Proofread Edits for the Medical Control Board

Throughout

- Throughout the document, change any references to the Division of Fire Standards and Training & Emergency Medical Services (FSTEMS) OR The Bureau to EMS to, “FSTEMS” and make a reference in the Preface.

Behavioral Emergencies

- Excited delirium needs to be removed from this protocol based on the decision to remove from Restraints Protocol.

Hyperthermia

- Excited delirium needs to be removed from this protocol based on the decision to remove from Restraints Protocol.

Cardiac Arrest

- Excited delirium needs to be removed from this protocol based on the decision to remove from Restraints Protocol.

Police Custody

- Excited delirium needs to be removed from this protocol based on the decision to remove from Restraints Protocol.
- Change from:
  “Excited/Agitated Delirium is characterized by extreme restlessness, irritability, and/or high fever. Patients exhibiting these signs are at high risk for sudden death, see Restraints Procedure 6.5."
  To:
  "Dangers of Restraint: Patients who are restrained are at high risk of sudden death. See Restraints Procedure 6.5"

Sodium Bicarb

Recommendation from our pharmacists for standardized dosing

Current:

- Crush Injuries: 1 mEq/kg (max dose 50 mEq) IV/IO bolus over 5 minutes
- Hyperkalemia: 50 mEq IV/IV, slow IV push over 5 minutes
- Poisoning (Tricyclics): 1 – 2 mEq/kg IV
- Cardiac Arrest: 1 – 2 mEq/kg IV

Proposed Change:

- Crush Injuries, Hyperkalemia & Poisoning (Tricyclics):
  - 1 mEq/kg IV/IO bolus over 5 minutes, may repeat in 5 minutes.
- For Cardiac Arrest:
  - 1 mEq/kg IV/IO

Ketamine

IV Ketamine pushed rapidly can cause apnea. Currently it is given slow IV push for all protocols except Restraints, is it practical to change the restraints protocol to slow IV push when trying to restrain a patient?

Current:

- Adult Restraints Immediate Danger to Self or Others:
  - 1 mg/kg rounded to nearest 25 mg, max 250 mg, repeat 0.5 mg/kg in 5 – 10 min
- Adult Protocols: Pain, Bradycardia, Tachycardia, BiPAP and CPAP:
  - 10 – 20 mg IV diluted in 50 – 100 mL over 10 minutes OR 25 – 50 IM
- Pediatric Protocols: Pain, Bradycardia, Tachycardia, BiPAP and CPAP:
  - 0.5 -1 mg/kg IN OR 0.1 -0.25 mg/kg diluted in 50 mL over 10 minutes
- Analgesia & Sedation for Invasive Airway:
  - 1 mg/kg IV bolus followed by infusion via pump 2 – 5 mg/kg/hr
- Analgesia & Sedation for Invasive Airway Pedi:
  - 1 mg/kg IV every 5 – 15 minutes as needed.

Push Dose Epinephrine

Anaphylaxis, Sepsis, Bradycardia, Post Resuscitation Care, and RSI all have push dose epinephrine as:

- Epinephrine by push dose (dilute boluses – see Push Dose Epi Chart prepare 10 mcg/mL, then administer 10 - 20 mcg boluses (1 – 2 mL) every 2 minutes (switch to infusion as soon as possible).

We do not have a "Push Dose Epi Chart", we have the mixing instructions in the Adult Formulary.

Proposed Change:

- Change "see Push Dose Epi Chart" to "see Medication Formulary" with a link to that page.

Push Dose Epinephrine in the Medication Formulary

Currently the Push Dose Epinephrine is under the 0.1 mg/mL section, but push dose epinephrine is 0.01 mg/mL.

Proposed Change:

- Move push dose epinephrine to it's own section as 0.01 mg/mL, with the mixing instructions.

Anaphylaxis

Updated Angioedema Section to the following:

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.

Shock Protocol and GI Bleeding:

- The Shock protocol's GI bleeding bullet directs providers to see the Abdominal Pain protocol, however there is no treatment for GI bleeding in the Abdominal Pain protocol. This bullet should be removed.

Fever & Pain

Currently:

- Fever: Ibuprofen is 400 – 800 mg
- Pain: Ibuprofen 400 mg

Standardize to either 400 mg or 800 mg.

Hyperglycemia

The Hyperglycemia protocol states, "may require emergent treatment", however there is not a "consider" option for fluids.

Currently:

- Adult: Administer 1000 m IV bolus of IV fluid bullet.
- Pediatric: Administer 10 – 20 mL/kg IV bolus of IV fluid

Add "Consider" to each bullet for:

- Adult: Consider administering 1000 m IV bolus of IV fluid bullet.
- Pediatric: Consider administering 10 – 20 mL/kg IV bolus of IV fluid

Hyperkalemia

Remove "consider" from the treatment bullets. If they have the ECG and history, they should be giving the calcium, etc.

Currently:

- Where ECG interpretation combines with history or clinical presentation suggest hyperkalemia, consider:
  - Calcium gluconate 3 grams IV/IO….

Change to:

- Where ECG interpretation combines with history or clinical presentation suggest hyperkalemia:
  - Calcium gluconate 3 grams IV/IO….

Seizures – Adult:

Midazolam route order should be IM/IN first then IV.

Currently:

- Midazolam 5 mg IV, repeat every 5 minutes as needed, **OR**
- Midazolam 10 mg IM/IN, repeat every 5 minutes as needed **OR**

Change to:

- Midazolam 10 mg IM/IN, repeat every 5 minutes as needed **OR**
- Midazolam 5 mg IV, repeat every 5 minutes as needed, **OR**

Acute Coronary Syndrome:

Fentanyl can also be given IM.

Currently:

- Consider fentanyl 25 – 100 micrograms slow IV push
- Consider morphine 1 – 5 mg IV/IM every 5 minutes

Change to:

- Consider fentanyl 25 – 100 micrograms slow IV push or IM
- Consider morphine 1 – 5 mg IV/IM every 5 minutes

Cardiac Arrest – Pediatric

Pediatric Cardiac Arrest the calciums are pushed over 5 minutes however during a cardiac arrest they should be IVP.

Currently:

- Pediatric: Calcium gluconate (10% solution) 100 mg/kg IV/IO (maximum dose 3 gm) over 5 minutes; may repeat in 10 minutes if clinical indication persists **OR**
- Calcium chloride (10% solution) 20 mg/kg IV/IO (maximum dose 1 gm) over 5 minutes, may repeat in 10 minutes; if effective consider IV infusion 20 mg/kg/hour.

Change to:

- Pediatric: 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.

Cardiac Arrest Pediatric:

- Blue box state to do BVM ventilation every 5 compressions and Stand Order bullet states every 10 compressions. Which is it?

TXA Notification

Hemorrhage Control is the only place TXA has to notify hospital, change to match other protocols.

Currently:

- Hemorrhage Control
  - 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.
      - Notify receiving facility of TXA administration prior to arriving.
  - Anaphylaxis/Childbirth/Obstetrics:
    - 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.

Seizure and others:

- When assisting patient's with their prescribed medication, the protocols say to follow physician's instructions, change physician to prescriber, as others besides physician can prescribe.

Airway Management & Surgical Cric:

The Airway Management surgical cricothyrotomy section still references the surgical cricothyrotomy protocol as a prerequisite. This bullet needs to be changed to mirror the opening sentence in the surgical cricothyrotomy protocol.

Currently:

- Airway Management Adult under surgical cricothyrotomy notes:
  - "This is a prerequisite procedure only to be used by paramedics who are trained and credentialed to perform bougie assisted surgical cricothyrotomy by the NH Bureau of EMS."

Change Airway Management Adult to:

- Training approved by the EMS unit's Medical Director must be delivered once every two years.

Analgesia & Sedation for Invasive Airway Devices

The protocol has a RASS chart but there is no target RASS as there is in RSI.

Currently:

- Analgesia & Sedation for Invasive Airway Devices PEARLS:
  - Sedation can be guided by the RASS scale shown above.
- RSI:
  - Target RASS of -3 to -5.

Change to:

- Analgesia & Sedation for Invasive Airway Devices PEARLS
  - Sedation can be guided by the RASS scale shown above with a target RASS of -3 to -5.

Restraints - Red Flag

Currently:

- "Administer haloperidol with caution to patients who re already on psychotropic medication which may precipitate serotonin syndrome or malignant hyperthermia".

This would be the same for Droperidol, which is newly added to the formulary.

Change to:

- "Administer droperidol and haloperidol with caution to patients who re already on psychotropic medication which may precipitate serotonin syndrome or malignant hyperthermia".

Restraints - Red Flag

Currently:

- "Ketamine may cause transient apnea when administered intramuscularly."

IV Ketamine can also cause transient apnea.

Change to:

- "Ketamine may cause transient apnea."

Interfacility Transport:

- Under Transport Agency Levels states, "*Only to be used by paramedics and EMS units who have been trained and credentialed by the NH Bureau of EMS and the NH Medical Control Board." It should just be FSTEMS.

Pilot:

  - Edits regarding legal authority throughout.

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 MEDICAL CONTROL 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.

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^{o} C (>104^{o} 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^{o} C (102^{o} 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

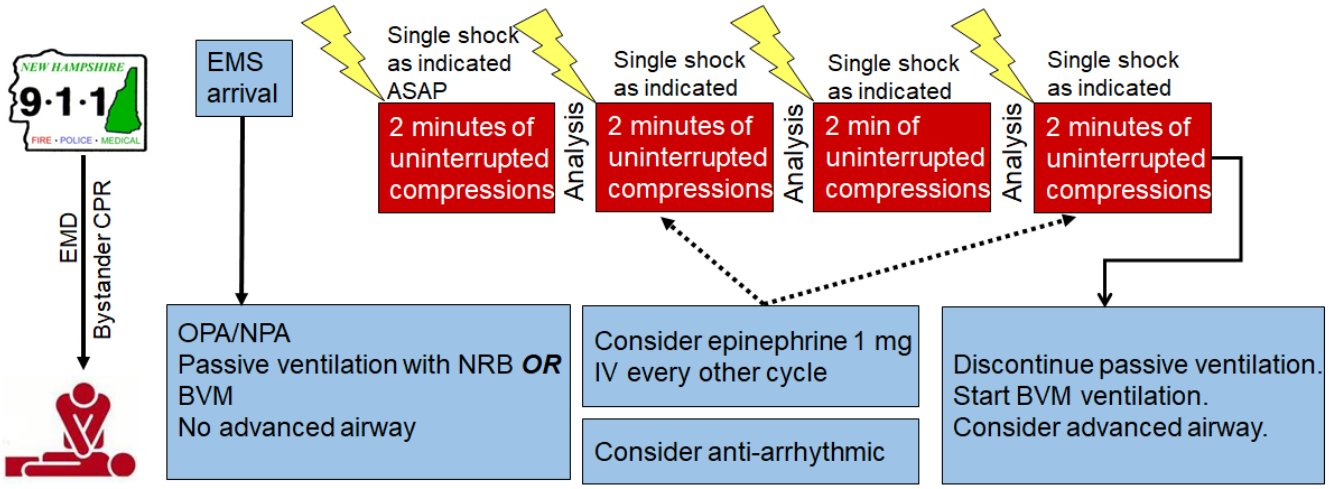
- If uncontrolled shivering occurs during cooling:
  - Midazolam 0.05 mg/kg IV (single maximum dose 2.5 mg), may repeat once in 5 minutes, **OR**
  - *Midazolam 0.1 mg IM/IN (single maximum dose 5 mg) may repeat once in 5 minutes, **OR**
  - Lorazepam 0.05 mg/kg IV (maximum dose 1 mg); may repeat once 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.

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.
- 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 mEq/kg IV.

For suspected pre-existing metabolic acidosis consider:

- Sodium bicarbonate 1 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

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.

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.

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.
- Where 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.

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 IVIO 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 - 2 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.

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

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.

E/A

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 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 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 which 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.

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

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 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	**Cardiac Arrest** • 1 mg IV. ▪ Repeat 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/Advanced Sepsis:** • 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
	•

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 Push Dose Epi Chart) 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.

2.0A 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.

Non-Traumatic Shock Adult & Pediatric

2.22

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 Push Dose Epi Chart) 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.
For GI bleeding see Abdominal Pain Protocol 2.0.
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

Medical Protocols 2.22

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 400 – 800 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 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.

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 400 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; cerebrovasular 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.

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.

2.8 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.

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 physician (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 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.

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 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

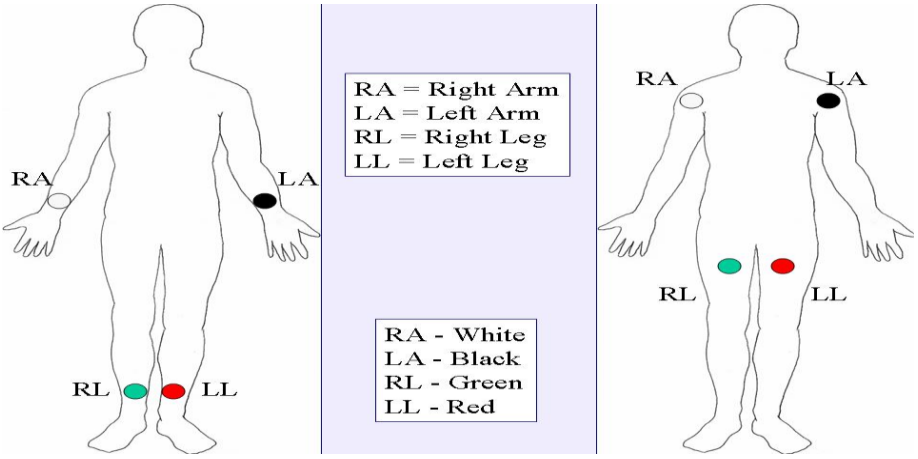
If STEMI without uncontrolled bleeding or known thrombocytopenia consider:

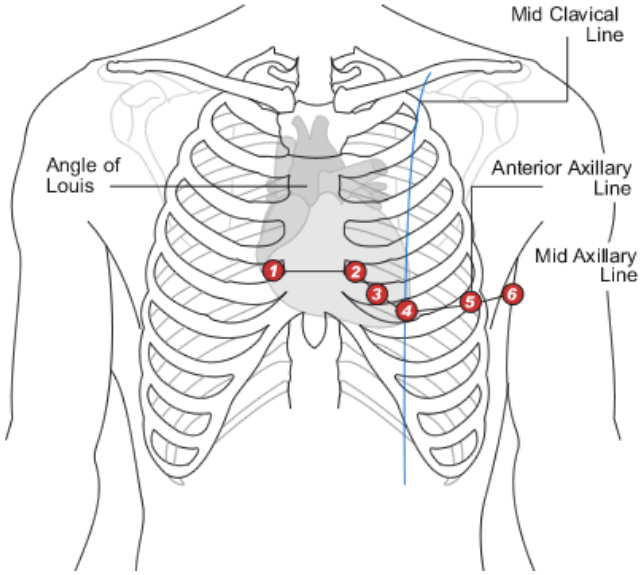
- Heparin 60 unit/kg to a maximum of 4000 unit IV bolus.

- 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

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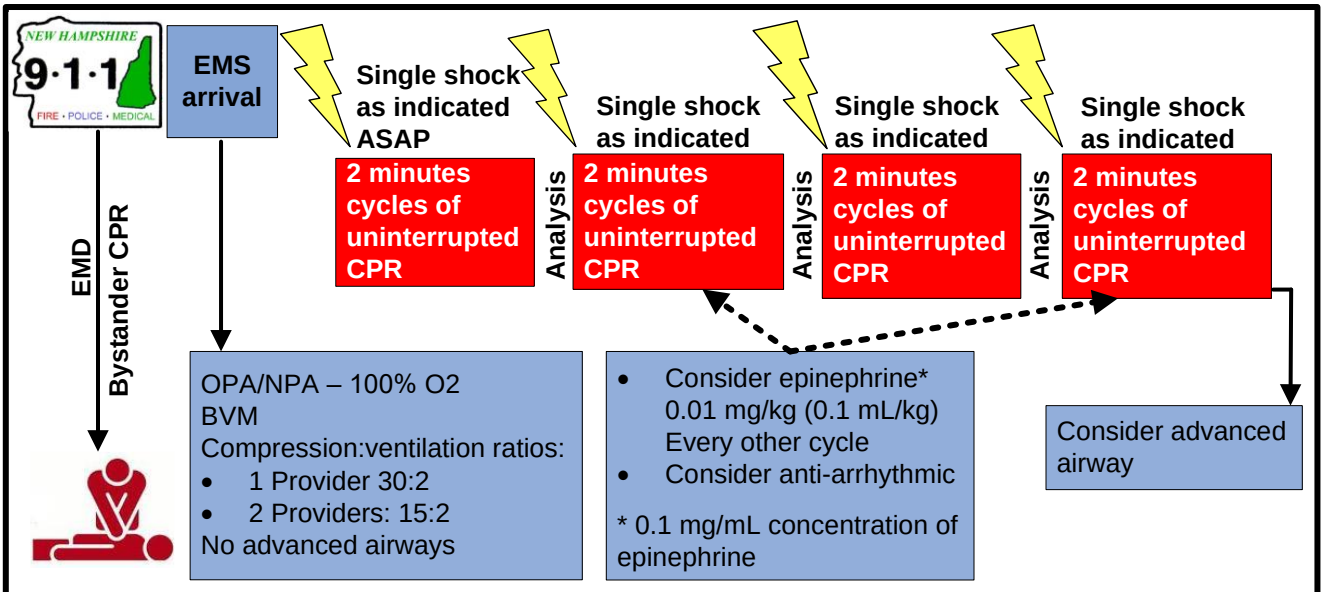
Cardiac Arrest – Pediatric 3.2P



- 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 BVM ventilation every 5 compressions 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 10 compressions interposed asynchronously.
- Monitor waveform capnography throughout resuscitation, if available, to assess and monitor airway placement and CPR quality, and to monitor for signs of Return of Spontaneous Circulation (ROSC) (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) over 5 minutes; may repeat in 10 minutes if clinical indication persists **OR**
  - Calcium chloride (10% solution) 20 mg/kg IV/IO (maximum dose 1 gm) over 5 minutes, 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.

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

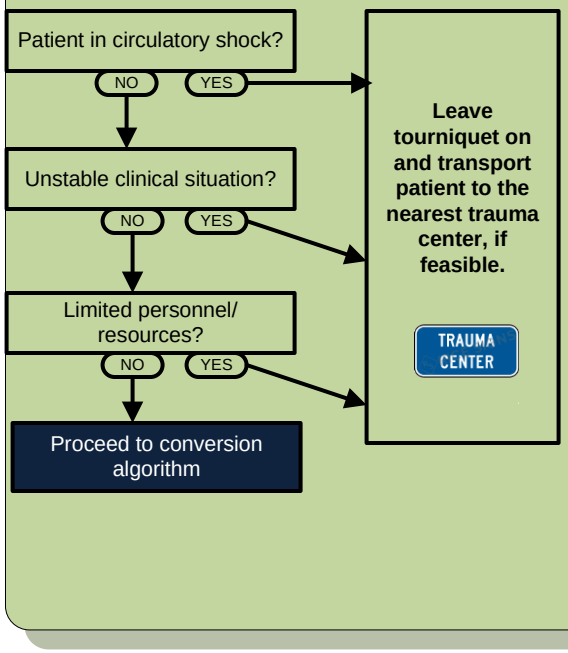
Protocol Continued

EMT/ADVANCED EMT/PARAMEDIC STANDING ORDERS

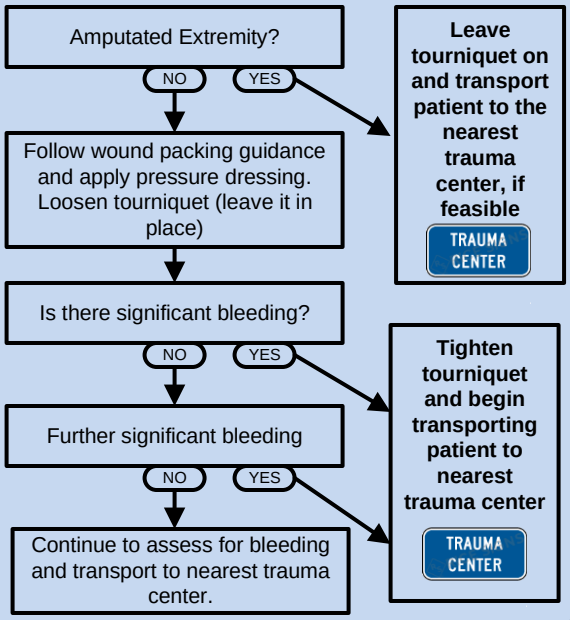
X

- 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.

5.1A Airway Management – Adult

EMR STANDING ORDERS – ADULT & PEDIATRIC

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 and/or nasopharyngeal 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

- 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 – Percutaneous Procedure 5.5 **OR**
  - Consider Cricothyrotomy – Surgical Bougie Assisted Procedure 5.6.
    Note: this is a prerequisite procedure only to be used by paramedics who are trained and credentialed to perform bougie assisted surgical cricothyrotomy by the NH Bureau of EMS.

5.1A Airway Management – Adult

EMR STANDING ORDERS – ADULT & PEDIATRIC

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 and/or nasopharyngeal 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.

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- If patient has a tracheostomy tube, follow the procedure for Tracheostomy Care Procedure 5.13.
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- 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.
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- 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 – Percutaneous Procedure 5.5 **OR**
  - 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.

5.2 Analgesia and Sedation for Invasive Airway Device

P

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

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.
- 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.

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

After Sept 2023 MCB mtg

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

PIP > 40 cm H2O

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 ❑ pump that is locked ❑ 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

Pilot Protocol 7.x

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 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.x 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 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

7.x 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

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.