SUMMARY OF CT EMS PROTOCOL CHANGES - from v2017.2 to v2018.1

Protocol Name	Change Made to Protocol	Justification for Change
Adult Medication Reference	Updated to reflect new medications and protocol changes	Updated to reflect new medications and protocol changes
1.0 Routine Patient Care	For protocols 1.0, 1.1, 2.5 A&P, 2.22A, 2.26, 3.0, 3.4, 5.1 replaces verbiage regarding oxygen titration with: "If breathing is adequate, administer oxygen as needed to maintain O2 saturation of 94% to 99% (≥90% for COPD patients)"	More consistent verbiage through protocols.
1.0 Routine Patient Care	Adds MOLST reference	Consistent with statutory change
1.1 EMR Routine Patient Care	• Remove 'Advanced Directive' portion of DNR, insert 'MOLST' • Add 'with patients with unstable vital signs, respiratory distress, or other life threatening conditions' to Advanced Life Support intercept (page 13) • Remove reference to SpO2 and directs "If breathing is adequate but there is evidence of difficulty breathing or hypoxia, administer oxygen. -Skin signs and mental status are important in assessing potential hypoxia"	Consistent with statutory change. Additional guidance for requesting ALS resources. SpO2 not in EMR scope of practice.
2.2 Alcohol withdrawal	Adds NEW Alcohol withdrawal protocol	Earlier recognition and treatment of alcohol withdrawal
2.3A Allergic Reaction / Anaphylaxis Reaction	Revise PEARLS section verbiage to 'Anaphylaxis is defined as: 1 - Known allergy exposure with hypotension or respiratory compromise OR 2 - acute onset of symptoms with two or more of the following:...'	Clarifies wording of anaphylaxis definition
2.3P Allergic Reaction / Anaphylaxis Reaction	Revises anaphylaxis definition same as for 2.2A. Removes mg/kg IM dosing and sets flat 0.15mg epinephrine IM if <25 kg.	Consistency with NH protocol and simplified dosing to reduce time to administration and errors.
2.5A Asthma / COPD / RAD	Adds to AEMT section contact DMO for consideration of Epinephrine (1mg/1mL). Adds to PEARLS, "Be certain of the diagnosis when considering Epinephrine. The use of Epinephrine in patients with known cardiac disease may increase cardiac complications."	Allows 2007 AEMT a DMO option for IM epi in severe asthma. Emphasizes need for caution with epinephrine.
2.5P Asthma / COPD / RAD	Change to: "nebulized racemic epinephrine 0.5 ml of 2.25% (11.25mg) with 3 mL 0.9% NaCl"	Proper dilution of racemic epinephrine for safe and effective administration
2.8 Fever - Pediatric	Adds NEW Pediatric Fever Protocol	Improve comfort of pediatric patients with fever
2.10 Hyperkalemia	Adds NEW Hyperkalemia Protocol	Improve recognition and early treatment of life-threatening hyperkalemia
2.16 Newborn Care	Modifies heart rate assessment to: • "Utilize 3 or 4 lead ECG monitoring (superior accuracy to clinical assessment of heart rate) •If ECG is unavailable/not authorized, auscultate apical beat with a stethoscope or palpate the pulse by lightly grasping the base of the umbilical cord."	Changes protocol for consistency with published neonatal resus guidelines.

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2.17 Newborn Resuscitation	Modifies heart rate assessment to: • "Utilize 3 or 4 lead ECG monitoring (superior accuracy to clinical assessment of heart rate) •If ECG is unavailable/not authorized, auscultate apical beat with a stethoscope or palpate the pulse by lightly grasping the base of the umbilical cord." Replaces meconium guidance with: • "If meconium is present and the newborn is not vigorous (poor muscle tone, weak respiratory effort, or heart rate <100 bpm), initiate standard resuscitation techniques. Consider intubation and suctioning via meconium aspirator if the airway is obstructed" Adds • "If heart rate is above 100/min but breathing is labored or there is persistent cyanosis/hypoxia: o Position and clear airway o Continue to monitor SpO2/ECG o Provide supplemental oxygen as needed Inserts "Consider inserting a laryngeal mask (eg. LMA, iGEL, etc.) for newborns ≥34 weeks gestation if endotracheal intubation (ETI) is unsuccessful or as an alternative to ETI."	Changes protocol for consistency with published neonatal resus guidelines.
2.17A & 2.17P Poisonings	Replace "Tricyclic, Benadryl or Cocaine with symptomatic dysrhythmia (e.g. tachycardia and wide QRS): Sodium bicarbonate 2 mEq/kg IV" with "For sodium channel blocker toxicity (e.g. Tricyclic, Benadryl or Cocaine) with symptomatic dysrhythmia (e.g. tachycardia and wide QRS) administer: Sodium bicarbonate 2 mEq/kg IV"	Allows treatment of sodium channel blocker toxicity beyond just tricyclics, diphenhydramine or cocaine (e.g. flecainide)
2.19 A - Pain Management Adult	Major revisions including but not limited to: Allows for combination therapy analgesia. Adds ketorolac, IV & PO acetaminophen, PO ibuprofen. Caps ketamine dose at 30mg. Allows metoclopramide or prochlorperazine for diagnosed migraine. Adds reference to non-opioid directive. Allow prophylactic antiemetic. Adds/modifies cautions/PEARLS.	Provide additional non-opioid options and methods to improve analgesia and reduce opioid requirements. Guides providers to respect patient wishes.
2.19 P - Pain Management Pediatric	Major revisions including but not limited to: Allows for combination therapy analgesia. Adds PO acetaminophen and PO ibuprofen. Adds reference to non-opioid directive. Adds/modifies cautions/PEARLS.	
3.1A - Bradycardia	Insert below benzodiazepine options for transcutaneous pacing: "Alternatively, provide analgesia per Pain Management Protocol" and insert a pearl of "In the un-intubated patient, analgesics may not be administered in combination with benzodiazepines without online medical control order"; Also, modifies guidance regarding rate of calcium administration to administer "over at least 5 minutes".	Allows option of analgesics instead of sedation for continuous transcutaneous pacing. Simplifies guidance on rate of calcium administration to avoid conflicting guidance.
3.2 A - Cardiac Arrest	Replaces bullet "Administer anti-dysrhythmic as indicated" with: "For VF/pulseless VT unresponsive to CPR, defibrillation, and vasopressor therapy, administer: 300 mg amiodarone IV/IO. If after 5 minutes, VF/pulseless VT remains unresponsive to CPR, defibrillation, and vasopressor therapy, administer an additional 150 mg amiodarone IV/IO. If successful, consider amiodarone maintenance infusion @ 1mg/minute Or, if amiodarone is unavailable: 1.5 mg/kg lidocaine IV/IO. Repeat lidocaine 0.75mg/kg IV/IO every 5-10 minutes until defibrillation is successful up to a maximum total dose of 3 mg/kg. If successful/ROSC, consider maintenance infusion of lidocaine 1-4 mg/min"	Specifies antidysrhythmic medication/dosing consistent with AHA guidelines.
5.0 Airway Management	Replace 'consider using BVM with PEEP valve at 3 cmH20' with "Consider attaching PEEP valve at 5-10 cm H2O to BVM. Avoid PEEP in patients with suspected pneumothorax or recent tracheobronchial surgery"	Change to be consistent with other PEEP/CPAP recommendations. Facilitates improved oxygenation.
5.1A Airway Management Adult	Add to Paramedic section above OG tube: "Consider attaching PEEP valve at 5-10 cm H20 to BVM. Avoid PEEP in patients with suspected pneumothorax or recent tracheobronchial surgery."	Allows application of PEEP to BVM in order to provide improved oxygenation.

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5.1P Airway Management Pediatric	Insert bullet in EMT section of: - Consider attaching PEEP valve at 5 cm H2O to BVM. Avoid PEEP in patients with suspected pneumothorax or recent tracheobronchial surgery."	Allows application of PEEP to BVM in order to provide improved oxygenation.
5.5 Nasotracheal Intubation, 5.6 Orotracheal Intubation, 5.8A&P RSI Adult & Pedi, 5.10 A&P Supraglottic Airway	Under all "Post-Intubation Care" sections, replace with: "ADULT Sedation: -Midazolam 2 – 5 mg IV/IO, every 5 – 10 minutes, as needed, OR -Lorazepam 1 – 2 mg IV/IO, may repeat every 15 minutes as needed (maximum: 10 mg) OR -Ketamine 1-2 mg/kg IV/IO AND Consider analgesia/potentiation of sedation: -Fentanyl 1-2 micrograms/kg (max 200 micrograms), slow IV/IO push (preferred), OR -Dilaudid 0.5 - 1 mg, slow IV/IO push, OR -Morphine 2 – 5 mg, slow IV/IO push (be cautious of hypotension), OR -Ketamine 0.3 mg/kg IV/IO/IM" and "PEDIATRIC Sedation: -Midazolam 0.1 mg/kg (4 mg maximum dose) every 10 minutes as needed, OR -Lorazepam 0.1 mg/kg (4 mg maximum dose) every 10 minutes as needed. AND Consider analgesia/potentiation of sedation: -Fentanyl 1-2 micrograms/kg (max. 200), slow IV/IO push."	Change to provide consistent and appropriate post-tube sedation and analgesia. Wording allows discretion when hemodynamics or other considerations will not support administration of one or more agents.
5.8P RSI Pedi	Modifies sedative Options: Age <2 Ketamine (1-2 Mg/Kg) OR Midazolam (0.2 Mg/Kg) OR Age > 2 Consider Etomidate (0.3 mg/Kg.)	Streamlines pediatric RSI sedation medication and doses consistent with best practice
6.8 Intraosseous access	Replaces IO procedure from #6 down with specific, manufacturer recommended procedure including for lidocaine local anesthetic administration. Modifies total lidocaine dose to 40mg (0.5 mg/kg pedi)	Provide more effective local anesthesia for IO in conscious patients
6.9 LVADs	Replaces VAD resource weblink with https://www.mylvad.com/medical-professionals/ems	Dead weblink
6.14 - Restraints	Major revisions. Modifies indications for restraint. Multiple changes to Paramedic Standing Orders. Increases intranasal midazolam dose. Limits haloperidol/olanzepine to use for extreme agitation/combativeness or if benzodiazepines are ineffective. Identifies ketamine as preferred agent for extreme agitation/combativeness. Modifies ketamine dosing and allows additional dose. Allows administration of ketamine in cases when benzodiazepines were administered but ineffective. Adds administration of calcium chloride/gluconate for cardiac arrest after suspected excited delirium. Adds red flag regarding patient harm from struggling against restraint. Adds red flags of increased risk of respiratory depression with rapid benzo or ketamine admin and need to be prepared to manage airway when providing chemical restraint. Adds pediatric chemical restraint dosing/option.	Consistency with New Hampshire protocol. Attempt to improve efficacy and address safety concerns. Provides options for/clarifies chemical restraint of violent pediatric patients.