

2107 Protocol Changes

Protocol No	Name	Level	Change
	In general		Attempt to keep oxygen saturation between 94 - 99% (90% in COPD);
1	Routine Pt Care	All	<p>New bullet under Airway and Breathing: For patients with an SaO2 of 100%, consider titrating oxygen lower while maintaining SaO2 ≥ 94%.</p> <p>Under Transport expanded on the lights and siren bullet: Lights and sirens should be justified by the need for immediate medical intervention that is beyond the capabilities of the ambulance crew using available supplies and equipment, e.g. STEMI, acute stroke, multisystem trauma. The majority of patients do not medically require transport with lights and siren. Use of lights and sirens should be documented on the patient care report. Exceptions can be made under extraordinary circumstances.</p> <p>Under Disability updated child suspected of cervical/spinal injury as follows: In general, pediatric patients should not be transported in a passenger safety seat if a cervical/spinal injury is suspected. (See Pediatric Transport 8.12). If a child requires spinal motion restriction, transport in a child safety seat (See Spinal Trauma 4.5 and Pediatric Transportation 8.12).</p>
1.1	Exception Protocol		No changes
1.2	Extended Care Guidelines		No changes
2.0	Abdominal Pain	All	Removed blue assessment box and added the following PEARL: Common causes of acute abdominal pain may be appendicitis, cholecystitis, bowel perforation, diverticulitis, abdominal aortic aneurysm, ectopic pregnancy, pelvic inflammatory disease and pancreatitis.
2.1	Adrenal Insufficiency	Extended care Paramedic	<ul style="list-style-type: none"> ● After the stress dose continue to administer hydrocortisone every 6 hours: ○ Adult: 100mg IV/IM every 6 hours. <p>After the initial hydrocortisone (100 mg IV/IM), give hydrocortisone 50 mg IV bolus administered every 6 hours until stabilization of vital signs and capacity to eat and take medication orally.</p>
2.2	Allergic Reaction – Adult	EMT	<ul style="list-style-type: none"> ● For anaphylaxis, administer: (anterolateral thigh preferred administration site) <ul style="list-style-type: none"> ○ Adult epinephrine autoinjector 0.3 mg IM OR ○ Epinephrine 1mg/1mL: Administer 0.3 mg (0.3 mL) IM*. <ul style="list-style-type: none"> ▪ For additional dosing, contact Medical Control. <p><i>*EMTs must have completed the Ready, Check & Inject training, click here.</i></p> <p>Removed 3rd bullet: For patient who has a history of anaphylactic reaction and prescribed EpiPen, consider immediate administration of an EpiPen.</p>
2.2	Allergic Reaction – Pediatric	EMT	<ul style="list-style-type: none"> ● For anaphylaxis administer: (anterolateral thigh preferred

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			<p>administration site)</p> <ul style="list-style-type: none"> ○ Pediatric epinephrine autoinjector (EpiPen Jr) 0.15 mg IM for < 25 kg, ○ Adult epinephrine autoinjector (EpiPen) 0.3 mg IM if > 25 kg <p>OR</p> <ul style="list-style-type: none"> ○ If < 25 kg, epinephrine (1 mg/mL) 0.15 mg (0.15 mL) IM*, ○ If > 25 kg, epinephrine (1 mg/mL) 0.3 mg (0.3 mL)IM*. ▪ For additional dosing, contact Medical Control <ul style="list-style-type: none"> ● *EMTs must have completed the <u>Ready, Check & Inject training, click here.</u>
2.3	Asthma/COPD/RAD	AEMT	<ul style="list-style-type: none"> ○ CPAP up to a maximum of 10 15 cm H₂O pressure support. (See CPAP Procedure 5.x)
2.3	Asthma/COPD/RA	Paramedic	<p>Consider:</p> <ul style="list-style-type: none"> ● Levalbuterol 1.25mg via nebulizer, repeat every 20 minutes (4 doses total). <p>Consider:</p> <ul style="list-style-type: none"> ● Methylprednisolone 125 mg IV (preferred) OR ● Dexamethasone 10 mg IV or by mouth OR
2.3	Asthma/Bronchiolitis/Croup	All	<p>Added Pediatric Respiratory Distress to title New PEARLS: The IV formulation of dexamethasone may be given by mouth. Pneumonia</p> <ul style="list-style-type: none"> ● Signs and symptoms include: tachypnea, fever, intercostal retractions, cough, hypoxia and chest pain. <p>Tachypnea in children is defined as:</p> <p>< 2 months: 60 bpm 2-12 months: 50 bpm 1-5 years: 40 bpm >5 years: 20 bpm</p>
2.5	Behavioral	All	No change
2.3	BRUE AKA: Apparent Life Threatening Event	ALL	Brief Resolved Unexplained Event (BRUE) new protocol to replace ALTE.
2.6	Childbirth & Newborn Care		Combined with Newborn Care
2.7	Fever	All	Removed the protocol because board member agreed that you do not need to treat a fever, as it is a natural defense of the immune system. Additionally, it was discussed that some providers are being distracted by the fever and not identifying underlying sepsis.
2.8	Hyperglycemia	All	In definition added:

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			Hyperglycemia is defined as blood glucose greater than or equal to 250 mg/dL with associated signs and symptoms. Early signs include: Increased thirst, headaches, trouble concentrating, frequent urination and fatigue
2.9	Hyperthermia	All	Added an indication and contraindication box at the beginning to make it clear this was a protocol for elevated temperature due to environmental exposure, over exertion, pharmacological agents or excited/agitated delirium and NOT fever associated with infectious illness.
2.1	Hypoglycemia	All	Removed Glucapen as they will not be available for a number of years. Redefined hypoglycemia as < 60 mg/dl with associated altered mental status, CGS <15.
2.1P	Hypoglycemia - Pediatric	A/P	<ul style="list-style-type: none"> Administer 5 mL/kg dextrose 10% IV via premixed infusion bag (preferred) or prefilled syringe until mental status returns to baseline and glucose level is greater than 60 mg/dL or per Pediatric Color Coded Appendix 3, may repeat every 5 minutes until mental status returns to baseline and glucose level is greater than 60 mg/dL, IV pump not required. If unable to obtain IV access: <ul style="list-style-type: none"> Patients < 20 kg, give glucagon 0.5 mg IM or Glucapen Jr 0.5 mg IM. Patients > 20 kg, give glucagon 1 mg IM or Glucapen 1.0 mg IM.
2.11	Hypothermia	All	Added the consideration of the heat reflective emergency blanket (space blanket).
2.12	Nausea/Vomiting	EMT	Added: For severe nausea allow patient to inhale vapor from isopropyl alcohol wipe 3 times every 15 minutes as tolerated.
2.12	Nausea/Vomiting	Paramedic	Ondansetron 4 mg IV/PO/IM OR
2.13	Nerve Agent		Change 2Pam dosing to an infusion
2.14	Newborn Care		Combined with Childbirth
2.15	Newborn Resuscitation		No changes
2.16	Obstetrical		Renamed from OB/GYN. Reorganized into obstetrical emergencies and treatment modalities
2.17	Pain		Sucrose removed, studies showed no statistical evidence it decreased pain. Ketorolac dose changed from 15 – 30 mg to 15 mg. . A study came out in 2016 and showed the same pain relief for 10, 15, or 30. Plus, lower doses have less chance of causing acute kidney injury Acetaminophen and Ketamine added. <ul style="list-style-type: none"> Note: Nitronox may only be used if patient has not received an opiate or ketamine.
2.18	Poisoning/Overdose	EMT	Added: Naloxone 4mg (0.5mL) commercially prepared nasal spray.
2.19	Seizures		Midazolam IN added to assisted meds and new description on how

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			to use VNS magnet
2.2	Septic Shock		Updated indications
2.21	Shock - non traumatic		Changed the bolus end point from B/P > 90 to “a coherent mental status or palpable radial pulse. Added a bullet that End Tidal < 25 mmHg OR lactate > 2 mmol/L may indicate poor perfusion.
2.22	Smoke Inhalation		Added CO symptoms box
2.23	Stroke		Worked with ME & VT to develop Norther NE Unified Guideline Updated protocol with check list and stroke alert criteria
2.24	Syncope		No changes
3	ACS	EMT	Removed bullet to complete fibrinolytic questionnaire
3	ACS	P-Medical Control	Last bullet: If STEMI without uncontrolled bleeding or known thrombocytopenia consider: and no affirmative finding from fibrinolytic questionnaire, consider · Heparin 60 unit/kg to a maximum of 4000 5000 unit IV bolus.
3.1	Bradycardia Adult/Pedi	P	If symptomatic and hemodynamically unstable
	Bradycardia Adult	P	Removed Dopamine
	Bradycardia Adult/Pedi	P	New PEARL: When pushed too quickly, glucagon can cause nausea and vomiting.
	Bradycardia Pedi	P	Added epi concentrations: Epinephrine (0.1mg/mL) 0.01 mg/kg IV (0.1 ml/kg of 0.1mg/mL) every 3 – 5 minute
3.2	Cardiac Arrest	All	Completely updated with high performance CPR - see training module.
3.2	Cardiac Arrest	Paramedic	<ul style="list-style-type: none"> • Consider tension pneumothorax and treat with needle decompression. • For suspected pre-existing metabolic acidosis, suspected or known hyperkalemia (dialysis patient), known tricyclic antidepressant overdose, or suspected excited/agitated delirium consider: <ul style="list-style-type: none"> ○ Sodium bicarbonate 2mEq/kg IV. • For suspected or known hyperkalemia (dialysis patient) consider: <ul style="list-style-type: none"> ○ Calcium gluconate 2 gram IV, OR ○ Calcium chloride (10%) 1 gram IV. • For refractory ventricular fibrillation consider: <ul style="list-style-type: none"> ○ Changing pad placement from anterior-apex to anterior-posterior ○ If second manual defibrillator is available consider <u>Double Sequential Defibrillation Procedure X.X</u>

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			<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ IV boluses for suspected hypovolemia ○ Needle decompression for suspected tension pneumothorax • Wide complex PEA is often due to a metabolic cause including hyperkalemia and sodium-channel blocker toxicity. For wide complex PEA consider: <ul style="list-style-type: none"> ○ Calcium gluconate 2 grams IV, OR calcium chloride (10%) 1 gram IV AND ○ Sodium bicarbonate 2mEq/kg IV • For suspected pre-existing metabolic acidosis or suspected excited/ agitated delirium consider: <ul style="list-style-type: none"> ⊖ Sodium bicarbonate 2mEq/kg IV
3.3	CHF	AEMT	<p>Moved CPAP to top of protocol and nitroglycerin dosed according to BP:</p> <ul style="list-style-type: none"> • Consider Continuous Positive Airway Pressure (CPAP) with maximum 10cm H2O pressure support. • Establish IV access • For patients with known history of congestive heart failure, consider: <ul style="list-style-type: none"> ○ For systolic BP of 140 - 160 mmHg: nitroglycerin 0.4 mg SL ○ For systolic BP of 160 - 200 mmHg: nitroglycerin 0.8 mg SL (2 tabs/sprays). ○ For systolic BP > 200 mmHg: nitroglycerin 1.2 mg SL (3 tabs/sprays) ○ The above doses may be repeated every 5 minutes until symptomatic improvement or systolic BP of 140 mmHg • Assess blood pressure every 3 – 5 minutes during nitroglycerin administration
3.3	CHF	Paramedic	<p>Nitroglycerin dosed according to BP:</p> <ul style="list-style-type: none"> • Titrate until symptomatic improvement or systolic BP of 140 mmHg <ul style="list-style-type: none"> ○ For systolic BP of 140 - 160 mmHg: IV nitroglycerin start at 50 micrograms/minute ○ For systolic BP of 160 - 200 mmHg: IV nitroglycerin start at 100 micrograms/minute ○ For systolic BP > 200 mmHg: nitroglycerin start at 200 micrograms/minute. <p>Note: It is recommended two (2) IV lines in place and the IV</p>

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			nitroglycerin must be on an infusion pump. Generally, accepted maximum dose: 400 micrograms/minute.
3.4	Post Resuscitative Care	EMT	<p>Changed oxygen saturation range:</p> <ul style="list-style-type: none"> • Maintain oxygen saturation at \geq 94% • Consider titrating oxygen lower for patients with SaO₂ of 100%.
3.4	Post Resuscitative Care – Adult & Pedi	Paramedic	Removed Dopamine and Phenylephrine
3.5A	Tachycardia-Adult	Paramedic	<p>Change lead in sentence from: Follow ACLS guidelines as trained and credentialed. If symptomatic and hemodynamically unstable: TO: Follow ACLS tachycardia guidelines as trained and credentialed. For symptomatic tachyarrhythmias (other than sinus tachycardia):</p>
3.5A	Tachycardia-Adult	Paramedic	Removed Adenosine from the synchronized cardioversion section, left it in the narrow complex section.
3.5A	Tachycardia-Adult	Paramedic	Updated red flag on medications contraindicated with WPW: Diltiazem, metoprolol, amiodarone, and adenosine are contraindicated in patients with atrial fibrillation and a history of or suspected Wolff-Parkinson-White (WPW) syndrome.
3.5P	Tachycardia-Pedi	Paramedic	<p>Removed “symptomatic” from indications: If symptomatic tachyarrhythmias (other than sinus tachycardia): If symptomatic and hemodynamically unstable:</p>
3.6	Team Focused CPR	All	New Protocol, see High Performance CPR Training
4.0	Burns	All	<p>Combined Adult & Pediatric Protocol re-written into the following sections:</p> <ul style="list-style-type: none"> • Thermal • Chemical • Electrical/Lightening • Assess Extent of Burn • Pain Control <p>New Transport Decision Box:</p> <ul style="list-style-type: none"> • Consider air medical transport for major burns with greater than 20% BSA and/or inhalation injury with risk of airway compromise <p>New Rule of 9s Graphics</p> <p>Removed Red Flag Expert burn center opinion recommends no or limited prehospital IVF, based on concerns for fluid overload and development of compartment syndrome. In cases where burn patients are in shock, IV fluid administration should be based on use of the Shock-Traumatic Protocol 4.4.</p> <p>New PEARLS:</p>

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			<ul style="list-style-type: none"> • Electrocuting/Lightening burns can occur anywhere along the path a current travels through the body. Evident surface burns may only comprise a small portion of the overall burn injury, and an injury's full extent may not be immediately apparent. • Chemical burns: If 0.9% NaCl or sterile water is not readily available, do not delay; use tap water for flushing the affected area. Flush the area as soon as possible with the cleanest readily available water using copious amounts of water.
4.0	Burns	AEMT	<p>IV fluid dose changed from age range to weight based:</p> <ul style="list-style-type: none"> • Transport time less than 1 hour: <ul style="list-style-type: none"> ○ BSA > 20%: 20 mL/kg IV warm 0.9% NaCl*, over 10 – 30 minutes. (Does not need to be on a pump) ○ BSA < 20%: 10 mL/kg warm IV 0.9% NaCl*, over 10 – 30 minutes. • Consult Medical Control: <ul style="list-style-type: none"> ○ Transport time greater than 1 hour and/or ○ Patient has signs of shock <p>* An IO device can be inserted through burned skin as long as the underlying bone has not been compromised.</p>
4.1	Drowning/Submersion	EMT	<p>EMT rewritten as follows:</p> <ul style="list-style-type: none"> • Routine Patient Care. • Victims with only respiratory arrest usually respond after a few artificial breaths are given. <ul style="list-style-type: none"> ○ Give a few breaths and check for a pulse. <ul style="list-style-type: none"> ▪ Anticipate vomiting. • For patients in cardiac arrest, provide immediate CPR. <ul style="list-style-type: none"> ○ Utilize the sequence ABC, not CAB, i.e. start with airway and breathing before compressions • Routine stabilization of the cervical spine in the absence of circumstances that suggest a spinal injury is not recommended. • Assess temperature, if unresponsive, obtain esophageal or rectal temperature. • Due to extremely poor prognosis, providers may consider withholding or terminating resuscitation efforts when: <ul style="list-style-type: none"> ○ A clear history of prolonged submersion (without prior prolonged immersion), greater than 20 minutes (children may survive despite extended submersion) OR ○ Esophageal or rectal temperature is greater than 32°C (89.6° F) with asystole documented in 2 leads OR ○ No return of spontaneous circulation after 30 minutes of resuscitation (BLS alone or combined BLS & ALS). • Consider hypothermia, see Hypothermia 2.11 <ul style="list-style-type: none"> ○ Do not delay urgent procedures such as airway management and IV access. ○ Although hypothermic patients may exhibit cardiac irritability, do not delay necessary interventions.

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			<ul style="list-style-type: none"> Conscious patients who survive any form of drowning are at risk of deterioration and should be transported to the hospital.
4.1	Drowning/Submersion	All	<p>New bullets in PEARLS:</p> <ul style="list-style-type: none"> In hypothermic patients, low levels of ETCO₂ may not be a useful predictor of outcome, due to reduced metabolism. Oral and tympanic thermometers do not yield an accurate core temperature for severely hypothermic patients. Cold water offers enhanced survival only where the patient becomes cold prior to cardiac arrest. There is no need to clear the airway of aspirated water; only a modest amount of water is aspirated by most drowning victims, and aspirated water is rapidly absorbed into the central circulation. Unnecessary cervical spine immobilization can impede adequate opening of the airway and delay delivery of rescue breaths.
4.2	Eye & Dental	EMT	Removed bullet: Foreign body: patch both eyes.
4.2	Eye & Dental	AEMT	<p>Under Dental, new bullet for nausea:</p> <ul style="list-style-type: none"> An anti-emetic is strongly recommended for penetrating or blunt eye trauma, consider Nausea Protocol 2.12 <p>Under Dental, Replace brand name "Save-a-tooth" with hanks solution.</p>
4.2	Eye & Dental	All	<p>New Pearl bullets:</p> <ul style="list-style-type: none"> Significant eye injury may be present despite normal vision and minimal symptoms. Any chemical or thermal burn to the face/eyes should raise suspicion of respiratory insult. Vomiting in connection with blunt or penetrating eye trauma significantly increases intraocular pressure and should be avoided.
4.3	Musculoskeletal	AEMT/P	Added links to Shock – Traumatic Protocol for fluid administration.
4.4	Shock - Traumatic	AEMT	<p>Change Adult IV fluid administration:</p> <ul style="list-style-type: none"> Administer 0.9% NaCl to maintain systolic blood pressure >90 mmHg in 250–500 mL boluses. Administer 0.9% NaCl (in the form of small boluses, i.e., 250 mL) to return the patient to a coherent mental status or palpable radial pulse. <ul style="list-style-type: none"> In the setting of traumatic brain injury, however, fluids should be titrated to maintain systolic blood pressure greater than 110. Total volume should not exceed 2000 mL without consultation with Medical Control. Do not delay transport of IV access.
4.4	Shock – Traumatic	All	Updated PEARLS: For adult patients with uncontrolled external hemorrhagic or

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			<p>penetrating torso injuries:</p> <ul style="list-style-type: none"> • Restrict Titrate IV fluids to clinical end points: <ol style="list-style-type: none"> 1. Delaying aggressive fluid resuscitation until operative intervention may improve outcome. 2. Several poor outcomes associated with IV fluid administration have been suggested, including dislodgement of clot formation, dilution of clotting factors, and acceleration of hemorrhage caused by elevated blood pressure. • Patients should be reassessed frequently, with special attention given to the lung examination to ensure volume overload does not occur. • Do not overlook the possibility of associated domestic violence and child abuse.
4.5	Spinal Injury	All	No major changes
4.	TXA	Paramedic	New Protocol
4.6	Thoracic Injuries		Added bullets for needle decompression for pediatric patients.
4.7	TBI	AEMT	<p>Changed Adult IV Fluid:</p> <ul style="list-style-type: none"> • Maintain systolic BP >90mmHg. • Administer 0.9% NaCl (in the form of small boluses, i.e., 250 mL) to return the patient to a coherent mental status or palpable radial pulse. <ul style="list-style-type: none"> ○ In the setting of traumatic brain injury, however, fluids should be titrated to maintain systolic blood pressure greater than 110 mmHg. ○ Total volume should not exceed 2000 mL without consultation with Medical Control. Do not delay transport for IV access
4.7	Tranexamic Acid (TXA)	Paramedic	New Protocol
4.8	TBI-Adult & Pedi	Paramedic	Removed lidocaine administration prior to intubation.
5	Airway Mgmt Procedure	EMT	Under BASIC SKILLS: added language for PEEP valve with BVM: Provide ventilation with a bag-valve-mask (BVM). Using BVM with a PEEP valve at 3 set at 5-15 cmH₂O is recommended.
5	Airway Mgmt Procedure	AEMT & Paramedic	<p>Under Advanced Airway the following, Please note that Combitube will be removed from the protocols in 2017:</p> <p>The appropriate method of airway management should be determined based on patient condition. Only after If basic procedures are deemed inappropriate or have proven to be inadequate then should more advanced methods should be used. Use the least invasive method Non-rebreather Face Mask (NRB) (NRFM) → Bag-Valve-Mask (BVM) → Supraglottic Airway (SGA) → Endotracheal Intubation (ETT) → Cricothyrotomy (Cric). Procedures documenting the use of each device/technique listed below are found elsewhere in this manual.</p> <p>CPAP/BiPAP: Continuous positive airway pressure (CPAP) or</p>

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			<p>bilevel positive airway pressure (BiPAP) have been shown to be effective in eliminating the need for intubation and in decreasing mortality in properly-selected patients with acute respiratory distress.</p> <p>Supraglottic Airways (SGA): Utilization of supraglottic airways is an acceptable alternative to endotracheal intubation as both a primary device or a back-up device when previous attempt(s) at ETT placement have failed. Each device has its own set of advantages/disadvantages and requires a unique insertion technique. Providers should have access to, and intimate knowledge of, at least one supraglottic airway. Examples include:</p> <ul style="list-style-type: none"> ● King LT ● Combitube/EasyTube (to be removed in 2017 protocols) ● LMA <p>ETT: The endotracheal tube was once is considered the optimal method or “gold standard” for of securing the airway in patients with significant respiratory distress and/or airway compromise. airway management. It is now clear. However, the incidence of complications is unacceptably high when intubation is performed by inexperienced providers or monitoring of tube placement is inadequate. The optimal method for managing an airway will, therefore, vary based on provider experience, emergency medical services (EMS) or healthcare system characteristics, and the patient’s condition. Use capnography continuously for placement and CO₂ monitoring. Use video laryngoscopy, if available and trained.</p> <p>Bougie: All providers who attempt ETT placement should become intimately familiar with the use of a Bougie. It is the device used most often by anesthesiologists and emergency physicians for helping guide placement when a difficult airway is encountered. Bougie must be available for all intubations performed.</p>
5.1	Airway Mgmt Protocol		<p>Updated methods of airway management as such:</p> <ul style="list-style-type: none"> ● Use least invasive method for respiratory failure. NRB NRFM → BVM → SGA → ETT → Cric. ● 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 should more advanced methods should be used <p>Added link to new BiPAP Protocol Consider <u>BiPAP Procedure.</u></p>
5.2	BiPAP	Paramedic	New protocol for Paramedic Units utilizing ventilators with a BiPAP

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			option.
5.3	Cricothyrotomy - Percutaneous	Paramedic	No Changes
5.4	CPAP	AEMT	<p>Updated the procedure:</p> <ol style="list-style-type: none"> 1. Ensure adequate oxygen supply for CPAP device. 2. Explain procedure to patient. Be prepared to coach patient for claustrophobia or anxiety. Managing patient anxiety is extremely important. Reduce patient anxiety by coaching and minimize external stimuli as much as possible. 3. Place patient in upright position. Apply pulse oximetry, capnography nasal capture device and ECG as available and trained. 4. Choose appropriate sized device mask for patient, assemble the CPAP device, attach to oxygen supply and insure oxygen is flowing (follow manufacturer's directions for preparation for your particular device). 5. Place mask over face and secure with straps until minimal air leak. 6. Adjust Positive End Expiratory Pressure (PEEP) to 5 - 10 15 cmH₂O to effect for patient condition. 7. If device allows, titrate oxygen level to oxygen saturation of 94 – 99%. 8. Recheck mask for leaks and adjust straps as needed to minimize air leaks. 9. Reassure anxious patient. 10. Monitor pulse oximetry, quantitative waveform capnography and ECG as available and trained. 11. If patient stabilizes, maintain CPAP for duration of transport and notify receiving hospital to prepare for a CPAP patient. 12. If patient begins to deteriorate, discontinue CPAP and assist respirations by BVM with PEEP valve. 13. Document CPAP procedure, including time and provider. Document serial pulse oximetry and capnography readings to demonstrate effects. <p>If a commercial device is not available you may consider using a BVM with PEEP valve:</p> <ol style="list-style-type: none"> 1. Apply nasal cannula at 15 lpm 2. Attach PEEP valve to BVM at desired PEEP level (5 – 15 cmH₂O). 3. Attach oxygen to BVM at least 15 lpm and ensure flow. 4. Maintain continuous mask seal on patient to deliver CPAP.
	Gastric Tube Insertion	Paramedic	New Protocol
5.5	Gum Elastic Bougie/Flexguide		Rewritten with more detail.
5.6	Nasotracheal Intubation	Paramedic	Changed number of attempts to 2 from 3 and then some grammatical changes

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5.7	Orotracheal Intubation		Rewritten with more detail.
5.8	Suction (Advanced)	All	No Changes
5.9	Supraglottic Airway	All	Combitube removed from approved devices. Also removed the list of approved devices, as there are many.
5.1	Tracheostomy Care	Paramedic	Under PROCEDURE added a bullet: Bougie may be used to assist with placement of endotracheal tube into stoma.
5.11	Ventilators	Paramedic	No changes
6	12 Lead Acquisition	All	Grammatical changes in PEARLS
6.x	Double Sequential Defibrillation	All	New Protocol
6.1	Intraosseous Access	A/P	<p>Contraindications updated:</p> <ul style="list-style-type: none"> • Placement at an burn or infected site. • Inability to find landmarks. <p>Approved Sites:</p> <ul style="list-style-type: none"> • Per FDA-approved manufacturer's recommendation. <p>Under Procedure step 6: 6. For alert patients prior to IO syringe bolus (flush) or continuous infusion:</p> <ul style="list-style-type: none"> • Ensure that the patient has no allergies or sensitivity to lidocaine. • If using extension tubing without stopcock, prime with lidocaine 2% (preservative free).
6.2	Waveform Quantitative Capnography	All	<ul style="list-style-type: none"> • Changed title to Capnography. Updated Indications as follows: Routine monitoring of ventilation status and indirectly circulatory and metabolic status in adults and children with: <ul style="list-style-type: none"> ○ Respiratory distress (CHF, COPD, Asthma, Pulmonary embolus) ○ Altered mental status ○ Traumatic brain injury ○ Diabetic ketoacidosis ○ Circulatory shock ○ Sepsis ○ Cyanide and/or carbon monoxide poisoning ○ Administration of sedative medication • Advanced Airway Devices: <ul style="list-style-type: none"> ○ Confirm and document placement of advanced airway devices, see Airway Management 5.0 and 5.1 A&P <p>To confirm continued placement of advanced airway devices after every patient move and at transfer of care.</p>

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6.3	Restraints	E/A	<p>INDICATIONS</p> <p>Any patient who exhibits an altered mental status and who may harm himself, herself, or others or interfere with their own care may be restrained to prevent injury to the patient or crew and facilitate necessary medical care. Restraining must be performed in a humane manner and used only as a last resort.</p>
6.3	Restraints	All	<p>Red Flag:</p> <p>Continued patient struggling against restraints may lead to hyperkalemia, rhabdomyolysis, and/or cardiac arrest, chemical restraint may be necessary to prevent continued forceful struggling by the patient.</p>
6.3	Restraints	Paramedic	<p>Once physically restrained:</p> <ul style="list-style-type: none"> • Midazolam 5mg IM/IN, may repeat once in 20 10 minutes; or 2.5mg IV/IN, may repeat once in 5 minutes; OR • Lorazepam 2mg IM, may repeat once in 20 10 minutes; or 1mg IV, may repeat once in 5 minutes; OR • Diazepam 2mg IV (preferred route), may repeat once in 5 minutes; or 5mg IM, may repeat once in 20 minutes. • If agitation continues after benzodiazepines consider haloperidol 5 – 10mg IM, may repeat once in 10 minutes (max total dose 10 mg). <p>For patients with suspected Excited/Agitated Delirium, extreme agitation or ineffective control with benzodiazepines above:</p> <ul style="list-style-type: none"> • Ketamine (preferred): <ul style="list-style-type: none"> □ 4mg/kg IM rounded to nearest 50mg, maximum dose 500mg, repeat 100mg IM in 5 – 10 minutes. OR • Midazolam 5mg IM/IN, may repeat once in 10 minute; or 2.5mg IV may repeat once in 5 minutes AND • Haloperidol 10mg IM; may repeat once in 10 minutes. <p>Contact Medical Control for additional doses.</p> <ul style="list-style-type: none"> • If cardiac arrest occurs with suspected excited delirium, consider early administration of: fluid bolus, sodium bicarbonate, calcium chloride/gluconate, see Cardiac Arrest 3.2A. <p>For acute dystonic reaction to haloperidol: Diphenhydramine 25 – 50mg IV/IM.</p>
6.4	Tasers	All	<p>State and local law enforcement may use a conductive energy weapon called a Taser. This device is a non-lethal tool. When used, the device discharges a wire that, at the distal end, contains an arrow-like barbed projectile...</p>
6.5	Tourniquets	All	<p>Under Procedure:</p> <ol style="list-style-type: none"> 1. If hemorrhage is not severe, attempt to control the hemorrhage with direct pressure, bandaging and elevation. 2. With a commercial If a tourniquet is indicated:

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			Place tourniquet 2 – 3 inches proximal to wound on the affected extremity. And last bullet under Procedure: <ul style="list-style-type: none"> Do not remove or loosen tourniquet once hemostasis is achieved, unless in the extended care setting.
6.5	Tourniquets	All	A Reassessment and Removal Algorithms were added.
6.6	Vascular Access via Central Catheter		No Change
7.0	Advanced Sepsis	Paramedic	New Prerequisite protocol
7	Immunizations		No changes
7.1	IFT		Under the PIFT section, added further explanation that stable long-term vented patients were able to go with a PIFT crew with their current vent setting maintained even if PEEP is greater than 10 mmHg; and the acutely intubated patient needs to have 2 people in the back of ambulance, one being the PIFT paramedic. Under the CCT section, Option 2, where a CCT crew is not available and a PIFT crew and hospital staff are going to transport the patient we broke out the ventilated patient with complex setting only versus the ventilated patient with other instabilities. The complexly vented only patients may go with a PIFT crew and respiratory care practitioner, however the complexly vented patient with another condition causing a high risk of deterioration will require the PIFT crew, a respiratory care practitioner and a hospital based provider.
7.2	MIH		No changes
7.3	RSI		Rewritten with more depth; education expanded
7.4	Sx Cric		Added two more bullets for more detail: 3. The provider performing the procedure should be on the side of the patient corresponding to their dominant hand (i.e. right handed provider to the right of the patient). 4. While resting dominant hand on patient's sternum, make an approximately 3 cm vertical incision, 0.5 cm deep, through the skin and fascia. Incision should start just above the thyroid cartilage and extend below the cricoid ring. With finger, dissect tissue and locate the cricothyroid membrane."
8	Abuse & Neglect		Combine into Victims of Violence
8.1	AMT		Grammatical changes
	Baby Safe Haven		New Protocol
8.2	Bariatric		Added Bureau phone number
8.3	Communications		No Change
8.4	Communications Failure		No Change
8.5	Consent for Treatment of a	ALL	A The word "minor" is a legal term for a person who has not yet reached his/her eighteenth birthday and is under the control of

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	Minor		<p>parent(s) or legal guardian. Emancipated minors may make their own determinations regarding medical care and include those minors who are married or members of the armed forces. A minor patient bears the burden of establishing, by legal documentation or otherwise, that he/she is emancipated. New Hampshire recognizes emancipation decrees issued by other states.</p> <p>Note that the legal definition of a “minor” for purposes of consent is unrelated to the medical definitions of “pediatric patient,” “child,” and “children,” as used in these protocols.</p> <p>Implied Consent Under RSA 153-a:18, EMS personnel may treat minors under the doctrine of implied consent when the minor’s parent or other authorized representative is unavailable to provide expressed consent. (RSA 153-A:18) With the exception of life-threatening emergencies, personnel should attempt to contact the minor’s parent or legal guardian to obtain informed consent to treat and transport the child. When a parent or legal guardian is unavailable, another authorized representative (e.g., a school or camp official), who has been expressly authorized by the minor’s parent, may consent to health care treatment.</p> <p>Refusal of Care A parent or legal guardian or other authorized representative may refuse care for a minor and should understand the minor’s medical condition and potential consequences of refusing care. Carefully document all refusals.</p> <p>A minor may consent without parental permission for the following care:</p> <ul style="list-style-type: none"> ● Treatment for sexually transmitted diseases at age 14 and older (RSA 141-C:18). ● Treatment for drug and alcohol abuse at age 12 and older (RSA 318-B:12-a). ● Any patient 14 years of age or older does not need parental consent for treatment of sexually transmitted diseases (RSA 141-C:18). ● Any patient 12 years of age or older may voluntarily submit to a healthcare facility for drug dependency or any problem related to drugs (see RSA 318-B:12-a). ● An emancipated minor may consent to, or refuse health care. A minor patient bears the burden of establishing, by legal documentation or otherwise, that he/she is emancipated. New Hampshire recognizes emancipation decrees issued by other states.

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			<p>An adolescent patient under the age of 18 must give his/her consent for a sexual assault forensic exam ("Sexual Assault: An Acute Care Protocol for Medical/Forensic Evaluation", Office of the NH Attorney General, Sixth Edition, 2011). Adolescents with no life threatening injuries may be hesitant to seek medical attention after a sexual assault. Other reasons for transport to hospital include prophylactic treatment for sexually transmitted disease or pregnancy and drug/alcohol screening which is crucial for possible prosecution. If unable to convince patient to seek emergency care at a hospital, contact Medical Control and request assistance from a hospital based advocate or from the local crisis center.</p>
8.5	Continuity of Care	All	<p>New – see protocol rollout. The protocol goes over the following:</p> <ul style="list-style-type: none"> • EMS providers responding to a 911 emergency may encounter patients with pre-existing medical devices (e.g. ventilator) or pre-established medication infusions (e.g. antibiotics) that are outside of NH EMS Protocols and beyond the EMS provider’s scope of practice. The medical emergency may be unrelated to the pre-existing medical care (e.g. chest pain in a patient receiving an infusion) or may relate to the pre-existing care (e.g. problems with a ventilator supporting a patient’s breathing). • Pre-existing medical care may include ventilators, CPAP, BiPAP, ventricular assist devices (VADs), continuous or intermittent IV medication infusions (analgesics, antibiotics, chemotherapeutic agents, vasopressors, cardiac drugs), and nontraditional out-of-hospital drug infusion routes (subcutaneous infusaports, central venous access lines, direct subcutaneous infusions, self-contained implanted pumps). The type of pre-existing care potentially encountered by EMS providers is extensive. • The device or medication administration may be supported or maintained by the patient or the patient’s caregiver.
8.7	Crime Scene		No changes
8.8	DNR, POLST, Advanced Directive	All	<p>APRNs can sign DNRs. Red Flag: Neither a Living will nor a Durable Power of Attorney for Healthcare (DPOAH) form is as effective as a valid DNR order. Neither a patient’s spouse nor a healthcare agent under a DPOAH may not direct EMS providers to withhold resuscitation in the absence of a valid DNR Order.</p> <p>Additional grammatical edits.</p>
	Hospice	All	New protocol
8.9	Infectious Control	All	Name change from Bloodborne/Airborne Pathogens

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			<p><u>Body Substance Exposure - Procedures and Considerations</u></p> <ul style="list-style-type: none"> • Personnel with blood borne pathogen exposure should immediately flush exposed area or wash with an approved solution. At a minimum, use warm water and soap. • The exposed area If skin integrity is broken, the area cover area with a sterile dressing. • As soon as possible, or after transfer of patient care, the EMS provider should thoroughly cleanse exposed site and obtain a medical evaluation by the medical advisor as dictated by service department's Exposure Control Plan and/or Workers Compensation policy. <p><u>Airborne Procedures and Considerations</u></p> <ul style="list-style-type: none"> • Provide early notification to receiving hospital so hospital may enact its respective airborne pathogen procedures. • Limit number of personnel in contact with suspected patients to reduce potential exposure to others. • Limit procedures that may result in the spread of suspected pathogen, (e.g., nebulizer treatments), if feasible. • Utilize additional HEPA filtration on equipment, (e.g., BVM or suction), if available. • Exchange of fresh air into the patient compartment is recommended during transport. • EMS providers who believe they have been exposed to an airborne pathogen may proceed as above in getting timely medical care. The Patient Care Report enables hospital infection control staff to contact at risk EMS personnel, should that patient be found to have a potential airborne pathogen such as tuberculosis, neisseria bacterial meningitis, SARS, etc. <p><u>Enteric Pathogens</u></p> <ul style="list-style-type: none"> • Emergency medical services personnel should assume that patients who present with gastrointestinal illnesses accompanied by nausea, vomiting and/or diarrhea are potentially infectious with enteric pathogens and must protect themselves accordingly by use of appropriate contact and droplet precautions and approved procedures. <p>Screen symptomatic patients for recent antibiotic use or contact with others who have had Closteria Difficile or Noro Virus. Provide</p>

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			<p>early notification to receiving hospital.</p> <p>Under Decontamination and Follow-up:</p> <p>In the case of suspected enteric pathogen contamination, personnel should clean all areas of patient contact with cleaners that are effective against E. coli, Noro Virus or C. Difficile. This should be clearly stated on the cleaner label, as most products do NOT effectively kill the pathogen. See The Centers for Disease Control and Preventions (Guideline for Disinfection and Sterilization in Health Care Facilities) If the patient was actively vomiting during transport to the hospital, surfaces in close proximity to the patient should also be cleaned.</p>
8.10	LVAD		Re-written and removed much of the teaching elements. Changed title from LVAD to VAD
8.11	On-Scene Medical Personnel		No change
8.12	Pt Status Determination		No change
8.13	Pedi Transport	All	<p><u>NH RSA 265:107-a</u> requires all children up to 57 inches to be properly restrained in a safety seat or harness when riding in a vehicle. Any child who fits on a length-based resuscitation tape is 57 inches or less in height. An ill or injured child <u>must</u> be restrained in a manner that minimizes injury in an ambulance crash. The best location for transporting a pediatric patient is secured directly to the ambulance cot. The method of restraint will be determined by various circumstances including the child's medical condition and weight. Never allow anyone to hold an infant or child on the stretcher for transport.</p> <p>Under Types of Restraints:</p> <p>4. Isolette/Incubator Properly secure isolette and infant must be secured to ambulance according to manufacturer's guidelines.</p> <ul style="list-style-type: none"> • Secure infant using manufacturer's restraint. (Five point harness restraint is preferred.) <p>Blankets or towels may be used for additional stabilization</p> <p>MOTHER AND NEWBORN TRANSPORT</p> <ul style="list-style-type: none"> • Secure and transport mother on the cot. • Transport newborn secured to the <u>rear-facing provider seat /captain's chair</u> using a size-appropriate child restraint system. Either a convertible safety seat with a <u>forward-facing belt path</u> or an integrated child restraint system certified by the manufacturer to meet FMVSS No. 213 may be used to secure

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			<p>infant.</p> <p>Do NOT use a rear-facing only safety seat in the rear-facing provider seat / captain's chair as this is dangerous and may lead to significant injuries.</p>
8.14	Police Custody		No change
8.15	Refusal of Care		No change
8.15	Response to DV		Combined with Victims of Violence
8.16	Resuscitation Initiation and Termination		<p>Broke out when resuscitation may be stopped into EMT/AEMT and Paramedic sections</p> <p>Under the EMT/AEMT section changed AED advised no shock on 5 sequential analyses to 20 minutes and changed ALS/hospital care is not available with 15 minutes to within 20 minutes and the ETCO2 is less than 20 mmHg.</p> <p>Under the Paramedic section added asystole and slow wide complex PEA may stop resuscitation after 20 minutes and ETCO2 less than 20 mmHg. Added Narrow complex PEA with a rate above 40 or refractory and recurrent ventricular fibrillation / ventricular tachycardia stop resuscitation after 60 minutes from time of dispatch; additionally the paramedic should consider early expert consultation with medical control on these cases.</p>
	Strangulation	All	New Protocol
8.17	Trauma Triage and Transport Decision		Minor changes with additional training being created by TMRC's Prehospital Subcommittee
9	Hazardous Material Exposure		No changes
9.1	Mass/Multiple Casualty Triage		Cleaned up the SALT Triage Categories by taking out the examples.
9.2	Radiation Injuries - MCI		No changes
	Scope of Practice	AEMTs	Removed manual defibrillation