity bag-valve-mask breaths with 100% oxygen.
- Apply nasal cannula with oxygen regulator turned up to its fullest capacity (nasal cannula should remain in place until endotracheal tube is secured).

PREMEDICATION: T minus 3 – 5 minutes.

- **PEDIATRIC:** Consider atropine 0.02 mg/kg IV/IO for **pediatric** patients with increased risk of bradycardia. No minimum dose.

{SEDATE THEN} PARALYZE: T minus 45 seconds.

- Etomidate 0.3 mg/kg IV/IO, maximum 40 mg, **OR**
- Ketamine 2 mg/kg IV/IO, **OR**
- Midazolam 0.2 mg/kg IV/IO (0.1 mg/kg IV/IO for patients in shock).
- Succinylcholine 1.5 mg/kg IV/IO immediately after sedation.
- For patients with contraindications to succinylcholine:
  - Rocuronium 1 mg/kg IV/IO, **OR**
  - Vecuronium 0.1 mg/kg IV/IO

PASS THE TUBE: T minus 0 seconds.

- Observe for fasciculations approximately 90 seconds after succinylcholine to indicate imminent paralysis.
- After paralysis is achieved, follow Orotracheal Intubation - 5.9 to place the ETT.

(Continued)

SUCCINYLCHOLINE CONTRAINDICATIONS:
Extensive recent burns or crush injuries > 24 hours old.
Known or suspected hyperkalemia.
History of malignant hyperthermia.

PARAMEDIC - PREREQUISITES REQUIRED (CONTINUED)

P

PROOF OF PLACEMENT

- Assess for proper placement by following the procedure outlined in Orotracheal Intubation - 5.9.

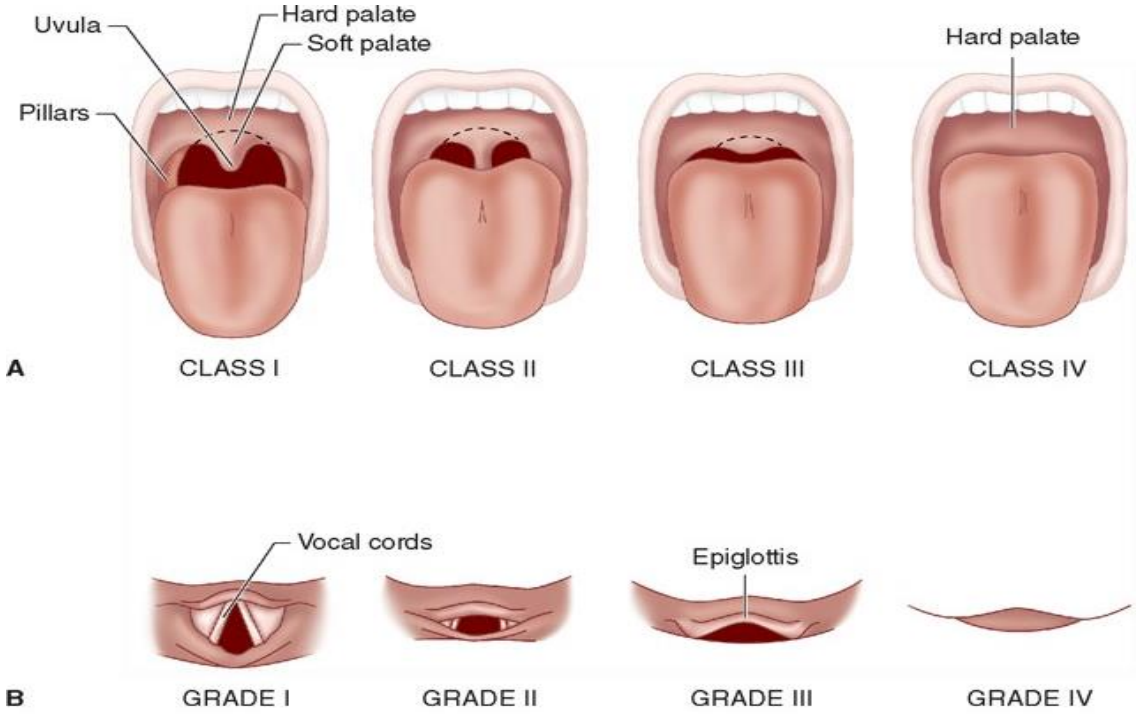
POST-INTUBATION CARE

- Sedation:
  - Midazolam 2.5 – 5 mg IV/IO, every 5 – 10 minutes as needed for sedation (maximum 20 mg), **OR**
  - Lorazepam 1 – 2 mg IV/IO every 15 minutes as needed for sedation (maximum 10 mg), **AND**
  - Fentanyl 50 – 100 mcg IV/IO. May repeat every 15 minutes as needed for anesthesia (maximum dose 300 mcg).
    - Be sure to maintain adequate sedation if patient is paralyzed.
- Paralysis (via on-line **Medical Direction** only):
  - Vecuronium 0.1 mg/kg IV/IO, **OR**
  - Rocuronium 1 mg/kg IV/IO
- Contact **Medical Direction** for additional dosing.

DOCUMENTATION

- Rapid Sequence Intubation is the process by which the Seven P's are carried out. "Pass The Tube" (Step 5) may require more than one attempt before successful placement. When documenting the procedure in SIREN, choose "Airway, RSI" from the Active Protocol Menu. Within the RSI protocol, document each procedure and medication, including the time performed and the provider. Document each successful or unsuccessful attempt at Step 5 (Pass The Tube) as Endotracheal Intubation. Finish by documenting the remaining steps as part of the entire RSI sequence in SIREN.
- Follow all other required documentation outlined in Orotracheal Intubation - 5.9.

Classifications of Oropharyngeal and Laryngoscopy Views



Source: Butterworth JF, Mackey DC, Wasnick JD: *Morgan & Mikhail's Clinical Anesthesiology*, 5th Edition: www.accessmedicine.com

Return to TOC

Air Medical Transport 8.0

EMS personnel may request Air Medical Transport (AMT) when operational and/or clinical conditions exist that would benefit from decreasing time to definitive care and/or advanced clinical capabilities offered by the AMT team.

The use of AMT is determined by the prehospital provider with the highest medical level providing patient care. It should not be determined by police or bystanders.

AMT does not require approval of on-line **Medical Direction**. However, if in doubt of the appropriateness of a patient for AMT, contact **Medical Direction** as soon as possible.

OPERATIONAL CONDITIONS

- When a patient meets the defined clinical criteria listed below and the ground transport time to the closest hospital capable of providing definitive care (e.g., Level I or 2 trauma hospital, PCI center, stroke center) exceeds the ETA of air medical transport, **OR**
- Patient location, weather, or road conditions preclude the use of ambulance, **OR**
- Multiple patients are present that will exceed the capabilities of local hospital and agencies, OR
- Advanced clinical capabilities offered by the air medical team are needed. The air medical team may respond by ground or intercept as appropriate.
- In general, the patient should begin movement toward the appropriate receiving facility as soon as practical. Consider landing zones to minimize total field time.

CLINICAL CONDITIONS

- Severe respiratory compromise with respiratory arrest or abnormal respiratory rate.
- Circulatory insufficiency: sustained MAP < 65 (systolic blood pressure <90mmHg) in adults, age-appropriate hypotension in children, or other signs of shock.
- Neurologic compromise: total GCS < 9, or motor component < 5. If the patient's neurologic status improves above these limits, consider canceling the helicopter and transporting to the local hospital.
- Trauma: All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee; chest wall instability or deformity (e.g., flail chest); two or more proximal long-bone fractures; crushed, degloved, mangled, or pulseless extremity; amputation proximal to wrist or ankle; pelvic fracture; open or depressed skull fracture; paralysis.
- Burns: Major burns with greater than 20% BSA and/or inhalation injury with risk of airway compromise.
- Electrocution injuries with loss of consciousness, arrhythmia, or any respiratory abnormality.
- STEMI: If 12-lead ECG indicates a STEMI (e.g., machine indicates ***Acute MI Suspected*** and/or Paramedic interpretation).
- Stroke: 1 or more abnormal signs of the stroke scale; and consistent with local stroke plans.
- Critically ill children, including those with acute decompensation of chronic and/or special healthcare needs.

ADDITIONAL NOTES

- Patients with an uncontrolled airway or uncontrollable hemorrhage should be brought to the nearest hospital unless advanced life support (ALS) service (by ground or air) can intercept in a more timely fashion.
- AMT is not indicated for patients in cardiac arrest except for hypothermic arrest. Should the patient go into cardiac arrest after AMT request, the AMT crew may be utilized for resuscitation and stabilization.
- AMT is not indicated for a contaminated patient until after decontamination.
- AMT may be indicated in a wide range of conditions other than those listed above. In cases where the patient's status is uncertain, contact **Medical Direction** and proceed as directed.

- Transfers from ground-ambulance to air-ambulance shall occur at the closest appropriate landing site, including a hospital heliport, an airport, or an unimproved landing site deemed safe per AMT crew discretion. In cases where a hospital heliport is used strictly as the ground-to-air ambulance transfer point, no transfer of care to the hospital is implied or should be assumed by hospital personnel, unless specifically requested by the EMS providers.

Return to TOC

Baby Safe Haven 8.1

GENERAL CONSIDERATIONS

In 2006, the Vermont Legislature passed legislation known as the Baby Safe Haven Law. This legislation provides a mechanism for parents to surrender infants up to 30 days old at locations and facilities that are capable of safeguarding the child and avoiding abandonment of extremely vulnerable infants. In that the language of the statute specifies 9-1-1 emergency responders at a location where the responder and the person have agreed to transfer the child as a Safe Haven location, it is possible that EMS personnel and organizations may receive infants. If another organization receives the infant, EMS may play a role in transporting the child to an emergency department for any necessary medical care and transition to custody of the Department for Children and Families staff. The text of the legislation reads:

> SHORT TITLE- This act shall be known as the "Baby Safe Haven Law."
> LEGISLATIVE INTENT-It is the intent of the general assembly that this act provide a procedure which ensures the safety and well-being of newborns and infants. The general assembly recognizes that it is preferable for a wide array of services to be available to all expectant mothers and to newborn infants and their mothers. The procedure established in this act should be considered a safeguard that will be followed only in extraordinary circumstances.
> Sec. 3. 13 V.S.A. § 1303 is amended to read:
> Sec 3. 13 V.S.A. § 1303. ABANDONMENT OR EXPOSURE OF BABY
> (a) A person who abandons or exposes a child under the age of two years, whereby the life or health of such child is endangered, shall be imprisoned not more than ten years or fined not more than $10,000.00, or both.
> (b) (1) It is not a violation of this section if a person voluntarily delivers a child not more than 30 days of age to:
> (A) An employee, staff member, or volunteer at a health care facility.
> (B) An employee, staff member, or volunteer at a fire station, police station, place of worship, or an entity that is licensed or authorized in this state to place minors for adoption.
> (C) A 9-1-1 emergency responder at a location where the responder and the person have agreed to transfer the child.
> (2) A person voluntarily delivering a child under this subsection shall not be required to reveal any personally identifiable information, but may be offered the opportunity to provide information concerning the child's or family's medical history.
> (3) A person or facility to whom a child is delivered pursuant to this subsection shall be immune from civil or criminal liability for any action taken pursuant to this subsection.
> (4) A person or facility to whom a child is delivered pursuant to this subsection shall:
> (A) Take temporary custody of the child and ensure that he or she receives any necessary medical care.
> (B) Provide notice that he, she, or it has taken temporary custody of the child to a law enforcement agency.
> (C) Provide notice that he, she, or it has taken temporary custody of the child to the Department for Children and Family Services, which shall take custody of the child as soon as practicable.

(Continued)

- While the statute does not specifically mention EMS personnel or organizations, EMS may become involved as a 9-1-1 emergency responder. It is also likely that EMS will be involved when an infant is delivered to any other Safe Haven. Delivery of an infant to a Safe Haven location will be an infrequent but very stressful event. Infants being delivered to the Safe Haven are at considerable risk and every possible step to safeguard the health and welfare of the infant should be taken.
- A person delivering an infant under the provisions of the Baby Safe Haven law may not make the subtle distinctions between EMS facilities and other Safe Haven locations specifically mentioned in the law. EMS personnel and organizations should be prepared to play an appropriate role in the receipt of infants delivered under the provisions of the Baby Safe Haven law.
- EMS may be summoned by a Safe Haven that receives an infant (fire, police, place of worship, adoption agency, or health care facility). Guidance being provided by the Department for Children and Families for Safe Havens suggests that when an infant is received, the Safe Haven should call an ambulance to provide treatment and transportation. The primary roles of EMS in a Baby Safe Haven encounter are as with any other patient: assess, provide treatment as indicated, transport to a hospital.
- EMS organizations with stations that could be unoccupied may wish to consider signage on entryways indicating that persons wishing to deliver an infant under the provisions of the Baby Safe Haven law should call 9-1-1 to make arrangements if the station is not staffed and should not leave an infant unattended.
- EMS organizations may wish to reach out to Safe Haven locations in their primary service area to coordinate procedures and develop local plans for handling Safe Haven encounters.
- To order additional copies of Safe Haven posters and brochures, call 802-241-2131. To find out about training opportunities from the Department for Children and Families, call 800-649-4357 or go to https://dcf.vermont.gov/fsd/prevention/havens

PROCEDURE

- Although EMS organizations and personnel are not specifically mentioned in the Baby Safe Haven statute, as 9-1-1 emergency responders, EMS needs to be familiar with the provisions of the law and work to facilitate the protection of infants being received.
- When involved in a Baby Safe Haven encounter, upon receiving physical custody of the baby, whether you receive an infant from the parent, a Safe Haven, or another third party, examine the baby and provide any treatment necessary according to the appropriate clinical protocol(s).
- If possible, offer the person delivering the infant the Safe Haven brochure published by the Agency of Human Services if the infant is not picked up at a Safe Haven.
- If it has not already been done, attempt to advise the person delivering the infant into a Safe Haven that while she/he is not required to reveal any identifying information, she/he can provide information about the child's medical history using the voluntary medical form that is attached to the DCF Safe Haven brochure. Encourage the person to complete the form and leave it with you. If the form is left with you, complete the information at the bottom of it with the date you received the baby and your location. This information should be delivered to the DCF Family Services staff person. Document this information on your EMS patient care report form as well.
- Document on your EMS patient care report any additional information about the child, the birthparents, and/or the situation that is observed or offered voluntarily, including any names the person is willing to provide.

(Continued)

- Transport the infant to the hospital once appropriate EMS treatment has begun. If you receive an infant from a parent or other person, at the earliest possible opportunity, call the police of jurisdiction where you received the child and the local DCF, Family Services District Office or DCF Emergency Services contact to report what has happened (see list attached). The EMS personnel involved may have information about the parent, the circumstances of receiving the child, etc. that will be important to law enforcement and the DCF Family Services personnel, so it is important for the EMS personnel involved to make this contact. If you receive an infant from another Safe Haven, assure that the original receiver(s) have made the police and DCF contacts.
- Once you have physical custody of the infant, transport the child to a hospital. If the person who delivered the infant or another person comes back to you requesting the return of the baby, do not return the baby to them. Instead, instruct the person to contact the Department of Children and Families at 800-649-4357. They will be referred to a social worker, who will assist them with the process. Urge them to act quickly, before a judge has terminated their parental rights.

DCF FAMILY SERVICES DISTRICT OFFICES AND STATEWIDE EMERGENCY SERVICES PROGRAM

BARRE – 802-479-4260
255 North Main Street, Suite 7
Barre, VT 05641-4189

BENNINGTON – 802-442-8138
200 Veterans Memorial Drive, Suite 14
Bennington, VT 05201-1956

BRATTLEBORO – 802-257-2888
232 Main Street, 2nd Floor
Brattleboro, VT 05301-2879

BURLINGTON – 802-863-7370
426 Industrial Ave. Ste. 130
Williston, VT 05495

HARTFORD – 802-295-8840
118 Prospect Street, Suite 400
White River Junction, VT 05001

MIDDLEBURY – 802-388-4660
156 South Village Green, Ste. 202
Middlebury, VT 05753

MORRISVILLE – 802-888-4576
63 Professional Drive, Suite 3
Morrisville, VT 05661-8522

NEWPORT – 802-334-6723
100 Main Street, Suite 230
Newport, VT 05855-4898

RUTLAND – 802-786-5817
88 Merchants Row
220 Asa Bloomer Bldg
Rutland, VT 05701-3449

ST. ALBANS – 802-527-7741
27 Federal Street, Suite 300
St. Albans, VT 05478-2247

ST. JOHNSBURY – 802-748-8374
1016 US Route 5, Suite 02
St. Johnsbury, VT 05819-5603

SPRINGFIELD – 802-289-0648
100 Mineral Street, Suite 101
Springfield, VT 05156-3166

STATEWIDE DCF Family Service's Emergency Services Program
For after hours, weekends and holidays
800-649-5285

Return to TOC

Bariatric Triage, Care & Transport 8.2

PURPOSE
This policy provides guidance for providers concerning the triage, extrication, care and transport for bariatric patients. The Vermont EMS system strives to provide all patients, including bariatric patients, with timely and effective care that preserves the comfort, safety and dignity of the patients and ensures the safety of providers. At times, even a single patient can exceed the capacity of the immediately available resources. Like a multi-system trauma patient, a bariatric patient requires:

- Appropriate EMS resources to respond.
- Appropriate protocols and equipment for the provision of care.
- Specialized equipment for transfer to the ambulance and transport.
- Careful selection of the appropriate destination hospital.
- Pre-alerting of the ED to ensure adequate resources to manage the patient.
- On scene times that may be significantly extended for bariatric patients.

EQUIPMENT
Deployment of equipment and procedures shall be done under local or regional operating guidelines.

DEFINITIONS
A bariatric patient is a patient whose:

- Weight exceeds 400 pounds, **OR**
- Weight, girth, body contours and/or co-morbidities challenge the ability of a two-person EMS crew to effectively manage.

DISPATCH
Bariatric Ambulance: If available, consider requesting a bariatric transport ambulance to respond to the scene. Resources should be requested as soon as it becomes clear that bariatric capabilities may be required. While standard ambulance stretchers can potentially handle some patients up to 750 pounds or more, the use of a specialized bariatric stretcher increases the ability to provide effective care, is more comfortable for the patient and enhances provider safety.

Additional Personnel: Consider requesting additional responders. Bariatric patients may require additional personnel to participate in lifting and moving. For significant extrications, consider designating a Safety Officer to oversee the safety of the operation in conjunction with Incident Command. It may be necessary to remove doors, walls or windows to carry out a safe extrication. The priorities are similar to extrication from a vehicle, although fixed property repair costs might be higher.

Paramedic: Consider requesting a paramedic. Even BLS bariatric patients present unique treatment challenges which may benefit from a higher level of care.

MEDICAL CARE
Medical care must take into account the unique challenges presented by the bariatric patient as well as the likelihood of extended on-scene times. Providers should use appropriately sized equipment to the extent it is available or can be readily obtained. For example, an appropriately sized blood pressure cuff will need to be used and intramuscular injection will be given with a longer needle.

If there are significant barriers to removing the patient from the structure in a timely manner (long narrow stairs, patient in the attic, etc.), there may be situations where EMS will provide extended care to the patient at the scene. In such cases, consult **Medical Direction** and consider use of the extended care protocols.

(Continued)

Bariatric Triage, Care & Transport 8.2

TRANSFER TO AMBULANCE
Specialized equipment will be needed to transfer the patient safely from the scene to the ambulance stretcher for transport. Many services utilize large transfer flats for moving bariatric patients. Be sure before you use any patient transfer device that you understand the procedure for using it safely and that you know the weight limits of the device.

HOSPITAL DESTINATION
Ensure that you select a destination hospital that has the capabilities to care for your patient. Bariatric patients may require specialized hospital stretchers, CT scanners, catheterization laboratory equipment, operating room equipment, etc. It may be appropriate to consider an alternate destination after consultation with **Medical Direction**. Pre-notification serves both to ensure that the hospital is capable of caring for the patient and allows hospital staff time for adequate preparation. Communication with the hospital shall be in a professional manner. Respect for the patient's privacy and feelings will match the respect for all EMS patients.

TRANSPORT TO THE HOSPITAL
A bariatric stretcher should be used to transport the patient to the hospital and equipment cache transfer devices may be utilized to facilitate transfer of the patient to the hospital stretcher. Be alert to ensure that the stretcher is adequately secured in the patient compartment. Transfer flats or other specialized transfer equipment may be left in place to facilitate transfer of the patient to the hospital stretcher.

PEARLS
- It may be difficult to establish IV and IO access. Consider intramuscular or intranasal as alternatives for some medications. For IM, ensure that the needle used is sufficiently long.
- Weight-based calculations may yield inappropriately large doses in obese patients. Consult with **Medical Direction** when in doubt.
- Bariatric patients often have decreased functional residual capacity, and are at risk of rapid desaturation. Extremely obese individuals require more oxygen than non-obese individuals due to their diminished lung capacity. Pulse oximetry may not be reliable due to poor circulation. Even patients without respiratory distress may not tolerate the supine position.
- Bariatric patients may present with severe airway challenges. Carefully plan your approach to the airway, and be prepared with backup airway plans.
- If the patient has had recent bariatric surgery, possible complications may include anemia, dehydration, hypoglycemia, leakage, ulcers, localized infection, sepsis, etc.

Return to TOC

EMS practitioners should routinely advise the receiving hospital, in a timely manner, of patients enroute to that Emergency Department (except in Mass Casualty Incidents (MCI) during which routine communications cease). Follow guidelines below or local receiving hospital protocol.

An EMS practitioner may establish contact with a Medical Direction physician via VHF radio on one of the assigned medical frequencies or via telephone direct to each Emergency Department (via recorded EMS line, if available). If a Medical Direction physician is needed for consultation, request this before giving patient information. It is recommended that hospitals record all medical communications.

VHF MEDICAL FREQUENCIES

- Initiate call to the appropriate hospital and identify:
  - Destination hospital
  - Ambulance unit calling
  - Status of the patient

TELEPHONE

- To contact the destination hospital via telephone, use of a direct-recorded line to the Emergency Department is recommended.
- Request Medical Direction, if needed, give the name of the patient, patient's age, status, and complaint.

Upon establishing voice communication with the destination hospital/medical direction physician (if needed), present the following information in a concise and clear manner:

- Emergency response unit and level of care: Paramedic/Advanced-EMT/EMT, with ETA.
- Advise if the patient meets the criteria for stroke, trauma, STEMI or sepsis alert.
- Patient's age, sex, and level of consciousness.
- Patient's chief complaint.
- Patient's present medical condition.
- Patient's vital signs, including level of consciousness.
- Patient's physical signs of illness or injury.
- Patient's electrocardiogram rhythm, if indicated.
- Patient's relevant medical history.
- Prehospital diagnostic tests performed/results and treatment rendered/results.

Give a list of medications and allergies only if requested by the destination hospital, or if it is anticipated that a medication order would be given by Medical Direction.

Return to TOC

Communications Failure 8.4

In case of a communications failure with Medical Direction due to equipment malfunction, lack of cell phone or radio service, or inability to reach Medical Direction despite reasonable attempts appropriate to the urgency of the situation, the following procedures will apply:

- EMS personnel may, within the limits of their level of licensure, perform necessary procedures described in these protocols that under normal circumstances would require online Medical Direction.
- These procedures shall be the minimum necessary to prevent the loss of life or the critical deterioration of a patient's condition.
- All procedures performed under this order, and the conditions that created the communications failure, need to be thoroughly documented.
- Attempts must be made to establish contact with Medical Direction as soon as possible.
- The EMS practitioner shall provide a written notification pertaining to the communications failure describing the events, including the patient's condition and treatment given, and referencing the EMS Incident Report. This report must be filed with the EMS District Medical Advisor and/or Hospital EMS Coordinator within 24 hours of the event.

Return to TOC

Consent for Treatment of a Minor 8.5

A “minor” is a person who has not yet reached their eighteenth birthday.

Note that the legal definition of a “minor” for purposes of consent is unrelated to the medical definitions of “pediatric patient,” “child,” and “children,” as used in these protocols.

EMS personnel may treat minors under the doctrine of implied consent when the minor’s parent or other authorized representative is unavailable to provide expressed consent. With the exception of life-threatening emergencies, personnel should attempt to contact the minor’s parent or legal guardian to obtain informed consent to treat and transport the child. When a parent or legal guardian is unavailable, another authorized representative (e.g., a school or camp official), who has been expressly authorized by the minor’s parent, may consent to health care treatment.

A parent or legal guardian may refuse care for a minor:

- When a parent or legal guardian is not reasonably available, another adult family member, or other authorized representative, may refuse care.
- EMS personnel may accept a telephonic refusal of care, provided that they have explained the consequences of refusing care; telephonic refusal of care should be carefully documented.

Except for the special circumstances listed below, a minor may not refuse care. When a minor attempts to refuse care and/or transport to the hospital, EMS personnel should enlist the assistance of the police, including requesting that the police place the minor in protective custody. Minors should be restrained only as a last resort.

SPECIAL CIRCUMSTANCES

- A minor parent who has not yet reached their eighteenth birthday may consent to or refuse care on behalf of their minor children, provided that the minor parent has the capacity to understand the nature of the treatment and the possible consequences of consenting to or refusing care.
- Contact Medical Direction to discuss consent/refusals regarding minors. Always attempt to provide medical care that is in the best interest of the minor.
- Minors of any age may give informed consent to medical treatment associated with rape, incest or sexual abuse.
- An emancipated minor may consent to, or refuse, care. A minor patient bears the burden of establishing, by legal documentation or otherwise, that he/she is emancipated. Vermont recognizes emancipation decrees lawfully obtained in other states (12 VSA §7157).

Return to TOC

Crime Scene/ Preservation of Evidence 8.6

If you have been dispatched to a possible crime scene, including motor vehicle incidents, or if you believe a crime has been committed, immediately contact law enforcement.

Protect yourself and other EMS personnel. You will not be held liable for failing to act if a scene is not safe to enter. Once a crime scene is deemed safe by law enforcement, initiate patient contact and medical care if necessary.

- Have all EMS practitioners use the same path of entry and exit, if feasible.
- Do not walk through fluids.
- Do not touch or move anything at a crime scene unless it is necessary to do so for patient care (notify law enforcement prior to moving if possible).
- Observe and document original location of items moved by crew.
- When removing patient clothing, leave it intact as much as possible.
  - Do not cut through clothing holes made by gunshot or stabbing
- If you remove any items from the scene, such as impaled objects or medication bottles, document your actions and advise a law enforcement official.
- Do not sacrifice patient care to preserve evidence.
- Consider requesting a law enforcement officer to accompany the patient in the ambulance to the hospital.
- Document statements made by the patient or bystanders on the EMS patient care report.
  - Comments made by a patient or bystanders should be denoted in quotation marks
- Inform staff at the receiving hospital that this is a “crime scene” patient.
- If the patient is obviously dead consistent with Resuscitation Initiation and Termination - 8.17, notify law enforcement of decision not to initiate resuscitation/patient care.
- At motor vehicle incidents, preserve the scene by not driving over debris, not moving debris and parking away from tire marks, if feasible.

Return to TOC

Do Not Resuscitate (DNR)/ Clinician Orders For Life Sustaining Treatment (COLST) 8.7

All out-of-hospital DNR/COLST orders are mandated to be on the Department of Health's Vermont DNR/COLST form.

- DNR orders signed prior to July 1, 2011 may continue to be recognized as valid for EMS encounters, if the document complies with statutory requirements.
- All DNR/COLST orders on the prior Vermont DNR/COLST form that comply with statutory requirements remain legal and valid and shall be honored.
- Health care facilities and residential care facilities may document DNR/COLST orders in the patient's medical record in a facility specific manner when the patient is in their care so long as they meet the criteria below.

TO BE VALID DNR/COLST ORDERS MUST MEET THE FOLLOWING CRITERIA:

- **DNR Orders must:**
  - Be signed by the patient's clinician. A verbal order documented with the clinician's name, and signed and dated by the patient's nurse or social worker is acceptable.
  - Certify that the clinician has consulted, or made an effort to consult, with the patient, and the patient's agent or guardian, if there is an appointed agent or guardian. Signature by the clinician serves as certification that they have attempted to consult with patient.
  - Must include: the name of the patient, agent or guardian giving informed consent OR meet the futility standard (Section A).
- **COLST Orders must:**
  - Be signed by the patient's clinician. A verbal order documented with the clinician's name, and signed and dated by the patient's nurse or social worker is acceptable. Include the name of the patient, agent or guardian giving informed consent.

PEARLS

- One essential element of providing quality end-of-life care involves honoring patient preferences.
- In the past a Do-Not-Resuscitate Order (DNR) has been used when a patient does not wish to have Cardiopulmonary Resuscitation (CPR). In recent years the old "DNR" order has been incorporated into a new form known as the DNR/COLST order by the Vermont Department of Health. The old "DNR" order only dealt with CPR. The DNR/COLST order deals with CPR as well as intubation, transfer to hospital, antibiotics, hydration and overall goals of care and is the only legal out-of-hospital DNR order in Vermont as of July 1, 2011. The DNR/COLST form was updated in 2022. Orders documented on prior VDH-approved DNR/COLST forms remain valid. Healthcare and residential care facilities can document these orders in a facility specific manner for inpatients.
- These are medical orders intended to reflect a patient's current medical condition and their goals and values resulting in a treatment plan regarding use of CPR, intubation, transfer to hospital, artificial nutrition and hydration, use of antibiotics and other relevant medical goals.
- EMS personnel are required to perform CPR if indicated for a victim of cardiac arrest unless there is a signed DNR/COLST order in the out-of-hospital setting or termination of resuscitation criteria are met (Resuscitation Initiation and Termination - 8.17).
- All forms of DNR/COLST remain valid during a transfer from one healthcare facility to another.

(Continued)

Do Not Resuscitate (DNR)/ Clinician Orders For Life Sustaining Treatment (COLST) 8.7

PROCEDURE

- Patients should be assessed per routine procedures and if resuscitation is or may be needed, EMS personnel should make reasonable efforts to check the patient for a DNR identification (bracelet, necklace, anklet) or inquire if there is a written DNR/COLST order available. Attempt to determine the identity of the patient (specifically, name and date of birth).
- **If The Patient/Resident Has No Pulse And/Or No Respirations:**
  - Go to Section A of the DNR/COLST form. If the DNR order is checked and there is a clinician signature, a verbal order documented, and signed and dated by the patient's nurse or social worker, or the patient has a DNR identification - Do Not initiate CPR or other resuscitation measures.
    - Do not perform chest compressions or assist ventilations via BVM.
    - Do not intubate or place advanced airway devices.
    - Do not defibrillate.
    - Do not administer resuscitation drugs to treat cardiac arrest or dysrhythmias (ventricular fibrillation, pulseless ventricular tachycardia, pulseless electrical activity, or asystole).
- **When Confronted With A Seriously Ill Patient Who Is Not In Cardiac Arrest But Is Breathing And/Or Has A Pulse:**
  - Go to Sections B – D of the DNR/COLST form to review Orders for Other Life-Sustaining Treatment.
    - Instructions for Intubation/Ventilation in the event of respiratory distress are in Section B.
    - Medical intervention guidelines including use of noninvasive airway support and comfort-focused treatment is in Section C.
    - Orders for other life sustaining treatments (nutrition, hydration, antibiotics) are in Section D.
  - Check for clinician signature. A verbal order documented with the clinician's name, and signed and dated by the patient's nurse or social worker is acceptable.

PEARLS

- A DNR Order (Section A of the DNR/COLST form) only precludes efforts to resuscitate in the event of cardiopulmonary arrest and does not affect other therapeutic interventions that may be appropriate for the patient. (Sections B through D of the COLST form address other interventions).
- EMS providers and other health care professionals must honor a DNR order or a DNR identification unless it is believed in good faith, after consultation with the patient, agent or guardian, where possible and appropriate:
  - That the patient wishes to have the DNR Order revoked if the Order is based on informed consent, or
  - That the patient with the DNR identification or order is not the individual for whom the DNR order was issued.
- A health care provider shall honor in good faith an out-of-state DNR order, orders for life sustaining treatment, or out-of-state DNR identification if there is no reason to believe that what has been presented is invalid.
- Statutory requirements for DNR or DNR/COLST require that the order be signed by the patient's clinician, or a verbal order documented, and signed and dated by the patient's nurse or social worker, and include the name of the patient/ agent/guardian or other individual giving informed consent and their relationship to the patient.
- In the absence of a valid DNR or DNR/COLST order, neither a spouse nor a healthcare agent/durable power of attorney may direct you to withhold resuscitation in the event of a cardiac arrest. Contact **Medical Direction** for guidance.
- Photocopies and faxes of signed DNR/COLST forms are legal and valid.
- An Advanced Directive (formerly referred to as Living Will) is different than DNR/COLST. An Advance Directive is a preference-based document completed by a capacitated patient and is not actionable in an out-of-hospital emergency. A DNR/COLST order is a medical order, completed by a clinician (MD, DO, PA, APRN), requiring informed consent (which may be provided by a health care agent, guardian or surrogate if the patient lacks capacity) which shall be honored by all health care providers, including EMS.
- Contact **Medical Direction** for circumstances not specifically covered by this protocol. Document in SIREN any actions taken or not taken based on a DNR/COLST order.

(Continued)

VERMONT
DEPARTMENT OF HEALTH

INSTRUCTIONS FOR CLINICIANS
COMPLETING VERMONT DNR/COLST FORM
(DO NOT RESUSCITATE ORDER/CLINICIAN ORDERS FOR LIFE SUSTAINING TREATMENT)

Completing DNR/COLST

- The DNR/COLST form must be completed and signed by a health care clinician based on patient preferences and medical indications. A clinician is defined as a medical doctor, osteopathic physician, advance practice registered nurse or physician assistant. 18 V.S.A. § 9701(5).
  - A "clinician" also includes a duly licensed medical doctor, osteopathic physician, advanced practice registered nurse or nurse practitioner, or physician assistant who treated the patient outside Vermont and held a valid license to practice in the state in which the patient was located at the time the DNR/COLST was issued. (18 V.S.A § 9708).
- Verbal orders are acceptable with follow-up signature by the clinician. See Documenting Clinician's Verbal Order (sections A & D) below.
- Photocopies and Faxes of signed COLST forms are legal and valid.
- Prior orders completed on previously approved Vermont DNR/COLST forms remain legal and valid and shall be honored.

Special requirements for completing the DNR section of COLST (18 V.S.A. §§9708, 9709)

- A DNR order may be written on the basis of either informed consent or futility. Indicate the basis for the order in Section A.
- An order based on informed consent must include the name of the patient, agent, guardian, or other individual giving informed consent.
- An order based on futility must include a certification by the clinician and a second clinician that resuscitation would not prevent the imminent death of the patient, should the patient experience cardiopulmonary arrest.
- If patient is in a health care facility, the clinician must certify that the requirements of the facility's DNR protocol as required by 18 V.S.A. § 9709 have been met.
- Clinician signature on this form serves as the issuance of a DNR Identification.
- Clinician signature certifies that the clinician has consulted or made an attempt to consult with the patient, and the patient's agent or guardian if there is an appointed agent or guardian.

Using DNR Order - Section A CPR/DNR - 18 V.S.A. § 9708(i) and (l)

- A DNR Order (Section A of the DNR/COLST form) only precludes efforts to resuscitate in the event of cardiopulmonary arrest and does not affect other therapeutic interventions that may be appropriate for the patient. (Sections B through D of the COLST Form address other interventions.)
- Health care professionals, health care facilities, and residential care facilities must honor a DNR order or a DNR Identification unless the professional or facility believes in good faith, after consultation with the patient, agent or guardian, where possible and appropriate:
  - the patient wishes to have the DNR/COLST order revoked; or
  - the patient with the DNR identification or order is not the individual for whom the DNR order was issued; and
  - documents the basis for the good faith belief in the patient's medical record.

Using COLST (Sections B through D)

- Any sections not completed indicate that the COLST order does not address that topic. It may be addressed in a patient's advance directive, or in other parts of the medical record.
- When comfort cannot be achieved in the current setting, the person, including someone with "comfort-focused treatment", may be transferred to a setting able to provide comfort.
- A patient with or without capacity, or another person authorized to provide consent, may revoke the COLST order at any time and request alternative treatment. Exceptions may apply. See, 18 V.S.A. § 9707(g) or 18 V.S.A. § 9707(h).
- Photocopies and faxes of signed DNR/COLST forms are legal and valid.

Documenting Clinician's Verbal Order (Sections A & D)
To document a clinician's verbal order for a DNR/COLST:

- The patient's nurse or social worker must print the clinician's name in **Section A for DNR** and/or **Section D for COLST** and write "Verbal Order" on the clinician signature line.
- The nurse or social worker documenting the verbal order must also sign and date the form.
- A duplicate DNR/COLST must be completed and sent to the clinician for an original signature.
- At the earliest convenience, the order with the original signature must be returned to the patient to replace the previously documented verbal order.

Reviewing DNR/COLST
This form should be reviewed periodically and a new form completed if necessary when:

1. The patient is transferred from one care setting or care level to another, or
2. There is a substantial change in the patient's health status, or
3. The patient's treatment preferences change, or
4. At least annually, but more frequently in residential or inpatient settings.

Voiding DNR/COLST
To void this form or a part of it, draw a line through each page or section to be voided and write "VOID" in large letters.

(Continued)

Do Not Resuscitate (DNR)/ Clinician Orders For Life Sustaining Treatment (COLST) 8.7

VERMONT DNR/COLST - Clinician orders for DNR/CPR & Other Life Sustaining Treatment

PATIENT:_____ BIRTHDATE:_____
LAST NAME FIRST NAME MIDDLE INITIAL

SECTION A: Cardiopulmonary Resuscitation: Follow these orders when the patient is unresponsive, has no pulse

○ **NO CPR: Do Not Attempt Resuscitation** (DNR)
(Allow Natural Death)

○ **YES CPR: Attempt Resuscitation,** including intubation, mechanical ventilation, defibrillation and transfer to hospital.

Basis for DNR order: informed consent OR medical non-benefit (Choose one)

○ **Informed Consent obtained from:**

_____
Name of Person Giving Informed Consent (Can be Patient)

_____
Relationship to Patient (Write "self" if Patient)
(agent, guardian or surrogate)

_____
Signature (if available)
☐ Verbal Consent

OR

○ **This DNR order is written on the basis of medical non-benefit (futility). Required if no consent.**

I have determined that resuscitation would not prevent the imminent death of this patient should the patient experience cardiopulmonary arrest. Another clinician has also so determined:

_____
Name of Other Clinician Making this Determination (Print here)

_____
Signature of Other Clinician Date

SECTION B: Intubation and Ventilation: Follow these orders in the event of respiratory distress, has a pulse

Instructions for Intubation and Ventilation: (Invasive: place a tube down the patients throat and connect a breathing machine)

Mark one circle ➔		
○ NO, do not intubate and ventilate (DO NOT check if you checked "attempt CPR" in section A)	○ TRIAL COURSE, of intubation and ventilation treatment	○ YES, intubate and ventilate

SECTION C: Medical Intervention Guidelines

○ **Focus on Sustaining Life.** Use intubation, advanced airway interventions, and mechanical ventilation as indicated. *Transfer to hospital and/or intensive care unit if indicated.* All patients will receive comfort-focused treatments.
Treatment Plan: Full treatment including life support measures in the intensive care unit.

○ **Avoid Invasive Interventions.** Use medical treatment, antibiotics, IV fluids and cardiac monitor as indicated. No intubation, advanced airway interventions, or mechanical ventilation. May consider less invasive airway support (e.g. high flow, CPAP, BiPAP). *Transfer to hospital if indicated.* Generally avoid intensive level of care (e.g. ICU). All patients will receive comfort-focused treatments.
Treatment Plan: Provide basic medical treatments aimed at treating new or reversible illness.

○ **Comfort-Focused Treatment (Allow Natural Death).** Relieve pain and suffering through the use of any medication by any route, positioning, wound care, and other measures. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Patient prefers *no transfer to hospital for life-sustaining treatments. Transfer if comfort needs cannot be met in current location.*
Treatment Plan: Maximize comfort through symptom management.

Facility DNR Protocol Requirement (required for patients in health care or residential care facilities, skip if patient is not in a facility)

☐ This patient is in a health care facility or a residential care facility.
Name of Facility: _____
The requirements of the facility's DNR protocol have been met. _____ (Initial here if protocol requirements have been met.)

SIGNATURE OF CLINICIAN for section A, B & C (signature authorizes DNR identification)

Clinician (Print Name):_____ Signature:_____ Date _____

(Continued)

Do Not Resuscitate (DNR)/ Clinician Orders For Life Sustaining Treatment (COLST) 8.7

PATIENT:_____BIRTHDATE:_____
LAST NAME FIRST NAME MIDDLE INITIAL

SECTION D: Orders For Other Life Sustaining Treatments

Artificially Administered Nutrition and Hydration

Nutrition (Mark one circle)	○ NO, do not administer artificial nutrition	○ TRIAL COURSE, of short-term artificial nutrition. No long term.	○ YES, administer artificial nutrition	○ Did not discuss
Hydration (Mark one circle)	○ NO, do not administer artificial hydration	○ TRIAL COURSE, of short-term artificial hydration	○ YES, administer artificial hydration	○ Did not discuss
Antibiotics (Mark one circle)	○ NO, do not use antibiotics	○ Determine use or limitation of antibiotics when infection occurs, with comfort as goal.	○ YES, administer antibiotics (if indicated)	○ Did not discuss

Other preferences (e.g. dying at home, awareness/level of consciousness, living independently, etc.) and treatment goals specific to the patient's medical condition and care needs (e.g. blood products, dialysis, etc.).

_____

_____

Informed Consent for orders for other life sustaining treatment (section D) has been obtained from:

_____ _____ _____
Name of Person Giving Informed Consent (Can be Patient) | Relationship to Patient (Write "self" if Patient) | Signature (if available)

☐ Verbal Consent

SIGNATURE OF CLINICIAN for section D

Clinician Signature:_____**Date**_____

SECTION E: Additional Information

○ Health Care Agent/Advance Directive _____
Name of Health Care Agent(s) / phone

○ Guardianship Order _____
Name of Guardian / phone#

○ Surrogate _____
Name of Surrogate / phone#

Note: This section CANNOT be used to appoint the health care agent or guardian. Only check if there is existing documentation of medical decision-makers in an advance directive or court order for guardianship.

○ Patient enrolled in hospice: Name of Hospice Agency _____ Phone/Contact _____

SECTION F: REVIEWS

Date	Reviewer	Location	Outcome
			○ No Change ○ New form completed ○ Form Voided

Instructions For Clinicians Completing This Form

Completing DNR/COLST:

- Must be completed and signed by a health care clinician (MD, DO, APRN, or PA) based on patient's medical condition, goals and values.
- Verbal orders are acceptable with follow-up signature by the clinician in accordance with facility/agency policy.
- Photocopies and faxes of signed DNR/COLST order are legal and valid.
- By signing, clinician is certifying that they have consulted or made an attempt to consult with the patient, the patient's agent, guardian or surrogate.

Documenting Clinician's Verbal Order

- The patient's nurse or social worker must print the clinician's name and write "Verbal Order" on the clinician signature line.
- The nurse or social worker documenting the verbal order must also sign and date the form.
- A duplicate DNR/COLST must be completed and sent to the clinician for an original signature.
- At the earliest convenience, the order with the original signature must be returned to the patient to replace the previously documented verbal order.

Return to TOC

Hospice 8.8

This protocol is specific to those patients enrolled in Hospice. Treatment should be based on consultation with their Hospice team.

Introduction

The treatment goals of hospice patients differ significantly from those of other patients. Maintaining patient dignity and quality of life, rather than treating medical conditions, is the objective. If a specific cause of discomfort is identified (e.g., bronchospasm), traditional EMS treatment may be appropriate depending on the invasiveness of the therapy and the patient's preferences. Hospice patients generally wish to remain at home and transport to the hospital should be the exception.

Many hospice patients will have a hospice comfort kit that contains medications that patient's caregivers are instructed to use to treat commonly encountered medical issues.

If the patient is unable to make medical decisions and the hospice team cannot be contacted, determine the patient's wishes and contact **Medical Direction.**

EMS practitioners should avoid the following interventions:

- Sirens, lights or aggressive interventions with family or caregivers.
- IV therapy (except where other forms of medication administration are not possible).
- Cardiac resuscitation: CPR, resuscitation medications, BVM ventilations.
- Cardiac pacing, cardioversion, and defibrillation.
- Hospice patients should not be transported to the hospital except where transport is specifically requested by the patient or their healthcare agent or surrogate, and preferably only after consultation with the hospice team and exhaustion of other treatment pathways that do not require transport to the hospital.

EMT/ADVANCED EMT STANDING ORDERS

E

- Routine Patient Care.
- Contact the hospice team (preferred) or **Medical Direction** to coordinate care and determine administration of hospice kit medications.
- Consider paramedic response for medication administration.
- Breakthrough Pain: Suggest administration of breakthrough pain medication by patients / families. For pain of sudden onset, seek to determine and ameliorate or treat the underlying cause (e.g., pathological fracture).
- Anxiety: Consider potential causes for patient's anxiety, such as increased pain and shortness of breath.
- Dyspnea: Administer oxygen via nasal cannula to relieve shortness of breath and achieve a respiration rate of < 20. Use a fan to blow air directly at the patient's face.
- Constipation: Suggest administration of constipation medication by patient/family.
- Nausea/Vomiting: Suggest administration of nausea medication by patient/family.
- Terminal Secretions: Reassure family that noisy breathing is generally not distressing to the patient. Suggest administration of medication by patients/families.
- Terminal Dehydration: Moisten lips with petroleum jelly; use artificial saliva/mouth sponges and ice chips.
- Confusion/Delirium: Speak slowly and calmly to the person. Remind the patient of where they are, and who you are. Avoid contradicting the patient's statements. Ensure a patient's hearing aid and glasses are available. Limit activity/noise in the room.

(Continued)

Hospice 8.8

EMT/ADVANCED EMT STANDING ORDERS

A

Nausea / Vomiting:

- Reference Nausea/Vomiting - 2.14.

PARAMEDIC STANDING ORDERS

P

Consider following the written orders for medications in hospice kit.
Note: Administration of hospice or adjunct medications does not necessarily require transport to the Emergency Department.

As an adjunct to the hospice kit medication consider:

Breakthrough Pain:

- See Pain Management – 2.20A (all IV formulated opioids may be given PO for hospice patients)

Anxiety:

- Midazolam: 2.5 mg IN, repeat every 10 – 15 minutes as needed to a maximum of 7.5mg
- Lorazepam: 0.25 – 2 mg PO or SL.

Dyspnea:

- Morphine or other opioid, dosing per Pain Management – 2.20A, maintaining respiratory rate above 8 bpm.
- Bronchospasm: See Asthma/COPD/RAD – 2.4A, subject to patient's goals.
- Heart Failure: See Congestive Heart Failure (Pulmonary Edema) - 3.3A, subject to patient's goals.

PEARLS

- Breakthrough pain assessment and management is important in patients with advanced disease as they may have a high burden of pain, be opioid tolerant, and already be receiving high doses of opioids.
- Anxiety ranges from mild to severe, is common in patients nearing death, and should be treated promptly.
- Terminal secretions are noisy, gurgling respirations caused by secretions accumulating in the lungs or oropharynx.
- Terminal dyspnea is exhibited by patients that are expected to die within hours to days. Individuals experiencing dyspnea often experience heightened anxiety.
- Constipation is a frequent cause of nausea and vomiting. Opioid-related constipation is dose-related, and patients do not develop tolerance to this side effect. Surgical treatment is often not appropriate.
- Nausea / Vomiting can be extremely debilitating symptoms at the end of life. Effective control of nausea can be achieved in most patients.
- Fever and infection treatment should be guided by an understanding of where the patient is in the dying trajectory and goals of care. Overwhelming sepsis may be a sign of death not to be reversed.
- Delirium is common at end of life and is often caused by a combination of medications, dehydration, infections or hypoxia. It is distressing to families. It often heralds the end of life and may require sedation.
- Though patients in hospice have decided not to pursue further treatment for their underlying condition, these patients can and do still require transport by EMS for acute problems unrelated to their underlying condition, and should be treated according to local and state protocols, as well as the patient's hospice plan.

Return to TOC

Implantable Ventricular Assist Devices (VAD) 8.9

EMT/ ADVANCED EMT / PARAMEDIC STANDING ORDERS

Patient Care Goals

- Rapid identification of, and interventions for, cardiovascular compromise in patients with VADs.
- Rapid identification of, and interventions for VAD-related malfunctions or complications.

Indications

- Adult patients that have had an implantable ventricular assist device (VAD) including Left Ventricular Assist Device (LVAD), right ventricular assist device (RVADs); and biventricular-assist devices (BiVADs) and have symptoms of cardiovascular compromise.
- Patients with VADs that are in cardiac arrest.
- Patients with VADs that are experiencing a medical or injury-related event not involving the cardiovascular system or VAD malfunction.

Contraindications

- Adult patients who do not have a VAD in place.

Assessment:

E/A/P

- Assess for possible pump malfunction:
  - Assess for alarms
  - Auscultate for pump sound “hum”
  - Signs of hypoperfusion including pallor, diaphoresis, altered mental status
- If the VAD pump has malfunctioned -
  - Utilize available resources to troubleshoot potential VAD malfunctions and to determine appropriate corrective actions to restore normal VAD function:
    - Contact the patient’s VAD-trained companion, if available
    - Contact the patient’s VAD coordinator, using the phone number on the device
    - Check all the connections to system controller
    - Change VAD batteries, and/or change system controller if indicated
    - Have patient stop all activity and assess for patient tolerance
    - Follow appropriate cardiovascular condition-specific protocol(s) as indicated

Treatment and Interventions:

- Manage airway as indicated.
- Cardiac monitoring.
- IV Access.
- Acquire 12-lead ECG. Transmit if possible.
- If patient is experiencing VAD-related complications or cardiovascular problems, expedite transport to a tertiary care facility if patient’s clinical condition and time allows.
- If patient has a functioning VAD and is experiencing a non-cardiovascular-related problem, transport to a facility that is appropriate for the patient’s main presenting problem without manipulating the device.

(Continued)

Implantable Ventricular Assist Device (VAD) 8.9

EMT/ ADVANCED EMT / PARAMEDIC STANDING ORDERS

Treatment and Interventions - continued:

If patient is in full cardiac arrest:

- CPR should not be performed if there is any evidence the pump is still functioning. The decision whether to perform CPR should be made based upon best clinical judgment in consultation with the patient's VAD-trained companion and the VAD coordinator (or medical control if VAD coordinator unavailable). CPR may be initiated only when:
  - You have confirmed the pump has stopped AND troubleshooting efforts to restart it have failed, **AND**
  - The patient is unresponsive and has no detectable signs of life

E/A/P

Patients with an implantable Ventricular Assist Device (VAD) should not be pronounced dead at the scene unless there are obvious factors of death (Resuscitation Initiation and Termination 8.17). Due to the unique nature of VADs, there are specific protocols to follow, as these patients may have signs of life that are not immediately apparent.

Key Documentation Elements

- Information gained from the VAD control box indicating any specific device malfunctions
- Interventions performed to restore a malfunctioning VAD to normal function
- Time of notification to and instructions from VAD-trained companion and/or VAD Coordinator

PEARLS

- You do not need to disconnect the controller or batteries in order to defibrillate or cardiovert
- You do not need to disconnect the controller or batteries in order to acquire a 12-lead EKG
- Flow though many VAD devices is not pulsatile and patients may not have a palpable pulse or accurate pule oximetry
- The blood pressure, if measurable, may not be an accurate measure of perfusion.
- Ventricular fibrillation, ventricular tachycardia, or asystole/PEA may be the patient's "normal" underlying rhythm. Evaluate clinical condition and provide care in consultation with VAD coordinator
- The patient's travel bag should accompany them at all times with back-up controller and spare batteries
- If feasible, bring the patient's Power Module, cable and Display Module with patient to the hospital
- All patients should carry a spare pump controller with them
- The most common causes for VAD alarms are low batteries or battery failure
- Although automatic non-invasive blood pressure cuffs are often ineffective in measuring systolic and diastolic pressure, if they do obtain a measurement, the MAP is usually accurate
- Other VAD complications:
  - Infection
  - Stroke / TIA
  - Bleeding
  - Arrhythmias
  - Cardiac Tamponade
  - CHF
  - Aortic Insufficiency

(Continued)

Implantable Ventricular Assist Device (VAD) 8.9

Resources:
Recommended Unit Resource: Print EMS Guide for Mechanical Circulatory Support Organization and place in all ambulances (40 pages). This guide has excellent information and trouble shooting guidance for VAD devices that patients could have out in the public. Access the resource guide at: https://www.mylvad.com/medical-professionals/resource-library/ems-field-guides.

Consider downloading onto your ambulance laptops/tablets the "MyLVAD Hospital Locator App."

References:

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- Mabvuure NT., et al., External cardiac compression during cardiopulmonary resuscitation with left ventricular assist devices. Interact Cardiovasc Thorac Surg. 2014 Aug;19(2):286-9.
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Shinar Z., et. al., Chest compressions may be safe in arresting patients with left ventricular assist devices (LVADs). Resuscitation 2014 May;85(5):702-4.

Return to TOC

Lift Assist 8.10

BACKGROUND

EMS practitioners are often called to provide lifting assistance. This assistance can vary but often involves an individual who has fallen or slipped and is now unable to get up or return to bed without assistance. In all calls from an individual or responsible party requesting lifting assistance, a medical evaluation must be completed looking for any injury, underlying medical process that contributed to this event, or for a deterioration in functional ability.

PROCEDURE

- Initial evaluation should begin by assessing for any suspected medical cause or inability to mobilize (e.g. dizziness, lightheadedness, syncope, new weakness or balance problem, dehydration/poor oral intake, visual disturbance, recent illness or infection, etc.).
- Assess vital signs to include HR, RR, BP, SpO_2. In some instances, based on patient's past medical history or provider discretion, a temperature, $EtCO_2$, EKG and blood glucose should also be checked.
- Determine if any acute injury or medical condition exists.
- Ascertain the duration of down time if found on the ground/floor. Consider hypothermia, compartment syndrome, or rhabdomyolysis and treat accordingly.
- Determine if patient is on any oral anticoagulants which may increase risk level for unrecognized bleeding and may prompt recommendation for transport.
- Transport should be recommended to patients that exhibit altered mental status, any loss of consciousness, suspected medical reason for fall, abnormal vital signs including BGFS or $EtCO_2$ if obtained, signs of new trauma, or use of anticoagulants (blood thinners).
- Those who decline transport should be evaluated for medical decision-making capacity and the informed refusal of care process should be followed. Advise patient that they may call 911 if they develop any symptoms.
- Refusal of Care should be followed and documented carefully as described in Refusal of Care 8.15.
- A SIREN report will be completed when a patient receives an assessment, assistance (i.e. lift assist), advice, or treatment by EMS personnel.

Return to TOC

Naloxone Leave Behind Overdose Rescue Program 8.11

PURPOSE
To identify and provide At-Risk Persons with a Naloxone Leave Behind Kit, along with instructions on harm reduction and how to access treatment.

DEFINITION
At-Risk Persons are those individuals who:

- Have indications of opioid or other substance use disorder (OUD/SUD) -
  - Indicators of SUD may include patient confirmation of opioid or other illicit substance use, concern expressed by others on scene, presence of drug paraphernalia, clinical signs and symptoms, **OR**
  - Just experienced an overdose, **OR**
  - Answers **yes** to the single question drug use screening test (see below)

BACKGROUND
Opioid overdoses, especially those involving fentanyl and fentanyl analogs, have become the leading cause of injury-related death in the United States. Fentanyl is often mixed, without the user's knowledge, into heroin, cocaine, methamphetamine, or any other pill or powder not obtained from a pharmacy, leading to a high risk of fatal overdose for any form of substance use.

NALOXONE LEAVE BEHIND KIT CONTENTS
Naloxone spray, instruction on harm reduction and how to access treatment, and other available harm reduction resources.

E/A/P

PROCEDURE

- Identify an At-Risk Person based upon the definition above.
- Perform single question Drug Use Screening Test by asking:
  - *"In the past year, have you used substances or prescription medications for non-medical or recreational reasons?"*
  - If the answer is yes, consider the patient an At-Risk Person
- Treat according to Vermont Statewide EMS Protocols. Consider Poisoning/ Substance Abuse/Overdose – 2.21A or Poisoning/Substance Abuse/Overdose 2.21P, Altered Mental Status – 2.3A or Altered Mental Status - 2.3P.
- Overdose patients who were administered Naloxone by EMS or prior to EMS arrival should be encouraged to accept transport to the emergency department.
- Advise At-Risk persons that immediate OUD/SUD treatment is available through any Vermont emergency department.
- Naloxone Leave Behind Kits may be given to both transported and non-transported patients, regardless of the initial call reason.

- Offer a Naloxone Leave Behind Kit to any:
  - At-Risk person who refuses transport
  - Patients who used Naloxone on scene prior to EMS arrival
  - Family, friends, or others on scene who may be in a position to help in an overdose emergency

- Review instructions found in the Naloxone Leave Behind Kit with the recipient, including proper use, local recovery resources, and available linkage to treatment.
- Contact **Medical Direction** for patients who refuse transport (Refusal of Care and Patient Non-Transport Form - 8.15).

DOCUMENTATION

- Document use of the Naloxone Leave Behind Overdose Rescue Program in SIREN.

Return to TOC

Non-EMS Personnel at the Emergency Scene 8.12

GENERAL CONSIDERATIONS

Emergency medical care is a continuum involving the concerted, integrated efforts of prehospital providers, physicians, nurses, allied health personnel, clergy and mental health workers. Recognizing this offers a guide for dealing with non-prehospital providers who wish to render assistance on the scene of an emergency.

NON-PHYSICIAN INTERVENTION ON THE SCENE

(Nurses, midwives, physician assistants, allied health personnel, clergy, mental health workers, etc.)

- Control of the medical care at an emergency scene is the responsibility of the individual in attendance who is most appropriately trained and knowledgeable in providing prehospital emergency stabilization and transport. With few exceptions, this is the on-duty responding EMS licensee of the highest license level. The intervener should be thanked by a member of the responding EMS crew and be asked to report any care that was provided prior to EMS arrival.
- Confrontation should be avoided whenever possible. The appropriate involvement of non-prehospital providers should be determined by the licensed responding prehospital providers.
- On-line medical direction should be sought for situations where a cooperative working relationship is failing or has failed, or the non-prehospital provider refuses to relinquish care of the patient.
- In any circumstance where the prehospital provider believes that care proposed by an intervener deviates from protocols, follow these protocols and seek on-line medical direction.

PHYSICIAN INTERVENTION ON THE SCENE

- Prehospital providers control an emergency scene, even in the presence of a physician.
- When EMS personnel encounter a person claiming to be a physician at the scene, one of the prehospital providers should take reasonable steps to verify the identity of the physician without restricting the physician's access to provide potentially lifesaving care.
- Patient’s private physician.
    - If the patient's private physician is present and assumes responsibility for the patient's care, the prehospital provider should generally defer to the orders of the private physician within the limits of the provider's training and licensure
    - Medical direction should be contacted
    - The private physician should be expected to accompany the patient to the hospital if interventions beyond the scope and practice of the providers have occurred
    - The prehospital provider reverts back to following these protocols and on-line medical direction at any time when the patient's private physician is no longer in attendance
- Not the patient’s private physician.
    - If on-line medical direction CANNOT be established:
        - The prehospital provider should generally relinquish responsibility for the patient's care when the physician has identified himself and has indicated a willingness to assume responsibility and document any interventions when this care appears competent and appropriate. Always act in the best interest of the patient
        - The prehospital provider should defer to the wishes of the physician on the scene within the limits of the provider's training and licensure
        - If the care and treatment differ from these protocols, the physician must agree in advance to accompany the patient to the hospital
        - In the event of a mass casualty incident or disaster, patient care needs may require the physician to remain at the scene
    - The prehospital provider reverts back to following these protocols and on-line medical direction at any time when this physician is no longer in attendance
    - If on-line medical direction CAN be established:
        - The on-line physician is ultimately responsible
        - Should any disagreement between the physician on the scene and the on-line physician exist, the prehospital provider should follow the orders from the on-line physician and place the intervener physician in contact with the on-line physician
        - The on-line physician has the option of managing the case entirely, working with the physician, or allowing the on-scene physician to assume responsibility
- The details of any encounter with an intervener should be documented. Include the intervener's name, qualifications, and any care provided by the intervener.

Return to TOC

PATIENT TRANSPORT

23 VSA §1258 requires all children to be properly restrained when riding in a vehicle. An ill or injured 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. Child passengers should never be transported in a side-facing orientation (i.e. on a bench seat or CPR chair).

1. Convertible car seat with two belt paths (front and back) with four points for belt attachment to the cot is considered best practice for pediatric patients who can tolerate a semi-upright position.
   - Position safety seat on cot facing foot-end with backrest fully elevated to meet the back of the child safety seat.
   - Secure safety seat with 2 pairs of belts at both forward and rear points of seat.
   - Place shoulder straps of the harness through slots just below child's shoulders and fasten snugly to child.
   - Follow manufacturer's guidelines regarding child's weight.

   Note: Non-convertible safety seats cannot be secured safely to cot. If child's personal safety seat is not a convertible seat, it cannot be used on the cot.

2. Stretcher harness device with 5-point harness (examples: Ferno Pedi-Mate, SafeGuard Transport, ACR)
   - Attach securely to cot utilizing upper back strap behind cot and lower straps around cot's frame.
   - 5-point harness must rest snugly against child.
   - Adjust head portion of cot according to manufacturer's recommendation.
   - Follow manufacturer's guidelines regarding weight.

3. Car bed with both a front and rear belt path
   - For infants who cannot tolerate a semi-upright position or who must lie flat.
   - Position car bed so infant lies perpendicular to cot, keeping infant's head toward center of patient compartment.
   - Fully raise backrest and anchor car bed to cot with 2 belts, utilizing 4 loop straps supplied with car bed.
   - Only appropriate for infants from 5 – 20 lbs.

(Continued)

4. Child belted directly to backboard and/or cot in manner to prevent ramping or sliding in a front or rear end crash
   - Loop narrow belt under each arm and extend over child's shoulder securing belt at shoulder level so no gap exists above shoulder.
   - Use soft, sliding, or breakaway connector to hold shoulder straps together on chest.
   - Anchor 2 belts to non-sliding cot member and route over thighs and hips, not around waist.

5. Properly secure isolette and infant according to manufacturer's guidelines.
   - Rest harness securely on child with no blanket or sheet between harness and child.
   - Attach to isolette tray at four points.
   - Additional soft Velcro straps may be added for lateral security.
   - Blanket or towels may be used to provide stabilization of the head.

MOTHER AND NEWBORN TRANSPORT

- It is not acceptable, under any circumstances, to transport a pediatric patient in the arms of an adult.
- Secure and transport mother on the cot.
- If mother and newborn are both stable and a commercial device is available to fasten newborn to mom, follow manufacturer's guidelines.
- If mother and/or newborn are not stable or a commercial device is not available, best practice is to request two ambulances, transporting each in their own ambulance.
- If a second ambulance is not available, transport stable newborn secured to the rear-facing provider seat/captain's chair using a size-appropriate child restraint system. Infant should be facing the rear of the ambulance. Enter a convertible safety seat with a forward-facing belt path or an integrated child restraint system certified by the manufacturer to meet FMVSS No. 213 may be used to secure the infant.

NON-PATIENT TRANSPORT

Best practice is to transport well children in a vehicle other than the ambulance, whenever possible, for safety.

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 locations:

- Captain's chair in 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.
- 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 air bag can be deactivated, an infant, restrained in a rear-facing infant seat, may be placed in the passenger seat of the driver's compartment.

(Continued)

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

The 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.

Return to TOC

Police Custody 8.14

PURPOSE
The purpose of this protocol is to give EMS guidance for patients who are temporary, protective or police custody.

POLICE TEMPORARY OR PROTECTIVE CUSTODY
Temporary or protective custody is a civil status in which an incapacitated person is detained by a law enforcement officer for the purposes of:
(a) Assuring the safety of the individual or the public or both; and
(b) Assisting the individual to return to a functional condition.

- **Temporary Custody:** For patients who present an immediate risk of serious injury to themselves or others, consult with law enforcement or a mental health professional about the use of temporary custody to transport the patient to the Emergency Department for an emergency examination, after obtaining a warrant from a Superior judge. (18 VSA §7505)
- **Protective Custody:** Patients who present with evidence of incapacitation from alcohol or drug use may be placed into protective custody and transported to the Emergency Department (18 VSA §4810).

POLICE CUSTODY
Police custody means a person is under arrest. Patients in police custody who require medical care should be transported to a medical facility.

DECISION TO TRANSPORT TO THE HOSPITAL
- If law enforcement refuses to place a patient into protective custody at the request of EMS, or if police and EMS disagree about whether a patient in police custody requires transport to a medical facility for further assessment or treatment, on-line Medical Direction must be contacted and a law enforcement supervisor should be requested for guidance.
- If Medical Direction advises that the patient needs to be transported to the Emergency Department but you are unable to do so, document circumstances carefully in your chart and communicate with Medical Direction.
- Patient medical condition is of primary concern when determining destination. When condition allows, consider law enforcement requests.

EMS INITIATED RESTRAINTS
For any patient potentially requiring restraints by EMS, reference Restraints - 6.6.

POLICE RESTRAINT DEVICES
Patients transported by EMS who have been restrained by law enforcement devices (e.g., handcuffs) should be accompanied, in the patient compartment, by a law enforcement officer who is capable of removing the device. If this is not feasible, the officer MUST follow directly behind the transporting ambulance to the receiving hospital.

CONDUCTED ELECTRICAL WEAPONS
Patients who have been subdued by a conducted electrical weapon (i.e., Taser™), reference Taser (Conducted Electrical Weapon) Probe Removal and Assessment - 6.7.

PEPPER SPRAY
Patients who have been subdued by pepper spray (Eye & Dental Injuries – Adult & Pediatric 4.3).

DELIRIUM WITH AGITATION
Delirium with agitation is characterized by extreme restlessness, irritability, and/or high fever. Patients exhibiting these signs are at high risk for sudden death (Restraints - 6.6).

Return to TOC

Refusal of Care 8.15

PURPOSE
Establish guidelines for the management and documentation of situations where patients refuse treatment or transportation.

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:

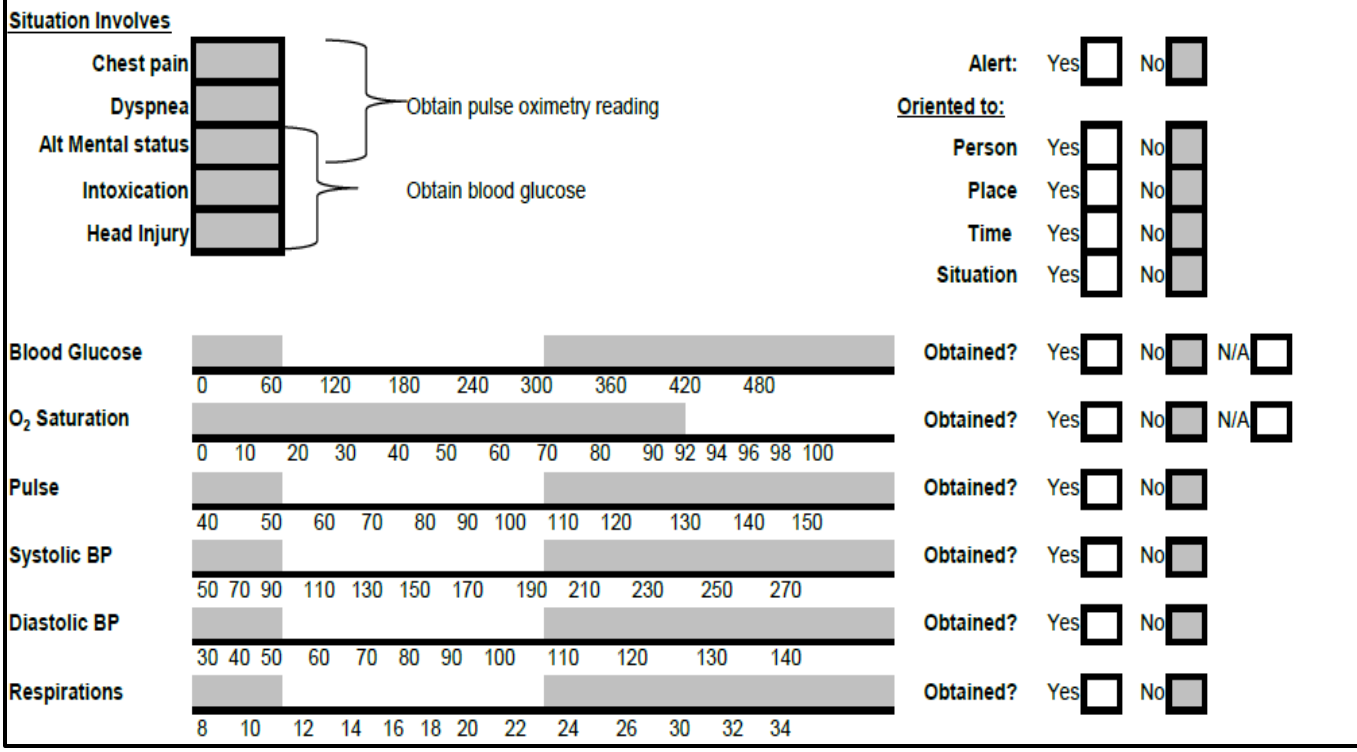
1. **Competence**: In general, a patient who is an adult or a legally emancipated minor is considered legally competent to refuse care. A parent or legal guardian who is on-scene or available by phone, may refuse care on their minor children's behalf.
2. **Capacity**: In order to refuse medical assistance a patient must have the capacity to understand the nature of their medical condition, the risks and benefits associated with the proposed treatment, and the risks associated with refusal of care.
3. **Informed Refusal**: A patient must be fully informed about their medical condition, the risks and benefits associated with the proposed treatment and the risks associated with refusing care.

Patients who meet criteria to allow self-determination shall be allowed to make decisions regarding their medical care, including refusal of evaluation, treatment, or transport. These criteria include:

1. Adults (≥ 18 years of age or a legally emancipated minor).
2. Orientation to person, place, time, and situation.
3. No evidence of altered level of consciousness resulting from head trauma, medical illness, intoxication, dementia, psychiatric illness or other causes.
4. No evidence of impaired judgment from alcohol or drug influence.
5. No language communication barriers (reliable translation available, e.g., on-scene interpreter, language line).
6. 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.

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 Care.

Utilize the Patient Non-Transport Algorithm. Any check mark in a shaded area requires on-line **Medical Direction** prior to terminating the patient encounter. (Include blood glucose only if applicable.)



(Continued)

Refusal of Care 8.15

Consider on-line **Medical Direction** 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.

Medical Direction is to be provided all relevant information and may need to speak directly with the patient by radio or preferably a recorded landline.

If **Medical Direction** advises that the patient needs to be transported to the Emergency Department but you are unable to do so, document circumstances carefully in your chart and communicate with Medical Direction.

If it is determined the patient does not have the capacity to refuse care and is in need of medical treatment or protective custody and refuses care, contact law enforcement for assistance.

Examples of high-risk refusals include but are not limited to:

1. Treated / resolved hypoglycemia.
2. Patient with obvious head trauma and taking anticoagulant medications.
3. Intoxicated patients.
4. Abnormal vital signs.
5. Treated / resolved narcotic overdose.
6. High risk mechanism of injuries (Spinal Trauma & Assessment – 4.6).
7. Patient / witness reports suicidal ideations.
8. Possible apparent life-threatening event (Brief Resolved Unexplained Event (BRUE) - 2.6P.

PROCEDURE

1. Clearly offer the patient both treatment and transportation to the hospital and document the offer in your Patient Care Report (SIREN). All non-transports after patient contact require documentation in SIREN.
2. Perform an assessment of the patient's mental capacity and, to the extent permitted by the patient, a physical exam including vital signs. Your assessment, or the patient's refusal of care, must be fully documented in your Patient Care Report
3. Explain to the patient the nature and severity of their 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 Patient Care Report.
4. A parent or legal guardian may refuse care for a minor or:
   - When a parent or legal guardian is not reasonably available, another adult family member, or other authorized representative, may refuse care.
   - EMS personnel may accept a telephonic refusal of care, provided that they have explained the consequences of refusing care; telephonic refusal of care should be carefully documented.
5. Follow the patient non-transport algorithm. Any check mark in a shaded area requires on-line **Medical Direction** prior to terminating the patient encounter.

6. Prepare and explain the Patient Non-Transport form or the equivalent section of the SIREN run form, if available, to the patient (or, in the case of a minor patient, the patient's parent, legal guardian, or authorized representative).
7. The Patient Non-Transport form or SIREN screen should 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. The form should also be dated and, where possible, signed by a witness, preferably a competent relative, friend, police officer, or impartial third person.
8. If on-line **Medical Direction** was consulted for a refusal of care, obtain and document the physician's name in the patient care report.
9. All patients in police custody retain the right to request transport. This should be coordinated with law enforcement.
10. If child abuse is suspected and a refusal of care situation exists, the EMT must contact police immediately (Victims of Violence - 8.19).
11. Offer a naloxone leave behind kit to an At-Risk Person who is refusing transport.

(Continued)

Vermont Department of Health
Emergency Medical Services
Supplemental Report for Patient Non-Transport *

108 Cherry St., PO Box 70, Burlington, VT 05402
802-863-7310 1-800-244-0911 (in VT)

Date: _____ Time: _____ EMS Agency: _____ Incident # _____

Incident Address: _____

Patient Address: _____

Patient Name: _____

Patient DOB: _____ If the patient is <18, is parent/guardian present? Yes ☐ No ☐

* All patient refusals must be documented in SIREN or on a patient care report.

Situation Involves

Chest pain ☐
Dyspnea ☐
Alt Mental status ☐ — Obtain pulse oximetry reading
Intoxication ☐
Head Injury ☐ — Obtain blood glucose

Alert: Yes ☐ No ☐

Oriented to:

Person Yes ☐ No ☐
Place Yes ☐ No ☐
Time Yes ☐ No ☐
Situation Yes ☐ No ☐

Blood Glucose	0 60 120 180 240 300 360 420 480	Obtained? Yes ☐ No ☐	N/A ☐
O_2 Saturation	0 10 20 30 40 50 60 70 80 90 92 94 96 98 100	Obtained? Yes ☐ No ☐	N/A ☐
Pulse	40 50 60 70 80 90 100 110 120 130 140 150	Obtained? Yes ☐ No ☐	
Systolic BP	50 70 90 110 130 150 170 190 210 230 250 270	Obtained? Yes ☐ No ☐	
Diastolic BP	30 40 50 60 70 80 90 100 110 120 130 140	Obtained? Yes ☐ No ☐	
Respirations	8 10 12 14 16 18 20 22 24 26 30 32 34	Obtained? Yes ☐ No ☐	

Reason for No Transport:

☐ Patient refuses transport against EMS advice.
☐ Patient does not desire transport to hospital via EMS and EMS provider agrees that the patient's alternative treatment/transportation plan is acceptable.
☐ EMS provider does not feel transport by EMS is necessary/indicated and patient agrees.
☐ EMS provider does not feel transport by EMS is necessary/indicated and patient desires transport.

Patient understands clinical situation Yes ☐ No ☐
Patient verbalizes logical reasons for desiring no transport Yes ☐ No ☐

Risks explained to patient: _____

Patient verbalized understanding of risks Yes ☐ No ☐
If patient lacks capacity or is pediatric, responsible adult family member or friend at the scene Yes ☐ No ☐ N/A ☐

Naloxone Leave Behind Kit offered if "At-Risk Patient?
Yes ☐ No ☐

Patient refused the following treatments/procedures: _____

Patient's plan for seeking further medical evaluation: _____

I understand that evaluation and/or treatment by Vermont-licensed Emergency Medical Services (EMS) personnel is not a substitute for care by my personal physician or hospital emergency department. Although I am not being transported to a hospital by EMS, my condition may still warrant care by a physician. I am responsible for seeking the care I feel is necessary, and I have a plan for doing so. I also release the EMS personnel and organizations involved with my current situation from all claims resulting from my voluntary refusal of treatment and/or transport. I understand that if I change my mind, I can call 9-1-1 at any time.

Patient or Parent/Guardian signature _____ Relationship (if applicable) _____ Witness _____

[ ] Patient refuses to sign.

EMS Provider & Cert Number _____ Medical Direction ID or name: _____

Consulted by: None _____ Radio _____ Phone _____ On scene _____

Check marks in shaded areas require consult with on-line medical direction.
White - Squad ; Pink - Patient; Yellow - File with District Medical Advisor Revised 5/25/2022

Return to TOC

Rehabilitation – Scene and Training Guidelines for EMS 8.16

Emergency Medical Services (EMS) agencies' primary responsibility at any incident is to provide emergency medical care and transportation to the sick and injured. EMS agencies may assist Incident Management teams (fire departments, tactical teams, SAR, hazmat, police departments, etc.), in the provision of incident scene and training rehabilitation (Rehab) of personnel who are at risk of suffering adverse effects from stress or from exposure to heat, cold, or hazardous environments according to the following guidelines and in accordance with local fire/EMS/police department standard operating guidelines (SOGs) and the principles of the Incident Command System (ICS). EMS agencies that decide to participate in Rehab operations are encouraged to develop written agreements with fire or police departments or other agencies that clearly define operational roles in accordance with these guidelines.

Personnel entering Rehab must be medically assessed for concerning signs or symptoms, including the following: Chest pain, altered mental status, shortness of breath, dizziness, nausea or vomiting, syncope, heat stress, significant injury or other complaints. Personnel with concerning signs or symptoms should receive emergency medical care according to standard Vermont Statewide Emergency Medical Service Protocols.

EMS personnel may perform the following activities in the Rehab area:

- Assess personnel for concerning signs or symptoms
- Obtain and report vital signs
- Obtain and report oxygen saturation (pulse oximetry) and carboxyhemoglobin oximetry values
- Provide oral hydration with water or electrolyte-containing sport drinks
- Provide nutritional snacks or meals for longer duration events
- Provide passive and active cooling measures
- Compare measured vital signs to baseline records if available (baseline values established prior to the incident as part of comprehensive worker safety/health program.
  See NFPA 1582 / NFPA 1583 / NFPA 1584

Any personnel encountered on the incident scene, including fire or police department members, that present with signs/symptoms of acute medical/traumatic illness or injury should receive emergency medical care by EMS personnel in accordance with the Vermont Statewide EMS Protocols. Treatments and assessments rendered using the Statewide EMS Protocols, which may include oxygen administration, IV fluid administration, medication administration, etc., should be part of a continuum of care that, as is true for the vast majority of EMS patients, results in transport to an appropriate acute care hospital.

The decision to release an individual from Rehab is determined by the Incident Commander (IC) or delegate in command of the Rehab area. Decisions should ideally be made collaboratively with EMS staff on scene, but the ultimate responsibility for worker health and safety lies with the IC.

Return to TOC

Resuscitation Initiation and Termination 8.17

RESUSCITATION EFFORTS SHOULD BE WITHHELD UNDER THE FOLLOWING CIRCUMSTANCES:

- **Valid Do Not Resuscitate Orde**r (Do Not Resuscitate (DNR) & Clinician Orders (COLST) - 8.7).
- **Scene Safety** - The physical environment is not safe for providers.
- **Dead on Arrival (DOA)** - A person is presumed dead on arrival when all five "Signs of Death" are present **AND** at least one associated "Factor of Death" is present.

  Signs of Death (all five signs of death must be present)
  - Unresponsiveness
  - Apnea
  - Absence of palpable pulses at carotid, radial, and femoral sites
  - Unresponsive pupils
  - Absence of heart sounds

E/A/P

  Factors of Death (at least one associated factor of death must be present)
  - Damage or destruction of the body incompatible with life, such as, but not limited to:
    - ✓ Decapitation
    - ✓ Decomposition
    - ✓ Deforming brain injury
    - ✓ Incineration or extensive full thickness burns
  - Lividity/Rigor mortis of any degree
  - Major blunt or penetrating trauma
  - Body frozen solid—unable to perform chest compressions

SUDDEN UNEXPLAINED INFANT DEATH (SUID)

- An infant <12 months who is apneic, asystolic (no heartbeat or umbilical cord pulse), and exhibiting lividity and/or rigor mortis may be presumed dead.

NEONATE

- A neonate who is apneic, asystolic, and exhibits either neonatal maceration (softening or degeneration of the tissues after death in utero), or anencephaly (absence of a major portion of the brain, skull, and scalp), may be presumed dead.
- Contact **Medical Direction** if gestational age is less than 22 weeks and neonate shows signs of obvious immaturity (translucent and gelatinous skin, lack of fingernails, fused eyelids).

Patients with a ventricular assist devices (VAD) (Implantable Ventricular Assist Device (VAD) - 8.9) should not be pronounced dead at the scene unless there are obvious factors of death.

(Continued)

Resuscitation Initiation and Termination

8.17

EMT/ADVANCED EMT STANDING ORDERS – ADULT

E/A

RESUSCITATION MAY BE STOPPED UNDER THE FOLLOWING CIRCUMSTANCES:

- When the patient regains pulse/respirations (Post Resuscitative Care – 3.4A, Post Resuscitative Care - 3.4P, Cardiac Arrest – 3.2A or Cardiac Arrest – 3.2P).
- The physical environment becomes unsafe for providers.
- The exhaustion of EMS providers.

TERMINATION OF RESUSCITATION (TOR) RULE (ADULTS ONLY):

1) Arrest not witnessed by emergency medical services personnel.
2) NO return of spontaneous circulation after 20 minutes of either BLS alone or combined BLS and ALS in the absence of hypothermia.
3) No shock was delivered or advised by the AED.

- If **ALL** criteria are present, contact **Medical Direction** to consider termination of resuscitation.
- If **ANY** criteria are missing, contact **Medical Direction** to consider termination of resuscitation **OR** continued resuscitation and transport.
- If ROSC, continue resuscitation and transport **AND** contact **Medical Direction**.
- Notify law enforcement if terminating resuscitation.

- Consider early transport if unable to ventilate.
- Contact **Medical Direction** to consider Termination of Resuscitation for any of the following:
  - Arrest witnessed by EMS personnel, if patient has no return of spontaneous circulation after 20 minutes of either BLS alone or combined BLS and ALS in the absence of hypothermia, and no shocks were delivered or advised, **OR**
  - Extrication is prolonged (> 20 minutes) with no resuscitation possible during extrication (hypothermia is an exception), **OR**
  - If extenuating circumstances or questions
- Hypothermic patients without contraindications to CPR should have continued CPR and should not be considered for TOR until the core temperature has been rewarmed to 32°C (90°F) with no return of spontaneous circulation (ROSC) (Hypothermia (Environmental) – Adult & Pediatric 2.13).
- CPR-induced consciousness is also a contraindication of TOR.
- Cardiac arrests should generally be managed on scene until return of spontaneous circulation, decision to cease resuscitation, or criteria are met for transport to hospital as indicated by Termination of Resuscitation (TOR) Rule. If transport is initiated, resuscitation must be continued until arrival at the receiving hospital.
- May continue resuscitation and transport if conditions on scene are NOT amenable to cessation of resuscitation.
- The adult TOR rule does not apply to pediatric patients < 18 years of age. Contact **Medical Direction** to consider termination of resuscitation or continued resuscitation and transport of pediatric patients.

PARAMEDIC STANDING ORDERS

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- Contact **Medical Direction** to consider Termination of Resuscitation for the non-hypothermic patient unresponsive to advanced cardiac life support with a non-shockable rhythm after 20 minutes of resuscitation and $ETCO_2 \leq 10$ mmHg.
- For narrow-complex PEA with a rate above 40 or refractory and recurrent ventricular fibrillation/ventricular tachycardia, consider continuation of resuscitation and transport:
  - May consider termination of resuscitation if > 60 minutes from time of dispatch
  - Confirm cardiac standstill with point-of-care ultrasound, if available and trained

(Continued)

Resuscitation Initiation and Termination 8.17

DETERMINING DEATH IN THE FIELD

When efforts to resuscitate are not initiated or are terminated under the above provisions, EMS providers shall:

- Document time that death is pronounced.
- Notify law enforcement, who will alert Medical Examiner.
- Consider possibility of a crime scene and restrict access.
- Any decision to move the body must be made in collaboration with law enforcement and the medical examiner.
- Leave any resuscitation adjuncts such as advanced airway devices, IV/IO access devices, electrode pads, etc., in place.
- Inform family on scene of patient's death and offer to contact family, friends, clergy, or other support systems.

E/A/P

The above requirements apply to situations in which law enforcement or the medical examiner may take jurisdiction. Law enforcement and the medical examiner are not required to take jurisdiction of hospice or other patients who are known to have been terminally ill from natural causes or congenital anomaly, and death was imminent and expected. Where law enforcement is not involved, EMS providers may provide appropriate assistance to families or other caregivers.

MASS CASUALTY INCIDENT (MCI)

- Mass/Multiple Casualty Triage - 9.1.

TRAUMATIC CARDIAC ARREST

- See Traumatic Cardiac Arrest - 4.11.

DOCUMENTATION

- Complete a patient care record (SIREN) in all cases. If available, include ECG rhythm strips and code summary with the patient care report.
- Document special orders including DNR, on-line Medical Direction, etc.
- MCI conditions may require a triage tag in addition to an abbreviated PCR.
- Record any special circumstances or events that might impact patient care or forensic issues.

Prolonging resuscitation efforts, beyond 20 minutes, without a return of spontaneous circulation is usually futile, unless cardiac arrest is compounded by hypothermia or submersion in cold water.

EMS providers are not required to transport every victim of cardiac arrest to a hospital. Unless special circumstances are present, it is expected that most resuscitations will be performed on-scene until the return of spontaneous circulation or a decision to cease resuscitation efforts is made based on the criteria listed. Transportation with continuing CPR is justified if hypothermia is present or suspected. Current AHA guidelines state: "cessation of efforts in the out-of-hospital setting…should be standard practice."

An $ETCO_2$ level of 10 mmHg or less measured 20 minutes after the initiation of advanced cardiac life support accurately predicts death in patients with cardiac arrest.

Return to TOC

Safe Response and Transportation Guidelines 8.18

RESPONSE & TRANSPORT PRIORITY DETERMINATION

- Determine response priority based on location of call and information provided per local SOP's.
- Consider traffic flow in the following response situations:
  - When access to the scene will be delayed, such as calls requiring EMS to stage for law enforcement but EMS is closer to the scene
  - Hazardous road conditions limiting response speed and/or road conditions are likely to cause accidents for individuals pulling to side of road (e.g., severe icing of roadways or extreme limited visibility)
- Determine transport priority considering the road and traffic conditions as they may impact the potential time savings, the ability to perform effective patient care, and most importantly the driver's ability to safely transport with lights and sirens:
  - Consider flow of traffic transport for cases such as cardiac arrest due to the inability of providers to be properly restrained when performing CPR, unless traffic conditions would significantly prolong transport time
  - Consider reserving use of lights and sirens in transport to known time-sensitive conditions such as MI, stroke or multi-trauma

SAFETY WHEN IN MOTION

While ambulance is in motion (at all times, not only while transporting patients):

- All objects weighing 3 lbs or greater should be secured within a cabinet, compartment or safely attached to a permanently-affixed structure within the passenger compartment or cab.
- Patients should be secured to the stretcher according to the manufacture's instructions. This includes patients who are secured to backboards.
- Providers should be restrained at all possible times, unless it would interfere with patient care:
  - If belt prohibits patient care from being performed, it may be removed but then should be refastened as soon as possible
  - If belt must be removed for care, consider timing procedures/treatments to times ambulance will experience minimal braking or turns. Select straight sections of road with few intersections to reduce risk of being thrown during sudden braking or turning
- Family members/non-rescue personnel should be properly restrained at all times.

Return to TOC

SEXUAL ASSAULT

DEFINITION
Any sexual contact or behavior that occurs without consent. This can include rape, unwanted sexual touching, and forced or coerced performance of a sex act.

Vermont Statute 13 V.S.A. § 3252. Sexual assault

(a) No person shall engage in a sexual act with another person and compel the other person to participate in a sexual act:
(1) without the consent of the other person, or
(2) by threatening or coercing the other person, or
(3) by placing the other person in fear that any person will suffer imminent bodily injury

(b) No person shall engage in a sexual act with another person and impair substantially the ability of the other person to appraise or control conduct by administering or employing drugs or intoxicants without the knowledge or against the will of the other person.

PROCEDURE FOR ASSESSMENT

- Stabilize life threatening injuries.
- If necessary, to remove patient's clothing, cut along seam lines to preserve evidence.
- General medical care is a priority.
- Do not examine the genitals or rectum unless necessary to stabilize the patient.
- Dress wounds, but do not attempt to clean.
- Discourage showering, changing clothes, brushing teeth, eating, drinking, or using the bathroom to preserve evidence.
- Assess and document injuries.
- Obtain a brief history of the assault and the timeframe.
- Do not attempt to get a detailed description of event.
- Document patient appearance- torn, bloody, missing clothing.
- Whenever possible, secure clothing in a paper bag and bring to the ED.

SPECIAL CONSIDERATIONS

- Provide calm, compassionate, non-judgmental support.
- Use active listening and non-blaming language.
- Explain all your actions to the patient and obtain consent for all treatment.
- Always wear gloves to preserve evidence.
- Consider drug facilitated sexual assault if patient has gaps in memory.
- Consider human trafficking if the patient is altered, unaware of their location (see human trafficking guidelines).
- Communicate with the receiving hospital early so that a forensic nurse and advocate can be contacted.
- Document verbatim any patient statement regarding the assault.

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- Patients who have experienced sexual assault have the following options for care:
  - To seek medical treatment at a hospital emergency department
  - To report or NOT report to law enforcement
  - Have forensic evidence collected WITH or WITHOUT a report to law enforcement
  - Care will be provided with no expense to the patient
- Reporting:
  - If the patient is a minor, follow mandatory reporting laws to DCF
  - If the patient is a vulnerable adult follow mandatory reporting laws to Adult Protective Services
  - If the patient is an adult, you should engage law enforcement ONLY after obtaining their consent
  - 24 hour Sexual Assault Crisis Line: 1-800-277-5570
  - Vermont Network Against Domestic and Sexual Violence 24hr Sexual Violence Hotline: 1-800-489-7273

HUMAN TRAFFICKING

DEFINITION

Human trafficking is the recruitment, harboring, transportation, provision or obtaining of a person for labor or services through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery. Sex trafficking is a commercial sex act induced by force, fraud, or coercion, or in which the person induced to perform such an act has not attained 18 years of age.

PROCEDURE FOR ASSESSMENT

- Stabilize life-threatening injuries.
- Make general medical care a priority.
- Assess and document injuries.
- Obtain a brief history.
- Document patient appearance- torn, bloody, missing clothing.
- Possible health care indicators for Human Trafficking:
  - Delayed presentation for medical care
  - Sexual assault, strangulation, defensive injuries
  - Discrepancy between stated history and clinical presentation or observed injuries
  - Lack of identification, insurance, or unaware of current location
  - Overdose

SPECIAL CONSIDERATIONS

- The goal for any provider during interactions should NOT be disclosure.
- Provide calm, compassionate, non-judgmental care.
- Use active listening and non-blaming language.
- Keep the interaction positive to encourage a relationship of trust.
- Encourage the patient to call 211 if there is a safety concern.
- Possible behavior indicators.
  - Scripted, memorized, mechanically recited or restricted history
  - Stated age older than visual appearance

(Continued)

SPECIAL CONSIDERATIONS CONTINUED...

- Subordinate, hypervigilant or fearful behavior.
- If you suspect human trafficking, use your professional judgement to manage and mitigate risk to the patient.
- Use a certified interpreter for non-English speakers.
- Support the patient in choices made to the extent possible.
- Reporting
  - If the patient is a minor, follow mandatory reporting laws to DCF
  - If the patient is a vulnerable adult follow mandatory reporting laws to Adult Protective Services
  - If the patient is an adult, you should engage law enforcement ONLY after obtaining their consent

DOMESTIC VIOLENCE

DEFINITION

The willful intimidation, physical assault, sexual assault, and/or other abusive behavior perpetrated by one intimate partner against another. Domestic violence affects individuals in every community, regardless of age, gender, economic status, race, religion, sexual orientation, or educational background.

PROCEDURE FOR ASSESSMENT

- Maintain heightened awareness – family members, caregivers or bystanders may exhibit anger, be the perpetrator, or choose to use violence.
- Stabilize life threatening injuries.
- Further assess for safety – if possible, assess the patient privately (e.g., move the patient to ambulance to assess and treat, even if non-transport).
- Discreetly inquire about immediate safety concerns as well as past or present physical or emotional abuse.
  - If patient presents with injuries consistent with assault but becomes agitated or denies abuse, an abbreviated assessment may be warranted. Focus on the treatment of injuries according to appropriate protocol
  - If patient discloses abuse and/or an immediate safety concern, present options for reporting to police, for transportation to the hospital for additional care, and for referrals to community support programs
- Assess and document injuries consistent with the signs and symptoms of domestic violence. These include but are not limited to: bruises, erythema due to slaps, grab-marks, burns, lacerations and fractures.
  - Special attention should be paid to indications of strangulation (see Strangulation - 4.7), injuries hidden by clothing or hair, injuries during pregnancy, and injury to or intimidation of children

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SPECIAL CONSIDERATIONS

- Provide compassionate, non-judgmental care always.
  - Psychological/behavioral characteristics of victims of domestic violence include but are not limited to: excessive crying, fragmented memories, passivity or aggression, fearful behavior, fear for the safety of children, hypervigilance and substance abuse
- Offer the patient choices when possible to allow the patient to regain a sense of control.
- Assess all children carefully for physical injury whenever another household member is injured/abused in a domestic violence incident and/or if the scene suggests a mechanism for injury.
  - If physically uninjured, children should be sheltered from further harm on scene (e.g., witnessing patient care or police interaction with suspected abuser, or view of crime scene). EMS may assist law enforcement with caring for the uninjured child while appropriate arrangements are made by law enforcement
- Consider a referral to the local domestic violence program.
- Reporting and Referrals
  - If the patient is a minor, follow mandatory reporting laws to DCF (1-800-649-5285)
  - If the patient is a vulnerable adult follow mandatory reporting laws to Adult Protective Services (1-800-564-1612)
  - If the patient is an adult, reports to law enforcement should ONLY be made with the patient's consent
  - Vermont Network Against Domestic and Sexual Violence 24hr Domestic Violence Hotline: 1-800-228-7395

CHILD MALTREATMENT

DEFINITION

Child maltreatment includes child abuse, neglect, abandonment, and endangerment. It can include physical, emotional, psychological and sexual abuse, secondary exposure to domestic violence and torture. Child maltreatment occurs across all age groups, sexes, cultures and socioeconomic groups. Missed diagnosis can lead to repeat abuse and/or escalation of injuries. Approximately one third of victims are younger than 3 months. Children younger than three years of age are at highest risk for fatality.

- Child: an individual under the age of 18.
- Person responsible for a child's welfare: includes the child's parents, guardian, foster parent; any other adult who resides in a child's home who serves in a parental role; an employee of a public or private residential home, institution or agency; or other person responsible for the child's welfare while in a residential, educational, or child care setting, including any staff person**.**

Vermont law (33.V.S.A. § 4912) defines an abused or neglected child as one whose physical health, psychological growth and development or welfare is harmed or is at substantial risk of harm by the acts or omissions of their parent or other person responsible for the child's welfare. An abused or neglected child also means a child who is sexually abused or at substantial risk of sexual abuse by any person.

(Continued)

PROCEDURE FOR ASSESSMENT

- Stabilize life-threatening injuries.
- Treat and document assessment findings using appropriate medical treatment protocols-general medical care is a priority.
- Assess and document injuries and the patient's physical appearance.
- Obtain a brief history of the presenting concern with a timeframe. Document using the caregiver's and/or child's own words.
- Assess for physical signs and symptoms of child maltreatment which include, but are not limited to:
  - ANY injury or bruising on a non-ambulatory child
  - Bruises on the torso, ears, neck, face, and upper arms of any child
  - Injuries that have a patterned appearance reflective of an object used to cause the injury (e.g., bite mark or belt buckle)
  - Genital or anal trauma
  - Burns with demarcated immersion lines, those which involve the genitals, or have evidence of patterns
  - Patient confined to restricted space or position
  - Pregnancy or presence of sexually-transmitted disease in a child
  - Without a clear history of events, consider inflicted internal organ injury with the following: signs of head or abdominal trauma, unexplained shock, cardiac arrest, or unconsciousness
- Assess for historical findings of child maltreatment which include, but are not limited to:
  - History that is inconsistent with physical findings or developmental level
  - Conflicting reports regarding injury from the patient, caregivers or bystanders
  - Lack of plausible explanation for serious injury
  - Delay or failure to seek medical care
  - A child's direct disclosure
  - Injuries or ingestions resulting from inadequate protection from environmental hazards (e.g., guns, unrestrained in car, inadequate clothing)
  - Repeat calls to EMS or visits to the Emergency Department
- Assess for findings of child endangerment (a lack or disregard of the child's safety that may result in injury):
  - Caregiver with sole responsibility for child supervision is impaired
  - Hazardous or caustic substances are not properly stored
  - Living conditions that are unsuitable for human inhabitation

SPECIAL CONSIDERATIONS

- Interactions with the child-victim are a powerful step in the healing process. Provide calm, compassionate, non-judgmental care in a reassuring manner.
- Inappropriate or extreme caregiver and child behaviors are challenging to interpret but may be indicative of child maltreatment.
- All incidences of sexual violence in minor children are reported to child protection agencies. Follow Sexual Assault section of this protocol for patient care required.

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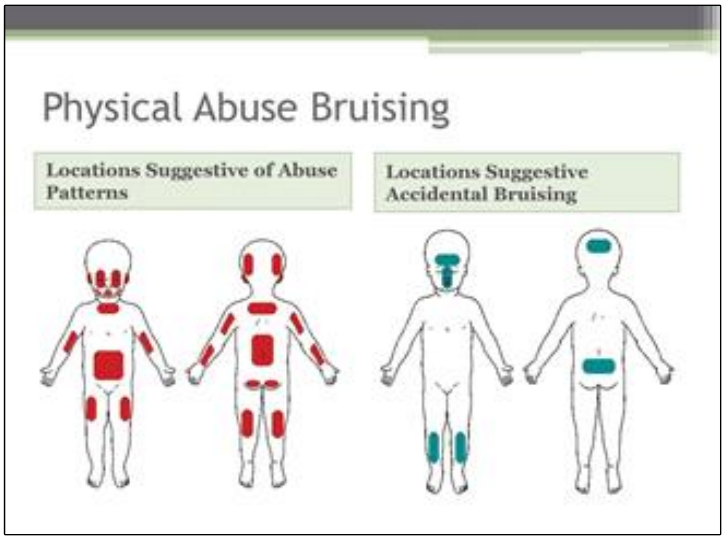
Mandated Reporting

According to Vermont law, any and all cases of suspected child maltreatment must be reported immediately and/or within 24 hours. This applies even in cases when the patient is not transported. It is not necessary to witness or have actual evidence of an event of child maltreatment. Suspicions should be reported following mandatory reporting laws:

- Notify the VT Department for Children and Families: 1-800-649-5285. Available 24 hours/day, 7 days/week
- If a caregiver refuses treatment of a minor child whom you feel needs medical attention, contact law enforcement immediately
- Informing hospital personnel or involving law enforcement does not fulfill legal reporting responsibilities
- Responsibility for reporting child abuse and protection from liability for such good faith reporting is established by

33 VSA §4913 (Mandated Reporter)



VULNERABLE/ELDER ADULT MALTREATMENT

As defined by VT law **(**33 V.S.A. § 6902**)**, a vulnerable adult is defined as any person 18 years of age or older who:

- Is the resident of a licensed facility, psychiatric hospital or unit of a hospital
- Has been receiving personal care services for more than one month from a home health agency certified by the Vermont Department of Health or from a person or organization that offers, provides, or arranges for personal care. Is impaired due to brain damage, infirmities of aging, mental condition, or physical, psychiatric, or developmental disability that results in some impairment of the individual's ability to provide for their own care without assistance, including the provision of food, shelter, clothing, health care, supervision, or management of finances; or because of the disability or infirmity, the individual has an impaired ability to protect themself from abuse, neglect, or exploitation.

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Vermont law provides a broad definition of Abuse as it applies to vulnerable adults. Abuse is defined as:

- Any treatment of a vulnerable adult which places their life, health, or welfare in jeopardy, and which results in impairment of health.
- Any conduct committed with intent to cause reckless disregard of unnecessary pain, harm, or suffering.
- Unnecessary or unlawful confinement or restraint of a vulnerable adult.
- Intentionally subjecting a vulnerable adult to behavior which results in intimidation, fear, humiliation, degradation, agitation, disorientation, or other forms of serious emotional distress.
- Any sexual activity with a vulnerable adult by a caregiver who volunteers for or is paid by a care-giving facility or program (This definition shall not apply to a consensual relationship between a vulnerable adult and a spouse, nor to a consensual relationship between a vulnerable adult and a caregiver hired, supervised, as directed by the vulnerable adult).
- Administration of a drug, substance or preparation to a vulnerable adult for a purpose other than legitimate and lawful medical or therapeutic treatment.

Neglect may be a single incident or repeated conduct which results in physical or psychological harm. Neglect is defined as:

- Failing to provide care or arrange for goods or services necessary to maintain the health or safety of the vulnerable adult, including food, clothing, medicine, shelter, supervision, and medical services.
- Not protecting a vulnerable adult from abuse, neglect, or exploitation by others.
- Failure to carry out a plan of care for a vulnerable adult when such failure results in physical or psychological harm or substantial risk of death to the vulnerable adult.
- Not reporting significant changes in health status of a vulnerable adult to a physician, nurse, or immediate supervisor, when the caregiver is employed by an organization that offers, provides or arranges for personal care.

Vermont statutes define Exploitation of a vulnerable adult as:

- Willfully using, withholding, transferring or disposing of funds or property of a vulnerable adult for the wrongful profit or advantage of another.
- Acquiring possession, control or an interest in funds or property of a vulnerable adult through undue harassment or fraud.
- Forcing a vulnerable adult against their will to perform services for the profit or advantage of another.
- Any sexual activity of a vulnerable adult when the person does not consent or is incapable of resisting due to age, disability, or the fear of retribution or hardship.

PROCEDURE FOR ASSESSMENT

- Stabilize life-threatening injuries.
- Treat and document assessment findings using appropriate medical treatment protocols-general medical care is a priority.
- Assess and document injuries and the patient's physical appearance.

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- Obtain a brief history of the presenting concern with a timeframe. Document using the patient's own words verbatim.
- Assess privately in a safe place, if feasible.
- Incorporate strategies to reduce communication barriers (speak clearly, slowly, use short instructions).
- Note psychological /behavioral characteristics of maltreatment including (but not limited to): excessive crying, passivity or aggression, depression; compliant or fearful behavior for safety of self, children, and/or pets: panic attacks, anxiety, depression and/or suicidal ideation, and substance abuse.
- Assess for physical signs of maltreatment, including but not limited to:
  - Sexual assault, strangulation, defensive injuries
  - Unexplained or poorly explained bruising, lacerations, or fractures
  - Multiple injuries in various stages of healing
  - Alterations in skin integrity, including decubitus ulcers
  - Hazardous living conditions
  - Inappropriate clothing for weather
  - Inadequate hygiene
  - Physical signs of malnutrition or dehydration
  - Physical signs of under/over medication
  - Pregnancy or presence of sexually transmitted disease
- Assess for historical signs of maltreatment, including but not limited to:
  - Delayed presentation for medical care
  - Discrepancy between stated history and clinical presentation or observed injuries
  - Absence of caregiver(s)
  - Failure to respond to warning signs of obvious disease
  - A disclosure of maltreatment by the patient
  - Patient confined to restricted space or position
  - Repetitive EMS calls due to probable failure of health care surveillance

SPECIAL CONSIDERATIONS

- Interactions with elder or vulnerable adult patients are a powerful step in the healing process. Provide calm, compassionate, non-judgmental care in a reassuring manner.
- Written documentation is vital to comprehensive, accurate investigations.

Mandated Reporting

Vermont law requires any and all cases of suspected abuse, neglect or exploitation of an elder or vulnerable adult must be reported immediately and/or within 48 hours:

- Notify the Vermont Adult Protective Services Program at 800-564-1612 between the work hours of 8:00am to 4:30 pm, Monday through Friday
- After business hours, on weekends or holidays, call the Emergency Services Program (ESP) at 800-649-5285
- If a caregiver refuses treatment of an elder/vulnerable adult whom you feel needs medical attention, contact law enforcement immediately
- Informing hospital personnel or involving law enforcement does not fulfill legal reporting responsibilities
- Responsibility for reporting elder/ vulnerable adult maltreatment and protection from liability for such good faith reporting is established by **33 V.S.A. § 6902,** Mandated Reporter.

Return to TOC

Hazardous Materials Exposure 9.0

PURPOSE

The goal of the hazardous materials exposure protocol is to prepare the EMS provider for the potential risks that may be encountered and to provide guidelines to mitigate the effects of a hazardous exposure incident. The EMS provider may reference additional protocols for the management of specific hazardous materials exposure in dealing with known chemicals.

Successful management of a hazardous materials exposure depends on effective coordination between EMS, local hazardous materials teams, fire and police departments, the Poison Control Center, and appropriate state and federal agencies.

IDENTIFICATION

- Identification of the exposed material should be made at the earliest convenient time possible.
- Proper chemical name and spelling will be necessary for identification of procedures for Poison Control (1-800-222-1222) and receiving hospitals. Consider contacting Poison Control as soon as practical for consultation.
- Utilization of shipping papers, waybills, and Material Safety Data Sheets (MSDS) may assist in identifying chemical hazards, safety precautions, personal protective equipment, and treatments.

Note: Many household chemicals may not require activation of a hazardous materials team. Utilize manufacturer's recommendation for decontamination and treatment, or contact Poison Control for treatment and decontamination procedures.

PERSONAL SAFETY

- Personal protection is the highest priority when responding to an incident where hazardous material exposure is suspected. DO NOT ENTER THE HOT ZONE. Only HazMat Teams should enter the hot zone.
- If there is a major hazardous materials release:
  - Request specific staging information and be alert for clusters of injured patients
  - Maintain safe location upwind and uphill of the site (at least 300 ft)
  - Observe strict adherence to hot, warm, and cold-zone areas for personal safety, decontamination, and treatment
  - Activate the Vermont Hazardous Materials Response Team HAZMAT Hotline at 800-641-5005 or through 911

PATIENT DECONTAMINATION

Only properly trained and protected personnel should conduct patient decontamination. The decontamination system is established by the appropriately trained fire department/HazMat Team. EMS personnel will work cooperatively with them during the decontamination process. Patient decontamination is necessary to minimize injury due to exposure, as well as to mitigate risk of secondary exposure.

MASS/GROSS DECONTAMINATION

- Mass Decontamination (Large-scale Multiple/Mass Casualty) involves the effective dilution of a chemical or hazardous substance utilizing large quantities of water. This process should be supervised by the appropriately trained local fire department or HazMat Team.
- This process is necessary due to the involvement of an overwhelming number of patients, the severity of symptoms, and where technical or fine decontamination cannot be utilized due to time and personnel.

(Continued)

TECHNICAL DECONTAMINATION

- Technical Decontamination involves a multi-step process, supervised by the appropriately trained fire department or HazMat Team.
- This decontamination process is dependent on the type of chemical hazard present, and may require different methods such as:
  - Dilution
  - Absorption
  - Neutralization
  - Chemical degradation
  - Solidification

Each method of decontamination has specific uses. Ascertain from the HazMat Team which method was used, if there are any hazards associated with the decontamination process, and if further definitive decontamination is required at the hospital.

DEFINITIVE/FINE DECONTAMINATION

Usually completed at the hospital, it involves additional washing and rinsing to further dilute and finally remove any contaminants. Definitive decontamination should be performed in an authorized decontamination facility and with appropriately trained personnel.

DECONTAMINATION OF SPECIAL POPULATIONS

Children and their families, the elderly/frail, and patients with medical appliances will require more EMS personnel and time for general assistance and may also require simultaneous basic life support assistance during decontamination. An individual patient requiring special needs decontamination may take 10 – 15 minutes to complete.

Although the principles of decontamination are the same, certain precautions may need to be taken, depending on the patient.

- These patients may have the inability to give history or describe symptoms and physical complaints.
- Typical stress response of children is to be highly anxious and inconsolable, making assessment difficult.
- Small children are more difficult to handle while wearing personal protection equipment (PPE).
- Attempt to keep children with their families, as the decontamination process is likely to be frightening and children may resist.
- Keep patients with existing medical conditions together with their caregivers, if feasible.
- Children and elderly, and possibly special needs patients, are inherently unable to maintain body temperature and quickly become hypothermic. Utilize water warmed to 100ºF, if available. Keep warm after drying procedure.
- Use low-pressure water and soft washcloths and protect the airway and eyes throughout the decontamination process.

(Continued)

TREATMENT DURING DECONTAMINATION

- If medication is required, limit administration route to intramuscular or medi-inhaler.
- Intravenous therapy and advanced airway interventions should be delayed until after gross decontamination.
- Specific individual treatment should be referenced from Poison Control or MSDS sheets.

DOCUMENT EXPOSURE AND TREATMENT INFORMATION

- Name of chemical(s).
- Amount, time, and route of exposure.
- Decontamination information.
- Treatment/antidotes administered.

TRANSPORT

- EMS personnel transporting potentially contaminated patients (e.g., patients who have received gross decontamination) must have appropriate PPE.
- If an ambulance has transported a contaminated patient, it can only be used to transport similarly contaminated patients until proper decontamination of the vehicle is complete.
- Contaminated patients will not be transported by helicopter.
- Lining of the interior of the ambulance and further use of PPE may be necessary, dependent upon the level of completed decontamination.
- Communication of chemical exposure should be transmitted to the receiving hospital at the earliest possible time. Transmitted information should include such information as covered under the documentation and treatment section.

Return to TOC

MASS/MULTIPLE CASUALTY TRIAGE 9.1

PURPOSE

- The goal of the mass/multiple Casualty Triage protocol is to prepare for a unified, coordinated, and immediate EMS mutual aid response by prehospital and hospital agencies to effectively expedite the emergency management of the victims of any type of Mass Casualty Incident (MCI).
- Successful management of any MCI depends upon the effective cooperation, organization, and planning among health care professionals, hospital administrators and out-of-hospital EMS agencies, state and local government representatives, and individuals and/or organizations associated with disaster-related support agencies.
- Adoption of Model Uniform Core Criteria (MUCC).

DEFINITIONS

Multiple Casualty Situations

- The number of patients and the severity of the injuries do not exceed the ability of the provider to render care. Patients with life-threatening injuries are treated first.

Mass Casualty Incidents

- The number of patients and the severity of the injuries exceed the capability of the provider, and patients sustaining major injuries who have the greatest chance of survival with the least expenditure of time, equipment, supplies, and personnel are managed first.

GENERAL CONSIDERATIONS

Initial assessment to include the following:

- Location of incident.
- Type of incident.
- Any hazards.
- Approximate number of victims.
- Type of assistance required.

COMMUNICATION

- Within the scope of a Mass Casualty Incident, the EMS provider may, within the limits of their scope of practice, perform necessary ALS procedures, that under normal circumstances would require a direct physician's order.
- These procedures shall be the minimum necessary to prevent the loss of life or the critical deterioration of a patient's condition.
- All procedures performed under this order shall be documented thoroughly.
- Communications Policy - 8.3 or Communications Failure Policy - 8.4.

TRIAGE

Utilize a triage system such as "SALT" (Sort, Assess, Lifesaving Interventions, Treatment/ Transport) to prioritize patients. SALT is part of a CDC-sponsored project based upon best evidence and designed to develop a national standard for mass casualty triage.

- Assess each patient as quickly and safely as possible.
- Conduct rapid assessment.
- Assign patients to broad categories based on need for treatment (Still, Wave, Walk).
- Remember: Triage is not treatment! Stopping to provide care to one patient will only delay care for others. Standard triage care is only to correct airway and severe bleeding problems.

(Continued)

TRIAGE CATEGORIES

- Immediate: **RED** Serious injuries, immediately life-threatening problems, high potential for survival (e.g., tension pneumothorax, exposure to nerve agent resulting in severe shortness of breath or seizures). Likely to survive given available resources. If no to any of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Delayed**: YELLOW** Serious (not minor) injuries requiring care but management can be delayed without increasing morbidity or mortality (e.g., long bone fractures, 40% BSA exposure to mustard gas). If yes to all of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Minimal: **GREEN** Injuries require minor care or no care (e.g., abrasions, minor lacerations, nerve agent exposure with mild runny nose). If yes to all of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Expectant: **GREY** Unlikely to survive given available resources. Does not mean dead. Method of preserving resources: should receive comfort care or resuscitation when resources are available. Serious injuries: very poor survivability even with maximal care in hospital or pre-hospital setting (e.g., 90% body surface area burn, multiple trauma with exposed brain matter). If no to any of the following: Has a peripheral pulse? Not in respiratory distress? Hemorrhage is controlled? Follows commands or makes purposeful movements?
- Dead**: BLACK** Patient is not breathing after opening airway. (In children, if after giving 2 rescue breaths, if appropriate.) Deceased or casualties whose injuries are so severe that their chance of survival does not justify expenditure of limited resources. Tag patients to prevent re-triage. Do not move bodies unless they are hindering efforts to rescue live patients, or they are in danger of being further damaged, for example, burned by fire, building collapse, etc.

TAGGING SYSTEM

- Use water-repellent triage tags with waterproof markers and attach to the patient.
- Indicate patient's triage priority, degree of decontamination performed, treatment and medications received.

TRIAGE IN HAZARDOUS MATERIAL INCIDENTS

Decontamination

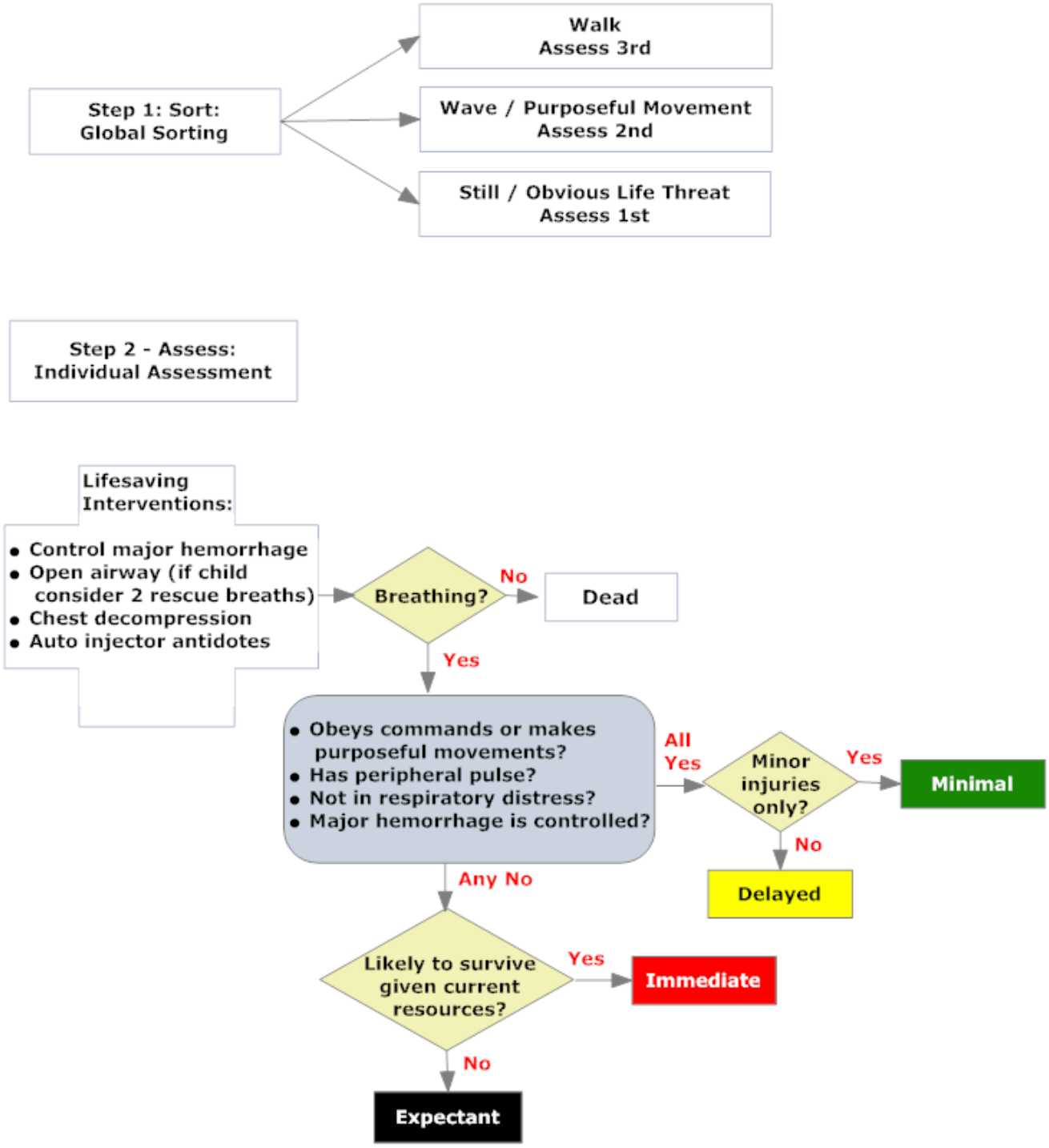
The need for decontamination is the "first triage decision." since decontamination can be a lengthy process; the "second decision" is which patient(s) are the first to be decontaminated. The "third decision" is based on need for treatment during the decontamination process, since only simple procedures such as antidote administration can be accomplished while wearing PPE.

Identification and Treatment

- Signs and symptoms of exposure will usually dictate the treatment required, however, at the earliest possible time, identification of the specific chemical should be made.
- Reference additional hazardous materials protocols as necessary.
- Request additional resources. Initial antidote and medical supplies may be limited to priority patients.
- Respiratory compromise is a leading factor of fatalities due to hazardous material exposure. Symptoms of chemical exposure may be delayed and occur suddenly. Constant reevaluation of respiratory status is necessary.

(Continued)

SALT Mass Casualty Triage



Return to TOC

Radiation Injuries
Adult & Pediatric

9.2

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Remove the patient from scene and decontaminate by appropriately trained personnel.
- If triage is required for a mass casualty event, use the following guidelines:
  - If vomiting starts:
    - Within 1 hour of exposure, survival is unlikely and patient should be tagged “Expectant”
    - Less than 4 hours after exposure, patient needs immediate decontamination and evaluation and should be tagged “Immediate”
    - 4 hours after exposure, reevaluation can be delayed 24 – 72 hours if no other injury is present and patient should be tagged “Minimal”
- Routine Patient Care.
- Treat traumatic injuries and underlying medical conditions.
- Patients with residual contamination risk from wounds, shrapnel, or internal contamination should be wrapped in water repellent dressings to reduce cross contamination.
- Consider Air Medical Transport after proven definitive decontamination of patient.

PARAMEDIC STANDING ORDERS

P

- Consider anti-emetic (Nausea/Vomiting – Adult & Pediatric - 2.14).
- Consider pain management (Pain Management – 2.20A or Pain Management – 2.20P.

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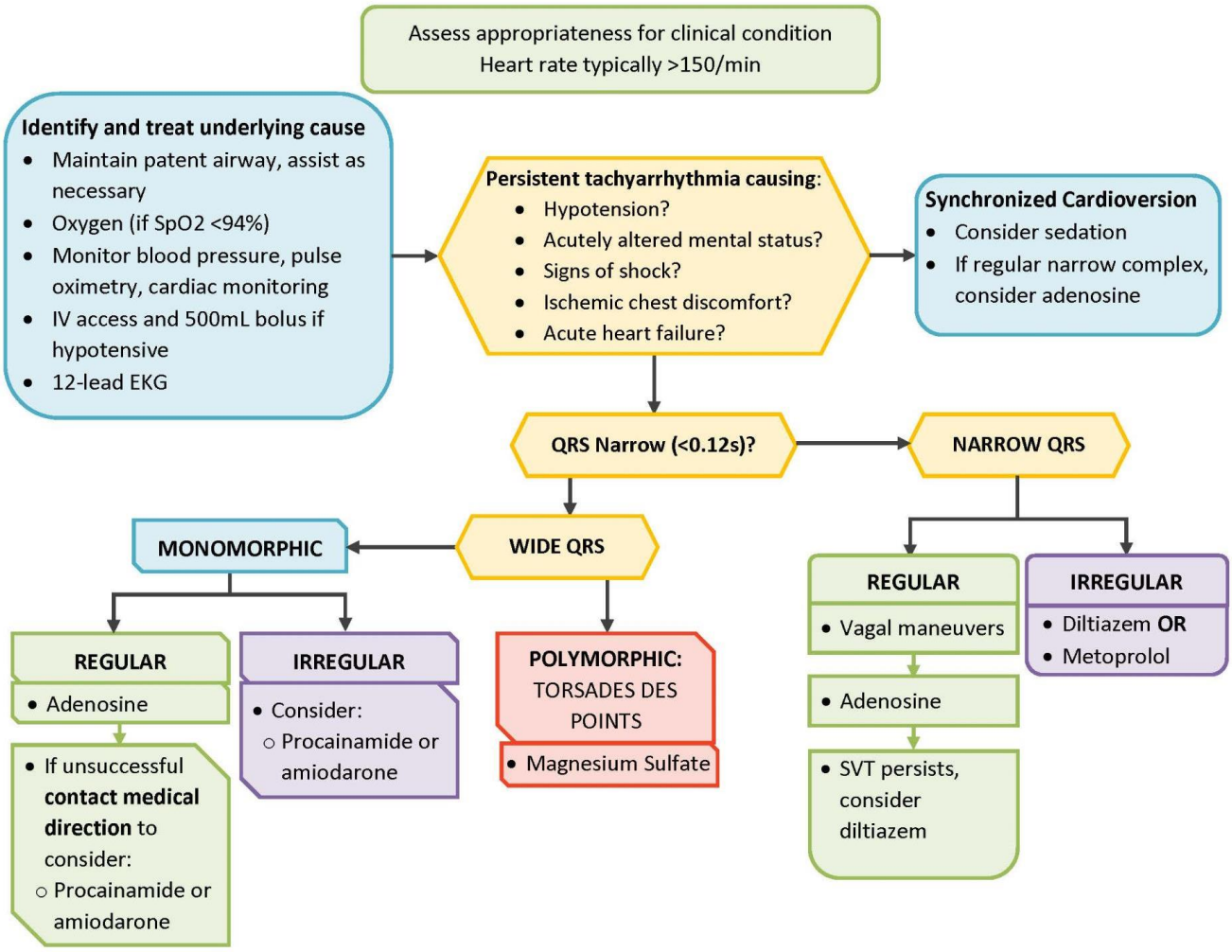
PEARLS:

- In general, trauma patients who have been exposed to or contaminated by radiation should be triaged and treated on the basis of the severity of their conventional injuries.
- A patient who is contaminated with radioactive material (e.g. flecks of radioactive material embedded in their clothing and skin) generally poses a minimal exposure risk to medical personnel.

Return to TOC

Tachycardia Algorithm
Adult

A.1



Medication Dosing:

- Adenosine:
  - 6mg rapid IV push
  - No success, 12mg rapid IV push
    - If reconversion, repeat successful dose
- Diltiazem
  - 0.25mg/kg 2min IV push (max 20mg)
  - May repeat in 15 min at 0.35mg/kg (max 25) 2min IV
    - If low BP or elderly, use ½ dose
- Metoprolol
  - 5mg IV over 2-5 min
  - Repeat every 5 min to max 15 mg to ventricular rate of 90-100
- Procainamide:
  - 10mg IV over 20 min
  - Stop infusion
    - Once arrhythmia suppressed
    - SBP < 90
    - QRS duration increases > 50%
- Amiodarone:
  - 150mg in 50-100mL NS or D5W over 10 min
  - May repeat once in 10 minutes
    - If successful, consider maintenance infusion of 1mg/min
- Magnesium Sulfate
  - 2g IV/IO in 50mL NS or D5W over 10min

Return to TOC

Bradycardia Algorithm
Adult

A.1

Assess appropriateness for clinical condition
Heart rate typically <50/min

Identify and treat underlying cause

- Maintain patent airway, assist as necessary
- Oxygen (if SpO2 <94%)
- Monitor blood pressure, pulse oximetry, cardiac monitoring
- IV access and 500mL bolus if hypotensive
- 12-lead EKG
- Consider hypoxic and toxicologic causes

Persistent bradyarrhythmia causing:

- Hypotension?
- Acutely altered mental status?
- Signs of shock?
- Ischemic chest discomfort?
- Acute heart failure?

NO- STABLE → Monitor and observe

YES- UNSTABLE

Atropine

- 1mg IV/IO
- Repeat every 3-5 minutes
- Maximum: 3mg

Atropine Ineffective?

- Transcutaneous Pacing
- Push dose epinephrine [1]
  - 10-20mcg (1-2mL) boluses
  - Repeat at 2 min until infusion possible
- Epinephrine Infusion [1]
  - 2-10mcg/min

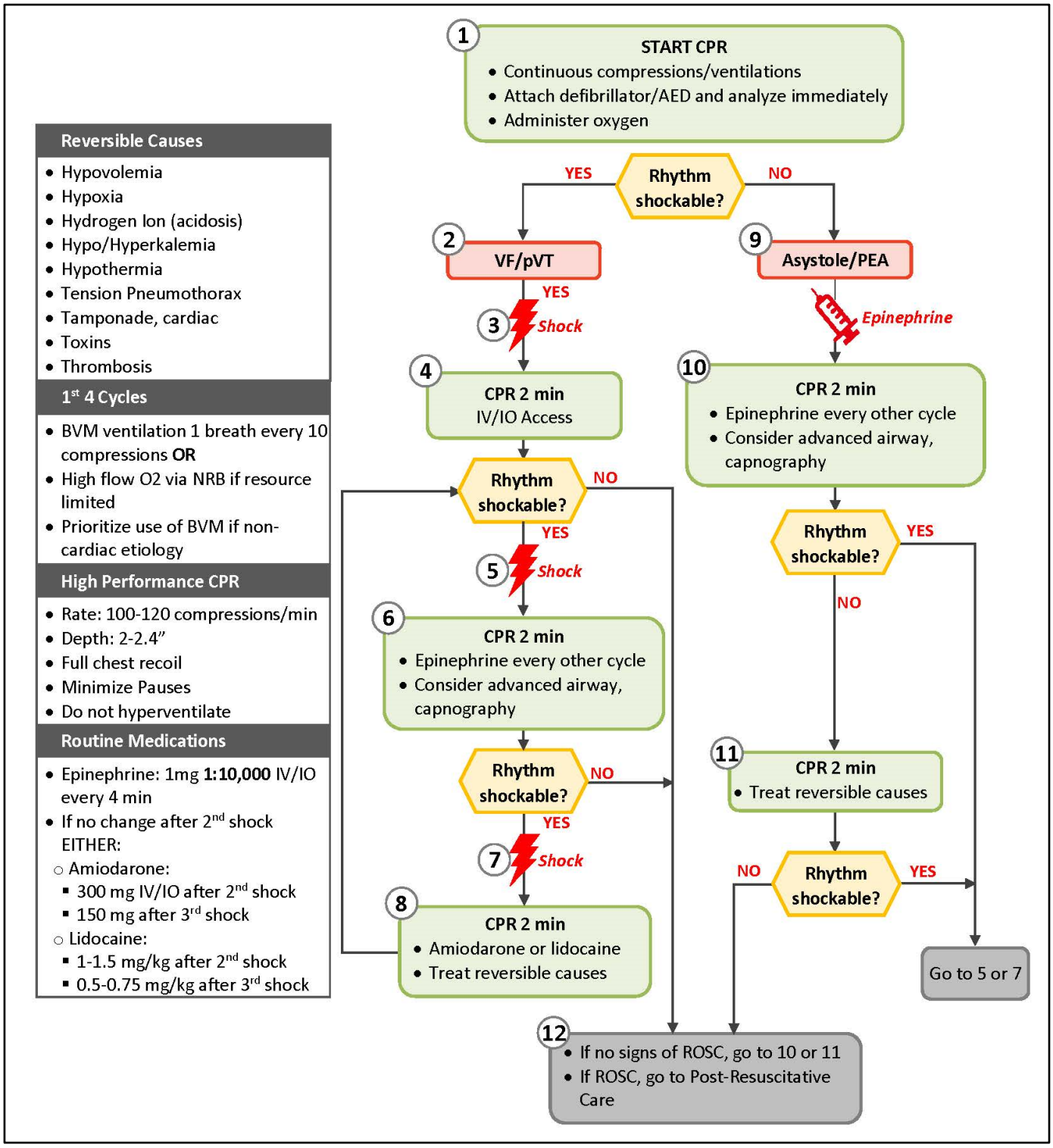
Contact Medical Direction and consider other causes:

- β-blocker or calcium channel blocker overdose:
  - Glucagon 2-5mg over 3-5 min
  - May repeat up to 10mg
- Hyperkalemia or calcium channel blocker overdose:
  - Calcium Gluconate:
    - 2g IV/IO in 50mL NS or D_5W over 10 minutes
  - Calcium Chloride:
    - 1,000mg IV/IO in 50mL NS or D_5W over 10 min
  - May repeat either in 10 minutes

Return to TOC

Cardiac Arrest Algorithm
Adult

A.1



Reversible Causes

- Hypovolemia
- Hypoxia
- Hydrogen Ion (acidosis)
- Hypo/Hyperkalemia
- Hypothermia
- Tension Pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis

1st 4 Cycles

- BVM ventilation 1 breath every 10 compressions **OR**
- High flow O2 via NRB if resource limited
- Prioritize use of BVM if non-cardiac etiology

High Performance CPR

- Rate: 100-120 compressions/min
- Depth: 2-2.4”
- Full chest recoil
- Minimize Pauses
- Do not hyperventilate

Routine Medications

- Epinephrine: 1mg **1:10,000** IV/IO every 4 min
- If no change after 2nd shock EITHER:
  - Amiodarone:
    - 300 mg IV/IO after 2nd shock
    - 150 mg after 3rd shock
  - Lidocaine:
    - 1-1.5 mg/kg after 2nd shock
    - 0.5-0.75 mg/kg after 3rd shock

Return to TOC

CPAP Algorithm
Adult & Pediatric

A.1

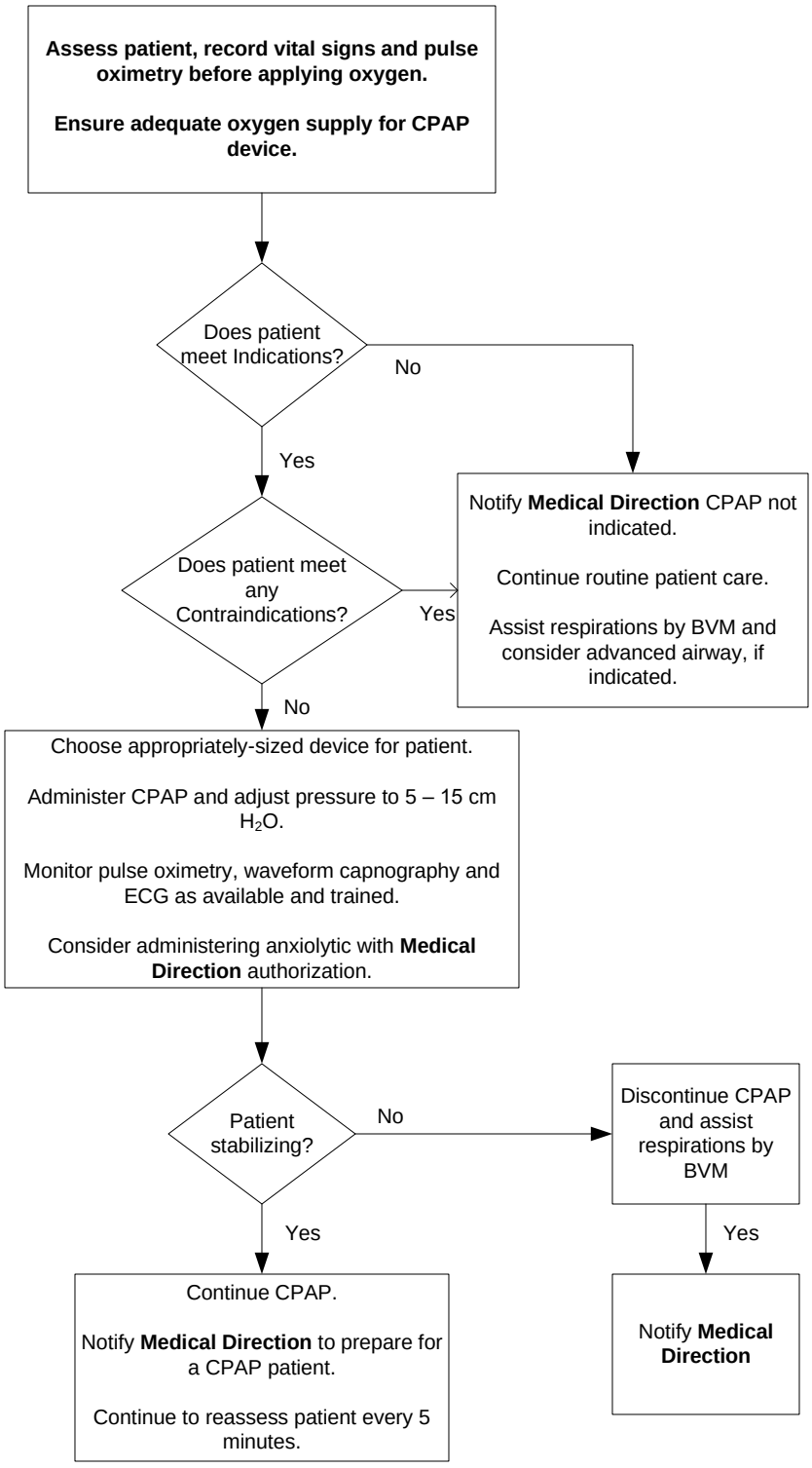
CPAP Indications

- Spontaneously breathing patient in moderate to severe respiratory distress due to congestive heart failure/pulmonary edema, asthma/ COPD, pneumonia, submersion injury or undifferentiated respiratory distress, concurrent with the following:
  - Oxygen saturation < 94%
  - Respiratory rate > 25 (see chart for pediatric rates)
  - Retractions or accessory muscle use

CPAP Contraindications

- Cardiac or respiratory arrest/apnea
- Unable to follow commands
- Unable to maintain their own airway
- Agitated or combative behavior and unable to tolerate mask
- Vomiting and/or active GI bleed
- Respiratory distress secondary to trauma
- Suspicion of pneumothorax
- Facial trauma or impossible face seal
- Hypotension with MAP < 65 (SBP < 100 mmHg)
- Pediatric SBP < 70 + (avg in yrs x 2)

Pediatric Respiratory Distress		
	Age	Resp Rate
Infant	0 - 1 year	> 60
Toddler	1 - 3 years	>40
Preschooler	4 - 5 years	>34
School Age	6 - 12 years	>30
Teen	13 and older	>25



Return to TOC

Adult Drip Rate Reference A.2

Lidocaine

Standard Concentration 2 Gm/500 mL
4 mg/mL

Dose (mg/min)	Rate (mL/hr)
0.5	7.5
1	15
1.5	22.5
2	30
2.5	37.5
3	45
3.5	52.5
4	60

Nitroglycerine*

Standard Concentration 100 mg/250mL
400 mcg/mL premixed infusion

Dose (mcg/min)	Rate (mL/hr)
5	0.8
10	1.5
25	3.8
50	7.5
100	15.0
150	22.5
200	30.0
400	60.0

Epinephrine*

Standard Concentration 4 mg/250mL
16 mcg/mL

Dose (mcg/min)	Rate (mL/hr)
1	3.8
2	7.5
3	11.3
4	15
5	18.8
6	22.5
7	26.2
8	30
9	33.8
10	37.5

Norepinephrine*

Standard Concentration 8 mg/250mL
32 mcg/mL

Dose (mcg/min)	Rate (mL/hr)
2	3.8
3	5.6
4	8
5	9.4
6	11.2
7	13.1
8	15
9	16.9
10	18.8
15	28.1
20	38
25	46.9
30	56.2

*Shall be administered by infusion pump:

- Nitroglycerine
- Epinephrine
- Norepinephrine

Return to TOC

High Consequence Pathogen
COVID-19: Field Triage Guidance

A.3

PURPOSE
To identify patients that are safe to assess and not transport to a hospital during widespread cases of confirmed COVID-19 virus.

This protocol is only authorized for patients with signs or symptoms consistent with COVID-19 (fever, or cough, or shortness of breath), or concerning contact or travel history.

INDICATION FOR COVID-19 FIELD TRIAGE PROTOCOL
Local EMS District Medical Advisor has decided to enact field triage guidance based on local indications and consultation with hospital leadership, and Vermont EMS.

INITIAL ASSESSMENT
- Responders who will have close contact (less than 6 feet) with any potential emergency medical patient should don appropriate personal protective equipment before making contact:
- If dispatch advises that the patient is:
  - Suspected of having infectious disease (COVID-19) or has had close contact with someone being evaluated for or diagnosed with COVID-19, **OR**
  - Patient is exhibiting symptoms including fever, or cough, or shortness of breath:
    - EMS practitioners should donn appropriate PPE before entering the scene
    - Initial assessment should begin from a distance of at least 6 feet from the patient and be limited to one EMS practitioner if possible

E/A/P

EVALUATE PATIENT FOR SEVERITY OF DISEASE
- Respiratory Distress?
- Increased Respiratory Rate?
- Oxygen Saturations less than 93% on RA (room air)?
- Evidence of Severe Dehydration or Shock?
- Changes in Mental Status?
- Chest Pain *(other than mild with coughing)*?
- Patient with worsening symptoms?
- Any history of immunosuppression?

All NO? Patient less ill.

Proceed to next page.

Any YES? Patient clinically ill.

Proceed with standard medical treatment protocols. Patient should be transported to the hospital, maintaining infection control principles of limiting exposure to patient, masking patient, wearing appropriate PPE, and minimizing aerosol-generating procedures, when possible.

Alert hospital as soon as operationally feasible.

(Continued)

High Consequence Pathogen
COVID-19: Field Triage Guidance

A.3

Continued from previous page

Consider the patient's age

Consider patient's past medical history

Assess for underlying pulmonary, cardiac or renal disease, or underlying malignancy

Evaluate the patient's eligibility for home care

Are there caregivers in the home?
Is there a separate room where the patient can recover without sharing immediate space with others?
Are there resources for access to food or other necessities?
Are there medically-fragile patients in the home?

E/A/P

Discuss the feasibility of home care with local Medical Direction OR contact the UVM Prehospital Medicine & EMS Consult Service 802-847-1962 for COVID-19 Field Triage Medical Direction

Patients most appropriate for home care include those with the following characteristics:

1. Meet all criteria for "Less Ill."
2. Ages between 5 and 65.
3. Is generally healthy without significant burden of underlying medical disease.
4. Has support, resources and caregivers in the home with no medically-fragile co-inhabitants.

If Home Care Deemed Appropriate by Medical Direction

1. Leave the CDC home instructions with patient (attached to this protocol).
2. Assure the patient has a support system.
3. Assure the patient has capacity.
4. If patient insists on transport and cannot be convinced otherwise, then the patient may be transported to the ED.
5. Suggest the patient contact their primary care physician.
6. Patient should be advised to follow up with health resources as per **local plan** and to visit https://www.healthvermont.gov/covid-19 for information on testing and self-care.
7. Ask the patient to call 9-1-1 for worsening symptoms, including worsening dyspnea.

If Home Care Deemed NOT Appropriate by Medical Direction

Transport patient to the hospital, maintaining infection control principles of limiting exposure to patient, masking patient, wearing appropriate PPE, and minimizing aerosol-generating procedures, when possible.

Alert hospital as soon as operationally feasible.

(Continued)

10 ways to manage respiratory symptoms at home

If you have fever, cough, or shortness of breath, call your healthcare provider. They may tell you to manage your care from home. Follow these tips:

1. **Stay home** from work, school, and away from other public places. If you must go out, avoid using any kind of public transportation, ridesharing, or taxis.

2. **Monitor your symptoms** carefully. If your symptoms get worse, call your healthcare provider immediately.

3. **Get rest and stay hydrated.**

4. If you have a medical appointment, **call the healthcare provider** ahead of time and tell them that you have or may have COVID-19.

5. For medical emergencies, call 911 and **notify the dispatch personnel** that you have or may have COVID-19.

6. **Cover your cough and sneezes.**

7. **Wash your hands often** with soap and water for at least 20 seconds or clean your hands with an alcohol-based hand sanitizer that contains at least 60% alcohol.

8. As much as possible, **stay** in a specific room and **away from other people** in your home. Also, you should use a separate bathroom, if available. If you need to be around other people in or outside of the home, wear a facemask.

9. **Avoid sharing personal items** with other people in your household, like dishes, towels, and bedding.

10. **Clean all surfaces** that are touched often, like counters, tabletops, and doorknobs. Use household cleaning sprays or wipes according to the label instructions.

CS 315822-A 03/12/2020

For more information: **www.cdc.gov/COVID19**

Return to TOC

High Consequence Pathogen
COVID-19: Assessment & Transport

A.3

E/A/P

PURPOSE

To minimize risk of exposure and spread of Coronavirus (COVID-19).

INITIAL ASSESSMENT

- Given the community spread of COVID-19, EMS practitioners who will have close contact (less than 6') with any potential emergency medical patient should don appropriate PPE as described below.
- If dispatch advises that the patient is suspected of having an infectious disease (COVID-19), EMS practitioners should put on appropriate PPE (see below) before entering the scene.
- If situation is unclear, or cardiac or respiratory arrest, use full PPE (see below).
- EMS practitioners should evaluate for and suspect the patient may have COVID-19 if any of the following signs and symptoms are present:
  - Patients presenting with fever, or cough, or shortness of breath, **OR**
  - Anyone who has had close contact with someone being monitored for or diagnosed with COVID-19 within 14 days of symptom onset, **OR**
  - A history of travel from outside the United States within 14 days of symptom onset.
- Initial assessment should begin from at least 6 feet from the patient and be limited to one EMS practitioner, if possible.
- A face mask should be worn by the patient for source control. If a nasal cannula is in place, a face mask should be worn over the nasal cannula. If a non-rebreather mask is clinically indicated, place a face mask over it.
- Any additional resources requested (transporting agency, intercepting agency, fire, police) should be notified so they can take precautions.
- Refer to the COVID-19 Field Triage Guidance to determine if the patient requires transport to the Emergency Department.

PERSONAL PROTECTIVE EQUIPMENT (PPE) RECOMMENDATIONS

- Responders who will have close contact (less than 6 feet) with any potential emergency medical patient should don the following personal protective equipment before making contact:
  - Face mask (definition: surgical mask or non-fit-tested “Universal N95 mask”):
    - Fit-tested N95 respirators that offer a higher level of protection should be used instead of a face mask when in the presence of a confirmed COVID-19 case or when performing or present for an aerosol-generating procedure
  - Eye protection (i.e., goggles or disposable face shield that fully covers the front and sides of the face). Personal eyeglasses and contact lenses are NOT considered adequate eye protection
  - A single pair of disposable patient examination gloves. Change gloves if they become torn or heavily contaminated
  - Isolation gown
    - Prioritize gowns for aerosol-generating procedures, care activities where splashes and sprays are anticipated, and high-contact patient care activities that provide opportunities for transfer of pathogens to the hands and clothing of EMS clinicians (e.g., moving patient onto a stretcher)
- Drivers should wear PPE if providing patient care. After completing patient care and before entering an isolated driver’s compartment, the driver should remove

(Continued)

PERSONAL PROTECTIVE EQUIPMENT (PPE) RECOMMENDATIONS (CONTINUED)

and dispose of PPE and perform hand hygiene to avoid contaminating the compartment.
  - If the ambulance does not have an isolated driver's compartment, the driver should remove the face shield or goggles, gown and gloves and perform hand hygiene. An N-95 respirator/PAPR or face mask should continue to be used during transport.
- After transfer of care, EMS practitioners should remove and discard PPE and perform hand hygiene. Used PPE should be discarded in accordance with routine procedures.
- All personnel should avoid touching their face while working.
- Other required aspects of standard precautions (e.g., injection safety, hand hygiene) are not emphasized in this document, see High Consequence Pathogen Maintenance & Considerations – 6.3.
- If experiencing supply chain interruptions, consider CDC guidance to reuse N-95 respirators:
  - The CDC recommends re-use of an N-95 respirator up to five times unless the manufacturer has more specific reuse recommendations.
  - N95 respirators used during aerosol generating procedures or respirators that have been contaminated with blood, respiratory or nasal secretions, or other bodily fluids from patients should be immediately discarded and not reused.
  - If a respirator is removed between uses, it should be hung in a designated storage area or kept in a clean, breathable container such as a paper bag between uses. To minimize potential cross-contamination, store respirators so that they do not touch each other and the person using the respirator is clearly identified. Storage containers should be disposed of or cleaned regularly.
- *The outside surfaces of a used N-95 respirator should be considered contaminated.* Consider the following steps in the donning process to prevent cross contamination:
  - Always use clean gloves when inspecting, handling, donning, and performing a user seal check on a reused respirator.
  - Avoid touching the inside of the respirator.
  - Prior to reusing, inspect the integrity of the respirator, checking for obvious signs of damage.
  - Discard gloves after the N95 respirator is donned and any adjustments are made to ensure the respirator is sitting comfortably on your face with a good seal.
  - Clean hands with soap and water or an alcohol-based hand sanitizer after touching or adjusting the respirator.
  - The CDC recommends using a cleanable face shield (preferred) or a surgical mask over an N95 respirator and/or other steps (e.g., masking patients, use of engineering controls), when feasible to reduce surface contamination of the re-used respirator.
- The full CDC guidance on reusing respirators can be found at: https://www.cdc.gov/niosh/docs/2018-128/

E/A/P

Situation	Procedure	PPE Standard
Suspected COVID-19 Patient (Within 6 feet of any EMS patient)	Non-Aerosol Generating Routine Patient Care	Face Mask or Non-fit-tested Universal N95 Gown Gloves Face Shield or Goggles
Suspected COVID-19 Patient (Within 6 feet of any EMS patient) Cardiac or Respiratory Arrest	Aerosol Generating Procedure MDI/Nebulizer, IN Naloxone BVM or CPAP Supraglottic Airway or Intubation CPR	Fit-Tested N95 Respirator or PAPR Gown Gloves Face Shield or Goggles
Known COVID-19 Patient (Lab Confirmed)	All Patient Care Activities	Fit-tested N95 Respirator or PAPR Gown Gloves Face Shield or Goggles

(Continued)

E/A/P

AEROSOL-GENERATING PROCEDURES

- To limit risk, avoid aerosol-generating procedures.
- If necessary, consult with **Medical Direction** before performing aerosol-generating procedures.

- Practitioners should wear N95 respirator/PAPR, gown, gloves and face shield or goggles.
- EMS practitioners should exercise caution if an aerosol-generating procedure (e.g., bag valve mask (BVM) ventilation, oropharyngeal suctioning, endotracheal intubation, nebulizer treatment, continuous positive airway pressure (CPAP), or resuscitation involving emergency intubation or cardiopulmonary resuscitation (CPR) is necessary).
- BVMs, and other ventilatory equipment, should be equipped with HEPA filtration to filter expired air.
- If possible, the rear doors of the ambulance should be opened, and the HVAC system should be activated during aerosol-generating procedures.
- Consider use of MDI (metered dose inhaler) preferentially over nebulizer.
- Consider use of supraglottic airway preferentially over endotracheal intubation.
    - Supraglottic airways (SGA) - The use of a SGA (King or i-Gel) is considered a high-risk aerosolizing procedure. It is critically important to plug the side/ gastric port on a SGA to prevent large volume spread of airborne pathogens.

TRANSPORT

- EMS practitioners should notify the receiving healthcare facility if they suspect COVID-19 so that appropriate precautions may be taken prior to arrival. Share any known details regarding signs/symptoms, travel, or contact history.
- During transport, limit the number of practitioners in the patient compartment to essential personnel to minimize possible exposures.
- Keep the patient separated from other people as much as possible.
- Family members and other contacts of suspect patients should not ride in the ambulance. If unavoidable, they should wear a face mask.
- Isolate the ambulance driver from the patient:
    - Close the door/window between these compartments before bringing the patient on board
        - Tape opening with plastic if there is no door or window that can close
        - Use non-recirculated mode to ventilate ambulance.
        - Open the outside air vents in the driver area and turn on the rear exhaust ventilation fans to the highest setting.
        - Follow hospital protocol for transfer of patient.
- Carefully doff and dispose of PPE and perform hand hygiene.

(Continued)

E/A/P

DECONTAMINATION

Action Completed	Action	Comments
	Leave the doors of the ambulance open during transfer of the patient and decontamination.	This is to allow for air changes to remove potentially-infectious particles.
	EMS practitioners should wear a surgical face mask, gown and gloves. A face shield or goggles should also be worn if splashes during cleaning are anticipated.	This is to protect the provider from exposures during decontamination.
	All surfaces that came in contact with the patient or materials contaminated during patient care should be thoroughly cleaned and disinfected.	Link to Disinfectants: https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2
	Clean and disinfect reusable patient care equipment before use on another patient.	
	After an aerosol-generating procedure, clean and disinfect horizontal surfaces around the patient.	
	Follow standard operating procedures for containing and laundering used linen.	Avoid shaking the linen.
	Follow standard operating procedures for the containment and disposal of used PPE.	
	Perform hand hygiene.	

Return to TOC

High Consequence Pathogen
Ebola Virus Disease

A.3

If VT e911 PSAP (9-1-1 Call Center) advises that the patient is suspected of having Ebola, put on appropriate PPE BEFORE entering the scene and follow instructions for Suspect Case for Ebola Virus Disease below. Personnel with First Responder agencies without appropriate PPE should NOT enter scene or have contact with patient. Only one EMS provider should approach the patient and perform initial screening from at least 3 feet away as follows:

Identify travel and exposure history: Has the patient lived in or traveled to areas with widespread Ebola transmissions, **OR** had contact with blood or body fluids (including but not limited to urine, saliva, vomit, sweat, and diarrhea) of a patient known to have or suspected to have Ebola within the previous 21 days?

NO – Proceed with normal EMS care
YES – Proceed with questions about signs and symptoms

Identify signs and symptoms: Does the patient have a fever (subjective or > 100.4°F or 38.0°C) **or ANY** of the following Ebola-compatible symptoms: severe headache, weakness, muscle pain, fatigue, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage (bleeding or bruising)?

NO – Proceed with normal EMS care and appropriate PPE and notify receiving facility of exposure history
YES – Consider the patient a **Suspect Case for Ebola Virus Disease**. Notify the receiving hospital before transport and the VT Department of Health at 802-863-7240, and implement the following **IMMEDIATELY**:

E/A/P

Personal Protective Equipment (PPE): Based on the clinical presentation of the patient, there are two PPE options:

- If the patient is not exhibiting obvious bleeding, vomiting, or diarrhea, and does not have a clinical condition that warrants invasive or aerosol-generating procedures (e.g., intubation, suctioning, active resuscitation), then EMS personnel should at a minimum wear the following PPE:
  A. Face shield and surgical face mask
  B. Impermeable gown, and
  C. Two pairs of gloves
- If the patient is exhibiting obvious bleeding, vomiting, or diarrhea, or has a clinical condition that warrants invasive or aerosol-generating procedures (e.g., intubation, suctioning, active resuscitation), then immediately don appropriate PPE that leaves no skin exposed and includes the following:
  - PAPR (powered air purifying respirator) or N95 Respirator with single-use disposable full-face shield and either surgical hood **or** coverall with integrated hood. Ensure complete coverage of the head and neck
  - If using surgical hood option, may use single-use fluid-resistant or impermeable gown that extends to at least mid-calf ***or*** coverall without integrated hood. If not using surgical hood, use coverall with integrated hood
  - Double gloves. Single-use nitrile examination gloves, outer with extended cuffs.
  - Boot covers that are waterproof and go to at least mid-calf or leg covers
  - Apron that is waterproof and covers the torso to the level of the mid-calf should be used if patient has vomiting or diarrhea
  - PPE should be put on before entering the scene and continued to be worn until personnel are no longer in contact with the patient. PPE should be carefully put on as per CDC guidelines and under supervision by a trained observer who may be another member of the EMS crew
  - PPE should be carefully removed in an area designated by the receiving hospital as per CDC guidelines and under supervision by a trained observer

(Continued)

PPE Continued:

- If during initial patient contact and assessment and before an EMS provider has donned the appropriate PPE, it becomes apparent that the patient is a suspected case of Ebola, the EMS provider must immediately remove themselves from the area and assess whether an exposure occurred. The provider should implement their agency's exposure plan, if indicated by assessment.
- EMS personnel wearing PPE who have cared for the patient must remain in the back of the ambulance and not be the driver.

GENERAL GUIDENCE

- Keep the patient separated from other persons as much as possible.
- Minimize the number of EMS personnel that directly care for the patient as appropriate depending on the condition of the patient and scene.
- Consider obtaining additional resources or mutual aid to ensure adequate staffing and PPE. Recommended crew includes 2 patient care providers, and one driver.
- Use caution when approaching a patient with Ebola. Illness can cause delirium, with erratic behavior that can place EMS personnel at risk of infection, e.g., flailing, staggering.
- Initiate transport to the closest facility. Consider transport directly to UVMMC or DHMC if additional transport time < 15 minutes. Contact **Medical Direction** for guidance.

- Notify the receiving hospital before transport and notify the VT Department of Health at 802-863-7240.
- Patients being monitored by VT Department of Health who develop symptoms and inter-facility transfers will be transported by designated ground units (UVM Healthnet Transport, DHART).
- Keep an accurate list of all EMS personnel involved in care of a suspect patient.
- If blood, body fluids, secretions, or excretions from a patient with suspected Ebola come into direct contact with the EMS provider's skin or mucous membranes, then the EMS provider should disengage when safe to do so. They should wash the affected skin surfaces with soap and water and mucous membranes (e.g., conjunctiva) should be irrigated with a large amount of water or eyewash solution. Report exposure to an occupational health provider or supervisor for follow-up and receive medical evaluation.
- Follow CDC guidelines for cleaning EMS transport vehicles after transporting a patient with suspected or confirmed Ebola.
- EMS personnel involved in care of a suspect or known Ebola case must follow up with VDH to determine appropriate monitoring, follow-up and reporting requirements.
- Contact the Vermont Department of Health 802-863-7240 and **Medical Direction** for guidance for patients that refuse transport or are deceased on scene.

MEDICAL CARE GUIDANCE

- If patient is cooperative and able to assist, request the patient put on a Tyvek coverall. If the patient cannot tolerate the Tyvek coverall, or the coverall is likely to interfere with patient care activities, or the patient cannot assist in putting it on, the patient may be wrapped in a sheet or similar barrier to prevent environmental contamination.
- Limit activities, especially during transport that can increase the risk of exposure to infectious material.
- Limit aerosol-generating procedures such as nebulized medications, CPAP, intubation or suctioning unless absolutely necessary for patient care.
- Limit the use of needles and other sharps as much as possible. IVs should not be started unless the patient is in emergent need of volume replacement or IV medications. No sharps are to be utilized in a moving vehicle. All needles and sharps should be handled with extreme care and disposed of in puncture-proof, sealed containers.
- Consider giving the patient oral medicine to reduce nausea. See Nausea/Vomiting Protocol – Adult & Pediatric 2.14.
- If patient is vomiting, give them a large red biohazard bag to contain any emesis.
- See https://www.cdc.gov/viral-hemorrhagic-fevers/hcp/emergency-guidance/ems-911.html

E/A/P

Return to TOC

High Consequence Pathogen
Measles

A.3

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS– ADULT & PEDIATRIC

BACKGROUND

Measles typically presents in adults and children as an acute, viral illness characterized by fever and a generalized maculopapular rash (small, red, flat or raised bumps). The early signs may include cough, conjunctivitis, and runny nose. Koplik spots – blue-white spots on the mucosal tissue of the mouth and gums – are occasionally seen. The rash usually starts on the face, proceeds down the body, and may include the palms and soles. The rash, which lasts for several days, initially appears discrete, but may become confluent before fading in order of appearance. The time between exposure and rash onset averages 14 days but may range from 7 to 21 days. Of note, immunocompromised patients may not develop the rash. Complications include diarrhea, otitis media, pneumonia, hepatitis, and encephalitis.

Measles is transmitted by airborne particles, droplets, and direct contact with the respiratory secretions of an infected person. Patients are considered to be contagious for a total of nine days - from 4 days before through 4 days after the rash appears with date of rash onset counting as day 0.

PURPOSE

There have been an increased number of measles cases and multiple outbreaks in the U.S. These guidelines address precautions that should be taken by EMS personnel when evaluating and transporting persons with suspected measles infection.

E/A/P

PROCEDURE

In addition to routine infection prevention practices including standard precautions, VT EMS recommends the following:

1. Vaccination
   - All EMS personnel should have documented evidence of immunity to measles. Entities responsible for EMS providers may want to review their current policies regarding documentation of immunity for staff, including volunteers. This information should be documented and readily available at the work location.
   - Presumptive evidence of immunity to measles for EMS providers includes 2 doses of MMR vaccine or laboratory evidence of immunity (measles IgG positive).
   - First responders born before 1957 who lack laboratory evidence (e.g., blood test) of immunity or laboratory confirmation of previous disease should be vaccinated with 2 doses of MMR vaccine at the appropriate interval.
2. Protective Equipment and Procedures
   - All EMS personnel should use standard, droplet, and airborne precautions during all encounters with patients suspected to have measles. Measles is a highly contagious viral infection. In order to minimize risk, the following is recommended:
     - Only those who are known to be immune should approach patients who may have measles
     - EMS personnel should wear an N-95 particulate respirator or a respirator with similar effectiveness in preventing airborne transmission; please note that particulate respirators should only be used as part of a comprehensive respiratory protection program that includes appropriate screening, training and fit-testing; patients should wear a surgical mask, if they are able to tolerate it safely

(Continued)

E/A/P

3. Notification to Receiving Facility
   - Receiving facilities must be notified prior to arrival of known or suspected measles patients to facilitate implementation of appropriate infection prevention procedures.
   - In health care settings, patients with suspected measles should be placed immediately in an airborne infection (negative-pressure) isolation room if one is available and, if possible, should not be sent to other parts of the hospital for examination or testing purposes.
4. Transportation
   - Because measles virus can contaminate surfaces or hang in the air for up to two hours, ambulances and transport vehicles should be taken out of service for two hours after transport of a patient with known or suspected measles.
   - Routine cleaning of the transport vehicle should be done.
5. Report and Evaluation of Exposure
   - Make note of all EMS personnel who were potentially exposed to measles during the time the suspect measles patient was being treated by EMS and for up to 2 hours after.
   - If measles is confirmed in the suspect patient, exposed people will need to be assessed for measles immunity:
     - EMS personnel who are potentially exposed to measles should consult with health care and public health professionals
     - Health care personnel should evaluate risk and recommend and/or provide appropriate post-exposure prophylaxis when indicated (i.e., one dose of MMR within 72 hours of exposure for first responders with no proof of immunity)
     - In consultation with the Health Department, first responders who are exposed and do not have proof of immunity may be furloughed from day 5 through day 21 following exposure
     - Personnel who develop symptoms consistent with measles, including fever, rash, runny nose, cough and red, watery eyes, should seek medical attention (calling ahead before going to the medical facility so proper precautions can be taken to reduce potential exposure)
     - All suspected cases of measles must be reported immediately to the Health Department at 802-863-7240 (available 24/7)

Return to TOC

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Acetaminophen (Tylenol/Ofirmev) **Indications:** • Fever control (pediatric seizure). • Pain control. **Contraindications:** • Avoid in patients with severe liver disease. • Impairment or sensitivity to acetaminophen. • Do not use with other drug products containing acetaminophen or if patient has taken any drug containing acetaminophen within 4 hours.	**Pain Management** • 325 – 1000 PO, no repeat. • 1000 mg IV over 10 minutes (if not taken or given PO)
Activated Charcoal **Indications:** • Poisoning/Overdose. **Contraindications:** • **Caustic Substances** • **Ingestion greater than 60 minutes ago** • **Patient unable to protect airway**	**Poisoning/Substance Abuse/Overdose** • **Contact Medical Direction for** 25 – 50 grams PO
Adenosine (Adenocard) **Indications:** • Specifically for treatment or diagnosis of Supraventricular Tachycardia. • Consider for regular or wide complex tachycardia. **Contraindications:** • WPW (Wolff-Parkinson-White) Syndrome.	**Narrow and Wide Complex Regular Tachycardia** • 6 mg rapid IV/IO push, followed by rapid flush. ▪ May repeat 12 mg if no conversion. ▪ May repeat successful dose if dysrhythmia recurs after conversion. ▪ May dilute adenosine with 20 mL of 0.9% normal saline and give as rapid IV push.

Return to TOC

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See the Pediatric Color Coded Appendix for pediatric dosages

Albuterol

Indications:

- Nebulized treatment for use in respiratory distress with bronchospasm.
- Hyperkalemia.

Allergic Reaction/Anaphylaxis

- 2.5 mg via nebulizer or metered-dose inhaler (MDI) 2 – 4 puffs.
  - May repeat every 5 minutes for continued symptoms.
- 2.5 mg albuterol and 0.5 mg ipratropium (DuoNeb) via nebulizer.
  - May repeat every 5 minutes (maximum 3 doses).
- Contact **Medical Direction** for additional dosing.

Asthma/COPD/RAD

- 2.5 mg albuterol and 0.5 mg ipratroprium bromide (DuoNeb) via nebulizer.
  - May repeat every 5 minutes for continued symptoms (maximum 3 doses).
- 2.5 mg albuterol via nebulizer.
  - May repeat every 5 minutes for continued symptoms.
- Albuterol metered-dose inhaler (MDI) 2 – 4 puffs.
  - May repeat every 5 minutes for continued symptoms.

Crush/Suspension Injury

- Albuterol continuous 10 – 20 mg nebulized if ECG suggestive of hyperkalemia before or after extrication.

Hyperkalemia

- Albuterol continuous 10 – 20 mg nebulized

Smoke Inhalation/Carbon Monoxide Poisoning

- 2.5 mg albuterol via nebulizer.
  - May repeat every 5 minutes for continued symptoms.

Amiodarone (Cordarone)

Indications:

- Antiarrhythmic used mainly in wide complex tachycardia and ventricular fibrillation.

Contraindications:

- Avoid in patients with heart block or profound bradycardia.
- Hypersensitivity, including iodine
- Contraindicated in patients with WPW (Wolff-Parkinson-White) Syndrome.
- Cardiogenic Shock

Cardiac Arrest
V-Fib/Pulseless V-Tach

- 300 mg IV/IO
  - Repeat 150 mg dose as needed.

Post Resuscitative Care

- Infusion 1 mg/min IV/IO (if arrest was the result of V-Fib or Pulseless V-Tach and, the patient is having frequent PVCs or runs of VT or transport time exceeds 30 minutes).

Tachycardia
Wide complex tachycardia

- 150 mg IV/IO mixed with 50 – 100 mL D5W or 0.9% NaCl over 10 min.
  - May repeat once in 10 minutes.
  - If successful, consider maintenance infusion of 1 mg/min IV/IO.

Return to TOC

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See the Pediatric Color Coded Appendix for pediatric dosages

Aspirin
 	
Indications:
• An antiplatelet drug for use in cardiac chest pain.
Contraindications:
• History of anaphylaxis to aspirin or NSAIDs
• Active GI bleeding
	Acute Coronary Syndrome
	• 324 mg PO.
	  ▪ If patient has taken a partial dose within the last hour, administer additional aspirin dose to equal 324 mg
	  ▪ If more than one hour since the patient took any dose of aspirin, administer 324 mg aspirin

Atropine **Indications:** • Anticholinergic drug used in bradycardias and organophosphate poisonings. **Contraindications:** • Avoid in hypothermic bradycardia • Caution with myocardial ischemia, increases 02 demand • Not effective in Mobitz type II block or new 3rd degree block	**Bradycardia** • 1 mg IV/IO every 3 – 5 minutes to total of 3 mg. **Nerve Agents/Organophosphate Poisoning** • 2 mg IV/IO; repeat every 5 minutes until excess secretions cease (stop).
Atropine and Pralidoxime Auto-Injector (DuoDote or MARK I) Nerve Agent Kit **Indications:** • Antidote for Nerve Agents or Organophosphate Overdose.	**Nerve Agent/Organophosphate Poisoning** • Refer to Nerve Agents Organophosphate Poisoning Protocol – 2.15A for symptom assessment and dosing guidelines.

Return to TOC

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See the Pediatric Color Coded Appendix for pediatric dosages

Calcium Chloride 10% solution

Indications:

- Calcium channel blocker overdose, hyperkalemia, or beta blocker overdose.

Contraindications:

- Do not routinely use in cardiac arrest.
- Avoid use if pt is taking digoxin.
- Do not mix with or infuse immediately before or after sodium bicarbonate.

Bradycardia

- 1,000 mg (10 mL of a 10% solution) mixed in 50 mL NS or D5W IV/IO over 10 minutes.
  - May repeat in 10 minutes.
  - Do not exceed 1 mL per minute. Flush with 0.9% NaCl before and after administration.

Cardiac Arrest
Wide Complex PEA

- 1,000 mg of 10% solution IV/IO

Crush/Suspension Injury

- 1,000 mg mixed in 50 mL NS or D5W over 10 minutes.
  - May repeat in 10 minutes, with constant cardiac monitoring.

Hyperkalemia

- 500 – 1,000 mg mixed in 50 mL NS or D5W over 10 minutes.
  - May repeat dose in 10 minutes, with constant cardiac monitoring.

Interfacility Transfer

- For massive hemorrhage, administer 1 gm calcium chloride or 2 gm calcium gluconate after the first 2 units of blood products.
  - Repeat dosing after each additional 4 units of blood products.

Calcium Gluconate

Indications:

- Calcium channel blocker overdose, hyperkalemia/ renal failure, wide complex PEA or beta blocker overdose with bradycardia.

Contraindications:

- Hypercalcemia

Bradycardia

- 2,000 mg mixed in 50 mL NS or D5W IV/IO over 10 minutes (preferred if patient not in arrest).
  - May repeat in 10 minutes.

Cardiac Arrest
Wide Complex PEA

- 2,000 mg IV/IO push

Crush/Suspension Injury

- 2,000 mg mixed in 50 mL NS or D5W IV/IO over 5 – 10 minutes.
  - May repeat in 10 minutes.

Hyperkalemia

- 2,000 mg mixed in 50 mL NS or D5W IV/IO over 5 – 10 minutes.
  - May repeat in 10 minutes.

Interfacility Transfer

- For massive hemorrhage, administer 1 gm calcium chloride or 2 gm calcium gluconate after the first 2 units of blood products.
  - Repeat dosing after each additional 4 units of blood products.

Dexamethasone

Indications:

- Steroid used to control inflammatory conditions, asthma, croup, allergic reactions or adrenal insufficiency

Adrenal Insufficiency

- 10 mg IV/IO/IM.

Allergic Reaction/Anaphylaxis

- 0.6 mg/kg IV/IO/IM/PO, maximum dose 10 mg – *extended care protocol.*

Asthma/COPD/RAD

- 10 mg IV/IO/IM/PO.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Dextrose 5%, 10%, 50% Glucose solutions

Indications:

- Symptomatic hypoglycemia.
- Use in medication infusion medium.

Diabetic Emergencies (Hypoglycemia)

- Dextrose 10% (preferred) or 50% IV up to 25 grams.
  - Recheck blood glucose after 5 minutes.
  - Repeat up to 25 grams dextrose 10% or 50% if glucose levels < 60 mg/dl with continued altered mental status.
  - 25 grams = 250 mL of 10% solution.
  - 1 amp (25 grams) = 50 mL of 50% solution.

Diazepam (Valium)

Indications:

- Seizure control.
- Sedation.
- Anxiolytic.

Behavioral Emergencies: Anxiety

- 5 mg IV

Bilevel Positive Airway Pressure (BiPAP)

- Consider administering anxiolytic, contact **Medical Direction**:
  - 5 mg IV, may repeat once in 5 minutes.

Bradycardia
Procedural Sedation for Cardiac Pacing

- 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes.

Continuous Positive Airway Pressure (CPAP)

- Consider administering anxiolytic, contact **Medical Direction**:
  - 5 mg IV, may repeat once in 5 minutes.

Hyperthermia

- 2 mg IV, may repeat once in 5 minutes.

Nerve Agent/Organophosphate Poisoning

- 5 mg IV every 5 minutes **OR**
- 10 mg IM **OR**
- Diazepam auto-injector (10mg)
  - Repeat every 10 minutes as needed**.**

Poisoning/Substance Abuse/Overdose

- 2 mg IV, may repeat once in 5 minutes.

Restraints: Resistant or Aggressive Behavior

- Contact **Medical Direction** for 5 mg IV.
  - Contact Medical Direction if additional dosing is needed.

Seizure

- May assist with patient's own diazepam gel as prescribed.
- 5 – 10 mg IV, then 2.5 mg every 5 minutes (maximum dose 20 mg).

Tachycardia
For Cardioversion Sedation

- 5 mg IV/IO, may repeat 2.5 mg once in 5 minutes.

Traumatic Brain Injury

- 5 mg IV/IO, may repeat once in 5 minutes.

Return to TOC

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See the Pediatric Color Coded Appendix for pediatric dosages

Diltiazem (Cardizem) **Indications:** • Calcium channel blocker used to treat narrow complex tachycardia/SVT. **Contraindications:** • Heart block, ventricular tachycardia, WPW, and/or acute MI. • WPW (Wolff-Parkinson-White) Syndrome.	**Tachycardia** **Stable Regular or Irregular Narrow Complex Tachycardia** • 0.25 mg/kg slow IV over 2 minutes (maximum dose 20 mg). ▪ May repeat dose in 15 minutes at 0.35 mg/kg (maximum dose 25 mg) if necessary. ▪ Consider 10 mg maximum initial dose and 20 mg maximum second dose for elderly patient or patient with low blood pressure. ▪ Consider maintenance infusion 5 – 15 mg/hour IV.
Diphenhydramine (Benadryl) **Indications:** • Antihistamine used as an adjunctive treatment in allergic reactions. • Antidote for dystonic reaction.	**Allergic Reaction/Anaphylaxis** • 25 – 50 mg IM/IV/IO to treat pruritus. • 25 – 50 mg by mouth – *extended care protocol.* ▪ May repeat every 4 – 6 hours as needed; maximum dose of 300 mg/24 hours. **Nausea/Vomiting** • 25 – 50 mg IV/IM for dystonic reaction. • 25 mg PO – *extended care for motion sickness.* **Poisoning/Substance Abuse/Overdose – Dystonic Reaction** • 25 – 50 mg IV/IM. **Restraints** • For acute dystonic reaction to droperidol or haloperidol 25 – 50 mg IV **OR** 50 mg IM.
Dopamine **Indications:** • A vasopressor used in shock or hypotensive states. • Infusion pump required.	**Use by CCP in IFT per Medical Direction only** **Shock** • 5-20 mcg/kg/min IV/IO
Droperidol **Indications:** • Delirium (off-label) • Antiemetic **Contraindications:** • Do not use if known or suspected prolonged QTc interval >450 msec	**Nausea/Vomiting** • 0.625 - 1.25 mg slow IV push over 1 – 2 minutes or IM. ▪ May repeat once in 10 minutes if nausea/vomiting persists. **Restraints: Resistant or Aggressive Behavior** • 5 mg IM/IV. ▪ Contact **Medical Direction** if additional dosing is needed. **Restraints: Violent/Combative Behavior, OR Delirium with Agitated Behavior:** • 10 mg IM. ▪ Contact **Medical Direction** if additional dosing is needed.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Epinephrine 1:1,000 (1 mg/mL)

Indications:

- Bronchodilation in asthma and COPD exacerbation. Primary treatment for anaphylaxis.
- Vasopressor used for bradycardia, post-resuscitative care, shock, anaphylaxis.

MIXING INSTRUCTIONS FOR EPINEPHRINE INFUSIONS
Epinephrine 1:1,000 (1mg/mL) multidose vial (30mL) and withdraw 4 mg (4mL) and add to a 250 mL infusion bag of D5W or 0.9% NaCl. The resulting concentration is 16 mcg/mL

Allergic Reaction/Anaphylaxis

- 0.3 mg IM by autoinjector **OR** 0.3 mg (0.3 mL) IM.
  - May repeat dose x 1. For additional dosing, contact **Medical Direction** (EMT).
- 0.3 mg (0.3 mL) IM.
  - May repeat every 5 – 15 minutes.
  - Maximum of 3 doses.
  - For additional dosing, contact **Medical Direction**.
- For anaphylaxis refractory to IM epinephrine, consider epinephrine infusion 2 – 10 mcg/min IV/IO, titrated to effect. (Infusion pump required.)

Asthma/COPD/RAD

- Consider 0.3 mg IM by autoinjector (preferred) **OR** epinephrine **(1:1,000) (1 mg/mL)** 0.3 mg (0.3 mL) IM.
  - For additional dosing, contact **Medical Direction**.

Bradycardia

- Infusion 2 – 10 mcg/min IV/IO, titrated to effect (Infusion pump required.)

Post-Resuscitative Care

- Infusion 2-10 mcg/min IV/IO titrated to effect. (Infusion pump required.)

Septic Shock

- Infusion 2 – 10 mcg/min IV/IO titrated to MAP ≥ 65 (systolic ≥ 90). (Infusion pump required.)

Shock (Cardiogenic or Distributive)

- Infusion 2-10 mcg/min IV/IO titrated to effect. (Infusion pump required.)

Smoke Inhalation

- 3 mg (mL) in 3 mL 0.9% NaCl via nebulizer for symptomatic patients.

Epinephrine 1:10,000 (0.1 mg/mL)

Indications:

- Vasopressor used in cardiac arrest.
- Push Dose Epinephrine for short transport times or as a bridge to infusion

MIXING INSTRUCTIONS FOR PUSH DOSE EPINEPHRINE:
Add 1 ml (0.1mg) of Epinephrine to 9 ml of normal saline in a 10 ml syringe for a concentration of 10mcg/ml

Cardiac Arrest

- 1 mg IV/IO every 3 to 5 minutes.
  - Repeat every other cycle when utilizing high performance CPR.
  - In hypothermic arrest do not administer until temperature is > 30°C (90°F), then increase dosing intervals to twice normal from 30-35°C.

Shock, Bradycardia, and Hypotension during ROSC

- Push dose rpinephrine (10 mcg/mL concentration)
  - 10-20 mcg (1-2 mL) IV/IO every 2 minutes
  - Titrate to effect
  - Transition to infusion as soon as feasible

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Etomidate (Amidate) **Indications:** • Sedative used in Rapid Sequence Intubation.	**Rapid Sequence Intubation** **{Sedate then} Paralyze** • 0.3 mg/kg IV/IO (maximum 40 mg).

Fentanyl (Sublimaze)
 	
Indications:
• Narcotic analgesic
Contraindications:
• Avoid use if BP < 100 mmHg.
	Acute Coronary Syndrome
	• 25 – 50 mcg slow IV push.
	  ▪ Repeat every 5 minutes up to 300 mcg and systolic BP remains ≥100 mmHg.
	
	Bradycardia
	Analgesia for Cardiac Pacing
	• 25 – 50 mcg slow IV push.
	  ▪ May repeat every 5 minutes to a total of 300 mcg and systolic BP remains ≥100 mmHg.
	
	Pain Management
	• 25 – 100 mcg slow IV push, every 2 – 5 minutes to a total of 300 mcg titrated to pain relief **OR**
	• 50 – 100 mcg IM/IN, every 5 minutes to a total of 300 mcg titrated to pain relief.
	  ▪ Contact **Medical Direction** for additional dosing.
	
	Nasotracheal and Orotracheal Intubation
	Post Intubation Care
	• Fentanyl 50 – 100 mcg IV/IO, may repeat every 15 minutes as needed for analgesia (maximum 300 mcg).
	  ▪ Contact **Medical Direction** for additional dosing.
	
	Rapid Sequence Intubation
	Post-Intubation Care
	• Fentanyl 50 – 100 mcg IV/IO, may repeat every 15 minutes as needed for anesthesia (maximum 300 mcg).
	
	Supraglottic Airway
	• 50 – 100 mcg slow IV/IO push every 15 minutes, as needed (maximum 300 mcg)

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Glucagon

Indications:

- Converts glycogen to glucose in the liver to increase blood sugar
- Use in patients with no IV access
- Indicated for beta blocker or calcium channel blocker overdose

Bradycardia

- 2 – 5 mg IV/IO over 3 – 5 minutes.
  - May repeat up to 10 mg.
  - If effective, place on infusion 1 – 5 mg/hr IV/IO via pump.

Diabetic Emergencies (Hypoglycemia)

- 1 mg IM
  - Recheck glucose 15 minutes after administration of glucagon.
  - May repeat glucagon 1 mg IM if glucose level is <60 mg/dl with continued altered mental status.

Glucose Oral Glucose Solutions

Indications:

- Use in conscious hypoglycemic states. Patient must be able to protect their own airway

Diabetic Emergencies (Hypoglycemia)

- Administer 1 – 2 tubes commercially prepared glucose gel, **OR**
- 15 to 30 mL (1 – 2 tablespoons) of *Pure VT Maple Syrup* or equivalent, for a standard dose of 15 to 30 grams sugar.

Haloperidol (Haldol)

Indications:

- Medication to assist with sedation of agitated patients.
- Chemical restraint.

Contraindications:

- Poorly controlled seizure disorder - May lower seizure threshold.
- Neuroleptic malignant syndrome (NMS)
- Parkinson's Disease.

Restraints: Resistant or Aggressive Behavior

- Contact **Medical Direction** to consider:
  - 5 mg IM
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

Restraints: Violent/Combative Behavior, OR Delirium with Agitated Behavior:

- Contact **Medical Direction** to consider:
  - 5 mg IM
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

Heparin

Indications:

- STEMI and no affirmative finding from fibrinolytic questionnaire.

Contraindications:

- History of Heparin Induced Thrombocytopenia

Paramedic

- Maintenance of already established heparin drip.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Hydrocortisone (Solu-Cortef)

Indications:

- Steroid used for adrenal insufficiency and associated distributive shock.

Adrenal Insufficiency

- 100 mg IV/IO/IM (preferred steroid for use in adrenal insufficiency).
  - May be repeated every 6 hours – *extended care protocol.*

Distributive Shock

- 100 mg IV/IO/IM.
  - Stress dose steroid for patient in shock with history of adrenal insufficiency

Hydroxocobalamin (Cyanokit)

Indications:

- Cyanide poisoning
- Vitamin B12 with hydroxyl group complexed to cobalt is displaced by cyanide resulting in non-toxic cyanocobalamin

Smoke Inhalation

- Hydroxocobalamin via use of Cyanokit:
  - Reconstitute: Place the vial of hydroxocobalamin in an upright position; add 0.9% NaCl to the vial (200 mL for 5 grams vial or 100 mL for 2.5 grams vial) using the transfer spike. Fill to the line.
  - Rock vial for at least 60 seconds (do not shake).
  - Using vented intravenous tubing, administer IV over 15 minutes.
  - Depending on clinical response, a second dose may be required.
  - May color skin or urine red.

Ibuprofen

Contraindications:

- Hypersensitivity to ibuprofen
- Cerebrovascular bleeding or other bleeding disorders, active gastric bleeding
- Administration of a medication containing ibuprofen within last 6 hours.

Pain Management

- 600 mg PO, no repeat.

Ipratropium Bromide (Atrovent)

Indications:

- Anticholinergic bronchodilator. Blocks the muscarinic receptors of acetylcholine.
- Relief of bronchospasm in patients with reversible obstructive airway disease and bronchospasm.

Allergic Reaction/Anaphylaxis

- 0.5 mg ipratropium and 2.5 mg albuterol (DuoNeb) via nebulizer.
  - May repeat every 5 minutes (maximum 3 doses).
  - Contact **Medical Direction** for additional dosing.

Asthma/COPD/RAD

- 0.5 mg ipratropium and 2.5 mg albuterol (DuoNeb) via nebulizer.
  - May repeat every 5 minutes for continued symptoms (maximum 3 doses).

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Ketamine

Indications:

- Short acting dissociative anesthetic
- Sedative used in Rapid Sequence Intubation.
- Pain control.
- Chemical restraint

Contraindications:

- Contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, and aortic aneurysm, and those that cannot tolerate hypertension.
- Avoid in patients with known schizophrenia.

Bradycardia Adult & Pediatric (analgesia for transcutaneous pacing)

- 0.25 mg/kg IV/IO every 15 min prn analgesia. Administer slow over 2-3 minutes.

Nasotracheal and Orotracheal Intubation

- 1 mg/kg ideal body weight (IBW)IV every 5 – 15 minutes.

Post Intubation Care

- 1 mg/kg ideal body weight (IBW) every 5 – 15 minutes, as needed.
  - Contact **Medical Direction** for additional dosing.

Pain Management

- 0.25 mg/kg IV infusion (in 50 – 100 mL bag 0.9% NaCl **over 10 minutes**). May be administered via bolus. (Consider lower 0.15 mg/kg dose for frail or elderly patients.) **OR** 0.5 mg/kg IM/IN
  - May repeat ketamine dose every 15 – 20 minutes for a total of 1 mg/kg.
  - Contact **Medical Direction** for additional dosing

Rapid Sequence Intubation: Sedation prior to paralysis

- 2 mg/kg IV/IO

Restraints: Violent/Combative Behavior OR Delirium with Agitation

- Contact **Medical Direction** and consider:
  - 4 mg/kg IM rounded to nearest 25 mg, maximum dose 500 mg (use 100 mg/mL concentration).
  - May repeat 2 mg/kg IM dose once in 10 minutes if first dose unsuccessful.

Supraglottic Airway: Sedation Post tube placement

- 1 mg/kg ideal body weight (IBW) IV/IO every 5 – 15 minutes, as needed.

Traumatic Brain Injury

- 4 mg/kg (maximum dose 500 mg) **IM injection only**
  - Contact **Medical Direction** for additional dosing.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Ketorolac (Toradol) **Indications:** • A nonsteroidal anti-inflammatory drug used for pain control. Consider as first line in renal colic. **Contraindications:** • Avoid Ketorolac in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease. • Avoid NSAIDS in women who are pregnant or could be pregnant. • Avoid in patients currently taking anticoagulants such as coumadin.	**Pain Management** • Contact **Medical Direction for** 15 mg IV **OR** 30 mg IM.
Lactated Ringers **Contraindications:** • Use Lactated Ringers with **caution** in patients with: ▪ Hyperkalemia or severe renal failure (potassium) ▪ Severe hepatic failure (impaired lactate clearance) ▪ Severe metabolic acidosis or alkalosis (potassium and worsening alkalosis) ▪ Lactic acidosis ▪ Neonates and infants less than 6 months (lactate effects on neonates)	Lactated Ringers may be used as a direct substitute for Normal Saline with the following exceptions and precautions: Lactated Ringers (LR) **SHOULD NOT** be directly combined with the following drug agents (due to limited data or clear evidence of incompatibility). These medications should be administered at a site separate from where the LR is infusing via a normal saline lock/line, or stop the LR infusion for medication injection, then administer a saline flush, and then restart the LR infusion. • Amiodarone • Atropine • Calcium Chloride • Dexamethasone • Diazepam • Diltiazem • Epinephrine • Etomidate • Fentanyl • Glucagon • Ketamine • Lorazepam • Metoprolol • Naloxone • Pralidoxime • Sodium Bicarbonate • Tranexamic Acid

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Lidocaine

Indications:

- Antiarrhythmic used for control of ventricular dysrhythmias.
- Used prior to intubation of patients with suspected increased intracranial pressure (e.g., TBI, ICH) to reduce increases in intracranial pressure.
- Anesthetic for nasotracheal intubation and intraosseous access.

Contraindications:

- Do not use lidocaine if CHF, cardiogenic shock, heart block, or WPW.

Cardiac Arrest
V-Fib/Pulseless V-Tach

- 1 – 1.5 mg/kg IV/IO.
  - Repeat dose 0.5 – 0.75 mg/kg up to a maximum dose of 3 mg/kg.

Intraosseous Access

- Slowly administer 20 – 50 mg (1 – 2.5 mL) 2% lidocaine through IO device catheter.
  - Allow 2 – 5 min for anesthetic effects, if possible

Nasotracheal Intubation

- 2% lidocaine jelly.

Post-Resuscitative Care

- Maintenance infusion 1 – 4 mg/min IV/IO (30 – 50 mcg/kg/min) if patient is having frequent PVCs or runs of VT, or if transport time exceeds 30 minutes.

Tachycardia
Wide complex regular monomorphic tachycardia

- (Considered second-line therapy) 1 – 1.5 mg/kg IV. May repeat once in 5 minutes to maximum 3 mg/kg.
  - If successful, consider a maintenance infusion of 1 – 4 mg/minute.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.

See the Pediatric Color Coded Appendix for pediatric dosages

Lorazepam (Ativan)

Indications:

- Seizure control.
- Sedation.
- Anxiolytic.

Contraindications:

- CNS Depression
- Breastfeeding
- Sleep Apnea
- Hepatic or Renal failure
- Caution if used with opioids

Behavioral Emergencies: Management of Anxiety

- 1 mg PO or IV

Bilevel Positive Airway Pressure (BiPAP)

- Consider administering anxiolytic, contact **Medical Direction**:
  - 0.5 – 1 mg IV; may repeat once in 5 minutes **OR**
  - 1 – 2 mg IM, may repeat once in 10 minutes.

Bradycardia: Procedural Sedation for Cardiac Pacing

- 1 mg IV/IO, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

Continuous Positive Airway Pressure (CPAP)

- Consider administering anxiolytic, contact **Medical Direction:**
  - 0.5 – 1 mg IV; may repeat once in 5 minutes **OR**
  - 1 – 2 mg IM, may repeat once in 10 minutes.

Hospice: Anxiety

- 0.25 – 2 mg PO or SL

Hyperthermia: Uncontrolled shivering during cooling

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

Nasotracheal and Orotracheal Intubation: Post Intubation Care

- 1 – 2 mg IV/IO every 15 minutes as needed for sedation (maximum 10 mg)
  - Contact **Medical Direction** for additional dosing.

Nerve Agent/Organophosphate Poisoning

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

Poisoning/Substance Abuse/Overdose:
Severe agitation, seizures or hyperthermia

- 1 mg IV, may repeat once in 5 minutes **OR**
- 2 mg IM, may repeat once in 10 minutes.

Rapid Sequence Intubation: Sedation

- 1 – 2 mg IV/IO every 15 minutes as needed for sedation (maximum 10 mg) AND
- Fentanyl 50 – 100 mcg IV/IO. May repeat every 15 minutes as needed for anesthesia (maximum dose 300 mcg).

Restraints: Resistant or Aggressive Behavior

- Contact **Medical Direction** to consider:
  - 2 mg IM, **OR**
  - 1 mg IV
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

Restraints: Violent/Combative Behavior, OR Delirium with Agitated Behavior:

- Contact **Medical Direction** to consider:
  - 2 mg IM
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

(continued)

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Lorazepam (Ativan) *(continued)*	**Seizure** • 1 – 2 mg IV, may repeat every 5 minutes (maximum dose 8 mg) **Supraglottic Airway: Post-Tube Sedation** • Lorazepam 1 – 2 mg IV/IO every 15 minutes as needed (maximum 10 mg) **Tachycardia:** **For Cardioversion Procedural Sedation** • 1 mg IV/IO, may repeat once in 5 minutes **OR** • 2 mg IM, may repeat once in 10 minutes. **Traumatic Brain Injury** • 1 mg IV/IO, may repeat once in 5 minutes **OR** • 2 mg IM, may repeat once in 10 minutes.
Magnesium Sulfate **Indications:** • Elemental electrolyte used to treat seizures due to preeclampsia and eclampsia during the third trimester of pregnancy. • A smooth muscle relaxor used in refractory respiratory distress resistent to beta-agonists. • Torsades de Pointes.	**Asthma/COPD/RAD** • 2 grams in 50 mL D5W or 0.9% NaCl IV/IO over 10 minutes. **Cardiac Arrest – Torsades de Pointes With No Pulse** • 1 – 2 grams IV/IO over 1 – 2 minutes. **Obstetrical Emergencies** • 4 grams in 50 mL D5W or 0.9% NaCl given slow IV push over 5 minutes for patients in the third trimester of pregnancy or post-partum who are seizing or are postictal. **Seizures** • 4 grams in 50 mL D5W or 0.9% NaCl given slow IV push over 5 minutes in the presence of seizure in the third trimester of pregnancy or post-partum. **Tachycardia – Wide Complex Polymorphic Torsades de Pointes** • If pulse present, consider 2 grams IV/IO diluted in 50 mL D5W or 0.9% NaCl over 10 minutes.
Methylprednisolone (Solu-medrol) **Indications:** • Steroid used in respiratory distress to reverse inflammatory and allergic reactions.	**Adrenal Insufficiency** • 125 mg IV/IO/IM. **Allergic Reaction/Anaphylaxis** • 1 mg/kg IV, maximum dose 125 mg every 6 hours – *extended care protocol.* **Asthma/COPD/RAD** • 125 mg IV/IO/IM.
Metoclopramide (Reglan) **Indications:** • Anti-emetic used to control nausea and/or vomiting and as alternative treatment for adrenal insufficiency.	**Nausea/Vomiting** • 5 – 10 mg slow IV push over 1 – 2 minutes, **OR** • 10 mg IM ▪ May repeat once after 10 minutes if nausea/vomiting persists. ▪ May repeat IM every 4 – 6 hours as needed - *extended care protocol.* ▪ Administer IV slowly, over 1 – 2 minutes, to reduce dystonic reactions.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Metoprolol (Lopressor)

Indications:

- Use for rate control in narrow complex tachycardia with an irregular rhythm.

Contraindications:

- Contraindicated in patients with HR < 45 bpm, SBP < 100 mmHg, heart block or acute heart failure syndromes (CHF or cardiogenic shock).
- Use with caution in patients with bronchospastic disease.
- Contraindicated in patients with WPW (Wolff-Parkinson-White) Syndrome.

Tachycardia: Irregular Narrow Complex

- 5 mg IV/IO over 2 – 5 minutes.
  - May repeat every 5 minutes to a maximum of 15 mg as needed to achieve a ventricular rate of 90 – 100 BPM.

Midazolam (Versed)

Indications:

- Seizure control.
- Sedation.
- Anxiolytic.

(continued)

Behavioral Emergencies: Anxiety

- Midazolam 2.5 mg IM/IN; **OR**
- Midazolam 1.25 mg IV.

Bilevel Positive Airway Pressure (BiPAP)

- Consider administering anxiolytic, contact **Medical Direction:**
  - 2.5 mg IV/intranasal, may repeat once in 5 minutes **OR**
  - 5 mg IM, may repeat once in 10 minutes.

Bradycardia: Procedural Sedation for Cardiac Pacing

- 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

Continuous Positive Airway Pressure (CPAP)

- Consider administering anxiolytic, contact **Medical Direction:**
  - 2.5 mg IV/intranasal, may repeat once in 5 minutes **OR**
  - 5 mg IM, may repeat once in 10 minutes.

Hospice: Anxiety

- 2.5 mg IN, may repeat every 10 – 15 minutes as needed to a maximum of 7.5 mg.

Hyperthermia

- 2.5 mg IV/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

Nasotracheal and Orotracheal Intubation
Post Intubation Care

- 2.5 – 5 mg IV/IO, every 5 – 10 minutes as needed for sedation (maximum 20 mg).
- Contact **Medical Direction** for additional dosing.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Midazolam (Versed) *(continued)*

Indications:

- Seizure control.
- Sedation.
- Anxiolytic.

Nerve Agent/Organophosphate Poisoning

- 2.5 mg IV/intranasal, may repeat every 5 minutes **OR**
- 5 mg IM, may repeat every 10 minutes.

Pain Management

- **Antidote:** For dysphoria (emergence reaction) caused by ketamine,
  - 1 – 2 mg IV/IM every 5 minutes as needed.

Poisoning/Substance Abuse/Overdose

- 2.5 mg IV/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

Rapid Sequence Intubation: Post-Intubation Care

- 2.5 – 5 mg IV, every 5 – 10 minutes as needed for sedation (maximum 20 mg).
  - Contact **Medical Direction** for additional dosing.

Rapid Sequence Intubation: Sedation

- 0.2 mg/kg IV/IO (0.1mg/kg IV/IO for patients in shock).

Restraints: Resistant or Aggressive Behavior

- Contact **Medical Direction** to consider:
  - 5 mg IM/IN
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

Restraints: Violent/Combative Behavior, OR Delirium with Agitated Behavior:

- Contact **Medical Direction** to consider:
  - 5 mg IM, **OR**
  - 2.5 mg IV
    - May combine and administer Benzodiazepine and Haloperidol in one syringe.
    - Contact **Medical Direction** if additional dosing is needed.

Seizure

- May assist with patient's own intranasal midazolam as prescribed.
- 10 mg IM (preferred if no IV access established) or intranasal, may repeat 10 mg IM/IN every 10 minutes (maximum dose 20 mg). **Note**: 5 mg/mL concentration is required for IM/intranasal **OR**
- 5 mg IV, may repeat every 5 minutes until seizure activity resolved (maximum dose 20 mg).

Supraglottic Airway

- Midazolam 2.5 – 5 mg IV/IO every 5 – 10 minutes, as needed (maximum 20 mg).

Tachycardia: Sedation for Cardioversion

- 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

Traumatic Brain Injury

- 2.5 mg IV/IO/intranasal, may repeat once in 5 minutes **OR**
- 5 mg IM, may repeat once in 10 minutes.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Morphine Sulfate **Indications:** • Narcotic analgesic **Contraindications:** • Avoid use if BP < 100 mmHg. • Associated with increased mortality in Acute Coronary Syndrome.	**Acute Coronary Syndrome** • 2 – 4 mg IV/IM every 5 minutes to a maximum of 15 mg titrated to pain and systolic BP remains ≥100 mmHg. **Bradycardia: Analgesia for Cardiac Pacing** • 2 – 4 mg IV every 10 minutes to a total of 15 mg and systolic BP ≥100 mmHg. **Pain Management** • 2 – 5 mg IV/IM every 10 minutes to a total of 20 mg titrated to pain relief and if systolic BP is > 100 mmHg. • Contact **Medical Direction** for additional dosing.
Naloxone (Narcan) **Indications:** • Opioid overdose.	**Altered Mental Status (Unknown Etiology)** • 1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 12 mg. • Single spray of NARCAN® Nasal Spray (4 mg/0.1 ml) into one nostril. May repeat every 3 – 5 minutes if no response or patient relapses, to a total of 12 mg. • 0.4 – 2 mg IV/IM/IO/SQ/intranasal, titrated to response. If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg. **Cardiac Arrest with suspected opioid overdose** • 4 mg intranasal (EMT) • 2 mg IV/IO (AEMT) **Pain Management** • **Antidote:** For hypoventilation from opiate administration by EMS personnel, administer naloxone 0.4 – 2.0 mg SQ/IV/IO/IM or 2.0 – 4.0 mg intranasal as needed. **Poisoning/Substance Abuse/Overdose** **Narcotic Overdose** • 1 mg (1 mL) per nostril via atomizer for a maximum of 2 mg. May repeat every 3 – 5 minutes if no response to a maximum of 12 mg. • Single spray of NARCAN® Nasal Spray (4 mg/0.1 ml) into one nostril. May repeat every 3 – 5 minutes if no response or if patient relapses, to a total of 12 mg. • 0.4 – 2 mg IV/IM/IO/SQ/intranasal, titrated to response. ▪ If no response, may repeat initial dose every 3 – 5 minutes to a total of 12 mg.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Nitroglycerin

Indications:

- Vasodilator used in the treatment of chest pain secondary to acute coronary syndrome and CHF
- Infusion pump required for infusion.

Contraindications:

- Avoid in any patient who has used a phosphodiesterase inhibitor for erectile dysfunction and pulmonary hypotension, such as sildenafil (Viagra, Revatio) or vardenafil (Levitra, Staxyn) within 24 hours or tadalafil (Cialis, Adcirca) within 48 hours.
- Avoid in patients receiving IV prostacyclins for pulmonary hypertension.

Acute Coronary Syndrome

- Facilitate administration of patient's own nitroglycerin every 3 – 5 minutes while symptoms persist and systolic BP remains ≥100 mmHg, to a total of 3 doses. Contact **Medical Direction** for additional dosing.
- 0.4 mg SL every 3 – 5 minutes while symptoms persist and if systolic BP remains ≥100 mmHg (MAP ≥ 65).
- 10 – 30 mcg/min IV if symptoms persist (must be on a pump).
  - Increase IV nitroglycerin by 10 mcg/min every 5 minutes while symptoms persist and systolic remains ≥100 mmHg, max rate 200 mcg/min. Two (2) IV lines or equivalent are recommended, and IV nitroglycerin must be on an infusion pump.
- If IV nitroglycerin is not available, consider the application of nitroglycerin paste 1 – 2 inches transdermal.

Congestive Heart Failure

- Contact **Medical Direction** for online order to facilitate administration of the patient's own nitroglycerin, while symptoms persist and systolic BP is ≥ 140 mmHg (EMT).
- 0.4 mg SL every 3 – 5 minutes while symptoms persist and systolic BP is ≥140 mmHg.
- Contact **Medical Direction** to consider nitroglycerin:
  - For systolic BP of 140 – 160 mmHg: nitroglycerin 0.4 mg SL.
  - For systolic BP of 160 – 200 mmHg: nitroglycerin 0.8 mg SL (2 tabs/sprays).
  - For systolic BP > 200 mmHg: nitroglycerin 1.2 mg SL (3 tabs/sprays).
  - The above doses may be repeated every 5 minutes until symptomatic improvement or systolic BP is 140 mmHg.
- Titrate IV drip until symptomatic improvement or systolic BP of 140 mmHg:
  - For systolic BP of 140 – 160 mmHg: IV nitroglycerin start at 50 mcg/min.
  - For systolic BP of 160 – 200 mmHg: IV nitroglycerin start at 100 mcg/min.
  - For systolic BP > 200 mmHg: IV nitroglycerin start at 200 mcg/min.
  - Note: It is recommended two (2) IV lines in place and the IV nitroglycerin must be on an infusion pump. Maximum dose of 400 mcg/min.
- If patient improves after SL, may apply nitroglycerin paste 1" – 2" transdermal.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Nitrous Oxide **Indications:** • Non-narcotic analgesic gas **Contraindications:** • Contraindicated in abdominal pain, head/facial/chest/ abdominal trauma, headache/migraine, altered mental status, pregnancy, pneumothorax, head injury, or diving emergency patients. • Not to be used if patient has received an opiate. • **Must have approval of District Medical Advisor** • Requires use of scavenger/ventilation fan and open window.	**Pain Management for isolated extremity injuries (suspected fractures) or global soft tissue injuries (e.g., burns or road rash) or uncomplicated back/flank pain or renal colic (kidney stone)** • Patient must be able to self-administer this medication for pain control as needed.
Norepinephrine (Levophed) **Indications:** • Alpha and Beta 1 receptor adrenergic receptor agonist vasopressor • Infusion pump required.	**Post Resuscitation Care** • Infusion 1 – 30 mcg/min IV/IO, titrated to effect. **Sepsis** • Infuse 1 – 30 mcg/min IV/IO (preferred 1st line agent). **Shock** • Infusion 1 – 30 mcg/min (preferred 1st line agent).
Normal Saline (0.9% NaCl) **Indications:** • Isotonic vehicle for dilution and/or dissolution of drugs for IV, IM, or SC injection or flushing of indwelling access • Isotonic fluid use for fluid resuscitation	**Use per Protocol**
Ondansetron (Zofran) Anti-emetic **Indications:** • Anti-emetic used to control nausea and/or vomiting.	**Nausea/Vomiting** • 4 mg PO/ODT/IV/IM ▪ May give IV solution by oral route. ▪ Paramedics repeat once after 10 minutes if nausea/vomiting persists.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Oxygen **Indications:** • Indicated in any condition with increased cardiac workload, respiratory distress, or illness or injury resulting in altered ventilation and/or perfusion. Goal oxygen saturation 94 – 98%. • Indicated for pre-oxygenation whenever possible prior to endotracheal intubation. Goal oxygen saturation 100%.	**Administer oxygen as appropriate with a target of achieving 94-98% saturation:** • 1 – 4 liters/min via nasal cannula. • 6 – 15 liters/min via NRB mask. • 15 liters via BVM / ETT / supraglottic airway.
Oxymetazoline (Afrin) **Indications:** • Alpha adrenergic agonist provides vasoconstriction for epistaxis **Contraindications:** • Heart disease (increased BP, HR, palpitations). • Pregnancy.	**Epistaxis/Nosebleed** • 2 sprays into the affected nostril followed by direct pressure.
Oxytocin (Pitocin) **Indications:** Post-partum hemorrhage after placental delivery.	**Normal Labor and Delivery** • 10 units IM. **Obstetrical Emergencies** • 10 units IM
Phenylephrine (Neo-Synephrine) **Contraindications:** • Cardiac disease (increased BP, HR, palpitations) • Use of MAO inhibitors; risk of hypertensive reaction • Pregnancy	**Epistaxis/Nosebleed** • 2 sprays into affected nostril followed by direct pressure **Nasotracheal Intubation** • Pre-medicate nasal mucosa with a vasoconstricting nasal decongestant spray such as neo-synephrine, if available.

Return to TOC

This document is to serve as a reference for the 2025 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Pralidoxime (2-PAM) **Indications:** • Antidote for Nerve Agents or Organophosphate Overdose. • Administered with Atropine.	**Nerve Agent** • 1 – 2 gram IV. ▪ Reconstitute pralidoxime 1 gram vial with 20 mL sterile water for injection. ▪ Dilute reconstituted pralidoxime 1 gram in 100 mL of 0.9% NaCl (may dilute 1-2 grams in this manner). ▪ Infuse over 5 minutes (1 gram dose) to 10 minutes (2 gram dose). • Maintenance infusion: ▪ Reconstitute pralidoxime 1 gram vial with 20 mL sterile water or 0.9% NaCl for injection. ▪ Dilute reconstituted pralidoxime 1 gram in 100 mL of 0.9% NaCl. ▪ Infuse 1 gram over 15 – 30 minutes, followed by continuous infusion at 500 mg/hr, to a maximum of 12 grams/day.
Procainamide **Indications:** • Ventricular arrhythmia **Contraindications:** • Avoid if prolonged QTc or CHF • Complete heart block, 2nd/3rd degree AV block, Torsades de pointes, systemic lupus erythemasosus	**Wide complex tachycardia (infusion pump required):** • Procainamide 10 mg/kg IV. Dilute in 100 mL of 0.9% NaCl (1500 mg max dose) and give via pump over 20 minutes until arrythmia suppressed, hypotension (SBP < 90), or QRS duration increases > 50%. Avoid if prolonged QTc or CHF.
Prochlorperazine (Compazine) **Indications:** • Anti-Emetic used to control Nausea and/or Vomiting.	**Nausea/Vomiting** • 5 – 10 mg slow IV push over 1-2 minutes, **OR**, • 10 mg IM ▪ May repeat once after 10 minutes if nausea/vomiting persists. ▪ May repeat IM every 4 – 6 hours as needed – *extended care protocol*. ▪ Administer IV slowly, over 1 – 2 minutes, to reduce dystonic reactions.
Proparacaine (Alcaine) **Indications:** • Topical anesthetic	**Eye Injuries** • 2 drops to affected eye; repeat every 5 minutes as needed.

Return to TOC

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Rocuronium **Indications:** • Non-depolarizing paralytic agent used as a component of rapid sequence intubation, when succinylcholine is contraindicated and for post intubation paralysis. • Onset of action is longer than succinylcholine, up to 3 minutes, patient will NOT fasciculate.	**Rapid Sequence Intubation** **Post Intubation Paralytic** • 1 mg/kg IV/IO via **on-line Medical Direction** only. **Rapid Sequence Intubation** **{Sedate then} Paralyze** • 1 mg/kg IV/IO.
Sodium Bicarbonate **Indications:** • A buffer used in acidosis to increase the pH in Cardiac Arrest, Hyperkalemia or Tricyclic (Cyclic) Overdose, crush syndrome **Contraindications:** • Do not routinely use in cardiac arrest • Avoid extravasation	**Poisoning/Substance Abuse/Overdose** **Tricyclic (Cyclic) with symptomatic dysrhythmias, (eg. tachycardia and wide QRS):** • 1 – 2 mEq/kg IV/IO. **Cardiac Arrest: Wide Complex PEA or Pre-Existing Metabolic Acidosis** • 1 – 2 mEq/kg IV/IO **Crush/Suspension Injury** • 1 mEq/kg (maximum dose 50 mEq) IV/IO bolus over 5 minutes. ▪ Infusion secondary to initial bolus: 150 mEq in 1000 mL D5W at a rate of 250 mL/hour or 4mL/min – *extended care protocol.* **Hyperkalemia** • 1 mEq/kg (maximum dose 50 mEq) IV/IO bolus over 5 minutes.
Succinylcholine Paralytic Agent **Indications:** • Paralytic Agent used as a component of rapid sequence intubation. **Contraindications** • Avoid in patients with burns >24 hours old, chronic neuromuscular disease (e.g., muscular dystrophy), ESRD, or other situation in which hyperkalemia is likely.	**Rapid Sequence Intubation** **{Sedate then} Paralyze** • 1.5 mg/kg IV/IO immediately after sedation.
Tetracaine **Indications:** • Topical anesthetic	**Eye Injuries** • 2 drops to affected eye; repeat every 5 minutes as needed.

Return to TOC

This document is to serve as a reference for the 2053 Vermont Statewide Protocols.
See the Pediatric Color Coded Appendix for pediatric dosages

Tranexamic Acid (TXA) **Indications:** • See Traumatic Emergencies – 4.12 • **Must have approval of District Medical Advisor to use TXA.**	**Obstetrical Emergencies** • Mix 1 gram TXA in 50 – 100 mL 0.9% NaCl. Infuse via wide-open IV/IO bolus over approximately 10 minutes. ▪ Notify receiving facility of TXA administration prior to arrival. **Tranexamic Acid** • Mix 1 gram TXA in 50 - 100 mL 0.9% NaCl. Infuse via wide-open IV/IO bolus over approximately 10 minutes. ▪ Notify receiving facility of TXA administration prior to arrival.
Vasopressin **Indications:** • Posterior pituitary hormone (ADH) vasoconstrictor • Used in cardiac arrest, vasodilatory shock	**Use by CCP in IFT per Medical Direction only** **Cardiac Arrest** • **40 Units IV/IO x 1** **Shock** • 0.02-0.1 units/min IV infusion per interfacility transfer orders, typically a second line pressor
Vecuronium Paralytic Agent **Indications:** • Long-acting non-depolarizing paralytic agent. **Contraindications:** • Avoid in patients with chronic neuromuscular disease (e.g., muscular dystrophy).	**Rapid Sequence Intubation** **Post Intubation Paralysis** • 0.1 mg/kg IV/IO **via on-line Medical Direction only**. **Rapid Sequence Intubation** **{Sedate then} Paralyze** • 0.1 mg/kg IV/IO.

Return to TOC

Weight 3-5 Kg (Avg 4.0 Kg) / Length < 59.5 cm

Gray (0-3 months)

Vital Signs		Dextrose 10%	20 mL	Lidocaine	
Heart Rate	120-150	Diazepam (IV)	0.4 mg	Cardiac Arrest	4 mg
Respirations	24-48	Diphenhydramine	HOLD	Traumatic Brain Injury	6 mg
BP Systolic	70 (+/-25)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	2 mg
		Cardiac	0.04 mg	Wide Complex Tachy	4 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	0.4 mg
ET Tube	2.5 - 3.5	Nebulized	2.5 mg	Magnesium Sulfate	
Blade Size	0 - 1	IM	0.15 mg	RAD	160 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	200 mg
Defibrillation		0.1 mcg/kg/min	1.5 mL/hr	Methylprednisolone	4 mg
Defibrillation	8 J, 15 J	0.2 mcg/kg/min	3 mL/hr	Midazolam IM	0.8 mg
Cardioversion	4 J, 8 J	0.3 mcg/kg/min	4.5 mL/hr	Midazolam IV	0.4 mg
		0.4 mcg/kg/min	6 mL/hr	Morphine Sulfate	0.4 mg
Normal Saline	80 mL	0.5 mcg/kg/min	7.5 mL/hr	Naloxone	0.4 mg
		Fentanyl	4 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	60 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	.75 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	1.5 mL/hr
1st Dose	0.4 mg	Hydrocortisone	10 mg	0.5 mcg/kg/min	3.8 mL/hr
Repeat Dose	0.8 mg	Hydroxocobalamin	300 mg	1 mcg/kg/min	7.5 mL/hr
Albuterol	2.5 mg	Ibuprofen	HOLD	2 mcg/kg/min	15 mL/hr
Amiodarone	20 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	0.4 mg
Atropine- Bradycardia	0.1 mg			Pralidoxime IM	60 mg
- Organophosphate Poison	0.2 mg			IV (over 15-30 mins)	200 mg
Calcium Chloride	80 mg			Proparacaine	2 drops
Dexamethasone	2.4 mg			Sodium Bicarbonate	4 mEq
				Tetracaine	2 drops

Weight 6-7 Kg (Avg 6.5 Kg) / Length 59.5-66.5 cm

Pink (3-6 months)

Vital Signs		Dextrose 10%	35 mL	Lidocaine	
Heart Rate	120-150	Diazepam (IV)	0.65 mg	Cardiac Arrest	6.5 mg
Respirations	24-48	Diphenhydramine	HOLD	Traumatic Brain Injury	9.75 mg
BP Systolic	85 (+/-25)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	3.25 mg
		Cardiac	0.065 mg	Wide Complex Tachy	6.5 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	0.65 mg
ET Tube	3.5	Nebulized	2.5 mg	Magnesium Sulfate	
Blade Size	1	IM	0.15 mg	RAD	260 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	325 mg
Defibrillation		0.1 mcg/kg/min	2.4 mL/hr	Methylprednisolone	6 mg
Defibrillation	10 J, 20 J	0.2 mcg/kg/min	4.9 mL/hr	Midazolam IM	1.3 mg
Cardioversion	5 J, 10 J	0.3 mcg/kg/min	7.3 mL/hr	Midazolam IV	0.65 mg
		0.4 mcg/kg/min	9.7 mL/hr	Morphine Sulfate	0.6 mg
Normal Saline	130 mL	0.5 mcg/kg/min	12.2 mL/hr	Naloxone	0.6 mg
		Fentanyl	6.5 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	100 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	1.2 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	2.5 mL/hr
1st Dose	0.65 mg	Hydrocortisone	10 mg	0.5 mcg/kg/min	6.1 mL/hr
Repeat Dose	1.3 mg	Hydroxocobalamin	400 mg	1 mcg/kg/min	12.2 mL/hr
Albuterol	2.5 mg	Ibuprofen	HOLD	2 mcg/kg/min	24.4 mL/hr
Amiodarone	30 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	0.6 mg
Atropine- Bradycardia	0.13 mg			Pralidoxime IM	100 mg
- Organophosphate Poison	0.32 mg			IV (over 15-30 min)	325 mg
Calcium Chloride	130 mg			Proparacaine	2 drops
Dexamethasone	3.9 mg			Sodium Bicarbonate	7 mEq
				Tetracaine	2 drops

Weight 8-9 Kg (Avg 8.5 Kg) / Length 66.5-74 cm

Red (7-10 months)

Vital Signs		Dextrose 10%	43 mL	Lidocaine	
Heart Rate	120	Diazepam (IV)	0.85 mg	Cardiac Arrest	8.5 mg
Respirations	24-32	Diphenhydramine	HOLD	Traumatic Brain Injury	12.75 mg
BP Systolic	92 (+/-25)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	4.25 mg
		Cardiac	0.085 mg	Wide Complex Tachy	8.5 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	0.85 mg
ET Tube	3.5-4.0	Nebulized	2.5 mg	Magnesium Sulfate	
Blade Size	1	IM	0.15 mg	RAD	340 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	425 mg
Defibrillation		0.1 mcg/kg/min	3.2 mL/hr	Methylprednisolone	8 mg
Defibrillation	20 J, 40 J	0.2 mcg/kg/min	6.4 mL/hr	Midazolam IM	1.7 mg
Cardioversion	9 J, 18 J	0.3 mcg/kg/min	9.5 mL/hr	Midazolam IV	0.85 mg
		0.4 mcg/kg/min	12.8 mL/hr	Morphine Sulfate	0.8 mg
Normal Saline	170 mL	0.5 mcg/kg/min	15.9 mL/hr	Naloxone	0.8 mg
		Fentanyl	8.5 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	130 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	1.6 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	3.2 mL/hr
1st Dose	0.85 mg	Hydrocortisone	20 mg	0.5 mcg/kg/min	8 mL/hr
Repeat Dose	1.7 mg	Hydroxocobalamin	600 mg	1 mcg/kg/min	15 mL/hr
Albuterol	2.5 mg	Ibuprofen	80 mg	2 mcg/kg/min	31.9 mL/hr
Amiodarone	40 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	0.8 mg
Atropine- Bradycardia	0.17 mg			- ODT	2 mg
- Organophosphate Poison	0.42 mg			Pralidoxime IM	125 mg
Calcium Chloride	170 mg			IV (over 15-30 min)	425 mg
Dexamethasone	5.1 mg			Proparacaine	2 drops
				Sodium Bicarbonate	9 mEq
				Tetracaine	2 drops

Weight 10-11 Kg (Avg 10.5 Kg) / Length 74-84.5 cm

Purple (11-18 months)

Vital Signs		Dextrose 10%	50 mL	Lidocaine	
Heart Rate	115-120	Diazepam (IV)	1 mg	Cardiac Arrest	10.5 mg
Respirations	22-30	Diphenhydramine	12.5 mg	Traumatic Brain Injury	15.75 mg
BP Systolic	96 (+/-30)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	5.25 mg
		Cardiac	0.105 mg	Wide Complex Tachy	10.5 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	1 mg
ET Tube	4	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	1	IM	0.15 mg	RAD	420 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	525 mg
Defibrillation		0.1 mcg/kg/min	3.9 mL/hr	Methylprednisolone	10 mg
Defibrillation	20 J, 40 J	0.2 mcg/kg/min	7.9 mL/hr	Midazolam IM	2 mg
Cardioversion	10 J, 20 J	0.3 mcg/kg/min	11.8 mL/hr	Midazolam IV	1 mg
		0.4 mcg/kg/min	15.8 mL/hr	Morphine Sulfate	1 mg
Normal Saline	210 mL	0.5 mcg/kg/min	19.7 mL/hr	Naloxone	1 mg
		Fentanyl	10.5 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	160 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	2 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	4 mL/hr
1st Dose	1.05 mg	Hydrocortisone	20 mg	0.5 mcg/kg/min	9.9 mL/hr
Repeat Dose	2.1 mg	Hydroxocobalamin	700 mg	1 mcg/kg/min	19.7 mL/hr
Albuterol	2.5 mg	Ibuprofen	100 mg	2 mcg/kg/min	39.4 mL/hr
Amiodarone	50 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	1 mg
Atropine- Bradycardia	0.21 mg			- ODT	2 mg
- Organophosphate Poison	0.52 mg			Pralidoxime IM	150 mg
Calcium Chloride	210 mg			IV (over 15-30 min)	525 mg
Dexamethasone	6.3 mg			Proparacaine	2 drops
				Sodium Bicarbonate	11 mEq
				Tetracaine	2 drops

Weight 12-14 Kg (Avg 13 Kg) / Length 84.5-97.5 cm

Yellow (19-35 months)

Vital Signs		Dextrose 10%	70 mL	Lidocaine	
Heart Rate	110-115	Diazepam (IV)	1.3 mg	Cardiac Arrest	13 mg
Respirations	20-28	Diphenhydramine	16 mg	Traumatic Brain Injury	19.5 mg
BP Systolic	100 (+/-30)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	6.5 mg
		Cardiac	0.13 mg	Wide Complex Tachy	13 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	1.3 mg
ET Tube	4.5	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	2	IM	0.15 mg	RAD	520 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	650 mg
Defibrillation		0.1 mcg/kg/min	4.9 mL/hr	Methylprednisolone	13 mg
Defibrillation	30 J, 50 J	0.2 mcg/kg/min	9.8 mL/hr	Midazolam IM	2.6 mg
Cardioversion	15 J, 30 J	0.3 mcg/kg/min	14.6 mL/hr	Midazolam IV	1.3 mg
		0.4 mcg/kg/min	19.5 mL/hr	Morphine Sulfate	1.3 mg
Normal Saline	260 mL	0.5 mcg/kg/min	24.4 mL/hr	Naloxone	1.3 mg
		Fentanyl	13 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	195 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	2.5 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	4.9 mL/hr
1st Dose	1.3 mg	Hydrocortisone	30 mg	0.5 mcg/kg/min	12.2 mL/hr
Repeat Dose	2.6 mg	Hydroxocobalamin	900 mg	1 mcg/kg/min	24.4 mL/hr
Albuterol	2.5 mg	Ibuprofen	120 mg	2 mcg/kg/min	48.8 mL/hr
Amiodarone	60 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	1.3 mg
Atropine- Bradycardia	0.26 mg			- ODT	2 mg
- Organophosphate Poison	0.65 mg			Pralidoxime IM	200 mg
Calcium Chloride	260 mg			IV (over 15-30 min)	650 mg
Dexamethasone	7.8 mg			Proparacaine	2 drops
				Sodium Bicarbonate	13 mEq
				Tetracaine	2 drops

Weight 15-18 Kg (Avg 16.5 Kg) / Length 97.5-110 cm

White (3-4 years)

Vital Signs		Dextrose 10%	80 mL	Lidocaine	
Heart Rate:	110-115	Diazepam (IV)	1.7 mg	Cardiac Arrest	16.5 mg
Respirations	20-26	Diphenhydramine	20 mg	Traumatic Brain Injury	24.75 mg
BP Systolic	100 (+/-20)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	8.25 mg
		Cardiac	0.165 mg	Wide Complex Tachy	16.5 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	1.7 mg
ET Tube	5	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	2	IM	0.15 mg	RAD	650 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	800 mg
Defibrillation		0.1 mcg/kg/min	6.2 mL/hr	Methylprednisolone	16 mg
Defibrillation:	30 J, 70 J	0.2 mcg/kg/min	12.4 mL/hr	Midazolam IM	3.3 mg
Cardioversion:	15 J, 30 J	0.3 mcg/kg/min	18.6 mL/hr	Midazolam IV	1.7 mg
		0.4 mcg/kg/min	24.8 mL/hr	Morphine Sulfate	1.6 mg
Normal Saline	330 mL	0.5 mcg/kg/min	30.9 mL/hr	Naloxone	1.6 mg
		Fentanyl	16.5 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	250 mg	Glucagon	0.5 mg	0.1 mcg/kg/min	3.1 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	6.2 mL/hr
1st Dose	1.65 mg	Hydrocortisone	30 mg	0.5 mcg/kg/min	15.5 mL/hr
Repeat Dose	3.3 mg	Hydroxocobalamin	1200 mg	1 mcg/kg/min	30.9 mL/hr
Albuterol	2.5 mg	Ibuprofen	160 mg	2 mcg/kg/min	61.9 mL/hr
Amiodarone	80 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	1.6 mg
Atropine- Bradycardia	0.33 mg			- ODT	4 mg
- Organophosphate Poison	0.82 mg			Pralidoxime IM	250 mg
Calcium Chloride	330 mg			IV (over 15-30 min)	825 mg
Dexamethasone	10 mg			Proparacaine	2 drops
				Sodium Bicarbonate	17 mEq
				Tetracaine	2 drops

Weight 19-22 Kg (Avg 20.75 Kg) / Length 110-122 cm

Blue (5-6 years)

Vital Signs		Dextrose 10%	100 mL	Lidocaine	
Heart Rate	100	Diazepam (IV)	2 mg	Cardiac Arrest	20.75 mg
Respirations	20-24	Diphenhydramine	30 mg	Traumatic Brain Injury	31.125 mg
BP Systolic	100 (+/-15)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	10.375 mg
		Cardiac	0.21 mg	Wide Complex Tachy	20.75 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	2.7 mg
ET Tube	5.5	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	2	IM	0.15 mg	RAD	850 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	1050 mg
Defibrillation		0.1 mcg/kg/min	7.8 mL/hr	Methylprednisolone	20 mg
Defibrillation	40 J, 85 J	0.2 mcg/kg/min	15.6 mL/hr	Midazolam IM	4 mg
Cardioversion	20 J, 40 J	0.3 mcg/kg/min	23.3 mL/hr	Midazolam IV	2 mg
		0.4 mcg/kg/min	31.1 mL/hr	Morphine Sulfate	2 mg
Normal Saline	415 mL	0.5 mcg/kg/min	37.5 mL/hr*	Naloxone	2 mg
		Fentanyl	20 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	311 mg	Glucagon	1 mg	0.1 mcg/kg/min	3.9 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	7.8 mL/hr
1st Dose	2 mg	Hydrocortisone	40 mg	0.5 mcg/kg/min	19.5 mL/hr
Repeat Dose	4 mg	Hydroxocobalamin	1500 mg	1 mcg/kg/min	33.9 mL/hr
Albuterol	2.5 mg	Ibuprofen	200 mg	2 mcg/kg/min	77.8 mL/hr
Amiodarone	100 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetro - IV	2 mg
Atropine- Bradycardia	0.41 mg			- ODT	4 mg
- Organophosphate Poison	1 mg			Pralidoxime IM	300 mg
Calcium Chloride	415 mg			IV (over 15-30 min)	1000 mg
Dexamethasone	10 mg			Proparacaine	2 drops
* Maximum dose				Sodium Bicarbonate	21 mEq
				Tetracaine	2 drops

Weight 23-29 Kg (Avg 27 Kg) / Length 122-137 cm

Orange (7-9 years)

Vital Signs		Dextrose 10%	135 mL	Lidocaine	
Heart Rate	90	Diazepam (IV)	2.7 mg	Cardiac Arrest	27 mg
Respirations	18-22	Diphenhydramine	40 mg	Traumatic Brain Injury	40.5 mg
BP Systolic	105 (+/-15)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	13.5 mg
		Cardiac	0.27 mg	Wide Complex Tachy	27 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	2.7 mg
ET Tube	6	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	2-3	IM	0.3 mg	RAD	1100 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	1350 mg
Defibrillation		0.1 mcg/kg/min	10.1 mL/hr	Methylprednisolone	27 mg
Defibrillation	50 J, 100 J	0.2 mcg/kg/min	20.3 mL/hr	Midazolam IM	5.4 mg
Cardioversion	30 J, 60 J	0.3 mcg/kg/min	30.4 mL/hr	Midazolam IV	2.7 mg
		0.4 mcg/kg/min	37.5 mL/hr*	Morphine Sulfate	2.7 mg
Normal Saline	540 mL	0.5 mcg/kg/min	37.5 mL/hr*	Naloxone	2 mg
		Fentanyl	27 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	405 mg	Glucagon	1 mg	0.1 mcg/kg/min	5.1 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	10.2 mL/hr
1st Dose	2.7 mg	Hydrocortisone	60 mg	0.5 mcg/kg/min	25.3 mL/hr
Repeat Dose	5.4 mg	Hydroxocobalamin	1900 mg	1 mcg/kg/min	50.6 mL/hr
Albuterol	2.5 mg	Ibuprofen	270 mg	2 mcg/kg/min	101.3 mL/hr
Amiodarone	135 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	2.7 mg
Atropine- Bradycardia	0.5 mg			- ODT	4 mg
- Organophosphate Poison	1.3 mg			Pralidoxime IM	400 mg
Calcium Chloride	540 mg			IV (over 15-30 min)	1000 mg
Dexamethasone	10 mg			Proparacaine	2 drops
* Maximum dose				Sodium Bicarbonate	27 mEq
				Tetracaine	2 drops

Weight 30-36 Kg (Avg 33 Kg) / Length 137-150 cm

Green (10-12 years)

Vital Signs		Dextrose 10%	180 mL	Lidocaine	
Heart Rate	85-90	Diazepam (IV)	3.3 mg	Cardiac Arrest	33 mg
Respirations	16-22	Diphenhydramine	50 mg	Traumatic Brain Injury	50 mg
BP Systolic	115 (+/-20)	Epinephrine 0.1 mg/mL (1:10,000)		Intraosseous	18 mg
		Cardiac	0.33 mg	Wide Complex Tachy	33 mg
Equipment		Epinephrine 1 mg/mL (1:1,000)		Lorazepam	3.3 mg
ET Tube	6.5	Nebulized	5 mg	Magnesium Sulfate	
Blade Size	3	IM	0.3 mg	RAD	1320 mg
		Infusion (4 mg in D5W 250 mL)		Torsades	1650 mg
Defibrillation		0.1 mcg/kg/min	12.4 mL/hr	Methylprednisolone	33 mg
Defibrillation	60 J, 130 J	0.2 mcg/kg/min	24.8 mL/hr	Midazolam IM	6.6 mg
Cardioversion	30 J, 60 J	0.3 mcg/kg/min	37.1 mL/hr	Midazolam IV	3.3 mg
		0.4 mcg/kg/min	37.5 mL/hr*	Morphine Sulfate	3.3 mg
Normal Saline	660 mL	0.5 mcg/kg/min	37.5 mL/hr*	Naloxone	2 mg
		Fentanyl	33 mcg	Norepinephrine (8 mg in D_5W 250 mL)	
Acetaminophen	595 mg	Glucagon	1 mg	0.1 mcg/kg/min	6.2 mL/hr
Adenosine		Glucose Oral	1 tube	0.2 mcg/kg/min	12.4 mL/hr
1st Dose	3.3 mg	Hydrocortisone	80 mg	0.5 mcg/kg/min	31 mL/hr
Repeat Dose	6.6 mg	Hydroxocobalamin	2500 mg	1 mcg/kg/min	61.9 mL/hr
Albuterol	2.5 mg	Ibuprofen	330 mg	2 mcg/kg/min	123.8 mL/hr
Amiodarone	165 mg	Ipratropium w/ albuterol	0.5 mg	Ondansetron - IV	3.3 mg
Atropine- Bradycardia	0.5 mg			- ODT	4 mg
- Organophosphate Poison	1.8 mg			Pralidoxime IM	500 mg
Calcium Chloride	660 mg			IV (over 15-30 min)	1000 mg
Dexamethasone	10 mg			Proparacaine	2 drops
* Maximum dose				Sodium Bicarbonate	33 mEq
				Tetracaine	2 drops

Return to TOC

Scope of Practice
Adult & Pediatric Other Skills

A.6

ADULT & PEDIATRIC OTHER SKILLS	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Advanced Spinal Assessment			√	√	√	√
Cervical Spinal Immobilization	**Manual Stabilization**	√	√	√	√	√
Cold Pack	√	√	√	√	√	√
Emergency Moves for Endangered Patients	√	√	√	√	√	√
Eye Irrigation (Morgan Lens)					√	√
Hot Pack		√	√	√	√	√
Procedural Sedation for Transcutaneous Pacing					√	√
Restraints – Pharmacological					√	√
Restraints – Physical			√	√	√	√
Spinal Immobilization – Lying (Long board)	**Manual Stabilization**	**Manual Stabilization**	√	√	√	√
Spinal Immobilization – Seated (K.E.D.)	**Manual Stabilization**	**Manual Stabilization**	√	√	√	√
Spinal Motion Restriction	**Manual Stabilization**	√	√	√	√	√
Splinting	**√-basic**	√	√	√	√	√
Splinting – Traction	**Manual Stabilization**	**Manual Stabilization**	√	√	√	√
Stroke Scale System	√	√	√	√	√	√
Temperature		√	√	√	√	√
Trauma Triage		√	√	√	√	√
Tourniquet	√	√	√	√	√	√
Wound Care – Occlusive Dressing		√	√	√	√	√
Wound Care – Pressure Bandage	√	√	√	√	√	√
Wound Care – Hemostatic Bandage	√	√	√	√	√	√

Return to TOC

Scope of Practice
Adult Airway Management

A.6

ADULT AIRWAY MANAGEMENT	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Auto Transport Ventilator				√	√	√
BiPAP					√	√
BVM		√	√	√	√	√
Capnography				√	√	√
Chest Tube Maintenance					√	√
CPAP			√	√	√	√
Endotracheal Intubation					√	√
Endotracheal Suctioning				√	√	√
Extubation					√	√
Heimlich Maneuver	√	√	√	√	√	√
High-Flow Nasal Cannula					√	√
Nasogastric Tube					√	√
Nasopharyngeal Airway			√	√	√	√
Nasotracheal Intubation					√	√
Nebulizer Treatment			√	√	√	√
Needle Decompression					√	√
Oral Suctioning		√	√	√	√	√
Orogastric Tube					√	√
Oropharyngeal Airway		√	√	√	√	√
Oxygen Administration		√	√	√	√	√
Percutaneous Cricothyrotomy					√	√
Pulse Oximetry		√	√	√	√	√
Rapid Sequence Intubation					**See Protocol**	**See Protocol**
Supraglottic Airway				√	√	√
Surgical Cricothyrotomy					√	√
Tracheostomy Maintenance			√	√	√	√
Tracheostomy Replacement					√	√

Return to TOC

Scope of Practice
Pediatric Airway Management
A.6

PEDIATRIC AIRWAY MANAGEMENT	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Auto Transport Ventilator				√	√	√
BVM		√	√	√	√	√
Capnography				√	√	√
CPAP				√	√	√
Endotracheal Intubation					√	√
Endotracheal Suctioning				√	√	√
Extubation					√	√
Heimlich Maneuver	√	√	√	√	√	√
High-Flow Nasal Cannula					√	√
Nasogastric Tube					√	√
Nasopharyngeal Airway			√	√	√	√
Nebulizer Treatment			√	√	√	√
Needle Decompression					√	√
Oral Suctioning		√	√	√	√	√
Orogastric Tube					√	√
Oropharyngeal Airway		√	√	√	√	√
Oxygen Administration		√	√	√	√	√
Percutaneous Cricothyrotomy					√	√
Pulse Oximetry		√	√	√	√	√
Supraglottic Airway				√	√	√
Surgical Cricothyrotomy (age ≥ 8)					√	√
Tracheostomy Maintenance			√	√	√	√
Tracheostomy Replacement					√	√

Return to TOC

Scope of Practice
Medication Administration Route
A.6

ADULT MEDICATION ADMINISTRATION ROUTE	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Auto Injector	Assist with	Assist with	√	√	√	√
Blood Products					√	√
Endotracheal					√	√
Inhalation	Assist MDI	Assist MDI	√	√	√	√
Intramuscular			*	√	√	√
Intraosseous				√	√	√
Intravenous				√	√	√
Intravenous Pump					√	√
Oral			√	√	√	√
Intranasal	√ Narcan Only	√ Narcan Only	√ Narcan or Assist	√	√	√
Rectal			Assist	Assist	√	√
Subcutaneous				√	√	√
Sublingual			Assist	√	√	√

PEDIATRIC MEDICATION ADMINISTRATION ROUTE	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Auto Injector	Assist	Assist	√	√	√	√
Endotracheal					√	√
Inhalation	Assist MDI	Assist MDI	√	√	√	√
Intramuscular			*	√	√	√
Intranasal	√ Narcan Only	√ Narcan Only	√ Narcan or Assist	√	√	√
Intraosseous				√	√	√
Intravenous				√	√	√
Intravenous Pump					√	√
Oral			√	√	√	√
Rectal			Assist	Assist	√	√
Subcutaneous				√	√	√

Return to TOC

Scope of Practice

Vascular Access / Adult Cardiac Management

A.6

ADULT VASCULAR ACCESS	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Blood Draw				√	√	√
Blood Glucose Analysis			√	√	√	√
Central Line Maintenance					√	√
Peripheral Venous Access				√	√	√
Intraosseous				√	√	√
PEDIATRIC VASCULAR ACCESS	**VEFR**	**EMR**	**EMT**	**AEMT**	**PARAMEDIC**	**IFT/ CCP**
Blood Draw				√	√	√
Blood Glucose Analysis			√	√	√	√
Central Line Access						√
Central Line Maintenance					√	√
Intraosseous				√	√	√
Peripheral Venous Access				√	√	√
ADULT CARDIAC MANAGEMENT	**VEFR**	**EMR**	**EMT**	**AEMT**	**PARAMEDIC**	**IFT/ CCP**
Acquire and Transmit 12- Lead ECG			√	√	√	√
Arrythmia Monitoring				√	√	√
Cardiac Arrest Epinephrine				√	√	√
CPR – Cardiopulmonary Resuscitation	√	√	√	√	√	√
Cardiac Monitoring					√	√
Defibrillation – AED	√	√	√	√	√	√
Defibrillation – Manual					√	√
Interpretation of 12 Lead ECG					√	√
Mechanical CPR			√	√	√	√
Resuscitation Initiation and Termination			√	√	√	√
STEMI System		√	√	√	√	√
Synchronized Cardioversion					√	√
Transcutaneous Pacing					√	√

Return to TOC

Scope of Practice

Pediatric Cardiac Management

A.6

PEDIATRIC CARDIAC MANAGEMENT	VEFR	EMR	EMT	AEMT	PARAMEDIC	IFT/ CCP
Acquire and Transmit 12 Lead ECG			√	√	√	√
CPR – Cardiopulmonary Resuscitation	√	√	√	√	√	√
Defibrillation – AED	√	√	√	√	√	√
Defibrillation – Manual					√	√
Interpretation of 12 Lead ECG					√	√
Synchronized Cardioversion					√	√
Transcutaneous Pacing					√	√

Return to TOC

Scope of Practice
Interfacility Transport
A.7

ADULT & PEDIATRIC OTHER SKILLS	EMT	AEMT	Para	CCP
AICD Magnet Use				Y
A-Line Insertion				W
A-Line Assist				Y
A-Line Monitoring				Y
Aortic Balloon Pump Monitoring				W
Blood Chemistry/Lab Interpretation				Y
Cardiac Assist Device - Impella Maintenance				W
Central Venous Pressure Monitor Interpretation				Y
Chest Tube Insert				W
Continuous Bladder Irrigation				Y
Cricothyroidotomy - Surgical			C	Y
Escharotomy				W
Extubation			Y	Y
Fiberoptic Intubation				W
IFT Transport Documentation	Y	Y	Y	Y
Invasive Intracardiac Catheters Maintenance				Y
Infusion Pump for Medications/Fluids			Y	Y
Intubation Maintenance with Paralytics				Y
Maintenance of Intracranial Monitoring Lines				Y
Manual Transport Ventilator				Y
Percutaneous Pericardiocentesis				W
Procedural Sedation for Transcutaneous Pacing			Y	Y
Rapid Sequence Intubation Adult (Age 13 and Over)			YRSI	YRSI
RSI Pediatric				WRSI
Tracheostomy Replacement			Y	Y
Transvenous Pacing				Y
Ultrasound			C	C
Umbilical Vein Initiation				W
Use of PICC Lines			Y	Y

Legend
Y = Yes N = No
W = Waiver required
RSI = State approve RSI program required
C = Additional training and/or credentialing required

Return to TOC

Scope of Practice
Interfacility Transport
A.7

ADULT & PEDIATRIC MEDICATIONS RSI	EMT	AEMT	Para	CCP
Atropine			YRSI	YRSI
Etomidate (Amidate)			YRSI	YRSI
Ketamine (Ketalar)			YRSI	YRSI
Lidocaine			YRSI	YRSI
Propofol (Diprovan) – Maintenance Only			YRSI	YRSI
Rocuronium (Zemuron)			YRSI	YRSI
Sucinycholine (Anectine)			YRSI	YRSI
Vecuronium (Norcuron)			YRSI	YRSI
ADULT & PEDIATRIC MEDICATIONS	**EMT**	**AEMT**	**Para**	**CCP**
Acetaminophen (Tylenol) PO	Y	Y	Y	Y
Acetaminophen (Tylenol) IV		Y	Y	Y
Acetazolamide (Diamox)				Y
Acetylcysteine (Mucomyst)				Y
Activated Charcoal		Y	Y	Y
Adenosine			Y	Y
Albuterol	Y	Y	Y	Y
Alteplase (Activase)				Y
Amiodarone			Y	Y
Antibiotics Initiation				Y
Antibiotics Maintenance			Y	Y
Aspirin	Y	Y	Y	Y
Atropine			Y	Y
Atropine/Pralodoxime Auto-Injector	Y	Y	Y	Y
Bilvalirudin (Angiomax)				Y
Blood Products Initiation				Y
Blood Products Maintenance			Y	Y
Calcium Chloride 10%			Y	Y
Calcium Gluconate			Y	Y
Clopidogrel (Plavix)				Y
Dexamethasone (Decadron)			Y	Y
Dextrose		Y	Y	Y
Diazepam			Y	Y
Diazepam Auto-Injector	Y	Y	Y	Y
Diphenhydramine			Y	Y
Diltiazem			Y	Y
Dobutamine (Dobutamine)				Y
Dopamine				Y
Droperidol			Y	Y
Epinephrine (0.1 mg/mL) Cardiac		Y	Y	Y
Esmolol (Brevibloc)				Y

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Return to TOC

Scope of Practice
Interfacility Transport

A.7

ADULT & PEDIATRIC MEDICATIONS	EMT	AEMT	Para	CCP
Fentanyl			Y	Y
Fosphenytoin (Cerebyx)				Y
Glucagon		Y	Y	Y
Glucose Solutions	Y	Y	Y	Y
Glycoprotein IIB/IIIA Inhibitor				Y
IIB/IIIA Maintenance			Y	Y
Haloperidol			Y	Y
Heliox (With RT)				Y
Heparin (Heparin) Initiation Bolus and/or Drip				Y
Heparin (Heparin) Maintenance			Y	Y
Humate-P				Y
Hydralazine (Apresoline)				Y
Hydoxocobalamin			Y	Y
Hydrocortisone			Y	Y
Hypertonic Saline 3%				Y
Ibuprofen (Motrin)				Y
Insulin (initiation)				Y
Insulin (maintenance)			Y	Y
Ipratroprium Bromide	Y	Y	Y	Y
Ketamine – Analgesic Dose			Y	Y
Ketamine – Dissociative Dose			Y	Y
Ketamine – Maint. Infusion			Y	Y
Ketoralac			Y	Y
Labetalol (Normodyne)				Y
Levitiracetam (Keppra)			Y	Y
Lidocaine			Y	Y
Lorazepam			Y	Y
LMWH (Lovenox)				Y
Magnesium Sulfate			Y	Y
Mannitol 20% (Osmitrol)				Y
Metoclopramide			Y	Y
Methylprednisolone			Y	Y
Metoprolol (Lopressor)			Y	Y
Midazolam			Y	Y
Milrinone Initial/Maint				W
Morphine Sulfate			Y	Y
Naloxone	Y	Y	Y	Y
Neo-Synephrine			Y	Y
Nicardipine (Cardene)				Y
Nimodipine (PO for SAH)				Y

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Return to TOC

Scope of Practice
Interfacility Transport
A.7

ADULT & PEDIATRIC MEDICATIONS	EMT	AEMT	Para	CCP
Nitroglycerin IV			Y	Y
Nitroprusside (Nipride)				Y
Nitrous Oxide		Y	Y	Y
Norepinephrine			Y	Y
Normosol-R				Y
Octreotide Acetate (Sandostatin)				Y
Ondansetron		Y	Y	Y
Oxygen	Y	Y	Y	Y
Oxytocin		Y	Y	Y
Pantoprazole (Protonix)			W	Y
Phenobarbital (Luminal)				Y
Phentolamine				W
Phenytoin (Dilantin)				Y
PlasmaLyte			Y	Y
Potassium Chloride				Y
Potassium-Containing Maintenance Fluids			Y	Y
Pralidoxime			Y	Y
Precedex				W
Procainamide			Y	Y
Prochlorperazine			Y	Y
Propofol Initiation				W
Propofol Maintenance/ Titration/Bolus			W	Y
Prostaglandin Infusion				W
Protamine Sulfate				W
Protein Complex Concentrates				W
Sodium Bicarbonate			Y	Y
Sodium Chloride (0.9%)		Y	Y	Y
Sodium Polystyrene Sulfonate (Kayexelate)				Y
Sucrose Solution 24%				Y
Terbutaline				Y
Thiamine (Vitamin B12)				Y
Ticagrelor (Brillinta)				Y
TPN/Lipids			Y	Y
TNKase (Tenecteplase)				Y
TPA Infusion Maintenance				Y
TXA Initiation			Y	Y
TXA Maintenance			Y	Y
Various Eye Drops			Y	Y

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Return to TOC

Prehospital Stroke Screening Tool

Stroke screen is positive if any abnormal finding in BE-FAST below.

Witness: *Best contact number for witness:* ( ) -

Prehospital Stroke Scale Examination	Please check: Normal	Abnormal
B **Balance:** *Perform bilateral index finger-to-nose test and bilateral heal-to-shin test.* Does the patient have sudden loss of balance or coordination, trouble walking or dizziness?	Normal	Abnormal
E **Eyes:** *Assess 4 quadrants of visual field by having patient locate your index finger.* Does the patient have trouble seeing out of one or both eyes or sudden double vision?	Normal	Abnormal
F **Facial Droop:** *Have the patient smile and show teeth.* Normal: Both sides of the face move equally well.. Abnormal: One side of the face does not move as well as the other.	Normal	Abnormal
A **Arm Drift:** *Have the patient close their eyes and hold arms extended for 10 seconds.* Normal: Both arms move the same, or both arms don't move at all. Abnormal: One arm doesn't move, or one arm drifts down compared to the other.	Normal	Abnormal
S **Speech:** *Ask the patient to repeat a phrase such as, "You can't teach an old dog new tricks".* Normal: Patient says the correct words without slurring. Abnormal: Patient slurs words, says the wrong word, or is unable to speak.	Normal	Abnormal
T **Time Last Known Well:** *What time did symptoms start?* *What time was patient last known well?*		
Blood Glucose: *(Treat blood glucose < 60 mg/dl)*		

Return to Stroke 2.26