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| **#** | **Protocol or Appendix** | **Change** | **Reason** |
| 1. | Inside cover | OEMS address change. | Move to Marlborough. |
| 2. | TOC and Appendices A2, A3 and A4 | Added New protocols  -2.19 Hyperkalemia – Adult  -5.4 Sedation for an Intubated Patient  -6.11 Withholding and Cessation of Resuscitation by  EMT Paramedic  -6.12 ECG Acquisition and Transmission by Basic and  AEMTs  -Removed Pedi Drug Reference. References to the Pediatric Drug reference were removed from Protocols 2.11-Newly Born Care, 3.10 Ventricular Tachycardia with Pulses – Adult & Pediatric and 7.6 Sedation and Analgesia for Electrical Therapy-Adult & Pediatric.  Relabeled Appendices:  A2-IFT  A3-Scope of Practice  A4-POE plans. | Technical fixes with protocol changes. |
| 2a. | Table of Contents | Protocol 6.11 Title changed to Withholding and Cessation of Resuscitation by EMT Paramedic as a Medical Control Option. | To match the amended title of Protocol 6.11. |
| 3. | 1. Routine Patient Care   -Patient Approach | On page 1 at the last bullet:  - Note that there is no such regulatory concept as a “lift-assist call.” Under 105 CMR 170.345 of the EMS System regulations, each EMS call – including but not limited to those cases in which no treatment is provided, the patient refuses treatment and there is no transport – a patient care  report (PCR) must be documented. When EMS is dispatched to a patient who is requesting a “lift  assist,” EMS must complete and document an appropriate patient assessment on a PCR. If the  patient is not transported, then an informed refusal must be documented, in accordance with  Protocol 7.5 and included in the PCR. | EMS Providers must assess the patient document findings, transport or attain a refusal if the patient declines transportation. |
| 4. | 1. Routine Patient Care (RPC)   -Assessment and Treatment Priorities (continued) | On page 2 in the fourth bullet three items/statements have been added:  -OLMC need not be contacted for a patient in cardiac arrest,  -tunneled and non-tunneled externally accessible central catheters and  -fluid  The update now reads:  In a critical patient with no other vascular access, if trained to do so and with concurrent on-line medical control order (OLMC need not be contacted for a patient in cardiac arrest), Paramedics may access a Peripherally Inserted Central Catheter (PICC) line, tunneled and non-tunneled externally accessible central catheters, in order to administer fluids or medications. | Paramedic can utilize existing vascular access sites for fluid and medication administration. |
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| 5. | 1. Routine Patient Care (RPC)   Patient Care reports and Data Collection | This language was added as the 2nd bullet:  Note that EMS personnel dispatched to an EMS call in a certified ambulance vehicle of any class (Class I through V) must always complete an appropriately documented patient care report. This is required under 105 CMR 170.345 of the EMS System regulations. See last bullet under Patient Approach, above. | EMS personnel must complete a patient care report. |
| 6. | 1. Routine Patient Care (RPC)   -Advanced Airway Confirmation  And  2.2P, 2.6P 2.15P 3.4P, 3.5P, 4.2, 4.5 4.11 and 5.1P | This language was added in the Advanced Airway Confirmation section: For patients under 12 years old, the airway is in most cases best managed with a BVM or SGA. In some cases, intubation may be preferred. This is at the discretion of the treating paramedic.  -the above language was added in each protocol as a red flag topic yellow box with into each protocol. | BVM and SGAs may provide better outcomes than Endotracheal Intubation in the pediatric patients. |
| 7. | 1.1 High Quality CPR - Adult | -In the Basic section under the 6th bullet the language was changed and now reads:  Ventilation / oxygenation options during 4 cycles (8 minutes):  o BVM ventilation during recoil and without interrupting compressions, OR  o If part of a care bundle, apply high flow oxygen via NRB. | Priority is to provide ventilation via BVM.  Care bundle is a set of interventions used together that improve patient outcomes. |
| 8. | 2.14 Poisoning/Substance Abuse/Overdose/Toxicology - Adult & Pediatric | Pediatric Doses added to the AEMT level for:  **Naloxone**  o PEDI: 0.1 mg/kg IV/IO/IM/IN May be repeated as indicated.  Pediatric doses added to the Medical Control section for:  **Atropine**  o PEDI: 0.02 mg/kg IV/IO/IM/IN May be repeated as indicated.  **Furosemide**  o PEDI: 0.5 mg/kg IV/IO  **Midazolam**  o PEDI: 0.05mg/kg IV/IO/IM/IN.  And  **Glucagon**  o PEDI: 0.5 or 1 mg IV/IO/IM (per online Medical Control). | With the Pediatric Medication appendix removed the doses were added into the protocol. |
| 9. | 2.15 A Seizure – Adult | Magnesium Sulfate moved to the Paramedic Standing Order Section. | Within Paramedic scope of practice. |
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| 10. | 2.18 Stroke | Language changes in  3rd bullet now reads: Clearly determine “last time known well” ~~time of onset of the symptoms or the last time seen well.~~  4th bullet now reads: If the patient wakes from sleep or is found with symptoms of stroke, the time ~~of onset of first symptoms~~ is defined as the last time the patient was observed to be normal. Notify the emergency department as soon as possible. | Clarifying language based on the Stroke Collaborative recommendations. |
| 11. | 2.19 *New Protocol* Hyperkalemia – Adult | New protocol for treating Hyperkalemia. EKG changes  may identify patients who may benefit (chronic renal failure/dialysis)from pre-hospital treatment. | MSC recommendation in April 2019-Early intervention may impact outcome. |
| 11a. | 2.19 Hyperkalemia - Adult | Reference to ~~sponsor~~ hospital changed to affiliate. | Technical fix. |
| 12. | 2.20 *New Protocol* Home Hemodialysis Emergency Disconnect | Released as an emergency change document on 12/16/19.  - arrow in the picture pointing out the off button  -highlight the needles  -leave the machine at home  -language if trained and equipped remove needles and clamp the site  -unplug the machine  -note data on liters processed-take picture of the dialysis data. | Expected increase in patients providing home dialysis. In the event EMS is called this protocol was developed to guide EMS personnel in disconnecting the patient from the dialysis machine. |
| 13. | 3.2 Atrial Fibrillation/Flutter | Metoprolol moved to the Paramedic section. Now reads:  If patient is already taking a Beta Blocker, **Metoprolol** as an alternative:  Bolus: 2.5-5 mg SLOW IV/IO over 2 minutes.  Repeat dosing in 5 minute intervals for a maximum of 15 mg. | Paramedics may administer to a patient already on metoprolol.  Within the Paramedic scope of practice. |
| 14. | 3.3 P Bradycardia - Pediatric | Moved from Medical Control section to the Paramedic section:  -Transcutaneous pacing, if available. | Within the Paramedic Scope of Practice. |
| 15. | 3.4 P Cardiac Arrest (PEDIATIC): Asystole/Pulseless Electrical Activity | Added to the Paramedic Standing orders section:  - Transcutaneous pacing, if available. | Within the Paramedic Scope of Practice. |
| 15a. | 3.4P Cardiac Arrest (PEDIATRIC): Asystole/Pulseless Electrical Activity | In the Paramedic Standing Orders section may consider transcutaneous pacing moved down in the Paramedic Standing Orders section. | Reformatted-Epinephrine is a more important intervention. |
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| 16. | 3.5 A Cardiac Arrest (ADULT): Ventricular Fibrillation/Pulseless Ventricular Tachycardia | The word maximum was removed from the 2nd and 4th bullets. Now read:  In the Paramedic section at the 2nd bullet the Defibrillation language was changed now reads: Defibrillation when available, with minimum interruption in chest compressions (use ~~maximum~~ manufacturer's recommended energy consistent with ACLS guidelines);  At the 4th bullet: Continue HQCPR and defibrillate (each shock at the ~~maximum~~ energy recommended by the manufacturer consistent with ACLS guidelines) per ECC guidelines if ventricular fibrillation/pulseless ventricular tachycardia is persistent.  -In the 3rd bullet the word Consider has been removed.  Now reads: ~~Consider e~~**Epinephrine** (1:10,000) 1mg IV/IO; repeat every 3 – 5 minutes. May substitute **vasopressin** 40 units IV/IO in place of first or second dose of epinephrine 1:10,000. | Clarifying language. Use manufacturer recommendations and ECG guidelines.  -ACLS guidelines now recommend Epinephrine administration for CA (VF/VT). |
| 16a. | 3.8 Post Resuscitative Care/ROSC  -Adult & Pediatric | In the Medical Control section 10cc Normal Saline was removed. Now reads: **amiodarone** bolus (150 mg ~~in 10 cc Normal Saline,~~ slow over 8-10 minutes. | Technical fix. |
| 17. | 3.9 P Supraventricular Tachycardia - Pediatric | 2nd bullet in the Medical Control section. The maximum synchronized cardioversion dose has been increased from 1 to 2 joules/kg. Now reads: Synchronized cardioversion **0.5 joules/kg** for symptomatic patients. Subsequent cardioversion may be done at up to 2 joules/kg. | ACLS guidelines recommended dose. |
| 17a. | 3.9 P Supraventricular Tachycardia - Pediatric | Removed Pedi color coded references. | Technical fix. |
| 18. | 3.10 Ventricular Tachycardia with Pulses – Adult & Pediatric | In the Paramedic section-the cardioversion dose was added-now reads: In Pediatric patients, synchronized cardioversion at 0.5 joules/kg, then 2 joules/kg. | ILCOR recommended cardioversion dose. |
| 18a. | 3.10 Ventricular Tachycardia with Pulses – Adult & Pediatric | In the Paramedic section:  -Language added: age appropriate for Pediatric patients, for Adult patients. Now reads: If Systolic BLOOD PRESSURE is unstable (age appropriate for Pediatric patients, for Adult patients less than 100mm Hg)  -the word Adult was added and 10cc normal Saline has been removed: Now reads:  In Adult patients, if systolic BLOOD PRESSURE is stable (greater than or equal to 100mm Hg) administer **amiodarone** 150 mg ~~in 10 cc Normal Saline,~~ slow IV/IO over 8-10 minutes.  -In the Medical Control section this line was added:  In Pediatric patients, give medications as ordered by Medical Control. | Clarifying language for pediatric and Adult BP readings  Clarifying Adult and Pediatric dosing. |
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| 19. | 4.4 Head trauma & Injuries Adult & Pediatric | Informative language added to the top of the protocol that reads: Brain Injury as a result of head trauma occurs by both:  1. Primary “impact” damage as the immediate consequence of the injury; and  2. Secondary complications of impact such as blood accumulation or cerebral swelling, sometimes with herniation syndromes.  GCS is the most reliable indicator of brain injury in the field:  GCS 13-15 Minor TBI  GCS 9-12 Moderate TBI  GCS 3-8 Severe TBI  Progressively increasing ICP can lead to tentorial herniation. This condition is manifested by  a decreasing level of consciousness, ipsilateral pupil dilation, contralateral hemiparesis, and decerebrate posturing. Cushing’s Reflex (bradycardia, irregular respirations, and hypertension) is a late clinical indication of herniation.  In the AEMT section Hypertonic saline solution for increased intercranial pressure.  CAUTION: Medication Safety Alert that reads:  Hypertonic Saline is packaged very similarly to other IV fluids. Hypertonic Saline should be stored away from crystalloids and, while maintaining package sterility, be marked in bright, contrasting colors to indicate its identity.  In the EMT section, the 4th bullet was removed:   * ~~Within your scope of practice, work to avoid hypoxia and hypotension.~~ | 3% hypertonic solution for patients under age 15 exhibiting signs cerebral fluid accumulation and / or swelling may benefit from administration.  Draws fluid from the brain.  Safety recommendation.  Covered in Protocol 1.1 Routine Patient Care. |
| 20. | 5.4 *New Protocol* Sedation for an Intubated Patient | New protocol for sedating an intubated patient, Richmond Agitation and Sedation Scale (RASS) is listed. | Improve care by assessing the intubated patient using RASS and treating accordingly. |
| 21. | 6.0 Medical Director Options | Added to the MCO index  BLS g. and ALS i.-12 Lead ECG Acquisition and Transmission by Basic and AEMTs.  ALS h.-Withholding and Cessation of Resuscitation by EMT Paramedic. | Updated MCO list. |
| 21a. | 6.0 Medical Director Options | Protocol 6.11 Title changed to Withholding and Cessation of Resuscitation by EMT Paramedic as a Medical Control Option. | To match the amended title of Protocol 6.11. |
| 22. | 6.6 Check and Inject Epinephrine by EMT Basic | In the Criteria for participating section-Retraining changed from quarterly training to two times per year. | Training was noted to be cumbersome. To monitor-data to be reevaluated in 1 year. |
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| 23. | 6.11 *New Protocol* Withholding and Cessation of Resuscitation by EMT Paramedic | *New protocol* a Medical Director Option (MDO) protocol listing criteria the Paramedic must meet to cease resuscitative efforts. | Paramedics can utilize Protocol 6.11 to withhold or cease resuscitation efforts when the criteria listed in the protocol are met. |
| 23a. | 6.11 Withholding and Cessation of Resuscitation by EMT Paramedic | -Added “as a Medical Control Option “ to the title. | Clarifying language. |
| 23b. | 6.11 Withholding and Cessation of Resuscitation by EMT Paramedic | Reformatted-~~Paramedic Standing Order~~ was removed. MEDICAL CONTROL MAY ORDER was added along with the telephone icon. | Clarifying that an OLMC order must be attained to terminate resuscitative efforts. |
| 24. | 6.12 *New Protocol* 12 Lead ECG Acquisition and Transmission by EMT Basic and/or Advanced EMTs | *New protocol* allowing BLS providers to acquire and transmit 12 lead ECGs as a Medical Director option. | EMTs and AEMTs may acquire and transmit ECGs. |
| 25. | 7.7 Withholding and Cessation of Resuscitation | In Section I. Exceptions to Initiation of Resuscitation this statement was added as number 2:  2. Health care agent who is named in a health care proxy document for the patient requests no resuscitative efforts on behalf of the patient, **but only if** 1) he or she is on scene and 2) he or she has his/her health care proxy document in hand to show EMS. If there is any doubt about the health care agent’s authority, and none of the other exceptions to initiation of resuscitation are present, EMS is to resuscitate the patient.  In section II. Cessation of Resuscitation by EMTs the language defining when EMTs certified at the Paramedic level only may cease resuscitation was moved to a new MDO Protocol 6.11 Withholding and Cessation of Resuscitation by EMT Paramedic.  #2 now reads: 2. EMTs certified at the **Paramedic level only** may cease resuscitativeefforts as per Protocol 6.11 Withholding and Cessation of Resuscitation by EMT Paramedic, if approved by your AHMD. | Defines conditions for a Health Care agent to request no  Resuscitative efforts.  With AHMD approval Paramedics can utilized Protocol 6.11 to cease resuscitation efforts when the criteria listed in the protocol are met. |
| 25a. | 7.7 Withholding -Cessation of Resuscitation | Top of 2nd page ~~Exemptions~~ changed to  Exceptions. | Technical fix-same language throughout the document. |
| 25b. | 7.7 Withholding -Cessation of Resuscitation | Reposition arrow. | Technical fix. |
| 26. | 8.1 Fire and Tactical Rehabilitation | -changed the systolic BP readings to <160 in the Rehab Protocol.  -changed the diastolic BP readings to < 100 mm Hg  -reformatted. | NFPA Rehabilitation recommendations. |
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| 27. | Appendices-Pediatric Color-Coded Medication Reference | Removed the Pediatric Med Reference from the protocols.  -Remaining appendices renumbered. | Inconsistencies noted since inception. |
| 28. | A1-Adult Medication Reference | -Calcium gluconate added to reflect Hyperkalemia protocol Paramedic Standing Order.  -Metoprolol-updated to reflect treatment in Protocol #.2 Atrial Fibrillation/Flutter. | Updated to reflect protocol changes in this version. |
| 28a. | A-1 Adult med ref | Removed Pedi color coded references from every page. | Technical fix. |
| 29. | Appendix A2-Interfacility Guidelines and Protocols | Added to Part E2 Approved Medications and Classes  -3% Hypertonic Saline. | Approved for head trauma in patients (less than 15 years old in Protocol 4.4). |
| 30. | Appendix A3-Scope of Practice  Cardiac Management | Added Acquisition and Transmission of 12 lead ECG with Medical Director Approval to the EMT and AEMT columns. | Within the scope of practice for EMTs and AEMTs. |
| 31. | A-4 Point of Entry-Trauma | Under Physiologic Criteria-3rd bullet (age appropriate) was added to the pediatric Systolic Blood Pressure. Now reads: Systolic Blood Pressure < 90 mmHg or < 70-90 (age appropriate) in pediatrics. | EMSC recommendation, BP levels based on age. |