EMR EMT AEMT PARAMEDIC EXTENDED

State of New Hampshire
Patient Care Protocols
Version 9.0

Approved by the NH Medical Control Board
Effective June 1, 2024

New Hampshire Department of Safety

Division of Fire Standards and Training and Emergency Medical Services

Patient Care Protocols – Version 9.0

Legend	Definition
R	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
	Telephone Medical Control
	Pediatric
	Documentation

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This document is the Patient Care Protocols for New Hampshire Prehospital Medical Providers – Version 9.0.

These protocols are a “living document” developed and drafted by the Protocol Committee of the New Hampshire Emergency Medical Services Medical Control Board. At the option of the Bureau of EMS and the Medical Control Board, they can be edited and updated at any time. However, they are formally reviewed, edited, and released every two years.

These NH EMS Patient Care Protocols, Version 9.0 were reviewed, edited, and unanimously approved of by the NH EMS Medical Control Board.

These are New Hampshire State Patient Care Protocols; they have been written and approved of by the NH EMS Medical Control Board, under authority granted by RSA 153-A;2.

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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603-223-4200

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 theses protocols, see the New Hampshire EMS website at: https://www.nh.gov/safety/divisions/fstems/ems/advlifesup/patientcare.html.

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2024 EMS Protocols Dedication - "Change"

As always with a new set of protocols, there is change. As EMS providers, we would see a new set of protocols every few years. Inevitably there would be changes and challenges to established practices, both long and dearly held, and recently implemented. And again, as always, the EMS systems embraces these challenges as being part of an EMS System long recognized for its innovation and dedication to the citizens of New Hampshire.

This year, however, marks a far larger change than most, not in scope of practice, expanded EMS roles, or new medications. This change comes in the makeup of the group of individuals dedicated to crafting these protocols. After 19 years of dedicated service to the State of New Hampshire, Captain **Vicki Blanchard** is retiring. This rollout marks the 9th version of the protocols that Vicki has guided into approval.

In searching for a way to describe the role that Vicki has filled in protocol development, more than a few terms come to mind: editor, producer, technical expert, or author. None of these, however, fit, as while they do encompass the precision and professionalism that Vicki brought to the protocols, they don't describe the passion and dedication she brought as well. Ultimately, Vicki was a master craftswoman who spent a career of long hours fine tuning her craft, balancing precision, and passion in helping create EMS protocols that are progressive, evidence-based, and functional for those who use them.

This was all accomplished while completing the many other duties assigned to her as the State of New Hampshire Division of Fire Standards and Training & EMS, Bureau of EMS Clinical Systems Coordinator. These duties ranged from serving on the Statewide Stroke Collaborative and the Child Fatality Review Committee to overseeing the State's Prerequisite Protocol program and coordinating the State's trauma, interfacility, and specialty service programs. In addition, Vicki is a long-standing member of the greater EMS community serving in Washington and Milford to name a few. All told Vicki's career has spanned nearly 34 years as an EMS provider.

For all the above and so much more, this version of the EMS protocols is dedicated to Captain Vicki Blanchard. Enjoy the time with your family and friends and keep on creating!

Respectfully Submitted,

The New Hampshire EMS System

Preface

Welcome to our most recent edition of the State of New Hampshire Patient Care Protocols. Using the best available data, we continue to improve and enhance each version of the protocols to drive exceptional patient care in the Granite State.

This edition of the protocols is Version 9.0, as it is the ninth time we have released a statewide protocol set. If there is a protocol change mid-cycle, we will reference the update as Version 9.1, etc. Upon release of 9.0 the ongoing review process will begin once again leading to the creation of next version of the statewide protocols, which generally occurs every two years.

You will note there are several significant and exciting changes in Version 9.0:

- We have created a Routine Patient Care Protocol for Emergency Medical Responders (EMR) as well as identified additional protocols in which the EMR can practice beyond routine care. These appear next to an “R” section within the protocols and are shaded gray. They are also linked within the Routine Patient Care protocol for convenience.

- You will find two new prerequisite protocols, a Pilot Protocol which will enable new treatment modalities to be trialed between cycles and a Point of Care Ultrasound (POCUS) Protocol. Additionally, in Version 8.2 we added the Operational Canine Protocol which appears in Version 9.0 as well. As a reminder, these protocols require an application process and specific training to be put to use.

- The Surgical Cricothyrotomy Protocol has moved from the prerequisite to the general protocols. The Percutaneous Cricothyrotomy Protocol remains, however it is only indicated for certain pediatric patients and with specific training on the available commercial device. We have also added the ability to make an incision with a scalpel through the skin and subcutaneous tissues prior to inserting the device.

You will find several other fairly significant changes throughout Version 9.0 including, but not limited to, the introduction of a High Flow Nasal Cannula Protocol; movement of select nebulized medications up to the EMT level throughout the protocols; addition of TXA for angioedema; addition of Droperidol as indicated for restraint and nausea/vomiting; addition of Labetolol and Nifedipine as anti-hypertensive options in obstetrical emergencies; addition of Nicardipine for the interfacility transfer of stroke patients; additional indications for the use of push dose pressors; transition of the Leave-Behind Naloxone Protocol from a prerequisite to a routine protocol and many more.

While our protocols continue to evolve, there are many concepts from the past that remain of the utmost importance:

- All licensed providers functioning within the New Hampshire EMS system are required to be familiar with the contents of this document pertinent to their level of training.

- It is understood that emergency medical care begins when a patient accesses the system. Telecommunications Specialists at the Bureau of Emergency Communications are integral to delivering effective care by notifying, in a timely manner, the appropriate local dispatcher, as well as by initial instructions offered via Emergency Medical Dispatch (EMD) algorithms. Information will be offered via the Medical Priority Dispatch System including dispatch determinant descriptors (i.e., Omega, Alpha, Bravo, Charlie, Delta, Echo) to local dispatchers. With local medical director approval, each EMS agency may choose what resources and type of response are appropriate (i.e., lights and siren versus flow of traffic) for each call.

Preface

- It is assumed that the Paramedic standing orders include those of the EMT and AEMT, likewise AEMT standing orders include all those orders listed under EMT. The sequence of orders in these protocols is not necessarily the order in which they must be executed.

- Standing orders listed in this document are not orders that must be carried out. They are orders that may be carried out at the discretion of the EMS provider without the need for on-line medical control. EMS providers at any level of training are encouraged to contact on-line medical control in cases where they feel that additional treatment is warranted beyond standing orders, cases where there is uncertainty regarding treatment, or in cases involving medico legal or jurisdictional issues.

- While medical control may have some variation between facilities and physicians, on-line medical control should not direct providers to practice outside their usual scope of practice, and likewise, providers should not ask to perform procedures or administer medications outside their scope of practice as defined within these protocols.

- Multiple medications are often listed to provide options for treatment. While the first medication listed is considered the “preferred agent,” the list is intended to provide latitude to medical directors and medical resource hospitals to choose which medications an EMS agency under its direction may carry. It will also help us deal with ongoing medication shortages. There is no intent that all listed medications should be carried.

- When transferring care from one provider to another, the transfer must be to a provider of 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.

- EMS providers have a responsibility to ensure, to the best of their abilities, that all patients feel safe and that their privacy and modesty is always protected during the delivery of care. Situational awareness and best practice should be considered particularly when patients must undress and/or clothing removed when performing an exam or medical procedures. Talking through procedures and an explanation of what is occurring is crucial to building a rapport with both the patient and their family.

We will be using the New Hampshire Fire Academy and EMS’s Online Learning Academy at www.nhfaemslearning.org for the protocol rollout again this year. Providers can complete this at their convenience, but the rollout module must be completed prior to utilizing the new protocols.

I would like to thank the members of the Protocol Subcommittee, the Medical Control Board and Bureau of EMS staff for their ongoing dedication and tireless efforts towards the development and revising of these protocols to enable the best possible care of our residents.

Finally, and most importantly, I would like to acknowledge that the work that you do is both physically and emotionally demanding, but each day you strive to provide excellent care with pride, skill & compassion. The dedication that you continuously display is both admirable and commendable. On behalf of myself, the Bureau of EMS and your communities I would like to extend a deep and truly heart-felt thank you.

Gratefully,

Joey Scollan, DO, FACEP, FAAP Medical Director NH Bureau EMS

Emergency Medical Dispatch

Emergency Medical Care begins when 911 or a dispatch center is called. Telecommunications Specialists that are certified in Emergency Medical Dispatch (EMD) with the New Hampshire Bureau of Emergency Communications serve as the "First, First Responders" and are an integral part of the EMS system. They are the first-activated professional link in the chain of survival for cardiac arrest care and provide vital interim care pending EMS arrival. New Hampshire currently uses the Medical Priority Dispatch System (MPDS). Some of the Telecommunication Specialists' functions include:

- Timely notification to local dispatch centers.
- Systematized caller interrogation and pre-arrival instructions using scripted protocols.
- Triage emergency medical calls by level of medical acuity and provide dispatch centers with standardized dispatch determinants (i.e., Omega, Alpha, Bravo, Charlie, Delta, Echo).
- With local medical director approval, each EMS agency may choose what resources and type of response (i.e., lights and siren versus flow of traffic) for each dispatch determinant.

Respond to Scene in a Safe Manner

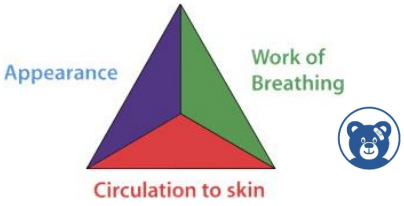
- Review dispatch information.
- Use lights and sirens and/or pre-emptive devices when responding as appropriate per emergency medical dispatch information and local guidelines.
- Use Incident Management/Command System (IM/CS) for all responses and scene management.

Scene Arrival and Size-up

Universal precautions, scene safety, environmental hazards assessment, number of patients, need for additional resources, and bystander safety. Initiate Mass Casualty Incident procedures as necessary.

Patient Approach

- Determine mechanism of injury / nature of illness.
- 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).
- Establish responsiveness.
- General Impression.



	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	Pallor, mottling, cyanosis

- Determine if DNR/Comfort Care protocol applies (DNR Policy).

Airway and Breathing

- Airway
  - Assess the patient for a patent airway.
  - Open the airway using a head-tilt/chin-lift, or a jaw thrust if suspicious of cervical spine injury.
  - Suction the airway as needed.
  - Treat foreign body obstruction in accordance with current guidelines.
  - Consider an oropharyngeal or nasopharyngeal airway.
  - Consider advanced airway interventions as appropriate and as trained and credentialed to perform.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - If breathing is ineffective, ventilate with 100% oxygen using Bag-Valve-Mask.
  - If breathing is effective, but patient's oxygen saturation remains ≤ 94% (≤ 90% for COPD patient) or short of breath, administer oxygen.
    - Both skin signs and pulse oximetry are important in assessing potential hypoxia.
  - For patients with an SpO_2 of 100%, consider titrating oxygen lower while maintaining SpO_2 ≥ 94% - 98%.
  - Consider capnography ($EtCO_2$) and/or CO-oximetry, if available.
  - Assess lung sounds and chest.

Protocol Continues

Protocol Continues

Circulation Assessment

- Assess patient's pulse, noting rate, rhythm, and quality.
- Control active bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandages. See Hemorrhage Control Protocol 4.4.
- Assess patient's skin color, capillary refill, temperature, and moisture.
- Assess blood pressure.
- Provide IV access and fluid resuscitation as appropriate for the patient's condition.
  - For adult patients, administer fluids to maintain systolic blood pressure per the Shock Protocols 2.21A, 2.22, 4.6.
  - For pediatric patients, administer fluids based on physiological signs and therapeutic end-points per the Shock Protocol 2.21P, 2.22, 4.6.
  - For adult patients with suspected dehydration without shock administer IV fluids as indicated in increments of 250 mL 0.9% NaCl or Lactated Ringers.
  - Consider obtaining a blood sample, per receiving hospital's preference.

NOTE: An IV for the purposes of these protocols is a saline lock or line with 0.9% NaCl (normal saline) or Lactated ringers, unless otherwise specified in an individual protocol.
Routes of medication administration when written as "IV" can also include "IO".

Disability Assessment

- Assess level of consciousness appropriate for age; use Glasgow Coma Scale for trauma.
- Spinal motion restriction by collaring patient, placing flat on cot and securing, if indicated by Spinal Trauma Protocol 4.7.
- If a child requires spinal motion restriction, transport in a child safety seat (See Spinal Trauma 4.7 and Pediatric Transportation 8.12).

Transport

- The destination hospital and mode of transport are determined by the prehospital provider with the highest medical level providing patient care; it should not be determined by fire, police or bystanders.
- Refer to the Trauma Triage and Transport Decision 8.17 and Air Medical Transport 8.0 policies as necessary.
- Notify receiving facility as early as possible.
- The majority of patients do not medically require transport with lights and sirens. 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, (e.g. STEMI, acute stroke, multi-system trauma). Use of lights and sirens should be documented in the patient care report.
- Non emergent medical transports from home or a medical facility with self or caretaker managed devices is an EMT level skill. The caretaker must travel with the patient if it is not a self managed device. See Continuity of Care Policy 8.5.

For more information on hospital services click on this LINK

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.
- Determine level of pain.
- Consider field diagnostic tests including: cardiac monitoring, blood glucose, temperature, stroke assessment, pulse oximetry, capnography, etc.
- Dress and bandage lacerations and abrasions.
- Cover evisceration with an occlusive dressing and cover to prevent heat loss.
- 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 approximately every 15 minutes (more frequently if the patient is unstable).

Protocol Continues

Protocol Continues

Target Ventilation Rates	
Patient	**Bag-Valve Mask**
Adult	10 – 12 breaths per minute
Child	20 - 30 breaths per minute
Infant	20 – 30 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.

Percent O2 Saturation	Ranges	General Patient Care
94% – 100 %	Normal	Usually indicate adequate oxygenation; validate with clinical assessment (see below)
90% – 93%	Mild hypoxia	Consider O_2 to maintain saturation ≥ 94 - 98%. Caution 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, hypoperfusion, carbon monoxide poisoning, hemoglobin abnormality (sickle cell anemia), vasoconstriction, and nail polish.

$EtCO_2$ 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

Pediatric Respiratory Distress	Pediatric Respiratory Failure
• 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.	• 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.
Respiratory distress in children and infants must be promptly recognized and aggressively treated as patient may rapidly decompensate.	

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

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

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Patient Approach

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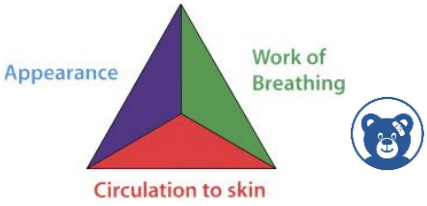

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- Determine if DNR/Comfort Care protocol applies (DNR Policy).

Airway and Breathing

- Airway
  - Assess the patient for a patent airway.
  - Open the airway using a head-tilt/chin-lift, or a jaw thrust if suspicious of cervical spine injury.
  - Suction the airway as needed.
  - Treat foreign body obstruction in accordance with current guidelines.
  - Consider an oropharyngeal airway.
- Assess breathing: rate, effort, tidal volume, and breath sounds.
  - If breathing is ineffective, ventilate with 100% oxygen using Bag-Valve-Mask (BVM).

Circulation Assessment

- Assess patient's pulse, noting rate, rhythm, and quality.
- Control active bleeding using direct pressure, pressure bandages, tourniquets, or hemostatic bandages. See Hemorrhage Control Protocol 4.4.
- Assess patient's skin color, capillary refill, temperature, and moisture.
- Assess blood pressure.

Protocol Continues

Protocol Continues

Disability Assessment

- Assess level of consciousness appropriate for age using AVPU.
- Spinal motion restriction by collaring patient, placing flat on cot and securing, if indicated by Spinal Injury Protocol 4.7.

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.
- Maintain body temperature.
- Determine level of pain.
- Dress and bandage lacerations and abrasions.
- Stabilize impaled objects. Do not remove an impaled object unless it interferes with CPR or your ability to maintain the patient's airway.
- Splint extremities as indicated.
- Monitor vital signs approximately every 15 minutes (more frequently if the patient is unstable).

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.

- Airway Management – Adult & Pediatric (See Airway Management Protocol - Adult 5.1A or Airway Management Protocol – Pediatric 5.1P)
  - BVM.
  - Cleared, Opened.
  - Oral Suctioning.
  - Oropharyngeal Airway.
  - Oxygen Administration.
  - Naloxone Intranasal.
- Cardiac Management – Adult & Pediatric (See Cardiac Arrest Protocol – Adult 3.2A, Cardiac Arrest Protocol – Pediatric 3.2P, or Traumatic Cardiac Arrest. 4.10).
  - CPR – Cardiopulmonary Resuscitation.
  - Defibrillation – AED

Medical Emergencies see:

Behavioral Emergencies - 2.4.
Childbirth & Newborn Care - 2.6.
Nerve Agent – Adult 2.14A.
Nerve Agent – Pedi 2.14P.
Newborn Resuscitation - 2.15.
Opioid Overdose – Adult 2.17A.
Opioid Overdose – Pedi 2.17P.
Poisoning/OD – Adult 2.19A.
Poisoning/OD – Pedi 2.19P.

Traumatic Protocols see:

Burns - 4.0.
Crush Injuries – Adult 4.1A.
Crush Injuries – Pediatric 4.1P.
Drowning/Submersion Injuries - 4.2.
Eye Injuries - 4.3.
Hyperthermia - 2.10.
Hemorrhage Control - 4.4.
Musculoskeletal Injuries - 4.5.
Traumatic Shock - 4.6.
Thoracic Injuries - 4.8.

EMRs should adhere to their Routine Patient Care for all other protocols.

Protocol Continues

Protocol Continues

Target Ventilation Rates	
Patient	**Bag-Valve Mask**
Adult	10 – 12 breaths per minute
Child	20 - 30 breaths per minute
Infant	20 – 30 breaths per minute

Pediatric Respiratory Distress	Pediatric Respiratory Failure
• 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.	• 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.
Respiratory distress in children and infants must be promptly recognized and aggressively treated as patient may rapidly decompensate.	

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

1.2 Exception Protocol

"Exception Principle" of the Protocols

- The Statewide Patient Care Protocols represent the best efforts of the EMS physicians and pre-hospital providers of New Hampshire to reflect the current state of out-of-hospital *emergency medical care*, and as such should serve as the basis for such treatment.
- For situations covered by existing protocols, providers are expected to operate under those protocols. **This exception protocol may not be used to circumvent protocols or directives of the Medical Control Board (e.g., Medication Assisted Intubation).** We recognize, though, that on rare occasion good medical practice and the needs of patient care may require actions not otherwise authorized by these protocols, as no protocol can anticipate every clinical situation. In those circumstances, under this Exception Principle, EMS personnel are authorized to take actions not otherwise explicitly authorized under these protocols provided that:
    1. Such action is within their current EMS certification, licensure level, and scope of practice, **AND**
    2. They have obtained the approval of online medical control.
- This exception is intended only to be used when unanticipated clinical situations arise. This Exception Principle is not intended to cover advancements in medical science or emerging changes or improvements to existing protocols. These advancements should be evaluated based on the best available evidence under our existing process for protocol review. For example, providers who believe that intra-cardiac arrest cooling has beneficial effects may not implement that action under the Exception Principle. They should instead submit their desire to see the existing protocol modified in the next protocol cycle to the protocol subcommittee of the Medical Control Board.
- Where a patient has a medical condition that cannot be appropriately treated under the existing protocols, and has provided the provider with a written treatment plan prepared by the patient's physician and approved by the provider's medical control physician, the provider may perform the treatments prescribed in the treatment plan provided they are within their level and scope of practice. This specific instance would not require online medical control.
- Actions taken under this policy are considered to be appropriate and within the scope of the protocols. The EMS provider shall provide a written notification pertaining to the action taken describing the events including the patient's condition and treatment given, and referencing the EMS Incident Report**. This report must be filed with the Medical Resource Hospital's EMS Medical Director, Hospital EMS Coordinator, and FSTEMS within 48 hours of the event.** Use of this protocol must be documented under "Protocols Used" in the Patient Care Report.

Extended Care Guidelines 1.3

When NH 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, (e.g., extreme weather conditions or extended mass casualty with active shooter incidents).

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. Patients may also require some treatments and procedures that clearly exceed the scope of NH EMS providers licensed at the EMT, Advanced and Paramedic levels.

In an extended care environment, EMS providers will follow the following guidelines:

1. Every effort should be made to contact medical control for guidance.

2. If medical control 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. Any other treatment or procedure outside the provider's normal scope of practice requires additional levels of training and certification from nationally recognized courses as deemed appropriate per FSTEMS. (An example of a procedure that would require additional training and certification would be the reduction of dislocations).

Special circumstances to consider in an extended care environment:

- Protecting 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. Resources to consider but are not limited to:
  - NH Fish and Game
  - Rescue organizations
  - Technical Climbers
  - Snowmobile, ATV or boat
  - Helicopters
  - Tracking dogs
  - Swift water technicians
- 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 control

2.0A Abdominal Pain (Non Traumatic) Adult & Pediatric

EMT STANDING ORDERS

E

- Routine Patient Care.
- Consider acquiring and transmitting a 12-Lead ECG for upper abdominal or epigastric pain, see 12-Lead Acquisition Protocol 6.0.
- Vaginal bleeding or suspected pregnancy see, Obstetrical Emergencies Protocol 2.16.
- See Nausea/Vomiting Protocol 2.13 as needed.
- Nothing by mouth, other than sublingual medications.
- Place patient in position of comfort.

ADVANCED EMT STANDING ORDERS

A

- Assess for signs of shock, if present see Shock – Non-traumatic Protocol 2.22.

PARAMEDIC STANDING ORDERS

P

- See Pain Management Protocol 2.18A & 2.18P as needed.

PEARLS:

- Potential causes of acute abdominal pain may be appendicitis, cholecystitis, bowel perforation, diverticulitis, abdominal aortic aneurysm, ectopic pregnancy, pelvic inflammatory disease and pancreatitis.
- Referred pain from the chest may involve the heart, lungs and pleura. It is important to remember that abdominal pain can be caused by a number of different disease processes. Cardiac disease may present as upper abdominal pain or “indigestion”.
- DKA may present with abdominal pain, nausea and vomiting.
- The diagnosis of abdominal aortic aneurysm should be considered in patients over 50 years old.

Adrenal Insufficiency Adult & Pediatric

2.1

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

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

ADVANCED EMT STANDING ORDERS - ADULT & PEDIATRIC

A

- Assist the patient/caregiver in giving the patient his or her own medications, as prescribed.

PARAMEDIC STANDING ORDER – ADULT & PEDIATRIC

P

Stress Dose:

- Adult: History of adrenal insufficiency; administer hydrocortisone 100 mg IV/IM.
- Pediatric: History of adrenal insufficiency; administer hydrocortisone 2 mg/kg, to a maximum of 100 mg IV/IM.

PARAMEDIC EXTENDED CARE ORDERS- ADULT & PEDIATRIC

X

- After the initial hydrocortisone, administer the following until stabilization of vital signs and capacity to eat and take medication orally:
  - Adult: hydrocortisone 50 mg IV bolus every 6 hours.
  - Pediatric: hydrocortisone 2 mg/kg IV/IM every 6 hours to a maximum single dose of 50 mg.
- In patients with the following signs and symptoms consider the need for repeat stress dosing:
  - Nausea, vomiting, weakness, dizziness, 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, see Shock – Non-Traumatic Protocol 2.22.
  - Treat for hypoglycemia, see Hypoglycemia Protocol 2.11A or 2.11P.
  - Normalize body temperature.

PEARLS:
Adrenal insufficiency results when the body does not produce the essential life-sustaining hormones cortisol and aldosterone. These 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 and/or 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 hydrocortisone.

PEARLS:
A “stress dose” of hydrocortisone should be given to patients with known chronic adrenal insufficiency who have the following illnesses/injuries:

- Shock (any cause)
- Fever >100.4°F and ill-appearing
- Multi-system trauma
- Drowning
- Environmental hyperthermia or hypothermia
- Multiple long-bone fractures
- Vomiting/diarrhea accompanied by dehydration
- Respiratory distress
- 2nd or 3rd degree burns >5% BSA
- RSI
- Solu-cortef’s formulation usually provided to patients and their families, requires reconstitution (e.g., mixing) before use.

2.2A Anaphylaxis/Allergic Reaction Adult

EMT STANDING ORDERS

E

- Routine Patient Care.
- For anaphylaxis, administer: (anterolateral thigh preferred administration site)
  - Adult epinephrine autoinjector 0.3 mg IM, **OR**
  - Epinephrine 1mg/1mL: Administer 0.3 mg (0.3 mL) IM*.
  - If signs and symptoms do not resolve may repeat in 5 minutes.
    - For additional dosing, contact **Medical Control**.

***EMTs must have completed the Ready, Check & Inject training, found at:* https://www.nhfaemslearning.org

- For respiratory symptoms / wheezing consider albuterol 2.5mg via nebulizer. Repeat albuterol 2.5 mg, every 5 minutes (4 doses total) via nebulizer.

ADVANCED EMT STANDING ORDERS

A

- For anaphylaxis:
  - Repeat epinephrine every 5 minutes until signs and symptoms resolve.
  - For signs of shock consider fluid per Shock – Non-Traumatic Protocol 2.22.

PARAMEDIC STANDING ORDERS

P

- After epinephrine has been administered or for isolated skin symptoms of allergic reaction consider:
  - Diphenhydramine 25 – 50 mg IV/IM/PO.
- For anaphylaxis refractory to 3 or more doses of IM epinephrine, (e.g., persistent hemodynamic compromise, bronchospasm), consider:
  - Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical) **AND/OR**
  - Epinephrine infusion 2 - 10 micrograms/minute until symptoms resolve, pump required.

Angioedema

Swelling of the deep layers of the skin often of the face, mouth and upper airways which can be severe. It can be hereditary, idiopathic or caused of exposure to a drug (especially angiotensin-converting enzyme inhibitors, regardless of duration of time patient has been taking.)

- The diagnosis is clinical
- Prioritize airway management

Consider:

- Tranexamic Acid (TXA):
  - Mix 1 gram of TXA in 50-100 mL of 0.9% NaCl; infuse over approximately 10 minutes IV or IO.

CAUTION: Epinephrine is available in different routes and concentrations. Providers are advised to re-check the dosing and concentration prior to administration.

In anaphylaxis, do not delay epinephrine administer for second-line medications such as diphenhydramine.

PEARLS:

Anaphylaxis: Potential allergen exposure AND any two of the following:

- Breathing: shortness of breath, wheeze, stridor, cyanosis.
- Poor perfusion: hypotension, altered mental status, syncope, delayed capillary refill
- Skin: Hives, itching, extremity swelling, erythema.
- Gastrointestinal: vomiting, abdominal pain, diarrhea.

Protocol Continues

Anaphylaxis/Allergic Reaction Adult

Protocol Continues

EMT/ADVANCED EMT EXTENDED CARE ORDERS

- Diphenhydramine 25 – 50 mg PO. May repeat every 4 - 6 hours as needed; maximum dose of 300 mg in 24 hours.

PARAMEDIC EXTENDED CARE ORDERS

X

- Dexamethasone 10 mg IV/IM/PO **OR**
- Methylprednisolone 125 mg IV/IM **OR**
- Prednisone 60 mg by mouth.
- Famotidine 20 mg IV/IM/PO.

2.2P Anaphylaxis/Allergic Reaction Pediatric

Medical Protocol 2.2P

EMT STANDING ORDERS

E

- Routine Patient Care.
- For anaphylaxis administer: (anterolateral thigh preferred administration site)
  - Pediatric epinephrine autoinjector (EpiPen Jr) 0.15 mg IM for < 25 kg,
  - Adult epinephrine autoinjector (EpiPen) 0.3 mg IM if > 25 kg **OR**
  - If < 25 kg, epinephrine (1 mg/mL) 0.15 mg (0.15 mL) IM*,
  - If ≥ 25 kg, epinephrine (1 mg/mL) 0.3 mg (0.3 mL) IM*.
  - If signs and symptoms do not resolve may repeat in 5 minutes.
    - For additional dosing, contact **Medical Control.**

**EMTs must have completed the Ready, Check & Inject training, found at:* https://www.nhfaemslearning.org

- For respiratory symptoms / wheezing consider albuterol 2.5 mg via nebulizer or 4 puffs via MDI (with spacer if available). May repeat every 5 minutes as needed (4 doses total).

ADVANCED EMT STANDING ORDERS

A

- For anaphylaxis:
  - Repeat Epinephrine every 5 minutes until signs and symptoms resolve.
  - For signs of shock consider fluid per Shock – Non-Traumatic Protocol 2.22.

PARAMEDIC STANDING ORDERS

P

- After epinephrine has been administered or for isolated skin symptoms of allergic reaction consider:
  - Diphenhydramine 1 mg/kg IV/IM/PO (maximum dose 50 mg).
  - For anaphylaxis refractory to 3 or more doses of IM epinephrine, (e.g., persistent hemodynamic compromise, bronchospasm) consider:
  - Epinephrine Infusion 0.1 – 1.0 micrograms/kg/minute (maximum 10 micrograms/min) via pump until symptoms resolve.

EMT/ADVANCED EMT EXTENDED CARE ORDERS

X

- Diphenhydramine 1 mg/kg PO (maximum dose of 50 mg), may repeat every 4 – 6 hours as needed.

PARAMEDIC EXTENDED CARE ORDERS

- Dexamethasone 0.6 mg/kg PO/IM/IV (PO preferred) maximum 10 mg **OR**
- Methylprednisolone 1 – 2 mg/kg IV (maximum dose 125 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, do not delay epinephrine administration for second-line medications such as diphenhydramine.

PEARLS:
Anaphylaxis: Potential allergen exposure AND any two of the following:

- Angioedema: facial/lip/tongue swelling, throat tightening, voice change.
- Breathing: shortness of breath, wheeze, stridor, cyanosis.
- Poor perfusion: hypotension, altered mental status, syncope, delayed capillary refill
- Skin: Hives, itching, extremity swelling, erythema.
- Gastrointestinal: vomiting, abdominal pain, diarrhea.

Asthma, COPD, RAD – Adult 2.3A

EMT STANDING ORDERS

E

- Routine Patient Care.
- Attempt to keep oxygen saturation between 94 - 98% (90% in COPD); increase the oxygen rate with caution and observe for fatigue, decreased mentation, and respiratory failure.
- Consider:
  - Albuterol metered-dose inhaler (MDI) 4 - 6 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 H2O pressure support. See CPAP Procedure 5.4.

ADVANCED EMT STANDING ORDERS

A

- For severe asthma **only** not responding to treatment consider epinephrine autoinjector 0.3 mg IM (preferred) OR epinephrine (1 mg/mL) 0.3 mg (0.3 mL) IM. Contact **Medical Control** for additional doses.

PARAMEDIC STANDING ORDERS

P

Consider:

- Methylprednisolone 125 mg IV/IM **OR**
- Dexamethasone 10 mg PO/IM/IV.

For patients who do not respond to treatments, or for impending respiratory failure, consider:

- BiPAP, (See BiPAP Procedure 5.3).
- Magnesium sulfate 2 grams in 100 ml NS given IV over 10 minutes.

PEARLS:

- Chronic obstructive pulmonary disease (COPD) refers to a group of lung diseases that block airflow and make breathing difficult. Emphysema and chronic bronchitis are the two most common conditions that make up COPD.
- Reactive Airway Disease (RAD) refers to a group of conditions that include reversible airway narrowing due to external stimulation.
- Beware of patients with a “silent chest” as this may indicate severe bronchospasm and impending respiratory failure

Pediatric Respiratory Distress

Asthma, Bronchiolitis, Croup

ASTHMA, BRONCHIOLITIS, CROUP - EMT STANDING ORDERS

E

- Routine Patient Care.
- Attempt to keep oxygen saturation between 94% - 98%
- Observe for fatigue, decreased mentation, and respiratory failure.
- For patients ≤ 2 who present with increased work of breathing and rhinorrhea, provide nasal suctioning with saline drops and bulb syringe; no more than 2 attempts.

Wheezing ≥ 2 years or history of asthma — YES

ASTHMA - EMT STANDING ORDERS

E

- Assist the patient with their metered dose inhaler (MDI): 4 - 6 puffs (with spacer, if available). May repeat every 5 minutes, as needed.
- MDI containing either albuterol, levalbuterol, or a combination of albuterol/ipratropium bromide.
- Consider DuoNeb unit dose **OR** albuterol 2.5 mg and ipratropium bromide 0.5 mg via nebulizer.
  - Consider additional DuoNeb, may repeat every 5 minutes (3 doses total).
- Consider albuterol 2.5 mg via nebulizer every 5 minutes, as needed.
- For severe respiratory distress due to asthma consider use of CPAP. See CPAP Procedure 5.4.

Wheezing ≥ 2 years or history of asthma — YES

ASTHMA - ADVANCED EMT STANDING ORDERS

A

For severe asthma consider:

- Epinephrine:
  - If < 25 kg, epinephrine (1 mg/mL) 0.15 mg IM, lateral thigh preferred.
  - If ≥ 25 kg, epinephrine (1 mg/mL) 0.3 mg IM, lateral thigh preferred.

Wheezing ≥ 2 years or history of asthma — YES

ASTHMA - PARAMEDIC STANDING ORDERS

P

Consider:

- Dexamethasone 0.6 mg/kg PO/IM/IV (PO preferred), maximum 10 mg **OR**
- Methylprednisolone 2 mg/kg IV/IM, maximum 125 mg.

For severe asthma consider:

- Magnesium sulfate 40 mg/kg in 100 mL 0.9% NaCl IV over 20 minutes (maximum dose 2 gm).

Wheezing ≥ 2 years or history of asthma — NO

Wheezing < 2 years old — YES

BRONCHIOLITIS - PARAMEDIC STANDING ORDERS

P

For patients who do not respond to suctioning or for impending respiratory failure consider:

- Nebulized epinephrine (1 mg/mL) 3 mg (3 mL) in 3 mL 0.9% NaCl.

Wheezing < 2 years old — NO

History of stridor or barky cough — YES

CROUP - ADVANCED EMT STANDING ORDERS

A

Croup with stridor at rest:

- Nebulized epinephrine (1 mg/mL) 3 mg (3 mL) in 3 mL 0.9% NaCl, repeat in 20 minute as needed **OR**
- Nebulized racemic epinephrine (2.25% solution) 0.5 mL in 2.5 mL 0.9% NaCl, may repeat in 20 minutes as needed

History of stridor or barky cough — NO

CROUP - PARAMEDIC STANDING ORDERS

P

Consider:

- Dexamethasone 0.6 mg/kg PO/IM/IV (PO preferred) maximum 10 mg.

- Respiratory distress in children must be promptly recognized and 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.
- In patients with suspected croup or stridor, provide necessary interventions while attempting to minimize noxious stimuli that may induce agitation.

Protocol Continues

Pediatric Respiratory Distress

Asthma, Bronchiolitis, Croup

2.3P

Protocol Continued

Consider differential diagnosis:

- Asthma
- Pneumonia (CPAP 5.4 for respiratory failure)
- Bronchiolitis
- Anaphylaxis (Anaphylaxis Protocol 2.2P)
- Croup
- Sepsis (Sepsis Protocol 2.21P)
- Foreign body airway obstruction (Airway Management 5.0)

PEARLS

The IV formulation of dexamethasone may be given by mouth. Consider mixing with juice or other sweet beverage to ease administration.

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.
- History of low-grade fever, runny nose, and sneezing.
- Signs and symptoms include: tachypnea, rhinorrhea, wheezes and / or crackles.

Croup

- Occurs mainly in children age 6 months to 3 years with peak incidence at 2 years*.
- 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:

- < 2 months: 60 bpm
- 2-12 months: 50 bpm
- 1-5 years: 40 bpm
- >5 years: 20 bpm

*Bjornson, Candice L. "Croup." The Lancet. 371.9609 329–339.

Behavioral Emergencies Adult & Pediatric

Maintain Scene Safety

- Request law enforcement support, consider staging away until law enforcement has cleared scene.
- Maintain situational awareness, focus on crew safety.
- Observe and record the patient's behavior and living conditions.

Consider Causes & Determine Capacity

- Consider causes (e.g., hypoxia, hypoglycemia, alcohol or drug intoxication, stroke and brain trauma)
- Ask patient directly if they have considered harming self or others.

Refusal & Police Assistance

- Consider requesting law enforcement upon dispatch.
- If patient lacks capacity to refuse care or is an active danger to self or others (e.g., suicidal ideation), they **MAY NOT** refuse care. See (Refusal of Care Policy 8.14)
  - Consider contacting law enforcement for assistance if unable to convince patient to be transported. (See Police Custody Policy 8.13)
- A patient should only be physically restrained for transport when other reasonable options for less restrictive measures have been unsuccessful. (Refer to Restraints Protocol 6.5)

Mobile Crisis Teams

- Behavioral health patients can benefit from mobile crisis teams in many areas of the state however, in New Hampshire not all geographical areas are supported by these teams.
- Licensed EMS units are encouraged to contact resources in their area to coordinate services.
- Due to the lack of direct support by a medical physician, care can only be transferred to a mobile crisis team if the patient refuses treatment and transport by EMS or there is an established Mobile Integrated Healthcare program between EMS and mobile crisis team.
- Patients who lack capacity to refuse care or are an active threat to others or self cannot refuse care and should be transported.

EMR STANDING ORDERS – ADULT & PEDIATRIC

R

Anxiety Management *(Anxious, apprehensive, but not aggressive)*

- Approach patient with the SAFER method.
- Provide calm emotional support and medical care as required.
- Minimize external stimuli (e.g., loud noises, lights)
- Encourage patient to be evaluated by a mental health professional.
- For significant anxiety that cannot be managed with BLS interventions, consider paramedic intercept for pharmacological intervention.

EMT/ ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

E/A

Resistant or Aggressive management *(Resisting necessary treatment/interventions)*

- Attempt verbal de-escalation.
- Consider paramedic intercept for pharmacological intervention, see Restraints Protocol 6.5.

Immediate Danger to Self/Others management

- Attempt verbal de-escalation.
- Consider physical restraints as a last resort if the patient is an immediate danger to self or others. See Restraints Protocol 6.5

Request Paramedic intercept, if available, for pharmacological intervention, see Restraints Protocol 6.5.

Agitation must be thought of as a clinical problem rather than as bad behavior.

Protocol Continues

Protocol Continues

PARAMEDIC STANDING ORDERS - ADULT

P

Anxiety Management *(Anxious, apprehensive, but not aggressive)*

For significant anxiety where BLS interventions have been attempted and are unsuccessful consider:

- Midazolam 2.5 mg IV may repeat once in 5 minute, **OR**
- *Midazolam 5 mg IM/IN may repeat once in 5 minutes **OR**
- Lorazepam 1 mg IV, may repeat once in 5 minutes **OR**
- Diazepam 5 mg IV, may repeat once in 5 minutes.

***For IN administration of midazolam use a 5 mg/mL concentration.

SAFER Model

S Stabilize the situation by lowering stimuli, including voice.
A Assess and acknowledge crisis by validating patient's feelings and not minimizing them.
F Facilitate identification and activation of resources (clergy, family, friends, or police).
E Encourage patient to use resources and take actions in his/her 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 the scene.

Restraints 6.5

The Restraints Procedure was placed after Behavorial Emergencies for ease of finding. It is also listed under procedures.

Procedure 6.5

EMT/ ADVANCED EMT STANDING ORDERS

INDICATIONS

Patients who are a potential harm to themselves or others, or interfere with their own care and lack the ability to refuse care under the Refusal of Care Protocol 8.14 may be restrained to prevent injury to the patient or crew and facilitate necessary medical care. Restraint must be performed in a humane manner and used only as a last resort.

PROCEDURE

E/A

1. Request law enforcement assistance.
2. Attempt less restrictive means of managing the patient, including verbal de-escalation, unless a delay in restraint would create an imminent risk of harm.
3. Ensure that there are sufficient personnel available to physically restrain the patient safely.
4. Restrain the patient in a lateral, semi-recumbent or supine position. In order to gain control, the patient may need to be briefly in a prone position; severe risk of airway and ventilation compromise and death is associated with prone positioning. Do not place devices such as backboards, splints, or other devices on top of the patient. Never hog-tie a patient.

Note that there is no restraint position that is inherently safe. Even patients in the lateral, semi-recumbent or supine position are at risk if their airway and breathing are restricted in any way.

5. The patient must be under constant observation by the EMS crew. This includes direct visualization of the patient as well as cardiac, pulse oximetry, and quantitative waveform capnography monitoring, if available.
6. Perform extremity circulation checks every 15 minutes.
7. Documentation should include the reason for the use of restraints, the type of restraints used, the time restraints were placed, and circulation checks.
8. You must have the ability to remove any restraints used during transport (e.g., handcuff key).

- Patient safety must be the primary focus.
- Agitation must be thought of as a clinical problem rather than as bad behavior.
- Obese patients in either the prone or supine position are at increased risk of apnea.
- Continued patient struggling against physical restraints may lead to hyperkalemia, rhabdomyolysis, and/or cardiac arrest. Chemical restraint may be necessary.

Protocol Continues

PARAMEDIC STANDING ORDERS - ADULT

Resistant or Aggressive Management *(Resisting necessary treatment/interventions)*

Goal is alert and calm, consider:

- Midazolam 2.5 mg IV, may repeat once in 5 minutes, **OR**
- *Midazolam 5 mg IM/IN, may repeat once in 5 minutes (*for IN use 5 mg/mL concentration), **OR**
- Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
- Diazepam 5 mg IV, may repeat once in 5 minutes.

Immediate Danger to Self or Others *(Immediate and active danger of serious harm to themselves or others)*

- A patient who is physically restrained and is not actively fighting against the restraints is not an active danger to themselves or others.
- Before proceeding, assess for and address any potential organic causes for the patient's combativeness (e.g., hypoglycemia). Patients whose breathing is restricted may be combative due to hypoxia.
- The determination that patients are an active threat should generally only be made after attempts at de-escalation have been unsuccessful.

Do not administer chemical sedation to a patient being restrained in the prone position or any position where breathing is restricted.

Prior to proceeding with chemical sedation:

- Reposition the patient as needed to ensure that the patient's airway and breathing are not restricted ("Reposition before you medicate").
- Equipment needed for performing monitoring & resuscitation must be at the patient's side.
- A paramedic shall be focused on monitoring the patient's airway, breathing and circulation during administration and until patient transfer at the emergency department.

Goal is safe and compliant:

- ***Droperidol 5 – 10 mg IM/IV repeat 5 – 10 minutes **OR**
- **Ketamine: 4 mg/kg IM rounded up to nearest 50 mg, maximum dose 500 mg, repeat up to 2 mg/kg IM in 5 – 10 minutes as needed **OR**
- Ketamine: 1 mg/kg IV rounded up to nearest 25 mg, maximum dose 250 mg, repeat 0.5 mg/kg in 5 – 10 minutes as needed.
- Benzodiazepines:
  - Midazolam 5 mg IV, repeat every 5 minutes as needed **OR**
  - *Midazolam 10 mg IM/IN, repeat every 5 minutes as needed **OR**
  - Lorazepam 2 - 4 mg IV, repeat every 5 minutes as needed **OR**
  - Diazepam 10 mg IV, repeat every 5 minutes as needed
- ***Haloperidol 10 mg IM; may repeat once in 10 minutes. Haloperidol can be given in addition to benzodiazepines.
- Contact **Medical Control** for additional doses.

*For IN administration of midazolam use a 5 mg/mL concentration.
**For ketamine use 100 mg/mL concentration
***Administer droperidol or haloperidol with caution to patients who are already on psychotropic medication as this may precipitate serotonin syndrome or malignant hyperthermia.

Protocol Continues

Restraints 6.5

PARAMEDIC STANDING ORDERS - ADULT

After chemical restraint:

- Re-evaluate whether the patient continues to meet criteria for physical restraint and remove if they are no longer necessary to ensure the safety of the patient, providers or both, taking into account transport times, the depth of sedation and the need to transfer the patient at destination.

P

For acute dystonic reaction to haloperidol or droperidol:

- Diphenhydramine 25 – 50 mg IV/IM.

PARAMEDIC STANDING ORDERS - PEDIATRIC

Resistant or Aggressive Management *(Resisting necessary treatment/interventions)*
Contact **Medical Control,** to discuss treatment options

*(**Immediate danger to self/others)** Goal is safe and compliant.
Contact **Medical Control** and consider:

- **Ketamine 4 mg/kg IM rounded to nearest 25 mg, maximum dose 250 mg, may repeat 2 mg/kg IM in 10 minutes as needed **OR**
- Benzodiazepines:
  - *Midazolam 0.2 mg/kg IM/IN (single maximum dose 10 mg) repeat every 5 minutes as needed, **OR**
  - Midazolam 0.1 mg/kg IV (single maximum dose 5 mg) repeat every 5 minutes as needed, **OR**
  - Lorazepam 0.1 mg/kg IV (single maximum dose 4 mg) repeat every 5 minutes as needed, **OR**
  - Diazepam 0.2 mg/kg IV (single maximum dose 10 mg IV) repeat every 5 minutes as needed.

*For IN administration of midazolam use a 5 mg/mL concentration.
**For ketamine use 100 mg/mL concentration

- Patients with alcohol or other sedative drugs onboard are at severe risk of apnea following chemical sedation with ketamine.
- Ketamine may cause transient apnea. The lowest appropriate dose should be used.
- A critically ill or elderly patient receiving a sedative dose of ketamine may become apneic; consider a lower initial dose.
- The decision to administer chemical sedation is a medical decision made by the EMS provider based upon clinical judgment alone and should not be influenced by the police or any other agency"

PEARLS:

- Combativeness may be due to comorbid medical conditions or due to hypoxia, hypercarbia, hypoglycemia, drug and/or alcohol intoxication, drug overdose, brain trauma. Note that hypercarbia due to impaired ventilation may cause agitation even in the presence of normal SpO_2.
- Verbal de-escalation is the safest method and should be delivered in an honest, straightforward, friendly tone, avoiding direct eye contact and encroachment of personal space.
- In stressful situations, overestimation of patient weight is not uncommon and increases risk. Consider having a second provider confirm weight estimate and utilizing lowest estimate.

Brief Resolved Unexplained Event (BRUE) 2.5

Brief Resolved Unexplained Event (BRUE) – formerly known as ALTE

An event occurring in an infant < 1 year old when the observer reports a sudden, brief and now resolved episode of 1 or more of the following:

- Cyanosis or pallor
- Absent, decreased or irregular breathing
- Marked change in tone (hyper or hypotonia)
- Altered level of responsiveness.

EMT/ADVANCED/PARAMEDIC STANDING ORDERS

E/A/P

- Routine Patient Care.
- Perform blood glucose analysis and manage per Hypo/Hyperglycemia Protocols 2.8 & 2.11P.
- Obtain history of event with particular attention to:
  - Activity at onset and history of the event
  - State during the event (cyanosis, 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.
- Transport patient to the hospital.

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

PEARLS

- BRUE is not a diagnosis, but a constellation of symptoms. Potential etiologies include central apnea (immature respiratory center), obstructive apnea (structural), gastroesophageal reflux (laryngospasm, choking, gagging), respiratory (pertussis, RSV), cardiac (congenital heart disease, arrhythmia), seizures.
- Always consider non-accidental trauma in any infant who presents with BRUE, see Victims of Violence Protocol 8.18.

2.6 Childbirth & Newborn Care

EMR/EMT STANDING ORDERS

- Routine Patient care.
- Obtain obstetrical (OB) history.
- Expose patient and determine if signs of imminent delivery are present.
  - Do not digitally examine or insert anything into the vagina.
  - If obstetrical complication is present, consider contacting **Medical Control** and transport to nearest appropriate hospital per local OB Diversion Protocol. (See Obstetrical Emergencies Protocol 2.16).
- If delivery is not imminent place mother in left-lateral recumbent position and transport to a hospital with OB capability.
- If delivery is imminent, assist in newborn's delivery.
  - With palm of hand, apply gentle perineal pressure for a slow, controlled delivery.
  - As the baby's head begins to emerge support the head as it turns. Do not pull on head.
  - If membranes are intact after head emerges, tear membrane with fingers to permit escape of fluid.
  - If umbilical cord is wrapped around newborn's neck, slip the cord over head prior to delivery. If after multiple attempts you are unable to slip cord off the neck, clamp and cut the cord between the clamps (EMT only).
  - Guide the baby's head downward to allow delivery of the upper shoulder.
  - Then guide the baby's head upward to allow delivery of the lower shoulders.
  - Delivery of trunk and legs occurs quickly; be prepared to support infant as it emerges.
- For newborns requiring resuscitation, see Newborn Resuscitation Protocol 2.15.
- Prevent heat loss by rapidly drying and warming:
  - Remove wet linen.
  - For stable newborn and mother, place newborn skin-to-skin on the mother's chest or abdomen.
    - Cover newborn's head, wrap newborn and mother in blankets, silver swaddler/space blanket or commercially available infant warming device. **Do not** use hot packs.
- 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, see Newborn Resuscitation Protocol 2.15.
- Assess breathing 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 2.15.
- Asses 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 Protocol 2.15.
  - Assess skin color: examine trunk, face and mucous membranes.
  - Assess temperature.
  - Record APGAR score at 1 minute and 5 minutes (see chart).
- See Pediatric Color Coded Appendix A3 for vital signs.

R/E

Protocol Continues

Childbirth & Newborn Care 2.6

Policy Continued

EMR/EMT STANDING ORDERS

R/E

- After one minute, clamp and cut the umbilical cord (EMT only):
  - After initial assessment and after the cord stops pulsating.
  - Leave a minimum of 6 inches of cord.
- Provide gentle downward traction (weight of the hand) on the umbilical cord while performing gentle fundal massage.
  - If patient and neonate are stable, consider staying on scene until the placenta has delivered.
  - If ongoing vaginal bleeding following placental delivery, continue to perform gentle fundal massage.
  - Package placenta for hospital staff.
- Monitor maternal blood loss and perfusion. (See Obstetrical Emergencies Protocol 2.16). Note that normal pregnancy is accompanied by higher heart rate and lower blood pressure.
- Active maternal seizures—see Seizures Protocol 2.20A.
- For transport:
  - Ensure newborn remains warm.
  - Turn heat to maximum in ambulance compartment.
  - Consider commercial warming device (do not put heat packs directly on skin).
  - Transport newborn per Pediatric Transport 8.12.

ADVANCED EMT STANDING ORDERS

A

After the umbilical cord is clamped and cut:

- Administer oxytocin 10 Units IM to the mother.

Note: In multiple pregnancy, do not give until all babies are delivered.

PARAMEDIC STANDING ORDERS

P

Ongoing bleeding after uterine massage and oxytocin administration, consider Tranexamic Acid (TXA):

- Mix 1 gram of TXA in 50 - 100 ml of 0.9% NaCl; infuse over approximately 10 minutes IV or IO.

APGAR Scale

SIGN	0	1	2
Appearance	Blue and pale	Body pink, limbs blue	All pink
Pulse	Absent	Less than <100	More than >100
Grimace	No response	Grimace	Coughing and crying
Activity	Limp	Weak	Strong
Respiration	Absent	Irregular, slow	Good, crying

PEARLS:

OB Assessment:

- Length of pregnancy
- Number of pregnancies
- Number of viable births
- Last menstrual period
- Due date
- Prenatal care
- Number of expected babies
- Drug use

Consider **Medical Control** for:

- Prepartum hemorrhage
- Postpartum hemorrhage
- Breech presentation
- Limb presentation
- Nuchal cord
- Prolapsed cord

Signs of imminent delivery:

- Urge to move bowels
- Urge to push
- Crowning
- Contractions less than 2 minutes apart

- Placental delivery can take up to 30 minutes.
- 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.

2.7A Fever (101°F/38.5°C) – Adult

IDENTIFICATION OF POSSIBLE SEPSIS
- Suspected infection – YES
- Evidence of sepsis criteria – YES (2 or more). Refer to Sepsis – Adult Protocol 2.21A:
  - Temperature < 96.8 °F or > 101°F
  - Heart rate > 90 bpm
  - Respiratory rate > 20 bpm
  - Mean Arterial Pressure (MAP) <65mmHg (systolic blood pressure < 90 mmHg)
  - New onset altered mental status OR increasing mental status change with previously. altered mental status
  - Serum lactate level >2 mmol/L OR $ETCO_2$ < 25 mmHg

EMT STANDING ORDERS

E
- Routine Patient Care.
- Obtain temperature.
- Passive cooling; remove excessive clothing.
- For temperature >101°F (38.5°C):
  - If no acetaminophen was taken in last 4 hours:
    - Consider administering acetaminophen 500 – 1,000 mg oral or rectal. (Rectal administration Paramedic only)
  - If acetaminophen was taken within last 4 hours and temperature is still >101°F (38.5°C):
    - Consider administering ibuprofen 600 mg oral.
  - If ibuprofen was taken within the last 6 hours:
    - Consider acetaminophen 500 – 1,000 mg oral or rectal. (Rectal administration Paramedic only)

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P
- Acetaminophen, if not already administered PO:
- 500 - 1000 mg IV, over approximately 10 minutes.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

X
- May repeat acetaminophen dose 650 mg oral or rectal every 4 hours or 1,000 mg every 6 hr. Maximum of 3,000 mg in 24 hours.
- May repeat ibuprofen dose 400-600 mg oral every 6 hours or 800 mg every 8 hours. Maximum of 2,400 mg in 24 hours.

Avoid Ibuprofen in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease.

History
The following symptoms, when associated with a fever, suggest a more serious illness:
- Persistent vomiting
- Difficulty breathing
- Chest pain
- Extreme listlessness or irritability
- Abdominal pain
- Pain when urinating
- Severe headache
- Unusual sensitivity to bright light
- Severe swelling of the throat
- Stiff neck and pain when the head is bent forward
- Unusual skin rash
- Altered mental status

PEARLS:
- The primary goal of treating fever is increasing comfort rather than normalization of body temperature. Fever is a physiologic mechanism that helps fight infection. There is no evidence that fever worsens illness or causes long-term neurologic complications.

Fever (>101°F/38.5°C) Pediatric 2.7P

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected Infection – YES.
- Evidence of sepsis criteria – YES (2 or more) Refer to Sepsis – Pediatric Protocol 2.21:
- Temperature > 101° F or < 96.8° F.
- Heart rate or respiratory 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.
  - Serum lactate level >2 mmol/L or $ETCO_2$ < 25 mmHg.

Note: Consider early consultation with **Medical Control** for suspected pediatric septic shock patients.

Upper limit of Pediatric HR & RR		
Age	Heart Rate	Resp Rate
0 day - < 1 mon	> 205	> 60
≥ 1 month - < 3	> 205	> 60
≥ 3mon - < 1 year	> 190	> 60
≥ 1 year - < 2 year	> 190	> 40
≥ 2 year - < 4 years	> 140	> 40
≥ 4 years - < 6 years	> 140	> 34
≥ 6 years - < 10 years	> 140	> 30
≥ 10 years - < 13 year	> 100	> 30
≥ 13 years	> 100	> 16

*ACP "An Emergency Department Septic Shock Protocol and Care Guideline for Children Initiated at Triage"

EMT/ADVANCED-EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Obtain temperature—rectal temperature preferred in infants < 3 months.
- Passive cooling; remove excessive clothing/bundling.
- For temperatures >101°F (38.5°C):
  - If no acetaminophen was taken in last 4 hours:
    - Consider administering acetaminophen per Pediatric Color Coded Appendix A3 oral or rectal (Rectal administration is Paramedic only).
  - If acetaminophen was taken within the last 4 hours:
    - Consider ibuprofen per Pediatric Color Coded Appendix A3 oral (contraindicated in infants under 6 months of age).

PARAMEDIC STANDING ORDERS

P

- Acetaminophen, if not already administered PO:
  - 15 mg/kg IV (maximum dose 1000 mg), over 10 approximately minutes, pump required if dose less than 1000 mg

EMT/ADVANCED-EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- May repeat acetaminophen dose every 4 hours (not to exceed 6 doses in 24 hours).
- May repeat ibuprofen dose every 6 hours (not to exceed 4 doses in 24 hours).

Avoid Ibuprofen in patients with NSAID allergy, aspirin-sensitive asthma, or renal insufficiency

History:
The following symptoms, when associated with a fever, suggest a more serious illness:

- Persistent vomiting
- Difficulty breathing
- Chest pain
- Extreme listlessness or irritability
- Abdominal pain
- Pain when urinating
- Severe headache
- Unusual sensitivity to bright light
- Severe swelling of the throat
- Stiff neck and pain when the head is bent forward
- Unusual skin rash
- Confusion

PEARLS:

- Avoid inducing shivering.
- The primary goal of treating fever is increased comfort rather than normalization of body temperature. Fever is a physiologic mechanism that helps fight infection. There is no evidence that fever worsens illness or causes long-term neurologic complications.
- Children should never take aspirin.

2.8 Hyperglycemia – Adult & Pediatric

Hyperglycemia is defined as a blood sugar of >250 mg/dl in a patient with signs and symptoms suggestive of Diabetic Ketoacidosis (DKA) or Hyperglycemic Hyperosmolar Nonketotic Syndrome (HHNS), as defined in the PEARLS, may require emergent treatment.

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care.
- Obtain glucose reading.

ADVANCED EMT/PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

A/P

Consider:

- ADULT: Administer 1000 mL IV bolus of IV fluid,
  - May repeat 500 mL fluid bolus once.
- PEDIATRIC: Administer 10 - 20 mL/kg IV bolus of IV fluid,
  - Contact online **Medical Control** for additional bolus.

EMT/ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- Oral fluids: if the patient is not vomiting, provide oral hydration with water.
  - Patient must be alert enough to swallow and protect airway.

PEARLS:

- Diabetic Ketoacidosis (DKA) is a life threatening emergency defined as uncontrolled hyperglycemia with the signs and symptoms of ketoacidosis.
- Signs and symptoms of DKA include uncontrolled blood glucose greater than or equal to 250 mg/dL, weakness, altered mental status, abdominal pain, nausea, vomiting, polyuria (excessive urination), polydipsia (excessive thirst), a fruity odor on the breath (from ketones), and tachypnea (Kussmaul respirations).
- Common causes of DKA 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 without significant ketoacidosis. Most patients present with severe dehydration and focal or global neurologic deficits e.g., coma, altered mental status.
- Hyperglycemia may be detrimental to patients at risk for cerebral ischemia such as victims of stroke, cardiac arrest, and head trauma.

Hyperkalemia 2.9

History	Signs & Symptoms	Differential
• Renal failure • Dialysis • Prolonged crush injury • Cancer • Diabetes • Addison's disease (adrenal insufficiency) • Hyperkalemic periodic paralysis • Dehydration • Medications	Serious ECG changes consistent with hyperkalemia, eg: • Bradycardia • Tall, peaked T waves • Loss of P waves • QRS widening • Tachycardia May progress to a very wide complex sine wave QRS morphology. PLUS one or more of: • Muscle weakness • Paralysis • Cardiac arrest • Hypotension • Altered mental status	• CHF • Sepsis • Other arrhythmia • Hyper or hypokalemia • Toxins

EMT STANDING ORDERS - ADULT

E

- Routine Patient Care.
- 12 Lead ECG, if available

ADVANCED EMT STANDING ORDERS - ADULT

A

- Establish IV access
- If systolic blood pressure is less than 90 mmHg, administer fluid in 250 mL boluses.
  - Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.

PARAMEDIC STANDING ORDERS - ADULT

P

- Maintain continuous cardiac monitoring.
- When ECG interpretation combined with history or clinical presentation suggest hyperkalemia:
  - Calcium gluconate 3 grams IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 – 10 minutes (preferred for patients with a pulse); if ECG changes persist may repeat in 5 – 10 minutes, **OR**
  - Calcium chloride 1 gram IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 -10 minutes.

For calcium chloride administration, ensure IV patency.

- For patients with suspected metabolic acidosis with QRS widening or bradycardia on ECG despite therapy with calcium, consider:
  - Sodium bicarbonate 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes.
  - Flush line after calcium administration, or administer through second IV site; sodium bicarb administered with calcium can lead to the precipitation of calcium.
  - Albuterol continuous 10 – 20 mg nebulized.

See
- Bradycardia Protocol 3.1
- Cardiac Arrest Protocol 3.2
- Crush Injuries Protocol 4.1

Protocol Continues

2.9 Hyperkalemia

Protocol Continued

PARAMEDIC STANDING ORDERS - PEDIATRIC

P

- Maintain continuous cardiac monitoring.
- If ECG suggestive of hyperkalemia, consider administering the following:
  - Calcium gluconate 100 mg/kg IV/IO mixed in 50 -100 mL of 0.9% NaCl with a maximum of 3 gram/dose over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 - 10 minutes **OR**
  - Calcium chloride 20 mg/kg IV/IO mixed in 50 -100 mL of 0.9% NaCl with a maximum of 1 gram/dose over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 - 10 minutes
- Albuterol per chart:

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

See
- Bradycardia Protocol 3.1
- Cardiac Arrest Protocol 3.2
- Crush Injuries Protocol 4.1

PEARLS

Clinical manifestations of hyperkalemia include muscle weakness or paralysis, ECG changes consistent with hyperkalemia and cardiac arrest.

- Hyperkalemia should be suspected in patients with ECG changes such as tall, peaked T waves, loss of P waves, QRS widening, and bradycardia or tachycardia. Severe hyperkalemia may progress to a very wide complex sine wave QRS morphology that, when fast, is sometimes mistaken for ventricular tachycardia.
- Very wide complex (>200msec) PEA may be due to a metabolic cause such as hyperkalemia, tricyclic anti-depressant overdose or other sodium channel blocker toxicity.
- Medical history suggestive of hyperkalemia includes renal failure, dialysis, prolonged crush injury, cancer, diabetes, Addison's disease (adrenal insufficiency), hyperkalemic periodic paralysis, dehydration and certain medications.
- Calcium is the first line agent for hyperkalemia.
- Calcium chloride is irritating to veins and must not be injected into tissues, since severe necrosis and sloughing may occur. Administer slowly, taking great care to avoid extravasation.

Hyperthermia – Adult & Pediatric 2.10

Indications: Elevated temperature due to environmental exposure, over exertion, pharmacological agents.
Contraindications: Fever associated with likely infectious illness.

EMR STANDING ORDERS- ADULT & PEDIATRIC

R

- Routine Patient Care.
- 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.

EMT STANDING ORDERS- ADULT & PEDIATRIC

E

- Obtain temperature – rectal temperature preferred as appropriate.
- If temperature is 40° C (>104° F) or if altered mental status is present, begin active cooling. Methods of active cooling include:
  - Continually misting the exposed skin with tepid water while fanning the patient (preferred).
  - Truncal ice packs and wet towels/sheets may be used, but are less effective than evaporation.
  - Discontinue active cooling when the patient reaches 38.9° C (102° F), or if shivering occurs and cannot be managed by paramedics (see below).

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

A

- ADULT: Consider 500 ml IV fluid bolus for dehydration even if vital signs are normal.
- PEDIATRIC: Consider 10 – 20 ml/kg 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, may repeat once in 5 minutes, **OR**
  - *Midazolam 5 mg IM/IN may repeat once in 5 minutes, **OR**
  - Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
  - Diazepam 5 mg IV, may repeat once in 5 minutes.

PARAMEDIC STANDING ORDERS- PEDIATRIC

- If uncontrolled shivering occurs during cooling:
  - Midazolam 0.05 mg/kg IV (single maximum dose 2.5 mg), may repeat once in 5 minutes, **OR**
  - *Midazolam 0.1 mg IM/IN (single maximum dose 5 mg) may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV (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 IN administration of midazolam use a 5 mg/mL concentration.

PEARLS:
- Exertional hyperthermic patients may be significantly dehydrated, and may require repeat fluid boluses.
- Immersion cooling (ice bath) is the most effective method to lower core body temperature if proper resources are available.

2.11A Hypoglycemia – Adult

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

EMT STANDING ORDERS

E

- Routine Patient Care.
- Obtain glucose reading.
- Administer 15 – 30 grams commercially prepared glucose gel or equivalent.
  - Hypoglycemic patients must be alert enough to swallow and protect airway.
- If unable to administer glucose gel or equivalent orally, administer commercially prepared intranasal glucagon or glucagon auto-injector, if available.
- For patients with an insulin pump who are hypoglycemic with associated altered mental status, and patient cannot ingest oral glucose and glucagon is not available and ALS is not available remove the pump infusion set.
  - Leave the pump connected and running if able to ingest oral glucose or glucagon is available.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Administer dextrose 10% IV via premixed infusion bag (preferred) or prefilled syringe until mental status returns to baseline and glucose level is greater than 60 mg/dL. IV pump not required.
- 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.

Intraosseous (IO) administration of dextrose should be reserved for hypoglycemic patients with severe altered mental status or active seizures and IV access cannot be obtained.

PEARLS:

- Causes of hypoglycemia include medication misuse or overdose, missed meal, infection, cardiovascular insults (e.g., myocardial infarction, arrhythmia), or changes in activity (e.g., exercise).
- Sulfonylureas (e.g., glyburide, glipizide) have long half-lives ranging from 12 - 60 hours. Patients with corrected hypoglycemia who are taking these agents are at particular risk for recurrent symptoms and frequently require hospital admission.
- Oral glucose equivalents include 3 - 4 glucose tablets, 4 oz. fruit juice (e.g. orange juice), non-diet soda, 1 tablespoon of pure New Hampshire maple syrup, sugar, or honey.
- Encourage patients who refuse transport after improvement of GCS and are back to baseline to consume complex carbohydrates (15 grams) and protein (12 – 15 grams) such as peanut butter toast, mixed nuts, milk or cheese to stabilize blood sugar.
- Hypoglycemia may be detrimental to patients at risk for cerebral ischemia, such as victims of stroke, cardiac arrest, and head trauma.

Hypoglycemia – Pediatric 2.11P

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

EMT STANDING ORDERS

E

- Routine Patient Care.
- Obtain glucose reading.
- Oral glucose: administer commercially prepared glucose gel or equivalent. Hypoglycemic patients must be alert enough to swallow and protect airway.
- If unable to administer glucose gel or equivalent orally, administer commercially prepared intranasal glucagon or glucagon auto-injector, if available.
- For patients with an insulin pump who are hypoglycemic with associated altered mental status, and patient cannot ingest oral glucose and glucagon is not available and ALS is not available remove the pump infusion set.
  - Leave the pump connected and running if able to ingest oral glucose or glucagon is available.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Administer dextrose 10% 5 mL/kg IV via premixed infusion bag (preferred) or prefilled syringe-per Pediatric Color Coded Appendix 3, may repeat every 5 minutes until mental status returns to baseline and glucose level is greater than 60 mg/dL. IV pump not required.

If unable to obtain IV access:

- Patients < 20 kg (44 lbs), give glucagon 0.5 mg IM.
- Patients > 20 kg (44 lbs), give glucagon 1 mg IM.

Intraosseous (IO) administration of dextrose should be reserved for hypoglycemic patients with severe altered mental status or active seizures and IV access cannot be obtained.

PEARLS:

- Common causes of hypoglycemia include missed meal, infection, or changes in activity (e.g., exercise).
- Oral glucose equivalents include 3-4 glucose tablets, 4 oz. fruit juice (e.g. orange juice), non-diet soda, 1 tablespoon of pure New Hampshire maple syrup, sugar, or honey.
- Encourage transport to the emergency department for evaluation

2.12 Hypothermia – Adult & Pediatric

EMT STANDING ORDERS - ADULT & PEDIATRIC

E

- Routine Patient Care.
- Handle gently to avoid rough movement and excess activity.
- Prevent further heat loss:
  - Insulate from the ground and shield from wind/water.
  - Move to a warm environment.
  - Once protected from the elements, gently cut away any wet clothing and dry patient.
  - Cover with warm blankets including the head and neck.
  - Consider use of heat reflective emergency blanket, vapor barrier and/or commercial hypothermia bag.
  - Apply truncal warm packs.
  - Patients with moderate to severe hypothermia require active external rewarming with chemical, electrical, or forced hot-air heating packs or blankets.
- Classify hypothermia clinically based on the presence/absence of vital signs, level of consciousness and intensity of shivering.
- Obtain core temperature, if able. Correct blood glucose if less than 60 mg/dL, see Hypoglycemia Protocol 2.11.
- Support shivering with calorie replacement if alert and able to swallow.
- Mildly hypothermic patients with delayed access to a warm environment should not be allowed to stand or walk for 20 minutes. Keep as warm as possible with calorie replacement and shelter.
- Moderate to severe hypothermic patients should be kept horizontal.
- A minimum of 60 second assessment of respirations and pulse is necessary to confirm respiratory arrest or cardiac arrest.
- Patients whose torsos are cool to the touch are likely to have cardiac instability (systolic blood pressure < 90 mmHg or ventricular arrhythmias, core temperature <28°C [82°F]).
- If pulse and breathing are absent, start CPR **unless contraindications exist**
  - Contraindications to CPR in the hypothermic patient include:
    - Chest wall not compressible as whole body is frozen solid.
    - Avalanche burial > 35 minutes **WITH** airway packed with snow.
    - Rescuers exhausted or in danger.
    - Otherwise meets the criteria for When Not to Start under Resuscitation Initiation and Termination Protocol 8.15.

  *****Apparent rigor mortis, dependent lividity or fixed and dilated pupils are **NOT** a contraindication for CPR in hypothermia.
- AED/defibrillate, if indicated, once per cycle of CPR up to three times. Consider limiting further defibrillation attempts until core temperature known to be > 30°C (86°F).
- Hypothermic patients without contraindications to CPR should have continuous CPR and should not be considered for Termination of Resuscitation until the core temperature is above 32°C (90°F) without ROSC.
  - Prolonged CPR is not indicated in patients who are thought to have experienced cardiac arrest prior to cooling (temperature is thought to have been above 32°C (90°F) at the time of cardiac arrest).
  - Causes of cardiac arrest before cooling include major trauma, witnessed normothermic arrest, witnessed drowning with immediate .submersion, and avalanche burial > 35 minutes **WITH** snow packed airway.
- When feasible, patients in severe or profound hypothermia with or without continuing CPR should be transported directly to a center capable of providing cardiopulmonary bypass (CPB) or extracorporeal membrane oxygenation (ECMO). Consider air medical transport.
- CPR may be delayed or performed intermittently if necessary to accomplish field evacuation and transport to an ECMO or CPB center.

Policy Continues

2.12 Hypothermia – Adult & Pediatric

Protocol Continues

ADVANCED EMT - ADULT ONLY
PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

A/P

- Warm IV 0.9% NaCl should be used.
- If pulse and breathing are absent and esophageal or rectal temperature core temperature is < 32° C (89.6° F):
  - Continue CPR.
  - Give IV medications based on dysrhythmia (consider limiting epinephrine doses to 3 and increasing interval dosing time to 6 – 10 minutes.

STAGE: COLD STRESSED: Conscious, shivering, functioning normally, able to care for self.
Core Temp > 35°C (95°F)
Treatment: Warm environment and clothing, warm sweet drinks, and active movement after 20 minutes.

MILD (STAGE: I) Conscious, shivering
Core Temp 35 to 32°C (95 to 89.6°F)
Treatment: Same as Cold Stressed

MODERATE (STAGE: II) Impaired consciousness, not shivering
Core Temp <32 to 28°C (<89.6 to 82.4°F)
Treatment: Cardiac monitoring, minimal and cautious movements to avoid arrhythmias, horizontal position and immobilization, full-body insulation, active external and minimally invasive rewarming techniques (warm environment; chemical, electrical, or forced- air heating packs or blankets; warm parenteral fluids).

SEVERE (STAGE: III) Unconscious, not shivering, vital signs present
Core Temp <28 to 24°C (<82.4 to 75.2°F)
Treatment: HT II management plus airway management as required; ECMO or CPB in cases with cardiac instability that is refractory to medical management.

PROFOUND (STAGE: IV) No vital signs
Core Temp <24°C (<75.2°F)
Treatment: HT II and III management plus CPR and up to three doses of epinephrine (at an intravenous or intraosseous dose of 1 mg) and defibrillation, with further dosing guided by clinical response; rewarming with ECMO or CPB (if available) or CPR with active external and alternative internal rewarming.

2.13 Nausea/Vomiting - Adult & Pediatric

EMT STANDING ORDERS- ADULT & PEDIATRIC

E

- Routine Patient Care.
- For nausea allow patient to inhale vapor from isopropyl alcohol wipe 3 times every 15 minutes as tolerated.

ADVANCED EMT STANDING ORDERS- ADULT

A

- Consider 500 ml IV fluid bolus for dehydration even if vital signs are normal.
  - May repeat 250 ml IV bolus if transport exceeds 15 minutes and patient's condition has not improved.
- Ondansetron 4 mg by PO/IV/IM.

PARAMEDIC STANDING ORDERS- ADULT

P

- Droperidol* 1.25 mg IV/IM
  - *Consider EKG when used with other QT prolonging agents **OR**
- Prochlorperazine 5 mg IV/IM **OR**
- Metoclopramide 5 mg IV.
  - May repeat any of the above medications once after 10 minutes if nausea/vomiting persists.

For dystonic reactions:

- Administer diphenhydramine 25 – 50 mg IV/IM.

PARAMEDIC STANDING ORDERS- PEDIATRIC

- Consider 10 – 20ml/kg IV fluid bolus for dehydration even if vital signs are normal.
- Ondansetron 2 mg ODT for patients 8 -15 kg, 4 mg ODT patients ≥ 16 kg **OR**
- Ondansetron 0.1 mg/kg IV (maximum single dose 4 mg).

ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

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

PEARLS**:**

- To reduce incidence of dystonic reactions, administer prochlorperazine and metoclopramide slowly over 1 - 2 minutes.
- Use prochlorperazine with caution in women of child bearing ages.

Nerve Agents
Organophosphate Poisoning - Adult

2.14A

EMR/EMT/ADVANCED EMT STANDING ORDERS

R/E/A

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

Determine dosing according to the following symptom assessment and guidelines.

- If multiple patients consider activation of local CHEMPACK, per regional plan.

Tag Color	Signs & Symptoms of SLUDGEM	Autoinjector Dose and Monitoring Interval	Maintenance Dose
RED	Apnea Convulsions Unconsciousness Flaccid paralysis	3 Atropine/pralidoxime auto-injectors **AND** 1 diazepam (10 mg) auto-injector	1 Atropine/ pralidoxime auto-injector every hour for 3 hours
YELLOW	Dyspnea Twitching Nausea, vomiting Sweating, anxiety Confusion, headache Constricted pupils, eye pain, visual impairment Restlessness, weakness	1 Atropine/pralidoxime auto-injector **AND** Monitor every 10 minutes for changes in signs and symptoms	
GREEN	Asymptomatic None	Monitor every 10 – 15 minutes for evidence of exposure.	

PARAMEDIC STANDING ORDERS

P

- If field conditions permit, initiate cardiac monitoring and consider the administration of IV medications.
- If symptoms persist after the administration of 3 atropine/pralidoxime auto-injectors or if atropine/pralidoxime auto-injectors are not available:
  - Atropine 2 mg IV/IM; repeat every 5 minutes until secretions clear.
  - Pralidoxime:
    - 1 – 2 grams in 50 - 250 mL of 0.9% NaCl, over 15 – 30 minutes (pump not required), may repeat within 1 hour if muscle weakness and fasciculations are not relieved. Additional doses may be needed every 3 – 8 hours, if signs or symptoms recur.
  - Diazepam 5 mg IV every 5 minutes; or 10 mg IM or diazepam auto-injector (10mg) every 10 minutes, as needed.
    Instead of diazepam, may use either:
    - Lorazepam 2 - 4 mg IV; repeat every 5 minutes as needed, **OR**
    - Midazolam 5 mg IV every 5 minutes as needed, **OR**
    - *Midazolam 10 mg IM/IN every 5 minutes as needed.

PARAMEDIC MEDICAL CONTROL – MAY CONSIDER:

Pralidoxime maintenance infusion:

- Pralidoxime: Initial dose 1 – 2 gram followed by a continuous infusion at 500 mg/hr.

***For IN administration of midazolam use a 5 mg/mL concentration.**

Medical Protocol 2.14A

2.14P Nerve Agents Organophosphate Poisoning – Pediatric

Medical Protocol 2.14P

EMR/EMT/ADVANCED EMT STANDING ORDERS

R/E/A

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

Determine dosing according to the following symptom assessment and guidelines.

- If multiple patients consider activation of local CHEMPACK, per regional plan.

Tag Color	Signs & Symptoms of SLUDGEM	Autoinjector Dose and Monitoring Interval		Maintenance Dose
RED (Pediatric)	Apnea Convulsions Unconsciousness Flaccid paralysis Dyspnea Twitching Nausea, vomiting Sweating, anxiety Confusion Constricted pupils, Restlessness, weakness	Age < 1 year	1 Peds Atropine Auto-Injector (0.5mg) * Monitor every 3 minutes for changes in signs and symptoms	1 Atropine Auto-Injector (0.5mg) every 3 – 5 minutes, as needed.
		Age > 1 year	1 Atropine/pralidoxime auto-injector Monitor every 3 minutes for changes in signs and symptoms	
GREEN (Pediatric)	Asymptomatic None	None Monitor every 10 minutes for evidence of exposure.		

* Atropine/pralidoxime auto-injectors 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, initate cardiac monitoring and consider the administration of IV medications.
- If symptoms persist after the administration of 3 atroprine/pralidoxime auto-injectors or if atroprine/pralidoxime auto-injector are not available:
  - Atropine 0.05 – 0.1 mg/kg IV (preferred) or IM (minimum dose of 0.1 mg, maximum single dose 5 mg); repeat every 2 – 5 minutes as needed.
  - Pralidoxime:
    - Infuse 20 – 50 mg/kg (maximum 2 grams) in 50 - 250 mL of 0.9% NaCl, over 30 minutes (pump not required) may repeat in 1 hour if muscle weakness and fasciculations are not relieved. Additional doses may be needed every 10 – 12 hours, if signs and symptoms recur.
  - Diazepam 0.2 mg/kg IV (maximum single dose 10 mg), repeat every 5 minutes as needed.
  - **Instead of diazepam, may use either:**
    - Lorazepam 0.1 mg/kg IV (single maximum dose of 4 mg), repeat every 5 minutes as needed, **OR**
    - Midazolam 0.1 mg/kg IV, (single maximum dose 5 mg),repeat every 5 minutes as needed, **OR**
    - *Midazolam 0.2 mg IM/IN (single maximum dose 10 mg), repeat every 5 minutes as needed.

PARAMEDIC MEDICAL CONTROL – MAY CONSIDER:

- Pralidoxime maintenance infusion:
- Initial does of 20 – 50 mg/kg, to a maximum dose of 1 gram, followed by continuous infusion at 10 – 20 mg/kg/hr.

***For IN administration of midazolam use a 5 mg/mL concentration.**

Newborn Resuscitation 2.15

EMR/EMT/ADVANCED EMT STANDING ORDERS

- Routine Patient Care—initial steps identified in Childbirth & Newborn Care Protocol 2.6.
- Continue warming techniques during resuscitation efforts.
- 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 100 mmHg.

R/E/A

- 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 using room air.
  - Inflation pressures should be individualized to achieve chest rise with each breath. Be aware that bag-valve-mask pop-off valves may deliver inconsistent results.
- 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 compression/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.
  - When newborn is stabilized see Childbirth & Newborn Care Protocol 2.6.

PARAMEDIC STANDING ORDERS

P

- If there is airway or ventilatory compromise due to meconium or other airway obstruction consider endotracheal suctioning using meconium aspirator and/or endotracheal intubation.
- If bag valve mask ventilation is inadequate or chest compressions are indicated, consider intubation using a 3.0 mm or 4.0 mm endotracheal tube. (For an infant born before 28 weeks gestation, a 2.5mm endotracheal tube should be used.)
  - Heart rate and $EtCO_2$ are the best indicators of whether the tube is properly placed in the trachea.
- Establish IV/IO. Obtain blood sample if possible.
  - If hypovolemia is suspected, administer 10 ml/kg bolus over 5 – 10 minutes.
  - If the heart rate fails to improve with chest compressions, administer epinephrine (0.1 mg/mL concentration) 0.01 – 0.03 mg/kg IV (0.1 – 0.3 ml/kg).
  - IV is preferred route for epinephrine (0.1 mg/mL concentration) — if there is a delay in establishing access, may administer via ETT 0.05 to 0.1 mg/kg .
  - If glucose level is <60 mg/dl:
    - Administer dextrose per Pediatric Color Coded Appendix A3.

PEARLS:

- ALS NOTES: Flush all meds with 0.5 to 1.0 ml 0.9% NaCl and follow all ETT meds with positive-pressure ventilation.

2.16 Obstetrical Emergencies

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 message and oxytocin administration.
- Pre-eclampsia/Eclampsia: BP> 160/100, severe headache, visual disturbances, edema, RUQ pain, seizures

EMR & EMT STANDING ORDERS

- 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 Control** and follow local OB diversion protocol, if available.

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 (see Shock Protocol 2.22)

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.

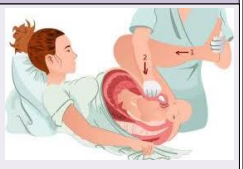
For limb presentation:

- Place mother in knee-chest or Trendelenburg 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 Trendelenburg 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 nasopharynx and oropharynx, as needed
- Position mother with buttocks dropped off end of stretcher and thighs flexed upward. 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.

Policy Continues

Policy Continued

EMR & EMT STANDING ORDERS

E

For postpartum hemorrhage:

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

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

- 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 recombent. Transport to nearest emergency department.
- See Cardiac Arrest Protocol 3.2A

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.
- For preterm labor:
  - 20 mL/kg IV fluid may repeat once
- After delivery:
  - Oxytocin 10 Units IM.
  - Note: In multiple pregnancy, do not give until all babies are delivered.

PARAMEDIC STANDING ORDERS

P

- Ongoing bleeding after uterine massage and oxytocin administration, consider Tranexamic Acid (TXA):
  - Mix 1 gram of TXA in 50 - 100 ml of 0.9% NaCl; infuse over approximately 10 minutes IV or IO

PEARL:
The amount of bleeding is difficult to estimate. Menstrual pad holds between 5 - 15 mL depending on type of pad. Maternity pad holds 100 mL when completely saturated. Chux pad holds 500 mL. Estimate the amount of bleeding by number of saturated pads in last 6 hours. Consider transporting the soiled linen to the hospital to help estimate blood loss.

PRE-ECLAMPSIA / ECLAMPSIA

Pre-eclampsia/Eclampsia is most commonly seen in the last 10 weeks of gestation, during labor, or up to 6 weeks post-partum.

EMT/ADVANCED EMT STANDING ORDERS

E

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

ADVANCED EMT STANDING ORDERS

A

- Establish IV access.

PARAMEDIC STANDING ORDERS

P

For patients with SBP > 160 mmHg or DBP > 110 mmHg:

- Labetalol 20 mg IV, may repeat in 10 to 30 minutes increasing in increments of 20 mg to a maximum of 80 mg **OR**
- Nifedipine 30 mg PO

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

- Magnesium sulfate, 4 grams IV (mix in 100 mL 0.9% NaCl) bolus over 10 minutes, then consider 1 gram/hr continuous infusion see Seizure Protocol 2.20A.
- Contact **Medical Control** and follow local OB Diversion Protocol.

2.17A Opioid Overdose – Adult

EMR & EMT STANDING ORDERS

R/E

- Routine Patient Care.
- Naloxone should be administered to those with signs and symptoms of hypoventilation from opioid intoxication, as follows:
  - Naloxone 1 mg (1 mL) per nostril (IN) via prefilled syringe and atomizer for a total of 2 mg **OR**
  - Naloxone 4 mg (0.5 mL) commercially prepared nasal spray.
  - Repeat every 5 - 10 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness.
  - Monitor the patient for recurrent respiratory depression and decreased mental status.
- Determine and document if bystander naloxone was given.
- If you suspect a poisoning or overdose by any other substance than an opioid see the Poisoning and Overdose Protocol 2.19.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Naloxone 0.4 – 2.0 mg IV, repeat every 2 - 3 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness.
- Naloxone 0.4 – 2.0 mg IM, repeat every 5 - 10 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness.

- Patient may become agitated or violent following naloxone administration due to opioid withdrawal/hypoxia.
- Patient may have used more than one type of substance use and reversal of the opiate may unmask the effects of other substances which could lead to violence or other signs and symptoms.

Naloxone Administration Kits

EMS units may choose to stock their ambulances with naloxone administration kits intended to be left at the scene where a suspected overdose patient was treated.

- Instructions on use as well as direction to area resources, to include the NH Statewide Addiction Crisis Line 211, should also be attempted.
- Leave-behind naloxone administration kits must be separate from the medication used for patient care.
- Naloxone administration kits should not be left at the scene where a patient has a known allergy to naloxone or kit constituents.

PEARLS:

- Signs and symptoms can include respiratory depression, apnea, altered mental status and/or pinpoint pupils.
- Intranasal naloxone may take up to 10 minutes to have effect. Repeat dosing should only be considered after an adequate amount of time has passed for medication effects to be seen.
- Capnography may be helpful for monitoring respiratory status and titrating to lowest effective naloxone dose. See Capnography Procedure 6.3.
- The clinical opioid reversal effect of naloxone is limited and may end within an hour, whereas some opioids may have extended release and therefore may have longer durations.

Opioid Overdose – Pediatric 2.17P

EMR/EMT STANDING ORDERS

R/E

- Routine Patient Care.
- Naloxone should be administered to those with signs and symptoms of hypoventilation from opioid intoxication, as follows:
  - **Infant & Toddle**r:
    - 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 total of 2 mg **OR**
    - Naloxone 4 mg (0.5 mL) commercially prepared nasal spray.
  - Monitor the patient for recurrent respiratory depression and decreased mental status.
  - For additional doses call **Medical Control**.
- Determine and document if bystander naloxone was given.
- If you suspect a poisoning or overdose by any other substance than an opioid see the Poisoning and Overdose Protocol 2.19.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Naloxone 0.1 mg/kg IN/IV refer to Pediatric Color Coded Appendix 3, repeat every 2 – 3 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness.
- Naloxone 0.1 mg/kg IM refer to Pediatric Color Coded Appendix 3, repeat every 5 – 10 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness.

- Patient may become agitated or violent following naloxone administration due to opioid withdrawal/hypoxia.
- Patient may have used more than one type of substance use and reversal of the opiate may unmask the effects of other substances which could lead to violence or other signs and symptoms.

Naloxone Administration Kits

EMS units may choose to stock their ambulances with naloxone administration kits intended to be left at the scene where a suspected overdose patient was treated.

- Instructions on use as well as direction to area resources, to include the NH Statewide Addiction Crisis Line 211, should also be attempted.
- Leave-behind naloxone administration kits must be separate from the medication used for patient care.
- Naloxone administration kits should not be left at the scene where a patient has a known allergy to naloxone or kit constituents.

PEARLS:

- Signs and symptoms can include respiratory depression, apnea, altered mental status and/or pinpoint pupils.
- Intranasal naloxone may take up to 10 minutes to have effect. Repeat dosing should only be considered after an adequate amount of time has passed for medication effects to be seen.
- Capnography may be helpful for monitoring respiratory status and titrating to lowest effective naloxone dose. See Capnography Procedure 6.1.
- The clinical opioid reversal effect of naloxone is limited and may end within an hour, whereas some opioids may have extended release and therefore may have longer durations.

2.18A Pain Management – Adult

EMT STANDING ORDERS

E

- Routine Patient Care.
- Use ample padding when splinting musculoskeletal injuries.
- Consider the application of a cold pack.
- Have the patient rate his/her pain from 0 to 10, or use another appropriate pain scale. If there is a language barrier, use self report scale, see Pain – Pediatric Protocol 2.18P.
- If not contraindicated, consider :
  - Acetaminophen 325 – 1000 mg PO, no repeat **OR**
  - Ibuprofen 600 mg PO, no repeat.
- For moderate to severe pain consider paramedic intercept.

Contraindications of acetaminophen:

- Hypersensitivity to acetaminophen or any component of the formulation; severe hepatic impairment or severe active liver disease. Use with caution if history of alcohol abuse. Do not use with other drug products containing acetaminophen within last four hours.

Contraindications of ibuprofen:

- Hypersensitivity to ibuprofen; cerebrovascular bleeding or other bleeding disorders, active gastric bleeding, administration of a medication containing ibuprofen within last six hours.

AEMT STANDING ORDERS

A

- Nitrous oxide: The patient must be able to self-administer this medication.
- Nitrous oxide is contraindicated in patients with abdominal pain, blunt chest trauma, head-injury, or diving-emergency patients.
- Note: Nitrous oxide may only be used if patient has not received an EMS-administered opiate or ketamine. A ventilation fan should be used while administering nitrous oxide.
- Acetaminophen, if not already administered PO:
  - 1000 mg IV, over approximately 10 minutes.

PARAMEDIC STANDING ORDERS

P

- Ketorolac 15 mg IV/IM.
  - Consider as first line in renal colic.
- For severe pain or pain refractory to above, consider one of the following opiates:
- Fentanyl:
  - 25 – 100 micrograms IV, every 2 – 5 minutes to a total of 300 micrograms titrated to pain relief;
  - 50 – 100 micrograms IM/IN, every 5 minutes to a total of 300 micrograms titrated to pain relief, **OR**
- Hydromorphone:
  - 0.5 – 1 mg IV, every 10 minutes to a total of 4 mg titrated to pain relief and if systolic BP is >100 mmHg,
  - 1 – 2 mg IM every 20 minutes to a total of 4 mg titrated to pain relief and if systolic BP is greater than 100 mmHg**, OR**
- Morphine:
  - 2 – 10 mg IV/IM every 10 minutes to a total of 20 mg titrated to pain relief and if systolic BP is >100 mmHg.
- **Antidote:** For hypoventilation from opiate administration by EMS personnel, assist ventilations and administer naloxone as directed in the Opioid Overdose Protocol 2.17A.

AND/OR

- Ketamine:
  - 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed) may repeat every 5 minutes to a total of 40 mg, as tolerated, **OR**
  - 25 – 50 mg IM/IN may repeat every 30 minutes, as tolerated.

Protocol Continues

Protocol Continued

PARAMEDIC STANDING ORDERS

For nausea: see Nausea/Vomiting 2.13 Protocol.

Contact Medical Control for guidance in patients with:

- Altered mental status **OR**
- Additional doses of a medication, **OR**
- Benzodiazepine administration 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, or hypotension.
- A ventilation fan should be used while administering nitrious oxide

Avoid ketorolac in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease.

Ketamine is contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, and aortic aneurysm.

PEARLS:

- Ketamine should be considered in patients with severe pain, hemodynamic compromise, pain refractory to opiates, patients on chronic opiate treatment (e.g., Methadone, Buprenophine), and patients with history of substance use disorder.
- Ketamine may cause appearance of intoxication at higher doses. Dysphoria (emergence reaction) may occur as the medication effects wear off.
- Place the patient in a position of comfort, if possible.
- Avoid coaching the patient; simply ask them to rate his/her 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 the patient's pain level and vital signs every 5 minutes.
- Narcotics are not recommended for first line treatment of headache and should be reserved for severe headaches only.

2.18P Pain Management – Pediatric

EMT STANDING ORDERS

- Routine Patient Care.
- Place the patient in position of comfort
- Use ample padding when splinting musculoskeletal injuries.
- Consider the application of a cold pack for 30 minutes.
- If not contraindicated, consider :
  - Acetaminophen 15 mg/kg PO, no repeat **OR**
  - Ibuprofen 10 mg/kg PO, no repeat

For adminsitration of ibuprofen use 100mg/5mL concentration.

Weight (lbs)	Weight (kg)	Tylenol		Ibuprofen	
		mg	mL	mg	mL
		160	5	100	5
		Dose (mg)	Volume (mL)	Dose (mg)	Volume (mL)
7.0 - 11.0	3.0 - 5.0	60	1.9	HOLD	HOLD
13 - 15	6.0 - 7.0	97.5	3.0	HOLD	HOLD
18 - 20	8.0 - 9.0	120	3.8	HOLD	HOLD
22 - 24	10.0 - 11.0	160	5.0	100	5.0
26 - 31	12.0 - 14.0	195	6.1	130	6.5
33 - 40	15 - 18	247.5	7.7	130	6.5
42 - 48	19 - 22	311.25	9.7	205	10.25
53 - 62	24 - 28	405	12.7	270	13.5
66 - 79	30 - 36	540	16.9	360	18

E

Contraindications of acetaminophen:

- Hypersensitivity to acetaminophen or any component of the formulation; severe hepatic impairment or severe active liver disease. Use with caution if history of alcohol abuse. Do not use with other drug products containing acetaminophen within last four hours.

Contraindications of ibuprofen:

- Hypersensitivity to ibuprofen; cerebrovascular bleeding or other bleeding disorders, active gastric bleeding, administration of a medication containing ibuprofen within last six hours.

AEMT STANDING ORDERS

A

- Nitrous oxide: Patient must be able to self-administer this medication. Nitronox is contraindicated in patients with abdominal pain, blunt chest trauma, head injury, or diving-emergency patients.
- Note: Nitrous oxide may only be used if the patient has not received an EMS-administered opiate or ketamine and a ventilation fan should be used while administering nitrous oxide.
- For moderate to severe pain consider paramedic intercept
- Rate the patient's pain:
  - Children greater than 8 years of age:
    - Ask the patient to rate pain on a scale from 0 – 10
  - Children 3 – 8 years of age:
    - Use the Wong-Bakers FACES Scale see Pain Management - Pediatric Protocol 2.18P Page 2.
  - Children less than 3 years of age or non-verbal:
    - Use the r-FLACC Pain Scale, see Pain Management - Pediatric Protocol 2.18P Page 3.

Protocol Continues

Protocol Continued

PARAMEDIC STANDING ORDERS

- Acetaminophen 15 mg/kg IV (maximum dose 1000 mg), over approximately 10 minutes, pump required if dose less than 1000 mg.

For severe pain or pain refractory to above, consider one of the following opiates:

- Fentanyl 0.5 - 1.0 micrograms/kg IV/IM/IN (maximum dose 100 micrograms) may repeat 0.5 micrograms/kg (maximum dose 50 micrograms) every 5 minutes. May be repeated to a total of 3 doses, **OR**
- Hydromorphone 0.01 – 0.02 mg/kg (maximum dose 1 mg) IV every 10 minutes to a total of 4 mg titrated to pain relief and if systolic BP is greater than 100 mmHg **OR**
- Morphine 0.1 mg/kg IV (maximum dose 5 mg) if systolic BP is greater than 100 mmHg, may repeat 0.05 mg/kg (maximum dose 2.5 mg) every 5 minutes. May be repeated to a total of 3 doses.

P

Antidote: For hypoventilation from opiate administration by EMS personnel, assist ventilations and administer naloxone as directed in the Opioid Overdose Protocol 2.17P.

AND/OR

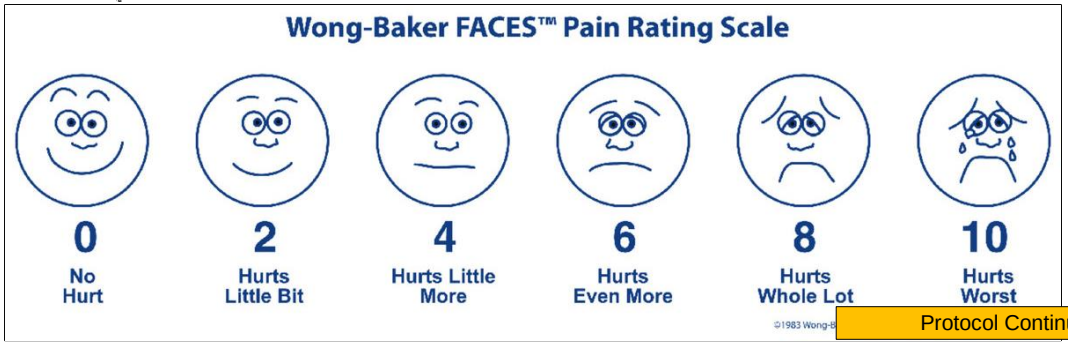
- Ketamine for patient > 3 months:
  - 0.5 – 1 mg/kg (maximum dose 50 mg) IN **OR**
  - 0.1 – 0.25 mg/kg (maximum dose 20 mg) IV diluted in 50 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed).

Antidote: For dysphoria (emergence reaction) caused by ketamine administer midazolam 0.05 mg/kg IV (single maximum dose of 2.5 mg) or *0.1 mg/kg IM/IN (single maximum dose 5 mg), may repeat once in 5 minutes.

- For nausea: See Nausea/Vomiting 2.13 Protocol
- Contact **Medical Control** for guidance regarding:
  - Altered mental status **OR**
  - Requests to provide additional doses of a medication.

- Ketamine is contraindicated in patients unable to tolerate hyperdynamic states such as those with known or suspected aortic dissection, myocardial infarction, and aortic aneurysm.
- Avoid ketorolac in patients with NSAID allergy, aspirin-sensitive asthma, renal insufficiency, pregnancy, or known peptic ulcer disease.

***For IN administration of midazolam use a 5 mg/mL concentration.



Protocol Continues

2.18P Pain Management - Pediatric

Protocol Continued

PEARLS:

- Ketamine should be considered in patients with severe pain, hemodynamic compromise, pain refractory to opiates, patients on chronic opiate treatment.
- Ketamine dosing is based on Pediatric Color Coded Appendix
- Ketamine may cause appearance of intoxication at higher doses. Dysphoria may occur as the medication effects wear off.
- Avoid coaching the patient; simply ask him/her to rate his/her pain on a scale from 0 – 10, where 0 is no pain at all and 10 is the worst pain the patient has ever experienced.
- Give reassurance, psychological support, and distraction.
- Reassess the patient's pain level and vital signs every 5 minutes.

Faces Legs Activity Cry Consolability Revised Scale (FLACC-R)

Categories	0	1	2
Face	No particular expression or smile	Occasional grimace or frown, withdrawn, disinterested, **sad, appears worried**	Frequent to constant quivering chin, clenched jaw, **distressed looking face, expression of fright/panic**
Legs	Normal position or relaxed, **usual tone & motion to limbs**	Uneasy, restless, tense, **occasional tremors**	Kicking, or legs drawn up, **marked increase in spasticity, constant tremors, jerking**
Activity	Lying quietly, normal position, moves easily, **regular, rhythmic respirations**	Squirming, shifting back and forth, tense, **tense/guarded movements, mildly agitated, shallow/splinting respirations, intermittent sighs**	Arched, rigid or jerking, **severe agitation, head banging, shivering, breath holding, gasping, severe splinting**
Cry	No cry (awake or asleep)	Moans or whimpers; occasional complaint, **occasional verbal outbursts, constant grunting**	Crying steadily, screams or sobs, frequent complaints, **repeated outbursts, constant grunting**
Consolability	Content, relaxed	Reassured by occasional touching, hugging or being talked to, distractible	Difficult to console or comfort, **pushing caregiver away, resisting care or comfort measures**

Each of the five categories (F) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between zero and ten.

Patients who are awake: Observe for at least 1-2 minutes. Observe legs and body uncovered. Reposition patient or observe activity, assess body for tenseness and tone. Initiate consoling interventions if needed

Patients who are asleep: Observe for at least 2 minutes or longer. Observe body and legs uncovered. If possible reposition the patient. Touch the body and assess for tenseness and tone.

The revised-FLACC can be used for all non-verbal children. The additional descriptors (in bold) are descriptors validated in children with cognitive impairment. The nurse can review with parents the descriptors within each category. Ask them if there are additional behaviors that are better indicators of pain in their child. Add these behaviors to the tool in the appropriate category.

Poisoning/Overdose – Adult 2.19A

EMR/EMT/ADVANCED EMT STANDING ORDERS

R/E/A

- Routine Patient Care.
- Prior to calling Poison Control attempt to identify substance, quantity, time/route of exposure and patient information (weight, medications, history, intentional, accidental).
- Contact Poison Control at (800) 222-1222 as soon as practical.
- Ingested Poison:
  - Consider activated charcoal 25 – 50 grams by mouth if recommended by Poison Control or **Medical Control**. (EMT only)
- For suspected opiate overdose with severe respiratory depression, see Opioid Overdose Protocol 2.17A.
- For suspected isolated cyanide poisoning, see Smoke Inhalation Protocol 2.23A.

PARAMEDIC STANDING ORDERS

P

Suggested Treatments

- Beta Blocker and Calcium Channel Blocker refer to Bradycardia Protocol 3.1A .
- Dystonic Reaction:
  - Diphenhydramine 25 – 50 mg IV/IM.
- Organophosphates, see Nerve Agent/Organophosphate Protocol 2.14A.
- Suspected Sympathomimetic/Stimulant:
  - Midazolam 2.5 mg IV, may repeat once in 5 minutes, **OR**
  - *Midazolam 5 mg IM/IN, may repeat once in 5 minutes, **OR**
  - Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
  - Diazepam 5 mg IV, may repeat once in 5 minutes.
- Tricyclic with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 100 milliseconds):
  - Sodium bicarbonate 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes..

*****For IN administration of midazolam use a 5 mg/mL concentration.

This protocol is designed to provide general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line medical control or in consultation with Poison Control.

POISON CONTROL

PEARLS:

- If possible, bring container/bottles and/or contents.
- Pulse oximetry may NOT be accurate for toxic inhalational patients.
- Capnography may be helpful for monitoring respiratory status. See Capnography Procedure 6.1.

Protocol Continues

2.19A Poisoning/Overdose – Adult

Protocol Continued

Signs & Symptoms, which may or may not be present:

- **Acetaminophen**: Initially no sign/symptoms or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **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.
- **Anticholinergic**: Tachycardia, fever, dilated pupils, mental status changes. Blind as a bat (blurred vision). Dry as a bone (dry mouth). Red as a beet (flushing). Mad as a hatter (confusion). Hot as a hare (hyperthermia).
- **Aspirin:** Abdominal pain, vomiting, tachypnea, fever and/or altered mental status. If not detected and treated may cause renal dysfunction, liver failure, and/or cerebral edema
- **Cardiac Medications**: Dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Depressants**: Bradycardia, hypotension, decreased temperature, decreased respirations, non-specific pupils.
- **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.
- **Opiate**: Respiratory depression or arrest, pinpoint pupils, decreased mental status. See Opioid Overdose Protocol 2.17A.
- **Organophosphates**: Bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils. DUMBELLS: Diarrhea, Urination, Miosis/muscle weakness, Brochorrhea, Bradycardia, Emesis, Lacrimation, Saltvation/sweating.
- **Solvents**: Nausea, vomiting, coughing, mental status change and arrhythmias. Patient with significant solvent exposure, must be handled gently to reduce the incident of arrhythmia and/ or subsequent cardiac arrest. Examples: cleaning products, gasoline, glues, paint.
- **Sympathomimetic/Stimulants**: Tachycardia, hypertension, seizures, agitation, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples: bath salts, cocaine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), salbutamol.
- **Tricyclic:** Seizures, dysrhythmias, hypotension, decreased mental status or coma.

Poisoning/Overdose – Pediatric 2.19P

EMR/EMT/AEMT STANDING ORDERS

R/E/A

- Routine Patient Care.
- Prior to calling Poison Control attempt to identify substance, quantity, time/route of exposure and patient information (weight, medications, history, intentional, accidental).
- Contact Poison Control at (800) 222-1222 as soon as practical.
- For suspected opioid overdose with severe respiratory depression, see Opioid Overdose Protocol 2.17P.
- For suspected isolated cyanide poisoning, see Smoke Inhalation Protocol 2.23P.

PARAMEDIC STANDING ORDERS

P

Suggested Treatments

- Beta Blocker and Calcium Channel Blocker, see Bradycardia Protocol 3.1P.
- Dystonic Reaction:
  - Diphenhydramine 1mg/kg IV/IM up to 50 mg.
- Organophosphates, see Nerve Agent/Organophosphate Protocol 2.14P.
- Suspected Sympathomimetic/Stimulant:
  - Midazolam 0.05 mg/kg IV (single maximum dose 2.5 mg, may repeat once in 5 minutes, **OR**
  - *Midazolam 0.1 mg/kg mg IM/IN (single maximum dose 5 mg), may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg mg IV (single maximum dose 1 mg), may repeat once in 5 minutes, **OR**
- Diazepam 0.1 mg/kg IV (single maximum dose 5 mg), may repeat once in 5 minutes.
- Tricyclic with symptomatic dysrhythmias, (e.g., tachycardia and wide QRS > 100 milliseconds):
  - Sodium bicarbonate 1 mEq/kg IV/IO over 5 minutes, may repeat in 5 minutes.

*****For IN administration of midazolam use a 5 mg/mL concentration.

This protocol is designed to provide general guidelines for treatment. Specific treatments or antidotes may be appropriate as directed by on-line medical control or in consultation with Poison Control.

POISON CONTROL

PEARLS:

- If possible, bring container/bottles, and/or contents.
- Pulse oximetry may NOT be accurate for toxic inhalational patients.
- Capnography may be helpful for monitoring respiratory status. See Capnography Procedure 6.3.

Protocol Continues

Protocol Continued

Signs & Symptoms, which may or may not be present:

- **Acetaminophen**: Initially no sign/symptoms or nausea/vomiting. If not detected and treated, may cause irreversible liver failure.
- **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.
- **Anticholinergic**: Tachycardia, fever, dilated pupils, mental status changes. Blind as a bat (blurred vision). Dry as a bone (dry mouth). Red as a beet (flushing). Mad as a hatter (confusion). Hot as a hare (hyperthermia).
- **Aspirin:** Abdominal pain, vomiting, tachypnea, fever and/or altered mental status. If not detected and treated may cause renal dysfunction, liver failure, and/or cerebral edema
- **Cardiac Medications**: Dysrhythmias, altered mental status, hypotension, hypoglycemia.
- **Depressants**: bradycardia, hypotension, decreased temperature, decreased respirations, non-specific pupils.
- **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.
- **Opiate**: Respiratory depression or arrest, pinpoint pupils, decreased mental status. See Opioid Overdose Protocol 2.17A.
- **Organophosphates**: Bradycardia, increased secretions, nausea, vomiting, diarrhea, pinpoint pupils. DUMBELLS: Diarrhea, Urination, Miosis/muscle weakness, Brochorrhea, Bradycardia, Emesis, Lacrimation, Saltvation/sweating.
- **Solvents**: Nausea, vomiting, coughing, mental status change and arrhythmias. Patient with significant solvent exposure, must be handled gently to reduce the incident of arrhythmia and/or subsequent cardiac arrest. Examples: cleaning products, gasoline, glues, paint.
- **Sympathomimetic/Stimulants**: Tachycardia, hypertension, seizures, agitation, increased temperature, dilated pupils, anxiety, paranoia, diaphoresis. Examples: bath salts, cocaine, methamphetamine, ecstasy, ADHD drugs, thyroid meds (rarely), salbutamol.
- **Tricyclic:** Seizures, dysrhythmias, hypotension, decreased mental status or coma.

Seizures – Adult 2.20A

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- If the blood glucose reading is <60 mg/dL, see Hypoglycemia Protocol 2.11A.
- If a benzodiazepine has been prescribed by the patient's provider (e.g., midazolam intranasal (Nayzilam) or diazepam rectal gel (Diastat)), assist the patient or care giver with the administration in accordance with the prescriber'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.
  - Swipe the VNS magnet over the stimulator, located in the left chest area, for one second, counting one-one thousand while it's swiped over the chest.
  - Note: do not delay medication administration.

PARAMEDIC STANDING ORDERS

P

While seizure activity is present, consider:

- *Midazolam 10 mg IM/IN, repeat every 5 minutes as needed, **OR**
- Midazolam 5 mg IV, repeat every 5 minutes as needed, **OR**
- Lorazepam 2 - 4 mg IV, repeat every 5 minutes as needed, **OR**
- Diazepam 10 mg IV, repeat every 5 minutes as needed.

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

- Magnesium sulfate, 4 grams IV (mix in 100 mL 0.9% NaCl) bolus over 10 minutes, then consider 1 gram/hr continuous infusion.

***For IN administration of midazolam use a 5 mg/mL concentration.

Do not delay medication administration to place an IV/IO with an actively seizing patient.

PEARLS:

- Do not attempt to restrain the patient; protect them from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, active infection, trauma, hypoglycemia, poisoning).
- **Status epilepticus** is defined as any generalized seizures lasting more than 5 minutes. This is a true emergency requiring rapid airway control, treatment (including benzodiazepines), and transport.
- IM/IN is the preferred route for midazolam where an IV has not been previously established.
- IM midazolam should be administered to the lateral thigh.
- Diazepam and lorazepam are not well absorbed IM and should be given IV.
- There is an increased risk of apnea with >2 doses of benzodiazepines.

2.20P Seizures – Pediatric

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- If the blood glucose reading is <60 mg/dL, see Hypoglycemia Protocol 2.11P.
- If a benzodiazepine has been prescribed by the patient's provider (e.g. midazolam intranasal (Nayzilam) or diazepam rectal gel (Diastat)), assist the patient or care giver with the administration in accordance with the prescriber'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.
  - Swipe the VNS magnet over the stimulator, located in the left chest area, for one second, counting one-one thousand while it's swiped over the chest.
  - Note: do not delay medication administration.

PARAMEDIC STANDING ORDERS

P

While seizure activity is present, consider:

- *Midazolam 0.2 mg/kg IM/IN (single maximum dose 10 mg) repeat every 5 minutes as needed, **OR**
- Midazolam 0.1 mg/kg IV (single maximum dose 5 mg) repeat every 5 minutes as needed, **OR**
- Lorazepam 0.1 mg/kg IV (single maximum dose 4 mg) repeat every 5 minutes as needed, **OR**
- Diazepam 0.2 mg/kg IV (single maximum dose 10 mg IV) repeat every 5 minutes as needed.

*****For IN administration of midazolam use a 5 mg/mL concentration.

Do NOT routinely place an IV/IO for the actively seizing patient (unless needed for other reasons).

PEARLS:

- Do not attempt to restrain the patient; protect them from injury.
- History preceding a seizure is very important. Find out what precipitated the seizure (e.g., medication non-compliance, active infection, trauma, hypoglycemia, poisoning).
- **Status epilepticus** is defined as any generalized seizures lasting more than 5 minutes. This is a true emergency requiring rapid airway control, treatment (including benzodiazepines), and transport.
- IM/IN is the preferred route for midazolam where an IV has not been previously established.
- IM midazolam should be administered to the lateral thigh.
- Diazepam and lorazepam are not well absorbed IM and should be given IV.
- There is an increased risk of apnea with >2 doses of benzodiazepines.

Sepsis – Adult 2.21A

IDENTIFICATION OF POSSIBLE SEPSIS
- Suspected infection – YES
- Evidence of sepsis criteria – YES (2 or more):
  - Temperature < 96.8 °F or > 101°F
  - Heart rate > 90 bpm
  - Respiratory rate > 20 bpm
  - Mean Arterial Pressure (MAP) <65mmHg (systolic blood pressure < 90 mmHg)
  - New onset altered mental status OR increasing mental status change with previously altered mental status
  - Serum lactate level >2 mmol/L or $ETCO_2$ < 25 mmHg

EMT STANDING ORDERS - ADULT

E
- Routine Patient Care.
- Do not delay transport.
- If positive sepsis screen, notify receiving facility of a “Sepsis Alert”.

ADVANCED EMT STANDING ORDERS - ADULT

A
- Rapidly administer IV fluid, up to 30 mL/kg bolus to maintain MAP > 65 mmHg (systolic blood pressure > 90 mmHg).
  - Patients should be reassessed after each 500 mL, with special attention given to the lung examination to ensure volume overload does not occur.

PARAMEDIC STANDING ORDERS - ADULT

P
- If there is no adequate hemodynamic response after starting IV fluids consider pressor infusion :
  - Norepinephrine (preferred) infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed OR
  - Epinephrine infusion 2 -10 micrograms/minute via pump
- Consider push dose epinephrine if infusion is not immediately available:
  - Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes switch to infusion as soon as possible.
  - Continue maintenance fluid concurrently with pressor administration, titrate to MAP ≥ 65 mmHg (systolic blood pressure > 90 mmHg).
- Refer to Advanced Sepsis Protocol 7.0, if prerequisites have been met.

PEARLS:
- **Sepsis** is life-threatening organ dysfunction due to a dysregulated host response to infection
- **Septic shock** is a subset of sepsis in which underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality.
- **Sepsis Alert -** Notifies receiving facility that patient may require resuscitation and/or more resource intensive management, may assist with predicting pts who will have poor outcomes without appropriate and timely treatment.
- Provide receiving facility with written documentation that includes time of initial bolus, time of completion of bolus, total volume infused and rate.
- Patients at risk for fluid overload include, but are not limited to age greater than 65, history of congestive heart failure, and history of end stage renal disease / on dialysis. Consider administering smaller volumes of IV fluids and earlier initiation of vasopressors.

2.21P Sepsis – Pediatric

IDENTIFICATION OF POSSIBLE SEPSIS:

- Suspected Infection – YES
- Temperature > 101° F or < 96.8° F
- Heart rate or respiratory 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
  - Finger stick lactate level > 2mmol/L **OR** $ETCO_2$ < 25 mmHg

Note: Consider early consultation with **Medical Control** for suspected pediatric septic shock patients.

Upper limit of Pediatric HR & RR		
Age	Heart Rate	Resp Rate
0 day - < 1 mon	> 205	> 60
≥ 1 month - < 3	> 205	> 60
≥ 3mon - < 1 year	> 190	> 60
≥ 1 year - < 2 year	> 190	> 40
≥ 2 year - < 4 years	> 140	> 40
≥ 4 years - < 6 years	> 140	> 34
≥ 6 years - < 10 years	> 140	> 30
≥ 10 years - < 13 year	> 100	> 30
≥ 13 years	> 100	> 16

*ACP "An Emergency Department Septic Shock Protocol and Care Guideline for Children Initiated at Triage"

EMT STANDING ORDERS - PEDIATRIC

E

- Routine Patient Care.
- Monitor and maintain airway and breathing as these may change precipitously.
- Administer oxygen and continue regardless of oxygen saturation levels.
- Obtain blood glucose reading.
- Do not delay transport.

ADVANCED EMT STANDING ORDERS - PEDIATRIC

A

IV fluids should be titrated to attain normal capillary refill, peripheral pulses, and level of consciousness.

- Administer fluid bolus of 10 - 20 mL/kg of IV fluid by syringe push method; reassess patient immediately after completion of bolus and repeat 2 times (max 60 mL/kg), if inadequate response to boluses.

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

PARAMEDIC STANDING ORDERS - PEDIATRIC

P

- If there is no response after 3 fluid boluses, consider:
  - Additional fluids
  - Norepinephrine (preferred) 0.05 mcg/kg/min, titrated to effect to a maximum dose 2 mcg/kg/min via pump. **OR**
  - Epinephrine 0.05 – 1.0 mcg/kg/min via pump, titrated to effect.

PEARLS:

- **Severe Sepsis** is life-threatening organ dysfunction due to a dysregulated host response to infection
- **Septic shock** is a subset of sepsis in which underlying circulatory and cellular/metabolic abnormalities are profound enough to substantially increase mortality.
- **Sepsis Alert -** Notifies receiving facility that patient may require resuscitation and/or more resource intensive management, may assist with predicting pts who will have poor outcomes without appropriate and timely treatment.
- Provide receiving facility with written documentation that includes time of initial IVbolus, time of completion of bolus, total volume infused and rate.
- Septic shock has a high mortality and is one of the leading causes of pediatric deaths.

Non-Traumatic Shock Adult & Pediatric

Recognize Compensated Shock- Adult
- Anxiety
- Tachycardia
- Tachypnea
- Diaphoresis

SHOCK

Inadequate tissue perfusion that impairs cellular metabolism

Recognize Compensated Shock - Pediatric:
- Delayed capillary refill
- Decreased or bounding peripheral pulses
- Palpable central pulse, decreased distal pulse
- Cool extremities
- Altered mental status
- Mild tachypnea

Trauma Involved?

NO

YES ▶ ***See Shock – Traumatic Protocol 4.6***

EMT STANDING ORDERS - ADULT & PEDIATRIC:

E

- $ETCO_2$ < 25 mmHg may indicate poor perfusion/shock

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

Consider ▶

A

- **ADULT:** Administer IV fluid in 250 mL boluses to return the patient to a coherent mental status or palpable radial pulse, not to exceed 2000 mL without consultation with **Medical Control**.
- **PEDIATRIC:** Administer fluid bolus of 10 - 20 mL/kg of IV fluid by syringe push method (may repeat to a maximum 60 mL/kg) to improve clinical condition (capillary refill time ≤ 2 seconds, equal peripheral and distal pulses, improved mental status, normal breathing.

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

ADULT consider:
- Norepinephrine Infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed OR
- Epinephrine 2 -10 micrograms/minute via pump

Consider push dose epinephrine if infusion is not immediately available:
- Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical)

PEDIATRIC: If there is no adequate hemodynamic response after 60 mL/kg IV fluid infused contact **Medical Control**

Consider ▶ **CARDIOGENIC SHOCK**

Primary pump failure Decreased cardiac output	• Norepinephrine infusion Infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed. **OR** • Epinephrine infusion 2 – 10 micrograms/minute, via pump *For pediatric cardiogenic shock administer fluid bolus of 10mL/kg of 0.9% saline by syringe push method. Repeat bolus per **Medical Control**.

Consider ▶ **DISTRIBUTIVE SHOCK**

Inadequate blood volume distribution.	Known history of adrenal insufficiency or recent illness, see Adrenal Insufficiency Protocol 2.1 Systemic response to an allergen, see Anaphylaxis/Allergic Reaction Protocol 2.2A&P Overwhelming response to an infection, see Sepsis Protocol 2.21 A&P

Consider ▶ **HYPOVOLEMIC SHOCK**

Insufficient circulating volume.	Abdominal pain with vaginal bleeding see Obstetric Protocol 2.16. Nausea and vomiting see Nausea Vomiting Protocol 2.13. Heat exposure, see Hyperthermia Protocol 2.9.

Consider ▶ **OBSTRUCTIVE SHOCK**

Obstruction of blood flow outside the heart	For cardiac tamponade, rapid transport, treat arrhythmias per Cardiac Protocols 3.0 – 3.6. For spontaneous pneumothorax: consider needle decompression per Thoracic Injury Protocol 4.8. For pulmonary embolism: rapid transport

2.23 Smoke Inhalation/Carbon Monoxide Poisoning – Adult & Pediatric

EMT STANDING ORDERS

E

- Routine Patient Care.
- Oxygen 100% via non-rebreather mask or BVM.
- Decontamination concurrent with initial resuscitation.
- If a carbon monoxide (CO) oximeter (e.g., Rad-57) is available, obtain SpCO levels.
- If a measuring device is available, obtain atmospheric levels of CO and cyanide (CN).

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

For a history of smoke exposure or suspected cyanide toxicity with an altered level of consciousness and/or hemodynamic or respiratory compromise, administer, if available:

- **ADULT:** Hydroxocobalamin via use of Cyanokit:
  - Depending on clinical response, a second dose may be required.
- **PEDIATRIC:** Hydroxocobalamin via use of Cyanokit:Using vented intravenous tubing, infuse per Pediatric Color Coded Appendix 3 over 7.5 minutes for 100 mL vial set or 15 minutes for 200 mL vial set.
  - Depending on clinical response, a second dose may be required.

- 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.

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

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.

PEARLS:

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

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).
- For symptomatic:
  - Administer oxygen to maintain SPO_2 between 94% - 98%
  - 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. See Hypoglycemia Protocol 2.10A or 2.10P.
  - 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 IV fluid.

Prehospital Stroke Screening Tool

Stroke screen is positive if any abnormal finding in facial droop, arm drift or speech.

Time Last Known Well: _____ *(If patient awoke with symptoms, time last known to be at baseline)*

Witness: Best contact number for witness: ( ) -

Prehospital Stroke Scale Examination	Please check: Normal	Abnormal
Facial Droop: *Have the patient smile and show teeth.*		
Normal: Both sides of the face move equally well..	Normal	Abnormal
Abnormal: One side of the face does not move as well as the other.		
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.	Normal	Abnormal
Abnormal: One arm doesn't move, or one arm drifts down compared to the other.		
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.	Normal	Abnormal
Abnormal: Patient slurs words, says the wrong word, or is unable to speak.		
Blood Glucose:		

Protocol Continues

Northern New England Unified Guideline
Stroke – Adult

Protocol Continued

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 gravity	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:

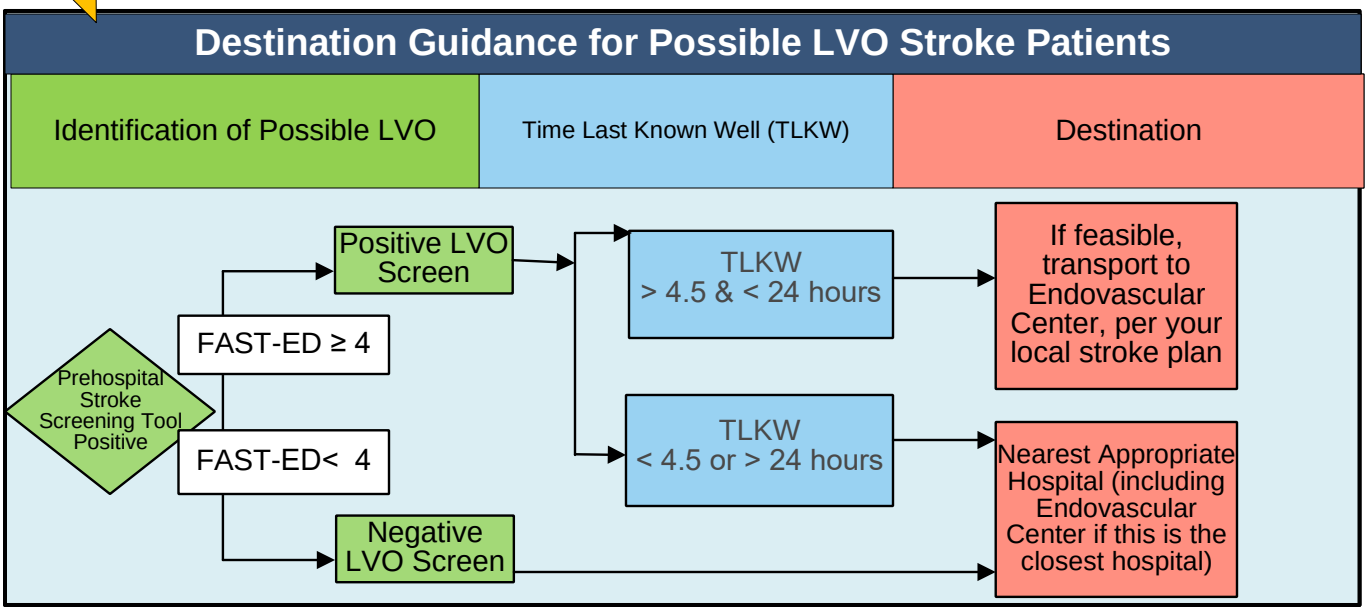
Yes	No	
☐	☐	Blood glucose is or has been corrected to greater than 60 mg/dL?
☐	☐	Deficit unlikely due to head trauma or other identifiable causes?
☐	☐	Positive Prehospital Stroke Screen:

- 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 appropriate destination, contact receiving hospital and report a STROKE ALERT with time last known well, FAST-ED score & thrombolytic checklist results

Protocol Continued

Destination Guidance for Possible LVO Stroke Patients



Work with your regional endovascular center when developing your local stroke plan.

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 uncontrolled bleeding (e.g.; internal organs)?
☐	☐	3. Spontaneous (non-traumatic) intracranial hemorrhage at any time in the past?
☐	☐	4. Is the patient taking any anticoagulants, including oral or injectable medications? 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**
- **Posterior Circulation Stroke (PCS):** Usually not identified with most commonly used stroke screens (e.g., CPSS, FAST-ED). Most common signs/symptoms include sudden visual deficits, sudden changes in balance and coordination, sudden dizziness or nausea and vomiting. PCS require prompt treatment and should be evaluated for a stroke alert/activation. Medical Direction should be contacted if patient presents with negative initial stroke screens, but clinical judgement of the EMS provider and presentation are still concerning for a possible stroke.
- Every minutes 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!
- Consider **stroke mimics** including: migraine, hypoglycemia, seizures, intoxication, sepsis cerebral infectious process, toxic ingestion, neuropathies (Bell's palsy), neoplasms, hypertensive encephalopathy.

This page left blank to insert your local Stroke agreement plan.

Syncope Adult & Pediatric 2.25

EMT STANDING ORDERS

E

- Routine Patient Care.
- Attempt to determine the cause of syncope.
- Perform cardiac monitoring; obtain 12 - Lead EKG, if available. If acute coronary syndrome is suspected, refer to Acute Coronary Syndrome Protocol 3.0.
- Obtain blood glucose analysis; refer to Hyperglycemia 2.8 A&P or Hypoglycemia 2.11 A&P Protocols, if indicated.
- Assess for trauma either as the cause of the syncope or as a consequence of the syncope.

ADVANCED EMT STANDING ORDERS

A

- Prevent and treat for shock; see Shock- Non-traumatic 2.22 or Shock - Traumatic Protocol 4.6.

PARAMEDIC STANDING ORDERS

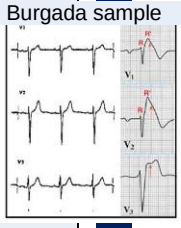
P

- Consider dysrhythmias (including less common dysrhythmias) and genetic / structural cardiac causes, especially in circumstances that do not suggest typical vaso-vagal syncope

PEARLS:

- Syncope is defined as a loss of consciousness accompanied by a loss of postural tone with spontaneous recovery.
- 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.
- 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.
- Less common dysrhythmias include:
  - Prolonged QTc (generally >500ms)
    Brugada Syndrome (incomplete RBBB pattern in V1/V2 with ST segment elevation)
  - Wolff-Parkinson-White Syndrome with Atrial Fibrillation (200 bpm+, irregular, changin QRS morphologies)

Burgada sample



- Genetic / Structural defects include:
  - STEMI
  - Cardiomyopathy (e.g., hypertropic, AVRC)
  - Aortic Stenosis
  - Pulmonary Embolus
  - Aortic Dissection

- Syncope can be indicative of many medical emergencies including:
  - Poisoning/drug effects
  - Seizures
  - Ectopic pregnancy

3.0 Acute Coronary Syndrome - Adult

Not all patients with complaint of chest pain should automatically 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 - ADULT

E

- Routine Patient Care.
- Obtain 12 – lead ECG within 10 minutes if available and practical and transmit per local guidelines. See Protocol 6.0 12-Lead EKG Acquisition
  - 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 sat <94%), or signs of heart failure at a rate to keep O_2 saturation ≥ 94 – 98%.
- Administer aspirin 324 mg by mouth (chewable), unless patient self administered 324 mg within the last 30 minutes.
- 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.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Establish IV (if feasible, avoid right wrist)
- IV must be established before administration of nitroglycerin.
- Nitroglycerin 0.4 mg SL every 3 – 5 minutes while symptoms persist and if systolic BP remains >100 mmHg.

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider IV nitroglycerin at 10 micrograms/minute if symptoms persist (it is recommended two (2) IV lines in place and the IV nitroglycerin must be on an infusion pump).
  - Increase IV nitroglycerin by 10 micrograms/minute every 5 minutes while symptoms persist and systolic BP remains >100 mmHg.
- Consider fentanyl 25 – 100 micrograms slow IV push or IM/IN every five minutes up to 300 micrograms and systolic BP remains >100 mmHg **OR**
- Consider morphine 2 – 5 mg IV/IM every 5 minutes to a maximum of 15 mg titrated to pain and systolic BP remains >100 mmHg.

PARAMEDIC MEDICAL CONTROL – MAY CONSIDER

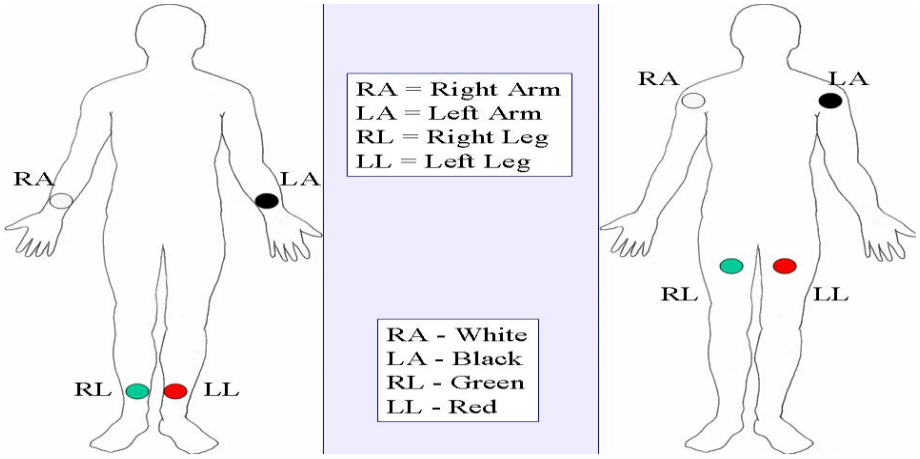
If STEMI without uncontrolled bleeding or known thrombocytopenia consider:

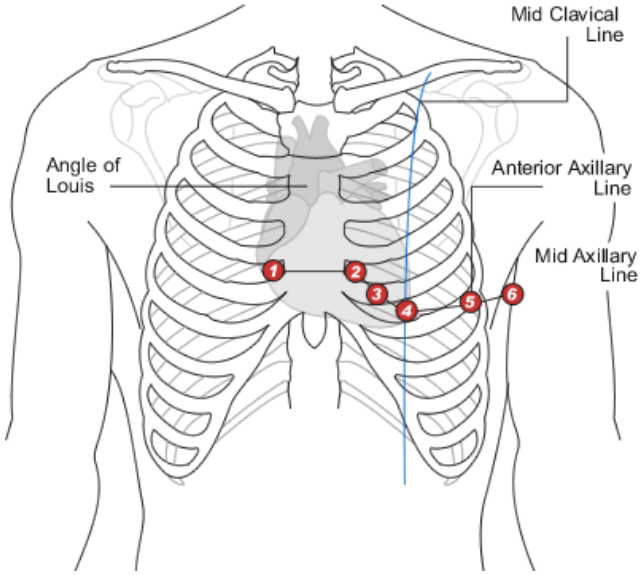
- Heparin 60 unit/kg to a maximum of 4000 unit IV bolus.

- Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor such as: sildenafil (Viagra, Revatio), vardenafil (Levitra, Staxyn), tadalafil (Cialis, Adcirca) which are used for erectile dysfunction and pulmonary hypertension. Also avoid use in patients receiving intravenous epoprostenol (Flolan) which is used for pulmonary hypertension.

Protocol Continues

Protocol Continued





PEARLS:

- Transmission of 12-lead ECG is critical to the activation of a STEMI system. Transmit any 12-lead ECG that states “Acute MI”, “Meets ST Elevation MI Criteria” or anything similar, or where the interpretation is unclear.
- Early 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 bleeding
- Patients with acute coronary syndrome (especially women and the elderly) may present with signs and symptoms other than chest pain including shortness of breath, weakness, syncope and nausea.

Protocol Continues

Protocol Continued

This page left blank to insert your local STEMI agreement plan.

Bradycardia – Adult 3.1A

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Consider the underlying causes of bradycardia (e.g., acute coronary syndrome, hyperkalemia, hypoxia, hypothermia).
- 12-lead ECG if available.

PARAMEDIC STANDING ORDERS

P

For symptomatic bradycardia:
If hemodynamically unstable:

- Consider atropine 1 mg IV every 3 – 5 minutes to a maximum of 3 mg.
- Consider transcutaneous pacing.
- Administer procedural sedation prior to or during transcutaneous pacing, if feasible:
  - Midazolam 2.5 mg IV, may repeat once in 5 minutes, OR
  - *Midazolam 5 mg IM/IN, may repeat once in 5 minutes, OR
  - Lorazepam 1 mg IV, may repeat once in 5 minutes OR
  - Diazepam 5 mg IV, may repeat once in 5 minutes
  - Ketamine:
    - 10-20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed) may repeat every 5 minutes to a total of 40 mg, as tolerated OR
    - 25 – 50 mg IM may repeat every 30 minutes, as tolerated
- Consider vasopressor:
  - Epinephrine 2 –10 micrograms/minute via pump **OR**
  - Norepinephrine Infusion 1 – 80 microgram/minute via pump. Starting dose 1 – 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed.
  - Consider push dose epinephrine if infusion is not immediately available:
  - Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical)
- **Contact Medical Control** for expert consultation.

Other Causes:

- For suspected hyperkalemia with ECG see Hyperkalemia Protocol 2.9
- For symptomatic beta blocker overdose, consider glucagon, as much as is available, up to 5 mg IV over 3 – 5 minutes
- For symptomatic calcium channel blocker/beta blocker overdose consider:
  - Calcium gluconate 3 grams IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 – 10 minutes (preferred for patients with a pulse); if ECG changes persist may repeat in 5 – 10 minutes, **OR**
  - Calcium chloride 1 gram IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 -10 minutes.

*For IN administration of midazolam use a 5 mg/mL concentration.

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.
- When pushed too quickly, glucagon can cause nausea and vomiting.

3.1P Bradycardia – Pediatric

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Consider the underlying causes of bradycardia (e.g., hypoxia, hypoglycemia, hypovolemia, and hypothermia).
- In infants and neonates only: begin/continue CPR if heart rate is <60 bpm with hypoperfusion despite adequate ventilation and oxygenation
- 12-lead ECG if available.

PARAMEDIC STANDING ORDERS

P

For symptomatic bradycardia:
If hemodynamically unstable, consider:

- Epinephrine concentration 0.1 mg/mL
  - Epinephrine 0.01 mg/kg IV (0.1 mL/kg) every 3 – 5 min (max single dose 1 mg).
- Atropine 0.02 mg/kg IV for increased vagal tone or AV blocks, may repeat once (minimum single dose: 0.1 mg; maximum single dose 0.5 mg.)
- Transcutaneous pacing.
  - Procedural sedation prior to/during pacing, if feasible:
    - Midazolam 0.05 mg/kg IV (single maximum dose 2.5 mg), may repeat once in 5 minutes, **OR**
    - *Midazolam 0.1 mg/kg IM/IN (single maximum dose 5 mg), may repeat once in 5 minutes, **OR**
    - Lorazepam 0.05 mg/kg IV (single maximum dose 1 mg), may repeat once in 5 minutes **OR**
    - Diazepam 0.1 mg/kg IV (single maximum dose 5 mg), may repeat once in 5 minutes
    - Ketamine for patient > 3 months:
      - 0.5 – 1 mg/kg (maximum dose 50 mg) IN **OR**
        - 0.1 – 0.25 mg/kg (maximum dose 20 mg) IV diluted in 50 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed)

Other Causes:

- For hypoglycemia see Hypoglycemia 2.10P Protocols.
- For symptomatic beta blocker overdose, consider glucagon:
  - Less than 20 kg: 0.5 mg IV , every 5 minutes as necessary
  - 20-40 kg: 1 mg IV , every 5 minutes as necessary,
- For suspected hyperkalemia see Hyperkalemia Protocol 2.9.
- For symptomatic beta calcium channel blocker overdose, consider
  - Calcium gluconate 100 mg/kg IV/IO mixed in 50 -100 mL of 0.9% NaCl with a maximum of 3 gram/dose over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 - 10 minutes **OR**
  - Calcium chloride 20 mg/kg IV/IO mixed in 50 -100 mL of 0.9% NaCl with a maximum of 1 gram/dose over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 - 10 minutes.

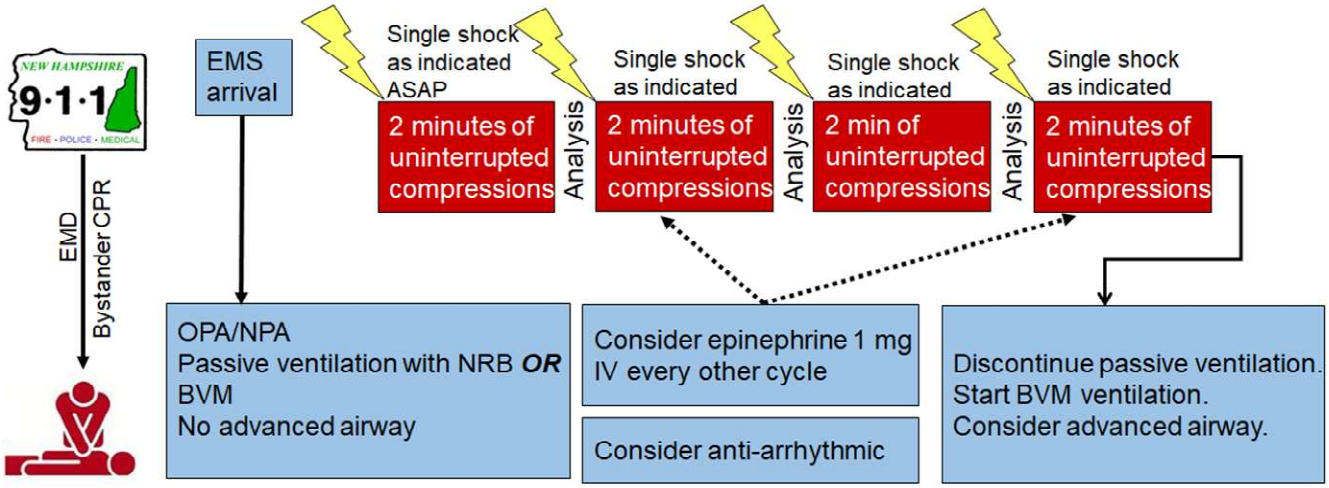
*For IN administration of midazolam use a 5 mg/mL concentration.

PEARLS:

- Use benzodiazepines sparingly or not at all in the context of hypotension
- Combine age specific heart rates with signs of respiratory failure and shock during assessment. If child is asymptomatic, consider no treatment.
- When pushed too quickly, glucagon can cause nausea and vomiting.

Cardiac Arrest – Adult 3.2A

- Perform 2 minute cycles of uninterrupted chest compressions.
- Interrupt chest compressions only for rhythm/pulse check and defibrillation.
- Ventilation / Oxygenation options:
  - Apply high flow oxygen via non-rebreather mask (NRB) for passive ventilation **OR**
  - BVM ventilation 1 breath every 10 chest compressions without interrupting compressions.
    - For arrests of non-cardiac etiology, including respiratory and trauma, use BVM ventilation.



EMR/EMT STANDING ORDERS - ADULT

R/E

- Routine Patient Care—with focus on high performance CPR
- Immediate chest compressions.
- Use AED as soon as possible, with minimal interruption of chest compressions.
- 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(nasal airway use is limited to EMT or above). .

- Ventilation / oxygenation options during 4 cycles (8 minutes):
  - Apply high flow oxygen via NRB, **OR**
  - BVM ventilation 1 breath every 10 chest compressions without interrupting compressions.
  - Consider advanced airway **only** if airway patency cannot be maintained using basic maneuvers and adjuncts. (EMT Only)
- If using a BVM, monitor capnography, if available, throughout resuscitation to assess high performance CPR quality and to monitor for signs of Return of Spontaneous Circulation (ROSC). (EMT only).
- After 4 cycles (8 minutes):
  - Continue 2 minute cycles of uninterrupted chest compressions.
  - If passive insufflation was used, switch to BVM ventilation.
  - Consider placement of a supraglottic airway without interrupting chest compressions (EMT only).
- Consider treatable causes: hypoxia, overdose/poisoning, hypothermia, hypoglycemia, and hypovolemia—treat as per specific protocol.
- If ROSC occurs see Post Resuscitative Care Protocol 3.4.
- Consider termination of efforts or not attempting resuscitation (see DNR, POLST & Advanced Directives Protocol 8.7 and/or Resuscitation Initiation & Termination Protocol 8.15)

Policy Continues

3.2A Cardiac Arrest – Adult

Policy Continued

ADVANCED EMT STANDING ORDERS - ADULT

A

- Place IV/IO without interrupting chest compressions.
- After the first 2 minute cycle, consider epinephrine (0.1 mg/mL concentration) 1 mg IV; repeat every other cycle.

PARAMEDIC STANDING ORDERS - ADULT

P

- Defibrillate as indicated at the device's maximum energy.
- After 4 cycles (8 minutes):
  - Consider endotracheal intubation without interrupting chest compressions.
- Administer anti-dysrhythmic, per ACLS algorithms.

For refractory ventricular fibrillation consider:

- If second manual defibrillator is available consider Double Sequential Defibrillation Procedure 6.2.
- If a second manual defibrillator is not available change pad placement / vector from anterior-apex to anterior-posterior.
- Consider resuscitation for up to 60 minutes from the time of dispatch, including transport for potential reversible causes if no ROSC after initial efforts.

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.
- Consider resuscitation for up to 60 minutes from the time of dispatch, including transport for potential reversible causes if no 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 gluconate 3 grams IV, OR calcium chloride (10%) 1 gram IV **AND**
- Sodium bicarbonate 1 - 2 mEq/kg IV.

For suspected pre-existing metabolic acidosis consider:

- Sodium bicarbonate 1 - 2 mEq/kg IV.

EMS agency should use a "pit crew" approach to ensure the most effective and efficient cardiac arrest care, see Team Focused CPR 3.6.

Except as indicated in this protocol, follow applicable AHA ACLS and BLS guidelines.

PEARLS:

- It is expected, unless special circumstances are present, resuscitation will be performed on scene until ROSC or termination of efforts. See Resuscitation Initiation and Termination 8.15
- Early high performance CPR and early defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compressions, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Recognizing the goal of immediate uninterrupted chest compressions, consider delaying application of mechanical CPR devices until after the first four cycles (8 minutes). If applied during the first 4 cycles, the goal is to limit interruptions. Mechanical devices should only be used by services that are practiced and skilled at their application.
- Switch compressors at least every two minutes to minimize fatigue.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered.
- 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 control and interventional cardiology

3.2A Cardiac Arrest – Adult

Policy Continued

ADVANCED EMT STANDING ORDERS - ADULT

A

- Place IV/IO without interrupting chest compressions.
- After the first 2 minute cycle, consider epinephrine (0.1 mg/mL concentration) 1 mg IV; repeat every other cycle.

PARAMEDIC STANDING ORDERS - ADULT

P

- Defibrillate as indicated at the device's maximum energy.
- After 4 cycles (8 minutes):
  - Consider endotracheal intubation without interrupting chest compressions.
- Administer anti-dysrhythmic, per ACLS algorithms.

For refractory ventricular fibrillation consider:

- If second manual defibrillator is available consider Double Sequential Defibrillation Procedure 6.2.
- If a second manual defibrillator is not available change pad placement / vector from anterior-apex to anterior-posterior.
- Consider resuscitation for up to 60 minutes from the time of dispatch, including transport for potential reversible causes if no ROSC after initial efforts.

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.
- Consider resuscitation for up to 60 minutes from the time of dispatch, including transport for potential reversible causes if no 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 gluconate 3 grams IV, OR calcium chloride (10%) 1 gram IV **AND**
- Sodium bicarbonate 1 mEq/kg IV/IO.

For suspected pre-existing metabolic acidosis consider:

- Sodium bicarbonate 1 mEq/kg IV/IO.

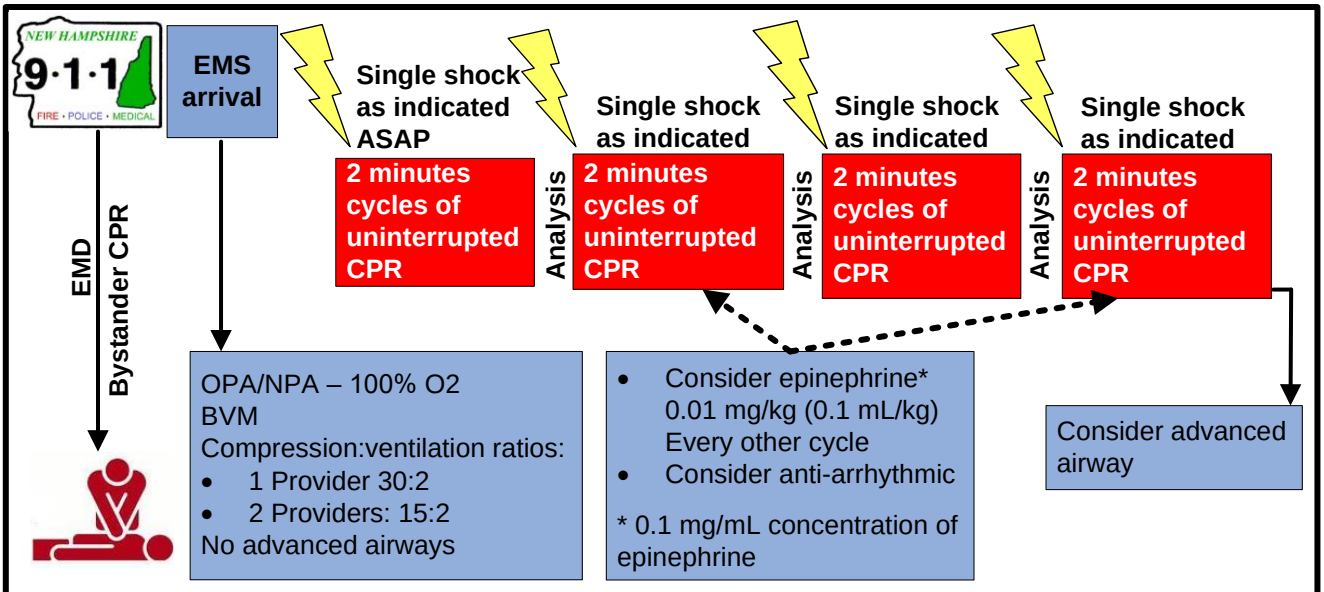
EMS agency should use a "pit crew" approach to ensure the most effective and efficient cardiac arrest care, see Team Focused CPR 3.6.

Except as indicated in this protocol, follow applicable AHA ACLS and BLS guidelines.

PEARLS:

- It is expected, unless special circumstances are present, resuscitation will be performed on scene until ROSC or termination of efforts. See Resuscitation Initiation and Termination 8.15
- Early high performance CPR and early defibrillation are the most effective therapies for cardiac arrest care.
- Minimize interruptions in chest compressions, as pauses rapidly return the blood pressure to zero and stop perfusion to the heart and brain.
- Recognizing the goal of immediate uninterrupted chest compressions, consider delaying application of mechanical CPR devices until after the first four cycles (8 minutes). If applied during the first 4 cycles, the goal is to limit interruptions. Mechanical devices should only be used by services that are practiced and skilled at their application.
- Switch compressors at least every two minutes to minimize fatigue.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered.
- 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 control and interventional cardiology

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: 30:2
  - Two providers: 15:2
  - Advanced airway in place: Continuous chest compressions with one ventilation every 2 – 3 seconds (20 – 30 ventilations per minute) during chest recoil interposed asynchronously.

EMR/EMT STANDING ORDERS

R/E

- Immediate high performance CPR with minimal interruptions (use metronome if possible). Administer 100% oxygen via BVM.
- **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.
- BVM ventilation is the preferred method of ventilation for pediatric population. However, if unsuccessful, consider placement of supraglottic airway without interrupting compressions (EMT only).
  - Once an advanced airway is in place, perform continuous chest compressions with one ventilation every 2 – 3 seconds (20 – 30 ventilations per minute) during chest recoil 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) (EMT only).
- If ROSC occurs see Post Resuscitative Care Protocol – Pediatric 3.4P.
- Consider and correct treatable causes: hypoxia, overdose/poisoning, hypothermia, hypoglycemia and hypovolemia, see specific protocols
- Consider termination of efforts or not attempting resuscitation (see DNR, POLST & Advanced Directives Protocol 8.7 and/or Resuscitation Initiation & Termination Protocol 8.15)

ADVANCED EMT STANDING ORDERS

A

- Do not interrupt chest compressions for advanced airway or IV/IO placement.
- Establish IV/IO access, administer 10 – 20 mL/kg fluid bolus

Policy Continues

Protocol Continues

ADVANCED EMT STANDING ORDERS

A

- Consider and correct treatable causes: hypoxia, overdose/poisoning, hypothermia, hypoglycemia, and hypovolemia—treat as per specific protocol.

PARAMEDIC STANDING ORDERS

P

- If ventilation is adequate with BVM, routine placement of advanced airway can be delayed.
- Consider tension pneumothorax and treat with needle decompression if indicated.
- For suspected hyperkalemia or symptomatic calcium channel blocker/beta blocker overdose consider:
  - Calcium gluconate (10% solution) 100 mg/kg IV/IO (maximum dose 3 gm); may repeat in 10 minutes if clinical indication persists **OR**
  - Calcium chloride (10% solution) 20 mg/kg IV/IO (maximum dose 1 gm); may repeat in 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 suspected hyperkalemia or known tricyclic antidepressant overdose consider:
  - Sodium bicarbonate 1 mEq/kg IV/IO (maximum dose 50 mEq). 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 Ventricular Fibrillation (VF)/Pulseless Ventricular Tachycardia (VT):

- Defibrillate at 2 J/kg; perform CPR for 2 minutes and recheck rhythm.
  - Second defibrillation at 4 J/kg; perform CPR for 2 minutes and recheck rhythm
  - Subsequent defibrillations at ≥ 4 J/Kg, maximum 10 J/Kg or adult dose
- If no response after second defibrillation, administer:
  - Epinephrine* 0.01 mg/kg (0.1 mL/kg) IV/IO 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.

For Asystole or Pulseless Electrical Activity (PEA):

- Epinephrine* 0.01 mg/kg (0.1 mL/kg) IV/IO, may repeat every other cycle.
  - Perform CPR for 2 minutes, 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.

*Epinephrine 0.1 mg/mL concentration

Protocol Continues

Cardiac Arrest – Pediatric 3.2P

Protocol Continues

Except as indicated in this protocol, follow applicable AHA ACLS and BLS guidelines.

PEARLS:

- It is expected, unless special circumstances are present, resuscitation will be performed on scene until ROSC or termination of efforts. See Resuscitation Initiation and Termination 8.15
- EMS agency should use "pit crew" approach to ensure the most effective and efficient cardiac arrest care.
- Optimize oxygenation and ventilation; cardiac arrest in children typically results from progressive deterioration in respiratory function.
- Minimize interruptions in chest compressions, 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.
- Perform chest compressions while defibrillator is charging and resume compressions immediately after the shock is delivered to avoid excessive interruptions in CPR.
- Do not use mechanical CPR devices on children.

3.3 Congestive Heart Failure (Pulmonary Edema)

EMT STANDING ORDERS - ADULT

E

- Routine Patient Care.
- Place the patient in a semi-sitting or full sitting position.
- Facilitate administration of the patient's own nitroglycerin every 5 minutes while symptoms persist and systolic BP is > 140 mmHg.
- Consider Continuous Positive Airway Pressure (CPAP) with maximum 15 cmH_2O pressure support. See CPAP Procedure 5.4
- 12-lead ECG, if available.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Establish IV access.
- For patient's with known history of congestive heart failure, consider:
  - 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 of 120 - 140 mmHg.
- Assess blood pressure every 3 – 5 minutes during nitroglycerin administration.

PARAMEDIC STANDING ORDERS - ADULT

P

Consider nitroglycerine infusion:

- For systolic BP of 140 - 160 mmHg: IV nitroglycerin start at 50 micrograms/minute.
- For systolic BP of 160 - 200 mmHg: IV nitroglycerin start at 100 micrograms/minute.
- For systolic BP > 200 mmHg: IV nitroglycerin start at 200 micrograms/minute.
- Titrate 5 – 10 mcg/min every 3 - 5 minutes until symptomatic improvement or systolic BP of 120 - 140 mmHg.

Note: Two (2) IV lines are recommended when giving IV nitroglycerin infusions; IV nitroglycerin infusions must be administered using an infusion pump.

- Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor within 48 hours such as: sildenafil (Viagra, Revatio), vardenafil (Levitra, Staxyn), tadalafil (Cialis, Adcirca) which are used for erectile dysfunction and pulmonary hypertension.
- Avoid use in patients receiving intravenous epoprostenol (Flolan) which is used for pulmonary hypertension.

PEARLS:

- If patient has taken their own nitroglycerin without relief, consider loss of potency due to age.
- Allow the patient to be in their position of comfort to maximize their breathing effort.

Post Resuscitative Care
Adult & Pediatric

3.4

EMT/ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- If feasible, acquire and transmit a 12-lead EKG at least 8 minutes post ROSC.
- Initial ventilation rate of 10 - 12 BPM for adults and 20 bpm for pediatric, then titrate to capnography of 35 to 40 mm Hg, if available.
- Titrate oxygen levels to between 94 – 98 % SpO_2

ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

A

- For post resuscitation hypotension:
- **Adult:** Maintain systolic blood pressure of >90 mmHg OR MAP ≥ 65 mmHg.
  - Administer IV fluid in 250 mL boluses not to exceed 2000 mL.
- **Pediatric:** 1 – 10 years of age: Maintain systolic blood pressure 70 mmHg + (2 x age)
  - Administer fluid bolus of 10 - 20 mL/kg by syringe push method (may repeat to a maximum 60 mL/kg)

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider vasopressor:
- Consider push dose epinephrine if infusion is not immediately available:
  - Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL, then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (switch to infusion as soon as possible), **AND/OR**
  - Norepinephrine infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed **OR**
  - Epinephrine infusion 2 – 10 micrograms/minute, via pump, titrated to effect.
- Consider nasogastric or orogastric tube for the intubated patient.

PARAMEDIC STANDING ORDERS - PEDIATRIC

For Post-Resuscitation Hypotension:

Consider: (An infusion pump is required for the use of these vasopressors)

- Epinephrine 0.05 – 1.0 mcg/kg/min, via pump, titrated to effect **OR**
- Norepinephrine 0.05 mcg/kg/min, titrated to effect to a maximum dose 2 mcg/kg/min, via pump.

- If patient meets STEMI criteria transport per your STEMI guidelines/agreements. Notify receiving facility of a “STEMI Alert”.

PEARLS:

- Avoid hyperventilation as it increases intrathoracic pressures, potentially worsening hemodynamic instability.

3.5A Tachycardia – Adult

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- 12-lead ECG if available.

PARAMEDIC STANDING ORDERS

P

For symptomatic tachyarrhythmias (other than sinus tachycardia):

If hemodynamically unstable:

- 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.
  - For narrow regular rhythm: 50 – 100J biphasic or 200J monophasic.
  - For narrow irregular rhythm: 120 – 200J biphasic or 200J monophasic.
  - For wide regular rhythm: 100J biphasic or monophasic.
  - For wide irregular/polymorphic VT: 120 – 200J biphasic or 360 monophasic, using unsynchronized defibrillation doses if unable to sync.
- Administer procedural sedation prior to or during cardioversion, if feasible:
  - Midazolam 2.5 mg IV, may repeat once in 5 minutes, OR
  - *Midazolam 5 mg IM/IN, may repeat once in 5 minutes, OR
  - Lorazepam 1 mg IV, may repeat once in 5 minutes OR
  - Diazepam 5 mg IV, may repeat once in 5 minutes OR
  - Ketamine:
    - 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed) may repeat every 5 minutes to a total of 40 mg, as tolerated, **OR**
    - 25 – 50 mg IM may repeat every 30 minutes, as tolerated

If hemodynamically stable:

For narrow complex tachycardia consider:

- For regular rhythms greater than 150 bpm, perform vagal maneuvers.
  - Adenosine 6 mg rapid IVP, may repeat at dose of 12 mg in 1 – 2 minutes if no conversion.
  - May repeat successful dose if rhythm recurs after conversion.
- Diltiazem 0.25 mg/kg IV (maximum dose 20 mg) over 2 minutes.
  - May repeat dose in 15 minutes at 0.35 mg/kg (maximum dose 20 mg), if necessary.
  - Consider maintenance infusion at 5 – 15 mg/hour, **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.

- Diltiazem, metoprolol, amiodarone, and adenosine are contraindicated in patients with atrial fibrillation and 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.

***For IN administration of midazolam use a 5 mg/mL concentration.**

Protocol Continues

3.5A Tachycardia – Adult

Protocol Continued

PARAMEDIC STANDING ORDERS - ADULT

P

For wide complex tachycardia:

- Only for regular rhythm with monomorphic QRS:
  - Consider: adenosine 6 mg rapid IV.
    - May repeat at dose of 12 mg after 1 – 2 minutes if no conversion.
    - May repeat successful dose if rhythm recurs after conversion.
  - Consider:
    - Amiodarone 150 mg IV mixed with 50 – 100 ml of 0.9% NaCl or D5W over 10 minutes.
      - ➢ May repeat once in 10 minutes.
      - ➢ If successful, consider a maintenance infusion of 1 mg/minute.
    - 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.

For polymorphic Ventricular Tachycardia/Torsades de Pointes:

- Consider magnesium sulfate 1 – 2 grams IV over 5 minutes.

PEARLS:

- Consider and treat potential underlying causes, e.g., hypoxemia, dehydration, fever.
- Wide complex tachycardia should be considered Ventricular Tachycardia until proven otherwise
- Signs and symptoms of hemodynamic instability:
  - Hypotension
  - Acutely altered mental status
  - Signs of shock
  - Signs of acute heart failure
  - Ischemic chest pain
- Adenosine should be administered rapidly though a proximal (e.g., antecubital) vein site followed by a rapid saline flush.

3.5P Tachycardia – Pediatric

EMT/ADVANCED EMT STANDING ORDERS

E/A:
- Routine Patient Care.
- 12-lead ECG if available.

PARAMEDIC STANDING ORDERS

P

If hemodynamically unstable:

For narrow complex/probable SVT:

- Synchronized cardioversion:
  - 0.5 – 1 J/kg, if unsuccessful, increase to 2 J/kg
- Administer procedural sedation prior to/during cardioversion, if feasible:
  - Midazolam 0.05 mg/kg IV (single maximum dose 2.5 mg), may repeat once in 5 minutes, **OR**
  - *Midazolam 0.1 mg/kg IM/IN (single maximum dose 5 mg), may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV (single maximum dose 1 mg), may repeat once in 5 minutes **OR**
  - Diazepam 0.1 mg/kg IV (single maximum dose 5 mg), may repeat once in 5 minutes
  - Ketamine for patient > 3 months:
    - 0.5 – 1 mg/kg (maximum dose 50 mg) IN **OR**
    - 0.1 – 0.25 mg/kg (maximum dose 20 mg) IV diluted in 50 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed)
- Adenosine 0.1 mg/kg IV (maximum dose 6 mg)
  - Repeat once at 0.2 mg/kg (maximum dose 12 mg)
- If adenosine is ineffective or for wide complex, perform synchronized cardioversion:
  - 0.5 – 1 J/kg; if unsuccessful, increase to 2 J/kg.

If hemodynamically stable:

For narrow complex, probable supraventricular tachycardia, or regular wide complex tachycardia (monomorphic QRS ONLY):

- Consider vagal maneuvers
- Adenosine 0.1 mg/kg IV (maximum dose 6 mg)
  - May repeat once at 0.2 mg/kg IV (maximum dose 12 mg)

For wide complex:

- Contact online **Medical Control** for consideration of amiodarone 5 mg/kg IV (maximum: 300 mg) over 20 – 60 minutes.

***For IN administration of midazolam use a 5 mg/mL concentration.**

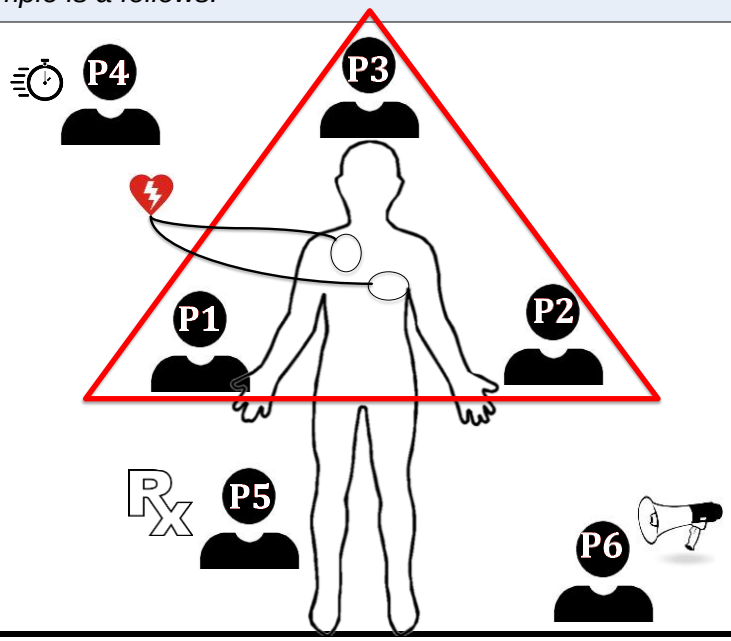
PEARLS:

- Consider and treat potential underlying causes, e.g., hypoxemia, dehydration, fever.
- Signs and symptoms of hemodynamic instability:
  - Hypotension
  - Acutely altered mental status
  - Signs of shock
- 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
    - Adenosine should be administered rapidly though a proximal (e.g., antecubital) vein site followed by a rapid saline flush

Team Focused CPR – Adult

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. *One Example is a follows:*



POSITION #1 - **Compressor 1** (right side of patient):
- Initiates 1 minute of chest compressions at rate of 100 - 120 / min
- Assists Position 3 with ventilations in off cycle

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

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

POSITION #4 - **CPR Coordinator**(Outside CPR triangle):
- Coaches the metrics
- Calls for compressor change every one minute
- 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
- 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

Policy Continues

3.6 Team Focused CPR – Adult

Policy Continued

- 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.
- Positions 1 and 2 are ideally set up on opposite sides of patient's chest and perform continuous chest compressions, alternating after 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
  - 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.
- 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 applications.
- 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

Consider possible causes

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

Burns/Electrocution/Lightning Adult & Pediatric 4.0

EMR/EMT STANDING ORDERS

- Routine Patient Care.
- 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, see Airway Management Protocols 5.1 and Smoke Inhalation/Carbon Monoxide Poisoning Protocols 2.23.

Thermal

- Stop burning process with water or normal saline
- 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. See Hazardous Material Exposure Protocol 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).

R/E

Electrical/Lightning

- Ensure your own safety; disconnect power source, if feasible.
- Place patient on a cardiac monitor. (EMT only)
- Consider spinal motion restriction for burns due to electric flow across the body.

Assess Extent of Burn

- Determine extent of the burn using Rules of Nine (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 of a maximum of 15 minutes. Prolonged cooling may result in hypothermia.

ADVANCED EMT STANDING ORDER - ADULT

A

- Transport time less than 1 hour:
  - Administer warm IV fluids* at 500 mL/hr.
- Transport time greater than 1 hour:
  - Administer warm fluids* at 1 – 2 mL/kg x % burn/8 = hourly rate x first 8 hours.

ADVANCED EMT STANDING ORDERS - PEDIATRIC

- Transport time less than 1 hour:
  - BSA > 20%: 20 mL/kg warm IV fluids*, over 10 – 30 minutes.(Does not need to be on a pump)
  - BSA < 20%: 10 mL/kg warm IV fluids*, over 10 – 30 minutes.

- Consult **Medical Control**:
  - Transport time greater than 1 hour and/or
  - Patient has signs of shock

* An IO device can be inserted through burned skin as long as the underlying bone has not been compromised.

Protocol Continues

4.0 Burns/Electrocution/Lightning Adult & Pediatric

Protocol Continues

PARAMEDIC STANDING ORDERS

P

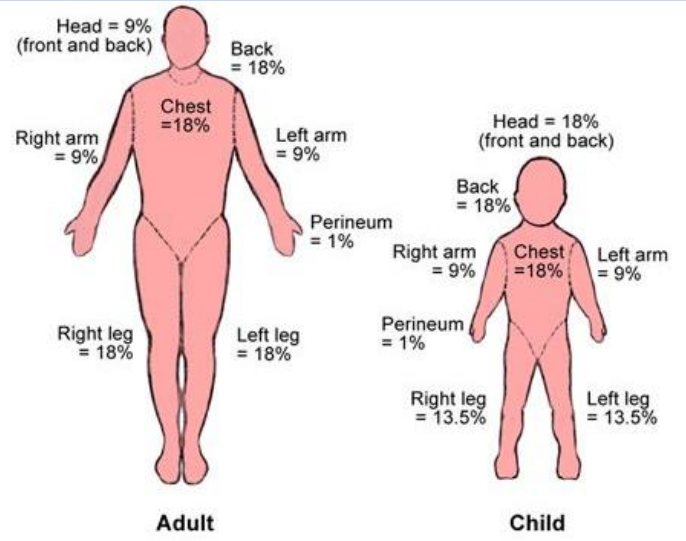
- Refer to Pain Management Protocol 2.18.

Air Medical Transport Considerations:

- 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:

- 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.

Crush Injuries – Adult 4.1A

EMR STANDING ORDERS - ADULT

R

- Routine Patient Care.
- For signs/symptoms of shock, see Shock Traumatic Protocol 4.6.
- Identify and treat any severe hemorrhage.
- Evaluate for additional trauma, potentially masked by other painful injuries.
- Consider early ALS and/or Air Medical Transport.

EMT STANDING ORDERS - ADULT

E

- Perform cardiac monitoring and obtain multiple 12 - lead ECGs, if available.
- Extrication and transport to a Trauma Center is preferred.
- Do not delay transport, consider hospital destination per Trauma Triage and Transport Decision Protocol 8.17.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Initiate IV fluid 500 - 1000 mL bolus, followed by 500 mL/hr infusion (warm preferred), prior to extrication, if possible.

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider pain management, see Pain Management Protocol 2.18
- Monitor for dysrhythmias or signs of hyperkalemia before and after extrication, if ECG suggests hyperkalemia see Hyperkalemia Protocol 2.9.
- For significant crush injuries or prolonged entrapment, consider:
  - Sodium bicarbonate 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes.

EMT, AEMT PARAMEDIC EXTENDED CARE ORDERS

X

- Secondary to initial bolus, consider sodium bicarbonate infusion (Paramedic only):
  - 150 mEq in 1000 mL D5W at a rate of 250 mL/hr or 4 mL/min.
- 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 control 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.
- If possible, 0.9% NaCl should be administered prior to extrication
- 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 prolonger >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.

4.1P Crush Injuries – Pediatric

EMR STANDING ORDERS - PEDIATRIC

R

- Routine Patient Care.
- For signs/symptoms of shock, see Shock Traumatic Protocol 4.6.
- Identify and treat any severe hemorrhage.
- Evaluate for additional trauma, potentially masked by other painful injuries.

EMT STANDING ORDERS - PEDIATRIC

E

- Perform cardiac monitoring and obtain multiple 12-lead ECGs, if available.
- Extrication and transport to a Trauma Center is preferred.
- Do not delay transport, consider hospital destination per Trauma Triage and Transport Decision Protocol 8.17.

ADVANCED EMT STANDING ORDERS - PEDIATRIC

A

- Initiate 10-20 mL/kg IV fluid bolus, followed by 10 mL/kg/hr infusion (warm preferred), prior to extrication, if possible.

PARAMEDIC STANDING ORDERS - PEDIATRIC

P

- Consider pain management, see Pain Management Protocol 2.18
- Monitor for dysrhythmias or signs of hyperkalemia before and after extrication, if ECG suggests hyperkalemia see Hyperkalemia Protocol 2.9.
- For significant crush injuries or prolonged entrapment, consider:
  - Sodium bicarbonate 1 mEq/kg (maximum dose of 50 mEq) IV/IO bolus over 5 minutes.

EMT, AEMT & PARAMEDIC EXTENDED CARE ORDERS

X

- Secondary to initial bolus, consider sodium bicarbonate infusion (Paramedic only):
  - 150 mEq in 1000 mL D5W at a rate of 250 mL/hr or 4 mL/min.
  - 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 Control** 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 thus causing crush substances to enter the blood. (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***: Also termed rhabdomyolysis, 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.
- 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 prolonger >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.

Drowning/Submersion Injuries Adult & Pediatric

4.2

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.

EMR/EMT/AEMT/PARAMEDIC STANDING ORDERS

- Routine Patient Care.
- Remove wet clothes and warm patient.
- Obtain information:
  - Submersion time.
  - Water temperature.
  - Events leading up to incident (e.g., trauma, seizure, OD, etc.).
- For respiratory arrest, give a few breaths and check for a pulse.
  - Anticipate vomiting.
- For patients in cardiac arrest, provide immediate CPR.
  - Utilize the sequence ABC, not CAB, i.e. start with airway and breathing before compressions.
- Routine use of spinal motion restriction in the absence of circumstances that suggest a spinal injury is not recommended.
- Acquire core temperature. (EMT/AEMT/Paramedic only)
- Due to extremely poor prognosis, providers may consider withholding or terminating resuscitation efforts when:
  - A clear history of prolonged submersion (without prior prolonged immersion), greater than 25 minutes **OR**
  - Core temperature greater than 32°C (90° F) and meets Termination of Resuscitation Criteria, see Resuscitation Initiation and Termination Protocol 8.15.
- Consider hypothermia, see Hypothermia Protocol 2.11.
  - Do not delay urgent procedures such as airway management and IV access. Although hypothermic patients may exhibit cardiac irritability, do not delay necessary interventions.
- Patients who survive any form of drowning are at risk of delayed deterioration and should be transported to the hospital.
- Consider CPAP to supplement the patient's own respiratory effort. (EMT/AEMT/ Paramedic only)
- If the victim was involved in underwater diving and uncertainty exists regarding the most appropriate therapy, consider contacting direct medical oversight and discussing need for hyperbaric treatment. Include discussion regarding:
  - Submersion time
  - Greatest depth achieved
  - Ascent rate
  - Gas mix

PEARLS

- Patients with Stage III or IV 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.
- 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.

4.3 Eye & Dental Injuries Adult & Pediatric

EYE – EMR STANDING ORDERS

R

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

EYE – EMT STANDING ORDERS

E

- Obtain visual acuity, if possible.
- Assist patient with the removal of contact lens, if applicable.

EYE - ADVANCED EMT STANDING ORDER

A

- An anti-emetic is strongly recommended for penetrating or blunt eye trauma, consider Nausea/Vomiting Protocol 2.13.

EYE - 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.
- Refer to Pain Management Protocol 2.18.

DENTAL AVULSION – 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, Hanks Balanced Salt Solution or patient's saliva or commercial solutions for this purpose.

EMT/ADVANCED EMT/PARAMEDIC EXTENDED CARE ORDERS

X

- If prolonged time to definitive care an attempt to reinsert the avulsed tooth in its socket should be considered, 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.
- Significant eye injury may be present despite normal vision and minimal symptoms.
- Any chemical or thermal burn to the face/eyes should raise suspicion of respiratory insult.
- Vomiting in connection with blunt or penetrating eye trauma significantly increases intraocular pressure and should be avoided.

Hemorrhage Control 4.4

INDICATIONS:
- Serious or life threatening extremity hemorrhage in the face of operational considerations that prevent the use of less aggressive hemorrhage control techniques.

EMR/EMT STANDING ORDERS– ADULT & PEDIATRIC

R/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 amputation.
  - Apply directly to the skin 2-3 inches above the bleeding site. If bleeding is not controlled with the first tourniquet, apply a second tourniquet side-by-side with the first.
  - Document time of tourniquet application and communicate this clearly with receiving facility.
- **Pack wounds** of groin, neck or axillary injuries not amenable to limb tourniquet.
  - Utilize hemostatic dressing or, if not available, gauze dressing.
- **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 – ADULT & PEDIATRIC

A

- Administer fluids per Shock – Traumatic Protocol 4.6
- Assess pain level and consider pain control measures, see Pain Management Protocol 2.18

PARAMEDIC STANDING ORDERS – ADULT

P

- Administer tranexamic acid (TXA):
  - Mix 1 gram of TXA in 50 - 100 ml of 0.9% NaCl; infuse over approximately 10 minutes IV or IO.

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.
- 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).

Protocol Continues

4.4 Hemorrhage Control

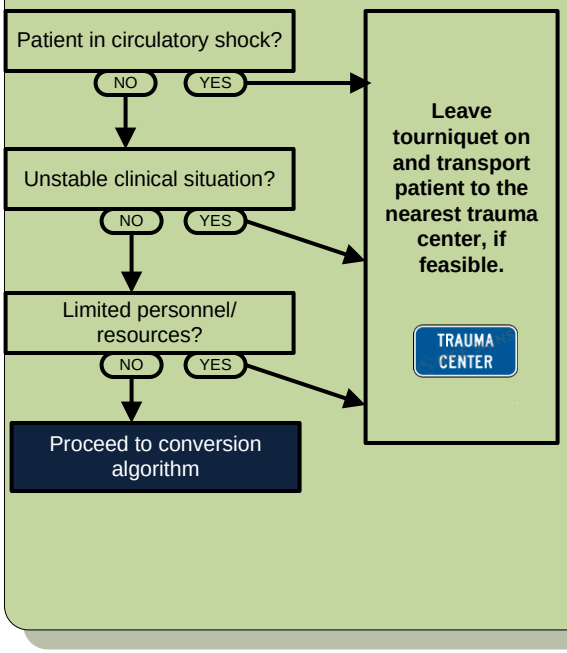
Protocol Continued

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

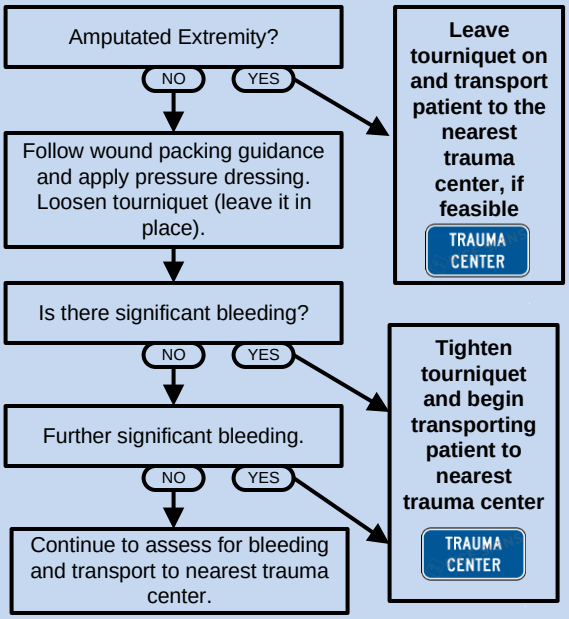
X

- Consult **Medical Control,** if feasible.
- If tourniquet has been in place for greater than 6 hours, do not remove.
- If less then 6 hours, consider Tourniquet Reassessment and Tourniquet Conversion Algorithms

Tourniquet Reassessment Algorithm



Tourniquet Conversion Algorithm



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 Level 1 or Level 2 trauma center and provide earliest possible notification / trauma alert.
- Damage to the limb from tourniquet application is unlikely if removed in several hours.

Musculoskeletal Injuries Adult & Pediatric

4.5

EMR/EMT STANDING ORDERS - ADULT & PEDIATRIC

R/E

- Routine Patient Care.
- Manually stabilize the injury.
- Control bleeding, see Hemorrhage Control Protocol 4.4.
- Remove obvious debris, irrigate open wounds with saline solution, and cover with moist sterile dressing.
- Assess CSMs distal to injury before and frequently after immobilization.
  - Splint extremity as required.
  - Consider traction splinting for isolated adult and pediatric mid-shaft femur fractures, do not delay transport unnecessarily. (EMT only)
  - For pain relief apply ice and elevate.
- In a patient with a high risk mechanism of injury see Spinal Injury Protocol 4.7.
- Stabilize suspected pelvic fractures with commercial device (preferred) or bed sheet. (EMT only)

ADVANCED EMT AND PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

A/P:

- Assess pain level and consider pain control measures, see Pain Management Protocol 2.18.
- Administer fluids per Shock – Traumatic Protocol 4.6.
- For patellar dislocation, consider reduction by exerting medially – directed pressure on lateral patella while extending knee*.
- *AEMTs & Paramedics must have completed the patella dislocation training found at: https://www.nhfaemslearning.org.

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

X

- For impaled objects in the extremities, consider removal of the object unless removal will cause significant damage and/or uncontrolled hemorrhage.
- For dislocated patella, shoulder, or digits from indirect force:
  - Attempt to reduce if evacuation will be prolonged, dangerous, or painful. (Training approved by EMS's Medical Director)
- For open/compound fractures consider:
  - Adult: Ceftriaxone 1 gram IV/IM, if available. (Advanced EMT/Paramedic only)
  - Pediatric: Ceftriaxone 50 mg/kg IV (maximum dose 1 gram) over 30 minutes, if available. (Paramedic only)
    - See reconstitution reference in the Medication Formulary
- For musculoskeletal pain consider:
  - Adult: Ibuprofen 400 – 600 mg or acetaminophen 325 – 650 mg by mouth; repeat every 6 hours as needed, not to exceed 3000 mg in 24 hours.
  - Pediatric: Ibuprofen or acetaminophen per Pediatric Color Coded Appendix 3.

NEVER MIX ceftriaxone with lactated ringers or plasmalyte, calcium in these solutions can cause precipitation and crystallization.

For dislocations due to direct impact, such as falls, the injury is more likely to be complicated by a fracture. Reducing these involves more risk. Splinting in place and urgent evacuation is ideal.

PEARLS:

- Use ample padding when splinting possible fractures, dislocations, sprains, and strains. 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 humerus, 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 fracture / dislocations have a high incidence of vascular compromise.
- Lacerations should be evaluated for repair within 6 - 12 hours.
- Blood loss may be concealed or not apparent with extremity injuries.

4.6 Shock - Traumatic Adult & Pediatric

Recognize Compensated Shock - Adult:
- Anxiety
- Tachycardia
- Tachypnea
- Diaphoresis

SHOCK

Inadequate tissue perfusion that impairs cellular metabolism

Recognize Compensated Shock - Pediatric:
- Delayed capillary refill
- Decreased or bounding peripheral pulses
- Palpable peripheral pulse, decreased distal pulse
- Cool extremities
- Altered mental status
- Mild tachypnea

Hemorrhagic shock: Locations of blood loss include the chest, abdomen, pelvis, and multiple long bone fractures. Signs include pale, cool, clammy skin, tachycardia, and or hypotension.
Neurogenic shock: May occur after an injury to the spinal cord disrupts sympathetic outflow resulting in unopposed vagal tone. Signs include warm, dry skin, bradycardia, and/or hypotension.

EMR STANDING ORDERS – ADULT & PEDIATRIC

R

- Routine Patient Care.
- Follow appropriate Trauma Protocols 4.0 – 4.10.
- Keep patient supine.
- Control active bleeding using direct pressure, pressure bandages, tourniquets (commercial preferred) see Hemorrhage Control Protocol 4.4, or hemostatic bandage
- Keep warm and prevent heat loss.
- Do not delay transport; consider hospital destination per Trauma Triage and Transport Decision Protocol 8.17.

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Assess blood glucose.

ADVANCED EMT STANDING ORDERS - ADULT

A

- Administer IV fluid in the form of small boluses (e.g., 250 mL) to return the patient to a coherent mental status or palpable radial pulse.
  - In the setting of traumatic brain injury, however, fluids should be titrated to maintain systolic blood pressure greater than 110 mmHg.
  - Total volume should not exceed 2000 mL without consultation with Medical Control. Do not delay transport for IV access.

ADVANCED EMT STANDING ORDERS - PEDIATRIC

Administer IV fluid bolus 10 - 20mL/kg by syringe method (may repeat to a maximum 60 mL/kg) to improve clinical condition (capillary refill time ≤ 2 seconds, equal peripheral and distal pulses, improved mental status, normal breathing).

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider tranexamic acid see, Hemorrhage Control Protocol 4.4.
- If tension pneumothorax is suspected, consider needle thoracostomy. See Thoracic Injury Protocol 4.8.
- If cardiac tamponade is suspected, rapid transport and treat arrhythmias per Cardiac Protocols 3.0 – 3.6.

PEARLS:
For adult patients with uncontrolled external hemorrhagic or penetrating torso injuries:
- Titrate IV fluids to clinical end points:
  1. Delaying aggressive fluid resuscitation until operative intervention may improve outcome.
  2. Several poor 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.
- Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur.

Spinal Trauma
Adult & Pediatric

4.7

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

E/A/P

Patients who have experienced a mechanism of spinal injury (See RED FLAG Box for High Risk mechanisms for spinal injury.) require spinal motion restriction and protection of the injury site if they exhibit:

- Midline spinal pain or tenderness with palpation.
- Abnormal (i.e., not baseline) neurological function or motor strength in any extremity.
- Numbness or tingling (paresthesia).
- Sensation is not intact and symmetrical (or baseline for patient).
- Cervical flexion, extension and/or rotation elicits midline spinal pain.

OR

If they cannot competently participate in the assessment due to one of the following:

- Altered mental status (e.g., dementia, acute or preexisting brain injury, developmental delay, psychosis).
- Alcohol or drug intoxication.
- Unable to participate in assessment (e.g., distracted by significant injuries to self or others).
- Insurmountable communication barriers (e.g., deafness, or hard of hearing, language barrier).

Patients without any of the above findings should generally be transported without the use of a cervical collar or other means to restrict spinal motion. Utilize spinal motion restriction only where, in the professional judgment of the provider, the patient is at high risk for spinal injury as described above.

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.

Elderly patients are a high risk for occult cervical spine fractures despite absence of neck pain. Consider placing a collar on all older patients (e.g., 65 years or older) who have a high mechanism of injury.

PEARLS:

- Secondary injury to the spine often arises from increased pressure (e.g. swelling, edema, hemorrhage) or from hypoperfusion or hypoxia (e.g., vascular injury). While the optimal treatment for secondary injury has not been established, providers should protect the injury site. Protecting the injury site from pressure may be as important as reducing spinal movement.
- In some circumstances, extrication of a patient using traditional spinal immobilization techniques may result in greater spinal movement or may dangerously delay extrication.
- Patients with penetrating trauma **DO NOT** require spinal motion restriction. All patients who have suffered possible spinal trauma should be handled gently and spinal motion should be minimized.
- Even with neurologic deficits caused by an injury to the spinal cord, additional movement will not worsen an already catastrophic injury. Emphasis should be on airway and breathing management, treatment of shock, and rapid transport to a Level 1 or 2 trauma center.
- 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.

Protocol Continues

4.7 Spinal Trauma Adult & Pediatric

Protocol Continues

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

- Routine Patient Care.
- Maintain manual in-line stabilization during assessment.
- Minimize spinal movement during assessment and extrication.

If patient requires spinal motion restriction:

- Apply a rigid cervical collar.
  - If collar does not fit properly or patient poorly tolerates collar (e.g., due to anxiety, shortness of breath, torticollis), apply soft collar, towel roll and/or padding.
- Self-extrication by patient is allowable if patient is capable.
- 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.
- Apply adequate padding to prevent tissue ischemia, minimize discomfort and maintain spinal neutrality after removing helmet or pads.
- Allow ambulatory patients to sit on stretcher and then lie flat. Position backboarded patient on stretcher then remove backboard.
- Situations or treatment priorities may require patient to remain on rigid vacuum mattress or backboard including the combative patient, elevated intracranial pressure see Traumatic Brain Injury 4.9 or rapid transport of unstable patient.
- With patient lying flat, secure patient firmly with all stretcher straps and leave collar in place. Instruct 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.
- Patients with nausea or vomiting may be placed in a lateral recumbent position. Maintain neutral head position with manual stabilization, padding/pillows, and/or patient's arm.

E/A/P

Pediatric Patients Requiring a Child Safety Seat

If child requires spinal motion restriction, transport in a child safety seat/device see Pediatric Transportation Policy 8.12.

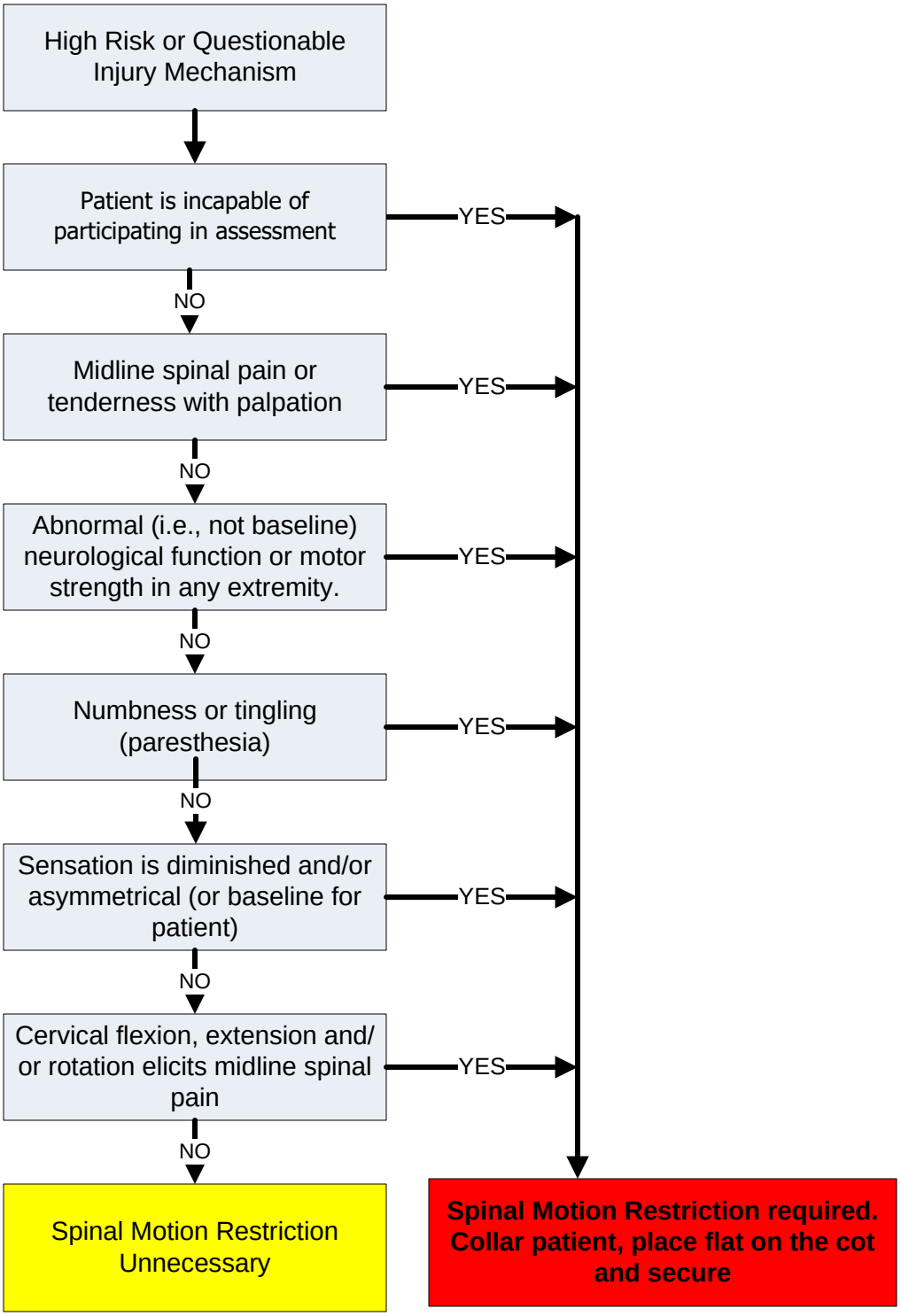
- Apply cervical collar. Use rolled towels/padding if infant/child will not tolerate collar.
- Patient may remain in own safety seat after motor vehicle crash if it meets the 5 criteria listed in Pediatric Transportation Policy 8.12
- If required treatment (e.g., airway management) cannot be performed in a safety seat, secure patient directly to stretcher using padding and pediatric-sized restraints.

Mechanisms that indicate a high risk for spinal injury include:

- Motor vehicle crash >60 mph, rollover, ejection (low-speed, rear-end can usually be excluded).
- Falls >3 feet/5 stairs (patient standing with feet 3' above floor).
- 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 struck/collision.

Protocol Continues

Protocol Continues



4.8 Thoracic Injuries Adult & Pediatric

EMR/EMT/ADVANCED EMT STANDING ORDERS

R/E/A

- Routine Patient Care.
- If in shock, see Shock Traumatic Protocol 4.6.
- Impaled Objects:
  - Secure in place with a bulky dressing.
- Open chest wound:
  - Cover with an occlusive dressing or use a commercial device; if the patient's condition deteriorates, remove the dressing momentarily, then reapply.
- Flail segment with paradoxical movement and in respiratory distress:
  - Consider positive-pressure ventilation.
  - Do not splint the chest.
- Consider Air Medical Transport.

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider pain management, see Pain Management Protocols 2.18.
- In presence of tension pneumothorax **WITH** hypotension or impending shock*, perform needle decompression using 10 – 16 gauge ≥ 3.00 inch angiocath or any other commercially available device intended for needle decompression. Repeat decompression may be necessary with returned signs of tension pneumothorax.

PARAMEDIC STANDING ORDERS - PEDIATRIC

- Consider pain management, see Pain Management Protocols 2.18.
- In presence of tension pneumothorax with hypotension or impending shock*, perform needle decompression using 14 – 16 gauge 1.50 - 2.00 inch angiocath or any other commercially available device intended for pediatric needle decompression. Repeat decompression may be necessary with returned signs of tension pneumothorax.

*Signs and symptoms of Tension Pneumothorax:

- Increasing signs of shock including tachycardia and hypotension
- Asymmetric or absent unilateral breath sounds
- Increasing respiratory distress or hypoxia
- JVD
- Possible tracheal deviation above the sternal notch (late sign)

PEARLS:

Needle decompression sites, as trained:

- 2nd intercostal mid clavicular.
- 4th to 5th intercostal anterior axillary.

Traumatic Brain Injury (TBI) Adult & Pediatric

4.9

EMT STANDING ORDERS - ADULT

E

- Routine Patient Care.
- If breathing is inadequate, ventilate with 100% oxygen utilizing normal ventilation parameters, maintaining SpO_2 >90%.
- If capnography is available:
  - Ventilate to maintain a capnography of 35 – 40mmHg.
  - Do not hyperventilate unless clear signs of cerebral herniation are present.
  - If signs of cerebral herniation are present, maintain capnography of 30 – 35 mmHg. If capnography is not available, ventilate at the following rates:
    - Adult: 20 breaths per minute.
    - Child: 25 breaths per minute.
    - Infant: 30 breaths per minute.
  - Discontinue hyperventilation when signs/symptoms improve.
- Assess and document pupillary response and Glasgow Coma Scale every 5 minutes.
- Check blood glucose; if hypoglycemic, see Hypoglycemia Protocol 2.11.
- For moderate to severe TBI, utilize long backboard for spinal motion restriction and elevate patient's head to help control intracranial pressure (ICP).

ADVANCED EMT STANDING ORDERS - ADULT

A

- Administer small IV fluid boluses, (e.g., 250 mL) to maintain systolic blood pressure greater than 110 mmHg.
  - Total volume should not exceed 2000 mL without consultation with Medical Control. Do not delay transport for IV access.

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider sedation for patients that are combative and may cause further harm to self and others, see Restraints Protocol 6.5

PARAMEDIC STANDING ORDERS - PEDIATRIC

- Administer fluid bolus 20 mL/kg; may repeat x2 (maximum total 60 ml/kg) to improve clinical condition (capillary refill time ≤ 2 seconds, equal peripheral and distal pulses, improved mental status, normal breathing).
- Administer fluid 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.
- Consider sedation for patients that are combative and may cause further harm to self and others, see Restraints Protocol 6.5.

4.10 Traumatic Cardiac Arrest Adult & Pediatric

Traumatic cardiac arrest requires specific interventions that vary from medical cardiac arrest. Priorities are different and standard treatments may not be helpful or may be harmful. One primary difference is that, in trauma, there is a focus on early airway intervention. The goal is to address possible causes rapidly and aggressively try to regain spontaneous circulation. If the underlying cause of arrest is not reversed, the likelihood of survival is minimal. Additionally, if downtime has been prolonged, survival is not likely. If the arrest is recent or witnessed, probability of survival is higher with meaningful interventions.

EMT STANDING ORDERS – ADULT & PEDIATRIC

E

- Routine Patient Care
- Compression/ventilation ratios:
  - Adult: continuous compressions, one breath every 10 compressions
  - Pediatric (one provider): 30 compression:2 breaths
  - Pediatric (two providers): 15 compressions:2 breaths
- Ventilate with BVM, ensure quality of ventilation with capnography, if available
- Provide early airway intervention using oral and/or nasal airways and suction
- Aggressively attempt to control internal and external hemorrhage.
  - See Shock Traumatic Protocol 4.6 and Hemorrhage Control Protocol 4.4
  - Consider pelvic binder, if indicated
- Attempt to maintain spinal motion restriction by minimizing head movement. Do not apply a cervical collar before ROSC.
- Consider placing a supraglottic airway device, see Supraglottic Airway 5.11
- If ROSC occurs, see Post Resuscitative Care Protocol 3.4 and transport to a Level I or Level II trauma center, if feasible.
- 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. See Resuscitation & Termination Protocol 8.15

ADVANCED EMT STANDING ORDERS - ADULT

A

- Place IV/IO without interrupting chest compressions
- Administer 500 mL – 1000 mL of IV fluid, repeat as needed.
- Epinephrine is **NOT** recommended in traumatic cardiac arrest

ADVANCED EMT STANDING ORDERS - PEDIATRIC

- Administer IV fluid bolus 20mL/kg by syringe push method (may repeat to a maximum 60 mL/kg) to improve clinical condition (capillary refill time ≤ 2 seconds, equal peripheral and distal pulses, improved mental status, normal breathing).

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

- Consider early placement of an endotracheal tube without interrupting chest compression. See Airway Management 5.0, Orotracheal Intubation 5.9, Cricothyrotomy-Percutaneous 5.5, or Surgical Cricothyrotomy 5.6
  - Consider leaving supraglottic airway in place, if effective. Monitor placement with capnography.
- Consider performing bilateral needle chest decompression. See Thoracic Injuries 4.8
- If ROSC consider Tranexamic Acid see Hemorrhage Control Protocol 4.4
- Epinephrine and antidysrhythmics are not recommended in traumatic cardiac arrest

PEARLS

- If arrest is caused by traumatic brain injury, survival is unlikely and early termination of efforts should be considered.
- Impact brain apnea is a phenomenon that occurs after head trauma causing lack of spontaneous respirations. It may or may not be associated with severe underlying brain injury. This can lead to death if ventilation is not rapidly restored.
- Always remember that a medical cardiac arrest can lead to trauma. For example, a cardiac arrest while driving causing a crash.

The goal of good airway management is good gas exchange.

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 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, no teeth, pregnancy, 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-occiptal 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.
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 ventilation are usually effective.

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 (can be used in combination with oral airways, use with caution if suspected facial fractures).
- Oral airway (can be used in combination with nasal airways).
- Suction.
- Removal of foreign body.

Procedure Continues

Procedure Continued

Oxygenation

For patients who exhibit adequate ventilation, optimize oxygenation using the following:

Positioning

- Proper patient positioning is essential to successful airway management. Conscious patients in respiratory distress should generally be positioned sitting upright.
- Nasal Cannula:
  - 2 to 6 lpm (may be used at 15 lpm to flush rates as a temporizing measure to increase oxygenation while other modalities are considered or deployed).
- Non-Rebreather Mask.
  - ≥ 8 lpm to flush rates.
- CPAP:
  - 5 to 15 cmH_2O.
  - Continuous positive airway pressure (CPAP) may ease work of breathing and help recruit additional lung volume in CHF, COPD and other respiratory emergencies. Use with caution in patients suffering from an asthma exacerbation.

Ventilation

For patients with inadequate breathing/ventilation.

- Positioning.
- Unconscious patients who need assistance with oxygenation or ventilation.

Provide ventilation with a bag-valve-mask (BVM). 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. 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.

ADVANCED AIRWAY SKILLS

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. Procedures documenting the use of each device/ technique listed below are found elsewhere in this manual.

- **CPAP/BiPAP:** Continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP) have been shown to be effective in eliminating the need for intubation and in decreasing mortality in properly-selected patients with acute respiratory distress.
- **Supraglottic Airways (SGA):** 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.
- **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 CO_2 monitoring. Use video laryngoscopy, if available and trained.

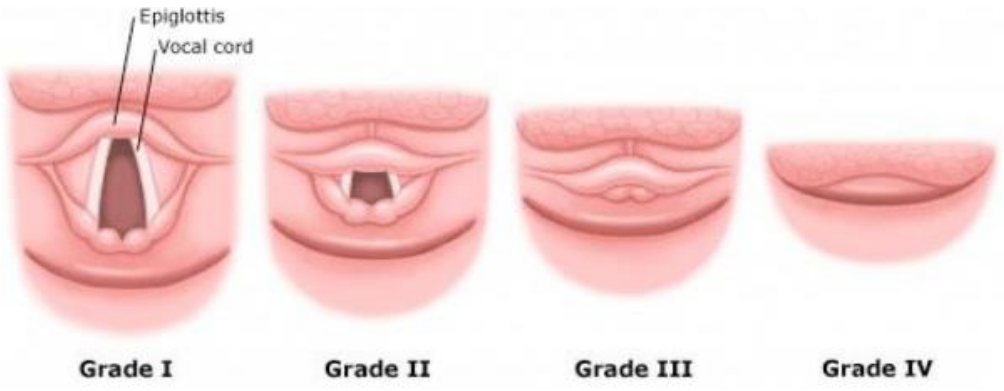
Procedure Continued

- **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.
- **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
  - Upper airway obstruction due to edema, mass or foreign body
- **Ventilation:** once an endotracheal tube has been placed, a mechanical ventilator is the preferred method of providing positive pressure ventilation if use is anticipated for more than a few minutes.

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, condensation in the ETT, symmetrical chest wall rise, as well as capnography.



5.1A Airway Management – Adult

EMR STANDING ORDERS – ADULT

R

- Routine patient care.
- Establish airway patency.
  - Open the airway.
    - Effective patient positioning is essential to effective airway management. See Airway Management 5.0.
    - Consider inserting an oropharyngeal airway adjunct.
  - Suction as needed.
  - Clear foreign body obstructions.
  - Assist ventilations with a bag-valve-mask device and supplemental oxygen as needed.

EMT/AEMT STANDING ORDERS

E/A

- Consider inserting nasopharyngeal airway adjunct with oropharyngeal. Often multiple adjuncts are beneficial.
- Titrate oxygen saturation to 94% - 98%.
- If patient has a tracheostomy tube, follow the procedure for Tracheostomy Care Procedure 5.13.
- For adult Cardiac Arrest: consider insertion of a supraglottic airway; see procedures for Supraglottic Airways 5.12.
- For adults in severe respiratory distress (e.g, Asthma/COPD/Pulmonary Edema/ Near Drowning) consider use of CPAP. See CPAP Procedure 5.4.

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 BiPAP Procedure 5.3.
- For impending respiratory failure with intact gag reflex or trismus: consider Nasotracheal Intubation, see Nasotracheal Intubation Procedure 5.9.
- For apnea/respiratory failure or impending respiratory failure with impaired or absent gag reflex: consider supraglottic airway device or intubation. See Supraglottic Airways 5.12 or Orotracheal Intubation 5.10.
- For adults with immediate, severe airway compromise consider Rapid Sequence Intubation. See Rapid Sequence Intubation Prerequisite Procedure 7.8.
  - **Note: this procedure is only to be used by paramedics who are trained and credentialed to perform RSI by FSTEMS.**
- If feasible, place a gastric tube to decompress the stomach.
- If you cannot establish an airway or ventilate:
  - Consider Cricothyrotomy – Surgical Bougie Assisted Procedure 5.6.
    Note: Training approved by the EMS unit's Medical Director must be delivered once every two years.

Airway Management – Pediatric 5.1P

EMR STANDING ORDERS – PEDIATRIC

R

- Routine patient care.
- Establish airway patency.
  - Open Airway.
    - Consider patient positioning by placing padding under shoulders to ensure sternal notch and ear are at the same level with the face flat. See Airway Management 5.0P.
    - If unable to maintain an open airway through positioning, consider placing an oropharyngeal airway adjunct. Often multiple adjuncts are beneficial.
  - Suction as needed.
  - Clear foreign body obstructions.
  - Assist ventilations with a bag-valve-mask device and supplemental oxygen as needed.

EMT/AEMT STANDING ORDERS

E/A

- Consider inserting nasopharyngeal airway adjunct with oropharyngeal. Often multiple adjuncts are beneficial.
- Titrate oxygen saturation to 94% - 98%.
- If patient has a tracheostomy tube see Tracheostomy Care 5.13.
- For respiratory distress:
  - Administer high concentration oxygen (humidified if available) via mask positioned on face or if child resists, held near face.
  - Monitor closely for fatigue, decreased mentation, and respiratory failure.
  - For children with chronic lung disease or congenital heart disease, maintain or increase home oxygen level to patient's target saturations.
    Note: Pulse oximetry is difficult to obtain in children. 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 respiratory failure or for distress that does not improve with oxygen administration:
  - Assist ventilations with a bag-valve-mask at rate appropriate for child's age. Reference Pediatric Color Coded Appendix A3.
- Determine if child's respiratory distress/failure is caused by a preexisting condition:
  - For Allergic Reaction/Anaphylaxis, refer to the Allergic Reaction/Anaphylaxis Protocol 2.2P.
  - For Asthma/Reactive Airway Disease/Croup, refer to the Asthma/Bronchiolitis/ Croup Protocol 2.3P.
- For Pediatric Cardiac Arrest: consider insertion of a supraglottic airway; see procedures for Supraglottic Airways 5.12.
- For pediatrics in severe respiratory distress due to asthma consider use of CPAP. See CPAP Procedure 5.4.

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.
- If feasible, place an orogastric tube to decompress the stomach.
- If you cannot establish an airway or ventilate, see Cricothyrotomy Percutaneous Procedure 5.5.

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

5.2 Analgesia and Sedation for Invasive Airway Device

After placement of an advanced airway device analgesia and sedation should generally be administered. NOTE: This protocol is to be used exclusively for analgesia post-intubation; it may NOT be used to facilitate intubation.

PARAMEDIC STANDING ORDERS – ADULT

P

Option 1:

- Ketamine 1 mg/kg IV bolus (max 100 mg) followed by infusion via pump 2 – 5 mg/kg/hr.
  - Initial bolus after intubation not needed if ketamine was used for induction.
  - If infusion not used: 1 mg/kg IV (max 100 mg) every 5 - 15 minutes as needed.

Option 2:

- Fentanyl 0.5 - 1 mcg/kg IV every 5-10 minutes as needed,

AND

- Midazolam 2 - 5 mg IV bolus followed by infusion via pump 1 – 10 mg/hour.
  - If infusion not used or if additional sedation is required: 2 - 5 mg IV every 5 -10 minutes as needed **OR**
- Lorazepam 1 - 2 mg every 15 minutes as needed (maximum total 10 mg).

PARAMEDIC STANDING ORDERS – PEDIATRIC

Option 1:

- Ketamine 1 mg/kg IV every 5 - 15 minutes, as needed.

Option 2:

- Fentanyl 1 – 2 mcg/kg IV every 5 - 10 minutes as needed,

AND

- Midazolam 0.1 mg/kg IV (single maximum dose 5 mg) every 5 minutes as needed, **OR**
- Lorazepam 0.1 mg/kg IV (single maximum dose 4 mg) every 5 minutes as needed.

Richmond Agitation Sedation Scale (RASS)

Target RASS	RASS Description
+ 4	Combative, violent, danger to staff
+ 3	Pulls or removes tube(s) or catheters; aggressive
+ 2	Frequent nonpurposeful movement, fights ventilator
+ 1	Anxious, apprehensive , but not aggressive
0	Alert and calm
- 1	awakens to voice (eye opening/contact) >10 sec
- 2	light sedation, briefly awakens to voice (eye opening/contact) <10 sec
- 3	moderate sedation, movement or eye opening. No eye contact
- 4	deep sedation, no response to voice, but movement or eye opening to physical stimulation
- 5	Unarousable, no response to voice or physical stimulation

PEARLS

- Analgesia and sedation should be considered in all patients with advanced airways in place, especially any time a patient shows signs of distress or there is difficulty providing appropriate ventilation due to patient resistance.
- Administering analgesia prior to anxiolysis has been shown to decrease the amount of benzodiazepine needed.
- Ketamine has analgesic properties and therefore does not require fentanyl to be co-administered.
- Ketamine IV boluses should be pushed slowly, over at least 30-60 seconds.
- Sedation can be guided by the RASS scale shown above with a target RASS of -3 to -5.
- Patients usually require more sedation in the prehospital environment than in-hospital due to increased external stimuli.
- Lower doses of the medication listed should be considered in the setting of hemodynamic compromise.

Bilevel Positive Airway Pressure (BiPAP) - ADULT 5.3

PARAMEDIC STANDING ORDERS

P

INDICATIONS

- Spontaneously breathing patient in severe respiratory distress.

ABSOLUTE CONTRAINDICATIONS (Do not use)

- Cardiac/Respiratory arrest.
- Agonal respirations.
- Unresponsive.
- Vomiting and/or active upper GI bleed.
- Respiratory distress secondary to trauma.
- Suspicion of pneumothorax.

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. IPAP: Set pressure to 10 cmH_2O and titrate to work of breathing not to exceed 20 cmH_2O.
7. EPAP: Set to 5 cmH_2O and titrate to SpO_2 of 94% - 98%; not to exceed 15 cmH_2O.
8. Pressure support to be no less than 5 cmH_2O (Difference between IPAP/EPAP).
9. Set back-up ventilatory rate of no less than 8 BPM.
10. Set FiO_2 initially to 100% and titrate to appropriate level to maintain an SpO_2 of 94 – 98%.
11. Recheck the mask for leaks and adjust as needed.
12. If the patient deteriorates and meets one or more of the contraindications above then discontinue the use BiPAP.

Consider Supraglottic Airway 5.12, Intubation 5.9/5.10.
Consider Rapid Sequence Intubation 7.8 (if trained and credentialed).
Consider administering anxiolytic:

- Midazolam 2.5 mg IV, may repeat once in 5 minutes, **OR**
- *Midazolam 5 mg IM/IN ,may repeat once in 5 minutes, **OR**
- Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
- Diazepam 5 mg IV, may repeat once in 5 minutes *OR*
- Ketamine:
  - 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, **OR**
  - 25 – 50 mg IM, may repeat every 30 minutes, as tolerated.

***For IN administration of midazolam use a 5 mg/mL concentration.

Keep in mind BiPAP uses large volumes of oxygen.

Administer benzodiazepines with caution in elderly patients or those with signs of hypercarbia or respiratory fatigue.

Airway Procedure 5.3

5.4 Continuous Positive Airway Pressure (CPAP)

Permitted devices for CPAP include stand alone mask devices and appropriately configured ventilators.

EMT/AEMT STANDING ORDERS

INDICATIONS

- Spontaneously breathing patient in severe respiratory distress.

ABSOLUTE CONTRAINDICATIONS (Do not use)

- Cardiac/Respiratory arrest.
- Agonal respirations.
- Unresponsive.
- Vomiting and/or active upper GI bleed.
- Respiratory distress secondary to trauma.
- Suspicion of pneumothorax.
- Pediatric patient who is too small for the mask sizes available.

RELATIVE CONTRAINDICATIONS (Use cautiously)

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

PROCEDURE

E/A

1. **Ensure adequate oxygen supply for CPAP device.**
2. Managing patient anxiety is extremely important. Reduce patient anxiety by coaching and minimize external stimuli as much as possible.
3. Place patient in upright position. Apply pulse oximetry, capnography nasal capture device and ECG as available and trained.
4. Choose appropriate sized device mask for patient, assemble the CPAP device, attach to oxygen supply and insure oxygen is flowing (follow manufacturer's directions for preparation for your particular device).
5. Place mask over face and secure with straps until minimal air leak.
6. Adjust Positive End Expiratory Pressure (PEEP) to 5 - 15 cmH_2O to effect for patient condition.
7. If device allows, titrate oxygen level to oxygen saturation of 94 – 98%.
8. Consider nasal cannula under CPAP mask to enhance O_2 flow rates, especially for CPAP devices that use flow to regulate pressure.
9. Recheck mask for leaks and adjust straps as needed to minimize air leaks.
10. Reassure anxious patient.
11. If patient stabilizes, maintain CPAP for duration of transport and notify receiving hospital to prepare for a CPAP patient.
12. If patient begins to deteriorate, discontinue CPAP and assist respirations by BVM with PEEP valve.
13. Document CPAP procedure, including time and provider. Document serial pulse oximetry and capnography readings to demonstrate effects.

If a commercial device is not available you may consider using a BVM with PEEP valve:

1. Apply nasal cannula at 15 lpm.
2. Attach PEEP valve to BVM at desired PEEP level (5 – 15 cmH_2O).
3. Attach oxygen to BVM at least 15 lpm and ensure flow.
4. Maintain continuous mask seal on patient to deliver CPAP.
5. Do not compress BVM.

Protocol Continues

Keep in mind CPAP uses large volumes of oxygen.

Continuous Positive Airway Pressure (CPAP) 5.4

Protocol Continued

PARAMEDIC STANDING ORDERS - ADULT

P

- Consider administering anxiolytic:
  - Midazolam 2.5 mg IV, may repeat once in 5 minutes, **OR**
  - *Midazolam 5 mg IM/IN, may repeat once in 5 minutes, **OR**
  - Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
  - Diazepam 5 mg IV, may repeat once in 5 minutes **OR**
  - Ketamine:
    - 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed) may repeat every 5 minutes to a total of 40 mg, as tolerated, **OR**
  - 25 – 50 mg IM may repeat every 30 minutes, as tolerated

PARAMEDIC STANDING ORDERS - PEDIATRIC

- Consider administering anxiolytic:
  - Midazolam 0.05 mg/kg IV (single max dose 2.5 mg), may repeat once in 5 minutes, **OR**
  - *Midazolam 0.1 mg/kg IM/IN (single max dose 5 mg), may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV (single max dose 1 mg), may repeat once in 5 minutes, **OR**
  - Diazepam 0.1 mg/kg (single max dose 5 mg), may repeat once in 5 minutes **OR**
  - Ketamine for patient > 3 months:
    - 0.5 – 1 mg/kg (maximum dose 50 mg) IN **OR**
    - 0.1 – 0.25 mg/kg (maximum dose 20 mg) IV diluted in 50 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed)

***For IN administration of midazolam use a 5 mg/mL concentration.

Medications should be administered cautiously in frail or debilitated patients; lower doses should be considered.

5.5 Cricothyrotomy – Percutaneous

This procedure cannot be performed until the provider has received training from their EMS unit on the commercial device selected and is deemed competent. Training and device approved by the EMS unit's Medical Director and must be delivered once every 2 years. Written notification will be provided to the Medical Resource Hospital's EMS Medical Director, Hospital EMS Coordinator, and FSTEMS within 48 hours of an event. Use of this procedure documented under "Procedures Used" in the Patient Care Report constitutes notification of the Bureau of EMS.

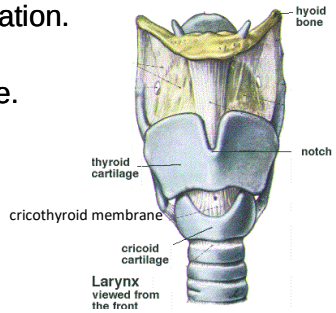
PARAMEDIC STANDING ORDERS

This protocol is intended for the use of commercially prepared rapid cricothyrotomy devices. Devices requiring use of a guide wire may not be used. Approved devices have a plastic cannula preloaded onto a metal introducer (e.g., Rusch QuickTrach).

- Devices may be utilized on patients less than 8 years old for which they are designed and appropriate sizes are available.
- If anatomical landmarks cannot be identified the procedure should not be performed.

INDICATIONS

- Children less than 8 years of age.
- Inability to adequately oxygenate and ventilate using less invasive methods including BVM, supraglottic airways and endotracheal intubation.



EQUIPMENT

- Commercially prepared percutaneous cricothyrotomy device.
- Antiseptic solution.
- Scalpel.
- Bag-valve-mask.
- Quantitative Waveform $ETCO_2$.

PROCEDURE

(May vary slightly with different devices)

1. Position the patient supine and extend the neck as needed to improve anatomic view.
2. Prepare neck with antiseptic solution.
3. Using non-dominant hand, stabilize larynx and locate the following landmarks: thyroid cartilage (Adam's apple) and cricoid cartilage (solid ring below the thyroid cartilage). The cricothyroid membrane lies between these cartilages.
4. Make a small vertical midline incision through the skin and subcutaneous tissues over the cricothyroid membrane. Palpate the cricothyroid membrane with your finger. Note: You will not be able to visualize the cricothyroid membrane.
5. Insert needle bevel through cricothyroid membrane at 90-degree angle while aspirating with syringe.
6. As soon as air is freely aspirated stop advancing the needle as this indicates entry into the trachea.
7. Direct the needle tip inferiorly by modifying angle to 60-degrees from the patient's head. Advance the assembly until the stopper is in contact with the skin. (Note: If air is not freely aspirated and the stopper has contacted the skin the stopper may need to be removed in order to reach the trachea. Be aware that if the stopper is removed there is increased risk of perforating the posterior aspect of the trachea.)
8. Remove the stopper while holding assembly firmly in place.
9. Hold the needle firmly in place and advance only the plastic cannula off the needle into the trachea until the flange rests on the neck. Carefully remove the needle and syringe.
10. Inflate cuff, if one is present.
11. Attach corrugated tubing extension to cannula, then apply BVM with waveform $ETCO_2$ and ventilate the patient.
12. Confirm placement by assessing for bilateral lung sounds and presence of quantitative and qualitative $ETCO_2$.
13. Secure cannula in place with neck strap.
14. Frequently reassess placement and continuously monitor $ETCO_2$.

Surgical Cricothyrotomy
Bougie Assisted — Adult

5.6

Training approved by the EMS unit's Medical Director must be delivered once every two years. **Written notification will be provided to the Medical Resource Hospital's EMS Medical Director, Hospital EMS Coordinator, and FSTEMS within 48 hours of an event.** Use of this procedure documented under "Procedures Used" in the Patient Care Report constitutes notification of FSTEMS.

PARAMEDIC – STANDING ORDERS

P

INDICATIONS

Inability to adequately oxygenate and ventilate using less invasive methods.

CONTRAINDICATIONS

- Ability to oxygenate and ventilate using less invasive measures.
- Age less than 8 years old.

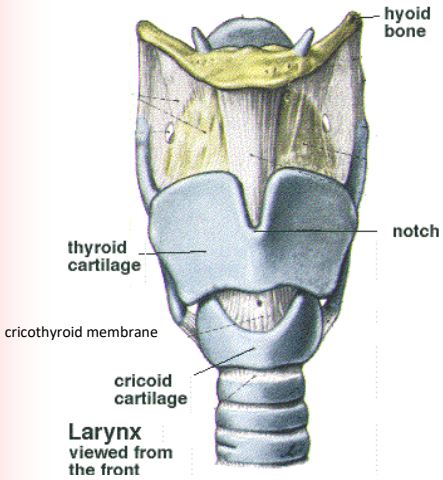
EQUIPMENT

A surgical cricothyrotomy kit that contains the following:

- Antiseptic solution.
- Scalpel.
- Syringe.
- Appropriately sized bougie.
- Endotracheal tube or trach tube
  - Patients 12 & older: 5.0 - 7.0 (used with an adult bougie).
  - Patients 8 - 12: 4.0 (used with a pediatric bougie).
    - Note: a 4.0 and pediatric bougie may be used with older patients if necessary.
- Securing device.

AND

- BVM.
- Waveform $ETCO_2$.



Extend the neck as needed to improve anatomic view.

Protocol Continues

5.6 Surgical Cricothyrotomy Bougie Assisted — Adult

Training approved by the EMS unit's Medical Director must be delivered once every two years. **Written notification will be provided to the Medical Resource Hospital's EMS Medical Director, Hospital EMS Coordinator, and FSTEMS within 48 hours of an event.** Use of this procedure documented under "Procedures Used" in the Patient Care Report constitutes notification of FSTEMS.

Protocol Continued

PARAMEDIC – STANDING ORDERS

P

PROCEDURE

1. Position the patient supine and extend and provide neck tissue tension. This may be accomplished by positioning the patient with his head just beyond the top of the stretcher.
2. Prep neck with Chlorhexidine.
3. The provider performing the procedure should be on the side of the patient corresponding to their dominant hand (i.e., right handed provider to the patient's right side).
4. The procedure is performed with the dominant hand. While the non-dominant hand is used to stabilize the anatomy, perform a vertical incision (approximately 3 cm) through the skin and fascia. Incision should start just above the thyroid cartilage and extend below the cricoid cartilage. With finger, dissect tissue and locate the cricothyroid membrane.
5. Make a horizontal incision through the cricothyroid membrane.
6. With your finger, bluntly dilate the opening through the cricothyroid membrane. Your finger is also used to help confirm that you are in the trachea.
7. With your finger in place, insert the bougie curved-tip (coude tip) first behind your finger and through the incision, angled towards the patient's feet.
8. Advance the bougie into the trachea feeling for "clicks" of tracheal rings and until "hold up" when it cannot be advanced any further. This confirms tracheal placement.
9. Advance endotracheal tube (ensure all air aspirated out of cuff) over the bougie and into the trachea only to the point where the balloon is just inside the trachea (inserting the ET tube too far can cause mainstem intubation).
10. Remove bougie while stabilizing ETT ensuring it does not become dislodged
11. Inflate the cuff with 5 – 10 ml of air.
12. Confirm appropriate proper placement using quantitative waveform $EtCO_2$. The following clinical signs can also be helpful in confirming tracheal placement but are unreliable in the absence of sustained exhaled $EtCO_2$: by symmetrical chest-wall rise, auscultation of equal breath sounds over the chest and a lack of epigastric sounds with ventilations using bag-valve-mask, and condensation in the ETT.
13. Secure the ETT.
14. Reassess tube placement frequently, especially after movement of the patient.
15. Ongoing monitoring of ETT placement and ventilation status using waveform capnography is required.

Endotracheal Tube Introducer "Bougie" 5.7

PARAMEDIC STANDING ORDERS – ADULT

P

INDICATIONS

- To facilitate routine placement of endotracheal tube.

LIMITATIONS

- Adult Bougies cannot be used on less than 6.0 ETT.
- Pediatric Bougies cannot be used on less than 4.0 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 Protocol 5.10 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 assessing for signs of tracheal placement (see below).
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:
   - If pre-loaded, advance tube (not Bougie).
   - if not pre-loaded, have assistant load the tube onto the Bougie and advance it.
6. Rotate the ETT 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 until the cuff is just past the vocal cords.
7. Inflate the cuff with 5 – 10 mL of air.
8. Holding the ETT firmly in place, have an assistant remove the Bougie.
9. Remove the laryngoscope.
10. Follow the procedures outlined in Procedure: Orotracheal Intubation 5.10 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 may 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.

High Flow Nasal Cannula Adult & Pediatric

5.8

PARAMEDIC STANDING ORDERS

P

INDICATIONS

Severe respiratory distress **AND** persistent Sp02 < 92% on maximum low-flow NC in patient who can maintain their airway (alert and able to swallow). High flow nasal cannula (HFNC) is ideally suited for hypoxic respiratory distress as might be seen in bronchiolitis in infants and children, see Pediatric Respiratory Distress 2.3P.

CONTRAINDICATIONS

Recent GI, airway, or tracheal surgery, tracheotomy, significant neck or facial trauma, foreign body aspiration.

PROCEDURE

- Nasal cannula should occlude 50% of the nares.
- Consider suctioning nares just prior to initiation of treatment.
- Set appropriate mode (pediatric or adult) and temperature (34^{o} C pediatric or 37^{o} C 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.
- Titrate FiO_2 to SpO_2 92% with target of 92 - 96%.

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 starting 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.

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

Nasotracheal Intubation 5.9

PARAMEDIC STANDING ORDERS - ADULT

P

INDICATIONS

- Impending respiratory failure with intact gag reflex or if jaw is clenched and unable to be opened.
- Inadequate ventilation/oxygenation with basic airway procedures.
- 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.

CONTRAINDICATIONS

- Apnea.
- Nasal obstruction.
- Suspected basilar skull fracture.

PROCEDURE

1. Pre-medicate nasal mucosa with 2% lidocaine jelly and nasal decongestant spray, if available.
2. Pre-oxygenate the patient.
3. Select the largest and least obstructed nostril and insert a lubricated nasal airway to help dilate the nasal passage.
4. Lubricate the ETT with water-based lubricant.
5. Remove the nasal airway and gently insert the ETT with continuous 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 wave form.
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 the patient. Be alert for vomiting.
9. Placement depth from the nares to the tip of the tube should be approximately 28 cm in males and 26 cm in females.
10. Inflate cuff with 5 – 10 mL of air.
11. Confirm appropriate placement by capnography, symmetrical chest-wall rise, auscultation of equal breath sounds over the chest, a lack of epigastric sounds with bagging, and condensation in the ETT.
12. Secure the ETT and consider applying a cervical-collar.

Protocol Continues

Protocol Continued

PARAMEDIC STANDING ORDERS

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

14. Document each attempt as a separate procedure so it can be time stamped in the ePCR. **An attempt is defined as placement of the tube into the patient's nare**. 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 nare), and confirmation of tube placement including chest rise, bilateral, equal breath sounds, absence of epigastric sounds, and end-tidal CO_2 readings.

If continued intubation attempts are unsuccessful (maximum of 2 attempts) consider cricothyrotomy. See Cricothyrotomy Procedures 5.5 OR 5.6.

POST TUBE PLACEMENT CARE – ADULT

- See Procedure: Analgesia and Sedation for Invasive Airway Device 5.2

P

5.10 Orotracheal Intubation

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

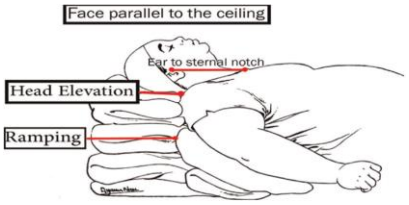
Basic airway procedures (e.g., BVM) and/or supraglottic airway devices are acceptable for airway management in cardiac arrest. Where ventilation and oxygenation are adequate, intubation offers no mortality advantage.

INDICATIONS

- Inadequate ventilation/oxygenation with basic airway procedures.
  - 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.
- Apnea/respiratory failure, impending respiratory failure, impaired or absent gag reflex.

CONTRAINDICATION

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



PROCEDURE

Direct Laryngoscopy or Direct Video Laryngoscopy:

1. Place patient in ear to sternal notch position (i.e., ramped) and elevate head to 30° if possible. Ensure all preparation and planning steps are complete.
2. Insertion: The laryngoscope should be gripped lightly as no significant force is needed until later steps. It is helpful, especially if there are substantial secretions, to lead with the suction catheter and suction as the laryngoscope is advanced.
3. Epiglottoscopy: SLOWLY advance the blade down the tongue at the midline until the epiglottis is seen. Be sure to control the tongue leaving space to the right for tube delivery. Keep the tip of the blade along the tongue and avoid allowing the laryngoscope to fall posterior.
4. Valleculoscopy: For Macintoch blades, gradually advance the blade until it is seated in the vallecula. The blade must engage the hypoepiglottic ligament in order to adequately lift the epiglottis. The ligament lies directly within the vallecula. If using a Miller blade, pass tip of blade under the epiglottis to control it directly.
5. Laryngoscopy: Once the tip of Mac blade is seated in the vallecula or tip of Miller blade has passed the epiglottis, lifting force should be applied forward and upward without rotating the handle backward. The epiglottis will lift or be displaced and the larynx will be exposed.
6. If using bougie: Once an optimal view is obtained pass the bougie through the cords. Tracheal rings may be felt if the coude tip remains pointing upright. Advance the bougie slowly until it lodges in the proximal bronchi. Be careful not to advance with too much force as tracheobronchial trauma may occur. If the bougie does not stop advancing this is suggestive of esophageal placement. Advance the lubricated endotracheal tube over the bougie without removing the laryngoscope. If the tube cannot be advanced through the cords rotate it 60° counterclockwise. Visualize the tube passing through the cords if possible and stop advancing once the cuff is past the cords. Remove the laryngoscope, hold tube firmly, and remove the bougie.
7. If using stylette: Ensure stylette is bent in “straight-to-cuff” fashion with 30° bend angle and tube cuff is lubricated. Once an optimal view is obtained, pass the tube to the right and below the line-of-sight to the cords. The tube must be visualized passing through the cords. Advance tube until the cuff is seen passing through the cords. If resistance is felt, rotate the tube clockwise. Once the tube is in place hold it firmly and remove the stylette.
8. Inflate ETT cuff with 5 - 10 mL of air and adjust inflation pressure if necessary. The pilot balloon should feel inflated but be easily compressible and not too hard.
9. Confirm tube placement via continued waveform capnography, bilateral lung sounds, and absence of epigastric sounds.

Protocol Continues

Protocol Continues

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

10. Secure ETT and continue to monitor waveform capnography. Frequently reassess tube placement.

Indirect (Hyperangulated & Channeled) Video Laryngoscopy
(Devices such as Glidescope and King Vision that cannot be used for direct laryngoscopy)

1. Place patient in ear to sternal notch position (i.e., ramped) and elevate head to 30° if possible. Ensure all preparation and planning steps are complete.
2. Insertion: Open mouth fully and insert blade at the midline. It is helpful, especially if there are substantial secretions, to lead with the suction catheter and suction as the laryngoscope is advanced.
3. Epiglottoscopy: Gradually advance the blade by rotating handle backward and allowing the tip of the blade to follow the tongue until the epiglottis is seen.
4. Valleculoscopy: Advance the tip of the blade until it is seated in the vallecula. DO NOT go to too deep. The tip of the blade may need to be slightly above the vallecula in order to facilitate tube passage. If you can see the cricoid ring through the cords you are too deep.
5. Laryngoscopy: Lift the jaw straight up with the blade exposing the larynx fully.
6. Tube passage for non-channeled devices: A lubricated ET tube loaded on a rigid or standard stylette should be used. The stylette should have a gradual curve at the end to 60° – 70° angle. Pass the tube into the mouth from the right side. The tip should enter view from the bottom of the screen and toward the larynx. When the tube has just begun entering the cords, the stylette should be popped up out of the tube slightly using your right thumb or with the help of an assistant. This will allow the tip of the tube to fall between the cords at the correct angle. Pass the tube until the cuff is past the cords.
   Note: It is not recommended to use a bougie with a non-channeled IVL laryngoscope as they are not easily maneuvered around the steep angle that is present.
7. Tube passage for channeled devices: Line up view on camera with the cords. Advance lubricated ETT down channel and visualize it passing through the cords. It may be helpful to preload a bougie in the tube and advance it through the cords first.
8. Inflate ETT cuff with 5 - 10 mL of air and adjust inflation pressure if necessary. The pilot balloon should feel inflated but easily compressible and not too hard.
9. Confirm tube placement via continued waveform capnography, presence of bilateral lung sounds, and absence of epigastric sounds.
10. Secure ETT and continue to monitor waveform capnography. Frequently reassess tube placement.

If the intubation attempt is unsuccessful, if ETT placement cannot be verified or if the ETT becomes dislodged:

- Monitor oxygen saturation and end-tidal CO_2 **AND**
- Ventilate the patient with 100% oxygen via a BVM until ready to attempt intubation again.
- Consider insertion of supraglottic airway if additional intubation attempts are unlikely to be successful.
- Consider limiting laryngoscopy to two attempts, maximum three attempts.

Techniques to improve laryngeal view:

- Head Elevation: Elevate the head by lifting with the laryngoscope or having an assistant lift the head from underneath.
- External Laryngeal Manipulation (ELM): The person intubating uses their right hand to manipulate the larynx to a position that is suitable. An assistant then holds the larynx in that position. Note: BURP and cricoid pressure are no longer recommended.
- Jaw Thrust: An assistant performs a jaw thrust to assist with tissue displacement.

Protocol Continues

5.10 Orotracheal Intubation

Protocol Continues

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

POST TUBE PLACEMENT CARE – ADULT & PEDIATRIC

- See Procedure: Analgesia and Sedation for Invasive Airway Device 5.2

P

Documentation
Document each attempt as a separate procedure so it can be time stamped in the ePCR. An attempt is defined as placement of the blade into the patient's mouth. For each attempt, document the time, provider, placement success, preoxygenation, airway grade, ETT size, placement depth, placement landmark (e.g. cm at the patient's teeth), and confirmation of tube placement including chest rise, bilateral equal breath sounds, absence of epigastric sounds, and capnography readings.

Intubation Checklist (Non-RSI)

FSTEMS

Patient Preparation

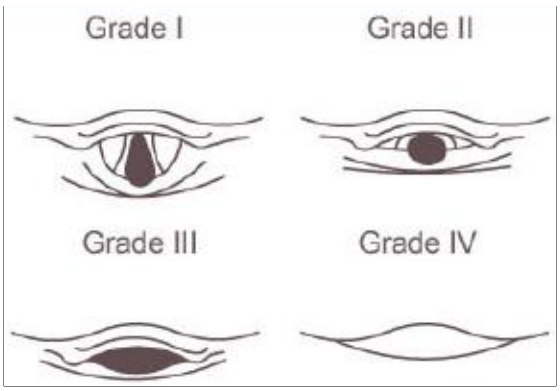
- ☐ **Preoxygenate** NC 15 lpm + NRB/CPAP/BVM
- ☐ **Positioning** Ear to sternal notch, ramp, remove collar
- ☐ **Monitoring** SpO_2, ECG, BP, $ETCO_2$ →
- Verbalize Airway Plan

Setup

- ☐ Laryngoscope(s)
- ☐ ETT(s) & syringe
- ☐ Bougie →
- ☐ Stylette
- ☐ Suction(s)
- ☐ BVM w/PEEP
- ☐ $ETCO_2$ →
- ☐ Supraglottic
- ☐ Surgical

Post-Intubation

- ☐ **Confirm Placement** -Waveform ETCO2 -Lung sounds -Epigastric sounds
- ☐ **Secure ETT**
- ☐ **Fentanyl**
- ☐ **Sedation**
- ☐ **OG/NG Tube**
- ☐ **Sit Patient Up** -if not contraindicated
- ☐ **Reassess**



PEARL:
- An intubation attempt is defined as a blade being introduced into the mouth.

Suctioning of Inserted Airway 5.11

EMT/ ADVANCED EMT / PARAMEDIC STANDING ORDERS

E/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 or supraglottic airway. For tracheostomy tube see Tracheostomy Care 5.12.

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 until resistance is met; pull back approximately 1 – 2 cm.
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. Saline flush may be used to help loosen secretions and facilitate suctioning.
8. Re-attach the ventilation device to the patient.

5.12 Supraglottic Airway Adult & Pediatric

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.
Note: Double Lumen Device (e.g., Combitube) are no longer approved.

EMT/ADVANCED EMT STANDING ORDERS

E/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 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:

- Need to provide improved ventilation and oxygenation in a patient without an intact gag reflex.

POST TUBE PLACEMENT CARE – ADULT & PEDIATRIC

- See Procedure: Analgesia and Sedationf for Invasive Airway Device 5.2

Tracheostomy Care 5.13

EMT/ADVANCED EMT STANDING ORDER – ADULT & PEDIATRIC

E/A

INDICATIONS

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

PROCEDURE

- Consult with the patient's caregivers for assistance.
- Assess tracheostomy tube: Look for possible causes of distress which may be easily correctable, such as a detached oxygen source.
- If the patient's breathing is adequate but exhibits continued signs of respiratory distress, administer high-flow oxygen (humidified if available) via non-rebreather mask or blow-by, as tolerated, over the tracheostomy.
- If patient's breathing is inadequate, assist ventilations using bag-valve-mask device with high-flow oxygen.
- 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.
- Suction if unable to ventilate via tracheostomy or if respiratory distress continues.
- Use no more than 100 mmHg suction pressure.
- If the tracheostomy tube has a cannula, remove it prior to suctioning.
- Determine proper suction catheter length by measuring the obturator.
- If the obturator is unavailable, insert the suction catheter approximately 2 – 3 inches into the tracheostomy tube. **Do not use force!**
- 2 – 3 ml saline flush may be used to help loosen secretions.
- 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 – ADULT & PEDIATRIC

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:

- If the patient continues in severe respiratory distress, remove tracheostomy tube and attempt bag valve mask ventilation.
- 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).
  - Bougie may be used to assist with placement of endotracheal tube into stoma.
- If unable to replace tube with another tracheostomy tube or endotracheal tube, assist ventilations with bag valve mask and high-flow oxygen.

PARAMEDIC – ADULT & PEDIATRIC

PURPOSE

- To define the appropriate indications and use of a mechanical ventilator.
- Utilize ventilators and ventilator modes for which they have received appropriate training.

INDICATIONS

- Patients with advanced airways placed prehospitally. The use of ventilators in the PIFT environment is not addressed by this protocol.
- Patients requiring CPAP or BPAP.
- Patients in cardiac arrest, as recommended by manufacturer.

SETTINGS

Utilize appropriate settings based on the patient's clinical condition, their training and the recommendations of the ventilator manufacturer.

P

The following initial settings may be used.

Mode: Volume Control.

Tidal Volume: 6 - 8 mL/kg of Ideal Body Mass (see charts below).

Rate: 10 – 35 to target $EtCO_2$ 35 - 45 mmHg titrate to appropriate $EtCO_2$ based on patient's condition.

Ti: 0.8 – 1.0 seconds.

FiO_2: Start at 100% FiO_2, then titrate to maintain SpO_2 > 94% (90% for COPD patients).

PEEP: 5 cmH_2O.

ALARM SETTINGS

- High pressure alarm: 30 cmH_20.
- Low pressure alarm, if available: 4 cmH_20.

AVOID

- Inverse I:E ratios.
- PEEP > 15 cmH_20.
- PIP > 40 cmH_20.
- Plateau pressure > 30 cmH_20.

PEARLS:

- Note, manufacturer's guidelines for pediatric weight limitations.

MALE		
Height in	6 mL/kg	8 mL/kg
5.0	314	418
5.1	320	426
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

SCOPE

S: Suction
C: Connections
O: Obstructions
P: Pneumothorax
E: Equipment/Tube Dislodgement

FEMALE		
Height in	6 mL/kg	8 mL/kg
5.0	286	382
5.1	293	390
5.2	300	400
5.3	314	406
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

6.0 12-Lead ECG Acquisition

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDER

Obtain 12 lead ECG with baseline vitals within 10 minutes if available and practical. Transmit per local guidelines.

INDICATIONS

- Congestive Heart Failure/Pulmonary Edema.
- Dysrhythmias and/or Palpitations
- Suspected Acute Coronary Syndrome.
- Syncope.
- Shortness of breath.
- Stroke/CVA.
- Cardiac Arrest with Return of Spontaneous Circulation (ROSC) at least 8 minutes post ROSC
- Upper Abdominal Pain
- Dizziness/ lightheadedness

PROCEDURE

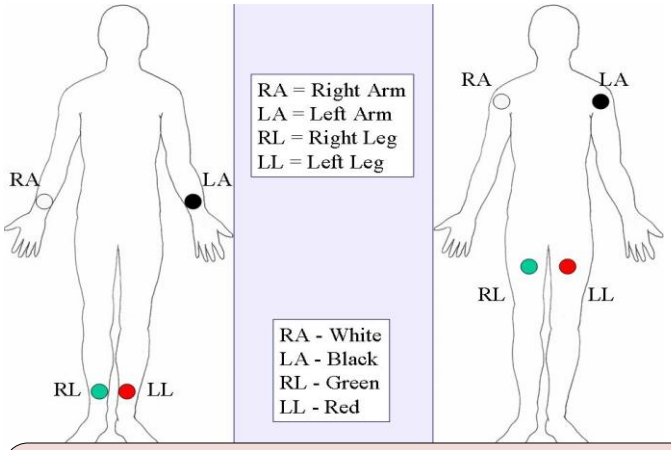
E/A/P

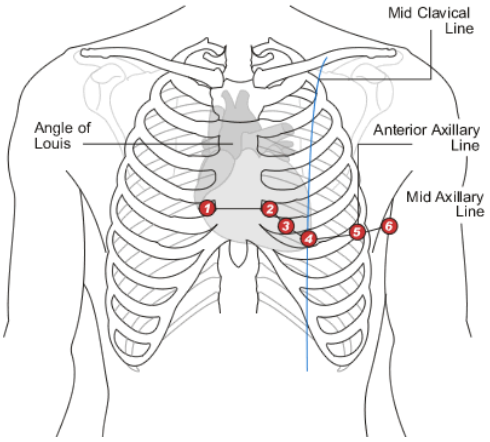
1. Prepare ECG Monitor and connect cable with electrodes.
2. Properly position the patient (supine or semi-reclined).
3. Enter patient information (e.g., age, gender, name) into monitor, when able.
4. Prep chest as necessary, (e.g., hair removal, skin prep pads).
5. Apply chest and extremity leads using 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. Acquire the 12 lead ECG.
8. If 12 lead ECG indicates a STEMI (e.g., ECG identifies ***Acute MI Suspected*** and/or Paramedic interpretation) transport patient to the most appropriate facility in accordance with local STEMI guidelines/agreements. Notify receiving facility of a “STEMI Alert” and patient information as requested.
9. For patients with continued symptoms consistent with acute coronary syndrome, perform repeat ECGs, as indicated, during transport to evaluate for evolving STEMI. Leave 12 lead attached.
10. Copies of 12 lead ECG labeled with the patient’s name and date of birth should be left with the receiving hospital.
11. Document the procedure and time of the ECG acquisition in appropriate section of the Patient Care Record. Include the ECG printout/image in the PCR, if possible.

Protocol Continues

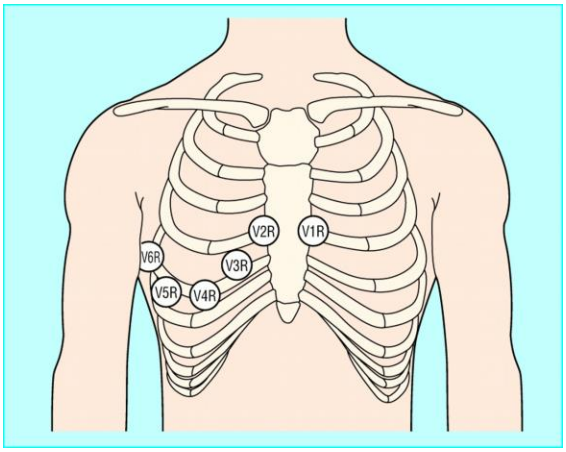
12-Lead ECG Acquisition 6.0

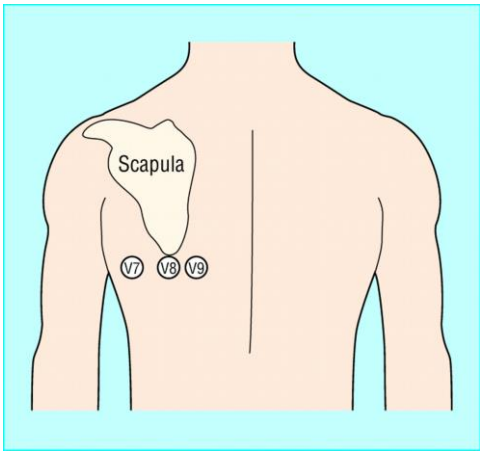
Protocol Continues





- For isolated ST depression in leads VI – V3 consider posterior ECG
- For suspect inferior MI consider right sided ECG.
  - Label these ECG printouts as applicable.





PEARLS:

- Enter the patient's age for proper interpretation.
- When transmitting either include the patient's name or notify the receiving facility of the patient's identity.
- Be alert for causes of artifact: dry or sweaty skin, dried out electrodes, patient movement, cable movement, vehicle movement, electromagnetic interference, static electricity
- Dried out electrodes are a major source of artifact; keep in original sealed foil pouches; plastic bags are not sufficient. Use all the same kind of electrodes. Press firmly around the edge of the electrode, not the center.
- Sweaty patients should be dried thoroughly. Consider tincture of benzoin. Dry skin is especially problematic. Clean the site (e.g., alcohol prep pad) and gently abrade skin using a towel or 4x4 gauze.
- Check for subtle movement: toe tapping, shivering, muscle tension (e.g., hand grasping rail or head raised to "watch")

6.1 Capnography

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Indications:

- Routine monitoring of ventilation status and indirectly circulatory and metabolic status in adults and children with:
  - Respiratory distress
  - Altered mental status
  - Traumatic brain injury
  - Diabetic ketoacidosis
  - Shock
  - Sepsis
  - Cyanide and/or carbon monoxide poisoning
  - Administration of sedative medication
- Advanced Airway Devices:
  - Confirm and document placement of advanced airway devices, see Airway Management 5.0 and 5.1 A&P
  - To confirm continued placement of advanced airway devices after every patient move and at transfer of care.
- Monitoring of 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.
- To assist with termination of resuscitation efforts when $ETCO_2$ is <20 mmHg despite adjusting the quality of chest compressions.
  - Low $ETCO_2$ production after 20 minutes of effective CPR is a predictor of mortality. See Resuscitation Initiation & Termination Policy 8.15.

E/A/P

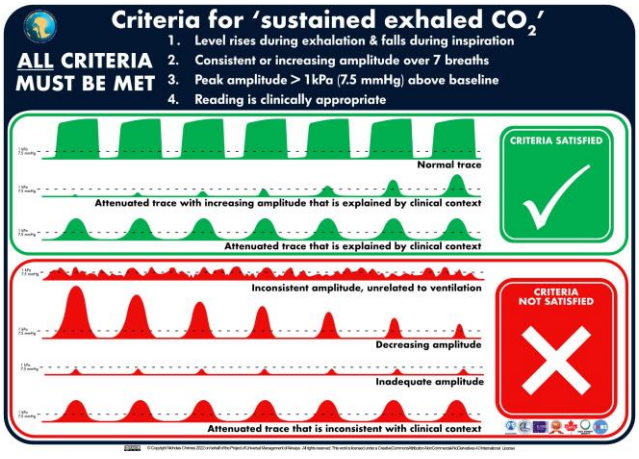
Procedure:

1. Attach the sensor to endotracheal tube, supraglottic airway, BVM or apply cannula with $ETCO_2$ mouth scoop or bi-cannula.
2. Assess ETCO2 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 $ETCO_2$ 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 ePCR.



Procedure 6.1

Double Sequential Defibrillation – Adult

6.2

PARAMEDIC STANDING ORDERS – ADULT

INDICATION: Refractory Ventricular Fibrillation / Tachycardia after 3 unsuccessful shocks and a second manual defibrillator is available. Ideally the second manual defibrillator should be the same model.

- **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. Ensure quality CPR and minimally interrupted chest compressions during pad application and procedure.
2. Apply a new set of external defibrillation pads adjacent to, but not touching the pad set currently in use.
3. Assure that controls for the second manual defibrillator are accessible to the team leader
4. Verify that both cardiac manual defibrillators are attached to the patient, that all pads are well adhered, and simultaneously charge both manual defibrillators.
5. When both monitors are charged to maximum energy settings and all persons are clear, one EMS provider should sequentially push the shock button on one monitor and then the other; they should NOT be pushed simultaneously.
6. May repeat procedure every 2 minutes as indicated if refractory ventricular fibrillation/tachycardia persists

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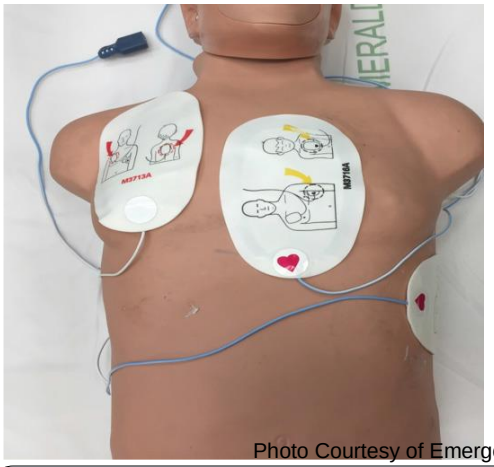


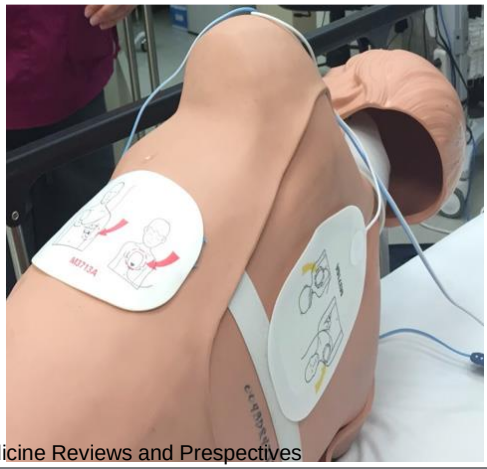


Photo Courtesy of Emergency Medicine Reviews and Prespectives

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 control and interventional cardiology.

6.3 Gastric Tube Insertion

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

Procedure 6.3

INDICATIONS

- Intubated patients (Orogastric preferred)

CONTRAINDICATIONS

- If suspected basilar skull fracture, do not use nasogastric tube.
- Severe facial trauma with distortion of airway anatomy

EQUIPMENT

- Salem sump gastric tube of appropriate size; for pediatric size refer to the length based tape.
- 60 mL syringe with Toomey tip (catheter tip); use 5-10 mL syringe for pediatric
- Lubricant
- Stethoscope
- Method of securing

OROGASTRIC TUBE PROCEDURE

1. Size a Salem sump gastric tube by measuring from the epigastrium, around the ear, and to the mouth.
2. Lubricate the distal portion of the tube with water based lubricant.
3. If possible, flex the head forward to better align the esophagus for tube placement.
4. Insert the tube into the mouth and advance until the measured depth is reached. If the tube coils or does not advance, pull it back, reposition, and try again. A maximum of three attempts are allowed.
5. Once the tube is in place confirm placement by instilling air into the tube using 60 mL syringe and auscultating the epigastrium for gastric sounds.
6. Secure the tube with tape or other device as necessary.
7. Perform low intermittent suctioning.

NASOGASTRIC TUBE PROCEDURE

1. Size a Salem sump gastric tube by measuring from the epigastrium, around the ear, and to the nose. The largest and least occluded nares should be utilized.
2. Lubricate the distal portion of the tube with water based lubricant.
3. If possible, flex the head forward to better align the esophagus for tube placement.
4. Insert the tube into the nares and advance until the measured depth is reached. If the tube coils or does not advance, pull it back, reposition, and try again. A maximum of three attempts are allowed.
5. Once the tube is in place confirm placement by instilling air into the tube using 60 mL syringe and auscultating the epigastrium for gastric sounds.
6. Secure the tube with tape or other device as necessary.
7. Perform low intermittent suctioning.

ADVANCED EMT/PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

A/P

Definition

Intraosseous insertion establishes access in a patient where venous access cannot be rapidly obtained. The bone marrow space serves as a "noncollapsible vein" and provides access to the general circulation for the administration of fluids and resuscitation drugs.

Indication

- Drug or fluid resuscitation of a patient in need of immediate life-saving intervention and unable to rapidly obtain peripheral IV access.
- May be used as a primary vascular device in cardiac arrest.

Contraindications

- Placement in or distal to a fractured bone.
- Placement near prosthetic limb, joint or orthopedic procedure.
- Placement at an infected site.
- Inability to find landmarks.

Complications

- Extravasation of fluid, fat embolism, and osteomyelitis (rare).

Equipment:

- 15 – 19 gauge bone marrow needle or FDA-approved commercial intraosseous infusion device.
- Chlorhexidine solution and gloves.
- Primed IV tubing (for alert patients with 2% preservative free lidocaine), IV stopcock, solution.
- IV flush.
- Pressure pump/bag or 60 ml syringe for volume infusion or slow push.
- 2% lidocaine (preservative free).
- Syringe.

Procedure Continues

6.4 Intraosseous Access

Protocol Continues

Procedure:

IO Device: Use an FDA approved commercial device.

IO Sites: Appropriate IO sites are for which the provider has received appropriate training.

1. Identify the bony landmarks as appropriate for device.
2. Cleanse the site.
3. Needle is appropriately placed if the following are present:
   - Aspiration with syringe yields blood with marrow particulate matter.
   - Infusion does not result in infiltration at the site.
   - Needle stands without support.
4. Attach IV tubing, with or without stopcock.
5. For alert patients prior to IO syringe bolus (flush) or continuous infusion:
   - Ensure that the patient has no allergies or sensitivity to lidocaine.
   - If using an extension tubing without stopcock, prime with preservative free lidocaine 2%.
   - SLOWLY administer preservative free lidocaine 2% device catheter into the medullary space.
   - Allow 2 – 5 minutes for anesthetic effects, if feasible:
   - Adult: 1 – 2.5 ml (20 – 50 mg) 2% lidocaine.
   - Pediatric: 0.5 mg/kg 2% lidocaine.
6. Flush with 10 ml of rapid fluid bolus prior to use:
   - Recommend use of a stop cock inline with syringe for bolus infusions.
   - Use a pressure bag for crystalloid infusions.
7. 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).

A/P

Restraints 6.5

The Restraints Procedure was placed after Behavorial Emergencies for ease of finding. It is also listed under procedures.

Procedure 6.5

EMT/ ADVANCED EMT STANDING ORDERS

INDICATIONS

Patients who are a potential harm to themselves or others, or interfere with their own care and lack the ability to refuse care under the Refusal of Care Protocol 8.14 may be restrained to prevent injury to the patient or crew and facilitate necessary medical care. Restraint must be performed in a humane manner and used only as a last resort.

PROCEDURE

E/A

1. Request law enforcement assistance.
2. Attempt less restrictive means of managing the patient, including verbal de-escalation, unless a delay in restraint would create an imminent risk of harm.
3. Ensure that there are sufficient personnel available to physically restrain the patient safely.
4. Restrain the patient in a lateral, semi-recumbent or supine position. In order to gain control, the patient may need to be briefly in a prone position; severe risk of airway and ventilation compromise and death is associated with prone positioning. Do not place devices such as backboards, splints, or other devices on top of the patient. Never hog-tie a patient.

Note that there is no restraint position that is inherently safe. Even patients in the lateral, semi-recumbent or supine position are at risk if their airway and breathing are restricted in any way.

5. The patient must be under constant observation by the EMS crew. This includes direct visualization of the patient as well as cardiac, pulse oximetry, and quantitative waveform capnography monitoring, if available.
6. Perform extremity circulation checks every 15 minutes.
7. Documentation should include the reason for the use of restraints, the type of restraints used, the time restraints were placed, and circulation checks.
8. You must have the ability to remove any restraints used during transport (e.g., handcuff key).

- Patient safety must be the primary focus.
- Agitation must be thought of as a clinical problem rather than as bad behavior.
- Obese patients in either the prone or supine position are at increased risk of apnea.
- Continued patient struggling against physical restraints may lead to hyperkalemia, rhabdomyolysis, and/or cardiac arrest. Chemical restraint may be necessary.

Protocol Continues

PARAMEDIC STANDING ORDERS - ADULT

Resistant or Aggressive Management *(Resisting necessary treatment/interventions)*

Goal is alert and calm, consider:

- Midazolam 2.5 mg IV, may repeat once in 5 minutes, **OR**
- *Midazolam 5 mg IM/IN, may repeat once in 5 minutes (*for IN use 5 mg/mL concentration), **OR**
- Lorazepam 1 mg IV, may repeat once in 5 minutes, **OR**
- Diazepam 5 mg IV, may repeat once in 5 minutes.

Immediate Danger to Self or Others *(Immediate and active danger of serious harm to themselves or others)*

- A patient who is physically restrained and is not actively fighting against the restraints is not an active danger to themselves or others.
- Before proceeding, assess for and address any potential organic causes for the patient's combativeness (e.g., hypoglycemia). Patients whose breathing is restricted may be combative due to hypoxia.
- The determination that patients are an active threat should generally only be made after attempts at de-escalation have been unsuccessful.

Do not administer chemical sedation to a patient being restrained in the prone position or any position where breathing is restricted.

Prior to proceeding with chemical sedation:

- Reposition the patient as needed to ensure that the patient's airway and breathing are not restricted ("Reposition before you medicate").
- Equipment needed for performing monitoring & resuscitation must be at the patient's side.
- A paramedic shall be focused on monitoring the patient's airway, breathing and circulation during administration and until patient transfer at the emergency department.

Goal is safe and compliant:

- ***Droperidol 5 – 10 mg IM/IV repeat 5 – 10 minutes **OR**
- **Ketamine: 4 mg/kg IM rounded up to nearest 50 mg, maximum dose 500 mg, repeat up to 2 mg/kg IM in 5 – 10 minutes as needed **OR**
- Ketamine: 1 mg/kg IV rounded up to nearest 25 mg, maximum dose 250 mg, repeat 0.5 mg/kg in 5 – 10 minutes as needed.
- Benzodiazepines:
  - Midazolam 5 mg IV, repeat every 5 minutes as needed **OR**
  - *Midazolam 10 mg IM/IN, repeat every 5 minutes as needed **OR**
  - Lorazepam 2 - 4 mg IV, repeat every 5 minutes as needed **OR**
  - Diazepam 10 mg IV, repeat every 5 minutes as needed
- ***Haloperidol 10 mg IM; may repeat once in 10 minutes. Haloperidol can be given in addition to benzodiazepines.
- Contact **Medical Control** for additional doses.

*For IN administration of midazolam use a 5 mg/mL concentration.
**For ketamine use 100 mg/mL concentration
***Administer droperidol or haloperidol with caution to patients who are already on psychotropic medication as this may precipitate serotonin syndrome or malignant hyperthermia.

Protocol Continues

Restraints 6.5

PARAMEDIC STANDING ORDERS - ADULT

After chemical restraint:

- Re-evaluate whether the patient continues to meet criteria for physical restraint and remove if they are no longer necessary to ensure the safety of the patient, providers or both, taking into account transport times, the depth of sedation and the need to transfer the patient at destination.

P

For acute dystonic reaction to haloperidol or droperidol:

- Diphenhydramine 25 – 50 mg IV/IM.

PARAMEDIC STANDING ORDERS - PEDIATRIC

Resistant or Aggressive Management *(Resisting necessary treatment/interventions)*
Contact **Medical Control,** to discuss treatment options

*(**Immediate danger to self/others)** Goal is safe and compliant.
Contact **Medical Control** and consider:

- **Ketamine 4 mg/kg IM rounded to nearest 25 mg, maximum dose 250 mg, may repeat 2 mg/kg IM in 10 minutes as needed **OR**
- Benzodiazepines:
  - *Midazolam 0.2 mg/kg IM/IN (single maximum dose 10 mg) repeat every 5 minutes as needed, **OR**
  - Midazolam 0.1 mg/kg IV (single maximum dose 5 mg) repeat every 5 minutes as needed, **OR**
  - Lorazepam 0.1 mg/kg IV (single maximum dose 4 mg) repeat every 5 minutes as needed, **OR**
  - Diazepam 0.2 mg/kg IV (single maximum dose 10 mg IV) repeat every 5 minutes as needed.

*For IN administration of midazolam use a 5 mg/mL concentration.
**For ketamine use 100 mg/mL concentration

- Patients with alcohol or other sedative drugs onboard are at severe risk of apnea following chemical sedation with ketamine.
- Ketamine may cause transient apnea. The lowest appropriate dose should be used.
- A critically ill or elderly patient receiving a sedative dose of ketamine may become apneic; consider a lower initial dose.
- The decision to administer chemical sedation is a medical decision made by the EMS provider based upon clinical judgment alone and should not be influenced by the police or any other agency"

PEARLS:

- Combativeness may be due to comorbid medical conditions or due to hypoxia, hypercarbia, hypoglycemia, drug and/or alcohol intoxication, drug overdose, brain trauma. Note that hypercarbia due to impaired ventilation may cause agitation even in the presence of normal SpO_2.
- Verbal de-escalation is the safest method and should be delivered in an honest, straightforward, friendly tone, avoiding direct eye contact and encroachment of personal space.
- In stressful situations, overestimation of patient weight is not uncommon and increases risk. Consider having a second provider confirm weight estimate and utilizing lowest estimate.

6.6 Vascular Access via Central Catheters

PARAMEDIC – ADULT & PEDIATRIC

PROVIDER LEVEL:

- Medical Director approved program and/or the FSTEMS and Medical Control Board approved learning objectives.

INDICATIONS

- In the presence of a life threatening condition, 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. Utilize good hand-hygiene with either alcohol gel based cleanser or soap and water.
2. Utilize respiratory precautions if indication of respiratory infection in provider or patient:
   - Mask the provider and/or the patient.
3. Prepare equipment:
   - 2 - 3 10 mL prefilled syringes of 0.9% NaCl.
   - Sterile gloves (if available).
4. If more than one lumen is available (PICCs, Hickmans and Broviacs can have one, two, or three lumens), select the largest lumen available.
5. Vigorously cleanse the cap of the lumen with chlorhexidine or 70% alcohol prep pad.
   - Allow to dry.
6. Unclamp the selected catheter lumen and using a prefilled 10 mL syringe.
   - Vigorously flush the catheter maintaining pressure at the end of the flush to prevent reflux of fluid or blood.
   - 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).
   - If unable to flush any of the lumens, the catheter is unable to be used.
7. Attach primed IV administration set and observe for free flow of IV fluid.
   - Utilizing an IV pump, set the flow rate based on the patient condition and in accordance to NH Protocols.

- Do not exceed recommended flow rates.
- Avoid taking a blood pressure reading in the same arm as the PICC.

CATHETER	SIZE	MAX FLOW RATE
PICC	Less than 2.0 fr	125 mL/hr
PICC	Greater than 2.0 fr	250 mL/hr
Groshong PICC	3 fr	240 mL/hr
Groshong PICC NXT	4 fr	540 mL/hr
Groshong PICC NXT	5 fr	200 mL/hr
Hickman/Broviac		
Hickman/Broviac – Power Port	8 – 9.5 fr	3000 mL/hr

PEARLS:

- There are many peripherally inserted, tunneled and/or implanted ports options. Providers should do their best to discern what option the patient has. Patient may be carrying a reference/wallet card about their device.
- PICC lines will not tolerate rapid infusions or infusions under pressure.

Procedure Continues

Vascular Access via Central Catheter

Procedure Continued

P

Procedure for implanted catheter (Port-a-Cath, P.A.S. port, Medi-port)

1. Utilize good hand-hygiene with either alcohol gel based cleanser or soap and water.
2. Utilize respiratory precautions if indication of respiratory infection in provider or patient.
   - Mask the provider and/or the patient.
3. Prepare all necessary equipment:
   - Non-coring, right angle needle specific for implanted vascular access ports.
   - 2 - 3 10 mL prefilled syringes of 0.9% NaCl.
   - Sterile infusion port cap.
   - Sterile gloves (if available).
   - Sterile occlusive dressing large enough to completely cover the insertion site
4. Identify the access site; usually located in the chest.
5. Vigorously cleanse the access site with chlorhexidine or 70% alcohol prep pad.
   - Allow to dry.
6. Attach the infusion port cap to the end of the non-coring, right angle needle tubing.
7. Prime the non-coring needle with attached tubing with saline using one of the prefilled 10 ml syringes.
   - Leave the syringe attached to the tubing.
8. Palpate the port to determine the size and center of the device.
   - If not utilizing sterile gloves, re-clean the skin and apply new gloves.
9. 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.
10. Aspirate 3 – 5 mL of blood with the syringe.
    - If unable to aspirate blood, re-clamp the catheter and do not attempt further use.
    - Dispose of aspirated blood in bio hazard container.
    - Asking the patient to cough and then retry aspiration, coughing may facilitate aspiration of blood.
    - Asking the patient to lift their arms may also help facilitate aspiration of blood.
11. Flush the catheter with 3 – 5 ml 0.9% NaCl using a prefilled 10 mL syringe.
    - If catheter does not flush easily, do not attempt further use.
12. Attach primed IV administration set and observe for free flow of IV fluid.
    - Utilizing an IV pump, set the flow rate based on the patient condition and in accordance with NH Protocols.
13. Cover the needle and insertion site with the sterile occlusive dressing.

- 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.

PEARLS:

- Many of the newer implanted ports are double lumen ports. Providers should ask the patient or family if they have a double lumen port or palpate carefully to discern this.
- Newer non-coring, right angle insertion needles have a hard plastic top which later serves as a safety device, housing the needle when the port is de-accessed.

7.0 Sepsis - Advanced Care

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS

IDENTIFICATION OF POSSIBLE SEPSIS

- Suspected infection – YES
- Evidence of sepsis criteria – YES (2 or more):
  - Temperature < 96.8 °F or > 101°F.
  - Heart rate > 90 bpm.
  - Respiratory rate > 20 bpm.

Plus one of the following signs of acute organ failure:

- Mean Arterial Pressure (MAP) < 65mmHg (systolic blood pressure < 90 mmHg).
- New onset altered mental status OR increasing mental status change with previously altered mental status.
- $ETCO_2$ < 25 mmHg.

PARAMEDIC - PREREQUISITES REQUIRED - ADULT ONLY

CONTRAINDICATIONS:

- Known allergies to available antibiotics.

PROCEDURE:

1. Draw labs:
   - Rainbow top draw (blue, purple, yellow and green).
   - Blood cultures X 2.
2. Administer fluid and vasopressor per Sepsis Protocol 2.21.
3. Administer appropriate antibiotics per your medical resource hospital .

Critical Care 7.1

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Introduction
The purpose of this prerequisite protocol is to recognize the unique aspects of critical care medicine and to facilitate it's practice within current protocol. Through this protocol providers affiliated with licensed rotary wing units and their ground assets, will be granted an expanded scope of practice. This expanded scope of practice can only be used within protocols/standards approved by the State of New Hampshire EMS Medical Director and must be in line with current NH EMS law and licensure requirements. It is intended to provide flexibility, when possible, for individual agencies, providers, and communities to meet their unique needs.

Definition of Critical Care
Critical care is defined as the direct delivery of medical care for a critically ill or critically injured patient. Critical illness acutely impairs one or more vital organ systems such that there is a high probability of imminent or life threatening deterioration in the patient's condition. Critical care requires high complexity medical decision-making to assess, manipulate and support vital organ system function in order to treat single or multiple vital organ system failure. **For the purpose of this protocol, critical care is only authorized to be utilized by licensed air medical units and their associated ground resources.**

Unit Protocols/Standards
Submission of unit protocols/standards for approval by the State of New Hampshire EMS Medical Director is required to operate within the expanded scope of practice. These unit protocols/standards must not exceed the established expansion of scope of practice outlined in this protocol. The most currently approved unit protocols/standards must be utilized for patient care activities. Any deviations may be subject to Compliance review as specified in Administrative Rule Saf-C 5922.

Medical Direction and Quality Management Program
The unit must establish a collaborative working relationship between the local EMS Physician Medical Director or designee who will be responsible for operations and continuous quality improvement, and a primary care provider providing medical direction for critical care services. The EMS Unit shall conduct a quality management (QM) program specifically for the critical care program. The QM program will incorporate all the components of an EMS QM program as specified in Administrative Rule Saf-C 5921.

Data Collection Plan
The EMS Unit will participate in electronic data collection as required by the NHBEMS and as specified in Administrative Rule Saf-C 5902.08.

Equipment and Staffing Plan
All equipment will be made available to appropriately deliver care at the critical care level using what is outlined in the expanded scope of practice as well as in the approved protocols/standards. At minimum this equipment shall follow levels specified in Administrative Rule Saf-C 5906. Participating units must define who will be providing critical care services, provide a roster of licensed EMS providers as well as all other medical providers associated with the unit and involved in patient care activities in the State of New Hampshire.

Protocol Continues

7.1 Critical Care

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Training Plan
Describe what training will be provided to enable the providers to deliver the services described within. List the objectives and outcomes of the training plan. Document who is responsible for training oversight and coordination and their qualifications. There must be a continuing education and credentialing process in place, with documentation of each EMS Provider's participation in it. Such a process shall be approved by the EMS Unit's Medical Director(s).

Expanded Scope of Practice
Skills identified may be performed by EMS providers only if the provider has successfully completed training (cognitive, affective and psychomotor) on the specified skill, which includes training to perform the skill on adults, children and infants, as appropriate. In addition to the skills, techniques and management procedures identified, latitude is extended to EMS providers with pharmacology to include expanded authorization in medication to be delivered as well as the dosing variations of medications. The following list outlines the expanded scope of practice for critical care units and affiliated EMS providers,

Airway/Respiratory
- Direct Laryngoscopy
- Video Laryngoscopy
- Rapid Sequence Induction (RSI)
- Supraglottic Airway Insertion (e.g.- King Airway, LMA, iGel)
- Needle Cricothyrotomy
- Surgical Cricothyrotomy

Cardiovascular
- Management of Ventricular Assist Device (VAD) to include, but not limited to, percutaneous or central LVAD, RVAD, and BiVAD
- Management of Extracorporeal Membrane Oxygenation (ECMO)
- Management of Intra-Aortic Balloon Pump (IABP)
- Perform and interpret 12-Lead ECG, with Cath Lab activation capabilities
- Intraosseous Access (e.g. manual IO, EZ IO, FAST1, etc.)
- Indwelling port access (e.g. Port-a-Cath)
- Transcutaneous, Transvenous, and Epicardial wire pacemaker capabilities
- Pericardiocentesis
- Invasive Hemodynamic Monitoring (e.g. Arterial Pressures, Central Venous Pressures (CVP), Pulmonary Artery Pressures (e.g. Swan Ganz), Abdominal Pressures, Intracranial Pressures (ICP))
- Blood/fluid warming devices
- Blood Product Administration (e.g. Packed Red Blood Cells (PRBCs), Platelets, Fresh Frozen Plasma (FFP))
- Operation of Single and Multi-Channel Infusion Pumps, including but not limited to Intravascular, Intraosseous, Intrathecal, Intra-arterial))
- Cardiovascular Doppler/Ultrasound monitoring
- Arterial Cannulation (Radial and/or Femoral)
- Central Venous Cannulation (Femoral, Subclavian, and/or Internal Jugular)
- Wound closure; including, but not limited to, suturing, stapling, skin adhesives (e.g. Dermabond)
- Hemorrhage control including, but not limited to, tourniquet use, Israeli bandage, chemical clotting agents, chest seals, etc.

Protocol Continues

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Gastrointestinal/Urinary
- Gastric tube placement and management
- Urinary catheter placement and management

OB/Gyn, Neonatal, Pediatric
- Fetal Heart/Uterine Monitoring
- Umbilical Vein/Artery Cannulation
- Inhaled Nitric Oxide
- Surfactant administration

Specialty (Misc.)
- Esophageal compression tubes (e.g. Blakemore tube, Minnesota tube)
- Radiographic Interpretation
- Perform and interpret ultrasound imaging, including utilization for placement of medical devices
- Ability to transport/manage any indwelling medical device
- Invasive/Noninvasive Temperature Monitoring
- Escharotomy

Pharmacology
- ACLS Medications
- Anesthetics
- Antibiotics
- Anticoagulants
- Anticonvulsants
- Antidiabetics
- Antidysrhthmics
- Antiemetics
- Antihypertensives
- Antipsychotics
- Anti-inflammatory Agents
- Anxiolytics
- Blood and Blood Products
- Cardio Glucosides
- Corticosteroids
- Drotecogin
- Electrolytes (e.g. Calcium, Magnesium, Potassium)
- GI Agents
- Inhaled Gasses (e.g. Heliox, Nitric Oxide)
- Narcotics/Analgesics
- Nebulized respiratory medications
- Paralytics (e.g. Succinylcholine, Rocuronium, Vecuronium, etc.)
- Parenteral Nutrition
- Platelet Aggrefation Inhibitors
- Prostaglandin
- Surfactant
- Transexamic Acid (TXA)
- Thrombolytic agents
- Vasoactive agents (e.g Norepinepherine, Neosynepherine, Vasopressin, etc.)

7.2 Immunization

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by the FSTEMS.

Prerequisite Required
This procedure is only to be used by Paramedics or AEMTs who are trained and credentialed to perform immunization by FSTEMS.

Indications:
Pre-hospital providers may be called upon to provide certain immunizations as necessary to assist state health officials in the event of a public health or public safety incident, or under the written order of a physician.

Non-Patient Specific Orders:
A non-patient specific order authorizes Paramedic or AEMT to administer specified immunizations for a specified period of time to an entire group of persons such as school children, employees, patients of a nursing home, etc.
Some examples of non-patient specific orders are:
Administer influenza vaccine 0.5 ml IM to all incoming freshmen students at X College who are eligible per protocol.
Administer influenza vaccine 0.5 ml IM to all employees of X organization who request it and who are eligible by protocol.
Administer influenza vaccine 0.5 ml IM to all X town residents who request it and who are eligible by protocol.
Administer hepatitis B series to all employees of X organization eligible per protocol.

Note: NH State EMS Medical Director may add immunizations in accordance with the recommendations of the Centers for Disease Control and Prevention and the New Hampshire Department of Health and Human Services.

Administration of Immunizations
The non-patient specific standing order and protocol must be authorized by a physician.

Public Health or Public Safety Incident Exception
Any Paramedic or AEMT may administer immunizations that are authorized by a non-patient specific standing order and protocol as part of an immunization program when the immunization program is instituted as a result of a public health or public safety incident by public health officials.

Protocol Requirements
- Ensure that the potential immunization recipient is assessed for contraindications to immunizations.
- Inform each potential immunization recipient of the potential side effects and adverse reactions, orally and in writing, prior to immunization, and inform each potential immunization recipient, in writing, of the appropriate course of action in the event of an untoward or adverse event. Vaccine Information Statements (VIS), developed by the Centers for Disease Control and prevention (CDC), United States Department of Health and Human Services are recommended for this use. http://www.cdc.gov/vaccines/pubs/vis/.

Protocol Continues

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Protocol Requirements continued

- Before the immunization is administered, obtain consent for the immunization from the potential recipient.
- In cases of minors and persons incapable of personally consenting to immunization consent may be gained by informing the legally responsible person of the potential side effects and adverse reactions in writing and obtaining a written consent prior to administering the immunization.
- Provide to each legally responsible immunization recipient a signed certificate of immunization noting the recipient's name, date of immunization, address, administering Paramedic or AEMT, immunizing agent, manufacturer and lot number.
- Have available on-site medications to treat anaphylaxis.
- Report all adverse immunization outcomes to the Vaccine Adverse Event Reporting System (VAERS) using the appropriate form from the Centers for Disease Control and Prevention, United States Department of Health and Human Services. https://vaers.hhs.gov/esub/index.
- Coordinate with program site managers to ensure that the record of all persons immunized includes: the non-patient specific standing order and protocol utilized, recipient's name, date, address of immunization site, immunization, manufacturer and lot number of administered vaccine(s), and recommendations for future immunizations.
- For the administration of the influenza vaccine to adults only it is acceptable to maintain a log of the names, addresses, and phone numbers of all adult patients immunized with the influenza vaccine under non-patient specific orders, in a dated file.
  Coordinate with program site managers to ensure that a record is kept of all potential recipients, noting those who declined immunization.

7.3 Interfacility Transfers

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

A notification of an occurrence must be sent by the sending facility and the transporting EMS Unit(s) via email to FSTEMS Captain of Clinical Systems and the Unit EMS Medical Director with 48 hours when the following occurs:

- PIFT Medications ordered outside formulary initiated during transport.
- Utilization of either Alternative 1 or Alternative 2.

Introduction

The purpose of this section is to reconcile the unique aspects of interfacility transfers with current NH EMS law, licensure, and acute care protocols. It is intended to provide flexibility, when possible, for individual agencies, institutions, and communities to meet their unique needs.

Interfacility Transfer

Any transfer, after initial assessment and stabilization, from and to a healthcare facility. (Guide for interfacility patient Transfer, NHTSA, April 2006) or any transfer from a healthcare facility to any other location.

- Nothing in this protocol shall preclude EMS personnel from providing any medication or therapy that is already within their scope of practice unless it is explicitly forbidden by 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 NH EMS Protocol.
- If there is a conflict between NH EMS Protocols and the transferring facility provider's written orders for transport, the transferring facility provider's written orders shall prevail.

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.

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 point of contact who will be immediately available to serve as medical control 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 control as necessary during transport.
- Seek education or information about therapies or medications outside of normal formulary as necessary.

Protocol Continues

Interfacility Transfers 7.3

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Transport Agency Levels

- EMT
- AEMT
- Paramedic Interfacility Transport (PIFT)*
- Critical Care Teams (CCT)*

At a minimum, 2 licensed EMS providers in the vehicle, of which 1 may be the driver.

*Only to be used by paramedics and EMS units who have been trained and credentialed by FSTEMS. Training must be delivered once every 2 years.

Interfacility transfers that are appropriate for EMT or AEMT level of care do not require additional levels of credentialing beyond training requirements defined in the NH EMS protocols and by Saf-C 5900.

CAPABILITIES

EMT

E

- Care and treatment of stable patients.
- Therapies within the EMT scope of practice.
- Medications within EMT scope of practice.
- Non-invasive monitoring (BP, HR, RR, SpO_2, $EtCO_2$, temperature).
- Previously inserted Foley catheter, suprapubic tube, established feeding tube (NG, PEG, J-tube not connected to infusion or suction).
- Saline lock.
- Chest tube capped and without need for suction during transport.
- 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.
- If a device or infusion is functioning properly and is maintained by an alert/oriented patient (or caregiver), transport the patient with the device or infusion in place and operating normally.

Advanced EMT

A

- Care and treatment of stable patients.
- Therapies within the AEMT scope of practice.
- Medications within AEMT scope of practice.
- Pain management (nitrous oxide or IV acetaminophen).
- Any IV crystalloid infusion (e.g., normal saline, lactated ringers, D5, ½ normal saline, pH balanced crystalloid solution).
- Cardiac monitoring 4 lead ECG as vital sign, no rhythm interpretation.
- CPAP.

Protocol Continues

7.3 Interfacility Transfers

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Prerequisite Protocol 7.3

PIFT Paramedic
PIFT credential required. This level is only to be used by paramedics and EMS units who have been trained and credentialed to perform PIFT- level transfers.

P

- Care and treatment of potentially unstable patients.
- Therapies within the Paramedic scope of practice.
- Medications within Paramedic scope of practice.
- Continuation of any infusion started prior to departure, including blood products.
- Repeat administration of any medications given prior to departure.
- In anticipation of patient deterioration, medication administration within the scope of practice and within the formulary (see Appendix 1), the transferring hospital provider may provide the medications as well as provide initiation and titration guidelines on the appropriate transfer paperwork.
- Maximum 1 vasopressor infusion.
- Cardiac monitoring of 4 lead ECG with anticipated need for ACLS intervention.
- Chest tube management.
- Epidural catheter if secured, capped, and labeled.

The following require a SECOND EMS provider or hospital based healthcare provider based on anticipated healthcare needs in the patient compartment:

- Transcutaneous pacing.
- Intubated non-complex vent setting.
- Deep suctioning.
- RSI/DSI (agency & providers must be credentialed).

Critical Care Transport, including but not limited to:

- Care and treatment of unstable patients.
- Greater than one vasopressor infusions.
- Initiation of additional blood products.
- Managing uncorrected shock.
- Continuation of invasive monitoring.
- Continuation of balloon pump/impella pump.
- Transvenous pacing.
- Rapid sequence or delayed sequence induction.
- Intubated/ventilated patients with complex vent settings.
- See Critical Care Protocol 7.1 for additional scope

This level is only to be provided by air or ground agencies credentialed to perform CCT by FSTEMS and the EMS Medical Control Board unless utilizing one of the following alternative crew configurations:

Alternative 1: PIFT paramedic provider and 1 additional (sending) hospital-based advanced health care provider with experience related to the patient's condition (e.g., nurse, physician assistant, nurse practitioner, physician, paramedic, respiratory therapist).

Alternative 2: 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 an exhaustive effort to send appropriate personnel.
- All interventions are within the scope of practice of the assembled crew.
- Properly document in PCR the staffing configuration.

Protocol Continues

Interfacility Transfers 7.3

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

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. 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 .

Non-complex vent settings: Volume or pressure modes of ventilation provided that:

No inverse I:E ratios.

No PEEP > 12 cmH_20.

No PIP > 40 cm H2O.

No Plateau pressures > 30 cm H20.

No pediatric patients, see definition of pediatric patient in Routine Patient Care.

No high frequency oscillation.

No mode of ventilation without apnea backup.

Complex vent settings: Any mode of ventilation outside the above parameters.

Protocol Continues

Interfacility Transfers 7.3

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Prerequisite Protocol 7.3

Transport Levels			
EMT Stable	**AEMT** Stable	**PIFT** Potentially Unstable	**CCT** Unstable
❑ EMT therapies ❑ EMT medications ❑ Vital signs ❑ $EtCO_2$ ❑ Temperature monitoring ❑ Foley catheter ❑ Suprapubic catheter ❑ Feeding tube with no need to access or adjust ❑ Saline lock ❑ Capped chest tube ❑ 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 ❑ If a device or infusion is functioning properly and is maintained by an alert/oriented patient (or caregiver), transport the patient with the device or infusion in place and operating normally.	❑ AEMT therapies ❑ AEMT Medications ❑ Pain management (nitrous oxide or IV acetaminophen, if available) ❑ Any crystalloid infusion (e.g., normal saline, lactated ringers, D5, ½ normal saline normasol, pH balanced crystalloid solution, etc.). ❑ Cardiac monitoring 4 lead ECG as vital sign, no rhythm interpretation ❑ CPAP	❑ Paramedic therapies ❑ Paramedic medications ❑ Any infusion started prior to departure ❑ Repeat administration of any medications given prior to departure ❑ Max 1 vasopressor ❑ Continuation of blood or blood products ❑ High flow nasal cannula ❑ In anticipation of patient deterioration, medication administration within the scope of practice and within the formulary (see Appendix 1), the transferring hospital provider may provide the medications as well as provide initiation and titration guidelines on the appropriate transfer paperwork. ❑ Cardiac monitoring of 4 lead ECG with anticipated need for ACLS intervention ❑ Serial 12 leads ❑ Chest tube management ❑ Epidural catheter if secured, capped, and labeled. **The following require a SECOND provider in the patient compartment:** ❑ Active transcutaneous pacing ❑ Intubated/sedated patients ❑ Deep suctioning ❑ RSI/DSI* ❑ Acutely Non-complex vent settings	Including but not limited to: ❑ Multiple vasoactive medications/pressors ❑ Initiation of additional blood products ❑ Managing uncorrected shock. ❑ Continuation of invasive monitoring. ❑ Continuation of balloon pump/impella pump ❑ Transvenous pacing. ❑ Intubated/ventilated patients with complex vent settings ❑ See Critical Care Protocol for additional scope Crew Options: Alternative: 1 PIFT paramedic provider and 1 additional (sending) hospital-based advanced health care provider with experience related to the patient's condition (e.g., nurse, physician assistant, nurse practitioner, physician, paramedic, respiratory therapist). • Last Resort ○ Any other appropriate crew

Mobile Integrated Healthcare 7.4

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Introduction

This prerequisite protocol enables an EMS Unit, a hospital and/or a Medicare-certified home health agency to form a collaboration for the purpose of providing community healthcare. A community that is experiencing a gap in healthcare coverage, as evidenced by a community needs assessment, may elect to utilize the capabilities of the EMS system in cooperation with a medical resource hospital and other healthcare professionals.

EMS Providers have traditionally functioned as a mobile healthcare unit and are a logical means of providing healthcare to the community as an extension of the primary care network, provided that a formal process has been followed, as outlined in this protocol. Only those EMS Units that have applied for, and have been approved by the NH BEMS under this prerequisite protocol, and only EMS providers who have met the requirements of this protocol may practice under these guidelines.

Definition of Mobile Integrated Healthcare

Mobile Integrated Healthcare (MIH) is the provision of healthcare using patient centered, mobile resources in the out-of-hospital environment.

In NH the MIH concept is envisioned to be an organized system of services, based on local need, which are provided by EMT's, AEMT's and Paramedics integrated into the local health care system, working with and in support of physicians, mid-level practitioners, home care agencies and other community health team colleagues, and overseen by emergency and primary care physicians. The purpose of the initiative is to address the unmet needs of individuals who are experiencing intermittent healthcare issues. It is not intended to address long-term medical or nursing case management.

General Project Description

Describe the community/communities to be served, the Unit's base location(s) to be employed, the unmet community health need being addressed, the current community health team members being partnered with, and the methodology for addressing the need (including any enhancements of the EMS response system that will result).

Community Needs Analysis

The EMS Unit, hospital, and any other partners must provide a needs assessment that demonstrates the gap in healthcare coverage that the MIH program intends to fill.

Patient Interaction Plan

Describe the nature of anticipated patient care and diagnostic interactions. Specify how the patient community will be educated to have realistic expectations of the MIH provider and these interactions.

Staffing Plan

Define who will be providing the MIH services and how will these services fit within the normal EMS staffing of the Unit. Specify what type of schedule will these services be made available and how this staffing arrangement will be funded.

Policy Continues

7.4 Mobile Integrated Healthcare

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

Training Plan

Describe what training will be provided to enable the providers to deliver the services described above. List the objectives and outcomes of the training plan. Document who is responsible for training oversight and coordination and their qualifications.

There must be a continuing education and credentialing process in place, with documentation of each EMS Provider's participation in it. Such a process shall be approved by the EMS Unit's Medical Director(s).

Quality Management Program and Data Collection

The EMS Unit shall conduct a quality management (QM) program specifically for the community healthcare program. The QM program will incorporate all the components of an EMS QM program as specified in Administrative Rule Saf-C 5921.

Describe what data demonstrates the need for this project, if any. Describe the data to be collected to demonstrate the impact of this project on the population served. Describe the data reporting plan and how FSTEMS will be included in it.

Documentation

The EMS Provider may at any time, using their own discretion, decide to activate the 911 system for emergency treatment and transport to appropriate care.

Electronic patient care reports of all community healthcare patient encounters must be submitted to the requesting medical practice according to policies developed in coordination between the EMS Unit, MRH, collaborating home health agency and medical practice. Copies of these records shall be maintained by the EMS Unit, and be available for review by the NHBEMS.

The EMS Unit will participate in electronic data collection as required by the NHBEMS.

Medical Direction

Must establish a collaborative working relationship between the EMS Physician Medical Director or designee, who will be responsible for operations and continuous quality improvement, and a primary care provider providing medical direction for MIH services.

Operational K9 7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

These canine guidelines are reserved for use only on Operational K9s (OpK9) who are injured or become ill while on duty.
Ill or injured humans always take priority over canines.

Operational Canine Definition

According to SB 268, operational canine means a canine owned or used by a law enforcement department or agency and fire departments in the course of the department or agency's work, including a police canine, search and rescue canine, accelerant detection canine, comfort canine, or other canine that is in use by a county, municipal, or state law enforcement agency.

This law allows ambulances to transport operational canines to a veterinary care facility if the canine is ill or has been injured in the course of their official duties and no human needs transport or treatment.

These protocols do not apply to service canines as defined by the Americans with Disabilities Act (ADA) or to emotional support canines. Service dogs as defined by the ADA are canines specifically trained to do work or perform tasks directly related to the disability of an individual (i.e. guide dogs, medic alert dogs, etc). Emotional support canines are canines whose sole function is to provide comfort or emotional support; these canines do not qualify as service animals under the ADA.

Parameter	Normal Value
RR	10 - 40 breaths/minute
HR	60 - 80 bpm (up to 130 post exercise)
Capillary Refill	less than 2 sec.
Rectal Temp	100 -102.5 F (103-106 F post exercise)
LOC	Bright, alert, responsive (BAR)
BP	120/75 mmHg
Blood Glucose	70 - 120 mg/dL
SpO2	greater than 94%
EtCO2	35 - 45 mmHg

7.5 Operational K9 Restraint

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

The goal is to *safely* provide the canine's initial medical evaluation, treatment and transport to definitive care. Injured and ill canines may pose an unintentional threat to clinicians, therefore it is imperative that the canine be secured prior to medical evaluation. This is best done by the canine's handler. It is preferable that the handler stay with their canine throughout all phases of care, evacuation, and transport unless they, themselves, are injured or required for threat neutralization. If the primary handler is not available, attempt to locate another handler or person that is familiar with handling OpK9s to secure and stay with the injured canine.

All injured canines should be muzzled before handling.

R/E/A/P

The following are relative contraindications to muzzling:

- Unconsciousness.
- Upper airway obstruction.
- Vomiting.
- Severe facial trauma.
- Heat-related injury (need to allow evaporative cooling via panting). If these canines need to be muzzled, a Cage or Basket-type muzzle is preferred.

Muzzling:

- The type of muzzle used depends on the size of the canine, available material, type of injury and desired canine access.
- The canine should be restrained in a position of comfort, which may include sitting or standing. Do not restrain the canine in such a manner that its ability to breathe or pant is impeded.
- Slide the appropriately-sized muzzle over the canine's snout from the rostral (anterior) to caudal (posterior) aspect. Be sure that the lower jaw is captured in the muzzle and not free.
- Be sure to frequently check the security of the muzzle and make sure that it is not impeding the canine's ability to breathe.

It is important that the clinician be adequately trained to restrain the OpK9 in order to safely apply a muzzle. A stressed canine may not only bite the EMS clinician or others, but may bite its handler as well.**

Muzzle Type	Required Material	Suggested Use
Cage or Basket	Manufactured cage/basket muzzle (Preferably made out of rubber)	"'All-purpose "'Preferred muzzle: allows for open-mouth breathing "'Suggested if oxygen delivery is indicated
Fabric	Manufactured, pre-sized muzzle	All - purpose
Quick Muzzle	Any available, broad-width (greater than 1-2 inches) tape, leash, webbing, gauze, etc.	...use only if fabric or cage/ basket muzzle is unavailable "'Narrow tape/gauze etc. can cause injury

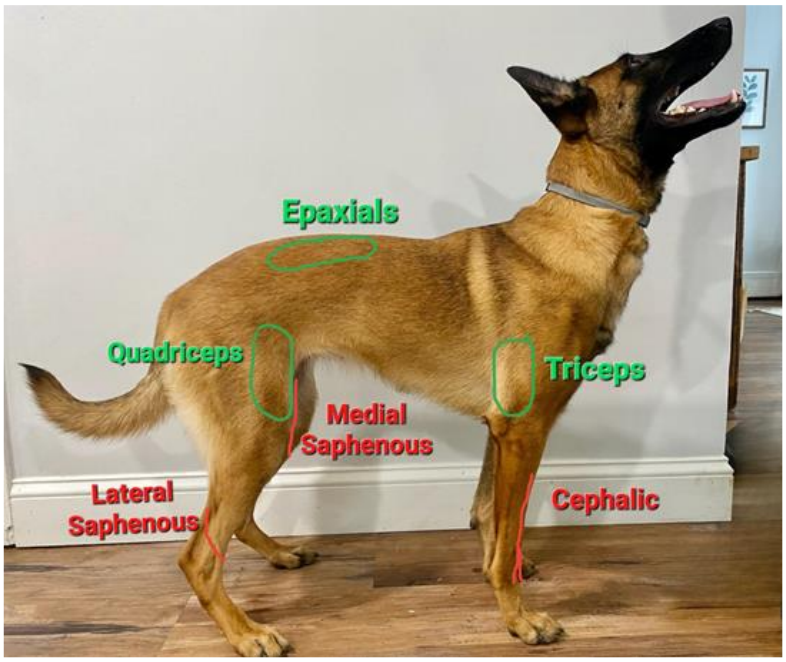
This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Intravenous Access

- Peripheral intravenous catheters (20g and 18g preferred) placement and intravenous injections are most commonly performed in the cephalic or lateral saphenous veins, less commonly the medial saphenous.

Intramuscular Injections

- Intramuscular injections (needle size 22g, 20g or 18g preferred) are most commonly performed in the epaxials or quadriceps. The triceps can be used but is less common.



7.5 Operational K9 Anaphylaxis

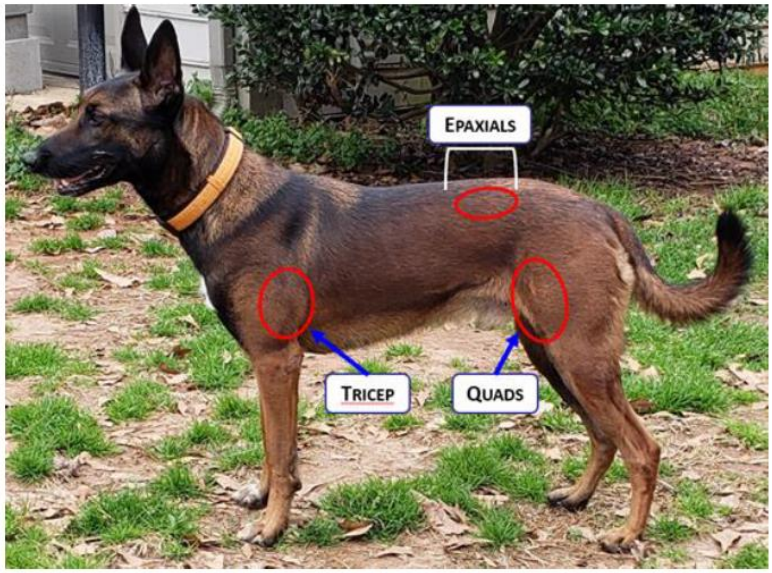
This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

- Secure OpK9 see OpK9 Restraint Protocol.
- Allow OpK9 to assume position of comfort.
- Manage airway see Operation K9 Airway Management Protocol.
- Administer epinephrine via auto-injector:
  - Pediatric epinephrine autoinjector (EpiPen Jr) 0.15 mg IM for OpK9 < 25 kg,
  - Adult epinephrine autoinjector (EpiPen) 0.3 mg IM if OpK9 > 25 kg **OR**
- Administer epinephrine IM using Ready, Check and Inject:
  - If OpK9 < 25 kg, epinephrine (1 mg/mL) 0.15 mg (0.15 mL) IM*,
  - If OpK9 > 25 kg, epinephrine (1 mg/mL) 0.3 mg (0.3 mL)IM*.
- If signs and symptoms do not resolve may repeat in 5 minutes.

E/A/P

**EMTs must have completed the Ready, Check & Inject training.*



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PEARLS

In allergic reactions with progression to anaphylaxis, clinical signs are most often associated with the cardiovascular (CV) and gastrointestinal (GI) systems.

Respiratory signs may also develop, along with seizures and anxiousness, progressing to weakness and collapse.

Signs include:

- CV: tachycardia, weakness, weak pulses, mucous membrane color changes
- GI/GU: urinating, vomiting, and diarrhea that is often bloody
- Respiratory: increased respiratory effort, wheezes, and crackles

Operational K9 Hyperthermia 7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

- OpK9s do not sweat. Their predominant cooling mechanism is by panting.
- The progression of heat injury in the Police K9 can be quite rapid and requires immediate intervention.
- Hyperthermia can be caused by environmental or exertional factors or a combination of the two.
- Avoid muzzles unless required for safety reasons; an open basket muzzle is the preferred muzzle in this case to allow for panting.

	Core Temp (F)*	Heart Rate	Mucous Membranes	LOC	Panting	Behavior Performance
Mild Heat Stress	Varies 105° - 106°	Fast, Strong	Moist/Pink	Alert	Heavily Controlled**	Excessive thrist, discomfort with physical activity, slightly decreased performance
Moderate Heat Exhaution	106° - 108°	Fast, Strong or Weak	Tachy or Dry Bright Red	Alert	Uncontrolled*** Failure to Salivate	Weakness, anxiety, unwillingness to work, acts tired, unresponsive to handler commands
Severe Heat Stroke	> 108°	Weak	Dry Pale	Altered	Maybe	Vomiting, diarrhea, ataxia, head tremors, seizures, blindness, abnormal pupil size

****Controlled panting:** the OpK9 may stop panting when an alcohol-soaked gauze is put in front of the nose or when the OpK9 becomes interested in or distracted by something (i.e. toy, reward, noxious stimulus, verbal command).
*****Uncontrolled panting:** the OpK9 cannot stop panting even when offered a treat or reward or when exposed to alcohol-soaked gauze or other noxious stimuli.

EMR/EMT STANDING ORDERS

R/E

Treatment for all stages of hyperthermia:

- Secure OpK9 see OpK9 Restraint Protocol.
- Remove OpK9 from the heat source and stop their work/exercise.
- Begin cooling.
- Monitor temperature (rectal or axilla) if equipped. Axillary temps are approximately 1 - 2 degrees F^0 less than rectal. (EMT only)
- Monitor for changes in mentation.

Mild (Heat Stress)

- Cool by bringing to a shaded or lightly air-conditioned area. If no A/C available use circulating fan to blow a light breeze by the OpK9.
- As feasible, remove muzzles, harnesses, tactical gear etc.
- Place on a cool surface to promote conductive cooling.
- Offer cool water and encouraging drinking.
- Monitor vital signs every 5 minutes; if able to measure temperature, discontinue cooling efforts when core temperature is 104^{o}F or less. (EMT only)

Protocol Continues

7.5 Operational K9 Hyperthermia

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

EMR/EMT STANDING ORDERS

R/E

Moderate (Heat Exhaustion)

- Follow guidelines above to start active external cooling.
  - Use air conditioning or cooling fans, if available, to reduce core body temperature.
  - Avoid placing ice packs on the limbs as this causes vasoconstriction and slows the effects of conductive cooling and decreases heat loss ability.
  - Douse or spray body with water, soak hair to skin with water and use fans or A/C to cool further.
- Monitor vital signs every 5 minutes; if able to measure temperature, discontinue cooling efforts when core temperature is 104° F or less. (EMT only)
- Dry OpK9 off, place on a dry surface if possible, and avoid direct application of air from circulating fans or A/C.
- If able to monitor temperature and if body temperature drops below 100° F (rebound hypothermia) consider passive warming by covering with blankets. (EMT only)

Severe (Heat Stroke)

This is a life-threatening condition

- If able to monitor temperature (EMT only), rapid cooling to a body temperature of 103.5° - 104° F should be performed:
  - Use water (do not submerge in ice bath).
  - Soaking the OpK9 to the skin with water. Soak the entire OpK9 as rapidly as possible through the hair, soaking the skin thoroughly and implement convective cooling with fans or A/C.
- When temperature reaches 104° F (EMT only):
  - Discontinue cooling
  - Dry hair and
- Continue to monitor temperature for rebound hypothermia. (EMT only)

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- IV enroute.
- If shock present, administer 20 mL/kg fluid bolus (lactated ringers preferred).

NOTE: No single core temperature value defines heat-related illness for all OpK9s in all circumstances. Well - conditioned, acclimated OpK9 may reach peak core temperatures as high 106° - 108° F while working, yet display no behavioral or clinical signs of heat stress. Base clinical assessment on presence and progression of clinical signs over core temperature.

Operational K9 Nerve Agent/ Organophosphate Exposure

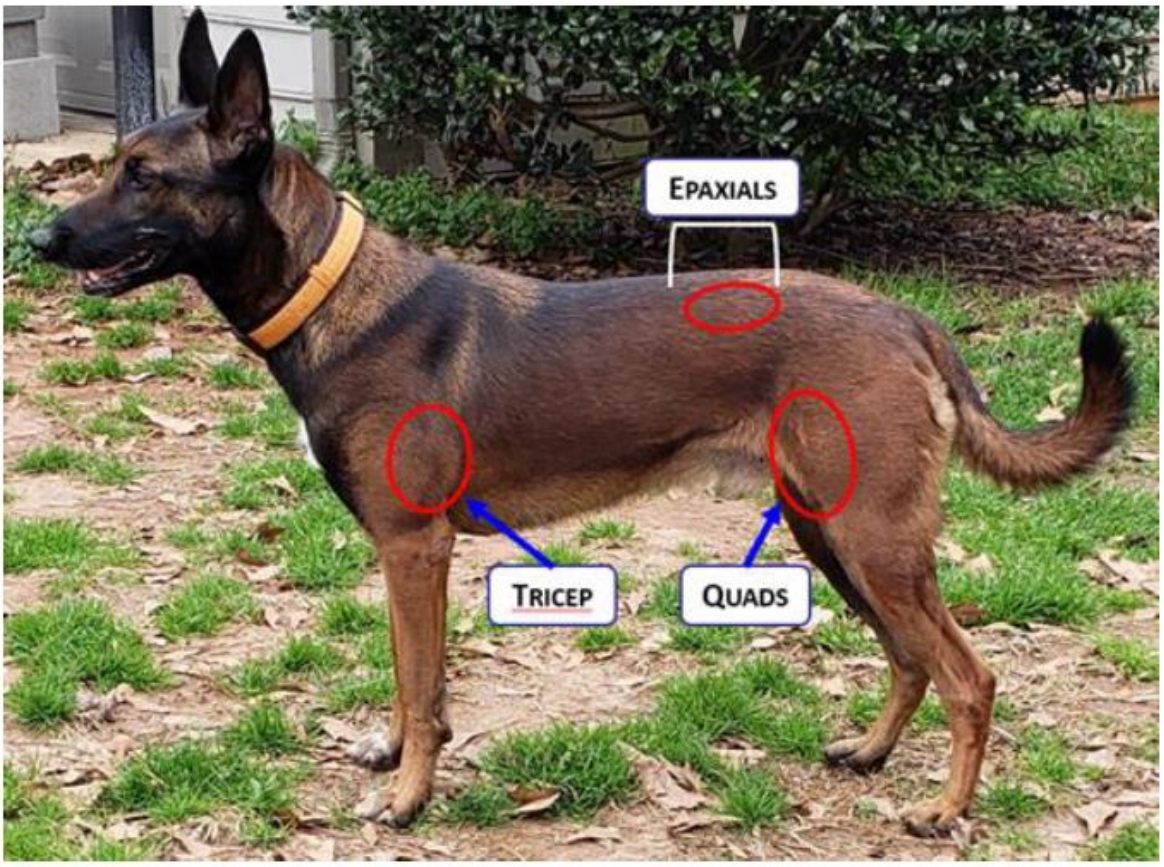
7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

R/E/A/P

- Secure OpK9 see OpK9 Restraint Protocol.
- Assess for SLUDGEM [Salivation, Lacrimation, Urination, Defecation, Gastric upset, Emesis, Muscle twitching/Miosis (constricted pupils) and KILLER Bs (Bradycardia, Bronchorrhea, Bronchospasm).
- Remove from contaminated area and consider decontamination as needed.
- Manage airway as appropriate; see OpK9 Airway Management Protocol.
- Vigorous suctioning may be necessary.
- Administer atropine/pralidoxime auto-injectors:
  - 18 – 27 kg (40 – 60 pounds): 2 atropine/pralidoxime auto-injectors.
  - 32 – 36 kg (70 – 80 pounds): 3 atropine/pralidoxime auto-injectors.
  - ≥ 41 kg (90 pounds): 4 atropine/pralidoxime auto-injectors.



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PEARLS:

- Transport canine with all windows of ambulance open.
- Decontaminate entire ambulance after canine transport.
- All providers who contacted the canine require decontamination.

7.5 Operational K9 Opioids Overdose

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

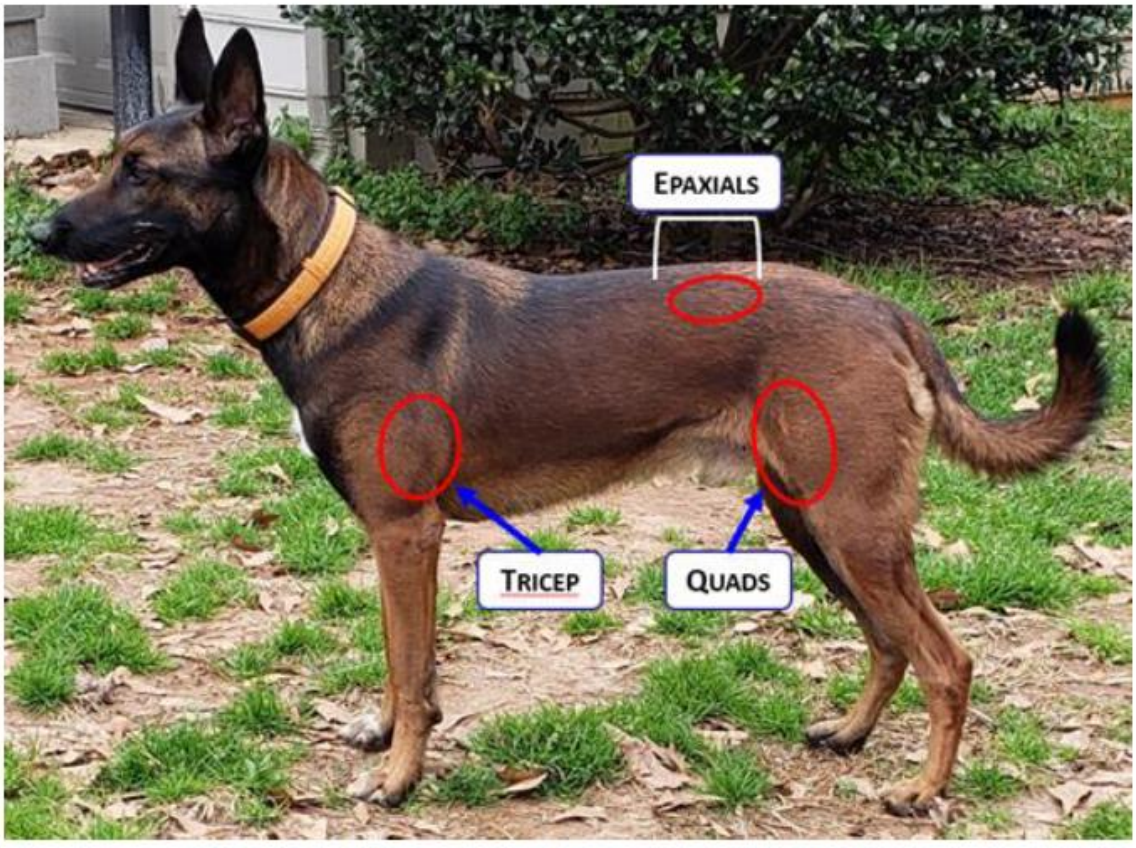
R/E

- Manage airway as appropriate; see OpK9 Airway Management Protocol.
- Consider securing canine with muzzle in anticipation of reversal of opioid.
- For suspect opioid overdose administer:
  - Naloxone 2 – 4 mg IN, may repeat every 2 – 5 minutes **OR**
  - Naloxone 2 – 4 mg IM via auto – injector, may repeat every 2 – 5 minutes.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- Establish IV.
- Alternative route for Naloxone 2 - 4 mg IV, may repeat every 2 – 5 minutes.
- If hypotensive, administer 20 mL/kg (lactated ringers preferred).



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PEARLS:

- Common signs of opioid overdose include: excessive sedation, bradycardia, mydriasis, and hypothermia.

Operational K9 CO/CN Exposure/Smoke Inhalation

7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

- Secure canine, see OpK9 Restraint Protocol.
- Manage airway as appropriate; see OpK9 Airway Management Protocol.
- Administer high-flow oxygen.

ADVANCED EMT & PARAMEDIC STANDING ORDER

A/P

- Establish IV.
- If hypotensive, administer 20 mL/kg (lactated ringers preferred).

7.5 Operational K9 Cardiac Arrest ROSC & Post - Resuscitation Care

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

- Place canine in lateral recumbency for narrow chested dogs and in dorsal recumbency for barrel/round-chested dogs.
- Initiate chest compressions at a ration of 30:2.
  - Compression rate of 100 - 120 compressions/minute.
  - Depth of 1/2 -1/3 of chest width.
  - End-tidal of > 15 mmHg indicates good compressions.
- Administer high-flow oxygen with BVM ventilation.
  - 1 breath every 10 chest compressions during recoil and without interrupting compressions.
  - Continue 2-minute cycles of chest compressions with pulse checks.
  - If ROSC occurs, see OpK9 Post-Resuscitation Care Protocol.
- If no ROSC in 20 minutes and ALS-trained K9 care clinician not on scene, terminate resuscitation.

ADVANCED EMT STANDING ORDERS

A

- Establish IV without interrupting chest compressions.
- Secure airway, see OpK9 Airway Management Protocol
- If ROSC is achieved and shock or hypotension present:
  - Administer 10 – 20 mL/kg fluid bolus (lactated ringers preferred), repeat within 15 – 30 minutes, as needed, up to 2 times in order to achieve palpable femoral pulse and improved mentation.

PARAMEDIC STANDING ORDERS

P

- Epinephrine 0.01 mg/kg of 1mg/10mL IV every 3 - 5 minutes.

Ventricular Tachycardia/Ventricular Fibrillation

- Amiodarone 5 mg/kg IV **OR**
- Lidocaine 2 mg/kg IV.

Asystole/PEA

- Atropine 0.04 mg/kg IV push at the initiation of CPR, re-dose every other 2 - minute cycle of compressions.

Consider Causes

- Suspected hypovolemia: 20 mL/kg fluid bolus.
- Suspected hypoxia: high-flow oxygen and manage airway see OpK9 Airway Management Protocol
- Suspected pneumothorax: perform bilateral needle decompressions, see OpK9 Chest Trauma Protocol.

		Weight (kg)	25	30	35	40	45	50
		Weight (lb)	50	60	70	80	90	100
	Drug	Dose	mL	mL	mL	mL	mL	mL
Arrest	Epi 1mg/10mL every other BLS cycle	0.01 mg/kg	2.5	3	3.5	4	4.5	5
	Atropine (0.54 mg/mL)	0.04 mg/kg	1.9	2.2	2.6	3	3.3	3.7
Anti-Arrhyth	Amiodarone (50 mg/mL)	5 mg/kg	2.5	3	3.5	4	4.5	5
	Lidocaine (20 mg/mL)	2 mg/kg	2.5	3	3.5	4	4.5	5
Reversal	Naloxone (0.4 mg/mL)	0.04 mg/kg	2.5	3	3.5	4	4.5	5

Operational K9 Burns 7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

- Remove collar/harness/vest/booties, etc. Avoid pulling away any gear that is melted in the skin/coat.
- Manage airway as appropriate see OpK9 Airway Management Protocol.
- Give highest priority to airway problems and major bleeding.
- Burns < 15% TBSA, consider cooling with cool water (sterile/saline, if available).
- Cover burns with dry sterile dressing/sheets.
- Prevent heat loss/hypothermia.
- If suspect CO/CN poisoning see OpK9 CO/CN Exposure/Smoke Inhalation Protocol.

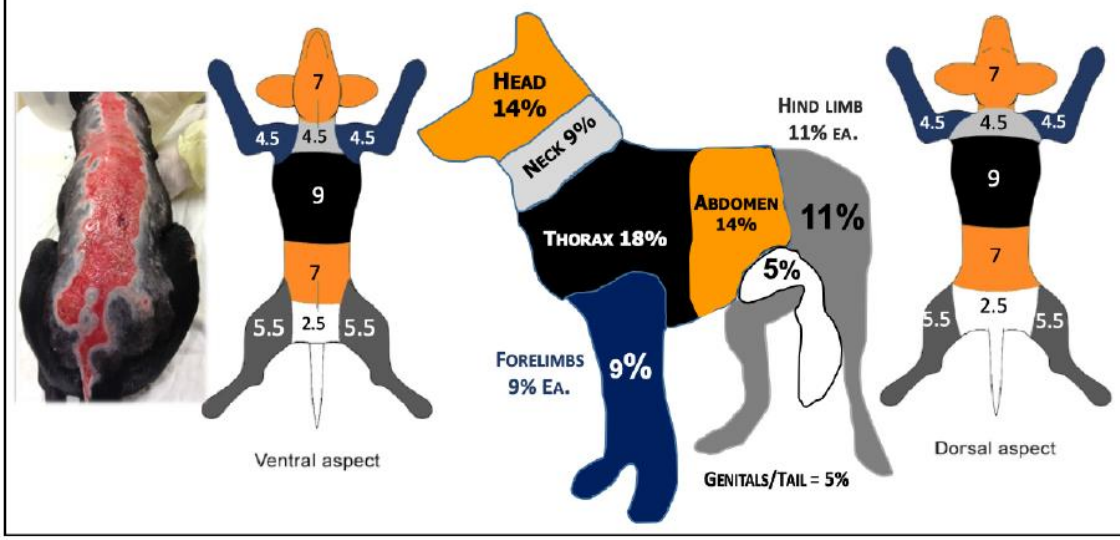
ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- IV enroute.
- If shock present, administer 20 mL/kg (lactated ringers preferred).

BODY SURFACE AREA IN K9S – "K9 RULE OF 9's"

HENRIKSSON A, KUO K, GERKEN K, CLINE K, ET AL. J VET EMERG CRIT CARE, 2021 (PENDING PUBLICATION)



7.5 Operational K9 Chest Trauma

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

- Manage airway as appropriate see OpK9 Airway Management Protocol.

Impaled Object

- Secure in place with bulky dressing.

Open Chest Wounds

- Cover with vented or non-vented occlusive dressing.
- If shock present, consider tension pneumothorax and burp/vent the chest seal.

Flail Segment with paradoxical movement and respiratory distress

- Consider positive pressure ventilations.

ADVANCED EMT STANDING ORDERS

A

- IV enroute.
- If shock present, administer 20 mL/kg (lactated ringers preferred).

PARAMEDIC STANDING ORDER

P

- For suspected tension pneumothorax, perform chest decompression using 14 - 18 gauge or other approved decompression device.

Landmark:

- 7^{th} – 9^{th} intercostal space (canines have 13 ribs) OR
- Midpoint between shoulder and last rib/widest point on rib cage.
  - Go over tope (cranial) aspect of rib.
  - Aspirate and consider decompressing the other side of the chest as well.
  - Remember the canine mediastinum is fenestrated.
  - DO NOT leave decompression catheters(s) in place.

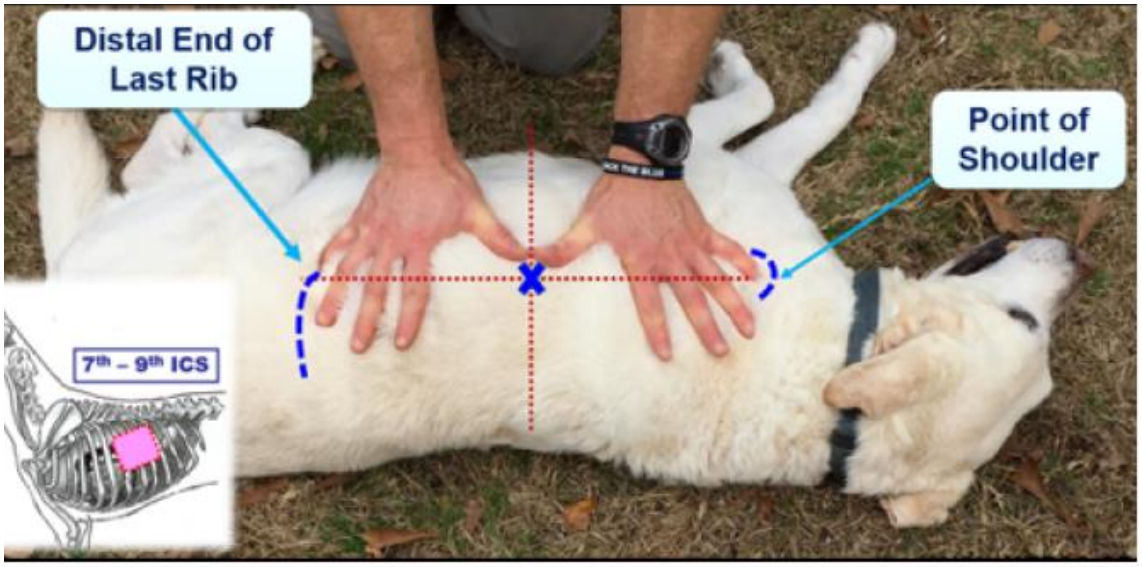


Photo used with permission from K9 TCCC Quick Reference Guide

Operational K9 Hemorrhage Control

7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

- Ascertain all sites of bleeding and control with direct pressure
- Extremity: apply an elastic wrap/pressure bandage, or Stretch Wrap and Tuck Tourniquet (SWAT-T).

Commercially made windlass tourniquets are not effective on canines due to the tapered shape of their extremities.

- For deep wounds in junctional areas or areas containing large muscle bellies (neck, thigh, shoulder/triceps area) control bleeding by applying hemostatic agent and packing the agent in the wound and applying/maintaining pressure over the agent for a minimum of 5 minutes.
- Check for ongoing bleeding. If bleeding has stopped, apply appropriate pressure bandage over the top of the dressing; if bleeding continues, reapply manual pressure for a minimum of 5 minutes.
- If bleeding continues, remove the initial hemostatic agent and repeat with a new hemostatic agent. Remember, for these agents to have maximum effectiveness, they must be packed inside the wound as close to the bleeding source as possible.
- Treat for shock, if indicated, see OpK9 Shock Protocol.
- Manage airway as appropriate, see OpK9 Airway Management Protocol.

ADVANCED EMT/PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

A/P

- IV enroute.
- Administer 20 mL/kg fluid bolus (lactated ringers preferred), repeat every 15 - 30 min to achieve palpable femoral pulse and improved mentation, with typical maximum volume of 500 – 600 mL; maximum total dose 60 mL/kg.

7.5 Operational K9 Hemorrhagic Shock

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT STANDING ORDERS

R/E

If history of illness or mechanism of injury consistent with signs/symptoms of shock (elevated pulse, elevated respiratory rate, pale mucous membranes, altered LOC, or lowered BP) transport as soon and as efficiently as possible.

- Control bleeding, refer to Hemorrhage protocol, see OpK9 Hemorrhage Control Protocol.
- Manage airway as appropriate; see OpK9 Airway Management Protocol.

ADVANCED EMT/PARAMEDIC STANDING ORDERS

A/P

- IV enroute.
- Administer 20 mL/kg fluid bolus (lactated ringers preferred), repeat every 15 - 30 min to achieve palpable femoral pulse and improved mentation, with typical maximum volume of 500 – 600 mL; maximum total dose 60 mL/kg.

Stage of Shock	Heart Rate	Capillary Refill	Mucous Membranes	Mentation	Pulse Quality	Systolic BP
Normal (at rest)	< 120	< 2 sec	Pink	Bright Alert	Strong	> 90
Acute Compensatory	> 120	< 1 sec	Red	Alert	Fair	> 90
Early Decompensatory	> 140	> 2 sec	Pale	Depressed	Weak	< 90
Terminal/ Irreversible	< 80	Absent	Pale	Stupor Comatose	Absent	Low

Operational K9 Airway Management 7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT/ADVANCED EMT STANDING ORDERS

R/E/A

- Place the canine in the sternal (prone) position.
- Open airway.
- Tilt head and slightly extend the neck.
- If foreign body suspected, see OpK9 Airway Obstruction Protocol
- Provide oxygen to maintain $Sp0_2$ > 94%*.
- Provide oxygen via BVM (with canine mask) with goal respiratory rate of 10 - 12 breaths/minute. Pediatric or Adult BVMs can be used, targeting goal tidal volume on seeing chest rise.
  - If positive pressure ventilations are not required, supplemental oxygen may be administered by holding a NRB near the nose, taping oxygen tubing to the muzzle or holding a canine mask near the nose (without tight seal).

PEARLS*

- Pulse oximetry is most reliable in unconscious, sedated, or anesthetized canines.
- Finger probes used for people do not work well in canines.
- If possible, obtain and use a flat ear probe attachment. Place the probe on the tongue or non-pigmented portion of the lip.
- In conscious dogs, use the ear pinna, lip fold, inguinal skin fold or prepuce/vulva; although not optimal for oximetry, these alternate sites generally yield reliable results inmost instances.
- Alternatively, a neonatal or disposable pulse oximetry adhesive sensor attached to the base of the canine's tail provides an alternative and very reliable site.

PARAMEDIC STANDING ORDERS

P

If unable to ventilate with basic airway maneuvers, proceed with intubation (only if canine is unconscious).

Prepare

- Suction.
- Light source (flashlight/headlamp/laryngoscope).
- ET tube ready with lubricant, bougie and syringe.
- Measure ETT from incisor to thoracic inlet (typical ETT size is 9-11mm).
- Tube-securing device ready (umbilical tape, roll gauze).
- Continuous end-tidal $C0_2$ monitor ready, if available.

Position

- Sternal/prone position.
- Assistant to help open mouth.
- Second rescuer may use gauze/leash and place behind upper canines to hold mouth/airway open.

Protocol Continues

7.5 Operational K9 Airway Management

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

PARAMEDIC STANDING ORDERS

P

Pass the Tube

- Pull tongue straight out and over mandible.
- Visualize vocal cords.
- Directly visualize ETT passing through cords to pre-measured depth.
- Inflate cuff.

Check Tube Placement

- Breath sounds/chest rise.
- End-tidal $C0_2$, if available (35 - 45 mmHg).

Secure ETI

- Consider using a mouth-gag to keep mouth open and prevent damage to the ETT. This can be achieved with a 1 – 2 wide inch roll of tape. Do not force mouth open beyond 1 – 2 inches for any significant length of time as it can cause damage to TMJ, muscles and nerves and result in altered maxillary blood flow.

Operational K9 Airway Obstruction 7.5

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

EMR/EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

Clinical signs of airway obstruction include the following:

- Gagging.
- Pawing at the mouth.
- Excessive drooling.
- Frequent swallowing motions.
- Extension of the head and neck.
- Tripod position.
- Reluctance to lie down.
- Cyanosis (late sign).

Similar to a person who can speak clearly without any respiratory distress, consider a canine that is barking, growling, or whining without any clinical signs of respiratory distress to have a patent airway.

R/E/A/P

1. Allow for position of comfort (sit or stand, sternal helps with gravity).
2. Secure canine with leash/rope.
3. Avoid putting hands in canine's mouth (serious injury to clinician can occur).
4. Attempt Heimlich maneuver (avoid if sharp object involved).
   - "Bear hug" or lay canine on side and place fist just below sternum or behind ribs.
   - Five (5) quick and upward abdominal thrusts followed by airway check.
   - If not successful, repeat 1 – 2 times.
5. Palpate throat/trachea - you may be able to dislodge a supraglottic foreign body cephalad out of the pharynx.
   - Palpate the object at the supraglottic region (ventral mandible).
   - From caudal aspect of object, squeeze/push cranially.
     - Two-handed with both thumbs, or
     - Single-handed with thumb and index or middle finger.

Protocol Continues

7.5 Operational K9 Airway Obstruction

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

EMR/EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

6. In an unconscious canine, open the airway by extending the head and neck, and pull the tongue forward. A second rescuer may use gauze/leash looped behind upper canine teeth to keep the mouth open. You may use a second length of gauze/leash for the lower jaw as well.

E/A/P

7. In an unconscious canine, if the obstruction is:
   - VISIBLE: attempt to manually remove; do not push foreign body further back in airway.
   - NOT VISIBLE: do not attempt a blind finger sweep due to risk of pushing the foreign body further down the airway.
8. If object is not removed and canine collapses, provide chest compressions and mouth-to-snout or BVM (with a canine mask). If unable to get chest rise, see OpK9 Airway Management Protocol and/or OpK9 Cardiac Arrest Protocol.

Pilot Protocol 7.6

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by the NH Bureau of EMS.

Introduction

This prerequisite protocol enables an emergency medical services (EMS) organization to operate a pilot program for the purpose of delivering a treatment or intervention not otherwise authorized by these protocols.

Under the principles of evidence-based medicine, the practice of emergency medicine is continuously evolving, driven by the publication of new studies, the evolution of EMS providers' scope of practice and the shifting demands of the healthcare system and patient populations.

The primary avenue for incorporating new practices or treatments into EMS care in New Hampshire is the New Hampshire EMS Patient Care Protocols, nonetheless:

- New treatment modalities may emerge between protocol cycles that potentially offer significant benefits for patients.
- It may be valuable to gain practical experience with a new proposed treatment modality prior to state-wide adoption via the general EMS protocols.

Any proposed pilot protocols that are not considered within standard of care or have concern for high risk of patient harm will be considered research, and will necessitate appropriate approval from an Institutional Review Board (IRB) before being reviewed for endorsement by the Medical Control Board. Agencies are encouraged to consult the Medical Control Board prior to seeking IRB approval.

Proposals for pilot projects shall include:

Proposed Written Protocol

A proposed written protocol to be followed by EMS providers. The protocol should be drafted in the style of the existing New Hampshire protocols.

Literature Supporting Treatment Modality

A brief description and bibliography of the literature supporting the proposed treatment modality, demonstrating the potential benefit and the lack of any significant risk of harm.

Similar EMS Protocols

The organization shall seek to determine if other EMS organizations currently have protocols incorporating the proposed treatment modality and will submit copies of any such protocols.

Medical Director Endorsement

An endorsement from the organization's EMS medical director supporting implementation of the pilot program.

Training Plan

Describe what training will be provided to enable providers to take part in the pilot program. List the objectives and outcomes of the training plan. Document who is responsible for training oversight and coordination and their qualifications. There must be a continuing education and credentialing process in place, with documentation of each EMS Provider's participation in it. Such a process shall be approved by the EMS Unit's Medical Director(s).

Policy Continues

7.6 Pilot Protocol

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by the NH Bureau of EMS.

Protocol Continues

Quality Management Program and Data Collection

The EMS Unit shall conduct a quality management (QM) program specifically for the pilot program. The QM program will incorporate all the components of an EMS QM program as specified in Administrative Rules Saf-C 5921.

Describe what data demonstrates the need for this project, if any. Describe the data to be collected to demonstrate the impact of this project on the population served. Describe the data reporting plan and how the Bureau of EMS will be included in it.

An established plan must be defined for performing quality management (QM) to ensure appropriate oversight and ongoing safety review. At a minimum, the QM plan should include:

- Documentation of each use of the treatment modality.
- Any adverse events, regardless of whether the treatment modality is presumed to be the cause of the adverse event.
- Any deviation from the protocol, which should be reported immediately to the Division per standard process.
- Rapid (e.g. < 24 hours) reporting of any serious adverse events, including any deaths, regardless of whether the treatment modality is presumed to be the cause of the adverse event to:
  - The training officer and medical director, **AND**
  - The Division
- Regular reports (monthly or quarterly) generated via NHESR identifying all uses of the treatment modality.
- QM by the training officer of 100% of the calls involving the treatment modality. Where the QM is proposed to be less than 100%, the proposal should include an explanation of why 100% QM is unnecessary.

Annual Reports

Annual published reports describing the organizations experience with the treatment modality, including number of times it was utilized, any perceived benefit and any adverse consequences. The reports shall be submitted to the New Hampshire Division of Fire Standards and Training and Emergency Medical Services. and the New Hampshire Medical Control Board.

Submission and Renewals Review

Proposals for pilot projects shall be made to the Division of Fire Standards and Training and Emergency Medical Services through the standard prerequisite protocol application process.

Approval

Endorsed proposals for pilot projects shall be approved by the Division of Fire Standards and Training and Emergency Medical Services to include the State EMS Medical Director.

Policy Continues

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by the NH Bureau of EMS.

Protocol Continues

Suspension of Pilot Project

Any pilot project can be suspended or terminated by the Division, to include the State EMS Medical Director:

- They have reason to believe that the treatment modality may have resulted in serious harm to a patient.
- The organization fails to comply with the requirements of this Pilot Protocol and fails to promptly remedy the failure after being given written notice.
- A new study is published that shows the treatment modality has a serious risk of harm or that it is futile.

7.7 Point of Care Ultrasound

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

This protocol provides guidelines on scope and use of prehospital POCUS but is not comprehensive of all procedures. For full prehospital POCUS guidelines and training/quality assurance standards, refer to the New Hampshire Prehospital POCUS Manual. The guidelines in the manual are part of the prehospital POCUS protocol and are incorporated in this protocol by reference.

Prerequisite Protocol 7.7

PARAMEDIC – PREREQUISITE REQUIRED

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 is an adjunct diagnostic tool to support decisions in specific clinical situations. Imaging is goal-directed with binary interpretation. POCUS can be used when indications are met and additional clarifying information is desired. If indications are met but clarifying information is not needed, POCUS is not necessary.
- Ultrasound should be used to help rule-in (e.g., identify likely potential for dangerous or actionable conditions). Ultrasound may be used to support decisions already indicated per protocol such as transport method, destination choice, pre-arrival alert, and appropriate prehospital interventions.
- Ultrasound should not be used to rule out potential pathologies or inform decisions not to initiate treatment/transport plans per protocol. Ultrasound should not be used to deviate from existing protocols.
- Contact Medical Control 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.

Protocol Continues

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

PARAMEDIC – PREREQUISITE REQUIRED - Continued

eFAST Exam continued.

Procedure:

1. Obtain and capture all eFAST views:
   - 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 Shock - Traumatic Adult & Pediatric Protocol 4.6.
- 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 8.18.
- Use lung findings in conjunction with history, exam, and Thoracic 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 Control** with difficulty applying eFAST findings or if findings do not align with conventional information and 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.
- 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:

- Suspected CHF or COPD/Asthma/RAD.
- Suspected pneumothorax (see eFAST Exam protocol).

Contraindications:

- Do not perform an ultrasound exam if it will delay treatment and/or transport of a critical patient.

Procedure:

1. Assess apical lung sliding.
2. Examine anterior and lateral lung fields for A or B - line patterns.
3. Interpret imaging and appropriately apply findings.

Protocol Continues

7.7 Point of Care Ultrasound

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

PARAMEDIC – PREREQUISITE REQUIRED - Continued

Focused Pulmonary Exam continued.

Decision Support:
The lung exam is a useful decision aid when you suspect CHF or COPD and need additional information to differentiate the two, or when you suspect pneumothorax.

- 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 3.3.
- 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 2.3A.
- See the eFAST protocol for decision support regarding lung sliding. Use lung findings in conjunction with the Thoracic Injuries Protocol 4.8.

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 Adult 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.

Protocol Continues

PEARLS:
- Early identification of pseudo-PEA is associated with significantly higher rates of survival.

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

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 8.15.

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: Perform guided venipuncture using the short or long axis technique while maintaining site sterility.

Protocol Continues

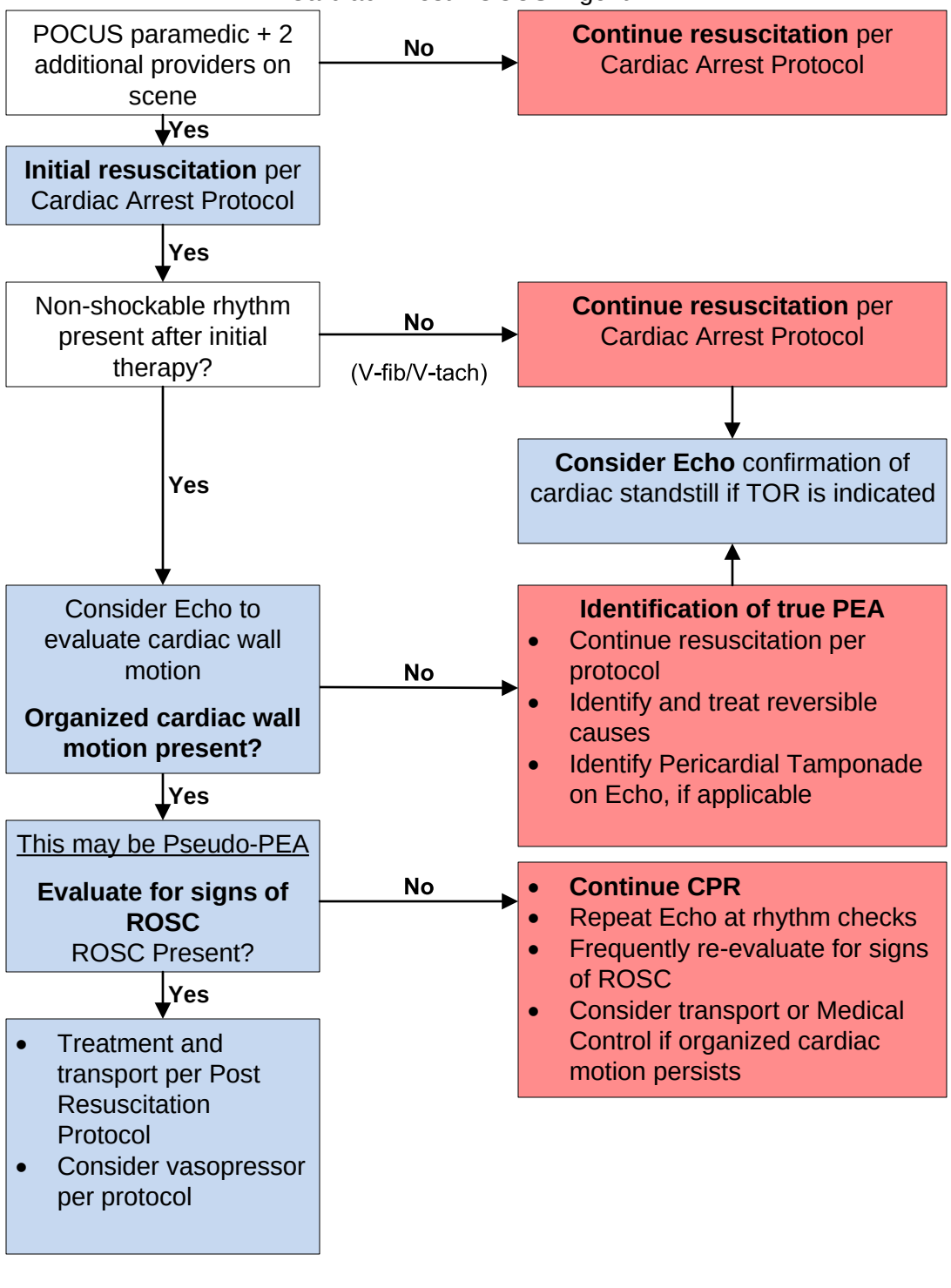
7.7 Point of Care Ultrasound

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continues

PARAMEDIC – PREREQUISITE REQUIRED - Continued

Cardiac Arrest POCUS Algorithm



Rapid Sequence Intubation (RSI) 7.8

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

PARAMEDIC - PREREQUISITES REQUIRED - ADULT ONLY

This protocol is not comprehensive of the entire RSI procedure. The New Hampshire Prehospital RSI Manual contains comprehensive guidelines that are part of this RSI protocol and are incorporated in this protocol by reference.

Each RSI procedure must be performed in a controlled fashion and must involve careful planning and preparation. RSI requires at least one RSI credentialed paramedic and one credentialed RSI assistant or non-RSI paramedic. Intubation must be performed by the most appropriate provider as determined by the RSI paramedic. After intubation, the RSI paramedic must remain with the patient at all times unless there are extenuating circumstances (mass casualty, etc.) and ensure that adequate staff remain.

Medications

The correct medication regimen should be chosen on a case-by-case basis. Weight-based dosages are listed below. Dosages for all medications are based on actual body weight. Use of a dosing chart with precalculated dosage ranges such as the one reproduced below is recommended; dosing charts reduce cognitive load and risk of error.

Induction

- Ketamine 2 mg/kg IV (RSI or DSI) or 4 mg/kg IM (max 500 mg) (DSI only).
  - For elderly, shock, or risk of hypotension: 1 mg/kg IV or 2 mg/kg IM.

OR

- Etomidate 0.3 mg/kg IV, maximum single dose 30 mg.
  - For elderly, shock, or risk of hypotension: 0.15 mg/kg IV.

Paralysis

- Rocuronium 1 mg/kg IV.

OR

- Succinylcholine 1.5 mg/kg IV, maximum 150.

Sample Dosing Chart:
IMPORTANT: Chart must be recalculated for the medication concentrations used by your service.

Weight (lbs)	Weight (kg)	Ketamine 2 mg/kg		Etomidate 0.3 mg/kg		Rocuronium 1 mg/kg		Succinylcholine 1.5 mg/kg	
		mg	mL	mg	mL	mg	mL	mg	mL
		100	1	2	1	10	1	20	1
		Dose (mg)	Volume (mL)	Dose (mg)	Volume (mL)	Dose (mg)	Volume (mL)	Dose (mg)	Volume (mL)
110 - 120	50 - 55	110	1.1	17	8.5	55	5.5	80	4.0
120 - 145	56 - 66	130	1.3	20	10.0	66	6.6	100	5.0
145 - 175	67 - 80	160	1.6	24	12.0	80	8.0	120	6.0
176 - 220	81 - 100	180	1.8	26	13.0	90	9.0	130	6.5
221 - 250	101 - 114	200	2.0	30	15.0	100	10.0	150	7.5
> 250	> 115	220	2.2	34	17.0	110	11.0	150	7.5

SUCCINYLCHOLINE CONTRAINDICATIONS:

- Extensive recent burns or crush injuries > 24 hours old.
- Known or suspected hyperkalemia.
- History of malignant hyperthermia.

Protocol Continues

7.8 Rapid Sequence Intubation (RSI)

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

PARAMEDIC - PREREQUISITES REQUIRED - Continued

Post-Intubation Analgesia and Sedation

- Target RASS of -3 to -5.

Option 1:

- Ketamine 1 mg/kg IV bolus (max 100 mg) followed by infusion via pump 2 – 5 mg/kg/hr. Initial bolus after intubation not needed if ketamine was used for induction.
  - If infusion not used: 1 mg/kg IV (max 100 mg) every 5 - 15 minutes as needed.

Option 2:

- Fentanyl 0.5 - 1 mcg/kg IV every 5-10 minutes as needed;

AND

- Midazolam 2 - 5 mg IV bolus followed by infusion via pump 1 – 10 mg/hour.
  - If infusion not used or if additional sedation is required: 2-5 mg IV every 5-10 minutes as needed **OR**
- Lorazepam 1 - 2 mg every 15 minutes as needed (maximum total 10 mg).

Hypotension

Consider vasopressors for patients at risk of or in shock:

- Norepinephrine Infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes **OR**
- Epinephrine 2 – 10 mcg/min.

Push Dose Epinephrine

May be administered to patients who develop hemodynamic compromise prior to starting infusion.

- Epinephrine by push dose (dilute boluses – see Medication Formulary) prepare 10 mcg/mL then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (where feasible, switch to infusion as soon as practical).

Video Laryngoscopy Required

Evidence and consensus guidelines suggest it yields higher first pass success.

Ventilator Required

A mechanical ventilator is the preferred over bag valve mask ventilation for providing positive pressure ventilation after intubation, especially for timeframes exceeding a few minutes.

If failed airway and unable to ventilate consider Cricothyrotomy Protocols 5.6.

Protocol Continues

Rapid Sequence Intubation (RSI) 7.8

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized FSTEMS.

Protocol Continued

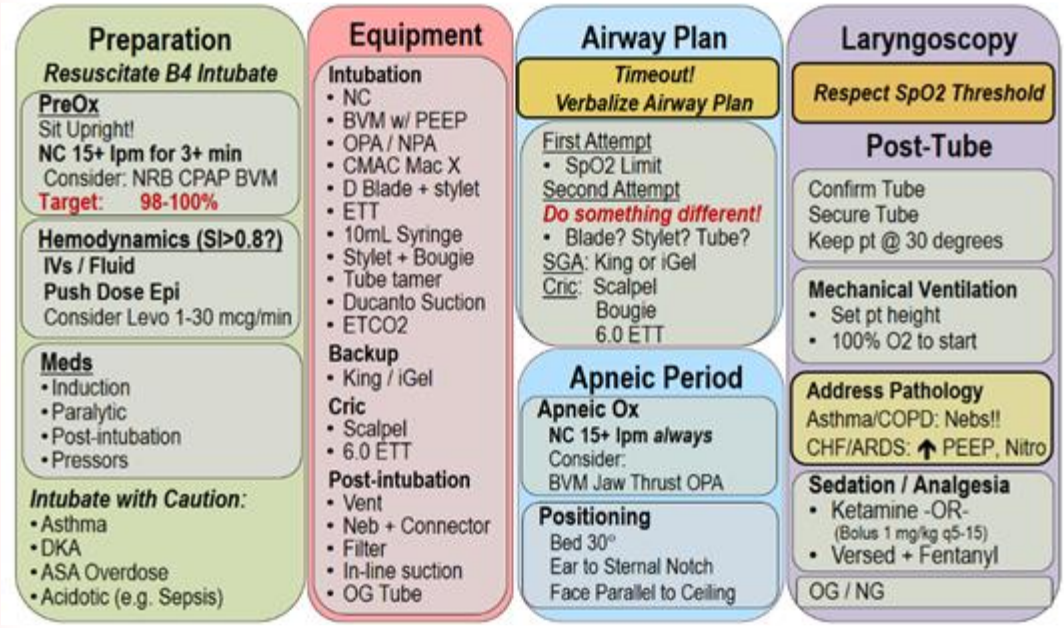
PARAMEDIC - PREREQUISITES REQUIRED - Continued

P

Principles of Effective and Safe RSI

The following key principles are fundamental to achieving effective and safe rapid sequence intubation.

1. **Utilize an RSI Checklist**.
The following checklist may be used or modified by your agency:



2. Resuscitate before You Intubate

a. Hemodynamics

When shock index (HR / SBP) is ≥ 0.8:

- Consider fluid bolus.
- Consider vasopressor.

If shock index remains ≥ 0.8 despite treatment RSI is relatively contraindicated.

b. Preoxygenation / De-nitrogenation

- Apply a nasal cannula at 15 + lpm **AND**:
- NRB, CPAP/BiPAP or BVM.

3. Anticipate & Prepare for Post RSI Hypotension

- Ensure adequate IV access.
- Prepare push-dose epinephrine.
- Consider preparing and initiating a low dose vasopressor infusion.

Profound hypotension is a predictor of adverse outcomes of RSI, even patients with apparently "normal" hemodynamics can suffer collapse.

Experience has shown that providers are challenged to initiate adequate vasopressor therapy once hemodynamic collapse has begun to occur.

Protocol Continues

7.8 Rapid Sequence Intubation (RSI)

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

PARAMEDIC - PREREQUISITES REQUIRED - ADULT ONLY

4. Positioning

Optimize positioning during preoxygenation and laryngoscopy. This includes, if feasible:

- Upright positioning during preoxygenation to optimize lung mechanics.
- During laryngoscopy:
  - Ear-to-sternal notch and face parallel to ceiling.
  - Stretcher up at 30 degrees.
- Post-intubation: maintain stretcher up at 30 degrees.

5. Airway Plan & Timeout

- An RSI airway plan includes plans for an initial attempt at laryngoscopy, backup plans for a second attempt at laryngoscopy, plans for a backup supraglottic airway and plans for surgical cricothyrotomy. All equipment needed for all of these plans should be prepared ahead of time.
- Establish a SpO_2 threshold for each attempt.
- Prior to proceeding, the RSI paramedic should perform an airway timeout during which they articulate to the team the initial and backup airway plans.
- The patient must be appropriately reoxygenated prior to a second attempt.

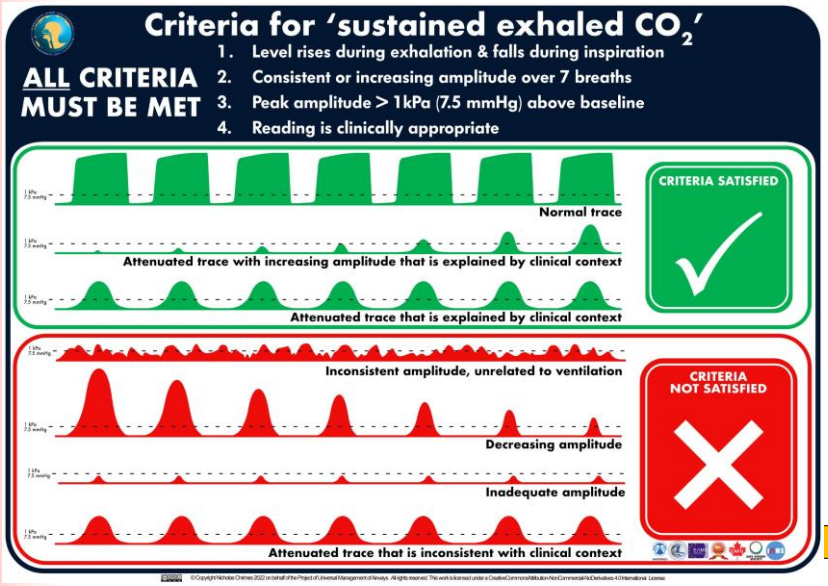
6. Apneic Oxygenation is Essential

- Maintain a nasal cannula at 15 + lpm throughout.
  - An $EtCO_2$ nasal cannula will not work for this purpose.

7. Prepare Post Intubation Medications

8.Confirm with Waveform $EtCO_2$

- Continuous waveform capnography must be used to confirm that the ET tube is in the trachea see Waveform Capnography Protocol 6.1.
- All criteria for sustained $EtCO_2$ must be met.
- $EtCO_2$ may be detected for several breaths even when the ET tube is in the esophagus.



Protocol Continues

Rapid Sequence Intubation (RSI) 7.8

This prerequisite protocol is only to be used by EMS Units and their affiliated providers who are authorized by FSTEMS.

Protocol Continued

PARAMEDIC - PREREQUISITES REQUIRED - Continued

11. Monitor the Patient & Airway Post-Intubation

- Declining or loss of ETCO2 may be a sign of a misplaced ET tube, shock or cardiac arrest.
- Declining blood pressure is an ominous sign of hemodynamic collapse/death, which may occur suddenly.

12. Post Intubation Sedation

- Administer post intubation medications, see Analgesia &Sedation for Invasive Airway Devices 5.2.

Delayed Sequence Intubation (DSI):

- May be used to facilitate preoxygenation and preparation for intubation in patients who cannot tolerate it otherwise.
- DSI involves administering ketamine and delaying administration of the paralytic with the intention of sedating the patient and facilitating preoxygenation and IV access.

P

Bougie Assisted Surgical Cricothyrotomy:

See Surgical Cricothyrotomy Bougie Assisted 5.6.

Documentation:

- Each attempt at passing an ETT should be documented as a separate procedure of "Rapid Sequence Intubation". The procedure should include the provider and time for each separate attempt. DO NOT also document a second procedure of "orotracheal intubation" as this will constitute double documentation of the intubation process. In this case, the procedure of RSI counts as the passing of the ETT itself.
- All medications administered should be documented, including the time and provider who administered them.

Follow all other required documentation outlined in Procedure: Orotracheal Intubation 5.10

In multiple deaths involving esophageal intubation, providers detected bilateral breath sounds suggesting tracheal intubation.

PEARL:
Placement of an ET tube does not address the patient's underlying pathophysiology (e.g. bronchospasm) and may worsen it (e.g. asthma). Rapidly address the patient's underlying pathophysiology post-intubation as appropriate (e.g., nebulized bronchodilators, increased PEEP, nitroglycerin).

8.0 Air Medical Transport

EMS personnel may request Air Medical Transport (AMT) when operational and/or clinical conditions are present that would benefit from decrease in 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 Control. However, if in doubt of the appropriateness of a patient for AMT, please contact Medical Control 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.

Clinical Conditions

- Severe respiratory compromise with respiratory arrest or abnormal respiratory rate.
- Circulatory insufficiency: sustained systolic blood pressure < 90 mmHg, HR > SBP or MAP of < 65 mmHg in adults, age appropriate hypotension in children or other signs of shock.
- Neurologic compromise: Patient cannot follow commands (GCS 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.
- 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 reads ***Acute MI Suspected*** and/or Paramedic interpretation), per your local STEMI plan.
- Stroke: positive stroke screen or symptoms of large vessel occlusion (e.g., FAST-ED ≥ 4); per 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 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, **consult with Medical Control** 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 pilot 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.

Baby Safe Haven 8.1

NH RSA 132-A and RSA PART He 6492 provides a mechanism for parents to surrender infants up to 7 days old at locations and facilities that are capable of temporarily safeguarding the infant. These locations and facilities include licensed hospitals and "Safe Havens" defined as houses of worship and emergency 911 responders including fire departments, police departments, ambulances, and rescue units. (A station that is not staffed is not an acceptable drop off location according to the law.) First Responders may also receive the infant at an agreed transfer location other than their stationhouse.

Procedure:

- Upon receiving physical custody of the infant, examine the child and provide any treatment necessary according to the appropriate clinical protocol(s).
- Complete a Patient Care Record and include the following:
  - Date and time infant was surrendered.
  - Infant's gender and date of birth (if known).
  - Name of physician/midwife present at delivery (if known).
  - Any information willingly provided by the parent(s) such as their names, addresses, medical information and other family information.
  - Examination findings and treatment provided.
- Transport infant to the local hospital.

Reporting Requirements:

Both the Department for Children, Youth, and Families (DCYF) and local police must be notified within 24 hours:

- Call DCYF at 1-800-894-5533, available 24 hours/day; if out-of-state: 603-271-6562.

  NOTE: Regardless of other agencies' involvement, EMS is mandated to notify DCYF.

Post Surrender Requests:

If the parent or other person contacts EMS after the infant is surrendered and wants the infant returned, instruct the person to contact DCYF immediately. The request will be referred to the family division of the circuit court.

EMS may bill the NH Department of Health and Human Services for all necessary medical or other costs incurred while assuming care of the infant within 90 days of the infant's surrender.

8.2 Bariatric Triage, Care & Transport

Purpose: This policy provides guidance for providers concerning the triage, extrication, care and transport for bariatric patients. 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 may be significantly extended for bariatric patients.
For bariatric cache information and assistance in EMS bariatric planning, contact FSTEMS at 603-223-4228.

Equipment

- Deployment of equipment and procedures shall be done under local or regional operating guidelines.

Definitions

A bariatric patient is a patient:

- 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: Based on dispatch information or previous planning, consider requesting a bariatric transport ambulance to respond to the scene. The arrival on-scene of a bariatric ambulance may require between 30 and 90 minutes, and should be requested as soon as it becomes clear that bariatric capabilities may be required. The State of New Hampshire has 10 regional bariatric equipment caches. 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 Manpower: Bariatric patients may require additional personnel to participate in moving the patient. 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.
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 Control and consider use of the extended care protocols.

Policy Continues

Protocol Continues

Transfer to Ambulance
Specialized equipment will be needed to transfer the patient safely from the scene to the ambulance stretcher for transport. If a bariatric equipment cache is utilized, both the bariatric ambulance and cache equipment needs to be dispatched.
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 bypass a local hospital to take the patient to a facility with the capabilities to properly care for the patient. This may even be appropriate in the case of life threatening emergencies if the closer emergency department does not have needed equipment.
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 control 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, leakage, ulcers, localized infection, sepsis, etc.

8.3 Communication & Communication Failure

EMS providers transporting status I, II, or III patients (see Patient Acuity 8.11) should advise the receiving hospital, in a timely manner, of patients en route to that Emergency Department (except in Mass Casualty Incidents (MCI) during which routine communications cease).

Establish two-way communication with the destination hospital/medical control by VHF radio, telephone, or HIPAA compliant and secure internet application as approved and used by that receiving facility. If a medical control physician is needed for consultation, request this before giving patient information. It is recommended that all medical communications be recorded.

Present the following information in a concise and clear manner as appropriate for acuity:

- Emergency response unit and level of care: Paramedic/AEMT/EMT with ETA.
- Patient's age, sex, and status level.
- 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 Control.

Communication Failure:

In case of a communications failure with Medical Control due to equipment malfunction or incident location, the following will apply:

- EMS personnel may, within the limits of their license, perform necessary ALS procedures that under normal circumstances would require a direct physician 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, and the conditions that created the communications failure, need to be thoroughly documented.
- Attempts must be made to establish contact with Medical Control as soon as possible.

The EMS provider 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 Medical Resource Hospital's EMS Medical Director and/or Hospital EMS Coordinator within 48 hours of the event.

Consent for Treatment of a Minor 8.4

The word “minor” is a legal term for a person who is not yet 18 years old and who has a legal guardian. Emancipated minors may make their own determinations regarding medical care and include those minors who are married or members of the armed forces. A minor patient bears the burden of establishing, by legal documentation or otherwise, that he/she is emancipated. New Hampshire recognizes emancipation decrees issued by other states.

Implied Consent
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. (RSA 153-A:18)

Obtaining 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., daycare/school/camp official), who has been expressly authorized by the minor’s parent, may consent to health care treatment. Another adult family member (e.g., grandparent) having custody of the minor may also give consent, see Refusal of Care Protocol 8.14.

Refusal of Care
A parent, guardian or other authorized representative may refuse care for a minor and should understand the minor’s medical condition and potential consequences of refusing care. Minors cannot legally refuse care. Carefully document all refusals.

- 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.

When a minor attempts to refuse care, explain that because they are under 18 that they are unable to legally sign a refusal and will have to be transported to the hospital. As a last resort or in cases of life-threatening injuries, police have the power to place children in protective custody.

Special Circumstances
A minor parent who has not yet reached his/her eighteenth birthday may consent to or refuse care on behalf of his or her 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.

A minor may consent without parental permission for the following care:

- An adolescent patient under the age of 18 must give his/her consent for a sexual assault forensic exam ("Sexual Assault: An Acute Care Protocol for Medical/Forensic Evaluation", Office of the NH Attorney General, Sixth Edition, 2011).
- Treatment for sexually transmitted diseases at age 14 and older (RSA 141-C:18).
- Treatment for drug and alcohol abuse at age 12 and older (RSA 318-B:12-a).

8.5 Continuity of Care

- EMS providers responding to a 911 emergency may encounter patients with pre-existing medical devices (e.g., ventilator) or pre-established medication infusions (e.g., antibiotics) that are outside of NH EMS Protocols and beyond the EMS provider's scope of practice. The medical emergency may be unrelated to the pre-existing medical care (e.g,. chest pain in a patient receiving an infusion) or may relate to the pre-existing care (e.g., problems with a ventilator supporting a patient's breathing).
- Pre-existing medical care may include ventilators, CPAP, BiPAP, ventricular assist devices (VADs), continuous or intermittent IV medication infusions (analgesics, antibiotics, chemotherapeutic agents, vasopressors, cardiac drugs), and nontraditional out-of-hospital drug infusion routes (subcutaneous infusaports, central venous access lines, direct subcutaneous infusions, self-contained implanted pumps). The type of pre-existing care potentially encountered by EMS providers is extensive.
- The device or medication administration may be supported or maintained by the patient or the patient's caregiver.

EMT/ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

- Routine Patient Care
- Consider early consultation with on-line medical control
- If the device or infusion is functioning properly and is maintained by an alert/oriented patient (or caregiver), transport the patient with the device or infusion in place and operating normally.
- If the device or infusion is not functioning properly or may be the cause of the medical emergency, the provider should utilize all appropriate and available resources:
  - The patient/family/caregivers
  - Specialty resources available via telephone (e.g., LVAD Coordinator, hospice nurse or physician), computer, smartphone or telemedicine device or application.
  - Product literature for the device or infusion (paper or digital)

E/A

- EMTs should not continue the administration of a newly initiated, i.e., not pre-existing medication that is outside their scope of practice.
  - Consider requesting that any healthcare providers or other trained personnel on scene who are involved in the patient's pre-existing care (e.g., nurse or physician) accompany the patient in the ambulance during transport to support the device or infusion.
  - Request paramedic intercept for any medication outside the EMT or AEMT formulary.

PARAMEDIC STANDING ORDERS – ADULT & PEDIATRIC

P

- Any treatment initiated recently or acutely by other healthcare providers (e.g., urgent care) may be continued. Collaboration between sending providers, EMS, and medical control may be necessary.

EMS providers are not required to continue treatments which they believe are harmful to the patient or caregivers, (e.g. chemotherapy agents). If an EMS provider is not comfortable with a pre-existing treatment they should seek additional resources or discontinue treatment.

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 providers 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 so if possible).
- Avoid moving or touching firearms; notify law enforcement to secure. If necessary to move a firearm for safety or resuscitation, document location and position.
- 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.
- Do not document penetrating wounds as entry or exits wounds.
- 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.
- Document locations of needle punctures by EMS.
- 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 Policy Policy 8.15, 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.

Recognized DNR Options in New Hampshire

The following are the only recognized DNR options in New Hampshire:
1. "P-DNR" (portable DNR) order: statewide recognized document of any color and/or a "DNR" (Portable DNR) wallet card signed by a physician, physician assistant or advanced practice registered nurse (APRN).
2. Medical orders form documenting the patient's name and signed by physician, physician assistant or APRN and that clearly documents the DNR order.
3. DNR bracelet or necklace worn by a patient, inscribed with the patient's name, date of birth (in numerical form), and "NH DNR" or "NH Do not resuscitate."
4. "POLST" constitutes a DNR if it states *'This will constitute a DNR Order, and no separate DNR Order will be required*.'
Note: Under state law, a DNR bracelet or necklace may only be issued to patients who have a valid DNR order.

Neither a Living will nor a Durable Power of Attorney for Healthcare (DPOAH) form is a valid DNR order. Neither a patient's spouse nor a healthcare agent under a DPOAH may direct EMS providers to withhold resuscitation in the absence of a valid DNR Order.

When a written DNR order is not available but the patient has a DPOAH and the patient's healthcare agent requests that resuscitation be withheld, contact online **Medical Control** for guidance.

For patients present or residing In a healthcare facility, the following is also acceptable
A DNR order written by a physician, physician assistant or APRN at the nursing home, hospital, or other healthcare facility issued in accordance with the healthcare facility's policies and procedures.

For Patients Being Transferred
All forms of DNR identified above remain valid during a transfer from one healthcare facility to another.

DNR Orders from Other States
EMS providers should honor any DNR order that is substantially similar to the NH statutory form. (see NH form below) Medical orders from other states must be signed by a physician, physician assistant or APRN that clearly documents the DNR order.

Revocation of a DNR Order
The following are the only recognized methods for revoking a DNR order:

Patients residing at home
- A patient residing at home may revoke a DNR order by destroying the DNR order and removing a DNR bracelet or necklace.
- If the patient lacks the capacity to make health care decisions, the patient's healthcare agent (under a DPOAH—see below) may revoke the DNR order by destroying the DNR order and removing any DNR bracelet or necklace.

Patients residing in a healthcare facility
- A patient in a healthcare facility may revoke his or her previous consent to a DNR order by making a written, oral, or other act of communication to the attending physician, physician assistant or APRN or other professional staff of the healthcare facility.
- For a patient who lacks the capacity to make health care decisions, the patient's healthcare agent (under a DPOAH—see below) may revoke a DNR order by notifying the attending physician, physician assistant or APRN in writing or, if a witness over the age of 18 is present, orally.

Policy Continues

Policy Continued

Procedures not to be Performed

If there is a valid DNR order and the patient is in cardiac or respiratory arrest, or cardiac or respiratory arrest is imminent, EMS providers should observe the following guidelines:

- Do not perform chest compressions.
- Do not actively 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 the rhythms identified below:
  - Ventricular fibrillation.
  - Pulseless ventricular tachycardia.
  - Pulseless electrical activity.
  - Asystole.

Procedures that may be performed

If the patient is not in imminent cardiac or respiratory arrest, all appropriate medical treatment for all injuries, pain, difficult or insufficient breathing, hemorrhage, and/or other medical conditions should be provided despite the presence of a DNR order. Competent patients (and healthcare agents) retain the right to refuse any treatments indicated.

EMS providers **MAY** perform any other measures, including comfort measures, for these patients, within their scope of practice per the usual treatment guidelines, including but not limited to:

- Oxygen therapy via nasal cannula, non-rebreather mask, and/or CPAP.
- Medications for treatment of pain, respiratory distress, dysrhythmias (except for those identified above).
- Intravenous fluid therapy for medication access and/or delivery.
- Mouth or airway suctioning.

NH Statutory DNR Form

Do Not Resuscitate Order.

As attending physician, physician assistant or APRN of [patient's name here] and as a licensed physician, physician assistant or advanced practice registered nurse, I order that this person **SHALL NOT BE Resuscitated** in the event of cardiac or respiratory arrest.

This order has been discussed with [patient's name here] (or, if applicable, with his/her agent,) [name of DPOAH], who has given consent as evidenced by his/her signature below.

Attending physician, physician assistant or APRN name:_____

Attending physician, physician assistant or APRN signature:_____

Address:_____

Patient signature:_____

Address:_____

Agent signature (if applicable):_____

Address: _____

Policy Continues

Policy Continued

Durable Power of Attorney for Healthcare

Under a Durable Power of Attorney for Healthcare, a patient may designate another person—a healthcare agent—to make health care decisions for themselves.

- Before a healthcare agent may make decisions on behalf of the patient, the patient's attending Attending physician, physician assistant or APRN must certify in writing that the patient lacks capacity (this certification is filed within the patient's medical record).
- A patient who, in the clinical judgment of the EMS provider, retains the capacity to make health care decisions, shall direct his or her health care, even where a healthcare agent has been appointed. That is, EMS providers shall follow the wishes of the patient rather than the healthcare agent unless the patient lacks the capacity to make health care decisions.
- The healthcare agent must make an informed decision. It is generally advisable for EMS providers to perform at least a preliminary assessment and inform the healthcare agent of the options for caring for the patient.

Note: in the absence of a valid DNR order, a healthcare agent does not have the authority to direct prehospital providers to withhold resuscitation in the event of a cardiac arrest. When a written DNR order is not available and a DPOAH is present and requests that resuscitation be withheld, contact online **Medical Control** for guidance.

Living Will

A Living Will is intended to address patients who have been admitted to a healthcare facility. Living Wills rarely, if ever, have application in the prehospital environment.

POLST (Provider Orders for Life-Sustaining Treatment)

Section A

The POLST constitutes a DNR if it states *'This will constitute a DNR Order, and no separate DNR Order will be required*.' Otherwise, if the patient has indicated they do not want resuscitation but does not have a separate valid DNR order, contact Medical Control for guidance

Section B

When confronted with a seriously ill patient who has a POLST form (yellow form),and is not in cardiac arrest: see POLST Appendix A5

- If "Full Treatment" box is checked: Use all appropriate measures to stabilize/resuscitate patient.
- If "Selective Interventions" box is checked: The maximum respiratory interventions are non-rebreather mask, CPAP, and suctioning. All appropriate IV medications may be utilized. No electrical therapies are to be provided.
- If "Comfort-focused Care" box is checked: Limit respiratory interventions to non-rebreather mask, suctioning and treatment of airway obstruction, as needed. Medications to relieve pain or discomfort may be utilized.

Note: Section C refers to IV therapy for hydration and nutrition. Advanced EMTs and Paramedics may start an IV for the purpose of medication administration outlined in Section B.

PEARLS:

- Your decision to withhold resuscitation is protected under the New Hampshire DNR law as long as it is based on the good faith belief that you have been presented with a valid DNR order or DNR jewelry.

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.

If the patient is unable to make medical decisions and the hospice team cannot be contacted, determine the patient's wishes and contact **Medical Control.**

EMS providers 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 his 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.
- 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.

EMT/ADVANCED EMT STANDING ORDERS

E/A

- Routine Patient Care.
- Contact the hospice team (preferred) or Medical Control 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.

Protocol Continues

Protocol Continues

PARAMEDIC STANDING ORDERS

P

Consider following the written orders for medications in hospice kit.
As an adjunct to the hospice kit medication consider:

Breakthrough Pain:

- See Pain Protocol 2.18 (All IV formulated opiates may be given PO for hospice patients.)

Anxiety:

- Midazolam: 2.5 mg IN, repeat every 10 - 15 minutes as needed to a maximum of 6mg
- Lorazepam: 0.25 - 2 mg PO or SL.

Dyspnea:

- Morphine or other opiate, dosing per Pain Protocol 2.18, maintaining respiratory rate above 8 bpm.
- Bronchospasm: See Asthma/COPD 2.3, subject to patient's goals.
- Heart Failure: See Congestive Heart Failure Protocol 3.3, subject to patient's goals.

Nausea / Vomiting:

- See Nausea/Vomiting Protocol 2.13

PEARLS

- Breakthrough Pain assessment and management is important in patients with advanced disease as they may have a high burden of pain, be opiate 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 active 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 active sedation.

Blood Borne Pathogens

Assume that all bodily fluids and tissues are potentially infectious and personnel must protect themselves by use of appropriate Body Substance Isolation (BSI) and approved procedures.

Transmission of pathogens has been shown to occur when infected blood or Other Potentially Infectious Materials (OPIM) enter another individual's body through skin, mucous membrane, or parenteral contact.

Screen symptomatic patients for out of country travel within the past month or close contact with another symptomatic individual who has recently traveled out of the country. If possible, determine where patient or contacts have recently traveled. Provide early notification to receiving hospital.

Body Substance Isolation (BSI) Procedures.

- BSI procedures include using protective barriers (such as gloves, masks, goggles, etc.), thorough hand washing, and proper use and disposal of needles and other sharp instruments.
- Centers for Disease Control and Prevention Guidelines for hand hygiene include:
  - When hands are visibly dirty, contaminated, or soiled, wash with soap and water.
  - If hands are not visibly soiled, use an alcohol-based hand sanitizer for routinely decontaminating hands.
- Personnel with any open wounds should refrain from all direct patient care and from handling patient-care equipment, unless they can ensure complete isolation of these lesions and protection against seepage.
- Personnel who are potentially at risk of coming into contact with blood or OPIM are encouraged to obtain appropriate vaccines to decrease the likelihood of disease and transmission.

Body Substance Exposure - Procedures and Considerations

- Personnel with blood borne pathogen exposure should immediately flush exposed area or wash with an approved solution. At a minimum, use warm water and soap.
- If skin integrity is broken, cover area with a sterile dressing.

Policy Continues

Policy Continued

Airborne Pathogens

Assume that all patients who present with respiratory distress, cough, fever, or rash are potentially infectious with airborne pathogens and personnel must protect themselves by use of appropriate Airborne Personal Protective Equipment (APPE), Body Substance Isolation (BSI), and approved procedures.

Screen symptomatic patients for out of country travel within the past month, or close contact with another symptomatic individual who has recently traveled out of the country. If possible, determine where patient or contacts have recently traveled. Provide early notification to receiving hospital.

Airborne Personal Protective Equipment (APPE)

- Preferred APPE for EMS personnel is an N95 or higher mask, to be worn whenever patient is suspected of having any communicable respiratory disease.
- N95 mask should be properly sized for each individual provider, having been previously determined through an annual fit-test procedure.
- A surgical mask should also be placed on suspect patients, if tolerated. If oxygen therapy is indicated, a surgical mask should be placed over the oxygen mask to block pathogen release. Close monitoring of the patient's respiratory status and effort will be required.

Airborne Procedures and Considerations

- Provide early notification to receiving hospital so hospital may enact its respective airborne pathogen procedures.
- Limit number of personnel in contact with suspected patients to reduce potential exposure to others.
- Limit procedures that may result in the spread of suspected pathogen, (e.g., nebulizer treatments), if feasible.
- Utilize additional HEPA filtration on equipment, (e.g., BVM or suction), if available.
- Exchange of fresh air into the patient compartment is recommended during transport.

Policy Continues

Policy Continued

Enteric Pathogens

- Emergency medical services personnel should assume that patients who present with gastrointestinal illnesses accompanied by nausea, vomiting and/or diarrhea are potentially infectious with enteric pathogens and must protect themselves by use of appropriate contact and droplet precautions and approved procedures.
- Screen symptomatic patients for recent antibiotic use or contact with others who have had Closteria Difficile or Noro Virus. Provide early notification to receiving hospital.

Decontamination and Follow-up

- In addition to accepted procedures for cleaning and disinfecting surfaces and equipment with approved solutions and for the proper disposal of contaminated items, the use of fresh air ventilation should be incorporated (e.g., open all doors and windows to allow fresh air after arrival at the hospital).
- In the case of suspected enteric pathogen contamination, personnel should clean all areas of patient contact with cleaners that are effective against E. coli, Noro Virus or C. Difficile. This should be clearly stated on the cleaner label, as most products do NOT effectively kill the pathogen. See The Centers for Disease Control and Preventions (Guideline for Disinfection and Sterilization in Health Care Facilities) If the patient was actively vomiting during transport to the hospital, surfaces in close proximity to the patient should also be cleaned.
- All personnel in contact with the patient should wash their hands thoroughly with warm water and soap. When soap and water are not immediately available, a hand sanitizer containing 60% isopropyl alcohol is recommended as an interim step until thorough hand washing is possible.
- Contaminated clothing should not be brought home by the employee for laundering, but laundered in a department provided washer or by other uniform cleaning arrangements.
- Ambulances equipped with airborne pathogen filtration systems should be cleaned and maintained in accordance with the manufacturer's guidelines.

- As soon as possible following any suspected exposures, EMS provider should complete all appropriate documentation as identified in service department's specific policies, including Worker Compensation Notice of Accidental Injury or Occupational Disease 8aWCA form.

On-Scene Medical Personnel

8.10

- The medical care provided at the scene is the responsibility of the highest level of EMS provider who has responded by usual dispatch systems to that scene. Passersby who stop to help, even though possibly more highly trained than the system providers, may **NOT** assume responsibility (except as outlined below) but may be allowed to help in care at the discretion of the lead EMS provider assuming they have proof of licensure.

- When an EMS provider, under Medical Control (on- or off-line), arrives at the scene of an emergency, the provider acts as the agent of Medical Control, (i.e., the on-line physician is ultimately responsible).

- Any health care provider (MD, PA, RN, nurse midwife, EMS provider, etc.) who is not an active member of the responding EMS unit or the unit's medical director, and who is either at the scene at the time of the EMS unit's arrival or arrives after an EMS unit has initiated care, and who desires to assume primary patient care, should be put in touch with the on-line **Medical Control** and:

  - Continue to provide care during transport of the patient; **OR**
  - Transfer patient care to another provider at the same licensing level for transport of the patient to a medical hospital/facility;
  - Document all advanced care procedures performed while rendering care, which shall include an emergency care provider's current license number assigned by FSTEMS; **AND**
  - Submit all documentation to the unit in charge of the incident.

- Where a higher level provider offers to assist, but that assistance is declined by the lead responding agency, the higher level provider shall not have any responsibility or liability for the patient's care.

  See Saf-C 5920.01 (c)

8.11 Patient Acuity

Patient acuity is based on national standards and should be determined and documented for both Initial Patient Acuity (before EMS care) and Final Patient Acuity (after EMS evaluation and care) Patient Acuity may change during the EMS event based on the patient's illness or injury and EMS interventions. Patient Acuity is not a justification for the use of lights and sirens but an indicator of the urgency for medical interventions for the patient.

Critical - Status I

Patients with symptoms of a life-threatening illness or injury with a high probability of mortality (Death) if immediate intervention is not begun to prevent further airway, respiratory, hemodynamic, and/or neurologic instability. Any patient meeting criteria for a clinical system alert/ activation that is severe and/or unstable should be considered a critical patient.
Examples of Critical – Status I patients:

- Patient unresponsive with abnormal/unstable vital signs (e.g., ↑↓ BP, HR, RR, O2 Sat or Temp)
- Severe or deteriorating respiratory condition, airway obstruction or ability to ventilate
- Pediatric non-responsive respiratory distress
- Decompensating Shock or Sepsis
- Major multi-system trauma, TBI or burns
- Uncontrollable bleeding or hemorrhage
- Status epilepticus
- Labor and delivery complications
- Acute STEMI with abnormal/unstable vital signs, irritable cardiac rhythm or acute clinical presentation
- Acute Stroke with significant deficits, altered mental status or other acute clinical presentation
- Cardiac and/or Respiratory arrest

Emergent – Status II

Patients with symptoms of an illness or injury with a high probability for morbidity (increased illness or injury) that may become more severe or result in complications if treatment is not begun quickly. Examples of Emergent – Status II patients:

- Moderate injury without shock or respiratory compromise e.g,. single-system trauma, stable vital signs
- Moderate dyspnea
- STEMI with stable vital signs and cardiac rhythm and responsive to intervention
- Stroke
- Combative or uncontrollable psychological emergencies
- Significant infections requiring isolation or compensated sepsis

Policy Continues

Protocol Continues

Lower Acuity – Status III

Patients with symptoms of an illness or injury that have a low probability of progression to more serious disease or development of complication.

Examples of Lower Acuity – Status III patients:

- Patient alert, vitals signs within normal limits, and with simple uncomplicated injuries or medical complaints
- Soft tissue injuries including minor burns
- Isolated extremity fractures and dislocations
- Maxillofacial injuries without airway compromise
- Asthma attack that has responded to bronchodilators
- Status: post seizure
- Psychological emergencies

Non-Acute – Status IV

EMS evaluation with no interventions provided

Examples of Non-Acute – Status IV patients:

- Scheduled medical transport, e.g., dialysis or return home
- Public assists, Good intent calls, Medical alarm with false activation

Notes of Clarification

- Patients should always be transported to the most appropriate available facility based on their Patient status.
- Patient status / acuity are based on definitions and conditions published in the National EMS Core Content and the 2016 Model of Clinical Practice of Emergency Medicine. EMS providers should reference these documents for a more comprehensive list of conditions under each level of patient status/acuity.
- Determining and documenting initial and final patient status provides a picture of how acutely ill or injured a patient was when contacted and the effectiveness of EMS protocols for care or patient decline despite quality care at the end of EMS interaction.

PATIENT TRANSPORT

Any child who fits on a length-based resuscitation tape must be properly restrained in a safety seat or harness.
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 secured to the ambulance cot. It is not acceptable, under any circumstance, to transport a pediatric patient in the arms of an adult.
It is recommended that agencies develop standard operating procedure/policy for pediatric transport that reflects their ambulance configurations and specific pediatric transport equipment/ devices.

TYPES OF RESTRAINTS:

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.
   - Follow manufacturer's guidelines regarding appropriate patient weight for device and use of product including securement to stretcher
   - Position safety seat on cot facing foot-end with backrest elevated to meet back of 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.

   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

   Restraint device (marketed to EMS) with 5-point harness. For list of devices available see National Association of State EMS Official's Pediatric Transport Products for Ground Ambulances.
   - Follow manufacturer's guidelines regarding appropriate patient weight for device and use of product including securement to stretcher
   - Harness must rest snugly against child with shoulder straps at or just below child's shoulder.

3. Car bed with both a front and rear belt path
   - Follow manufacturer's guidelines regarding appropriate patient weight for device and use of product including securement to stretcher
   - 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 the 4 attachment sites supplied with car bed.
     Follow manufacturer's guidelines regarding weight and use of product including securement to cot

Policy Continues

Policy Continued

4. Isolette/Incubator must be secured to ambulance according to manufacture's guidelines.
Follow manufacturer's guidelines regarding appropriate patient weight for device and use of product including securement to stretcher
Blankets or towels may be used for additional stabilization

MOTHER AND NEWBORN TRANSPORT

- It is not acceptable, under any circumstance 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 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. Either 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 infant.

Do **NOT** use a rear-facing only safety seat in the rear-facing provider seat / captain's chair as this is dangerous and may lead to significant injuries.
Special attention should be paid to the high risk of hypothermia in newborns

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:
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.
Captain's chair in patient compartment using a size appropriate integrated seat or a convertible safety seat.

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

The patient's safety seat may be used to transport child to 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.

8.13 Police Custody

Purpose
The purpose of this policy is to give EMS guidance for patients who are in police custody, restrained, and/or protective custody is required.

Protective Custody
Protective custody is a civil status in which an incapacitated person is detained by a peace 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.

- Patients with evidence of suicidal ideation who refuse care may be placed into protective custody under RSA 135C:28 III.
- Patients who present with an altered level of consciousness, diminished mental capacity, or evidence of impaired judgment from alcohol or drug use may be placed into protective custody under RSA 172 and 172:B3.
- If law enforcement refuses to place a patient into protective custody at the request of EMS, on-line medical control must be contacted and a law enforcement supervisor should be requested for further guidance.

Police Custody
- Police custody for this policy, shall mean a person under arrest.
- Patients who EMS believe require medical care should be transported to a medical facility. 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 control must be contacted and a law enforcement supervisor should be requested for guidance.

EMS Initiated Restraints

For any patient potentially requiring restraints by EMS, see the Restraints Procedure 6.5.

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.

Tasers® (Conductive Electrical Weapon)
Patient's with uncomplicated Taser probes embedded in non-vulnerable areas should use the below procedure to have them removed if requested by law enforcement. Probes that are embedded in complicated areas (i.e. face, groin, neck) should be transported to the hospital for evaluation and removal.

Procedure for Removal:
1) Ensure the wires have been disconnected from the weapon.
2) Stabilize the skin around the probe and grasp the metal body of the probe.
3) Remove the probe by pulling straight out in a single, swift motion.
4) Place the probes in a sharps container and clean/dress the wounds as needed.
5) Obtain refusal of care documentation unless transport is warranted.

Pepper Spray
Patients who have been subdued by pepper spray, see Eye and Dental Protocol 4.3.

Dangers of Restraint
Patients who are restrained are at high risk for sudden death, see Restraints Procedure 6.5.

Refusal of care

There are three components to a valid refusal of care. Absence of any of these components will 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 his or her minor children's behalf.
2. Capacity: In order to refuse medical assistance a patient must have the capacity to understand the nature of his or her medical condition, the risks and benefits associated with the proposed treatment, and the risks associated with refusal of care.
3. Informed Refusal: A patient must be adequately informed about his or her medical condition, the risks and benefits associated with the proposed treatment and the risks associated with refusing care.

Patients who meet these criteria may make decisions regarding their medical care, including declining or refusing of evaluation, treatment, or transport.

You should use caution concluding that a patient has the necessary capacity in context of:

1. Evidence of head trauma, medical illness, dementia, or psychiatric illness.
2. Evidence of alcohol or drug consumption.
3. Language communication barriers. Reliable translation available (e.g., on scene interpreter, language line).

Patients who have a present desire to hurt or kill themselves do not have the capacity to refuse care.

For high risk refusals, 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.

Consider on-line medical control for all patients who present a threat to themselves, present with an altered level of consciousness or diminished mental capacity, or have history or examination findings consistent with a high-risk refusal.

The use of alcohol or other substances does not automatically invalidate a patient's capacity to understand their medical condition and the consequences of refusing care. Where, however, a patient exhibits intoxication that impairs their ability to understand their medical condition, the benefits of accepting care and/or the consequences of refusing care, they are unable to refuse care.

Note that in circumstances where the patient is confused, intoxicated, or otherwise unable to make rational decisions, documenting that the patient is "alert and oriented × 3" or "awake and repeats instructions" is insufficient to demonstrate capacity. A patient may be oriented or be capable of signing a refusal form and still lack capacity.

In order to be valid and effective, a signed refusal of care form must be supported by:

a. Thorough assessment,
b. Thorough explanation of the medical condition and associated risks and benefits, and
c. Thorough documentation

Policy Continues

Policy Continued

Patients who lack the capacity to refuse care must be transported to the emergency department for evaluation. Efforts should be made to convince the patient to voluntarily accept transport. Patients who continue to seek to refuse care may be involuntarily transported. In some instances, the police may place patients in protective custody under NH RSA 172.

If unable to transport patient due to safety concerns, document circumstances clearly in the narrative. Include outreach to law enforcement, mobile crisis and discussion with medical control.

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, see Spinal Injury Protocol 4.5.
7. Patient / witness reports suicidal ideations.
8. Possible Brief Resolved Unexplained Event see BRUE Protocol 2.5.

Procedure

1. Offer the patient treatment and transportation to the hospital and document the offer in your Patient Care Report.
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, and the patient's refusal of care, must be fully documented in your Patient Care Report
3. Explain to the patient the nature, severity or uncertainty of his/her illness or injury, the treatments being proposed, the risks and consequences of accepting or refusing treatment, and the potential alternatives. 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 (e.g., grandparent), or other authorized representative having custody of the minor, 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. Prepare and explain the Refusal of Care form to the patient (or, in the case of a minor patient, the patient's parent, legal guardian, or authorized representative).
6. The Refusal of Care form 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.

All patients in police custody retain the right to request transport. This should be coordinated with law enforcement.

If child or adult abuse and/or neglect is suspected and a refusal of care situation exists, the EMT provider must contact police immediately, see Victims of Violence 8.18.

WHEN NOT TO START

Resuscitation efforts should be withheld or discontinued under the following circumstances:

- **VALID DO NOT RESUSCITATE ORDER:** Refer to DNR, POLST & Advanced Directives Protocol 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.

Factors of Death (At least one associated factor of death must be present)

- Damage or destruction of the body incompatible with life, such as:
  - ✓ Decapitation.
  - ✓ Decomposition.
  - ✓ Deforming brain injury.
  - ✓ Incineration or extensive full thickness burns.
- Lividity/Rigor mortis of any degree.
- Major blunt or penetrating trauma incompatible with life.

Patients with ventricular assist devices (VAD) should almost never be pronounced dead at the scene, see VAD Policy 8.19.

SUDDEN UNEXPLAINED INFANT DEATH SYNDROME (SUIDS).

- An infant <**12** months who is apneic, asystolic (no heartbeat or umbilical cord pulse), and exhibiting lividity and/or rigor mortis should be presumed dead.
- For unexpected, unexplained infant death, record carbon monoxide level in room where infant was found unresponsive, if possible.

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 Control** if gestational age is less than 20 weeks and neonate shows signs of obvious immaturity (e.g., translucent and gelatinous skin, lack of fingernails, fused eyelids).

NOTE: Infant and/or neonatal resuscitation and transport may be initiated in cases where the family does not accept the idea of nonintervention.

Policy Continues

Policy Continued

EMT/ADVANCED EMT STANDING ORDERS – ADULT & PEDIATRIC

Resuscitation may be stopped under the following circumstances:

The physical environment becomes unsafe for providers.

- The exhaustion of EMS providers.
- Extrication is prolonged (>15 minutes) with no resuscitation possible during extrication (hypothermia is an exception).
- If directed to do so by Medical Control

Resuscitation Factors

Resuscitation should be terminated when further resuscitation is futile, based on all of the relevant factors. Time should not be used as the deciding factor. At a minimum good quality high performance resuscitation should be conducted for at least 20 minutes after arrival onscene.

After 20 minutes the following factors can help guide the decision to terminate resuscitation. Relevant factors include but are not limited to:

E/A

- Witnessed versus unwitnessed cardiac arrest.
- Bystander CPR versus no bystander CPR.
- Shockable versus non-shockable rhythm.
- The presence and nature of comorbidities.
- Frailty
  - Note that while the likelihood of successful resuscitation decreases with advanced age, frailty is a more accurate predictor of outcome.
  - There is no age at which resuscitation becomes futile.
- Waveform $EtCO_2$ levels.
  - Less than 10 mmHg for an extended period of time suggests that successful resuscitation is unlikely.
  - A increase in $EtCO_2$ levels may indicate ROSC.
  - Good quality CPR can produce high levels of $EtCO_2$ (> 30 mmHg) even in the absence of effective spontaneous infusion.
- Distance from, and resources available at the closest hospital.

Consider early consultation with Medical Control.
No single factor or combination of factors is dispositive.

- 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 under “when to stop” (above). Transportation with continuing CPR may be justified if hypothermia is present or suspected. Current AHA guidelines state: “cessation of efforts in the out-of-hospital setting…should be standard practice.”

Policy Continues

Policy Continued

PARAMEDIC STANDING ORDER – ADULT & PEDIATRIC

Additional relevant factors include but are not limited to:

- Cardiac rhythm
  - Asystole or slow wide complex PEA at initiation of resuscitation have a very poor prognosis, even with optimal resuscitation
  - Patients with profound shock may lack a palpable pulse
  - Narrow complex PEA with a rate above 40 or sustained refractory and recurrent ventricular fibrillation / ventricular tachycardia
    - Consider early expert consultation with Medical Control
    - Consider extended resuscitation (i.e., up to 60 minutes from the time of dispatch)
    - Consider transport if reversible causes suspected
    - Note that residual cardiac activity may occur even in the presence of irreversible cardiac arrest.
- Cardiac activity on POCUS see POCUS Protocol 7.7, if available, may help guide termination decisions.

PEARLS:

- For patients that do not achieve return of spontaneous circulation on scene, termination of resuscitation should be considered before the patient is loaded into the ambulance for transport.

DETERMINING DEATH IN THE FIELD

When efforts to resuscitate are not initiated or are terminated under the above provisions, EMS providers shall:

- Document time of death.
- Notify law enforcement.
- 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.

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): See MCI Protocol 9.1.

Documentation

- Complete a Patient Care Record (PCR) in all cases. If available, include ECG rhythm strips with the patient care report.
- Document special orders including DNR, on-line Medical Control, 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.

Strangulation 8.16

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

Strangulation is a felony-level crime*. Per NH RSA 631:6, 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: 1-866-644-3574.
- 24-Hour Sexual Assault Crisis Line: 1-800-277-5570.
- 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.

8.17 Trauma Triage and Transport Decision

RED CRITERIA

High Risk for Serious Injury

Injury Patterns	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal extremities • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	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 < 70mm Hg + (2 x age in years) Age 10 – 64 years • SBP < 90 mmHg or • HR > SBP Age ≥ 65 years • SBP < 110 mmHg or • HR > SBP

- When feasible, patients meeting the "high risk" or RED criteria should be transported to the closest Level 1 or Level 2 Trauma Center by air or ground. Level 2 Trauma Centers should not be routinely bypassed for a Level 1 Trauma Center. If not feasible, transport to the nearest Level 3 or 4 Trauma Center (preferred) or acute care emergency department.
- For a child < 15 years of age, direct transport to a Level 1 or Level 2 Pediatric Trauma Center is desired.
- Contact destination hospital and activate the trauma system in accordance with local guidelines.

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgment

• 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 years) unrestrained or in unsecured child safety seat
  ○ Vehicle telemetry data consistent with severe injury
• Rider separated from transport vehicle with significant impact (e.g., motorcycle, ATV, horse)
• Pedestrian/bicycle rider thrown, run over, or with significant impact
• Fall from height > 10 feet (all ages)
	• 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

- Patients meeting any one of the **YELLOW** CRITERIA WHO DO NOT MEET RED CRITERIA should be transported to the closest Trauma Center (preferred) or acute care hospital.
- Contact destination hospital and activate the trauma system in accordance with local guidelines.

For more information on Trauma Center assignments and hospital services click on this LINK

Divert to the nearest acute care hospital if a patient with major trauma is in cardiac arrest, peri-arrest or immediately needs a life-saving intervention that cannot be delivered by available prehospital resources.

Implantable Ventricular Assist Devices (VAD) 8.19

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

- Patients with an implanted ventricular assist device (VAD) and symptoms of cardiovascular compromise or cardiac arrest.
- Patients with VADs experiencing a medical or injury-related event not involving the cardiovascular system or VAD malfunction

Assessment:

- Assess for possible pump malfunction
  - Assess for alarms
  - Auscultate for pump sound “hum”
  - Signs of hypoperfusion including pallor, diaphoresis, altered mental status
- 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 (phone number may be on device)
  - Check all the connections to system controller
  - Change VAD batteries one at a time and/or system controller if indicated

E/A/P

Treatment and Interventions:

- Routine Patient Care
- Cardiac monitoring and acquire 12-lead EKG
- For VAD-related complications or cardiovascular problems, expedite transport to the medical facility where VAD was placed if 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.
- Signs of poor perfusion, (e.g., MAP < 50 mmHg and/or $ETCO_2$ <20) follow ACLS algorithm
- CPR should only be initiated if:
  - 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
- See Cardiac Arrest Protocol 3.2

Protocol Continues

8.19 Implantable Ventricular Assist Device (VAD)

Protocol Continued

PEARLS

- The most common cause for VAD alarms are low batteries or battery failures
- You do not need to disconnect the controller or batteries in order to defibrillate or cardiovert or acquire a 12-lead EKG
- Flow through many VAD devices is not pulsatile (except older models) and patients may not have a palpable pulse or accurate pulse oximetry
- 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 must accompany him/her at all times with back-up controller and spare batteries and accessory equipment
- If feasible, bring the patient's power module, cable and display module with patient to the hospital
- 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

Scene Safety
Maintain heightened awareness: family members, caregivers or bystanders may exhibit anger or may be the perpetrator; their presence may hinder the patient's disclosure of information. If you are threatened or suspect potential violence, consider withdrawing and notifying police.

Assessment
General

- Assess patient privately in a safe place, if feasible. Abbreviated assessment may be indicated based on patient's mental state.
- Discreetly ask patient about past or present physical and emotional abuse, as a victim or witness.
- Note psychological/behavioral characteristics of abuse including: excessive crying, passivity or aggression; compliant or fearful behavior for safety of self, children, and/or pets; panic attacks, anxiety, depression, and/or suicidal ideation; substance abuse; vague or ambiguous chronic pain complaints; or age inappropriate behavior (e.g., children who act in a sexually inappropriate way).
- Assess for signs and symptoms of abuse:
  - Unexplained injuries or inconsistency with explanation: bruises; whiplash injuries; erythema due to slaps, grab-marks on arms or neck; burns, especially on genitals or buttocks, or with specific borders or shapes, (i.e., dip lines); lacerations, scars, or fractures including mandible; and multiple injuries in various stages of healing.
  - Children presenting with Brief Resolved Unexplained Event (BRUE), See BRUE Protocol 2.5
  - Strangulation /Choking, see Strangulation Policy 8.16.
  - Injury sites hidden by clothing or hair.
  - Injury during pregnancy
- Contact hospital by telephone, when feasible, to protect privacy of patient and family.

Sexual Assault

- Provide compassionate, non-judgmental support.
- Patient may prefer an EMS provider of the same gender as the patient, if available.
- Limit physical contact with patient to that which is required to perform assessment and treatment.
- Do not attempt to get a detailed description of event. Leave this to the police.
- Limit questions to: What happened? When did it occur? Did patient bathe or clean up after attack?
- Consider drug facilitated sexual abuse/assault: document torn, stained or bloody underclothing, unexplained injuries.

- Communicate with receiving hospital early so that sexual assault nurse examiner (SANE) and advocate personnel may be available upon patient arrival.

Additional Considerations: Sexual Assault

- Limit questions to the identification of injuries and pertinent medical information
- Do not inspect genitals unless uncontrolled hemorrhage, trauma or severe pain present.
- Discourage patient from eating, drinking, smoking, bathing, or urinating until after hospital evaluation. Urine may contain evidence of drug facilitated sexual assault. If patient needs to use restroom prior to transport, advise patient to not "wipe".
- Suggest transport to hospital for prophylactic treatment for sexually transmitted disease or pregnancy, drug/alcohol screening and evidence preservation.
- If adult patient refuses care or transport, document any care provided thoroughly and handle any evidence as you would if transporting. Leave patient's belongings with patient. Provide patient with contact information for sexual assault crisis line 1-800-277-5570.

Policy Continues

Policy Continued

Human Trafficking

- Human trafficking is defined as using force, fraud or coercion to control another person for the purpose of engaging in commercial sex acts or soliciting labor. Signs may include, but are not limited to: patient with branding/tattoos and environmental clues such as padlocks and/or doorknobs removed on interior doors, and intact window that are boarded up. If you suspect your patient is a victim of human trafficking, contact local law enforcements
- Signs may include:
  - Scars, mutilations, or infections due to improper medical care
  - Urinary difficulties, pelvic pain, pregnancy, or rectal trauma caused from working in the sex industry
  - Chronic back, hearing, cardiovascular, or respiratory problems as a result of forced manual labor in unsafe conditions
  - Malnourishment and/or serious dental problems
  - Disorientation, confusion, phobias, or panic attacks caused by daily mental abuse, torture, and culture shock
  - Environmental clues such as padlocks and/or doorknobs removed on interior doors, intact windows that are boarded up.
- Any minor exploited for commercial sex is a victim of human trafficking and mandates reporting to DCYF and police. Mandated reporting also applies to any incapacitated or vulnerable adult, gun shot or stabbing wound. Competent adults victims should be offered assistance of police **and/or** crisis service but may decline.

Suspected Abuse or Neglect of a Disabled Person, Elder or Child

- Assess for neglect including hazardous living conditions, inappropriate clothing for weather, inadequate hygiene, absence of caregiver(s), or physical signs of malnutrition or over/under medication
- 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 of injury such as broken glass or furniture.
- If physically uninjured, children should be sheltered from further harm on scene, (e.g., witnessing patient care or police interaction with the suspected abuser, or view of the crime scene). EMS may assist law enforcement with caring for the uninjured child until appropriate arrangements have be made by law enforcement.
- Consider non-accidental trauma in any infant presenting with any traumatic injury or BRUE, see BRUE Protocol 2.5
- If a parent/guardian refuses treatment of a minor child or incapacitated adult whom you feel needs medical attention, contact law enforcement immediately.

Policy Continues

Policy Continued

Documentation and Evidence Preservation

- Document verbatim everything the patient or caregiver says that may be relevant. Do not paraphrase. Capture inconsistencies.
- If necessary to remove patient's clothing, do not damage evidence (rips, stains) if possible. Cut along seam lines.

Preserve all evidence, see Crime Scene/Preservation of Evidence Policy 8.6

Reporting Procedures/Requirements

- Suspected abuse, neglect, or exploitation of children or adults must be reported immediately, whether or not the patient is transported. Informing hospital personnel or involving law enforcement does not fulfill legal reporting requirements.

REPORTING REQUIREMENTS: According to New Hampshire State law, most domestic violence injuries are not required to be reported to the police. If the patient is 18 years of age or older and has received a gunshot wound or other serious bodily injury, the injuries must be reported to the police. As defined in RSA 625:11 "Serious bodily injury" means any harm to the body which causes or could cause severe, permanent, or protracted loss of or impairment to the health or of the function of any part of the body.

Child Abuse

Both the Department for Children, Youth, and Families (DCYF) and local police must be notified within 24 hours:

- Call DCYF at 1-800-894-5533, available 24 hours/day; if out-of-state: 603-271-6562.
- NOTE: Regardless of other agency's involvement, EMS is mandated to notify DCYF.
- Do not send reports of suspected child abuse by email.

NOTE: If an uninjured child witnesses violence, this qualifies as child abuse and neglect and mandates a report.

Abuse of Elders and Incapacitated Adults

- Call Bureau of Elderly & Adult Services at 800-949-0470 or 603-271-7014 and leave a message. For adults residing in:
  - Independent living situation (own home/apartment, home/apartment of friends or relatives, boarding home, or no fixed address).
  - Homes or programs affiliated with Bureau of Behavioral Health or Bureau of Developmental Services.
  - Hospital or rehabilitation center.
- Call Office of Long-Term Care Ombudsman at 800–442–5640 or 603–271–4375 between 8:00 am to 4:30 pm, Monday through Friday, for adult residents of nursing or assisted living facilities.

Call local police department during non-work hours and holidays and follow up with a telephone call to Bureau of Elderly & Adult Services or Office of Long-Term Care Ombudsman during work hours.

Referral Information for Domestic Violence and Sexual Assault

The NH Coalition Against Domestic and Sexual Violence (NHCADSV) supports survivors of domestic and sexual violence and offers free, confidential services (emergency shelter and transportation, legal advocacy, hospital and court accompaniment, information about public assistance). Provide patient with referral information.
24-Hour Domestic Violence Crisis Line: 1-866-644-3574.
24-Hour Sexual Assault Crisis Line: 1-800-277-5570.

9.0 Hazardous Material Exposure

Hazardous Material: A hazardous material is any item or agent (biological, chemical, radiological, and/or physical), which has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Hazardous Material Exposure: Any patient with an illness, injury, or complaint which has been caused by or is suspected of being caused by a hazardous material.

When to use this protocol: During any response to a hazardous material exposure where the public, responders, environment, or valuable property are at risk of continued harm or exposure AND the hazard has not been previously mitigated or contained.

- SAFETY: Your safety is priority #1. DO NOT PROCEED beyond staging or cold zone unless directed by HAZMAT team and Incident Command.
- LOCAL PROTOCOL: Follow your dispatch area's HAZMAT response notification and response plan. This protocol is not a substitute for a comprehensive notification, response, decontamination, treatment and transport plan.

RESPONSE

- Activate ICS and HAZMAT response plan
- Request specific staging instructions
- Position ambulance uphill and upwind >300ft
- Be alert for patients self extricating from scene
- Declare MCI see MCI Protocol

Resources:
NH Fire Marshall: 603-223-4289
NH Bureau of Emergency Mgmt: 603-271-2231
NH National Guard 12th CST: 603-227-1555

HAZARDOUS MATERIAL IDENTIFICATION

- Name and proper spelling of material if known
- SDS sheet, bill of lading, waybill, other documentation
- Emergency Response Guide ID# (4 digits)
- DOT classification on placard
- Bystanders, technicians or employees at location
- Physical description of material (color, odor, etc.)

Resources:
North American Emergency Response Guide (NAERG)
Poison Control: 1-800-222-1222
Chemtrec: 1-800-424-9300
Military Shipments: 1-800-851-8061

Note: Many household chemicals may not require activation of a HAZMAT team. Utilize manufacturer's recommendation for decontamination and treatment, or contact Poison Control

HOSPITAL NOTIFICATION

- Estimate number of patients if possible
- Estimate triage/acuity level of patients
- Determine time frame for transportation
- Determine capacity of receiving hospitals

Resources
Triage Tags with "contaminated" identifier
See Mass Casualty and Triage Protocol

Receiving hospitals should be notified as soon as it is determined you have contaminated patient(s) to ensure the facility is capable and prepared to receive a potentially contaminated patient. Include level of hazardous materials suit, if known.

Protocol Continues

Protocol Continued

TREATMENT DURING DECONTAMINATION

- Limit medication administration route to IM/IN or nebulizer.
- Intravenous therapy and advanced airway interventions should be delayed until after gross decontamination.
- Specific individual treatment should be referenced from Poison Control or SDS sheets.
- Encourage the use of warmed water 100^{o} to prevent hypothermia.

RECORD EXPOSURE AND TREAMENT 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) should wear personal protective equipment as recommended by Incident Command.
- 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 should not be transported by helicopter.

9.1 Mass/Multiple Casualty Triage

A multiple casualty incident (MCI) is any situation where the number of sick or injured patients exceeds the available local, regional or state EMS system resources to provide adequate care in a timely manner to minimize injury and death. An MCI may be the result of a man made disaster or a natural event.

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 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 a system that meets the Model Uniform Core Criteria (MUCC) as developed by the CDC.

EMS Provider Role

- All providers must have thorough knowledge of both the Incident Command System (ICS) and the triage system.
- Within the scope of the MCI, the EMS provider may perform procedures within their scope of practice.

Triage Process

Utilize a triage system such as "SALT" (Sort, Assess, Lifesaving Interventions, Treatment/ Transport) to prioritize patients. SALT is part of the CDC - sponsored project based upon best evidence and designed to develop a national standard for mass casualty triage.

- Assess each patient as quickly 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.

SALT Triage Categories

RED	Immediate: Immediately life-threatening problems, high potential for survival
YELLOW	Delayed: Serious (not minor) injuries requiring care but management can be delayed without increasing morbidity or mortality
GREEN	Minimal: Injuries require minor care or no care
GREY	Expectant: Unlikely to survive given available resources.
BLACK	Dead: Patient is not breathing after opening airway. (In children, if after giving 2 rescue breaths, if appropriate.)

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.

Protocol Continues

Protocol Continued

Triage in Hazardous Material Incidents

Decontamination

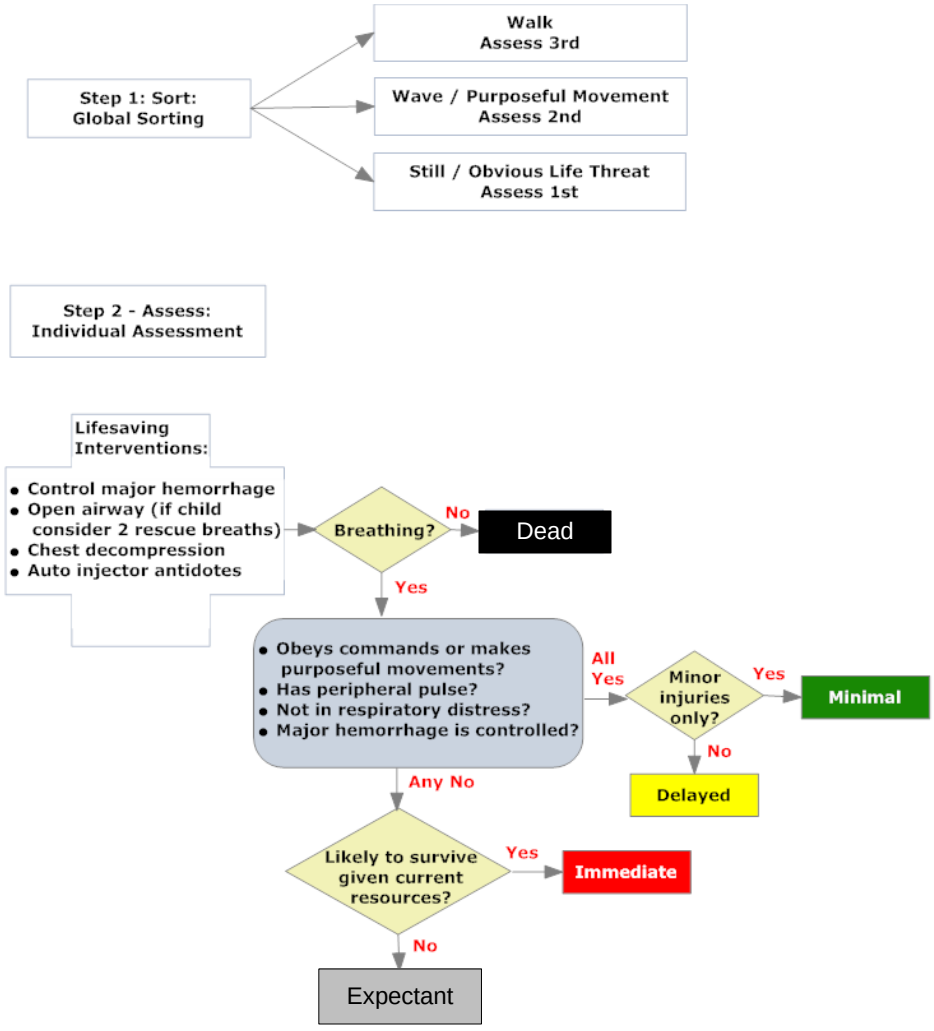
The need for decontamination is the "first triage decision." Since decontamination can be a lengthy process, the "second decision" is which patient(s) are the first to be decontaminated. The "third decision" is based on need for treatment during the decontamination process, since only simple procedures 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.

SALT Mass Casualty Triage Algorithm

(Sort, Assess, Lifesaving Interventions, Treatment/Transport)



9.2 Radiation Injuries Adult & Pediatric

Exposure to radioactive source or radioactive material/debris

EMT/ADVANCED EMT STANDING ORDERS

E

- Remove the patient from scene and decontaminate by appropriately trained personnel.
- Triage tools for mass casualty incident
  - 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 “Delayed”.
- 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.

ADVANCED EMT STANDING ORDERS

A

- Consider anti-emetic, see Nausea/Vomiting Protocol 2.13.

PARAMEDIC STANDING ORDERS

P

- Consider pain management, see Pain Management Protocol 2.18.

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.

NH Approved EMS Medication by Provider Level

Level	Generic	Trade name	Notes
EMT	Acetaminophen	Tylenol	Pedi and Adult
EMT	Activated Charcoal		Pedi and Adult
EMT	Albuterol	Proventil	Pedi and Adult
EMT	Aspirin		Adult
EMT	Atropine (autoinjector)	AtroPen, AtroPen Jr.	Pedi and Adult
EMT	Atropine & Pralidoxime (autoinjector)	DuoDote or Nerve Agent Antidote Kit	Pedi and Adult
EMT	Diazepam - rectal gel & nerve agent autoinjectors	Diastat	Pedi and Adult - patient assist only
EMT	Diphenhydramine	Benedryl	Pedi and Adult - PO Extended Care only
EMT	Epinephrine (1 mg/mL)	Autoinjector or IM	Pedi and Adult
EMT	Dextrose	Oral Glucose	Pedi and Adult
EMT	Glucagon	Intranasal/auto inject	Assist Only
EMT	Glucose (Oral)		Pedi and Adult
EMT	Ibuprofen	Motrin or Advil	Pedi and Adult
EMT	Ipratropium Bromide (mixed with Albuterol)	Atrovent (mixed with Albuterol) OR DuoNeb	Pedi and Adult
EMT	Isopropyl Alcohol	Alcohol prep	Pedi and Adult
EMT	Midazolam	Nayzilam	Pedi and Adult - patient assist only
EMT	Naloxone	Narcan	Pedi and Adult
EMT	Nitroglycerin	Tridil, Nitrobid, Nitrostat	Adult - patient assist only
EMT	Oxygen		Pedi and Adult
EMT	Pralidoxime (autoinjector)	2-Pam, Protopam	Pedi and Adult
AEMT	Ceftriaxone		Adult - Extended Care only
AEMT	Dextrose	D10	Pedi and Adult
AEMT	Epinephrine (0.1 mg/mL)		Adult Cardiac Arrest
AEMT	Epinephrine (1 mg/mL)		Pedi Nebulized
AEMT	Epinephrine-reacemic (2.25%)		Pedi Nebulized
AEMT	Glucagon		Adult & Pedi
AEMT	Hydrocortisone	SoluCortef	Pedi and Adult - patient assist only
AEMT	Hydroxocobalamin	Cyanokit®	Pedi and Adult
AEMT	Lidocaine		Adult - IO anesthetic only
AEMT	Naloxone	Narcan	Pedi and Adult
AEMT	Nitroglycerin	Tridil, Nitrobid, Nitrostat	Adult
AEMT	Nitrous Oxide premixed with oxygen	Nitronox®	Pedi and Adult
AEMT	Ondansetron	Zofran	Adult
AEMT	Oxytocin	Pitocin	Adult

NH Approved EMS Medication by Provider Level

Level	Generic	Trade name	Notes
Paramedic	Adenosine	Adenocard	Pedi and Adult
Paramedic	Amiodarone	Cordarone	Pedi and Adult
Paramedic	Antiobiotics (Advanced Sepsis only)		Adult Prerequisite
Paramedic	Atropine		Pedi and Adult
Paramedic	Calcium Chloride		Pedi and Adult
Paramedic	Calcium Gluconate		Pedi and Adult
Paramedic	Ceftriaxone		Pedi and Adult
Paramedic	Dexamethasone	Decadron	Pediatric
Paramedic	Diazepam	Valium	Pedi and Adult
Paramedic	Diltiazem	Cardizem, Dilacor, Tiazac	Adult
Paramedic	Diphenhydramine	Benadryl	Pedi and Adult
Paramedic	Droperidol	Inapsine	Adult
Paramedic	Epinephrine (0.01 mg/mL)		Adult Push Dose
Paramedic	Etomidate (RSI only)	Amidate	Adult
Paramedic	Famotidine	Pepcid	Adult
Paramedic	Fentanyl	Sublimaze	Pedi and Adult
Paramedic	Haloperidol	Haldol	Adult
Paramedic	Heparin		Adult
Paramedic	Hydrocortisone	SoluCortef	Pedi and Adult
Paramedic	Hydromorphone	Dilaudid	Adult
Paramedic	Ketamine		Pedi & Adult
Paramedic	Ketorolac	Toradol	Adult
Paramedic	Labetalol		Adult
Paramedic	Lidocaine		Pedi and Adult
Paramedic	Lorazepam	Ativan	Pedi and Adult
Paramedic	Magnesium Sulfate		Pedi and Adult
Paramedic	Methylprednisolone	Solumedrol	Adult & Pedi
Paramedic	Metoclopramide	Reglan	Adult
Paramedic	Metoprolol	Lopressor	Adult
Paramedic	Midazolam	Versed	Pedi and Adult
Paramedic	Morphine		Pedi and Adult
Paramedic	Nicardipine		Interfacility Transfers
Paramedic	Nifedipine		Adult
Paramedic	Norepinephrine	Levophed	Pedi and Adult
Paramedic	Ondansetron	Zofran	Pedi and Adult
Paramedic	Pralidoxime	2-Pam, Protopam Chloride	Pedi and Adult
Paramedic	Prednisone		Adult
Paramedic	Prochlorperazine	Compazine	Adult
Paramedic	Proparacaine	Alcaine	Pedi and Adult
Paramedic	Rocuronium (RSI only)	Zemuron	Adult
Paramedic	Sodium Bicarbonate		Pedi and Adult
Paramedic	Succinylcholine (RSI Only)	Anectine	Adult
Paramedic	Tetracaine		Pedi and Adult
Paramedic	Tranexamic Acid (TXA)		Adult

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing

Acetaminophen (Tylenol)
Indications:
• Fever.
• Pain.
	Fever
	• If no acetaminophen was taken in last 4 hours:
	  ○ Consider administering acetaminophen 500 – 1,000 mg oral or rectal. (Rectal adminstration Paramedic only)
	• If Ibuprofen was taken within the last 6 hours:
	  ○ Consdier acetaminophen 500 – 1,000 mg oral or rectal. (Rectal administration Paramedic only)
	Fever - Extended Care
	• May repeat acetaminophen dose 650 mg oral or rectal every 4 hours or 1,000 mg every 6 hr. Maximum of 3,000 mg in 24 hours.
	Pain
	• 325 – 1000 mg PO, no repeat
	• 1000 mg IV, over 10 minutes
	Musculoskeletal Injuries – Extended Care
	• 325-650 mg by mouth every 6 hours as needed, not to exceed 3000 mg/24 hours.
	
	Suggested Formulations:
	• Oral 325 mg tablets, 500 mg tablets, 160 mg/5 mL
	• Rectal 325 mg supp, 650 mg supp, 80 mg supp
	• Intervenous 100 mL (10 mg/mL)

Activated Charcoal **Indications:** • Poisoning/Overdose.	**Poisoning/Overdose** • 25 – 50 grams PO if advised by Poison Control or Medical Control. Suggested Formulations: • Ez-Char 25 g (requires reconstitution) • Kerr-Insta Char 25 g/120 mL • Actidose 25 g/120 mL
Adenosine (Adenocard) **Indications:** • Specifically for treatment or diagnosis of Supraventricular Tachycardia. • Consider for regular or wide complex tachycardia **Contraindications:** • Atril fibrillation and Wolff-Parkinson-White Syndrome • 2nd or 3rd degree AV block	**Tachycardia** • 6 mg rapid IV push. ▪ May repeat a dose of 12 mg in 1 – 2 minutes if no conversion. Suggested Formulations: Intravenous • Adenosine pre-filled syringe 12 mg/4 mL • Adenosine pre-filled syringe 6 mg/2 mL • Adenocard 12 mg/4 mL • Adenocard 6 mg/2 mL

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Medication	Adult Protocol/Dosing
Albuterol Beta-Agonist **Indications:** • Nebulized treatment for use in respiratory distress with bronchospasm.	**Anaphylaxis/Allergic Reaction** • 2.5 mg via nebulizer. • May repeat 2.5 mg via nebulizer, repeat every 5 minutes (4 doses total). **Asthma/COPD/RAD** • Metered-dose inhaler (MDI) 4 – 6 puffs (with spacer, if available). May repeat every 5 minutes for contined symptoms. • Ipratropium bromide 0.5 mg and albuterol 2.5 mg (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. **Hyperkalemia** • Continuous 10 – 20 mg nebulized Suggested Formulations: Albuterol • Albuterol 0.083% [2.5 mg/3 mL] nebule Albuterol/Ipratropium (Duoneb) • Ipratropium bromide 0.5 mg and albuterol (base) 2.5 mg per 3 mL nebule
Amiodarone (Cordarone) **Indications:** • Antiarrhythmic used mainly in wide complex tachycardia and ventricular fibrillation. **Contraindications:** • Heart block or profound bradycardia. • Iodine hypersensitivity.	**Tachycardia - Wide complex tachycardia** • 150 mg in 50 – 100 mL normal saline or D5W over 10 min. • May repeat once in 10 minutes. • If successful, consider maintenance infusion of 1 mg/minute. **Operational K9 Cardiac Arrest** **Ventricular Tachycardia/Ventricular Fibrillation** • 5 mg/kg IV Suggested Formulations: Amiodarone HCL • 150 mg/3 mL (3 mL); • 450 mg/9 mL (9 mL)
Antibiotics	**Severe Sepsis Prerequisite Protocol** • Per Medical Resource Hospital Agreement
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 by mouth (chewable). Suggested Formulations: Oral • 81 mg chewable tablets

NH Adult Medication Reference

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Medication	Adult Protocol/Dosing
Atropine **Indications:** • Bradycardia • Organophosphate poisonings.	**Bradycardia** • 1 mg IV every 3 – 5 minutes up to maximum of 3 mg. **Nerve Agent and Organophosphate Poisoning** • 2 mg IV/IM; repeat every 5 minutes until secretions clear. **Operational K9 Cardiac Arrest** **Asystole** • 0.4 mg/kg IV push at the initiation of CPR, re-dose every other 2 – minute cycle of compressions. Suggested Formulations: Solution, Injection, as sulfate [preservative free]: • 0.4 mg/mL (1 mL) • 0.8 mg/mL (0.5 mL) • 1 mg/mL (1 mL) Device, Intramuscular, as sulfate: • AtroPen: 0.25 mg/0.3 mL (0.3 mL) [pyrogen free] AtroPen: 0.5 mg/0.7 mL (0.7 mL); 1 mg/0.7 mL (0.7 mL); 2 mg/0.7 mL (0.7 mL) [pyrogen free; contains phenol]
Atropine and Pralidoxime Auto-Injector **Nerve Agent Kit** **Indications:** • Nerve Agent or Organophosphate Overdose.	**Nerve Agents** • Patients experiencing: apnea, convulsions, unconsciousness, flaccid paralysis administer 3 atropine/pralidoxime auto-injectors and 1 diazepam (10 mg) auto-injectors. • Patients experiencing: dyspnea, twitching, nausea, vomiting, sweating, anxiety, confusion, constricted pupils, restlessness, weakness administer 1 atropine/pralidoxime auto-injectors. • Maintenance Dose: 1 atropine/pralidoxime auto-injectors every 3 hours. **Operational K9 Nerve Agents** Administer atropine/pralidoxime auto-injectors: • 18 –27 kg (40 –60 pounds): 2 atropine/pralidoxime auto-injectors. • 32 –36 kg (70 –80 pounds): 3 atropine/pralidoxime auto-injectors. • ≥ 41 kg (90 pounds): 4 atropine/pralidoxime auto-injectors.
Calcium Chloride 10% solution **Indications:** • Hyperkalemia • Calcium channel blocker overdose. **Warnings:** • Caution in patients using digoxin.	**Cardiac Arrest - Wide Complex PEA** • 1 gram IV **Hyperkalemia** • Calcium chloride 1 gram IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 – 10 minutes; if ECG changes persist may repeat dose in 5 -10 minutes. Suggested Formulations: Solution, Intravenous: Generic: 10% (10 mL)

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Calcium Gluconate **Indications:** • Hyperkalemia • Calcium channel blocker overdose. **Warnings:** • Caution in patients using digoxin..	**Cardiac Arrest - Wide Complex PEA** • 3 grams IV **Hyperkalemia** • Calcium gluconate 3 grams IV/IO mixed in 50 -100 mL of 0.9% NaCl over 5 –10 minutes (preferred for patients with a pulse); if ECG changes persist may repeat in 5 –10 minutes
Ceftriaxone **Indications:** • Open/compund fractures	**Musculoskeletal Injuries – Extended Care** For open/compound fractures consider: • Adult: Ceftriaxone 1 gram IV/IM, if available. (Advanced EMT/Paramedic only) **Reconstitution instructions specific to 1 gram vials:** • IM administration: reconstitute with 2.1 mL normal saline for a final volume of 350 mg/mL • IV administration: reconstitute with 9.6 mL normal saline for a final volume of 100 mg/mL. Administer IV push over 3 – 5 minutes
Dexamethasone **Indications:** • Anaphylaxis • Asthma, COPD, RAD	**Anaphylaxis/Allergic Reaction – Extended Care** • 10 mg IV/IM/PO **Asthma, COPD, RAD** • 10 mg PO/IM/IV
Dextrose **Indications:** • Symptomatic hypoglycemia. • Use in medication infusion medium.	**Hypoglycemia** • Administer dextrose 10% IV via premixed infusion bag (preferred) or prefilled syringe until mental status returns to baseline and glucose level is greater than 60 mg/dL. IV pump not required. Suggested Formulations: Solution, Intravenous: • 10% (250 mL, 500 mL, 1000 mL);

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Medication	Adult Protocol/Dosing
Diazepam (Valium) Benzodiazepine **Indications:** • Seizure control. • Sedation. • Anxiolytic.	**Behavioral Emergencies** • 5 mg IV, may repeat once in 5 minutes **Bradycardia** • 5 mg IV, may repeat once in 5 minutes. **BiPAP** Consider administering anxiolytic: • 5 mg IV, may repeat once in 5 minutes **CPAP** Consider administering anxiolytic: • 5 mg IV, may repeat once in 5 minutes **Hyperthermia** • 5 mg IV, may repeat once in 5 minutes. **Nerve Agent** • 5 mg IV, every 5 minutes OR • 10 mg IM every 10 minutes OR • diazepam auto-injector (10 mg) every 10minutes as needed. **Poisoning/Substance Abuse/OD** • 5 mg IV, may repeat once in 5 minutes. **Seizure** • Diazepam rectal gel (Diastate) in accordance with the physician's instructions. • 10 mg IV, may repeat every 5 minutes as needed. **Restraints – Resistant or Aggressive Management (goal alert and calm)** • 5 mg IV may repeat once in 5 minutes **Restraints – Immediate Danger to Self or Others** • 10 mg IV, may repeat 5 minutes as needed. **Tachycardia** • 5 mg IV, may repeat once in 5 minutes. Suggested Formulations: Solution, Injection: • Generic: 5 mg/mL (2 mL, 10 mL)
Diltiazem (Cardizem) **Indications:** • Calcium channel blocker used to treat narrow complex SVT. **Contraindications** • Heart block • Ventricular tachycardia • Wolff-Parkinson-White • Acute MI.	**Tachycardia - Narrow Complex Tachycardia** • 0.25 mg/kg IV (maximum dose 20 mg) over 2 minutes. ▪ May repeat dose in 15 minutes at 0.35 mg/kg (maximum dose 20 mg) if necessary. ▪ Consider maintenance infusion 5 – 15 mg/hour. Suggested Formulations: • Solution, Intravenous, as hydrochloride: 25 mg/5 mL (5 mL, 25 mL); 50 mg/10 mL (10 mL); 125 mg/25 mL (25 mL)

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Medication	Adult Protocol/Dosing
Diphenhydramine (Benadryl) **Indications:** • Antihistamine used as an adjunctive treatment in allergic reactions. • Antidote for dystonic reaction.	**Allergic Reaction/Anaphylaxis** • 25 - 50 mg IM/IV/PO Extended Care: • 25 - 50 mg PO. May repeat every 4 - 6 hours as needed; maximum dose of 300mg in 24 hours. **Nausea/Vomiting** • 25 – 50 mg IV/IM. Extended Care: • For motion sickness: administer diphenhydramine: ○ Adult: 25 mg by mouth **Poisoning/Substance Abuse/OD** • 25 – 50 mg IV/IM. **Restraints** • 25 – 50 mg IV/IM. Suggested Formulations: Oral • 25 mg Capsule Solution, Injection, as hydrochloride [preservative free]: 50 mg/mL (1 mL)
Droperidol **Indications:** Nausea/vomiting	**Nausea/Vomiting** • 1.25 mg IV/IM ○ Consider ECG when used with other QT prolonging agents **Restraints** • 5 – 10 mg IM/IV, repeat in 5 – 10 minutes

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Medication	Adult Protocol/Dosing
Epinephrine 1 mg/mL **Indications:** • Anaphylaxis • Asthma and COPD exacerbation. • Hemodynamic instability	**Allergic Reaction/Anaphylaxis** • Adult epinephrine autoinjector 0.3 mg IM (0.3 mL) IM OR • Epinephrine 1 mg/1 mL: Administer 0.3 mg (0.3 mL) IM • Repeat epinephrine every 5 minutes until signs and symptoms resolve. **Asthma/COPD/RAD** • 0.3 mg auto-injector OR • 0.3 mg IM, lateral thigh preferred **Operational K9 - Anaphylaxis** Administer epinephrine via auto-injector: • Pediatric epinephrine autoinjector (EpiPen Jr) 0.15 mg IM for OpK9 < 25 kg, • Adult epinephrine autoinjector (EpiPen) 0.3 mg IM if OpK9 > 25 kg **OR** Administer epinephrine IM using Ready, Check and Inject: • If OpK9 < 25 kg, epinephrine (1 mg/mL) 0.15 mg (0.15 mL) IM*, • If OpK9 > 25 kg, epinephrine (1 mg/mL) 0.3 mg (0.3 mL)IM* ○ If signs and symptoms do not resolve may repeat in 5 minutes. Suggested Formulations: Device, Injection: • EpiPen 2-Pak: 0.3 mg/0.3 mL (2 ea) [latex free; contains sodium metabisulfite] • EpiPen Jr 2-Pak: 0.15 mg/0.3 mL (2 ea) [contains sodium metabisulfite] • Auvi-Q: 0.15 mg/0.15 mL (2 ea); 0.3 mg/0.3 mL (2 ea) [contains sodium bisulfite] Nebulization Solution, Inhalation [preservative free]: • S2: 2.25% (1 ea) [sulfite free; contains edetate disodium] Solution, Intravenous [preservative free]: • Generic: 1 mg/mL (1 mL)
Epinephrine 0.1 mg/mL **Indications:** • Cardiac arrest • Shock.	**Cardiac Arrest** • 1 mg IV. ▪ Repeat every 3 – 5 minutes. **Operational K9 - Cardiac Arrest** • 0.01 mg/kg of 1 mg/mL IV every 3 – 5 minutes. Suggested Formulations: Solution, Injection: • Generic: 0.1 mg/mL (10 mL); 1 mg/mL (1 mL)
Epinephrine 0.01 mg/mL Push Dose Epinephrine Indications: • Shock	**Anaphylaxis/Allergice Reaction, Bradycardia, Non – Traumatic Shock, Post Resuscitative Care, Rapid Sequence Intubation & Sepsis:** For Example: • Epinephrine by push dose (dilute boluses) 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) Infusion 2 -10 micrograms/minute via pump

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Medication	Adult Protocol/Dosing

Etomidate (Amidate)
Indications:
• Sedative used in Rapid Sequence Intubation.
	Rapid Sequence Intubation
	• 0.3 mg/kg IV, maximum single dose 30 mg
	  • For elderly, shock, or risk of hypotension: 0.15 mg/kg IV
	Suggested Formulations:
	Solution, Intravenous:
	  • Amidate: 2 mg/mL (10 mL, 20 mL) [contains propylene glycol]
	  • Generic: 2 mg/mL (10 mL, 20 mL)

Famotidine **Indications:** • Allergic Reaction	**Anaphylaxis/Allergic Reaction - Extended Care** • 20 mg IV/IM/PO
Fentanyl (Sublimaze) **Indications:** • Narcotic analgesic **Contraindications:** • Systolic Blood Pressure < 100 mmHg.	**Acute Coronary Syndrome** • 25 – 100 micrograms slow IV push or IM, every 5 minutes to a total of 300 micrograms and systolic BP remains > 100 mmHg **Pain** • 25 – 100 micrograms slow IV push, every 2 – 5 minutes to a total of 300 micrograms titrated to pain relief. • 50 – 100 micrograms IM/IN, every 5 minutes to a total of 300 micrograms titrated to pain relief **Analgesia and Sedation for Invasive Airway Device** • 0.5 - 1 mcg/kg IV push every 5 – 10 minutes as needed **RSI** Post-Intubation Analgesia and Sedation • 0.5 - 1 mcg/kg IV push every 5 – 10 minutes as needed Suggested Formulations: • Injection, solution, as citrate [strength expressed as base, preservative free]: 0.05 mg/mL (2 ml)

Glucagon
Indications/Contraindications:
• Converts glycogen to glucose in the liver to increase blood glucose
• Use in patients with no IV access
• Indicated for beta blocker or calcium channel blocker overdose
	Hypoglycemia
	• Commercially prepared intranasal glucagon.
	• Glugacon auto-injector.
	• 1 mg IM.
	  ▪ Recheck glucose 15 minutes after administration of glucagon.
	  ▪ May repeat glucagon 1mg IM if glucose level is < 60 mg/dL with continued altered mental status.
	
	Bradycardia
	• As much as available, up to 5 mg IV over 3 – 5 minutes.
	
	Suggested Formulations:
	Kit, Injection:
	• Glucagon Emergency: 1 mg
	Solution Reconstituted, Injection, as hydrochloride:
	• GlucaGen: 1 mg (1 ea)
	GlucaGen HypoKit: 1 mg (1 ea)

NH Adult Medication Reference

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Medication	Adult Protocol/Dosing
Glucose Oral Glucose Solutions **Indications:** • Use in conscious hypoglycemic states.	**Hypoglycemia** • Administer 15 – 30 mg commercially prepared glucose gel or equivalent. Suggested Formulations: Gel, Oral: • Glutose 15: 40% (37.5 g) • Glutose 15: 40% (37.5 g) [lemon flavor] • Glutose 45: 40% (112.5 g) [lemon flavor] • Insta-Glucose: 77.4% (31 g) Liquid, Oral: Glutol: 55 % (180 mL) [lemon flavor]
Haloperidol (Haldol) Phenothiazine Preparation **Indications:** • Medication to assist with sedation of agitated patients. • Chemical restraint.	**Restraints - Immediate Danger to Self or Others** • Haloperidol 10 mg IM, may repeat once in 10 minutes. Suggested Formulations: Solution, Injection, as lactate [strength expressed as base]: • Haldol: 5 mg/mL (1 mL) Generic: 5 mg/mL (1 mL, 10 mL)
Heparin **Indications:** • STEMI and no affirmative finding from fibrinolytic questionnaire. **Contraindications:** • History of Heparin Induced Thrombocytopenia	**Acute Coronary Syndrome** • 60 unit/kg to a maximum of 4000 units IV bolus. Suggested Formulations: Solution, Injection, as sodium: • Generic: 1000 units (500 mL); 2000 units (1000 mL); 12,500 units (250 mL); 25,000 units (250 mL, 500 mL); 1000 units/mL (1 mL, 10 mL, 30 mL); 2500 units/mL (10 mL); 5000 units/mL (1 mL, 10 mL); 10,000 units/mL (1 mL, 4 mL, 5 mL); 20,000 units/mL (1 mL) Solution, Intravenous, as sodium: Hep Flush-10: 10 units/mL (10 mL)
Hydrocortisone (Solu-Cortef) **Indications:** • Adrenal Insufficiency	**Adrenal Insufficiency** • 100 mg IV/IM. **Adrenal Insufficiency - Extended Care** • After the initial hydrocortisone (100 mg IV/IM), give hydrocortisone 50 mg IV bolus administered every 6 hours until stabilization of vital signs and capacity to eat and take medication orally. Suggested Formulations: Solution Reconstituted, Injection, as sodium succinate [strength expressed as base]: • A-Hydrocort: 100 mg (1 ea) • Solu-CORTEF: 100 mg (1 ea)

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Medication	Adult Protocol/Dosing
Hydromorphone **Indications:** • Pain control **Contraindications:** • Systolic Blood Pressure < 100 mmHg.	**Pain – Adult** • 0.5 – 1 mg IV, every 10 minutes to a total 4 mg titrated to pain relief and if systolic BP is > 100 mmHg.
Hydroxocobalamin (Cyanokit) **Indications:** Smoke Inhalation	**Smoke Inhalation** • Via use of Cyanokit. • Depending on clinical response, a second dose may be required
Ibuprofen (Motrin) **Indications:** • Fever. **Contraindications:** • Avoid in women who are pregnant or could be pregnant. • Use with caution in patients with dehydration, cardiovascular disease, or preexisting renal disease.	**Fever** • If acetaminophen was taken within last 4 hours and temperature is still >101°F (38.5°C): ○ Consider administering ibuprofen 600 mg oral. **Fever & Musculoskeletal – Extended Care** • 400 – 600 mg by mouth repeat every 6 hours as needed . **Pain** • 600 mg PO, no repeat Suggested Formulations: Capsule, Oral: • Generic: 200 mg • Advil: 200 mg
Ipratropium Bromide (Atrovent) Indications: • Anticholinergic bronchodilator. Blocks the muscarinic receptors of acetylcholine. • Relief of bronchospasm in patients with reversible obstructive airway disease and bronchospasm.	**Asthma/COPD/RAD** • 0.5 mg ipratropium and 2.5 mg albuterol (DouNeb). ○ May repeat every 5 minutes for continued symptoms (maximum 3 doses). Suggested Formulations: Solution, Inhalation, as bromide: • Generic: 0.02% (2.5 mL) Aerosol Solution, Inhalation, as bromide: • Atrovent HFA: 17 mcg/actuation (12.9 g) [contains alcohol, usp]
Isopropyl Alcohol Indications: • Nausea	**Nausea/Vomiting** • For nausea allow patient to inhale vapor from isopropyl alcohol wipe 3 times every 15 minutes as tolerated.

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Medication	Adult Protocol/Dosing

Ketamine
Indications/Contraindications:
• Short acting dissociative anesthetic
Contraindications:
• Inability to tolerate hyperdynamic states
• Known or suspected MI, aortic aneurysm
	Analgesia and Sedation for Invasive Airway Device
	• 1 mg/kg IV bolus (max 100 mg) follwed by infusion via pump 2 – 5 mg/kg/hr. Initial bolus after intubation not needed if ketamine was used for induction.
	  ○ If infusion not used: 1 mg/kg IV (max 100 mg) every 5 – 15 minutes as needed.
	BiPAP
	• 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, OR
	• 25 – 50 mg IM may repeat every 30 minutes, as tolerated
	Bradycardia
	• 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, OR
	• 25 – 50 mg IM may repeat every 30 minutes, as tolerated
	CPAP
	• 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, OR
	• 25 – 50 mg IM may repeat every 30 minutes, as tolerated
	Intubation – Delayed Sequence
	• 2 mg/kg IV or 4 mg/kg IM (max 500 mg)
	  ○ For elderly, shock or risk of hypotension: 1 mg/kg IV or 2 mg/kg IM
	Intubation – Rapid Sequence
	• 2 mg/kg IV
	  ○ For elderly, shock or risk of hypotension: 1 mg/kg IV
	Pain
	• 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, OR
	• 25 – 50 mg IM may repeat every 30 minutes, as tolerated
	Rapid Sequence Intubation
	• 2 mg/kg IV or 4 mg/kg IM (max 500 mg) (only if performing Delayed Sequence Intubation)
	For elderly, shock or risk of hypotension: 1 mg/kg IV or 2 mg/kg IM
	Rapid Sequence Inbuation – Post Intubation Analgesia and Sedation
	  • Ketamine 1 mg/kg IV bolus (max 100 mg) followed by infusion via pump 2 –5 mg/kg/hr. Initial bolus after intubation not needed if ketamine was used for induction.
	  ○ If infusion not used: 1 mg/kg IV (max 100 mg) every 5 -15 minutes as needed.
	Restraints – Immediate Danger to Self or Others::
	• 4 mg/kg IM rounded to nearest 50 mg, maximum dose 500 mg, repeat up to 2 mg/kg IM in 5 – 10 minutes as needed OR
	• 1 mg/kg IV rounded to nearest 25 mg, maximum dose 250 mg, repeat 0.5 mg/kg IV in 5 – 10 minutes as needed.
	Tachycardia
	• 10 – 20 mg IV diluted in 50 – 100 mL 0.9% NaCl or D5W over 10 minutes (no IV pump needed), may repeat every 5 minutes to a total of 40 mg, as tolerated, OR
	• 25 – 50 mg IM may repeat every 30 minutes, as tolerated
	
	Suggested Formulations:
	Solution, Injection:
	• Ketalar: 10 mg/mL (20 mL); 50 mg/mL (10 mL); 100 mg/mL (5 mL)
	• Generic: 10 mg/mL (20 mL); 50 mg/mL (10 mL); 100 mg/mL (5 mL, 10 mL)

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Medication	Adult Protocol/Dosing
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** • 15 mg IV/IM (no repeat) Suggested Formulations: Solution, Injection, • Generic: 15 mg/mL (1 mL); 30 mg/mL (1 mL); 60 mg/2 mL (2 mL)
Labetalol Indications: • Obstetric patient with SBP > 160 or DBP > 110	**Obstetric Emergencie** • 20 mg IV, may repeat in 10 to 30 minutes increasing in increments of 20 mg to a maximum of 80 mg.
Lidocaine **Indications:** • Antiarrhythmic used for control of ventricular dysrhythmias. • Anesthetic for nasotracheal intubation and intraosseous infusion.	**Tachycardia** • 1 – 1.5 mg/kg IV. (considered second-line therapy). ○ May repeat once in 5 minutes to maximum of 3mg/kg. ○ If successful, consider a maintenance infusion of 1 – 4 mg/minute. **Nasotracheal Intubation** • 2% lidocaine jelly. **Intraosseous** • 1 – 2.5 mL (20 – 50 mg) 2% lidocaine. **Operational K9 Cardiac Arrest** **Ventricular Tachycardia/Ventricular Fibrillation** • 2 mg/kg IV

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Medication	Adult Protocol/Dosing
Lorazepam (Ativan) Benzodiazepine **Indications:** • Seizure control. • Sedation. • Anxiolytic.	**Analgesia and Sedation for Invasive Airway Device, Rapid Sequence Intubation** • 1 – 2 mg IV every 15 minutes as needed (maximum 10 mg) (in conjunction with fentanyl) **Behavioral Emergencies** • 1 mg IV, may repeat once in 5 minutes **Bradycardia** • 1 mg IV, may repeat once in 5 minutes **BiPAP** • 1 mg IV, may repeat once in 5 minutes **CPAP** • 1 mg IV, may repeat once in 5 minutes **Hospice** • 0.25 - 2 mg PO or SL **Hyperthermia** • 1 mg IV, may repeat once in 5 minutes **Poisoning/Overdose** • 1 mg IV, may repeat once in 5 minutes **Nerve Agent** • 2 – 4 mg IV every 5 minutes as needed **Restraints – Resistant or Aggressive Management** • 1 mg IV, may repeat one in 5 minutes **Restraints – Immediate Danger to Self or Others** • 2 – 4 mg IV every 5 minutes as needed **Seizure** • 2 – 4 mg IV, every 5 minutes as needed. **Tachycardia** • 1 mg IV, may repeat once in 5 minutes Suggested Formulations: Solution, Injection: • Generic: 2 mg/mL (1 mL, 10 mL); 4 mg/mL (1 mL, 10 mL) **Special Note Product should be refrigerated unless specified otherwise**

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Magnesium Sulfate **Indications:** • Eclampsia during the third trimester of pregnancy or post partum. • Refractory respiratory distress resistant to beta-agonists. • Torsades de Pointes.	**Asthma/COPD/RAD** • 2 grams in 100 ml NS given IV over 10 minutes. **Obstetrical Emergencies** • 4 grams IV (mix in 100 mL 0.9% NaCl) bolus over 10 minutes, then consider 1 gram/hr continuous infusion **Seizure** • 4 grams IV (mix in 100 mL 0.9% NaCl) bolus over 10 minutes, then consider 1 gram/hr continuous infusion **Tachycardia - Polymorphic Ventricular Tachycardia / Torsades de Pointes.** • 1 – 2 grams IV over 5 minutes. Suggested Formulations: Solution, Injection: • Generic: 40 mg/mL (50 mL, 100 mL, 500 mL, 1000 mL); 80 mg/mL (50 mL); 50% (2 mL, 10 mL, 20 mL, 50 mL) Solution, Intravenous: • Generic: 10 mg/mL (100 mL); 20 mg/mL (500 mL **Special Note 1 g of magnesium sulfate = elemental magnesium 98.6 mg = magnesium 8.12 mEq = magnesium 4.06 mmol**
Methylprednisolone (Solu-medrol) **Indications:** • Rrespiratory distress to reverse inflammatory and allergic reactions.	**Anaphylaxis/Allergic Reaction** Extended Care • 125 mg IV/IM. **Asthma/COPD/RAD** • 125 mg IV/IM. Suggested Formulations: Solution Reconstituted, Injection, as sodium succinate: • Solu-MEDROL: 40 mg (1 ea); 125 mg (1 ea); 500 mg (1 ea); 1000 mg (1 ea)
Metoclopramide (Reglan) **Indications:** • Anti-Emetic used to control Nausea and/or Vomiting.	**Nausea/Vomiting** • 5mg IV. • May repeat once after 10 minutes if nausea/vomiting persists Extended care • May repeat every 4 – 6 hours as needed. Suggested Formulations: Solution, Injection: Generic: 5 mg/mL (2 mL)

NH Adult Medication Reference

This document is to serve as a reference for the NH Patient Care Protocols, Version 9.0.

See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Metoprolol (Lopressor) **Indications:** • Termination of arrhythmia **Contraindications:** • Atrial fibrillation and Wolff-Parkinson-White Syndrome	**Tachycardia** • 5mg 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. Suggested Formulations: Solution, Intravenous, as tartrate: • Generic: 1 mg/mL (5 mL); 5 mg/5 mL (5 mL) Lopressor: 1 mg/mL (5 mL)

NH Adult Medication Reference

This document is to serve as a reference for the NH Patient Care Protocols, Version 9.0.

See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing

Midazolam (Versed)
Benzodiazepine
Indications:
• Seizure control
• Sedation
• Anxiolytic
• Antidote for ketamine
	Analgesia and Sedation for Invasive Airway Device
	• 2 - 5 mg IV bolus (in conjunction with fentanyl) followed by infusion via pump 1 – 10 mg/hour.
	  ○ If infusion not used or if additional sedation is required: 2 – 5 mg IV every 5 – 10 minutes as needed.
	Behavioral Emergencies
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• *5 mg IN/IM may repeat once in 5 minutes.
	Bradycardia
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	BiPAP
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	CPAP
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	Hyperthermia
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	Hospice – Anxiety
	• 2.5 mg IN, repeat every 10 – 15 minutes as needed to a maximum of 6 mg
	Nerve Agent
	• 5 mg IV may repeat every 5 minutes as needed **OR**
	• 10 mg IN/IM may repeat every 5 minutes as needed
	Poisoning/Overdose
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	Rapid Sequence Intubation
	• 2 - 5 mg IV bolus (in conjunction with fentanyl) followed by infusion via pump 1 – 10 mg/hour.
	  ○ If infusion not used or if additional sedation is required: 2 – 5 mg IV every 5 – 10 minutes as needed.
	Restraints – Resistant or Aggressive Management
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IM/IN may repeat once in 5 minutes.
	Restraints – Immediate Danger to Self or Others
	• 5 mg IV/IN may repeat every 5 minutes as needed **OR**
	• 10 mg IN/IM may repeat every 5 minutes as needed
	Seizure
	• Midazolam IN (Nayzilam) in accordance with the physician's instructions.
	• 5 mg IV may repeat every 5 minutes as needed **OR**
	• 10 mg IN/IM may repeat every 5 minutes as needed
	Tachycardia
	• 2.5 mg IV, may repeat once in 5 minutes **OR**
	• 5 mg IN/IM may repeat once in 5 minutes.
	
	• *For IN administration of midazolam use a 5 mg/mL concentration
	
	Suggested Formulations:
	Solution, Injection
	  • Generic: 2 mg/2 mL (2 mL); 5 mg/5 mL (5 mL); 5 mg/mL (1 mL); 10 mg/2 mL (2 mL)

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Morphine Sulfate **Indications:** • Pain Management **Contraindications:** • Avoid use if Systolic Blood Pressure < 100 mmHg.	**Acute Coronary Syndrome** • 2 – 5 mg IV/IM every 5 minutes to a maximum of 15 mg titrated to pain and if systolic BP remains > 100 mmHg. **Hospice** • Dosing per Pain Protocol. **Pain** • 2 – 10mg IV/IM every 10 minutes to a total of 20 mg titrated to pain relief and if systolic BP is >100 mmHg. Suggested Formulations: Solution, Injection, as sulfate: • Generic: 2 mg/mL (1 mL); 10 mg/mL (1 mL)
Naloxone (Narcan) **Narcotic Antagonist** **Indications/Contraindications:** • Opioid overdose.	**Pain** **Antidote:** For hypoventilation from opiate administration by EMS personnel, assist ventilations and administer naloxone as directed in the Opioid Overdose Protocol **Opioid Overdose** • 1mg (1mL) per nostril (IN) via prefilled syringe and atomizer for a total of 2mg OR • 4 mg (0.5 mL) commercially prepared nasal spray • Repeat every 5 – 10 minutes (maximum) 10 mg) until respiratory depression resolves and not necessarily until return of consciousness • 0.4 – 2.0 mg IV, repeat every 2 – 3 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness • 0.4 – 2.0 IM, repeat every 5 – 10 minutes (maximum 10 mg) until respiratory depression resolves and not necessarily until return of consciousness Operational K9 Opioid Overdose • Naloxone 2 –4 mg IN, may repeat every 2 –5 minutes **OR** • Naloxone 2 –4 mg IM via auto –injector, may repeat every 2 –5 minutes. • Alternative route for Naloxone 2 -4 mg IV, may repeat every 2 –5 minutes. Suggested Formulations: Solution, Injection, as hydrochloride • Generic: 1 mg/mL (2 mL) Solution Auto-injector, Injection, as hydrochloride: • Evzio: 0.4 mg/0.4 mL (0.4 mL)
Nicardipine	**Interfacility Transfer**
Nifedipine Indications: • Obstetric patient with SBP > 160 or DBP > 110	**Obstetric Emergencies** • 30 mg PO

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Nitroglycerin **Indications:** • Congestive Heart Failure and chest pain secondary to acute coronary syndrome • Infusion pump required for infusion.	**Acute Coronary Syndrome** • 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. • 0.4 mg SL every 3 – 5 minutes while symptoms persist and if systolic BP remains >100 mmHg. • 10 micrograms/minute if symptoms persist (must be on a pump). • Increase IV nitroglycerin by 10 micrograms/minute every 5 minutes while symptoms persist and systolic remains >100 mmHg. **Congestive Heart Failure** For patients with known history of congestive heart failure, consider: • 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 of 120 - 140 mmHg. Nitroglycerin infusion: • For systolic BP of 140 - 160 mmHg: IV nitroglycerin start at 50 micrograms/minute. • For systolic BP of 160 - 200 mmHg: IV nitroglycerin start at 100 micrograms/minute. • For systolic BP > 200 mmHg: nitroglycerin start at 200 micrograms/minute. • Titrate 5 – 10 mcg/min every 3 – 5 minutes until symptomatic improvement or systolic BP of 120 - 140 mmHg. Note: Two (2) IV lines are recommended when giving IV nitroglycerin infusions; IV nitroglycerin infusions must be administered using an infusion pump.
Nitrous Oxide Non-narcotic analgesic gas **Indications:** • Pain **Contraindications:** • Abdominal pain • Blunt chest trauma • Head injury • Diving emergencies.	**Pain** • Patient self administers gas for pain control as needed

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Norepinephrine (Levophed) **Indications:** • Alpha and Beta 1 receptor adronergic receptor agonist vasopressor • Infusion pump required.	**Bradycardia, Non-Traumatic Shock, Post Resuscitation Care, Sepsis, Rapid Sequence Intubation** • Infusion 1 – 80 microgram/minute via pump. Starting dose 1 - 15 microgram/minute, titrate 2 – 5 microgram/minute every 5 minutes, as needed. Suggested Formulations: Solution, Intravenous [strength expressed as base]: • Levophed: 1 mg/mL (4 mL) [contains sodium metabisulfite]. • Generic: 1 mg/mL (4 mL).
Ondansetron (Zofran) Anti-emeticl**ndications:** • Nausea and/or Vomiting.	**Nausea/Vomiting** • 4 mg by mouth or IV/PO/IM Suggested Formulations:Tablet Dispersible, Oral: • Zofran ODT: 4 mg, • Generic: 4 mg, Solution, Injection [preservative free]: • Generic: 4 mg/2 mL (2 mL)
Oxygen **Indications:** • Indicated in any condition with increased cardiac work load, 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%.	• Flow rate as appropriate for clinical condition.
Oxytocin (Pitocin) **Indications:** Routine administration after placental delivery	**Obstetrical & Childbirth** • Oxytocin 10 units IM to the mother.
Pralidoxime (2-PAM) **Indications:** • Nerve Agents or Organophosphate Overdose. • Administered with Atropine.	**Nerve Agent** • 1 – 2 grams in 50 – 250 mL of 0.9% NaCl, over 15 – 30 minutes (pump not required), may repeat within 1 hour if muscle weakness and fasciculations are not relieved. Additional doses may be needed every 3 – 8 hours, if signs of poisoning recur. • **Medical Control:** Maintenance infusion: up to 500mg per hour (maximum of 12 grams/day).

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
Prednisone Indications: • Allergic reaction	**Anaphylaxis/Allergic Reaction – Extended Care** • 60 mg PO
Prochlorperazine (Compazine) **Indications:** • Anti-Emetic used to control Nausea and/or Vomiting.	**Nausea/Vomiting** • 5 mg IV/IM. Nausea/Vomiting Extended Care • Repeat IM every 4 – 6 hours, as needed Suggested Formulations: Solution, Injection, as edisylate [strength expressed as base]: • Generic: 5 mg/mL (2 mL, 10 mL)
Proparacaine (Alcaine) **Indications/Contraindications:** • Topical anesthetic	**Eye & Dental** • 2 drops to affected eye; repeat every 5 minutes as needed. Suggested Formulations: Solution, Ophthalmic, as hydrochloride: • Alcaine: 0.5% (15 mL) • Parcaine: 0.5% (15 mL) • Generic: 0.5% (15 mL)
Rocuronium **Indications:** • Non-depolarizing paralytic agent used as a component of rapid sequence intubation, when succinylcholine is contraindicated and for post intubation paralysis..	**Rapid Sequence Intubation** • 1mg/kg IV. Suggested Formulations: Solution, Intravenous, as bromide: • Zemuron: 50 mg/5 mL (5 mL); 100 mg/10 mL (10 mL) • Generic: 50 mg/5 mL (5 mL); 100 mg/10 mL (10 mL)
Sodium Bicarbonate **Indications:** • A buffer used in acidosis to increase the pH in Cardiac Arrest, Hyperkalemia or Tricyclic Overdose.	**Cardiac Arrest** • 1 mEq/kg IV/IO **Crush Injuries** • 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes Extended Care • Secondary to initial bolus, consider sodium bicarbonate infusion: ○ 150 mEq in1000 mL 0.9 % NaCl or D5W at a rate of 250 mL/hr or 4 mL/min **Hyperkalemia** • **1 mEq/kg IV/IO bolus oveer 5 minutes, may repeat in 5 minutes.** **Poisoning/Overdose** Tricyclic with symptomatic dysrhythmias, (eg. tachycardia and wide QRS > 100 milliseconds): • 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes

NH Adult Medication Reference

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See the Pediatric Color Coded Appendix for pediatric dosages

Medication	Adult Protocol/Dosing
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** • 1.5mg/kg IV, maximum 150 mg Suggested Formulations: Solution, Injection, as chloride: • Generic: 20 mg/mL (10 mL) [contains methylparaben] • Quelicin: 20 mg/mL (10 mL)
Tetracaine **Indications:** Topical anesthetic	**Eye & Dental** • 2 drops to affected eye; repeat every 5 minutes as needed. Suggested Formulations: • Generic: 0.5% (1 mL, 2 mL, 15 mL)
Tranexamic Acid (TXA) **Indications:** Evidence of significant trauma Evidence of severe bleeding The presence of hemodynamic instability **AND** The injury occurred within the past 3 hours in patients greater than 15 years old without a known allergy to TXA, without an isolated head injury, who has not or will not be receiving factors and is not pregnant with a viable fetus.	**Anaphylaxis/Allergice Reaction - Angioedemia** • Tranexamic Acid (TXA): ○ Mix 1 gram of TXA in 50-100 mL of 0.9% NaCl; infuse over approximately 10 minutes IV or IO. **Hemorrhage Control** • Mix 1 gram TXA in 50 - 100mL 0.9% NaCl ; infuse over approximately 10 minutes IV or IO . **Childbirth/Obstetrical Emergencies** • Mix 1 gram TXA in 50 - 100mL 0.9% NaCl. Infuse over approximately 10 minutes IV or IO. **Shock – Trauma** • Consider tranexamic acid see, Hemorrhage Control Protocol 4.4

Pediatric Color Coded Appendix

Weight 3-5 Kg (Avg 4.0 Kg)

Length < 59.5 cm

Vital Signs
Heart Rate: 120-150
Respirations: 24-48
BP Systolic: 70 (+/-25)

Equipment
ET Tube: 2.5 - 3.5
Blade Size: 0 - 1

Defibrillation
Defibrillation: 8 J, 15 J
Cardioversion: 2 J, 4 J

Normal Saline 40-80 ml

Acetaminophen	60 mg
Adenosine:	
1st Dose-	0.4 mg
Repeat Dose-	0.8 mg

Albuterol	2.5 mg
Amiodarone	20 mg
Atropine- Bradycardia	0.08 mg
- Organophosphate Poison	0.2 – 0.4 mg
Calcium Chloride	80 mg
Calcium Gluconate	400 mg
Dexamethasone	2.4 mg
Dextrose 10%	20 mL
Diazepam (0.1 mg/kg)	0.4 mg
Diazepam (0.2 mg/kg)	0.8 mg
Diphenhydramine (1 mg/kg)	4 mg
Epinephrine 1:10,000	0.04 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	2 – 4 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	8 mg
Hydromorphone	0.04 – 0.08 mg
Hydroxocobalamin	280 mg
Ibuprofen	HOLD
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	0.4 - 1 mg
0.5 – 1.0 mg/kg IN	2 - 4 mg
Lidocaine -Cardiac Arrest	4 mg
Lidocaine - Intraosseous	2 mg
Lorazepam (0.05 mg/kg)	0.2 mg
Lorazepam (0.1 mg/kg)	0.4 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	160 mg
- Torsades (25 – 50 mg/kg)	100 - 200 mg
Methylprednisolone (1 mg/kg)	4 mg
Methylprednisolone (2 mg/kg)	8 mg
Midazolam (0.05 mg/kg)	0.2 mg
Midazolam (0.1 mg/kg)	0.4 mg
Midazlolam (0.2 mg/kg)	0.8 mg
Morphine Sulfate	0.4 mg
Naloxone – IN	1 mg
Ondansetron – IV	0.4 mg
- ODT	2 mg
Pralidoxime IV	80 - 200 mg
Proparacaine	2 drops
Sodium Bicarbonate	4 mEq
Tretracaine	2 drops

Gray (0-3 months)

Weight 6-7 Kg (Avg 6.5 Kg)

Length 59.5-66.5 cm

Vital Signs
Heart Rate: 120-125
Respirations: 24-48
BP Systolic: 85 (+/-25)

Equipment
ET Tube: 3.5
Blade Size: 1

Defibrillation
Defibrillation: 10 J, 20 J
Cardioversion: 2 J, 5 J

Normal Saline 65-130 ml

Acetaminophen	97.5 mg
Adenosine:	
1st Dose-	0.65 mg
Repeat Dose-	1.3 mg

Albuterol	2.5 mg
Amiodarone	32.5 mg
Atropine- Bradycardia	0.13 mg
- Organophosphate Poison	0.33 – 0.65 mg
Calcium Chloride	130 mg
Calcium Gluconate	650 mg
Dexamethasone	3.9 mg
Dextrose 10%	32.5 mL
Diazepam (0.1 mg/kg)	0.65 mg
Diazepam (0.2 mg/kg)	1.3 mg
Diphenhydramine (1 mg/kg)	6.5 mg
Epinephrine 1:10,000	0.07 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	3.25 – 6.5 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	13 mg
Hydromorphone	0.07 – 0.13 mg
Hydroxocobalamin	455 mg
Ibuprofen	HOLD
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	0.65 – 1.63 mg
0.5 – 1.0 mg/kg IN	3.25 – 6.5 mg
Lidocaine- Cardiac Arrest	6.5 mg
Lidocaine - Intraosseous	3.25 mg
Lorazepam (0.05 mg/kg)	0.33 mg
Lorazepam (0.1 mg/kg)	0.65 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	260 mg
- Torsades (25 – 50 mg/kg)	162.5 - 325 mg
Methylprednisolone (1 mg/kg)	6.5 mg
Methylprednisolone (2 mg/kg)	13 mg
Midazolam (0.05 mg/kg)	0.33 mg
Midazolam (0.1 mg/kg)	0.65 mg
Midazolam (0.2 mg/kg)	1.3 mg
Morphine Sulfate	0.65 mg
Naloxone – IN	1 mg
Ondansetron – IV	0.65 mg
- ODT	2 mg
Pralidoxime IV	130 - 325 mg
Proparacaine	2 drops
Sodium Bicarbonate	6.5 mEq
Tretracaine	2 drops

Pink (3-6 Months)

Weight 8-9 Kg (Avg 8.5 Kg)

Length 66.5-74 cm

Vital Signs
Heart Rate: 120
Respirations: 24-32
BP Systolic: 92 (+/-25)

Equipment
ET Tube: 3.5 -4.0
Blade Size: 1

Defibrillation
Defibrillation: 20 J, 40 J
Cardioversion: 5 J, 9 J

Normal Saline 85-170 ml

Acetaminophen	127.5 mg
Adenosine:	
1st Dose-	0.85 mg
Repeat Dose-	1.7 mg

Albuterol	2.5 mg
Amiodarone	42.5 mg
Atropine- Bradycardia	0.17 mg
- Organophosphate Poison	0.43 – 0.85 mg
Calcium Chloride	170 mg
Calcium Gluconate	850 mg
Dexamethasone	5.1 mg
Dextrose 10%	42.5 mL
Diazepam (0.1 mg/kg)	0.85 mg
Diazepam (0.2 mg/kg)	1.7 mg
Diphenhydramine (1 mg/kg)	8.5 kg
Epinephrine 1:10,000	0.09 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	6.5 - 13 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	17 mg
Hydromorphone	0.09 – 0.17 mg
Hydroxocobalamin	595 mg
Ibuprofen	HOLD
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	0.85 – 2.13 mg
0.5 – 1.0 mg/kg IN	4.25 – 8.5 mg
Lidocaine - Cardiac Arrest	8.5 mg
Lidocaine - Intraosseous	4.25 mg
Lorazepam (0.05 mg/kg)	0.43 mg
Lorazepam (0.1 mg/kg)	0.85 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	340 mg
- Torsades (25 – 50 mg/kg)	212.5 - 425 mg
Methylprednisolone (1 mg/kg)	8.5 mg
Methylprednisolone (2 mg/kg)	17 mg
Midazolam (0.05 mg/kg)	0.43 mg
Midazolam (0.1 mg/kg)	0.85 mg
Midazolam (0.2 mg/kg)	1.7 mg
Morphine Sulfate	0.85 mg
Naloxone – IN	1 mg
Ondansetro – IV	0.85 mg
- ODT	2 mg
Pralidoxime IV	170 - 425 mg
Proparacaine	2 drops
Sodium Bicarbonate	8.5 mEq
Tretracaine	2 drops

Red (7-10 Months)

Pediatric Color Coded Appendix

Weight 10-11 Kg (Avg 10.5 Kg)

Length 74-84.5 cm

Vital Signs
Heart Rate: 115-120
Respirations: 22-30
BP Systolic: 96 (+/-30)

Equipment
ET Tube: 4.0
Blade Size: 1

Defibrillation
Defibrillation: 20 J, 40 J
Cardioversion: 5 J, 10 J

Normal Saline 105-210 ml

Acetaminophen	160 mg
Adenosine:	
1st Dose-	1.05 mg
Repeat Dose-	2.1 mg

Albuterol	2.5 mg
Amiodarone	52.5 mg
Atropine- Bradycardia	0.21 mg
- Organophosphate Poison	0.53 – 1.05 mg
Calcium Chloride	210 mg
Calcium Gluconate	1050 mg
Dexamethasone	6.3 mg
Dextrose 10%	52.5 mL
Diazepam (0.1 mg/kg)	1.05 mg
Diazepam (0.2 mg/kg)	2.1 mg
Diphenhydramine (1 mg/kg)	10.5 mg
Epinephrine 1:10,000	0.11 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	5.25 – 10.5 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	21 mg
Hydromorphone	0.11 – 0.21 mg
Hydroxocobalamin	735 mg
Ibuprofen	105 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	1.05 – 2.63 mg
0.5 – 1.0 mg/kg IN	5.25 – 10.5 mg
Lidocaine- Cardiac Arrest	10.5 mg
Lidocaine - Intraosseous	5.25 mg
Lorazepam (0.05 mg/kg)	0.53 mg
Lorazepam (0.1 mg/kg)	1.05 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	420 mg
- Torsades (25 – 50 mg/kg)	262.5 - 525 mg
Methylprednisolone (1 mg/kg)	10.5 mg
Methylprednisolone (2 mg/kg)	21 mg
Midazolam (0.05 mg/kg)	0.53
Midazolam (0.1 mg/kg)	1.05 mg
Midazolam (0.2 mg/kg)	2.10 mg
Morphine Sulfate	1.05 mg
Naloxone – IN	1 mg
Ondansetron – IV	1 mg
- ODT	2 mg
Pralidoxime IV	210 – 525 mg
Proparacaine	2 drops
Sodium Bicarbonate	10.5 mEq
Tretracaine	2 drops

Purple (11-18 Months)

Weight 12-14 Kg (Avg 13 Kg)

Length 84.5-97.5 cm

Vital Signs
Heart Rate: 110-115
Respirations: 20-28
BP Systolic: 100 (+/-30)

Equipment
ET Tube: 4.5
Blade Size: 2

Defibrillation
Defibrillation: 30 J, 50 J
Cardioversion: 6 J, 15 J

Normal Saline 130-260 ml

Acetaminophen	195 mg
Adenosine:	
1st Dose-	1.3mg
Repeat Dose-	2.6 mg

Albuterol	2.5 mg
Amiodarone	65 mg
Atropine- Bradycardia	0.26 mg
- Organophosphate Poison	0.65 – 1.3 mg
Calcium Chloride	260 mg
Calcium Gluconate	1300 mg
Dexamethasone	7.8 mg
Dextrose 10%	65 mL
Diazepam (0.1 mg/kg)	1.3 mg
Diazepam (0.2 mg/kg)	2.6 mg
Diphenhydramine (1 mg/kg)	13 mg
Epinephrine 1:10,000	0.13 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	6.5 – 13 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	26 mg
Hydromorphone	0.13 - 26 mg
Hydroxocobalamin	910 mg
Ibuprofen	130 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	1.3 – 3.25 mg
0.5 – 1.0 mg/kg IN	6.5 - 13 mg
Lidocaine - Cardiac Arrest	13 mg
Lidocaine - Intraosseous	6.5 mg
Lorazepam (0.05 mg/kg)	0.65 mg
Lorazepam (0.1 mg/kg)	1.3 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	520 mg
- Torsades (25 – 50 mg/kg)	325 - 650 mg
Methylprednisolone (1 mg/kg)	13 mg
Methylprednisolone (2 mg/kg)	26 mg
Midazolam (0.05 mg/kg)	0.65
Midazolam (0.1 mg/kg)	1.3 mg
Midazolam (0.2 mg/kg)	2.6 mg
Morphine Sulfate	1.3 mg
Naloxone – IN	1 mg
Ondansetron – IV	1.3 mg
- ODT	2 mg
Pralidoxime IV	260 - 650 mg
Proparacaine	2 drops
Sodium Bicarbonate	13 mEq
Tretracaine	2 drops

Yellow (19-35 Months)

Weight 15-18 Kg (Avg 16.5 Kg)

Length 97.5-110 cm

Vital Signs
Heart Rate: 100 - 115
Respirations: 20-26
BP Systolic: 100 (+/-20)

Equipment
ET Tube: 5.0
Blade Size: 2

Defibrillation
Defibrillation: 30 J, 70 J
Cardioversion: 8 J, 15 J

Normal Saline 165-330 ml

Acetaminophen	247.5 mg
Adenosine:	
1st Dose-	1.65 mg
Repeat Dose-	3.3 mg

Albuterol	2.5 mg
Amiodarone	82.5 mg
Atropine- Bradycardia	0.33 mg
- Organophosphate Poison	0.83 – 1.65 mg
Calcium Chloride	330 mg
Calcium Gluconate	1650 mg
Dexamethasone	10 mg
Dextrose 10%	82.5 mL
Diazepam (0.1 mg/kg)	1.65 mg
Diazepam (0.2 mg/kg)	3.3 mg
Diphenhydramine (1 mg/kg)	16.5 mg
Epinephrine 1:10,000	0.17 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	8.25 – 16.5 mcg
Glucagon	0.5 mg
Glucose Oral	1 tube
Hydrocortisone	33 mg
Hydromorphone	0.17 – 0.33
Hydroxocobalamin	1155 mg
Ibuprofen	165 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	1.65 – 4.13 mg
0.5 – 1.0 mg/kg IN	8.25 – 16.5 mg
Lidocaine - Cardiac Arrest	16.5 mg
Lidocaine - Intraosseous	8.25 mg
Lorazepam (0.05 mg/kg)	0.83 mg
Lorazepam (0.1 mg/kg)	1.65 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	660 mg
- Torsades (25 – 50 mg/kg)	412.5 - 825 mg
Methylprednisolone (1 mg/kg)	16.5 mg
Methylprednisolone (2 mg/kg)	32 mg
Midazolam (0.05 mg/kg)	0.83 mg
Midazolam (0.1 mg/kg)	1.65 mg
Midazolam (0.2 mg/kg)	3.3 mg mg
Morphine Sulfate	1.65 mg
Naloxone – IN	1 mg
Ondansetron – IV	1.65 mg
- ODT	2 mg
Pralidoxime IV	330 - 825 mg
Proparacaine	2 drops
Sodium Bicarbonate	16.5 mEq
Tretracaine	2 drops

White (3-4 yrs)

Pediatric Color Coded Appendix

Weight 19-22 Kg (Avg 20.75 Kg)

Length 110-122 cm

Vital Signs
Heart Rate: 100
Respirations: 20-24
BP Systolic: 100 (+/-15)

Equipment
ET Tube: 5.5
Blade Size: 2

Defibrillation
Defibrillation: 40 J, 85 J
Cardioversion: 10 J, 20 J

Normal Saline 205-410 ml

Acetaminophen	311.25 mg
Adenosine:	
1st Dose-	2.08 mg
Repeat Dose-	4.15 mg

Albuterol	2.5 mg
Amiodarone	103.5 mg
Atropine- Bradycardia	0.42 mg
- Organophosphate Poison	1.04 – 2.08 mg
Calcium Chloride	415 mg
Calcium Gluconate	2075 mg
Dexamethasone	10 mg
Dextrose 10%	103.75 mL
Diazepam (0.1 mg/kg)	2.08 mg
Diazepam (0.2 mg/kg)	4.15 mg
Diphenhydramine (1 mg/kg)	20.75 mg
Epinephrine 1:10,000	0.21 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.15 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	10.38 – 20.75 mcg
Glucagon	1 mg
Glucose Oral	1 tube
Hydrocortisone	41.5 mg
Hydromorphone	0.21 – 0.42
Hydroxocobalamin	1452.5 mg
Ibuprofen	208 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	2.08 – 5.19 mg
0.5 – 1.0 mg/kg IN	10.38 – 20.75 mg
Lidocaine - Cardiac Arrest	20.75 mg
Lidocaine - Intraosseous	10.38 mg
Lorazepam (0.05 mg/kg)	1.04 mg
Lorazepam (0.1 mg/kg)	2.08 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	830 mg
- Torsades (25 – 50 mg/kg)	518.75 – 1037.5 mg
Methylprednisolone (1 mg/kg)	20.75 mg
Methylprednisolone (2 mg/kg)	41.5 mg
Midazolam (0.05 mg/kg)	1.04 mg
Midazolam (0.1 mg/kg)	2.08 mg
Midazolam (0.2 mg/kg)	4.15 mg
Morphine Sulfate	2.08 mg
Naloxone – IN	2 mg
Ondansetro – IV	2.08 mg
- ODT	2 mg
Pralidoxime IV	415 – 1037.5 mg
Proparacaine	2 drops
Sodium Bicarbonate	20.8 mEq
Tretracaine	2 drops

Blue (5-6 yrs)

Weight 24-30 Kg (Avg 27 Kg)

Length 122-137 cm

Vital Signs
Heart Rate: 90
Respirations: 18-22
BP Systolic: 105 (+/-15)

Equipment
ET Tube: 6.0
Blade Size: 2-3

Defibrillation
Defibrillation: 50 J, 100 J
Cardioversion: 15 J, 30 J

Normal Saline 250-500 ml

Acetaminophen	405 mg
Adenosine:	
1st Dose-	2.7 mg
Repeat Dose-	5.4 mg

Albuterol	2.5 mg
Amiodarone	135 mg
Atropine- Bradycardia	0.5 mg
- Organophosphate Poison	1.35 – 2.7 mg
Calcium Chloride	540 mg
Calcium Gluconate	2700 mg
Dexamethasone	10 mg
Dextrose 10%	135 mL
Diazepam (0.1 mg/kg)	2.7 mg
Diazepam (0.2 mg/kg)	5.4 mg
Diphenhydramine (1 mg/kg)	27 mg
Epinephrine 1:10,000	0.27 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.3 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	13.5 - 27 mcg
Glucagon	1 mg
Glucose Oral	1 tube
Hydrocortisone	50 mg
Hydromorphone	0.27 – 0.54
Hydroxocobalamin	1890 mg
Ibuprofen	270 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	2.7 – 6.75 mg
0.5 – 1.0 mg/kg IN	13.5 - 27 mg
Lidocaine - Cardiac Arrest	27 mg
Lidocaine - Intraosseous	13.5 mg
Lorazepam (0.05 mg/kg)	1.35 mg
Lorazepam (0.1 mg/kg)	2.7 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	1080 mg
- Torsades (25 – 50 mg/kg)	675 - 1350 mg
Methylprednisolone (1 mg/kg)	27 mg
Methylprednisolone (2 mg/kg)	54 mg
Midazolam (0.05 mg/kg)	1.35 mg
Midazolam (0.1 mg/kg)	2.7 mg
Midazolam (0.2 mg/kg)	5.4 mg
Morphine Sulfate	2.7 mg
Naloxone – IN	2 mg
Ondansetro – IV	2.7 mg
- ODT	2 mg
Pralidoxime IV	540 - 1350 mg
Proparacaine	2 drops
Sodium Bicarbonate	27 mEq
Tretracaine	2 drops

Orange (7-9 yrs)

Weight 32-40 Kg (Avg 36 Kg)

Length 137-150 cm

Vital Signs
Heart Rate: 85-90
Respirations: 16-22
BP Systolic: 115 (+/-20)

Equipment
ET Tube: 6.5
Blade Size: 3

Defibrillation
Defibrillation: 60 J, 150 J
Cardioversion: 15 J, 30 J

Normal Saline 250-500 ml

Acetaminophen	540 mg
Adenosine:	
1st Dose-	3.6 mg
Repeat Dose-	7.2 mg

Albuterol	2.5 mg
Amiodarone	180 mg
Atropine- Bradycardia	0.5 mg
- Organophosphate Poison	1.8 – 3.6 mg
Calcium Chloride	720 mg
Calcium Gluconate	3 grams
Dexamethasone	10 mg
Dextrose 10%	180 mL
Diazepam (0.1 mg/kg)	3.6 mg
Diazepam (0.2 mg/kg)	7.2 mg
Diphenhydramine (1 mg/kg)	36 mg
Epinephrine 1:10,000	0.36 mg
Epinephrine 1:1000 Nebulized	3 mg
Epinephrine 1:1000 IM	0.3 mg
Epinephrine Racemic 2.25%	0.5 mL
Fentanyl	18 - 36 mcg
Glucagon	1 mg
Glucose Oral	1 tube
Hydrocortisone	50 mg
Hydromorphone	0.36 – 0.72
Hydroxocobalamin	2520 mg
Ibuprofen	360 mg
Ipratropium w/ albuterol	500 mcg

Ketamine	
0.1 – 0.25 mg/kg IV	3.6 - 9 mg
0.5 – 1.0 mg/kg IN	18 - 36 mg
Lidocaine - Cardiac Arrest	36 mg
Lidocaine - Intraosseous	18 mg
Lorazepam (0.05 mg/kg)	1.8 mg
Lorazepam (0.1 mg/kg)	3.6 mg
Magnesium Sulfate	
- Asthma (40 mg/kg)	1440 mg
- Torsades (25 – 50 mg/kg)	900 - 1800 mg
Methylprednisolone (1 mg/kg)	36 mg
Methylprednisolone (2 mg/kg)	72 mg
Midazolam (0.05 mg/kg)	1.8 mg
Midazolam (0.1 mg/kg)	3.6 mg
Midazolam (0.2 mg/kg)	7.2 mg
Morphine Sulfate	3.6 mg
Naloxone – IN	2 mg
Ondansetro – IV	3.6 mg
- ODT	2 mg
Pralidoxime IV	720 - 1800 mg
Proparacaine	2 drops
Sodium Bicarbonate	36 mEq
Tretracaine	2 drops

Green (10-12 yrs)

Scope of Practice

Airway Management	EMR	EMT	AEMT	PARAMEDIC
BVM	X	X	X	X
Chest Tube Maintenance				X
Cleared, Opened, Heimlich	X	X	X	X
BiPAP				X
CPAP		X	X	X
Cricothyrotomy – Percutaneous				X
Cricothyrotomy – Surgical (Bougie Assisted)				X
Endotracheal Intubation				X
Endotracheal Suctioning			X	X
End-Tidal CO_2 Monitoring		X	X	X
Nasogastric Tube				X
Nasopharyngeal Airway		X	X	X
Nasotracheal Intubation				X
Nebulizer Treatment		X	X	X
Needle Decompression				X
Oral Suctioning	X	X	X	X
Orogastric Tube				X
Oropharyngeal Airway	X	X	X	X
Oxygen Administration	X	X	X	X
High Flow Nasal Cannula				X
Pulse Oximetry		X	X	X
Rapid Sequence Intubation				**Prerequisite**
Supraglottic Airways		*	X	X
Tracheostomy Maintenance		X	X	X
Ventilator Operation			**CPAP mode only**	X

X *Skill allowed under protocol and taught in the National Education Standards.*
******* *Skill allowed under protocol after completion of a scope of practice module.*
Δ Skill allowed under protocol after completion of additional training.

Scope of Practice

Medication Administration Route	EMR	EMT	AEMT	PARAMEDIC
Auto Injector	Provider Protection	X	X	X
Blood Products				X
Endotracheal				X
Inhalation		X	X	X
Intramuscular		*	X	X
Intranasal	X	X	X	X
Intraosseous			X	X
Intravenous			X	X
Intravenous Pump			Interfacility Transfers	X
Nebulized		X	X	X
Oral		X	X	X
Rectal				X
Subcutaneous			X	X
Sublingual		Assist	X	X
Vascular Access	**EMR**	**EMT**	**AEMT**	**PARAMEDIC**
Blood Draw			X	X
Blood Glucose Analysis		X	X	X
Central Line Maintenance				X
External Jugular				X
Peripheral Venous Access			X	X
Intraosseous - Adult			X	X

X *Skill allowed under protocol and taught in the National Education Standards.*
*** Skill allowed under protocol after completion of a scope of practice module.*
Δ Skill allowed under protocol after completion of additional training.

Scope of Practice

Cardiac Management	EMR	EMT	AEMT	PARAMEDIC
Application of 12 Lead ECG		X	X	X
Application of 3 or 4 lead ECG		X	X	X
CPR - Cardiopulmonary Resuscitation	X	X	X	X
Defibrillation - AED	X	X	X	X
Defibrillation - Manual				X
Interpretation of 12 Lead ECG				X
Interpretation of 3 or 4 lead				X
Synchronized Cardioversion				X
Transcutaneous Pacing				X

X *Skill allowed under protocol and taught in the National Education Standards.*
*** Skill allowed under protocol after completion of a scope of practice module.***
Δ Skill allowed under protocol after completion of additional training.

Scope of Practice

OTHER SKILLS	EMR	EMT	AEMT	PARAMEDIC
Advanced Spinal Assessment		*	*	*
Burn Care	X	X	X	X
Cervical Spinal Immobilization	X	X	X	X
Childbirth	X	X	X	X
Cold Pack	X	X	X	X
Extrication		X	X	X
Eye Irrigation (Morgan Lens)				X
Hemorrhage Control	X	X	X	X
Hot Pack	X	X	X	X
Immunization			Prerequisite	Prerequisite
Patella Dislocation Reduction			Δ	Δ
Restraints - Pharmacological				X
Restraints - Physical		X	X	X
Spinal Motion Restriction	Manual Stabilization	X	X	X
Splinting	X	X	X	X
Splinting - Traction	Manual Stabilization	X	X	X
Stroke Scale		X	X	X
Temperature		X	X	X
Wound Care - Occlusive Dressing	X	X	X	X
Wound Care Pressure Bandage	X	X	X	X

X *Skill allowed under protocol and taught in the National Education Standards.*
*** Skill allowed under protocol after completion of a scope of practice module.***
Δ Skill allowed under protocol after completion of additional training.

HIPAA PERMITS DISCLOSURE OF POLST ORDERS TO HEALTH CARE PROVIDERS AS NECESSARY FOR TREATMENT
SEND FORM WITH PATIENT WHENEVER TRANSFERRED OR DISCHARGED. ATTACH PINK P-DNR FORM IF PATIENT HAS ONE.

Medical Record # (Optional)

New Hampshire POLST Form: A Portable Medical Order

Health care providers should complete this form only after a conversation with their patient or the patient's representative. The POLST decision-making process is for patients who are at risk for a life-threatening clinical event because they have a serious life-limiting medical condition, which may include advanced frailty (www.polst.org/guidance-appropriate-patients-pdf).

Patient Information. **Having a POLST form is always voluntary.**

This is a medical order, not an advance directive. For information about POLST and to understand this document, visit: www.polst.org/form

Patient First Name: _____

Middle Name/Initial: _____ Preferred name: _____

Last Name: _____ Suffix (Jr, Sr, etc): _____

DOB (mm/dd/yyyy): ____/____/_____ State where form was completed:_____

Gender: ☐ M ☐ F ☐ X Social Security Number's last 4 digits (optional): xxx-xx-___ ___ ___ ___

A. Cardiopulmonary Resuscitation Orders. Follow these orders if patient has no pulse and is not breathing.

Pick 1

☐ **YES CPR: Attempt Resuscitation, including mechanical ventilation, defibrillation and cardioversion.** (Requires choosing Full Treatments in Section B)

☐ **NO CPR: Do Not Attempt Resuscitation.** (May choose any option in Section B)
This will constitute a DNR order and no separate DNR order will be required. RSA 137-J:26 V(b).

B. Initial Treatment Orders. Follow these orders if patient has a pulse and/or is breathing.

Reassess and discuss interventions with patient or patient representative regularly to ensure treatments are meeting patient's care goals. Consider a time-trial of interventions based on goals and specific outcomes.

Pick 1

☐ **Full Treatments (required if choose CPR in Section A).** Goal: Attempt to sustain life by all medically effective means. Provide appropriate medical and surgical treatments as indicated to attempt to prolong life, including intensive care.

☐ **Selective Treatments.** Goal: Attempt to restore function while avoiding intensive care and resuscitation efforts (ventilator, defibrillation and cardioversion). May use non-invasive positive airway pressure, antibiotics and IV fluids as indicated. Avoid intensive care. Transfer to hospital if treatment needs cannot be met in current location.

☐ **Comfort-focused Treatments.** Goal: Maximize comfort through symptom management; allow natural death. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Avoid treatments listed in full or select treatments unless consistent with comfort goal. Transfer to hospital **only** if comfort cannot be achieved in current setting.

C. Additional Orders or Instructions. These orders are in addition to those above (e.g., blood products, dialysis).
[EMS protocols may limit emergency responder ability to act on orders in this section.]

D. Medically Assisted Nutrition (Offer food by mouth if desired by patient, safe and tolerated)

Pick 1

☐ Provide feeding through new or existing surgically-placed tubes ☐ No artificial means of nutrition desired

☐ Trial period for artificial nutrition but no surgically-placed tubes ☐ Discussed but no decision made (standard of care provided)

E. SIGNATURE: Patient or Patient Representative (eSigned documents are valid)

I understand this form is voluntary. I have discussed my treatment options and goals of care with my provider. If signing as the patient's representative, the treatments are consistent with the patient's known wishes and in their best interest.

✖ (required)

If other than patient, print full name: | Authority:

The most recently completed valid POLST form supersedes all previously completed POLST forms.

F. SIGNATURE: Health Care Provider (eSigned documents are valid) Verbal orders are acceptable with follow up signature.

I have discussed this order with the patient or his/her representative. The orders reflect the patient's known wishes, to the best of my knowledge. [Note: Only licensed health care providers authorized by law to sign POLST form in state where completed may sign this order]

✖ (required) | **Date** (mm/dd/yyyy): Required / / | **Phone #:** ( )

Printed Full Name: | License/Cert. #:

Supervising physician signature: ☐ N/A | License #:

A copied, faxed or electronic version of this form is a legal and valid medical order. This form does not expire. 2023