
Steven Bellone
Suffolk County Executive

James L. Tomarken, MD, MPH, MBA, MSW
Commissioner, Department of Health Services

Gregson H. Pigott, MD, MPH
EMS Medical Director

William M. Masterton, NREMT-P
Chief, Education and Training

Nathaniel Bialek, BS, EMT-P, CCHP
Director, EMS and Public Health
Emergency Preparedness

V4. March, 2019
Acknowledgements

This manual is the result of the collective efforts of many individuals; each working together to develop a state-of-the-art set of clinical protocols that meet the New York State Emergency Medical Advisory Committee (SEMAC) standard of care. The revisions published in this manual, to the original Suffolk County Advanced Life Support (ALS) Protocols, reflect both advancements in modern technology and progressions made in Continuous Quality Improvement and Education and Training of ALS Providers within the Suffolk County EMS System.

The clinical protocols documenting the prehospital approach to patients contained herein is in line with the current recommendations promulgated by the American Heart Association (AHA), the Regional Trauma Advisory Committee (RTAC), the American College of Surgeons Committee on Trauma (ACS-COT), are endorsed by the Regional Emergency Medical Advisory Committee (REMAC) and officially approved by the NY State Emergency Medical Advisory Committee (SEMAC); and the Regional EMS System Medical Director.

Thanks to Dr. Gregson Pigott, Dina Wayrich, Christopher Nuccio, Raegin Kellermann, Karl Klug and Darrell Berezny at the Suffolk County Department of Health Services, Emergency Medical Services (EMS) Division, for their efforts in researching, editing, creating new appendices and fact sheets, and working to develop this manual.

Special thanks to William Michael Masterton, Protocol Revision Project Manager, who worked diligently to ensure that our protocols remain state-of-the-art in recognition of the desire to ensure that our Emergency Medical Technician-Basics (EMT-Bs), Emergency Medical Technician-Critical Cares (EMT-CCs) and Emergency Medical Technician-Paramedics (EMT-Ps) can provide the best possible patient care.

Special thanks to Dr. Lincoln Cox and Dr. Trevor Marshall, as the REMAC’s Protocol Sub-Committee Co-Chairmen, and their committee. Each has spent countless hours of their own time ensuring that these protocols were consistent with New York State standards of care, their experiences and philosophies in emergency medicine, and for their appreciation of the skillset of EMT-CCs and EMT-Ps. Special thanks as well to Dr. Jason Winslow, immediate past REMAC chair, and Dr. Max Minnerop, current REMAC chair, for their leadership in supporting this endeavor.

Special thanks to David Sterne, EMT-P from the Setauket Fire District, who generously dedicated many hours of his own time researching material, developing the new protocol format, and creating and editing protocols.

With admiration and appreciation, this protocol manual revision is dedicated to Chief Thomas Lateulere, whose efforts continue to serve as the foundation for the clinical protocols contained herein.
# TABLE OF CONTENTS

## INTRODUCTION

1. MEDICAL CONTROL
   - A. DEFINITION OF
   - B. CONTACT WITH
   - C. CELLULAR TELEPHONES
   - D. MEDICAL CONTROL AS A RESOURCE
   - E. STANDING ORDERS
   - F. ON-SCENE PHYSICIANS
   - G. ON-SCENE PHYSICIAN EXTENDERS
   - H. OTHER HEALTH CARE PROFESSIONALS ON-SCENE

## 2. EMS PROVIDER LEVELS

   - A. BASIC LIFE SUPPORT (BLS)
   - B. ADVANCED LIFE SUPPORT (ALS)
   - C. THE ALS APPROACH

## 3. SELECTION OF DESTINATION HOSPITAL

## 4. HOSPITAL DIVERSION

## 5. REFUSAL OF MEDICAL ASSISTANCE

## 6. MEDEVAC SERVICE

   - A. GUIDELINES FOR USE OF MEDEVAC SERVICE
   - B. VITAL SIGN / ANATOMIC CRITERIA MECHANISM OF INJURY CONSIDERATIONS
     1. TRAUMA PATIENTS
     2. MEDEVAC USE FOR NON-TRAUMA PATIENTS
   - C. HOW TO REQUEST / CANCEL MEDEVAC SERVICE
   - D. DEFIBRILLATION ON THE MEDEVAC AIRCRAFT
   - E. USE OF NITROUS OXIDE PROHIBITED ON AIRCRAFT

## 7. DOCUMENTATION

   - A. WRITTEN DOCUMENTATION
   - B. POST-CALL FOLLOW-UP

## 8. QUALITY ASSURANCE AND QUALITY IMPROVEMENT

   - A. DEVIATION FROM PROTOCOLS
   - B. NOTIFICATION (NYS DOH) OF IMPROPER ACTIVITY
   - C. MANAGEMENT OF THE PATIENT WITH ADVANCED AIRWAY

Continued.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. DO NOT RESUSCITATE (DNR) ORDERS</td>
<td>14, 15</td>
</tr>
<tr>
<td>10. OBVIOUS DEATH</td>
<td>15</td>
</tr>
<tr>
<td>11. TERMINATION OF FIELD RESUSCITATION</td>
<td>15</td>
</tr>
<tr>
<td>12. CONTROLLED SUBSTANCES</td>
<td>15</td>
</tr>
<tr>
<td>13. ALS EQUIPMENT IN PRIVATE VEHICLES</td>
<td>16</td>
</tr>
<tr>
<td>14. AREA OF OPERATION</td>
<td>16</td>
</tr>
<tr>
<td>15. INTERACTION BETWEEN LEVELS OF EMS PROVIDERS</td>
<td>16</td>
</tr>
<tr>
<td>16. PATIENT TRANSFER PROTOCOL</td>
<td>16, 17</td>
</tr>
<tr>
<td>FROM ALS PROVIDER TO BLS PROVIDER</td>
<td>16, 17</td>
</tr>
<tr>
<td>FROM EMT-P TO EMT-CC</td>
<td>18</td>
</tr>
<tr>
<td>17. AUDIT FORMS</td>
<td>18</td>
</tr>
<tr>
<td>18. ALS PRECEPTORS</td>
<td>18</td>
</tr>
<tr>
<td>19. PROTOCOL FORMAT &amp; DESIGN</td>
<td>19</td>
</tr>
<tr>
<td>20. MOBILE STROKE UNIT</td>
<td>20</td>
</tr>
</tbody>
</table>

**SECTION B: MEDICAL PROTOCOLS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. INTRODUCTION</td>
<td>20</td>
</tr>
<tr>
<td>2. PEDIATRIC ALS GUIDELINES</td>
<td>20</td>
</tr>
<tr>
<td>3. PILOT PROGRAMS</td>
<td>21</td>
</tr>
<tr>
<td>4. NON-EMERGENCY TRANSPORTATION</td>
<td>21</td>
</tr>
<tr>
<td>5. SAFETY DURING SCENE OPERATIONS</td>
<td>21</td>
</tr>
<tr>
<td>6. SAFETY DURING TRANSPORTATION</td>
<td>21</td>
</tr>
</tbody>
</table>

**ALS PROTOCOLS – ADULT PATIENTS**

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALS ADULT CARE PROTOCOL</td>
<td>22</td>
</tr>
<tr>
<td>ADULT ADVANCED AIRWAY</td>
<td>23</td>
</tr>
<tr>
<td>ADULT RAPID SEQUENCE INTUBATION</td>
<td>24</td>
</tr>
<tr>
<td>ADULT MEDICATION FACILITATED INTUBATION</td>
<td>25</td>
</tr>
</tbody>
</table>

Continued.
<table>
<thead>
<tr>
<th>Condition</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventricular Fibrillation / Pulseless Ventricular Tachycardia</td>
<td>26</td>
</tr>
<tr>
<td>Asystole / PEA</td>
<td>27</td>
</tr>
<tr>
<td>Shock / Hypoperfusion After ROSC</td>
<td>28</td>
</tr>
<tr>
<td>Field Termination of Resuscitation</td>
<td>29</td>
</tr>
<tr>
<td>Cardiac Dysrhythmia Entry Protocol</td>
<td>30</td>
</tr>
<tr>
<td>Ventricular Tachycardia with Pulse</td>
<td>31</td>
</tr>
<tr>
<td>Symptomatic Bradycardia</td>
<td>32</td>
</tr>
<tr>
<td>Supraventricular Tachycardia</td>
<td>33</td>
</tr>
<tr>
<td>Atrial Fibrillation / Atrial Flutter</td>
<td>34</td>
</tr>
<tr>
<td>Acute Coronary Syndrome Entry Protocol</td>
<td>35</td>
</tr>
<tr>
<td>ST-Elevation MI</td>
<td>36</td>
</tr>
<tr>
<td>ACS Suspected</td>
<td>37</td>
</tr>
<tr>
<td>Medical Shock / Hypoperfusion</td>
<td>38</td>
</tr>
<tr>
<td>Pulmonary Edema: Systolic BP ≥ 120</td>
<td>39</td>
</tr>
<tr>
<td>Asthma</td>
<td>40</td>
</tr>
<tr>
<td>COPD / Exacerbation</td>
<td>41</td>
</tr>
<tr>
<td>Anaphylactic Shock / Allergic Reaction</td>
<td>42</td>
</tr>
<tr>
<td>Altered Mental Status Entry Protocol</td>
<td>43</td>
</tr>
<tr>
<td>Diabetic Emergency</td>
<td>44</td>
</tr>
<tr>
<td>Overdose</td>
<td>45</td>
</tr>
<tr>
<td>Seizure</td>
<td>46</td>
</tr>
<tr>
<td>Stroke / CVA</td>
<td>47</td>
</tr>
<tr>
<td>Organophosphate / Nerve Agent Exposure</td>
<td>48</td>
</tr>
</tbody>
</table>

Continued.
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAUSEA / VOMITING</td>
<td>49</td>
</tr>
<tr>
<td>TRAUMA ENTRY PROTOCOL</td>
<td>50</td>
</tr>
<tr>
<td>HYPOPERFUSION / HYPOVOLEMIA</td>
<td>51</td>
</tr>
<tr>
<td>HEAD TRAUMA</td>
<td>52</td>
</tr>
<tr>
<td>CHEST TRAUMA</td>
<td>53</td>
</tr>
<tr>
<td>BURNS</td>
<td>54</td>
</tr>
<tr>
<td>CRUSH INJURIES</td>
<td>55</td>
</tr>
<tr>
<td>PAIN MANAGEMENT</td>
<td>56</td>
</tr>
<tr>
<td>SUSPECTED CYANIDE POISONING / SMOKE INHALATION</td>
<td>57</td>
</tr>
<tr>
<td>BEHAVORIAL EMERGENCY / AGITATION</td>
<td>58</td>
</tr>
<tr>
<td>OB / GYN EMERGENCIES</td>
<td>59</td>
</tr>
<tr>
<td>ALS PROTOCOLS – PEDIATRIC PATIENTS</td>
<td></td>
</tr>
<tr>
<td>NEWBORN RESUSCITATION</td>
<td>60</td>
</tr>
<tr>
<td>NEWBORN RESUSCITATION-PRESENCE OF MECONIUM</td>
<td>61</td>
</tr>
<tr>
<td>PEDIATRIC RESPIRATORY ARREST</td>
<td>62</td>
</tr>
<tr>
<td>PEDIATRIC ADVANCED AIRWAY</td>
<td>63</td>
</tr>
<tr>
<td>PEDIATRIC VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA</td>
<td>64</td>
</tr>
<tr>
<td>PEDIATRIC ASYSTOLE / PEA</td>
<td>65</td>
</tr>
<tr>
<td>PEDIATRIC BRONCHOSPASM</td>
<td>66</td>
</tr>
<tr>
<td>PEDIATRIC RESPIRATORY DISTRESS (Stridor)</td>
<td>67</td>
</tr>
<tr>
<td>PEDIATRIC ANAPHYLACTIC SHOCK / ALLERGIC REACTION</td>
<td>68</td>
</tr>
</tbody>
</table>

Continued.
<table>
<thead>
<tr>
<th>Section Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEDIATRIC DIABETIC EMERGENCIES</td>
<td>69</td>
</tr>
<tr>
<td>PEDIATRIC SEIZURES</td>
<td>70</td>
</tr>
<tr>
<td>PEDIATRIC OPIOID OVERDOSE</td>
<td>71</td>
</tr>
<tr>
<td>PEDIATRIC ORGANOPHOSPHATE / NERVE AGENT EXPOSURE</td>
<td>72</td>
</tr>
<tr>
<td>PEDIATRIC MAJOR TRAUMA</td>
<td>73</td>
</tr>
<tr>
<td>PEDIATRIC HYPOPERFUSION</td>
<td>74</td>
</tr>
<tr>
<td>PEDIATRIC BRADYCARDIA</td>
<td>75</td>
</tr>
<tr>
<td>PEDIATRIC TACHYCARDIA</td>
<td>76</td>
</tr>
<tr>
<td>PEDIATRIC PAIN MANAGEMENT</td>
<td>77</td>
</tr>
<tr>
<td>PEDIATRIC SUSPECTED CYANIDE POISONING / SMOKE INHALATION</td>
<td>78</td>
</tr>
<tr>
<td><strong>SECTION C: APPENDICES</strong></td>
<td></td>
</tr>
<tr>
<td>1. ALS FORMULARY</td>
<td>79, 80</td>
</tr>
<tr>
<td>2. ANIMAL BITE REGISTRY</td>
<td>81</td>
</tr>
<tr>
<td>3. AUTHORIZED ALS PROCEDURES</td>
<td>82</td>
</tr>
<tr>
<td>4. REMAC ADVISORY ON EXTERNAL BLEEDING CONTROL</td>
<td>83, 84</td>
</tr>
<tr>
<td>5. BOUGIE DEVICE</td>
<td>85</td>
</tr>
<tr>
<td>6. MANDATED CHILD ABUSE REPORTING</td>
<td>86</td>
</tr>
<tr>
<td>7. COMBI-TUBE</td>
<td>87, 88</td>
</tr>
<tr>
<td>8. STANDARD PATIENT PRESENTATION FORMAT</td>
<td>89</td>
</tr>
<tr>
<td>9. CONTINUOUS QUALITY IMPROVEMENT PLAN</td>
<td>90-93</td>
</tr>
<tr>
<td>10. REGIONAL CREDENTIALING &amp; AUTHORIZATION</td>
<td>94-96</td>
</tr>
<tr>
<td>11. DESIGNATED EMS FIELD PHYSICIANS</td>
<td>97</td>
</tr>
</tbody>
</table>

*Continued.*
<table>
<thead>
<tr>
<th>12. PEDIATRIC PAIN SCALE (FLACC)</th>
<th>98</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. INITIAL CASE REVIEW FIELD REPORT</td>
<td>99, 100</td>
</tr>
<tr>
<td>14. INTERAGENCY UTILIZATION OF ALS PERSONNEL</td>
<td>101</td>
</tr>
<tr>
<td>15. CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)</td>
<td>102</td>
</tr>
<tr>
<td>16. TIBIAL IO PLACEMENT / EZ-IO™ DEVICE</td>
<td>103, 104</td>
</tr>
<tr>
<td>17. TIBIAL IO PLACEMENT / BIG™ DEVICE</td>
<td>105</td>
</tr>
<tr>
<td>18. HUMERAL IO PLACEMENT / BIG™ DEVICE</td>
<td>106, 107</td>
</tr>
<tr>
<td>19. HUMERAL PLACEMENT / EZ-IO™ DEVICE</td>
<td>108, 109</td>
</tr>
<tr>
<td>20. NEEDLE CRICOThYROTOMY</td>
<td>110</td>
</tr>
<tr>
<td>21. SUPRAGLOTIC AIRWAY / KING DEVICE</td>
<td>111, 112</td>
</tr>
<tr>
<td>22. LEFT VENTRICULAR ASSIST DEVICE (LVAD)</td>
<td>113-115</td>
</tr>
<tr>
<td>23. MUCOSAL ATOMIZER DEVICE (MAD)</td>
<td>116</td>
</tr>
<tr>
<td>24. MEDICAL MATH FORMULAS</td>
<td>117</td>
</tr>
<tr>
<td>25. MEDEVAC INTERFACE</td>
<td>118, 119</td>
</tr>
<tr>
<td>26. MEDICATION DRIP CHART / DOPAMINE</td>
<td>120</td>
</tr>
<tr>
<td>27. MEDICATION DRIP CHART / EPINEPHRINE / NOREPINEPHRINE</td>
<td>121</td>
</tr>
<tr>
<td>28. NEEDLE DECOMPRESSION</td>
<td>122</td>
</tr>
<tr>
<td>29. NERVE AGENT / ORGANOPHOSPHATE POISONING</td>
<td>123, 124</td>
</tr>
<tr>
<td>30. NO PATIENT FOUND</td>
<td>125</td>
</tr>
<tr>
<td>31. NON-INVASIVE CO-OXIMETRY AT CO EMERGENCIES</td>
<td>126-128</td>
</tr>
<tr>
<td>32. ORAL (PO) BODY TEMPERATURE FOR USE IN REHAB</td>
<td>129</td>
</tr>
<tr>
<td>33. PAIN ASSESSMENT SCALES</td>
<td>130</td>
</tr>
<tr>
<td>34. PEDIATRIC GUIDELINES</td>
<td>131-133</td>
</tr>
</tbody>
</table>

Continued.
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. POST-INTUBATION MANAGEMENT WITHOUT RSI</td>
<td>134</td>
</tr>
<tr>
<td>36. PULSE OXIMETRY</td>
<td>135</td>
</tr>
<tr>
<td>37. RECEIVING HOSPITALS / HOSPITAL DESIGNATIONS</td>
<td>136, 137</td>
</tr>
<tr>
<td>38. EMERGENCY INCIDENT REHAB</td>
<td>138-142</td>
</tr>
<tr>
<td>39. REFUSAL OF MEDICAL ASSISTANCE (RMA)</td>
<td>143-145</td>
</tr>
<tr>
<td>40. EMS RESPONSE TO SCHOOL INCIDENTS / BUS ACCIDENTS</td>
<td>146-150</td>
</tr>
<tr>
<td>41. TRANSPORTATION OF SERVICE ANIMALS</td>
<td>151</td>
</tr>
<tr>
<td>42. STABLE AND UNSTABLE PATIENTS</td>
<td>152</td>
</tr>
<tr>
<td>43. CONTRAINDICATIONS TO TERMINATION OF FIELD RESUSCITATION</td>
<td>153</td>
</tr>
<tr>
<td>44. USE OF HUMANE RESTRAINT</td>
<td>154-156</td>
</tr>
<tr>
<td>45. CHEMPACK PROGRAM</td>
<td>157, 158</td>
</tr>
<tr>
<td>46. MINIMUM SUPPLIES / EQUIPMENT LIST</td>
<td>159-163</td>
</tr>
<tr>
<td>47. MANUFACTURER – SPECIFIC ENERGY SETTINGS</td>
<td>164</td>
</tr>
<tr>
<td>48. AUTOMATIC TRANSPORT VENTILATOR (ATV)</td>
<td>165</td>
</tr>
<tr>
<td>49. NYS / SUFFOLK COUNTY TRAUMA TRIAGE FLOW CHART</td>
<td>166</td>
</tr>
</tbody>
</table>

**MEDICATION FACT SHEETS**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADENOSINE</td>
<td>167</td>
</tr>
<tr>
<td>ALBUTEROL SULFATE</td>
<td>168</td>
</tr>
<tr>
<td>ADMIODARONE</td>
<td>169</td>
</tr>
<tr>
<td>ASPIRIN</td>
<td>170</td>
</tr>
<tr>
<td>ATROPINE SULFATE</td>
<td>171</td>
</tr>
<tr>
<td>CALCIUM CHLORIDE</td>
<td>172</td>
</tr>
</tbody>
</table>

Continued.
<table>
<thead>
<tr>
<th>Drug/Protocol</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEXTROSE</td>
<td>173</td>
</tr>
<tr>
<td>DEXTROSE PEDIATRIC DOSAGE CHART</td>
<td>174</td>
</tr>
<tr>
<td>DIAZEPAM</td>
<td>175</td>
</tr>
<tr>
<td>DILTIAZEM</td>
<td>176, 177</td>
</tr>
<tr>
<td>DIPHENHYDRAMINE</td>
<td>178</td>
</tr>
<tr>
<td>DOPAMINE</td>
<td>179</td>
</tr>
<tr>
<td>DOPAMINE DOSING CHART</td>
<td>180</td>
</tr>
<tr>
<td>DUO-DOTE AUTO-INJECTOR</td>
<td>181</td>
</tr>
<tr>
<td>EPINEPHRINE</td>
<td>182, 183</td>
</tr>
<tr>
<td>EPINEPHRINE DRIP CHART / NOREPINEPHRINE DRIP CHART</td>
<td>184</td>
</tr>
<tr>
<td>ETOMIDATE</td>
<td>185</td>
</tr>
<tr>
<td>FENTANYL CITRATE</td>
<td>186</td>
</tr>
<tr>
<td>FUROSEMIDE</td>
<td>187</td>
</tr>
<tr>
<td>GLUCAGON</td>
<td>188</td>
</tr>
<tr>
<td>HALOPERIDOL</td>
<td>189</td>
</tr>
<tr>
<td>HYDROCORTISONE SODIUM SUCCINATE</td>
<td>190</td>
</tr>
<tr>
<td>HYDROXOCOBALAMIN</td>
<td>191</td>
</tr>
<tr>
<td>IPRATROPIUM BROMIDE</td>
<td>192</td>
</tr>
<tr>
<td>KETAMINE HYDROCHLORIDE</td>
<td>193</td>
</tr>
<tr>
<td>KETROLAC TROMETHAMINE</td>
<td>194</td>
</tr>
<tr>
<td>LIDOCAINE</td>
<td>195</td>
</tr>
<tr>
<td>MAGNESIUM SULFATE</td>
<td>196</td>
</tr>
<tr>
<td>MARK I AUTO-INJECTOR</td>
<td>197</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>Page</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>METHYLPREDNISOLONE</td>
<td>198</td>
</tr>
<tr>
<td>METOPROLOL TARTRATE</td>
<td>199</td>
</tr>
<tr>
<td>MIDAZOLAM HYDROCHLORIDE</td>
<td>200</td>
</tr>
<tr>
<td>MORPHINE SULFATE</td>
<td>201</td>
</tr>
<tr>
<td>NALOXONE</td>
<td>202</td>
</tr>
<tr>
<td>NITROGLYCERINE</td>
<td>203</td>
</tr>
<tr>
<td>NITROUS OXIDE</td>
<td>204</td>
</tr>
<tr>
<td>NOREPIINEPHRINE</td>
<td>205</td>
</tr>
<tr>
<td>ODANSETRON HYDROCHLORIDE</td>
<td>206</td>
</tr>
<tr>
<td>ROCURONIUM</td>
<td>207</td>
</tr>
<tr>
<td>SODIUM BICARBONATE</td>
<td>208</td>
</tr>
<tr>
<td>SUCCINYLCHOLINE</td>
<td>209</td>
</tr>
<tr>
<td>VECURONIUM BROMIDE</td>
<td>210</td>
</tr>
</tbody>
</table>
INTRODUCTION

The Suffolk County Emergency Medical Services (EMS) System is an organized and integrated system consisting of ambulance services, first responder services, emergency physicians, specialty physicians, hospitals, other support services and personnel providing patient care through approved patient care protocols under the supervision of the designated EMS System Medical Director (Medical Director) and the Suffolk County Department of Health Services, EMS Division, as the designated Regional EMS Program Agency.

Although in this home-rule New York (NY) State and in recognition of the duties and powers of other municipalities that operate or contract for ambulance services, we work together in the unified Suffolk County EMS System. Within the EMS System, out-of-hospital emergency medical care is the delegated practice of medicine, whereby non-physicians, with the appropriate certifications, credentialing, and authorizations, are empowered by the Medical Director to provide patient care under the direction and control of a licensed physician. Direction may be provided “on-line” (direct, radio or telephone contact) with a supervising physician, or “off-line” pursuant to standing orders and protocols. This care may be provided at the scene of a medical emergency and/or during transportation of the ill or injured to a hospital.

The Suffolk County EMS System’s Advanced Life Support (ALS) Protocol Manual (the “Manual”) serves as the reference for patient care within the Regional EMS System. It is intended to:

- Define the standard of care and establish quality assurance and quality improvement procedures for the System;
- Guide personnel in delivering the highest standard of emergency medical care in a safe environment; and
- Encourage the interdisciplinary approach to emergency medical care.

The Manual is divided into the three (3) sections identified below:

A. GENERAL ADMINISTRATIVE POLICIES:

This Section contains the administrative and operating policies and procedures for the Suffolk County EMS System.

B. MEDICAL PROTOCOLS:

This section contains the clinical medical treatment protocols that govern advanced level prehospital emergency medical care in our EMS System. There is a single set of ALS protocols used by Emergency Medical Technician-Critical Cares (EMT-CCs) and Emergency Medical Technician-Paramedics (EMT-Ps), with treatment options per certification level, followed by Medical Control options, clearly delineated. The medical protocols contained in this Manual are intended for the emergency prehospital care environment and are not to be used on inter-facility transports.

The Manual has been updated with broad-based, interdisciplinary input, and represents a regional consensus of opinion on the application of emergency medical care, and meets the standard of care defined by the New York State Emergency Medical Advisory Committee (SEMAC). The protocols contained in the Manual are predicated on the presence of a single ALS Provider. In cases where multiple ALS Providers are present, concurrent application of procedures is encouraged, concurrent with Medical Control contact, when indicated. Guidelines for pediatric patients are more fully described in Section B, II, and in the appendices section of the manual.
C. APPENDICES:

It is important to note that while limited protection from liability is afforded by Article 30 of the New York State Public Health Law (PHL), and financial protection is provided by various forms of insurance written for participants in the EMS System, such protection is not intended to extend to an individual who, or agency which, fails to adhere to the standard of care specified in this Manual.

While an attempt has been made to provide policies, protocols and “how-to” appendices for most eventualities, situations may arise which have not been addressed in this Manual. In such cases, field personnel and Medical Control Physicians must use their training and good judgment to provide interventions which meet the accepted standard of care and which is within the scope of their certification or licensure.

This Manual has been reviewed and approved for use in the Suffolk County Emergency Medical Services System.

Developed: November, 1999
Updated: January, 2001
Updated: January, 2004
Updated: December, 2007
Updated: March, 2010
Updated: August, 2010
Updated: August, 2011
Updated: June, 2013
Updated: August, 2014
Updated: November, 2015
Updated: February, 2016
Updated: September, 2017
Updated: March, 2018

___________________________    ______________________________________
Gregson H. Pigott, MD, MPH                            James L. Tomarken, MD, MPH, MBA, MSW
EMS Medical Director                                        Commissioner of Health
Department of Health Services

__________________________                ___________________________________
Max Minnerop, MD     William Michael Masterton, NREMT-P
Chairman      Chief, Education & Training &
Suffolk Regional Emergency      Course Sponsor Administrator
Medical Advisory Committee

_________________________     ______________________________________
Lincoln Cox, MD                Robert Delagi, MA, NREMT-P, CHEP
Chairman, Regional Emergency      Director, EMS &
Medical Advisory Protocol      Public Health Emergency Preparedness
Sub-Committee
SECTION A

GENERAL ADMINISTRATIVE POLICIES

1. MEDICAL CONTROL:

A) DEFINITION:

Responsibility for all aspects of out-of-hospital patient care provided within the Suffolk County EMS System rests with the EMS System Medical Director. All such patient care is provided as an extension of the Medical Director’s license to practice medicine. Ambulance Service-level Medical Directors are responsible for quality improvement and educational initiatives on a local level with each of his/her respective ambulance services. Prehospital emergency medical care at the Basic Life Support (BLS) level generally does not involve on-line physician intervention. BLS protocols and policies do contain Medical Control Options in certain specific circumstances, requiring Medical Control contact when directed. BLS personnel are encouraged to contact Medical Control for on-line physician assistance whenever questions arise regarding treatment and/or transport options, and are required to register specific interventions with Medical Control after the call.

Advanced Life Support (ALS) providers certified at EMT-Critical Care (EMT-CC) or EMT-Paramedic (EMT-P) level, provide Advanced Life Support (ALS) under the standing orders defined in the Manual or under the direction of an On-Line Medical Control Physician or a Designated EMS Field Physician. The Medical Control Physician or Designated EMS Field Physician is responsible for the care of a patient entered into the ALS System. The physician’s obligation is to apply the standard of care presented in the Manual to the individual patient care situation. An On-Line Medical Control Physician is a physician authorized by the Medical Director to provide advice and direction to ALS Providers providing out-of-hospital medical care. A Designated EMS Field Physician is a physician authorized by the EMS System Medical Director and the Regional Emergency Medical Advisory Committee (REMAC) to provide advice and direction when such physician is present at the scene of an out-of-hospital medical emergency. A Disaster Medical Response Team (DMRT) Physician is a physician receiving additional authority as a Deputy Fire Coordinator-Medical (DFC-Medical) to operate as an agent of the county, when specifically called upon.

B) CONTACT WITH MEDICAL CONTROL:

Contact with Medical Control is required in specific circumstances, and based on the level of certification of the provider(s) treating the patient, whenever an advanced, diagnostic, or therapeutic procedure is performed. In all cases where ALS is performed, a post-call telephone call (Signal 34) to Medical Control to register the call with the system is required, as soon as feasible after the call. Failure to contact Medical Control when required to do so by protocol increases liability and risk for the ALS Provider and the ambulance service. Once an IV is attempted, the cardiac monitor is applied, prehospital medications are administered, or patients are assisted with their own prescribed medications, as specified by specific protocol, the ALS Provider must follow the applicable ALS protocol and continue care of the patient until arrival at the hospital. Notable exception is for patients who have received prehospital Narcan if certain conditions have been met as are outlined in Part 16 section D of this manual.

When required by protocol, voice contact with Medical Control should be established as promptly as possible, but not more than 20 minutes, after technician-patient contact is established. Communication with Medical Control should not delay the initiation of appropriate care authorized under Standing Orders.

Following 12 lead acquisition by an EMT-B or EMT-CC, the provider must transmit and contact Medical Control at once. EMT-Ps must transmit and contact Medical Control at once if 12 lead shows STEMI. Providers of all levels should make the pre-arrival notification to the receiving hospital as soon as feasible, and before they begin transport, to pass along information regarding a positive STEMI.
Medical Control may be reached by cellular or landline telephone at 631-689-1430, or by using the 800 MHz radio system by “hailing” Medical Control on the talk group identified as “ALS CALL.” Medical Control will direct the caller to the available talk group, MEDCONTROL 1 or MEDCONTROL 2, where technician-to-physician conversation can take place. (MEDCONTROL 3 and 4 are reserved for future use, or for use as directed by a representative of the Suffolk County EMS Division, or Suffolk County FRES.).

In the event that contact cannot be made by cellular telephone OR 800 MHz radio, prehospital personnel may contact Medical Control via VHF channel 4 (155.175MHz) on the Medcom radio. NOTE: Refusal of Medical Assistance (RMA) consults, as more fully described in Section 5 below, must take place on the telephone.

If a system-wide communications system failure occurs, the EMS Division may institute the Catastrophic Communications Failure Policy. If activated, and an ALS Provider is unable to establish contact with Medical Control, the ALS Provider may only perform those procedures authorized as Standing Orders in the applicable protocol. In these cases, EMT-Paramedics may repeat their standing orders, based on patient needs while enroute to the hospital. EMT-Critical Cares may only follow their own standing orders while enroute to the hospital.

An ALS Provider has the right to question an order that is believed to be contraindicated or for which the ALS Provider is not certified. The ALS Provider should clarify the order and restate the patient’s condition. If the order is not altered or retracted, the ALS Provider must carry out the order unless he/she is not credentialed or trained in that intervention, or if that intervention is not listed in the formulary of authorized procedures. Any such action should be referred to the EMS System Medical Director as soon as possible for review.

C) CELLULAR TELEPHONE ACCESS TO ON-LINE MEDICAL CONTROL:

Article 30 of the NYS Public Health Law and Part 800 of the NYS EMS Code require that voice communications and bio-telemetry capability be available as part of any ALS System for technician-to-physician communication, including transmission of dynamic real-time three (3) lead rhythm strips and twelve (12) lead data-stored electrocardiograms. The use of cellular telephones or other devices with telemetry capability are considered acceptable for contact with Medical Control and ALS services are required to maintain telemetry-transmitting capabilities. It is each agency’s responsibility to ensure that they have the necessary peripheral equipment needed for the specific cardiac/monitor in use.

D) MEDICAL CONTROL AS A RESOURCE:

Medical Control may be accessed by any prehospital provider while on duty status with an authorized agency on an emergency medical alarm at any time for consultation and advice regarding patient care including, but not limited to, questions about triage, questions regarding diversion requests, treatment, selection of destination hospital, appropriateness of medevac utilization, and refusal of medical assistance. Contact with Medical Control is required in specific protocols, based on the level of certification of the provider(s) taking care of the patient.

E) STANDING ORDERS:

Standing Orders identify actions that may be taken by field personnel under specific medical protocols, based on level of certification of the provider(s) treating the patient, prior to contact with Medical Control. STANDING ORDERS ARE WRITTEN WITH THE ASSUMPTION THAT THERE IS A SINGLE ALS PROVIDER AND THEREFORE MUST BE PERFORMED IN THE ORDER PRESENTED. If there is more than one ALS provider providing care, the standing orders may be applied concurrently to facilitate good patient care. Procedure attempts are limited to TWO (2) attempts per patient. Once standing orders are initiated in a particular protocol, the ALS Provider is obligated to that protocol.
ALS Providers must contact Medical Control if a patient’s condition changes and interventions from additional protocols are needed. The exception to this rule concerns the use of supraglottic airways. An ALS Provider may insert a REMAC-approved Supraglottic airway prior to attempting endotracheal intubation if he/she assesses the patient, if the patient meets criteria for supraglottic airway and if he/she believes that intubation will be difficult or not possible.

In cases where there are two (2) ALS Providers treating a patient in a protocol that does not have an advanced airway as a standing order, who suddenly requires an advanced airway (ETT or supraglottic), an ALS Provider may secure the airway as clinically indicated up to their level/agency level of advanced airway privileges.

In cases where there are BLS Providers trained in acquiring and transmitting 12-lead EKG, the use of a BLS provider to perform this skill, when working with an ALS provider performing advanced assessment or therapies, is encouraged. This facilitates good patient care by allowing concurrent activity, thereby reducing time.

With the exception of defibrillation of the patient who develops Ventricular Fibrillation or Pulseless Ventricular Tachycardia, once contact with Medical Control has been established, Standing Orders, unless specifically stated otherwise in the protocol, are no longer valid. The Medical Control physician is responsible for all subsequent treatment decisions, including the transport decision.

If the ALS Provider has initiated treatment in a particular CARDIAC ARREST protocol, and the patient condition necessitates change to a different CARDIAC ARREST protocol, or the SHOCK/HYPOPERFUSION AFTER ROSC PROTOCOL, the ALS Provider(s) may switch protocols one (1) time, carry out standing orders for that protocol, AND CONTACT MEDICAL CONTROL.

The use of IO insertion as a procedure for infusing fluids and administering medications is applicable to ADULT and PEDIATRIC PATIENTS. ALS Providers primary insertion site is the upper extremity at the humeral head. If unable to access the upper extremities, the secondary insertion site is the lower extremity at the proximal tibia.

The use of SALINE LOCKS as a procedure to keep the vein open, or infuse fluids or medications, may be used when the patient’s condition requires a port for potential emergency access, limited fluids or does not require multiple medication administrations. Prior to establishing a Saline Lock, the provider must consider whether the patient will decompensate to the point of requiring fluid resuscitation or is acutely ill enough to require multiple IV medication administration. In those cases, an IV should be established.

F) ROLE OF ON-SCENE PHYSICIANS:

1) Designated EMS Physicians: On occasion, a physician may be present at the scene of an out-of-hospital emergency. The EMS Medical Director, a Medical Control Physician, or a Designated EMS Field Physician may provide on-scene medical control in accordance with System protocols. The primary role of these physicians is to provide direct on-scene medical control and direction, not to perform hands-on clinical care. If the physician does provide hands-on clinical care, the physician must be so designated by their ambulance service, and is doing so in accordance with their professional licensure and professional liability insurance coverage limits.

These physicians may accompany the patient to the hospital but are not obligated to do so. All procedures and medications performed or administered by the physician must be clearly documented on the PCR or electronic equivalent. A list of Designated EMS Field Physicians is listed in the appendices section of this manual.
2) Disaster Medical Response Team (DMRT) members are Designated EMS Field Physicians who also hold additional credentials that include: duly authorized by the Suffolk County EMS Division; credentialed by the Suffolk County Department of Health Services Compliance Unit; and appointed by Suffolk County Fire, Rescue & Emergency Services (FRES) as Deputy Fire Coordinator-Medical. In this capacity, physicians may act as agents of the county, only when specifically called to duty by the county.

Any clinical care provided is in accordance with their professional licensure and professional liability insurance coverage limits. All procedures and medications performed or administered by the physician must be clearly documented on the PCR or electronic equivalent. DMRT Physicians/Designated EMS Field Physicians may be useful in MCI situations, technical rescues, buildings evacuated due to “strange odors,” active violence, or other large-scale complex incidents requiring extensive emergency incident rehabilitation (Rehab) efforts.

3) Other Physicians: In the event that a non-designated physician is at the scene and wishes to assume responsibility for the care of his/her patient in his/her office, or as a passer-by at the scene of a call, the physician must be properly identified. Acceptable forms of identification include, but are not limited to, a medical society card, professional organization membership card, or hospital identification card. Until proper identification has been established, the ALS Provider shall render care to the patient in the usual manner.

To assume responsibility for the care of a patient, an on-scene physician must agree to assume all responsibility for the patient, document the assumption of responsibility on the Prehospital Care Report (PCR), and agree to accompany the patient to the hospital in the ambulance.

If the on-scene physician agrees to these terms, the physician’s orders may be carried out. However, such orders must conform to the level of training of the field personnel and to the protocols established in the Manual.

*Orders that are not within established Suffolk County EMS System policy or protocol, or those that are out of the scope of practice of an EMT-CC or EMT-P require that the physician perform the task, use his/her own equipment, and accompany the patient to the hospital in the ambulance.*

Medical Control need not be contacted until the post-event telephone report if the above conditions are met, unless the ALS Provider is uncomfortable with the non-designated physician’s actions. EMS Providers should always maintain a professional approach to other health care professionals during the transition of care phase of the alarm. All procedures and medications performed or administered by the physician must be clearly documented on the PCR or electronic equivalent.

If the on-scene physician is reluctant to agree to these terms, or is unwilling or unable to perform the task and orders an out-of-protocol procedure, the ALS Provider must contact Medical Control. The Medical Control Physician will make a judgment concerning the on-scene physician’s participation and responsibility. Communication between the Medical Control Physician and on-scene physician is encouraged. If the on-scene physician refuses to communicate with the Medical Control Physician, the ALS Provider must inform the on-scene physician that the ALS Provider may only accept the orders of the Medical Control Physician.

4) Physicians at the site of a disaster: Once a scene has been declared a disaster by a county emergency management or health official, the orders of any properly identified on-scene physician may be followed and documented appropriately.
G) ROLE OF PHYSICIAN-EXTENDERS AT THE SCENE:

If a “Physician Extender” (Physician Assistant or Nurse Practitioner), is present at an emergency in their usual employment setting, and requests to assume responsibility for the care of the patient, under the license of their absentee supervising physician, the “physician extender” may do so, provided that the individual has been properly identified. Acceptable forms of identification include, but are not limited to, a state registration certificate, professional medical society card or hospital identification card. Until proper identification has been established, the ALS Provider shall render care to the patient in the usual manner. The “physician extender” must abide by the terms and conditions defined for “other physicians” (see Section F-3 above).

A physician extender outside the normal setting of his/her usual place of employment may not provide on-scene medical direction and EMS providers may only take medical direction from a physician, as described above.

H) OTHER HEALTH CARE PROFESSIONALS AT THE SCENE:

In any event where a health care professional other than a physician or physician extender, as specified above, is at the scene, the ALS Provider is to maintain responsibility for patient care.

2. EMS PROVIDERS:

The Suffolk County EMS System recognizes two (2) levels of care:

A) Basic Life Support: BLS is provided by those certified by New York State as Certified First Responders (CFR) or Emergency Medical Technician – Basics (EMT-B) and render care in accordance with the NY State BLS Protocols.

B) Advanced Life Support: ALS is provided by those certified by New York State as Emergency Medical Technician – Critical Care (EMT-CC) or Emergency Medical Technician – Paramedic (EMT-P) and render care in accordance with the NY State BLS Protocols AND with the policies and protocols set forth in the Manual.

In order to perform at the ALS Level, ALS providers must complete the REMAC-approved credentialing and authorization process and receive clearance by the EMS System Medical Director before they are allowed to function in the System. The ALS provider must be a member, employee or authorized representative of an agency that has an ALS agreement with the Suffolk County Department of Health Services, and may only operate in the System when acting as a member of such agency or when specifically requested to assist another agency that has an ALS agreement with the Suffolk County Department of Health Services. An ALS Provider who is no longer a member of an authorized ALS agency MAY NOT continue to function as an ALS Provider in the System. In order to maintain operating privileges, an ALS Provider must complete all EMS System/REMAC-authorized protocol or policy updates. ALS Providers are responsible to provide proper documentation to the EMS Division upon successful completion of original and refresher training. The credentialing and authorization process is fully described in the appendices section of the manual.

C) The ALS Approach: The protocols contained in the Manual are predicated on the presence of a single ALS Provider. Once the cardiac monitor is applied, IV access is attempted, blood glucose determination has been made, prehospital medications are administered**, or patients are assisted with their own pre-prescribed medications, the ALS Provider must follow applicable protocol and continue care of the patient until arrival at the hospital. ALS Providers are expected to function at the ALS level and provide care consistent with their training and expertise, and give the patient access to the highest of care available.
* In cases where a blood glucose determination is the only procedure that has been performed and the blood glucose level is greater than (> 60 mg/dl) and less than (< 400 mg/dl) AND the patient does not have an altered level of consciousness/altered mental status, patient care may be transferred from an ALS provider to a BLS provider for transport to the hospital.

** With the exception of administration of IN Naloxone as indicated in Part 16 section D of this manual, PATIENT TRANSFER PROTOCOL.

3. SELECTION OF DESTINATION HOSPITAL:

NY State DOH policy for ambulance transport requires that patients be transported to the closest appropriate hospital Emergency Department. When a patient’s condition requires ADVANCED LEVEL CARE OR INTERVENTIONS, OR IS CONSIDERED TO BE LIFE THREATENING, the ambulance service is obligated to transport the patient to the nearest appropriate hospital Emergency Department, unless directed to another facility by state or regional protocols, or by a Medical Control Physician or Designated EMS Field Physician.

- Appropriateness is defined as the hospital most appropriate by NY State DOH designation (i.e.: Trauma Center, Pediatric Trauma Center, Stroke Center, Burn Center, PCI-Capable Center) where an admitting physician has privileges into a recognized specialty care area (i.e.: pediatrics), or in cases where there are no specific services at a particular hospital (i.e.: OB/GYN and Labor & Delivery).
- Psychiatric Emergencies should be transported to the closest emergency department for medical evaluation and clearance for secondary transfer, as indicated by additional diagnostic testing.
- Patients that may require hyperbaric therapy should be transported to the closest emergency department for evaluation and clearance for secondary transfer, as indicated by additional diagnostic testing.

Patients that are victims of sexual assault should be transported to a hospital that maintains a Sexual Assault Nurse Examiner (SANE) Program, unless the assault is compounded by an unstable illness or injury.

SANE Centers are maintained at Good Samaritan Hospital Medical Center, Peconic Bay Medical Center, and University Medical Center Stony Brook.

In many instances the patient’s illness or injury is not immediately life threatening. In such situations, the following factors should be considered when selecting the destination hospital, provided that the drive time to the alternative receiving hospital does not exceed more than twenty (>20) minutes additional time than it would have taken to get to the original facility, per NY State BLS policy:

- NY State or Regional injury/illness specific protocols;
- The patient’s or family’s request to be transported to a more distant hospital;
- The hospital affiliation of the patient’s private physician;
- Travel time and road conditions; and
- The ambulance agency’s internal policy for the selection of a destination.

A decision to transport a patient to a facility other than the nearest hospital implies that a judgment has been made that the risks of prolonged transport are outweighed by the potential benefits to the patient. Medical Control should be contacted for assistance in transport decisions when questions regarding the appropriateness of by-passing a hospital arise.
An ambulance service’s duty to act is to the patient in their presence, not the “patient they might get,” therefore, agency internal policies should reflect care that is most appropriate and safe for the patient, not convenience of returning back to the district. The duty to act is not terminated until the transfer at the hospital bedside is complete. In the event that EMS providers at any level are unsure as to the appropriate destination hospital, they should contact Medical Control for physician advice.

In general terms, the duty to act begins upon receipt of a call for EMS assistance, and ends upon transfer of care to hospital staff, including verbal bedside summary and transfer of written report.

4. HOSPITAL DIVERSION:

Section 405.19 (e) (4) of the NYS Hospital Code authorizes hospitals to request diversion of ambulances to other facilities when the acceptance of another critical patient might endanger the life of that or another patient. A request for diversion does not require that the ambulance divert from that facility. EMS personnel are not obligated to honor such a request if they believe that a critically ill or injured patient’s condition warrants transport to the closest hospital. However, EMS providers should consider the negative effects of bringing a patient to an emergency department that has declared that they are over capacity, or don’t have enough equipment or space to properly care for additional patients. If it is determined that the patient is stable, the diversion request may be honored. Medical Control may be contacted to assist in the transport decision. Personnel should fully document the reason(s) for their decision on the PCR.

Hospital diversion is a dynamic process, and may be the result of general overcrowding during seasonal variances, or the result of the loss of specific diagnostic and/or treatment equipment, or infrastructure. Each hospital’s decision to request diversion is made based upon different thresholds, in turn, based on each hospital’s specific resources. Hospitals must take aggressive action within the institution to decompress patient load prior to requesting diversion. In cases of general overcrowding, where a particular hospital is overwhelmed with a full census and extenuating circumstances in the emergency department, it may be acceptable to temporarily divert patients to allow the hospital to decompress. However, in cases where hospitals with contiguous catchment areas are requesting diversion, it may not be appropriate to honor such requests.

In cases where a hospital-specific event of magnitude, or a loss of critical infrastructure or diagnostic equipment negatively affects a hospital’s ability to receive patients, and the hospital makes an affirmative decision to temporarily place its emergency department out-of-service, every effort will be made to effectively communicate information to ambulances and to redirect patients. Personnel should expect to receive information via Suffolk County FRES Communications, or appropriate Public Safety Answering Point (PSAP) / Dispatch Center and should fully document the reason(s) for their decision on the PCR.

5. REFUSAL OF MEDICAL ASSISTANCE (RMA):

In the event that an ambulance service responds to a reported medical emergency where both the individuals at the scene and EMS personnel believe that no injuries or illnesses exist and that there are no individuals requiring or requesting EMS assistance, a PCR shall be prepared using the following Disposition Codes: 008 [Gone on Arrival (patient removed prior to arrival)] or 008 [Unfounded (false alarm) (no patient found)]. A thorough assessment of the scene is required to rule out mechanism of injury criteria. A physical assessment may also be necessary to make the determination that there are no patients at the scene. Consider the High Risk Criteria identified below before determining that there are no patients at the scene. Refer to the “No Patient Found” policy in the appendices section of the manual for guidance on determining patients from individuals.

If in the judgment of EMS personnel there is a patient at the scene that requires treatment and/or ambulance transport, but who refuses such services, Medical Control must be contacted in an attempt to convince the patient to consent to appropriate care and / or transport.
The Medical Control Physician will assess the patient’s capability to refuse treatment, encourage the patient to allow appropriate care as indicated, and offer advice and guidance to EMS personnel. If the Medical Control Physician determines that the patient warrants treatment and/or transport, every effort should be made, using all available resources at the scene, to encourage the patient to consent to treatment and/or transport to the hospital. If all efforts are unsuccessful, the refusal should be thoroughly documented on the PCR, signed by the patient and witnessed, preferably by a family member or a police officer.

Documentation should also include a complete patient assessment, and a statement that the patient has received explanation of the risks associated with refusal of transport, and that there is some level of support in place for them, including an alternative plan. **The use of the Suffolk County RMA Checklist, or an agency-specific checklist approved by Suffolk County EMS, must accompany PCRs or electronic report submissions for all RMA cases**, whether or not Medical Control was contacted. For high risk cases, where contact with Medical Control is required, the RMA Checklist should be completed to the degree possible prior to contacting Medical Control, so that essential information is obtained and can be readily communicated. A sample RMA checklist can be found in the appendices section of the manual.

From time to time, patients may receive treatment and then refuse further treatment or transportation to the hospital. In the event that a patient receives treatment but refuses transportation by ambulance, and the EMS provider agrees that ambulance transportation is not warranted and no high-risk illness or injury exists, Medical Control need not be contacted. The patient’s decision to refuse, the risks of refusal, and any recommended follow-up offered to the patient, should be noted on the PCR and the RMA signed by the patient, indicating he/she has refused transportation. If the EMS provider believes that ambulance transport is indicated, or high-risk illness or injury exists, Medical Control must be contacted. In all cases where there is no transport to a hospital, the yellow copy of the PCR must be sent to Medical Control by the ambulance service, or entered into the electronic reporting format, in the prescribed format and time frame.

The Medical Orders for Life Sustaining Treatment (MOLST) Form or electronic MOLST Form (eMOLST) is an advanced directive where a patient or the surrogate decision maker has communicated end-of-life wishes extending well beyond the DNR, with implications for the ALS provider regarding limited medical interventions, pain management, fluid resuscitation and transportation to the hospital.

Patients with a valid MOLST/eMOLST Form may elect to determine which treatments they are willing to accept or refuse, and you are obligated to honor that request. This includes decisions to attempt treatment, withhold treatment, initiate a trial course of treatment, or elect to NOT be transported to a hospital.

In cases where there may be high-risk RMA Criteria, and an individual has expressed his/her end-of-life wishes on a MOLST/eMOLST Form, this is not considered an RMA and Medical Control need not be contacted.

eMOLST allows for electronic completion of the current New York State Department of Health-5003 MOLST form. By moving the MOLST form to a readily accessible electronic format and creating the New York eMOLST Registry, health care providers, including EMS, can have access to MOLST forms at all sites of care including hospitals, nursing homes and in the community. eMOLST is a secure web-based application.

While there are no cut and dry answers to address the many variables you may encounter in the field, there are general guidelines and principles you can apply.

---

**IF AN ALS PROVIDER is on the scene, it is expected that the ALS provider with the highest level of certification be responsible for the assessment of the presence/absence of HIGH RISK CRITERIA and that those cases not be triaged down to a BLS provider.**
**RMA HIGH RISK CRITERIA:** An RMA should not be considered without contacting Medical Control if any of the following **High Risk Criteria** are present. A physical assessment may be necessary to rule out these criteria, when the patient:

- has received a medication, either by administration or self-assistance of an EMS provider, regardless of patient condition;
- has an altered mental status or a suspected head injury;
- is less than (<) eighteen (18), including situations where the legal guardian is on scene;
- is older than (>) seventy (70) years of age for any condition;
- has neurological, cardiac, or respiratory symptoms;
- Glasgow Coma Score is less than (<) fifteen (15);
- vital signs are outside of normal limits;
- has known or suspected alcohol or drug use involved;
- has a known carbon monoxide exposure, determined by atmospheric and/or non-invasive co-oximetry monitoring; or
- attempted suicide.

EMS personnel must contact Medical Control by telephone at 631-689-1430. For confidentiality purposes, and for ease of use by patients, the radio must not be used for RMA consultations. This policy cannot address every issue or possibility regarding RMA situations, therefore questions regarding appropriate action must be directed to Medical Control.

6. **MEDEVAC SERVICE:**

A) **GUIDELINES FOR USE OF MEDEVAC SERVICE:**

The process for determining that medevac service is appropriate for a particular patient includes consideration of the patient’s condition, distance from a designated specialty hospital, physical findings, mechanism of injury, contraindications for medevac service and the logistics of removing a patient unique to the given situation. Medevac operations are costly and inherently dangerous. Effort must be made to first consider ground transport times and the ability of a ground ambulance crew to continue care while enroute to the hospital, before requesting medevac services. In determining the appropriateness of medevac service in trauma responses, you must first evaluate the following:

**EXCLUSION CRITERIA.** It is inappropriate to request medevac service if the patient:

- Is in cardiac arrest;
- Has an unmanageable airway; OR
- Drive time to the appropriate hospital can be accomplished within thirty (<= 30) minutes.

Patients who fit the exclusion criteria should be transported as promptly as possible by ground ambulance to the nearest hospital.

**INCLUSION CRITERIA.** It is appropriate to consider medevac request if the patient’s condition:

- Requires expeditious transport to a hospital capable of providing specialized care, such as a designated Adult, or Adult and Pediatric Trauma Center; Stroke Center; Burn Center; STEMI Center; hospital with Obstetric (OB) services, etc.;
- Requires specialized services (medications or procedures) offered by the air medical crew not available to the ground crew prior to arrival at the hospital;
- Is a “life or limb” threatening situation demanding intensive multi-disciplinary treatment and care;
• Includes signs/symptoms/physical findings suggestive of unstable trauma patient;
• Includes critical burn patients; or
• Includes signs/symptoms/physical findings suggestive of an ill, unstable medical patient as defined in the medical protocols.

Per NY State DOH, if the transport time from the scene to the Trauma Center is greater than (>30) minutes, Medical Control must be contacted for transport decision, in accordance with current NY State BLS & ALS guidelines.

Per NY State DOH, if the patient will reach a Trauma Center more than (>1) hour after the injury occurred, Medical Control must be contacted for a transport decision.

Medical Control should be contacted to assist with transport decisions when use of medevac services are not specifically defined by the protocols and questions as to appropriateness arise.

For specialty hospital referrals, the patient must still meet NY State or Suffolk County criteria for selection of destination hospital.

In all cases, the goal of prehospital care, selection of transportation mode, and selection of destination hospital should be focused on getting the patient to the hospital best capable of caring for the particular injury or illness in the most expedient manner.

B) VITAL SIGN / ANATOMIC CRITERIA / MECHANISM OF INJURY CONSIDERATIONS:

1) TRAUMA PATIENTS

NY State has adopted the National Centers for Disease Control (CDC) / American College of Surgeons Committee on Trauma (ACS-COT) Trauma Center Field Triage Decision Scheme, and Trauma Center Designation process, which preferentially sends specific patients to “the highest level of trauma care” in the region, based on regional capabilities, measurement of vital signs and level of consciousness and anatomic criteria, and per the Suffolk Regional EMS Medical Director and REMAC, the ability to reach the appropriate Trauma Center within thirty (≤30) minutes.

Therefore, trauma patients with the following abnormal vital signs or anatomic findings (BOX 1 or 2) should preferentially be transported to a Level I or II Trauma Center:

• GCS ≤ 13, or;
• Systolic BP < 90, or;
• Respiratory Rate < 10 or > 29 or need for ventilatory support;
• All penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee;
• Flail Chest or any other chest wall instability or deformity;
• ≥ 2 proximal long bone fractures;
• Pelvic fractures;
• Open or depressed skull fractures;
• Paralysis;
• Amputation proximal to wrist or ankle; or
• Crushed, degloved, mangled or pulseless extremity.
Trauma patients with the following mechanism of injury patterns (Box 3) should be transported to the closest Trauma Center (Level I, II, III, NYS DOH defined Area Trauma Center):

- Ejection (partial or complete) from automobile;
- Death in same passenger compartment;
- Falls: adults > 20 feet, children > 10 feet or two to three times the height of the child;
- Intrusion, including roof; > 12 inches occupant site; > 18 inches any site
- Auto-pedestrian / auto-bicycle injury with > 20 mph impact;
- Pedestrian thrown or run over; or
- Motorcycle crash > 20 mph.

Trauma patients with the following considerations (Box 4) should be transported to the closest Trauma Center (Level I, II, III, NYS DOH defined Area Trauma Center): Consider consultation with Medical Control:

- Age ≤ 14 (pediatric patients should be triaged to pediatric trauma center);
- Older Adults > Age 55 years; SBP < 110 may represent shock after age 65; low impact mechanisms (e.g. ground level falls) may result in severe injury;
- Pregnancy > 20 weeks;
- Patients with bleeding disorders or on anticoagulants;
- Burns without other trauma mechanism: triage to burn facility; or
- Burns with trauma mechanism: triage to trauma center.

When considering the appropriateness of medevac service, the EMS provider must consider the alternative of ground ambulance transportation to the nearest appropriately designated Trauma Center, more formally defined in Appendix 26. Medevac service should be requested to get the patient to the highest level of trauma care provided the patient will arrive at the Trauma Center less than (<) 60 minutes of injury, OR unless warranted by multiple critical patients. Medevac services to distribute patients to a more distant Trauma Center should be considered in cases where there are more than (>) two (2) patients perceived to require operative intervention.

Medical Control must be contacted by telephone (631-689-1430) as soon as feasible after the alarm whenever a patient who meets trauma center criteria is transported to a non-trauma center.

**GROUND TRANSPORT VERSUS AIR TRANSPORT TIME CONSIDERATIONS**

<table>
<thead>
<tr>
<th>Ground Time Calculation</th>
<th>Air Time Calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>extrication</td>
<td>helicopter preparation</td>
</tr>
<tr>
<td>stabilization</td>
<td>flight time to scene</td>
</tr>
<tr>
<td>load into ambulance</td>
<td>drive time to landing zone</td>
</tr>
<tr>
<td>drive time to hospital</td>
<td>prepare the patient for flight</td>
</tr>
<tr>
<td>• weather</td>
<td>flight time to trauma center</td>
</tr>
<tr>
<td>• road conditions</td>
<td></td>
</tr>
<tr>
<td>• traffic</td>
<td></td>
</tr>
<tr>
<td>• time of day</td>
<td></td>
</tr>
</tbody>
</table>

EQUALS GROUND TRANSPORT TIME

EQUALS AIR TRANSPORT TIME
2) MEDEVAC USE FOR NON-TRAUMA PATIENTS:

Medevac service may be required to transport patients because of circumstances that limit ground access, or in cases for medical patients where ground transport times to designated specialty care hospitals are prolonged. Patients in these categories may be transported to facilities other than a designated Trauma Center.

Examples include, but are not limited to:

- the transport of a patient with a minor injury from a barrier beach or other remote areas not accessible by ground ambulance response;
- a medical patient presumed to be suffering from a stroke / CVA in an area where there are no designated stroke centers, or the patient needs comprehensive stroke care;
- a medical patient with STEMI per 12 lead EKG and the nearest PCI-capable Center is greater than sixty (> 60) minutes by ground transport, AND when the mode of transportation is authorized by Medical Control.

C) HOW TO REQUEST AND / OR CANCEL MEDEVAC SERVICE:

- The first responding medically certified person on-scene is responsible for making the determination that medevac service is appropriate. To avoid confusion, the decision to cancel medevac response should be made by the same person who made the original medevac service request. In certain circumstances, helicopters may be placed on stand-by, or by airborne in the vicinity of a call, based on dispatch information, pending confirmation of need, or cancellation by EMS resources on the scene.
- The primary method of requesting medevac service is through the police officer at the scene. If there is no police officer present, the medevac service can be requested through the MEDCOM or FIRECOM dispatcher. Although establishing a landing zone (LZ) is primarily the responsibility of the on-scene police, responding EMS providers should be familiar with the guidelines and safety procedures, outlined in the appendices section of this manual.
- For cases outside the Suffolk County Police District or when there is no sector car on scene, EMS providers should relay their operating frequency type (i.e. UHF, VHF, 800 MHz, other) and number through FRES MEDCOM to facilitate direct ambulance-to-helicopter communications.

D) DEFIBRILLATION ON THE MEDEVAC AIRCRAFT:

Airborne defibrillation has associated risks and should never be considered a routine procedure on board a medevac aircraft. The following guidelines apply to defibrillator use on board a medevac aircraft: The use of a defibrillator, as well as any other equipment on board the helicopter is at the discretion of the pilot in command; the pilot is solely responsible for the safe operation of the aircraft and all associated equipment; and only “hands free” defibrillation equipment is authorized.

The following precautions must be observed when a defibrillator is used on board the medevac aircraft:

- The patient must be on a non-conductive surface;
- The oxygen system must be off; and all
- Personnel and equipment must be clear of the patient.

E) USE OF NITROUS OXIDE PROHIBITED ON THE MEDEVAC AIRCRAFT:

Nitrous Oxide is not to be used on the medevac aircraft.
7. DOCUMENTATION:

A) Written Documentation: A New York State Prehospital Care Report (PCR) or recognized accepted electronic patient care report (ePCR) must be completed for every request for ambulance response in the Suffolk County EMS System, and accounted for per NY State EMS Policy Statement 12-02. Each technician’s name and NYS EMT number must be included on every PCR. Departmental badge numbers are not suitable substitutes for the EMT’s name and EMT number. NY State policy requires that a written report be submitted with the patient at the receiving emergency department.

B) Post-Call Follow-up: Medical Control must be contacted by telephone (631-444-3600) at the completion of every call when there is on-line contact with Medical Control, whenever ALS intervention(s) are provided or attempted, as well as every time an automated external defibrillator is placed on a patient, or when BLS medications are administered. It is not appropriate to follow standing orders or use the Adult Care Protocol and only document care on the PCR or electronic equivalent, without contacting Medical Control post call.

The data collected during these follow-up reports are an integral part of the System’s quality improvement and statistical documentation processes. In addition, information collected in these reports is used to credit each technician’s participation in the System and to document any skills that may have been performed.

8. QUALITY ASSURANCE AND QUALITY IMPROVEMENT:

Appropriate patient care is a medical and legal necessity. NYS BLS and Suffolk County ALS protocols define such care. EMS alarms are reviewed on a routine basis in accordance with the Suffolk County Division of EMS Quality Improvement Plan, referenced in the appendices section of the manual and the NY State Department of Health Quality Improvement for Prehospital Providers Workbook and Guidance Document for Service Level and Regional Level Quality Improvement Activities.

A) DEVIATION FROM PROTOCOLS:

All unauthorized administration of medication, unauthorized use of any procedure, or deviation from protocol must be reported for review by the EMS System Medical Director. Such review may result in the temporary suspension of ALS operating privileges, temporary suspension or restriction of standing orders, a warning, or mandatory remedial education. Intentional deviation from protocol or obstruction of the quality assurance process may result in the suspension / restriction of ALS operating privileges or expulsion from the ALS System. Agencies that restrict or suspend ALS provider privileges per internal agency level CQI audits MUST notify the Suffolk County EMS Division in writing, summarizing the infraction, restriction process, and remedial plan of action.

B) MANDATORY NEW YORK STATE DOH NOTIFICATION OF IMPROPER ACTIVITY:

The ambulance service, and in turn, the EMS System Medical Director is obligated, under New York State Department of Health EMS Policy to report specific types of occurrences, including activity that is contrary to a technician’s level of certification to the State Health Department for investigation. Such action may lead to the revocation of an EMT / AEMT certificate and / or the pursuit of civil or criminal action.
C) MANAGEMENT OF THE PATIENT WITH AN ADVANCED AIRWAY:

Prevention of unrecognized esophageal intubation is of paramount importance and is a medical and legal necessity. Therefore, the use of End-Tidal CO2 waveform capnography, the use of a commercially available tube holder, and immobilization of the head with cervical collar, head blocks and long backboard, is required on all endotracheal intubations performed in the ALS System. For patients where a waveform is initially obtained, then disappears, the ET tube should be removed.

For patients with a pulse requiring intubation, whether or not they have received medication to facilitate intubation, pulse oximetry, continuous ETCO2 waveform capnography, and cardiac monitoring is required prior to intubation, and is to be maintained throughout transport to the hospital. ET Tubes are to be secured in the manner described above.

The use of continuous ETCO2 capnography is strongly recommended for all non-intubated patients complaining of respiratory distress.

For patients with a supraglottic airway, the use of ETCO2 waveform capnography, immobilization of the head, and post-insertion verification procedures remain in effect.

The Suffolk REMAC Verification of Intubation Form must be completed and signed by the confirming party, and submitted to the EMS Division Office with a copy of the PCR and ETCO2 waveform capnography as soon as feasible after the alarm.

9. DO NOT RESUSCITATE (DNR) ORDERS / ADVANCED DIRECTIVES:

Non-hospital DNR orders and an advanced directive called the Medical Orders For Life Sustaining Treatment (MOLST) are permitted by the Family Health Care Decisions Act (FHCDCA) and governed by Public Health Law (PHL) Article 29-CCC. A DNR order is an order not to perform ventilations, compressions, defibrillation, intubation or medication administration in the event of cardiac or respiratory arrest, including mechanical ventilation after removal of a foreign body airway obstruction if ventilations are not spontaneously restored.

The MOLST Form, or eMOLST, more formally described previously in Section 5, is an advanced directive where a patient or the surrogate decision maker has communicated end-of-life wishes extending well beyond the DNR, with implications for the ALS provider regarding limited medical interventions, pain management, fluid resuscitation and transportation to the hospital.

The approved NYSDOH NON-HOSPITAL DNR ORDER, or an approved DNR bracelet, or the bright pink multi-page MOLST Form, or electronic access to eMOLST are to be honored. The DNR form must be signed and dated by the patient’s attending physician. Nursing Homes and other Article 28 licensed facilities may use their own DNR form and EMS providers must honor that form. The MOLST Form also must be signed by the decision maker and the physician. Like the DNR Form, the MOLST Form is subject to periodic review with no date/time parameter attached.

Therefore, DNR Forms and MOLST Forms should be considered valid as long as they have been signed and there is no indication to suggest the order has been modified.

Absence of a valid DNR Form, MOLST Form, or eMOLST requires that full treatment be rendered. CPR must be initiated in the absence of a Non-Hospital DNR, or a facility DNR, or MOLST Form; however, CPR may be stopped once the DNR or MOLST Form is produced.
Public Health Law (PHL) 2994-gg provides immunity from liability for good faith actions concerning DNR and MOLST orders. If it is believed that a DNR order or MOLST Form is invalid, and CPR is performed, the technician will not be held liable. If a DNR order or MOLST Form is disputed, CPR may be started in order to avoid a physical confrontation. Contact with Medical Control should be made to resolve any disputes with a DNR or MOLST / eMOLST Form.

10. OBVIOUS DEATH:

When a cardiac arrest situation is encountered, certified EMS providers are obligated to perform CPR, unless a valid NYS DNR form or MOLST Form indicating DNR is presented, or unless there are signs of obvious death, such as decapitation or similarly mortal injuries, or where rigor mortis, tissue decomposition or extreme dependent lividity are present. If CPR has been initiated by an untrained bystander or family member in the presence of signs of obvious death, the EMS provider may elect to discontinue CPR. AEDs or cardiac monitors are not to be used in this decision-making process.

There is no expectation that ambulances transport the deceased to the hospital. However, in cases where a person with a valid DNR or MOLST Form indicating DNR expires in a public location, or in the ambulance after transportation is already underway, transportation to the hospital without resuscitative measures is allowed.

11. TERMINATION OF RESUSCITATION:

In effort to balance EMS provider safety and safety to the general public, with recognition of futile resuscitative efforts, termination of unsuccessful resuscitation may occur in accordance with the parameters set forth in the Field Termination of Resuscitation Protocol, with the consent of the family present. Termination of Resuscitation (TOR) is appropriate only for applicable patients in a private residence where full ALS resuscitation (IV, advanced airway, medications, etc.) efforts do not result in prehospital return of spontaneous circulation (PROSC). In these cases, documentation should include all resuscitative measures, and the patient’s response to those measures. The patient need not be transported to the hospital, and left in the care of police officers on the scene. TOR is a standing order for EMT-Ps. EMT-CCs must contact Medical Control for a physician decision to terminate resuscitation. Note that this procedure does not apply to patients in a public setting.

Intravenous lines and endotracheal tubes should be left in place. If the family requests that the resuscitation effort be continued, and that the patient be transported to the hospital, the family’s request is to be honored.

12. CONTROLLED SUBSTANCES:

Only those controlled substances approved by the NY State Emergency Medical Advisory Committee (SEMAC) and the NY State Department of Health (NYSDOH) may be administered by appropriately certified and authorized ALS Providers of certified ALS ambulance services or certified ALS first response services participating in the Suffolk County ALS System, with a Class 3C Controlled Substance License. Controlled Substances may be administered either under standing orders, or upon the order of a Medical Control Physician or Designated EMS Field Physician, per applicable clinical protocols. Controlled substances may not be carried in the private vehicles of EMS providers, including private vehicles authorized by the ambulance service as first responder vehicles (EASV), as described below. Marked and certified ambulances or EASVs must be used to transport controlled substances. All certified personnel and all authorized officers, members and / or employees of an ALS agency are under a continuous duty to immediately report to the EMS System Medical Director, the Service Medical Director, the Controlled Substances Agent and the NYSDOH / BEMS any loss, theft, and / or diversion of controlled substances. ALS Providers must be engaged in “active response” with the agency that holds the Class 3C Controlled Substances license in order to administer controlled substances.
13. ALS EQUIPMENT IN PRIVATE VEHICLES:

Except as provided for in the next paragraph, ALS personnel are not authorized to carry any item that requires a physician’s prescription in their private vehicle. Such items include, but are not limited to, needles, syringes, medications, and defibrillators.

The only circumstance under which such equipment may be legitimately carried in a private vehicle is when the vehicle operator is serving as an authorized agent of an agency participating in the Suffolk County ALS System, functioning as an “ALS first-responder.” In those cases, the member’s personal vehicle is considered an Emergency Ambulance Service Vehicle (EASV) and must meet the criteria set forth in NY State policy. The ALS equipment may be carried only with the prior knowledge and approval of a chief officer of the ALS Provider’s agency, and with the authorization of the NYSDOH. All such ALS equipment must be able to be used under protocols applicable to the ALS Provider’s level of certification, and must include, but is not limited to, IV administration supplies and fluids, monitor / defibrillator, endotracheal intubation/airway adjunct equipment, and telemetry / communications equipment.

14. AREA OF OPERATION:

An ALS Provider credentialed and authorized by the EMS Medical Director to participate in the Suffolk County ALS System may legally operate only within the geographical confines of the Suffolk County EMS System, or out of Suffolk County as part of a bona fide mutual aid response. An ALS Provider may not perform ALS as a “passer-by” when the technician is outside of his / her agency’s district, unless the provider’s assistance is requested by an agency that participates in the Suffolk County ALS System, per guidelines in section 209i in General Municipal Law. Refer to Suffolk County EMS Policy “Inter-agency Utilization of Advanced Life Support Personnel,” outlined in the appendices section of this manual. Based on inter-regional agreements, in cases where the ALS Provider is operating outside Suffolk County on a bona fide mutual aid response, the Suffolk County ALS Protocols are to be used, and contact with Suffolk County Medical Control, when indicated, is expected.

15. INTERACTION BETWEEN LEVELS OF EMS PROVIDERS:

If a CFR or EMT-B initiated patient care prior to the arrival of an EMT-CC or EMT-P, the EMT-CC or EMT-P should allow personnel to continue to perform those Standing Orders which have been initiated. Common sense and good patient care are to prevail in all provider interactions. When questions arise, patient care activity should be directed by the individual with the highest certification. Medical Control must be contacted to resolve any conflicts occurring during patient care activity. Once medications have been administered / assisted to any patient (by BLS or ALS technicians), or the cardiac monitor placed on any patient, the ALS Provider must assume care of that patient until arrival at the hospital.

** With the exception of administration of IN Naloxone as indicated in Part 16 section D of this manual, PATIENT TRANSFER PROTOCOL.**

16. PATIENT TRANSFER PROTOCOL:

**FROM ALS PROVIDER (EMT-CC OR EMT-P) TO BLS PROVIDER**

A New York State certified EMS provider with a higher level of certification may transfer responsibility for the on-going care of a patient to a provider with a lesser New York State certification if the following conditions are met:
A) The patient does not have cardiac, respiratory, neurologic, or allergic signs / symptoms, and does not fit into an ALS Protocol.

B) The provider with the higher level of certification must have assessed the patient and made an affirmative decision to transfer care of the patient to a provider with a lesser certification, indicating that the patient is not in need of ALS level interventions and will not likely decompensate to the point where ALS interventions may become necessary during transport to the hospital.

C) The provider with the higher level of certification must have made the determination that the patient will not require any care or skills which would be possessed by the provider with the higher level of certification and not possessed by the provider with the lesser level of certification, nor need assistance of an additional advanced provider on difficult cases. In cases where the provider of lesser certification administered or assisted with administration of a medication, applied CPAP or has acquired a 12-lead, the provider with the higher certification must assume care of that patient.

D) ALS providers may transfer care to a BLS provider who has received IN naloxone (Narcan™) if the following conditions are met:

Patient must be fully awake and breathing normally; EMT must consent to the transfer; Transport time to the closest ED must be less than (<) 30 minutes; There is no suspicion or indication that would indicate that the opioid reversal has triggered the onset of agitation / seizure or other medical complication caused by another substance that could be treated by an ALS Provider; There is no need for restraint of the patient; and the patient exhibits: Normal Vital Signs (≥ 110 / 70, HR < 110, RR > 12, BG > 80 mg/dl).

If transfer is made, and during transport the patient relapses, exhibiting hypoventilation, developing unresponsiveness, and constricting pupils, the EMT-B may administer one (1) additional 2 mg Narcan™ IN while enroute under standing orders.

E) The provider with the lesser level of certification must agree to assume responsibility for patient care. If the provider with the lesser level of certification refuses to accept that responsibility, the provider with the higher level of certification must continue to care for the patient until the transfer at the hospital is complete.

F) If either provider who is a party to the transfer has any questions concerning the appropriateness of the transfer they must contact Medical Control for a physician consultation.

G) The patient transfer must be documented on the Prehospital Care Report (PCR) or electronic reporting format. The ALS Provider must document assessment and transfer on the PCR, Continuation Form, or ePCR as part of the patient care transfer process. When different services are involved, the transferring ambulance service must provide the transporting ambulance service with the pink and yellow copies of its PCR. The transporting ambulance service must leave the transferring service’s pink and yellow copies of its PCR at the receiving hospital emergency department for inclusion in the patient’s hospital file and the data collection system. Each service is responsible for documenting their respective service’s interaction with the patient and with each other.
FROM ALS PROVIDER (EMT-P) TO ALS PROVIDER (EMT-CC)

A New York State certified EMS provider with a higher level of certification may transfer responsibility for the on-going care of a patient to a provider with a lesser New York State certification if the following conditions are met:

A) The EMT-P may transfer ALS level care to an EMT-CC provided that the patient does not require an ALS level intervention that the EMT-CC is not authorized to carry out, and the patient will not likely decompensate to the point where specific paramedic level ALS STANDING ORDER interventions may become necessary during transport to the hospital.

B) The EMT-P may transfer ALS level care to an EMT-CC provided that the patient is not deemed to be unstable, either by assessment, or by protocol, and that the patient will not likely decompensate to the point of becoming unstable or critical during transport to the hospital. Documentation should include the medications and procedures initiated by the EMT-P prior to transfer of care to the EMT-CC, and that the conditions of transfer have been met.

C) If either provider who is a party to the transfer has any questions concerning the appropriateness of the transfer they must contact Medical Control for a physician consultation.

17. AUDIT FORMS:

From time to time, specific audit forms are to be used to provide ancillary documentation of a particular procedure, or in response to a particular request for information. It is the responsibility of the ALS Provider to ensure the following documents are submitted to the EMS Division in the prescribed format. Forms may be transmitted via fax to 631-852-5028 or scanned and sent as a .pdf file to william-michael.masterton@suffolkcountyny.gov.

- Suffolk County Verification of Intubation Form, with copy of the PCR (or electronic equivalent printout) and ETCO2 Waveform printout.
- Suffolk County Continuous Positive Airway Pressure (CPAP) Quality Improvement (QI) Form, with copy of the PCR (or electronic equivalent printout).
- Agency Cover Sheet documenting administration of controlled substances with copy of the PCR (or electronic equivalent printout).
- BLS 12 Lead ECG QI Form, with copy of the 12 lead ECG and the PCR (or electronic equivalent printout).
- Other forms that may be requested.

18. ALS PRECEPTORS:

ALS Providers must successfully complete the Suffolk County EMS Preceptor Process and be authorized by the Suffolk County EMS Division to perform the duties of an ALS Preceptor. Authorized ALS Preceptors may allow ALS course students that are either enrolled in an ALS Training Course in Suffolk County, or in an ALS Training Course recognized by the Division, to carry out the procedures they have been cleared for, with prior approval. This allows the student to perform only those skills that have been authorized by his / her Certified Instructor Coordinator (CIC). The Suffolk County ALS Policies and list of authorized procedures shall be followed at all times. On the post call telephone call to Medical Control, the students name must be provided as well as any procedure attempts.
19. ALS PROTOCOL FORMAT & DESIGN:

These ALS protocols were developed for all ALS Providers and are applicable to EMT-CCs and EMT-Ps. The entry pathway into each protocol is predicated on appropriate BLS care and generally follows the flow of EMT-CC Standing Orders, followed by EMT-P Standing Orders, followed by Medical Control Options.

- Boxes in Orange (dotted pattern) indicate EMT-CC and EMT-P Standing Orders.
- Boxes in Blue (solid pattern) indicate EMT-CC STOP, and EMT-P continuing Standing Orders, which become Medical Control Option for EMT-CCs.
- Boxes in Red (double solid pattern) indicate EMT-P STOP and Medical Control Options.
- Boxes in Green (dotted pattern) indicate EMT-CC Standing orders.

Special Notes:

A) Doses are only present in Standing Order Boxes, and efforts have been made to standardize medication and fluid doses as clinically appropriate.
B) Doses ARE NOT present in Medical Control Option Boxes, this is to facilitate yielding to physician judgment in terms of additional dosing and route, based on clinical needs of the patient.
C) All providers should become familiar with medication dosing, indications, contraindications, cautions and limitations by referring the Medication Fact Sheets.

20. Mobile Stroke Unit:

A) Interaction with a Mobile Stroke Unit

- On calls where the Mobile Stroke Unit (MSU) is simultaneously dispatched the MSU may be cancelled prior to arrival by EMS providers on-scene if they feel there is low probability the patient is having an acute stroke (ischemic or hemorrhagic).
- Transportation of the patient to the closest appropriate hospital should not be delayed by the remaining on-scene awaiting the arrival of the MSU.
- Upon assuming patient care, the paramedic on the MSU will assume primary responsibility for patient care.
- Medical Control may be contacted at any time if there are questions regarding these criteria.

B) Requesting a Mobile Stroke Unit

- On calls when a MSU was not simultaneously dispatched, the responding EMS providers may request a MSU response if an acute stroke is suspected; however this request should not delay providers departing the scene to transport the patient to the closest appropriate hospital. As such, this request should not be made if transport is able to be initiated before a MSU may arrive on-scene.
SECTION B

MEDICAL PROTOCOLS

1. INTRODUCTION:

**BASIC LIFE SUPPORT (BLS)** is the foundation of all out-of-hospital emergency medical care including **ADVANCED LIFE SUPPORT (ALS)**. The New York State Department of Health (NYSDOH) BLS Protocols have been adopted as the standard of care for BLS in Suffolk County.

The ALS Protocols set forth in this **Manual** constitute the standard of care for all advanced out-of-hospital emergency medical care provided by Advanced Emergency Medical Technicians authorized in the Suffolk County Advanced Life Support (ALS) System.

In situations where a patient’s condition may fit more than one of the protocols set forth in the **Manual**, the ALS Provider shall identify the most emergent clinical problem and use that as the protocol of entry into the ALS System. For patients presenting with multiple clinical problems, contact should be established with Medical Control as promptly as possible, even if Standing Orders have not been initiated. ALS Providers **MAY NOT** transition through multiple protocols, except in the cardiac arrest situation, where transition from the presenting arrhythmia, to ONE (1) ADDITIONAL arrhythmia, is allowed **PRIOR TO CONTACT WITH MEDICAL CONTROL**.

The protocols set forth in this **Manual** have been developed for adult and pediatric patients. Generally, the adult is defined as an individual who is fifteen or more (≥ 15) years old and who weighs more than thirty six (36) Kg. **Medical Control options** are those treatments and / or procedures that the online Medical Control Physician may order. Medication dosages may be modified by the Medical Control Physician for adult and pediatric patients that are outside their respective age, weight expectations. **Please refer to adult protocols. Contact with Medical Control shall be made for any adult patient greater than (> ) fifteen (15) years of age but weighing less than (<) thirty six (36) Kg.**

2. PEDIATRIC ALS GUIDELINES:

The **Pediatric patient** is defined as a patient greater than (> ) twenty eight (28) days AND less than (<) fifteen (15) years of age AND weighing less than or equal to (≤) thirty six (36) Kg. A Broselow Tape must be carried as part of the standard ALS equipment package and must be used to estimate the pediatric patient’s body weight, guide medication dosage adjustments, determine energy selection requirements, and tube sizes. IO access may be utilized on any pediatric patient who meets the age criteria above and weight criteria on the Broselow Tape (3-36 Kg.). **Please refer to pediatric protocols and the relevant appendices.**

Any patient greater than twelve (> 12) years old and weighing greater than (> ) thirty six (36) Kg. may be treated as an adult.

In cases where the medication is indicated for a pediatric patient, but not listed in the Broselow Tape, the tape will be used only for weight estimates and the dose listed in the protocol, or ordered by Medical Control, will be used.

The most critical pediatric medical emergencies, including cardiac arrest, are related to **primary airway or respiratory compromise**. Pediatric Standing Orders should be initiated and **transport should begin as soon as possible.**
3. PILOT PROGRAMS:
From time to time, and in response to additional training or new technology, additional procedures or medications may be authorized by the EMS Medical Director and REMAC, with the approval of NY State DOH, and added to the protocols for use by select agencies in a pilot program prior to adaptation by the entire system. In those cases, it is the responsibility of the ALS Provider to ensure that all necessary paperwork (audit forms, PCRs, electronic printouts, etc.) required by the pilot program authorization are completed and submitted to the EMS Division and the REMAC in a timely manner. Under no circumstances may an agency implement a pilot project or employ new technology that has not been pre-approved by the EMS Medical Director, in consultation with the REMAC and/or NY State DOH.

4. NON-EMERGENCY TRANSPORTATION:
The medical protocols in this manual are intended for use in emergency situations for care rendered in cases received through the emergency response system. These protocols are not intended for routine transportation use or interfacility transfer situations. In cases where an EMS System ambulance may be necessary to transport a patient between home and a health care facility, or between health care facilities, or any other non-emergent situation, requiring BLS Level care and interventions, **PRIOR APPROVAL FROM THE EMS SYSTEM MEDICAL DIRECTOR, OR DESIGNEE, IS REQUIRED.** Interfacility transportation at the ALS level is outside the scope of these protocols and is generally not acceptable but may be approved by the EMS System Medical Director on a case by case basis depending on the patient’s condition.

5. SAFETY DURING SCENE OPERATIONS
All providers operating at the scene of a medical emergency should be conscious of their surroundings at all times. “Scene safety” is more than just a simple yes or no question that occurs upon approach. On-going assessment of the scene is equally important as on-going assessment of the patient. EMS Providers should apply the theory of a “contact provider” to provide primary patient care and a “cover provider” to remain less distracted by the patient and more attentive to people, affect, crowd formation, egress paths and the like. If the scene turns from docile to hostile, and EMS providers safety is in jeopardy, hasty retreat is not abandonment. EMS providers should remain on the scene in a safe area of refuge, until scene safety can be re-established, and patient care can continue. Thorough documentation on the PCR / ePCR is required.

6. SAFETY DURING TRANSPORTATION
ALS providers should be mindful of how their therapies and interventions ultimately affect the patient. The foundation of ALS is to stabilize an unstable patient and safely transport them to the hospital. Therefore, the decision to use emergency lights and sirens should be based on the patient’s clinical needs and ALS providers’ judgement regarding the severity of their illness / injury in terms of immediate threats to life and limb.

Whenever possible, EMS providers should perform patient care skills at the scene. If skills need to be performed in a moving ambulance, providers should be appropriately restrained. As an alternative, as long as it is safe and appropriate to do so, the ambulance should be pulled off the road and stopped for the duration of necessary interventions and procedures. As a matter of safety, EMS providers should plan their patient care so that essential interventions are performed prior to beginning transport and have ready access to patient care equipment that may be needed while enroute to the hospital.
ALS ADULT CARE
For patients that do not fit into a specific protocol.

In addition this protocol is not intended for unstable patients.

Unstable patients include those with:

- Pulse less than (<) 50 or over 110
- SBP less than (<) 90mmHg or above 180mmHg
- DBP over 110mmHg
- Respiratory rate less than (<) 10 or above 29
- Persistent chest pain or discomfort.
- Persistent respiratory distress; unresolved AMS
- Status Post Cardiac or Respiratory Arrest
- Multisystem Trauma or Penetrating Trauma

- Assist airway / breathing / circulation.
- Protect cervical spine if necessary.
- Perform patient assessment as per NYS BLS protocols.
- Administer Oxygen as per NYS BLS protocols.
- If the patient’s signs / symptoms indicate that only BLS care is indicated, refer to appropriate NYS BLS protocol.
- If the findings or signs / symptoms indicate that the patient fits into a specific ALS protocol, refer to that protocol immediately.
- IV NS to KVO, or Saline Lock
- Apply Cardiac Monitor
- Perform Blood Glucose determination.
ADULT ADVANCED AIRWAY

- Needle cricothyrotomy for unrelieved airway obstruction.
- MFI or RSI if agency is authorized and Paramedic is credentialed.
- ATV if approved by the agency in accordance with Appendix 48.

- Repeat any of the above.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
ADULT RAPID SEQUENCE INTUBATION

This protocol is intended for use by agencies authorized by their Service Medical Director and approved by the REMAC. Providers must have received specialized training in Rapid Sequence Intubation prior to implementing this protocol. **INDICATIONS:** RSI may be utilized by a single paramedic on standing orders in any adult protocol requiring advanced airway management when definitive airway control is necessary for patients in imminent respiratory compromise and/or failure; and where no other means of securing an airway can be obtained without the use of sedative agents.

- If patient is exhibiting signs of respiratory compromise and/or the airway is not secure, pre-oxygenate the patient via BVM or NRB and Nasal Cannula. Begin apneic oxygenation with NC at 15 lpm or maximally tolerated rate, and continue until endotracheal tube or extraglottic airway is confirmed.
- IV of NS KVO
- **Consider Fentanyl, up to 2 mcg/kg SLOW IV/IO, for pre-induction analgesia and in cases of elevated intracranial pressure, as long as the SBP is above than 90.**
- Administer Etomidate 0.3 mg/kg over 30-60 sec IV/IO push OR Ketamine up to 1-2 mg/kg IVP/IO.
- Administer Succinylcholine 1.5mg/kg IV/IO push. (If Succinylcholine is contraindicated, administer Rocuronium 1 mg/kg IV/IO push.)
- When paralysis is achieved, intubate the patient then confirm ET tube placement with lung sounds and waveform EtCO2. *(Maximum of 2 ETI attempts, interchanged with BVM ventilations.)*
- If attempts at intubation fail, insert Supraglottic airway via protocol.
- If unable to adequately oxygenate the patient by use of the above means, perform needle cricothyrotomy as per protocol to oxygenate.
- Confirm ET tube or Supraglottic airway placement and attach a continuous EtCO2 monitor (ventilate to maintain EtCO2 between 35-45 mmHg), and secure the ET tube via protocol.
- Following confirmation of airway placement, the following may be administered for analgesia and sedation:
  - Administer Midazolam 0.05-0.1 mg/kg IV/IO to a maximum single dose of 5 mg. Midazolam can be repeated every 10 minutes, as needed, for additional sedation if SBP remains above 90; **AND/OR**
  - Administer Fentanyl 1 mcg/kg IV/IO to a maximum single dose of 100 mcg. Fentanyl can be repeated every 5 minutes, as needed, for additional analgesia if SBP remains above 90; **AND/OR**
  - Ketamine 1-1.5 mg/kg IV/IO. Ketamine can be repeated every 15 minutes, as needed, for additional analgesia and sedation if SBP remains above 90.
- Continuously monitor ET tube placement by effectiveness of oxygenation (SpO2) and ventilation (EtCO2 waveform).
- ATV if approved by the agency in accordance with Appendix 48.
- **Consider Rocuronium 0.5 mg/kg IV/IO, after significant administration of analgesia and/or sedation in cases of extended transport time, ventilation asynchrony, or aeromedical transport.**

- Repeat any of the above.
- Repeat Paralytics

EMT-P

MEDICAL CONTROL
ADULT MEDICATION FACILITATED INTUBATION

This protocol is intended for use by agencies authorized by their Service Medical Director and approved by the REMAC. Providers must have received specialized training and are authorized in Medication Facilitated Intubation (MFI) prior to implementing this protocol. **INDICATIONS:** Medication Facilitated Intubations may be utilized on standing orders in any protocol requiring advanced airway management when definitive airway control is necessary for patients in imminent respiratory comprise and / or failure; and where no other means of securing an airway can be obtained without the use of sedative agents.

**CONTRAINDICATIONS / PRECAUTIONS:** The use of sedation agents is contraindicated in patients that cannot be ventilated with a bag-valve-mask (BVM) due to anatomy, facial / airway trauma or other reasons.

- Properly position the patient. Apply Pulse Oximetry and ECG monitor with high flow oxygen via NRB.
- Assemble and test all basic and advanced airway equipment including suction.
- If patient is exhibiting signs of respiratory compromise and / or the airway is not secure, pre-oxygenate the patient via BVM while applying laryngeal manipulation.
- IV of NS KVO
- Administer Etomidate 0.3 mg/kg over 30-60 sec IV push.
- When deep sedation is achieved, intubate the patient and then confirm ET tube placement with lung sounds and waveform EtCO2. *Maximum of 2 ETI attempts < 15 seconds, interchanged with BVM ventilations.*
- If attempts at intubation fail, insert Supraglottic via protocol. *Must be unconscious or heavily sedated.*
- If unable to adequately ventilate the patient by use of the above means, perform a needle cricothyrotomy as per protocol to oxygenate.
- Confirm ET tube or Combitube placement and attach a continuous EtCO2 monitor (ventilate to maintain EtCO2 **between 35-45 mmHg**) and secure the ET tube via protocol.
- If additional sedation is necessary, **Midazolam** up to 5 mg IVP OR **Ketamine** up to 2 mg/kg IVP.
- Continuously monitor ET tube placement effectiveness of oxygenation (SpO2) and ventilation (EtCO2 waveform).
- ATV if approved by the agency in accordance with Appendix 48.

**EMT-P**

**MEDICAL CONTROL**
VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

- Follow NYS BLS protocols for cardiac arrest care.
- Secure airway with an advanced airway, initial use of BLS airway is appropriate if condition and situation warrants.
- Cardiac Monitor
- Defibrillation 360 joules or biphasic equivalent.
- IV/IO/EJ
- Defibrillation 360 joules or biphasic equivalent
- Epinephrine 1:10,000 1 mg IV/IO/EJ; repeat q 3-5 minutes
- Defibrillation 360 joules or biphasic equivalent, and repeat after every medication.
- If renal failure, TCA OD or hyperkalemia is suspected and the patient is well ventilated, administer Sodium Bicarbonate 1 mEq/kg IV/IO/EJ.
- If Torsade de Pointes is suspected - administer Magnesium Sulfate 2 g IV/IO/EJ
- Amiodarone 300 mg IV/IO/EJ bolus, may repeat Amiodarone 150 mg IV/IO/EJ in 3-5 minutes.

- Repeat any of the above.
ASYSTOLE / PEA

Consider the following causes: Hypoglycemia, Hypovolemia, Hypoxia, Acidosis, Hyperkalemia, Toxins, Tension Pneumothorax

- Follow NYS BLS protocols on cardiac arrest care.
- Secure airway with an advanced airway. Initial use of BLS airway is appropriate if condition and situation warrants it.
- Cardiac Monitor - check the rhythm in more than 1 lead if the patient presents in Asystole.
- IV/IO/EJ of NS
- Fluid bolus of 20 ml/kg (may be repeated to a total of 40 ml/kg)
- Epinephrine 1:10,000 1 mg; repeat q 3-5 minutes
- If you suspect the arrest was caused by one of the above “Hs” or “Ts” refer to the appropriate protocol during the resuscitation.
- If renal failure, TCA OD or hyperkalemia is suspected and the patient is well ventilated, administer Sodium Bicarbonate 1 mEq/kg IV/IO/EJ.
- If a Tension Pneumothorax is suspected - perform Needle Chest Decompression.

- Repeat any of the above.
- Termination of resuscitation
- Needle decompression, if indicated.
- Calcium Chloride 10% (100 mg/ml)
- Glucagon
- Naloxone
- Dextrose 50%
This protocol is intended for use in patients that are in shock, secondary to post-cardiac arrest. As evidenced by *SBP < 90 with signs and symptoms of Inadequate Tissue Perfusion.

- Administer high flow oxygen OR positive pressure ventilations as indicated.
- Cardiac Monitor
- IV/IO/EJ of NS
- Administer fluid bolus 20 ml/kg. This may be repeated to a total of 40 ml/kg.
- 12 Lead EKG
- Transport Decision
- Establish 2nd vascular access site, if needed.
- Norepinephrine 5 mcg/min if Systolic B/P < 90 mmHg

- Norepinephrine 5 mcg/min, to maximum total 20 mcg/min – if Systolic B/P < 90 mmHg

- Repeat any of the above.
- Sodium Bicarbonate
- Endotracheal Intubation
- Calcium Chloride 10% (100 mg/ml)
- Glucagon
- Epinephrine Infusion
- MFI or RSI if agency is authorized and Paramedic is credentialed.

EMT-CC and EMT-P
EMT-P
MEDICAL CONTROL
FIELD TERMINATION OF RESUSCITATION

This protocol is intended for use in adult patients that are in cardiac arrest. This protocol is not intended for patients that have a DNR / MOLST Form indicating DNR or for patients that meet obvious death / withhold CPR criteria.

- Begin resuscitation per protocol.
- Patient must be normothermic.
- Arrest was un-witnessed.
- No shocks were administered.
- The cardiac rhythm must be a persistent asystole, and refractory to IV/IO medications.
- A minimum of 20 minutes of CPR has been performed by the EMS agency.
- Family accepts decision on field termination.

Repeat any of the above.
CARDIAC DYSRHYTHMIA ENTRY PROTOCOL

- High concentration oxygen.
- Cardiac Monitor*
- Obtain Pulse Oximetry
- IV NS to KVO, or Saline Lock
- Obtain 12-lead EKG
- Refer to the appropriate dysrhythmia protocol.

*If the patient is unresponsive with a SBP less than (<) 90 and the cardiac monitor reveals a supraventricular tachycardia or a ventricular tachycardia with a pulse or atrial fibrillation / atrial flutter, you may go directly to the appropriate dysrhythmia protocol.
VENTRICULAR TACHYCARDIA WITH PULSE

**Stable Without Decompensation**
- If QRS is wide and polymorphic, administer 1 g of Magnesium Sulfate in 100 ml NS over 10 minutes.
- Amiodarone 150 mg in 100 ml over 10 minutes.

**Unstable (Decompensated SBP < 90 mmHg), or chest pain, or pulmonary edema AND PT. AWAKE**
- Pre-medicate with Diazepam up to 10 mg IV OR Midazolam up to 5 mg IV OR 10 IM/IN OR Fentanyl 100 mcg IV/IM/IN
- Cardioversion at 100 joules or biphasic equivalent. May repeat at 200 joules, then 300 joules, then 360 joules, or biphasic equivalent, until rhythm converts. If rhythm does not convert after 4 successive cardioversion attempts, CONTACT MEDICAL CONTROL.

**Unstable (Decompensated SBP < 90 mmHg) AND PT. UNRESPONSIVE**
- Cardioversion at 100 joules or biphasic equivalent. May repeat at 200 joules, then 300 joules, then 360 joules, or biphasic equivalent, until rhythm converts. If rhythm does not convert after 4 successive cardioversion attempts, CONTACT MEDICAL CONTROL.

- Repeat any of the above.
- Magnesium Sulfate
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.
- Adenosine
- Ondansetron

**EMT-CC and EMT-P**

**EMT-P**

**MEDICAL CONTROL**
SYMPTOMATIC BRADYCARDIA

If UNSTABLE, (Decompensated SBP < 90 mmHg, or chest pain, or pulmonary edema and Sinus Bradycardia, 1st Degree HB OR 2nd Degree Type I HB)

- Atropine 0.5mg IV
- Repeat Atropine to maximum of 3 mg.

Contact Medical Control for consideration of ACS Protocol.

If UNSTABLE, (Decompensated SBP < 90 mmHg, or chest pain, or pulmonary edema AND 2nd Degree Type II, Junctional HB, OR 3rd Degree HB)

- Premedicate with Diazepam up to 10mg IV OR Midazolam up to 5 mg IV/IM OR 10mg IM/IN OR Fentanyl 100mcg IV/IM/IN
- Transcutaneous Pacing

- Repeat any of the above.
- Sodium Bicarbonate
- Glucagon
- Epinephrine IV Drip
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.

EMT-CC and EMT-P
EMT-P
MEDICAL CONTROL
SUPRAVENTRICULAR TACHYCARDIA

Stable without decompensated shock.

- Adenosine 6 mg IVP
- Adenosine 12 mg IVP

If SVT is completely resolved, and vital signs are within normal limits, transport the patient to the closest emergency department and Signal 34 Medical Control after the alarm.

If SVT persists, or SVT returns, CONTACT MEDICAL CONTROL.

Unstable ( Decompensated SBP < 90mmHg) and Pt. is awake.

- Pre-mEDIATE with Diazepam up to 10 mg IV OR
  Midazolam up to 5 mg IV/IM
  OR 10 mg IM/IN OR
  Fentanyl 100 mcg IV/IM/IN

Unstable (Decompensated SBP < 90mmHg) and Pt. is unresponsive.

- Cardioversion at 100 joules or biphasic equivalent. May repeat at 200 joules or biphasic equivalent, until rhythm converts. If rhythm does not convert after 4 successive cardioversion attempts, CONTACT MEDICAL CONTROL.

If SVT persists, or SVT returns, CONTACT MEDICAL CONTROL.

- Adenosine 6 mg IVP
- Adenosine 12 mg IVP

If SVT is completely resolved, and vital signs are within normal limits, transport the patient to the closest emergency department and Signal 34 Medical Control after the alarm.

If SVT persists, or SVT returns, CONTACT MEDICAL CONTROL.

- Cardioversion at 50 joules or biphasic equivalent. May repeat at 100 joules or biphasic equivalent. If rhythm does not convert after 4 successive cardioversion attempts, CONTACT MEDICAL CONTROL.

If SVT persists, or SVT returns, CONTACT MEDICAL CONTROL.

- Repeat any of the above.
- Amiodarone
- Morphine Sulfate
- Diltiazem
- Ondansetron
- Endotracheal Intubation
- MFI or RSI if agency is authorized AND Paramedic is credentialed.
ATRIAL FIBRILLATION / ATRIAL FLUTTER

UNSTABLE, rate greater than (>) 150
(Decompensated SBP < 90 mmHg) AND
PATIENT UNRESPONSIVE

Cardioversion at 100 joules or bi-phasic equivalent. May repeat at 200 joules, bi-phasic equivalent, until rhythm converts. If rhythm does not convert after 4 successive cardioversion attempts CONTACT MEDICAL CONTROL.

UNSTABLE WITHOUT DECOMPENSATION, rate greater than (>) 150

If patient is symptomatic and the complex width is narrow AND irregular AND blood pressure is normal or elevated, administer *Diltiazem (see footnote) 0.25 mg/kg to a max dose of 20 mg, IV bolus, slowly, over 2 minutes, monitoring blood pressure continuously.

- Repeat any of the above.
- Amiodarone
- Diazepam
- Midazolam
- Fentanyl
- Morphine Sulfate
- Metoprolol
- Endotracheal Intubation
- MFI or RSI if agency is authorized AND Paramedic is credentialed.

*Standing Order Diltiazem should be withheld to patients with a history of WPW, Pre-Excitation Afib / Aflutter, or other accessory pathway dysrhythmias. For these patients, MEDICAL CONTROL MUST BE CONTACTED.
ACUTE CORONARY SYNDROME ENTRY PROTOCOL

- Follow NYS BLS protocols for Adult Related Cardiac Problem without assisting or administering the patient’s own prescribed Nitroglycerin.
- Chewable Aspirin 324 mg PO unless the patient has already taken Aspirin for this current episode.
- Cardiac Monitor
- Obtain a 12 lead EKG (transmit and contact Medical Control as soon as possible).
- IV NS to KVO or Saline Lock

- 12 lead must be transmitted to Medical Control and Medical Control must also be contacted for destination decision.

Proceed to the proper Acute Coronary Syndrome:
- STEMI-confirmed
- Acute Coronary Syndrome-suspected
STEMI

- Administer Nitroglycerin 0.4 mg SL tablet or spray. May repeat every 5 minutes for a total of 3 doses. The SBP must be greater than (> 120 prior to each dose.
- If SBP drops below (< 90 administer fluid bolus of 20 ml/kg. This may be repeated to a total of 40 ml/kg.

**If pain is not completely relieved and SBP is greater than (> 120):**

- Morphine Sulfate up to 10 mg IVP OR Fentanyl up to 100 mcg IV/IM/IN.
- Transmit 12 lead and contact Medical Control for PCI destination decision and STEMI notification.

- Repeat any of the above.
- Transport decision to PCI center.
- Fentanyl
ACS – SUSPECTED

- Administer Nitroglycerin 0.4 mg SL tablet or spray. May repeat every 5 minutes for a total of 3 doses. The SBP must be greater than (> 120 prior to each dose.  
- If SBP drops below (< 90 mmHg administer fluid bolus of 20 ml/kg. This may be repeated to a total of 40 ml/kg.

- If chest pain / discomfort persists, Morphine Sulfate up to 10 mg  
**OR** Fentanyl up to 100 mcg IVP.

- Repeat any of the above.  
- Transport decision to a PCI center.  
- 12 lead EKG  

EMT-CC and EMT-P  
EMT-P  
MEDICAL CONTROL
MEDICAL SHOCK / HYPOPERFUSION

SBP < 90 with signs and symptoms of Inadequate Tissue Perfusion.

- Cardiac Monitor
- Large bore peripheral IV, OR IO if peripheral access is unobtainable.
- IV/IO fluid bolus of 20 ml/kg - NS (If respiratory distress with rales occurs, D/C fluid bolus and EMT-CC contact Medical Control.)
- Transport Decision - If SBP less than (<) 90 mmHg, may repeat fluid bolus of 20 ml/kg during transport.

If SBP remains less than (<) 90 mmHg, Contact Medical Control.

- Norepinephrine 5 mcg/min, to maximum total 20 mcg/min – if Systolic B/P < 90 mmHg
  - If SBP remains < 90, Contact Medical Control.

- Repeat any of the above.
- Epinephrine Infusion
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.

EMT-CC
EMT-CC and EMT-P
EMT-P
MEDICAL CONTROL
PULMONARY EDEMA SYSTOLIC BP 120 OR HIGHER

*If patient’s SBP drops below 120 mmHg at any time during the course of this protocol, Medical Control must be contacted*

- Obtain baseline and continuous oxygen saturation readings and cardiac monitoring.
- Nitroglycerin 0.4 mg SL. This initial NTG may be administered prior to placement of CPAP mask.
- Apply CPAP, titrate up to 10 cmH2O via manometer or CPAP valve and monitor with continuous sidestream waveform capnography, if available.
- If congestive heart failure is suspected and an IV or Saline Lock is established, NTG 0.4 mg SL may be repeated q 5 minutes, twice, to a maximum individual dose of 3 NTG - if systolic BP remains greater than (>) 120 mmHg prior to each administration.
- IV NS at KVO or Saline Lock
- Cardiac Monitor
- Transport
- Obtain 12 Lead EKG

- Morphine Sulfate up to 10 mg IVP

- Repeat any of the above.
  - Nitroglycerin
  - Furosemide
  - Fentanyl
  - Albuterol
  - MFI or RSI if agency is authorized and Paramedic is credentialed.
  - Endotracheal Intubation
ASTHMA

- Albuterol **AND** Ipratropium Bromide unit-combination dose via med nebulizer - may be repeated 1 additional time.
- IV NS at KVO
- Methylprednisolone 125 mg IV
- Cardiac Monitor

- If patient in respiratory failure, or respiratory failure imminent,
  *Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution) IM
- Magnesium Sulfate IV infusion, 2 grams in 100 ml over 10 minutes

If respiratory distress is completely relieved and the vital signs remain stable, transport the patient to the closest appropriate emergency department and Signal 34 Medical Control after the alarm. If complete relief is not achieved and signs / symptoms of respiratory distress remain after 2 nebulizer treatments, or after the administration of Epinephrine **CONTACT MEDICAL CONTROL**.

- Repeat any of the above.
- Albuterol
- CPAP
- Endotracheal Intubation
- MFI or RSI if agency is authorized **and** Paramedic is credentialed.
COPD / EXACERBATION

- Albuterol **AND** Ipratropium Bromide *unit-combination* dose via med nebulizer - may be repeated 1 additional time.
- Apply CPAP titrate up to 10 cmH20 via manometer **or** CPAP valve with continuous side stream waveform capnography, if available, and SBP greater than (> 120 mmHg.
- IV NS at KVO **or** Saline Lock
- Cardiac Monitor
- Obtain 12 Lead EKG.

- Methylprednisolone 125 mg IV

- Repeat any of the above.
- Magnesium Sulfate
- Endotracheal Intubation
- Epinephrine 1:1,000
- MFI **or** RSI if agency is authorized **and** Paramedic is credentialed.
ANAPHYLACTIC SHOCK / ALLERGIC REACTION

**Anaphylactic Shock**
- If the patient is presenting with severe respiratory distress and SBP < 90mmHg with signs and symptoms of Inadequate Tissue Perfusion that are consistent with anaphylactic shock:
  - Epinephrine 0.3 mg of a 1:1,000 solution IM
  - Diphenhydramine 50 mg IV/IM
  - Methylprednisolone 125 mg IV
- **If wheezing is present** - Albuterol AND Atrovent combination dose via med nebulizer, may repeat to a total of 2 treatments.
- IV NS to KVO.
- Cardiac Monitor
- If SBP less than (<) 90, 20 ml/kg NS fluid bolus, may repeat bolus to a total 40 ml/kg or until SBP is greater than or equal to (≥) 90 mmHg.
- Methylprednisolone 125 mg IV - if angioedema is present secondary to an ACE inhibitor reaction without an airway compromise.
- Repeat any of the above.
- Dopamine
- Epinephrine Infusion 1:10,000
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.

**Allergic Reaction**
- IV NS to KVO
- Cardiac Monitor
- Diphenhydramine 50mg IV/IM
- Methylprednisolone 125 mg IV - if angioedema is present secondary to an ACE inhibitor reaction without an airway compromise.

**EMT-CC and EMT-P**

**EMT-P**

**MEDICAL CONTROL**
.view

ALTERED MENTAL STATUS ENTRY PROTOCOL

- Obtain vital signs and ensure Airway, Breathing, Circulation and consider need for spinal immobilization as appropriate.
- Management of airway and appropriate oxygen therapy in accordance with NYS BLS protocols, obtain SPO2 AND end tidal CO2 waveform if available.
- IV NS KVO
- Obtain Blood Glucose level - if less than (<) 60, or above (>) 400 mg/dl, refer to Diabetic Emergency Protocol.
- Cardiac Monitor
- Consider all possible causes of Altered Mental Status and refer to proper sub-protocol for treatment:
  - Seizure (Blood Glucose 60 mg/dl or greater)
  - Stroke (CVA)
  - Overdose
  - Organophosphate Poisoning/Nerve Agent Exposure

EMT-CC and EMT-P
**DIABETIC EMERGENCY**

**For Blood Glucose level less than**

(\(<\) 60 mg/dl)

- Administer Dextrose 50% 25 g IVP or 10% / 250 CC IVB titrate for effect.
- If unable to obtain vascular access, Administer Glucagon 1 mg IM OR 2 mg IN.
- If patient remains SYMPTOMATIC and less than (\(<\) 60 mg/dl) after 5 minutes, Administer Second Dextrose 50% 25 g IVP or 10% 250 mL IVB.
- If AMS resolves, continue monitoring and transport and 34 Medical Control upon completion.
- If patient remains SYMPTOMATIC, CONTACT MEDICAL CONTROL.

*If after medications are administered, and patient is ASYMPTOMATIC and requesting an RMA, MEDICAL CONTROL MUST BE CONTACTED.*

**For Blood Glucose level greater than**

(\(\geq\) 400 mg/dl)

- Administer fluid bolus of NS 20 ml/kg, repeat as necessary to a total of 40 ml/kg.
- If AMS resolves, continue monitoring and transport and 34 Medical Control upon completion.
- If patient remains SYMPTOMATIC, CONTACT MEDICAL CONTROL.

- Repeat any of the above.
- Consider switching to other AMS sub-protocols.
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.

**EMT-CC and EMT-P**

**MEDICAL CONTROL**
OVERDOSE

Consider hypoglycemia, if not, refer to appropriate sub protocol.

Suspected Opiate overdoses who are unconscious, unresponsive with hypotension.
- Administer Narcan 0.4 mg IV/IO titrated to adequate ventilations up to a total of 6 mg.
- If IV/IO is unable to be established, Administer Narcan 2 mg IN/IM up to a total of 4 mg.
- Consider referring to Advanced Airway Protocol if airway is still compromised.
- If symptoms are relieved, continue to monitor and transport and 34 Medical Control upon completion.
- If symptoms are not relieved and patient has received 6 mg in total of Narcan, CONTACT MEDICAL CONTROL.

For any suspected overdose that is hypotensive with SBP less than (<) 90 mmHg with signs and symptoms of Inadequate Tissue Perfusion, administer fluid bolus 20 ml/kg.

• Repeat any of the above.
• Glucagon
• Calcium Chloride
• Sodium Bicarbonate
• Diazepam
• Refer to other Altered Mental Status sub-protocol.
• Refer to Symptomatic Bradycardia Protocol.
• Endotracheal Intubation

Suspected Beta Blocker or Calcium Channel Blocker Overdose
- Contact Medical Control

Suspected Sympathomimetic Overdose – associated agitation
- Administer Midazolam up to 2.5 mg IV or 5mg IM/IN
- Obtain 12 Lead EKG

Suspected Sympathomimetic Overdose – associated agitation
- Administer Midazolam up to 5 mg IV or 10mg IM/IN OR Ketamine up to 2 mg/kg IV or up to 4 mg/kg IM
- Obtain 12 Lead EKG

Suspected Opiate overdoses who are unconscious, unresponsive with hypoventilation.

Suspected Sympathomimetic Overdose – associated agitation
- Administer Midazolam up to 2.5 mg IV or 5mg IM/IN
- Obtain 12 Lead EKG

MEDICAL CONTROL
SEIZURE

Standing Orders are intended for patients exhibiting Active Seizures ONLY. For all other types of Seizures, CONTACT MEDICAL CONTROL.

If the patient is actively seizing and is known to be, or appears, pregnant, treat the patient under this seizure protocol initially. EMT-CC then contact Medical Control for options under the OB/GYN Protocol. EMT-P Refer to the OB / GYN protocol.

For ACTIVELY seizing patients:

- Administer Diazepam 5 mg IV
  OR
- Midazolam up to 2.5 mg IV OR up to 5 mg IM/IN
  OR
- If seizures resolve continue to monitor and transport and 34 Medical Control upon completion.

EMT-CC

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
STROKE / CVA

- Ensure that time of onset of symptoms has been established.
- Perform Cincinnati Prehospital Stroke Scale (CPSS); ascertain when the patient was last seen well. On the PCR, please document CPSS findings when was the “last seen well” and by whom and with contact information.
- Consider hypoglycemia and check blood glucose level, refer to the appropriate protocol.
- Transport patient to closest NYS designated Stroke Center hospital of patient’s choice if the total prehospital time from onset of symptoms to arrival at hospital is 2 hours or less.
- If the onset of symptoms and arrival at hospital is greater than (> 2 hours, Contact Medical Control for Transport Decision.

- Repeat any of the above.
- Destination Decision
- Refer to other Altered Mental Status entry or sub-protocol.
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.
ORGANOPHOSPHATE / NERVE AGENT EXPOSURE

This protocol is for use in ADULT patients (greater than / equal to (≥) 15 years of age or 34 kg body weight) who exhibit signs or symptoms of organophosphate or nerve agent exposure AND MAY ONLY BE USED UNDER THE DIRECTION OF MEDICAL CONTROL OR AN ON-SCENE EMS FIELD PHYSICIAN. Ensure that the scene is safe, that appropriate PPE is available, and the patient(s) have been removed from the area of release. Patient triage should occur as soon as possible after gross decontamination.

- Assure patient decontamination.
- For multiple casualties, activate Suffolk County MCI Plan.
- Contact Medical Control with:
  - numbers of patients
  - nature of exposure i.e. home or industrial exposure, or mass intoxication
- Perform START TRIAGE.
- Provide airway support per NY State BLS and Adult Airway Management Protocols.
- For ASYMPTOMATIC PATIENTS – decontaminate, monitor for development of signs and/or symptoms and transport.

- For MILD / MODERATE EXPOSURE (runny nose, increased oral secretions, fatigue, miosis, dim vision, sweating, chest tightness, dyspnea, nausea)
  - One (1) Mark I™ kit (atropine first, then 2-PAM chloride) OR one (1) DuoDote™, reassess every five (5) minutes, if secretions still present, repeat to a maximum of three (3) kits.
- For SEVERE EXPOSURE (all of the above PLUS severe dyspnea, loss of bowel and / or bladder function(s), seizure, paralysis)
  - Three (3) Mark I™ kits (atropine first, then 2-PAM chloride) OR three (3) DuoDote™, reassess every five (5) minutes.
- IV/IO NS with 250 ml fluid bolus
- Repeat Atropine until secretions dry, to a maximum individual dose of 20 mg.
- Diazepam 10 mg IVP
- Midazolam 1-2 mg IV OR 5 mg IM/IN
- Release CHEMPACK assets.
NAUSEA / VOMITING

- Maintain airway and appropriate Oxygen therapy, SpO2.
- Cardiac Monitor
- IV NS to KVO
- Consider Fluid Bolus 20 ml/kg Normal Saline.
- Consider 12 Lead EKG
- Ondansetron 4 mg IV/IM

- Repeat any of the above.
- Midazolam
- Diphenhydramine

EMT-CC and EMT-P

MEDICAL CONTROL
TRAUMA ENTRY PROTOCOL

- Follow NYS BLS Trauma protocol.
- Transport Determination - See NYS / Suffolk County Trauma Triage Flow Chart.
- Consider Suffolk County Medevac Policy.
- For any patient meeting the criteria for the sub-protocols below refer to appropriate protocol as well as concurrent use of the Trauma Care Standard as appropriate.
- When indicated, patients should receive spinal immobilization.
- Administer 100% Oxygen via non-rebreather mask, assess adequacy of airway. (Use Pulse Oximetry and Waveform Capnography as appropriate.)
- Vascular Access (IV/IO/EJ) as appropriate to patient’s condition.
- Cardiac Monitor as appropriate.

Use NYS / Suffolk County Trauma Triage Flow Chart

*Unstable patients should be transported within 10 minutes of extrication to the closest appropriate hospital as determined by the Suffolk County / NYS Trauma Triage Flow Chart. Appendix 51*

- For patients in Traumatic Arrest - follow the standard Cardiac Arrest Protocols and patient should be transported by ground to closest hospital.
- For patients with Burns, Chest Trauma, Crush Injuries, Head Trauma, Hypoperfusion/Hypovolemia, Smoke Inhalation, refer to appropriate sub-protocol.

EMT-CC and EMT-P
HYPOPERFUSION / HYPOVOLEMIA

For **Compensated Shock** - Significant mechanism with tachypnea and tachycardia and SBP greater than (> 90 mmHg

- Administer fluid bolus of 20 ml/kg.

For ** Decompensated Shock** - Significant mechanism with and SBP < 90 mmHg with signs and symptoms of Inadequate Tissue Perfusion.

- Establish additional large bore IV NS
- Fluid Bolus up to 60 ml/kg NS, titrated to SBP greater than (> 90 mmHg

- Repeat any of the above.
- Dopamine IV drip
- Norepinephrine IV drip

EMT-CC and EMT-P

MEDICAL CONTROL
HEAD TRAUMA

- Monitor vital signs and level of consciousness.
- Reassess pupils and GCS on an ongoing basis.
- If evidence of inadequate respirations based on ventilatory rate, depth, and/or quality, initiate positive pressure ventilations via BVM at a rate of 12 per minute.
- Consider Endotracheal Intubation if BVM is not adequate or if patient’s condition does not improve.
- Refer to Seizure, AMS, or Nausea / Vomiting Protocols as needed.

If unable to Intubate due to patient condition, refer to RSI protocol if Agency and Provider are authorized.

- Repeat any of the above.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
CHEST TRAUMA

This Protocol is intended for patients with signs and symptoms of a tension pneumothorax. (Absent or severely diminished breath sounds on one side, severe dyspnea and SBP less than (<) 90 mmHg with signs and symptoms of Inadequate Tissue Perfusion.)

- Follow NYS BLS Protocol for management of chest trauma.
- For patients in Decompensated Shock or Imminent Cardiac Arrest - Perform Needle Chest Decompression.
- IV/IO large bore opposite side of injury if possible.
- Fluid Bolus up to 60 ml/kg NS, titrated to SBP greater than (> 90 mmHg
- Repeat any of the above.
- Refer to Hypovolemia / Hypotension Protocol.
- Endotracheal Intubation
- MFI or RSI if agency is authorized and Paramedic is credentialed.

EMT-CC and EMT-P

MEDICAL CONTROL
**BURNS**

- Ensure that the scene is safe and that you have appropriate personal protective equipment and ensure that appropriate support resources are requested. If burn is caused by a chemical, ensure adequate decontamination has been performed and you have appropriate chemical protective clothing. If burn is caused by an electrical source, ensure that the patient has been removed from the source.

- Administer high concentration oxygen via non-rebreather mask.
- Provide positive pressure ventilations with BVM if needed.
- Endotracheal Intubation, if needed.
- IV/IO of Normal Saline AND administer a 20 ml/kg fluid bolus.
- Cardiac Monitor

*For patients with a SBP greater than (> ) 90 mmHg or that do not have Altered Mental Status:*

- Morphine Sulfate up to 10 mg IV/IM OR Fentanyl up to 100 mcg IV/IM/IN OR Midazolam up to 5 mg IV OR up to 10 mg IM/IN. If patient develops nausea, administer Ondansetron 4 mg IV/IM; may be repeated 1 time to a maximum dose of 8 mg.

- Repeat any of the above.
- Ketamine
- MFI or RSI if agency is authorized and Paramedic is credentialed.

**EMT-CC and EMT-P**

**EMT-P**

**MEDICAL CONTROL**
CRUSH INJURIES

For suspected prolonged extrication, consider contacting MEDCOM for requesting Field Physician to the scene

- Cardiac Monitor
- IV/IO of Normal Saline AND administer a 20 ml/kg fluid bolus
- 12 Lead EKG, repeated as needed in 20 minute intervals during any extrication operation.

- If 1 extremity is completely crushed for over 2 hours or 2 extremities crushed for 1 hour and Hyperkalemia is suspected. (Signs / Symptoms of Hyperkalemia include widened QRS complexes and Peaked T waves on EKG.)
- Administer Sodium Bicarbonate 50 mEq IV slow push over 5 minutes every 30 minutes as needed during prolonged extrication.

- Repeat any of the above.
- Calcium Chloride
- Midazolam
- Fentanyl
- Albuterol
- Morphine Sulfate
- Diazepam

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PAIN MANAGEMENT

This protocol is not intended for any patient who is AMS, pregnant, or showing signs of hypoventilation or Systolic Blood Pressure less than (<) 90 mmHg. For these patients, Medical Control must be contacted immediately for pain management.

- Maintain airway and appropriate oxygen therapy.
- Cardiac Monitor
- Obtain SpO2 reading, if available.
- IV NS to KVO
- If no controlled substances available administer Nitrous Oxide if indicated and if available.

- Administer Morphine Sulfate up to 10 mg IV/IM
  OR Administer Fentanyl up to 100 mcg IV/IM/IN dose
  If patient develops Nausea, administer Ondansetron 4 mg IV/IM.

- Repeat any of the above.
- Ketorolac
- Ketamine

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
SUSPECTED CYANIDE POISONING / SMOKE INHALATION

This protocol is intended for use when cyanide toxicity is suspected from smoke inhalation, accidental or intentional poisoning, or mass intoxication, AND when sufficient resources and proper personal protective equipment are available to ensure the safety of the EMS personnel attending to the patient.

- Ensure that the patient has been removed to an area of refuge out of the contamination zone
- IV/IO NS to KVO
- Cardiac Monitor
- Obtain SpCO reading, if available.

If Patient is in CARDIAC ARREST or IS PROFOUNDLY HYPOTENSIVE (systolic BP less than < 90 with signs and symptoms of Inadequate Tissue Perfusion in the face of a smoke inhalation setting):

- Initiate second IV/IO Normal Saline.
- Hydroxocobalamin 5 g/200 ml NS over 15 minutes (15 ml/min)

- Repeat any of the above.
- Fluid bolus of NS

NOTE: HYDROXOCOBALAMIN MUST BE ADMINISTERED IN A DEDICATED IV.

Exposure to high concentrations of cyanide causes coma, seizures, apnea, and cardiac arrest, with death following in a matter of minutes.

With exposure to lower doses, patients experience general weakness, giddiness, headache, vertigo, confusion, and perceived difficulty breathing, progressing to altered mental status or loss of consciousness. In the early stages of unconsciousness, breathing is often sufficient or even rapid, although the state of the victim progresses towards a deep coma, sometimes accompanied by pulmonary edema, and finally cardiac arrest.
ADULT BEHAVIORAL EMERGENCY / AGITATION

Consider other possible causes of agitation, such as head trauma, seizures, infection, hypoxia, stroke, overdose, or poisoning and refer to the appropriate protocol.

- Access ABCs & vital signs and pulse oximetry, if possible, and avoid further agitation of the patient.
- Obtain additional assistance as needed, consider the Behavioral Emergencies / Use of Humane Restraint Policy. Check distal circulation on restrained limbs frequently, and document thoroughly on the PCR or ePCR.
- Perform Blood Glucose determination - If blood glucose is below 60 mg/dl, refer to the Altered Mental Status Protocol.
- IV of NS KVO, if possible.

- Administer Midazolam up to 2.5 mg IV or up to 5 mg/IM/IN OR Administer Haloperidol 5 mg IM

- Administer Midazolam up to 5 IV OR up to 10 mg/IM/IN OR Ketamine up to 2 mg/kg IV or up to 4 mg/kg IM OR Administer Haloperidol up to 5 mg IM

- If dystonic reaction occurs, administer Diphenhydramine 25 mg/IM/IV.

- Repeat any of the above.
OB / GYN EMERGENCIES

- Ensure airway, breathing, and circulation.
- Airway management and appropriate Oxygen Therapy.
- Monitor Vital Signs
- Cardiac Monitor
- IV NS to KVO
- Position patient in Left Lateral Recumbent Position, if tolerated.

For Preterm Labor between 24-37 weeks
- Administer a 20 ml/kg fluid bolus

For Signs and Symptoms of Pre-Eclampsia / Eclampsia (B/P > 140/90 mmHg), for a pregnant patient or a patient who has delivered in the past 4 weeks, with severe headache and confusion, and/or hyperreflexia administer Magnesium Sulfate 4 g IV over 2 minutes.

If patient is actively seizing after the administration or during the administration of Magnesium Sulfate history, refer to the Seizure Protocol.

- Repeat any of the above.
- Metoprolol
- Refer to the Adult Seizure Protocol.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
NEWBORN RESUSCITATION
MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE.

- Follow NYS BLS protocols on Newborn Delivery.
- Provide ventilations with the appropriate size BVM at 40 breaths per minute if ventilation is inadequate and heart rate is less than (<) 100, after 30 seconds attach 100% oxygen.
- If the pulse rate drops below 60 beats per minute at any time, or does not increase above 60 beats per minute after 30 seconds of assisted ventilations, begin chest compressions at 120 per minute compression ventilation ratio of 3:1. Compressions should be 1/3 the AP diameter of the chest.

If heart rate continues to be less than (<) 60 despite compressions:

- IV/IO
- Administer Epinephrine 0.01 mg/kg IV/IO (0.1 ml/kg of 1:10,000 solution using the Broselow tape) - repeat as needed q 3-5 minutes.
- Consider Endotracheal Intubation.

- Repeat any of the above.
- Normal Saline Fluid Bolus
- Perform blood glucose determination.
- Dextrose 10%
- Needle Decompression
- Epinephrine 1:1,000
- Atropine
- Sodium Bicarbonate 4.2%
- Cardiac Monitor

EMT-CC and EMT-P
EMT-P
MEDICAL CONTROL
NEWBORN RESUSCITATION – PRESENCE OF MECONIUM

This protocol is to be used if meconium staining is present and newborn has inadequate respiratory effort, poor muscle tone (no vigorous movement) and heart rate less than (<) 60 beats per minute.

- Endotracheal intubation and suctioning until clear, up to maximum of 3 times. Closely monitor heart rate and provide positive pressure ventilation if heart rate does not improve or worsens.
- Stimulate if ventilation is inadequate.
- If heart rate is less than (<) 60 begin chest compressions at 120 per minute at compression ventilation ratio of 3:1. Compressions should be 1/3 to 1/2 chest depth.

- IV/IO
- Administer Epinephrine 0.01 mg/kg IV/IO (0.1 ml/kg of 1:10,000 solution using the Broselow tape) - repeat as needed q 3-5 minutes.

- Repeat any of the above.
- Refer to Newborn Resuscitation Protocol.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PEDIATRIC RESPIRATORY ARREST

- Provide ventilations using a bag-valve-mask device connected to 100% oxygen, with appropriately sized mask using the NYS BLS protocols for Pediatric Respiratory Arrest.
- Consider the use of pediatric Magill Forceps for foreign body obstruction refractory to BLS obstructed airway maneuvers. If obstruction is due to enlarged epiglottis refer to Pediatric Stridor Protocol.
- Needle cricothyrotomy for airway obstruction for patients greater than (> ) 6 years of age and refractory to Magill Forceps removal.
- Endotracheal intubation if unable to ventilate and maintain oxygen saturation above SpO2 of greater than (> ) 90%, or manage the airway.
- Needle Decompression if Tension Pneumothorax is suspected.
- IV/IO
- Cardiac Monitor
- Repeat any of the above.
- Consider Pediatric Bradycardia protocol.
- Consider Pediatric Asystole / PEA protocol.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PEDIATRIC ADVANCED AIRWAY

- BLS airway management – OPA / NPA / BVM / Suction as appropriate.
- BLS foreign body obstruction techniques as appropriate.
- Pulse oximetry, waveform capnography, cardiac monitor as appropriate.
- Use of Magill Forceps to remove possible obstruction.
- Endotracheal Intubation

- **Needle cricothyrotomy** for airway obstruction for patients greater than (>) 6 years of age.

- Repeat any of the above.
PEDIATRIC CARDIAC ARREST: VENTRICULAR FIBRILLATION / PULSELESS VENTRICULAR TACHYCARDIA

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE.

- Follow NYS BLS protocols on Pediatric cardiac arrest care.
- Cardiac Monitor
- Defibrillation at 2 J/kg (weight determined by Broselow tape)
- Secure airway with an advanced airway, initial use of BLS airway is appropriate if condition and situation warrants.
- IV/IO
- Epinephrine 1:10,000 dose 0.01 mg/kg (weight determined by Broselow tape)
  Repeat Epinephrine q 3-5 minutes.
- Defibrillation 4 J/kg (weight determined by Broselow tape)

- Administer Amiodarone 5 mg/kg IV/IO bolus - following Broselow tape - may repeat 1 additional time.
- Defibrillation 4 J/kg (weight determined by Broselow tape)

- Repeat any of the above.
- Defibrillation 4 J/kg - 10 J/kg (weight determined by Broselow tape)
- Magnesium Sulfate
- Sodium Bicarbonate
- Epinephrine 1:1,000

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PEDIATRIC CARDIAC ARREST: ASYSTOLE / PEA

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE. CONTACT MEDICAL CONTROL ENROUTE FOR FURTHER ORDERS. WHENEVER POSSIBLE, MEDICAL CONTROL OPTIONS SHOULD BE PERFORMED DURING TRANSPORT.

- Follow NYS BLS protocols on Pediatric cardiac arrest care.
- Secure airway with an advanced airway, initial use of BLS airway is appropriate if condition and situation warrants.
- Cardiac monitor - check the rhythm in more than 1 lead if the patient presents in Asystole.
- IV/IO
- Fluid Bolus of 20 ml/kg of NS if vascular access is established. (weight determined by Broselow tape)
- Epinephrine 1:10,000 IV/IO 0.01 mg/kg (weight determined by Broselow tape IV/IO).

- If Tension Pneumothorax present - perform needle decompression.
- If hypovolemia suspected - administer a Fluid Bolus Normal Saline 20 ml/kg IV/IO, may repeat as necessary to a maximum total dose of 60 ml/kg.
- If hyperkalemia or tricyclic antidepressant overdose suspected - administer Sodium Bicarbonate 1 mEq/kg per Broselow tape IV/IO.

- Repeat any of the above.
- Sodium Bicarbonate
- Needle Decompression
- Epinephrine 1:1,000
- Glucagon
- Calcium Chloride
- Dextrose
- Consider discontinuance of field resuscitation for refractory asystole only.
PEDIATRIC BRONCHOSPASM

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE. CONTACT MEDICAL CONTROL ENROUTE FOR FURTHER ORDERS. WHENEVER POSSIBLE, MEDICAL CONTROL OPTIONS SHOULD BE PERFORMED DURING TRANSPORT.

- Secure airway, initial use of BLS airway and oxygen therapy as appropriate
- SPO2 and ETCO2 monitoring - if available.
- Administer Combi-treatment of Albuterol 0.083% and 0.5 mg of Ipratropium Bromide via nebulizer, may repeat up to a total of 2 treatments.
- Cardiac Monitor

- IV NS to KVO
- Epinephrine 1:1,000, 0.01 mg/kg IM per Broselow tape.
- Administer Methylprednisolone 2 mg/kg IV per - Broselow tape.

- Repeat any of the above.
- IV/IO
- Albuterol
- Magnesium Sulfate
- Refer to the Pediatric Advanced Airway protocol.

---

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PEDIATRIC RESPIRATORY DISTRESS (Stridor)

Follow NYS BLS protocols for Pediatric Respiratory Distress

Consider the cause

- If foreign body obstruction - use Pediatric Magill Forceps to remove the obstruction.
- If patient goes into respiratory arrest; refer to Pediatric Respiratory Arrest Protocol.
- Cardiac Monitor

Repeat any of the above.
- IV NS
- Methylprednisolone
- Epinephrine 1:1,000 - via nebulizer
- Refer to the Pediatric Advanced Airway protocol.
PEDIATRIC ANAPHYLACTIC SHOCK / ALLERGIC REACTION

**Anaphylactic Shock**
- If the patient is presenting with severe respiratory distress, signs of profound shock (SBP less than or equal to ≤ 70 mmHg) that is consistent with anaphylactic shock.
- Pediatric Epinephrine Jr Auto Injector OR if Auto Injector not available 0.15 mg of Epinephrine 1:1,000 IM
- Diphenhydramine 1 mg/kg IM per Broselow tape
- If wheezing is present, Administer Combi-treatment of Albuterol 0.083% and 0.5 mg of Ipratropium Bromide via nebulizer, may repeat to a total of 2 treatments.
- If patient is greater than (> 30 kg (66lbs) and signs of symptoms of anaphylaxis administer Epinephrine 0.3 mg of 1:1,000 IM (1 dose)

- IV NS to KVO
- Fluid Bolus 20 ml/kg Normal Saline
- Administer Methylprednisolone 2 mg/kg IV per Broselow tape.

- Repeat any of the above.
- Epinephrine Infusion
- Refer to the Pediatric Advanced Airway protocol.

**Allergic Reaction**
- Cardiac Monitor
- Diphenhydramine 1 mg/kg IM per Broselow tape.
PEDIATRIC DIABETIC EMERGENCIES

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE. CONTACT MEDICAL CONTROL ENROUTE FOR FURTHER ORDERS. WHENEVER POSSIBLE, MEDICAL CONTROL OPTIONS SHOULD BE PERFORMED DURING TRANSPORT.

- Follow NYS BLS protocols on Pediatric Diabetic Emergencies.
- Secure airway, initial use of BLS airway and oxygen therapy as appropriate.
- Check blood glucose level if less than (<) 60 and the child is conscious and can swallow, administer oral glucose.

If child has AMS:

- IV NS to KVO.
- D10% 250 mL IVB (0.5 g/kg) per Broselow tape
- If IV access is not available, administer Glucagon IM per Broselow tape OR IN (double the dose that is listed per Broselow tape).
- Cardiac Monitor

- If blood glucose level is over 400 and signs of dehydration are present administer fluid bolus of NS at 20 ml/kg - 1 bolus.

- Repeat any of the above.
- Refer to Pediatric Advanced Airway protocol.

EMT-CC and EMT-P

EMT-P

MEDICAL CONTROL
PEDIATRIC SEIZURE

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE. CONTACT MEDICAL CONTROL ENROUTE FOR FURTHER ORDERS. WHENEVER POSSIBLE, MEDICAL CONTROL OPTIONS SHOULD BE PERFORMED DURING TRANSPORT.

- Follow NYS BLS protocols for Pediatric Seizure.
- Secure airway, initial use of BLS airway and oxygen therapy as appropriate.
- Check blood glucose level. If less than (<) 60 refer to Diabetic Emergencies Protocol.
- Cardiac Monitor
- Administer Midazolam 0.1 mg/kg IM/IN per Broselow tape

OR

- Administer Diazepam 0.5 mg/kg PR per Broselow tape

- IV NS KVO

- Repeat any of the above.
- IO
- Refer to the Pediatric Advanced Airway protocol.
PEDIATRIC OPIATE OVERDOSE

MINIMIZE ENVIRONMENTAL EXPOSURE AND BEGIN TRANSPORT AS SOON AS POSSIBLE. CONTACT MEDICAL CONTROL ENROUTE FOR FURTHER ORDERS. WHENEVER POSSIBLE, MEDICAL CONTROL OPTIONS SHOULD BE PERFORMED DURING TRANSPORT.

Secure airway, initial use of BLS airway and oxygen therapy as appropriate.

- SPO2 and ETCO2 monitoring - if available
- Cardiac Monitor
- Check blood glucose if less than (<) 60, refer to Diabetic Emergency Protocol.

If patient exhibits hypoventilation and respiratory distress:

- Administer Naloxone 0.1 mg/kg IM/IN per Broselow tape, may repeat up to 2 mg total dose.
- IV NS to KVO

- Repeat any of the above.
- Refer to the Pediatric Advanced Airway protocol.
ORGANOPHOSPHATE / NERVE AGENT EXPOSURE

This protocol is for use in PEDIATRIC patients (less than (<) 15 years of age or 34 kg body weight) who exhibit signs or symptoms of organophosphate or nerve agent exposure AND MAY ONLY BE USED UNDER THE DIRECTION OF MEDICAL CONTROL OR AN ON-SCENE EMS FIELD PHYSICIAN.

Ensure that the scene is safe, that appropriate PPE is available, and the patient(s) has been removed from the area of release. Patient triage should occur as soon as possible after gross decontamination.

- Assure patient decontamination.
- For multiple casualties, activate Suffolk County MCI Plan.
- Contact Medical Control with:
  - numbers of patients
  - nature of exposure i.e. home or industrial exposure, or mass intoxication
- Perform START TRIAGE.
- Provide airway support per NY State BLS and Adult Airway Management. Protocols. REFER TO BROSELOW PEDIATRIC ANTIDOTE FOR CHEMICAL EMERGENCIES tape. For ASYMPOMATIC PATIENTS – decontaminate, monitor for development of signs and/or symptoms and transport.

- Repeat any of the above.
- IV/IO NS to KVO
- Atropine
- Pralidoximine 25 mg/kg
- Fluid Bolus
- Repeat Atropine
- Diazepam
- Midazolam
- Refer to the Pediatric Advanced Airway protocol.
- Release CHEMPACK assets.
PEDIATRIC MAJOR TRAUMA

This protocol is intended for pediatric patients that have the following signs and symptoms: cool, clammy and mottled skin; SBP less than (<) 70; tachycardia; and tachypnea.

- Follow appropriate NYS BLS protocols for Pediatric Major Trauma.
- Transport Determination – See NYS/Suffolk County Trauma Triage Flow Chart.
- Consider Suffolk County Medevac Policy.
- Airway management and appropriate oxygen therapy.
- IV/IO NS
- Fluid Bolus 20 ml/kg wide open
- Cardiac Monitor

Use Suffolk County / NYS Trauma Triage Flow Chart

Unstable patients should be transported within 10 minutes of extrication to the closest appropriate hospital as determined by the Suffolk County / NYS Trauma Triage Flow Chart. Appendix 49

- Repeat NS fluid bolus 20 ml/kg; may repeat 1 additional time to a maximum of 60 ml/kg.
- If a Tension Pneumothorax is indicated, perform a needle decompression.
- Additional IV/IO

- Repeat any of the above.
- Refer to the Pediatric Advanced Airway protocol.
PEDIATRIC HYPOPERFUSION

This protocol is intended for non-traumatic pediatric patients that have the following signs and symptoms: cool, clammy and mottled skin; SBP less than (<) 70; tachycardia; and tachypnea.

- Follow appropriate NYS BLS protocol.
- Airway management and appropriate oxygen therapy.
- Cardiac Monitor
- IV NS KVO
- Fluid Bolus  20 ml/kg wide open
- If you suspect cardiogenic shock, contact Medical Control.

If you suspect Adrenal insufficiency:

- Administer Hydrocortisone Sodium Succinate 2 mg/kg bolus IV/IM, not to exceed 100 mg, if available, OR Methylprednisolone 0.4 mg/kg, IV/IM, not to exceed 125 mg IV/IM.
- Repeat IV bolus 20 ml/kg

- Repeat Normal saline 20 ml/kg IVP.

- Repeat any of the above.
- Epinephrine Drip
- Norepinephrine Infusion
- Refer to the Pediatric Advanced Airway protocol.
Follow appropriate NYS BLS protocol.
- Airway management and appropriate oxygen therapy.
- Cardiac Monitor
- If the heart rate is bradycardic (HR less than (<) 60) and the patient shows signs of cardiopulmonary compromise (hypotension, acute AMS and signs of shock) assist ventilations with BVM.
- If Bradycardia (HR less than (<) 60) and poor perfusion persists, begin CPR.
- IV/IO
  - Epinephrine 1:10,000, 0.01 mg/kg IV/IO, per Broselow tape

Conside Endotracheal Intubation.

*If patient presents in primary AV block or if the Bradycardia is due to a vagal response, the Atropine may be given prior to Epinephrine.*

- Repeat Epinephrine 1:10,000, 0.01 mg/kg IV/IO, per Broselow tape, q 3-5 minutes.
- Atropine 0.02 mg/kg, IV/IO bolus, per Broselow tape, may be repeated once.

Repeat any of the above.
- Glucagon
- Transcutaneous Pacing
- Epinephrine Drip

**EMT-CC and EMT-P**

**EMT-P**

**MEDICAL CONTROL**
PEDIATRIC TACHYCARDIA

This protocol intended for patients showing signs / symptoms of hypoperfusion, including dehydration, pallor, and lethargy.

- Follow appropriate NYS BLS protocol.
- Airway management and appropriate oxygen therapy.
- Cardiac Monitor

- **Sinus Tachycardia**
  - For children with HR less than (<) 180 and infants with HR less than (<) 220.
  - IV NS
  - Normal Saline 20 ml/kg - IVP, may repeat once.

- **Ventricular Tachycardia**
  - IV NS at KVO

- **Supraventricular Tachycardia**
  - Consider vagal maneuvers.
  - IV NS at KVO
  - 0.1 mg/kg of Adenosine IVP per following Broselow tape.

- **Unstable Ventricular Tachycardia with cardiopulmonary compromise – Unconscious**
  - Synchronized cardioversion 0.5 J/kg

- **Unstable Supraventricular Tachycardia with cardiopulmonary compromise – Unconscious**
  - Synchronized cardioversion 0.5 J/kg

- Repeat any of the above.
- IO
- Morphine Sulfate
- Fentanyl
- Midazolam
- Amiodarone
- Adenosine
- Magnesium Sulfate
- Synchronized Cardioversion 1-2 J/kg

- **EMT-CC** and **EMT-P**

- **MEDICAL CONTROL**
PEDIATRIC PAIN MANAGEMENT

This protocol is intended for pediatric patients that have single isolated musculoskeletal injuries without AMS, hypoventilation or hypoperfusion.

- Follow the appropriate NYS BLS protocols.
- Airway management and appropriate oxygen therapy.
- Document pain by using the Wong-Baker pain scale.
- Cardiac Monitor

- IV Normal Saline Lock or KVO
- Morphine Sulfate 0.1 mg/kg IV - following the Broselow tape, may be repeated once to a maximum dose of 10 mg \textbf{OR} Fentanyl 1 mcg/kg slow IV, IM/IN following the Broselow tape. (1 dose)
- Ondansetron 4 mg IV/IM if patient is over 4 years old, for patients between the ages of 2-4 years old, Ondansetron 2 mg IV/IM.

- Repeat any of the above.
- Diphenhydramine

EMT-CC and EMT-P
EMT-P
MEDICAL CONTROL
SUSPECTED CYANIDE POISONING / SMOKE INHALATION

This protocol is intended for use when cyanide toxicity is suspected from smoke inhalation, accidental or intentional poisoning, or mass intoxication, when sufficient resources and proper personal protective equipment are available to ensure the safety of the EMS personnel attending to the patient.

- Ensure that the patient has been removed to an area of refuge out of the contamination zone.
- IV/IO NS to KVO
- Cardiac Monitor
- Obtain SpCO reading, if available.

If Patient is in CARDIAC ARREST or is PROFOUNDLY HYPOTENSIVE (systolic BP less than (<) 70) in the face of a smoke inhalation setting:
- Initiate second IV/IO Normal Saline
- Hydroxocobalamin 70 mg/kg over 15 minutes.
- Repeat any of the above.
- Repeat Hydroxocobalamin 70 mg/kg over 15 minutes.

NOTE: HYDROXOCOBALAMIN MUST BE ADMINISTERED IN A DEDICATED IV.

Exposure to high concentrations of cyanide causes coma, seizures, apnea, and cardiac arrest, with death following in a matter of minutes.

With exposure to lower doses, patients experience general weakness, giddiness, headache, vertigo, confusion, and perceived difficulty breathing, progressing to altered mental status or loss of consciousness. In the early stages of unconsciousness, breathing is often sufficient or even rapid, although the state of the victim progresses towards a deep coma, sometimes accompanied by pulmonary edema, and finally cardiac arrest.
APPENDIX 1

ALS FORMULARY

Adenosine – for IV administration
Albuterol – for inhalation
Amiodarone – for IV administration
Aspirin – for oral (PO) administration
Atropine – for IV or ET administration
Calcium Chloride – for IV administration
Diazepam – for IV administration**
Diltiazem – for IV administration
Diphenhydramine – for IV or IM administration
Dopamine – for IV infusion
DuoDote™
Epinephrine – for IV, IM, IV infusion, IN, or ET administration
Epinephrine Auto-Injectors (adult and pediatric) – for IM administration
Etidronate – for IV administration
Fentanyl Citrate – for IV, IM or IN administration**
Furosemide – for IV administration
Glucagon – for IM or IN administration
Haloperidol – for IM administration
Hydrocortisone Sodium Succinate – for IV or IM administration
Hydroxocobalamin – for IV infusion
Ipratropium Bromide – for inhalation
Ketamine Hydrochloride – for IV or IM administration
Ketorolac – for IV or IM administration
Lidocaine – for IO administration
Lorazepam – for IV or IM administration**
Magnesium Sulfate – for IV and IV infusion administration
Mark I™
Metoprolol Tartrate – for IV administration
Methylprednisolone – for IV or IM administration
Midazolam Hydrochloride – for IV, IM or IN administration**
Morphine Sulfate – for IV or IM administration**
Naloxone – for IV, IM, IN or ET administration
Nitroglycerin – for sublingual (SL) administration
Nitrous Oxide – for inhalation administration
Norepinephrine
Normal Saline – for IV administration
Ondansetron Hydrochloride – for IV or IM administration
Ringers Lactate – for IV administration
Rocuronium – for IV administration
Sodium Bicarbonate – for IV administration
Succinylcholine – for IV administration
Thiamine – for IV or IM administration
Vecuronium Bromide – for IV administration
50% Dextrose in Water – for IV administration
25% Dextrose in Water – for IV administration
10% Dextrose in Water – for IV administration
Sodium Chloride – for irrigation

Continued.
See Medication Fact Sheets in this Appendix for detailed medication-specific information. In addition to the medications listed above, the necessary IV catheters, needles, syringes, administration sets, cardiac monitor/defibrillators, EKG electrodes, hands-free pads (monitoring, defibrillation, cardioversion, transcutaneous pacing), laryngoscopes and blades, endotracheal tubes, nebulizers, Broselow Tapes, or any other equipment or devices necessary to perform authorized ALS procedures may also be purchased.

** Requires a Class 3C Controlled Substance License.
APPENDIX 2

SUFFOLK COUNTY ANIMAL BITE REGISTRY

The Suffolk County Legislature adopted Resolution 1083-1995 on November 28, 1995 establishing a registry for animal bite incidents that occur in Suffolk County. The law requires that any ambulance or rescue squad responding to an incident that involves an animal bite file a report with the Suffolk County Police Department, the Suffolk County Department of Health Services – Division of Public Health, and the animal control shelter in the township in which the bite incident occurred.

To comply with the reporting requirements of the law, the following procedures must be adhered to:

1. The ANIMAL BITE REGISTRY form must be completed in its entirety and mailed to the authorized agencies within twenty-four (24) hours of the incident.

2. The white (1st) copy shall be retained by the reporting agency and attached to the agency’s copy of the Pre-Hospital Care Report (PCR) generated for the incident.

3. The yellow (2nd) copy shall be mailed to the Suffolk County Police Department – Police Headquarters, 30 Yaphank Avenue, Yaphank, NY 11980.

4. The pink (3rd) copy shall be mailed to the Suffolk County Department of Health Service’s Division of Public Health – 3500 Sunrise Highway, Suite 124, P.O. Box 9006, Great River, New York 11739-9006

5. The gold (4th) copy shall be mailed to the Animal Control Shelter in the township in which the bite incident occurred.

Suffolk County Animal Bite Registry information and forms can be found on the Suffolk REMSCO website under “Downloads and Forms,” and agencies must make / distribute the appropriate copies.
APPENDIX 3

AUTHORIZED ALS PROCEDURES

EMT-CRITICAL CARE:

EMT-CCs are authorized to perform the following:

- Manual Defibrillation
- Synchronized Cardioversion
- Transcutaneous Pacing
- Continuous Positive Airway Pressure (CPAP)**
- Rhythm strip and 12-lead EKG acquisition and transmission**
- Peripheral IV Cannulation (including external jugular vein, when patient is unconscious and when other peripheral IV access is unavailable)
- Adult and Pediatric IO Insertion
- Valsalva Maneuver
- Medication administration by IV bolus, IV and IO infusion, IM and SC injection, rectal absorption, aerosolized nebulizer, inhalation, intranasal administration, endotracheal tube and supraglottic airways.
- Needle Decompression

EMT-PARAMEDIC:

In addition to the above, EMT-Ps are authorized to perform the following:

- Needle cricothyrotomy for airway obstruction refractory to other maneuvers.
- Jet insufflation through a needle cricothyrotomy.
- 12-lead EKG** acquisition, interpretation and transmission
- Medication facilitated intubation (MFI)** with prior training and authorization and members of agencies in the approved pilot program.
- Rapid Sequence Intubation Program (RSI Program)** credentialed as a RSI-Paramedic while working for an RSI authorized agency.

** NOTE: Procedures require additional training and authorization:

- CPAP
- 12-Lead EKG Acquisition
- MFI (Pilot Program with Service Medical Director Authorization/Meeting County Requirements – Paramedic Only)
- RSI (Meeting REMAC-approved credentialing as a RSI-Paramedic only.)
Changes in technology and contemporary data from the military experience have shed new light on severe bleeding control from an extremity injury. Based on standard of care established by the NY State Emergency Medical Advisory Committee (SEMAC) and the NY State Trauma Advisory Committee (STAC), and supported by the National Association of EMTs (NAEMT) Prehospital Trauma Life Support (PHTLS) curricula, the Suffolk Regional Emergency Medical Advisory Committee (REMAC) and the Suffolk Regional Trauma Advisory Committee (RTAC) are taking this opportunity to review current NY State EMS Basic Life Support (BLS) approach to the External Bleeding Protocol. Bleeding from soft tissue injury to the extremities may be associated with accompanying arterial injury.

Methods to control bleeding, consistent with updated NY State BLS Protocol for External Bleeding, include:

- Immediately apply direct pressure over the wound with a sterile dressing. **NOTE:** If available and bleeding is severe, an FDA hemostatic gauze dressing should be applied directly to the bleeding site simultaneously with direct pressure.

- If bleeding soaks through the dressing, apply additional dressings while continuing direct pressure. Do not remove dressings from the injured site! Cover the dressed site with a pressure bandage. For severe and persistent bleeding, maintain direct pressure with enough pressure to stop the bleeding, first by hand, then maintained by pressure dressing.

**If routine standard dressings were initially applied, and bleeding continues through several blood-soaked dressings, these dressings must be removed to apply an FDA approved hemostatic dressing directly over the wound. Only FDA hemostatic dressings are approved and may be used in place of simple gauze dressings, following manufacturer’s recommendations for application.** FDA approved hemostatic dressing should preferentially be used on wounds with severe bleeding, following manufacturer’s recommendations.

- Standard dressings should be applied to simple wounds where bleeding is easily controlled.

- For severe and persistent bleeding, maintain direct pressure with enough pressure to stop the bleeding, first by hand, then maintained by pressure dressing.

- In cases where hemorrhage to the extremity cannot be controlled by direct pressure, pressure dressing and if applicable, hemostatic dressing, the use of tourniquets are acceptable, particularly when the wound exhibits spurring blood. The most readily available tourniquet is a blood pressure cuff. If a BP cuff is used, the cuff should be inflated to just enough pressure to stop external blood flow. Mechanical winch-type tourniquets are acceptable. Tourniquets should be used if severe bleeding from a limb persists to control severe bleeding after all other methods have failed. The application of a tourniquet is limited to use on extremities. A second tourniquet may be applied proximal to the first if severe bleeding persists.

Continued.
Commercially available tourniquets, or those prepared with cravats, should be 2.5-3 inches wide. Never use wire, cord, or any material that may cut the skin. Follow manufacturer’s recommendations and NY State BLS External Bleeding Protocol (3/10/16 version).

Do not loosen or remove any tourniquet once it has been applied. The loosening of a tourniquet may dislodge clots and result in enough blood loss to cause shock and death.

Always assess for signs of hypoperfusion, keep the patient warm, elevate legs 8-12 inches, provide appropriate oxygen therapy. Ensure rapid transport to the closest appropriate hospital.

Obtain and record frequent serial vital signs.

Record all information on the PCR, including time tourniquet was applied.
APPENDIX 5

BOUGIE DEVICE

Indications:

The Bougie Device may be used in the patient with an identified or pending difficult airway. Identification of the difficult airway may be made from past history, pre-procedure visualization exam, an unsuccessful ET intubation attempt, or in anticipation of a difficult airway. The device may be used in the following situations:

- tracheal intubation via direct or video laryngoscopy, especially in difficult airways or during CPR
- tracheal intubation via supraglottic airway device
- needle cricothyrotomy
- confirmation of endotracheal tube position

Contraindications:

- Any intubation requiring a tube smaller than size 6.0.

Procedure:

1. Once the sterile package of the bougie has been opened, create the desired shape and bend the distal end if required to form a coude tip.
2. The bougie is typically held by the intubator 20-30 cm proximal to the coude tip.
3. Perform video laryngoscopy or direct laryngoscopy in the traditional manner to view the patient’s vocal cords. If the vocal cords are not completely visible (Mallampati Grade III or Grade IV), insert the distal end of the bougie with the bend facing up into the oropharynx and attempt to place the bougie into the larynx.
4. The bougie should be inserted via the side of the mouth, rather than down the center, so that rotation of the bougie provides better control of the coude tip in the vertical plane.
5. The user should feel the tip of the bougie ‘click’ as it passes along the tracheal rings.
5a. The bougie is typically inserted directly into the trachea and then used as a guide over which the endotracheal tube can be railroaded; or
5b. The bougie can be preloaded with an endotracheal tube or an assistant can pass the endotracheal tube over the free end of bougie while the intubator maintains visualization of the bougie/cords and ensures the placement of the bougie remains secure
6. The tracheal tube should be introduced through the cords, over the bougie, using a 90º counter-clockwise rotation to prevent its beveled point from getting caught in the arytenoids
7. Once the ET tube is in the correct position the ET tube is securely held in place while the assistant slowly removes the bougie. Final steps will consist of removing the laryngoscope, inflate the cuff, and confirm and secure the ET tube.
8. When used to confirm endotracheal placement the bougie is passed down the endotracheal tube and there should be ‘hold up’ at 30-40cm depth, indicating that the bougie has reached the carina or a mainstream broncus. If this does not occur the bougie is likely to be in the esophagus.
CERTIFIED EMS PROVIDERS AS MANDATED REPORTERS OF CHILD ABUSE

This policy applies to all certified EMS providers, while on “duty status” in NY State, as required by Section 415 of Social Services Law. The law states that:

“Reports of suspected child abuse or maltreatment made pursuant to this title shall be made immediately by telephone or facsimile machine on a form supplied by the Commissioner. Oral reports shall be made to the statewide register of child abuse and maltreatment unless the appropriate local plan for the provision of child protective services provides that oral reports should be made to the local child protective services.” EMS providers are also mandated to make a referral if a child is encountered at a location where there is evidence of methamphetamine production (meth lab) or use.

10NYCRR Part 800.21(p) (11) (ii) requires all ambulance services to have and enforce a written policy regarding the reporting of child abuse/maltreatment cases. This policy shall include at a minimum:

- PCR Documentation;
- Emergency Department staff notification;
- Placing a call to the toll-free number; and
- Completion of the DSS 2221-A form.

Oral reports of suspected child abuse/maltreatment shall be made by calling the NY State Child Abuse/Maltreatment Register at: 1-800-635-1522 and by mailing the completed DSS 2221-A form to:

CPS Register/Intake Unit  
Suffolk County Department of Social Services  
PO Box 18100  
Hauppauge, NY 11788-8900

The oral telephone report must be made as soon as feasible after the alarm and the written report must be submitted within 48 hours of the alarm. When multiple EMTs are on a call, only 1 EMT needs to make the call and submit the report on behalf of the entire crew, however, each EMT must ensure that his / her name is on all DSS reports to document compliance with the requirement.

Please refer to NY State Policy Statement 02-01 for additional detailed information. The DSS 2221-A form can be found on the Suffolk REMSCO website under “Downloads and Forms.”
APPENDIX 7

COMBITUBE™

Indications:

The Esophageal Tracheal COMBI-TUBE is an airway device that may be used on the ADULT patient in CARDIAC ARREST if intubation is not successful or a difficult airway is anticipated based on assessment of the patient’s anatomy. The device is manufactured in two (2) ADULT sizes, each of which is required, and choice is made based on patient height parameters, as indicated below.

The device is designed to provide sufficient ventilation whether the airway is placed in the trachea or the esophagus. The Combi-tube will be used in an ADULT patient in cardiac arrest, who is over four (>4) feet tall and less than seven (<7) feet tall.

- The Small Adult (37F) COMBITUBE should be used on adult patients who are four (4) feet tall but less than six feet tall (<6). The proximal balloon should be inflated to a maximum of 85 cc, the distal balloon to a maximum of 10 cc.

- The Adult (41F) COMBITUBE should be used on all patients over six (>6) feet tall but less than seven (<7) feet tall. The proximal balloon should be inflated to a maximum of 85 cc, the distal balloon to a maximum of 10 cc.

Contraindications:

- Patients not in cardiac arrest;
- Patients with a known esophageal disease;
- Patients that have ingested a known caustic substance;
- Patients that are less than four (<4) feet tall;
- Patients that are over seven (>7) feet tall; and/or;
- Cannot advance due to resistance.

Procedure:

- While inserting the COMBI-TUBE keep a mid-line position, insert it into the tip of the mouth and guide it downward following the curvature until the two (2) printed black bands on the tube lie between the teeth or alveolar ridges. DO NOT FORCE THE COMBI-TUBE. IF THE TUBE DOES NOT ADVANCE, WITHDRAW AND REINSERT. The maximum amount of attempts to insert the COMBI-TUBE is limited to three (3).

- Inflate the blue pilot balloon with 85 cc of air.

- Inflate the white balloon cuff with 10 cc of air using the 10 cc syringe.

- Begin to ventilate the patient through the blue tube, if auscultation of breath sounds are positive and stomach sounds are negative – continue to ventilate and secure the tube using a commercial device and immobilize the patient per Suffolk County Policy.

Continued.
If auscultations of breath sounds are negative and stomach sounds are audible with gastric distension, immediately begin to ventilate using the white tube.

Confirm placement by auscultation of breath sounds and negative gastric sounds.

Place ETCO2 detector on the tube and check for waveform. If the waveform does not confirm placement, deflate the pilot blue balloon and remove approximately 2-3 cm out of the patient’s mouth. Reinflate with 85 cc of air and ventilate with the bag-valve mask. If auscultation of breath sounds is positive continue with securing the tube and the immobilization of the patient’s head and neck.
APPENDIX 8

STANDARD PATIENT PRESENTATION FORMAT FOR COMMUNICATING WITH MEDICAL CONTROL

Clear and concise verbal communication is necessary for the coordinated relay of pertinent patient information and appropriate medical orders. A standard presentation format greatly enhances the EMS Provider’s ability to quickly and effectively communicate essential information to Medical Control personnel, minimizes the chance for error, streamlines the patient care process, and reduces the amount of time that an EMS Provider needs to spend on this function.

As a rule, the following standard presentation format should be used during routine communications with Medical Control. However, the presentation format may be adjusted based on the nature and severity of the case.

- UNIT ID / TECHNICIAN NAME / LEVEL OF CERTIFICATION
- AGE
- SEX
- CHIEF COMPLAINT
  - History of the present illness
  - Aggravating / Alleviating factors
- INITIAL VITAL SIGNS
  - Mental Status
  - Blood Pressure
  - Pulse Rate and Quality
  - Respiratory Rate, Quality and Effort
  - Lung Sounds
  - Skin Color, Condition and Temperature
  - Pupils
  - Physical Examination (including pertinent negatives)
- PAST MEDICAL HISTORY
- MEDICATIONS
- ALLERGIES
- TREATMENTS SO FAR / REPEAT VITAL SIGNS / RESPONSE TO THOSE TREATMENTS
- RECEIVING HOSPITAL AND ETA

Remember the simple SOAPIE formula in your approach to examining AND presenting your patient:

Subjective Interview – the patient’s words and description +
Objective Examination – your physical assessment +
Assessment – your prehospital impression or presumptive diagnosis (including differentials) =
Plan – your treatment(s) under standing orders or requested / ordered treatment(s)
Interventions – what’s been done by patient and/or technician
Evaluation – of any changes from therapy.
Typically, when one thinks of the term Quality Assurance (QA), the negative connotation of big-brother-watching-what-I-do emerges. Past QA efforts revolved around someone performing a retrospective review to establish that policies, protocols, or procedures were not followed appropriately and as a result, some sort of sanction against the offending individual would follow. In today’s rapidly changing health care environment, this is no longer the case. Enhancing organizational effectiveness and efficiency, utilizing the strategic planning process, and striving for excellence to promote customer service, are the current undertones. Quality Assurance has been replaced by Continuous Quality Improvement in both process and spirit. Continuous Quality Improvement (CQI) initiatives remain a major tool for problem solving activities. The focus of quality improvement activities is centered on asking “why,” instead of “who,” and examines the organization as opposed to the individual. Rather than assessing blame for a lack of compliance, the QI approach seeks to identify the actions to determine if the organization is operating at peak efficiency, applying uniform and appropriate care and response to recognize areas of excellence, and to address deficiencies through the continuing medical educational process.

At the county level, and at the agency level, individual CQI is an on-going and important tool in ensuring standards of care are adhered to, in effort to ensure optimal patient care consistent with established policies and protocols, reduce liability and risk to providers, agencies, the county, and all interested parties. The EMS System Medical Director and the Suffolk Regional Emergency Medical Advisory Committee (REMAC) is responsible on a macro level, for overall system wide CQI, concentrating on protocol and policy. Service Medical Directors, through their commitment attested to on the Medical Director’s Affirmation Statement (NYSDOH Form 4362), are responsible on the micro level, for the day-to-day close proximity CQI of the providers they interact with regularly. Together, physician oversight remains the cornerstone of quality prehospital emergency medical care.

A variety of appropriateness, statistical, and red-flag monitors are itemized and analyzed and presented to the EMS System Medical Director and applicable Service Medical Director(s) as needed. Information will also be made available to local hospitals to assist in fulfilling their 405.19, 708.2b, and 708.5 regulations, and to the Suffolk REMAC’s Quality Improvement Sub-Committee. Monitors include, but are not limited to:

**Appropriateness Monitor**

- PCR completion reports
- RMA review
- Time reports
- Protocol Appropriate Treatment
- Policy Appropriate Action
- Diagnosis Comparison
- High Risk Procedures

Continued.
CONTINUOUS QUALITY IMPROVEMENT PLAN

Statistical Monitor

- Cardiac Arrest Outcome
- Time of dispatch to arrival of ambulance
- AEMT skills report
- Treatment appropriate to patient condition and technician availability, consistent with protocol & policy

Red-Flag Monitors

- Deviations from protocol / procedure / untoward events.
- Deviations from NY State or Suffolk County Policy Statements, including, but not limited to:
  - Transfers of Care;
  - RMA;
  - Destination Hospital;
  - Initial Case Review/Field Case Review forms;
  - Citizen or response agency complaints;
  - Technical malfunction of equipment; and/or
  - Time parameters

Patient Outcome Monitor

- Correlation of return of spontaneous circulation (ROSC) to time of defibrillation, presenting arrhythmia
- Hospital disposition for patients receiving ALS care
- Correlation between survivability and cumulative prehospital care options

Program Outcome Monitors

- Performance consistent with medically accepted standards
- Adequacy of resource allocation
- Increased skill level for field providers
- External validity of QI program

Deviations from procedure, protocol, or potential untoward events are documented and categorized on an Initial Case Review Report form generated by the Medical Control facility at University Hospital & Medical Center Stony Brook or a Field Case Review Report form generated by an emergency responder. Forms are forwarded to the Chief of Education & Training according to the pre-determined time schedule. The Chief, and/or his designee, will review each case. In instances where technician input is necessary to aid in the investigation, letters or telephone calls will be made to elicit required information. The case review summary and the outcome and recommendations are documented on the INITIAL CASE REVIEW - FIELD REPORT PROCEDURE AND FORM, which can be found on the Suffolk REMSCO website under “Downloads and Forms” or in APPENDIX 13 of these policies.
CONTINUOUS QUALITY IMPROVEMENT PLAN

On-going and / or topical reports produced by University Hospital & Medical Center Stony Brook personnel and / or EMS Division personnel will be forwarded to the EMS System Medical Director, the Regional Medical Advisory Committee’s Quality Improvement Sub-Committee and the technicians and agencies involved.

The scope of resolution includes efforts to foster a partnership between prehospital EMS providers, provider agencies, and those individuals and agencies responsible for medical oversight in the Suffolk region. The purpose of the QI initiative is to ensure the highest quality patient care. Guiding change is a principal activity of the QI program, and positive feedback is an essential part of the process. Actions imposed on prehospital providers and provider agencies may be:

- Reinforcing, in an attempt to encourage continued excellence; and / or
- Rationalization, in an attempt to effect change through the educational process; and / or
- Punitive, in that disciplinary action may be warranted under certain circumstances.

The Chief of Education & Training and the EMS System Medical Director collaborate and offer the following dispositions:

- Standing Order restriction, with full ALS privileges upon contact with Medical Control;
- ALS privilege suspension with full BLS privileges, pending successful remediation; or
- ALS and BLS privileges suspension pending successful remediation.

Once a decision is made, the EMS Division will notify the EMS Provider(s) involved, and an initial meeting will be scheduled to discuss the case, from the provider’s perspective. The meeting will be held at a mutually convenient time, as soon as feasible after the case is identified. EMS Division staff notifies Medical Control, and the provider’s agency leadership of the type of restriction.

A program for skill remediation that will allow for supervised reinforcement in the clinical setting has been implemented. Sessions will be “tailor-made” to the specific needs of the individual(s) involved. A mentoring program utilizing previously identified preceptors within each agency has been established by the EMS Division.

A series of didactic and / or practical skill workshops to rationalize appropriate actions will be scheduled by the EMS Division, or other qualified instructor, designated by the EMS Division staff. In rare circumstances, the EMS System Medical Director may require attendance at mandatory specialty training classes or completion of a refresher course at the appropriate certification level, prior to reinstatement of privileges.

Disciplinary procedures, when unavoidable, may consist of:

- Verbal counseling - for least serious offenses.
- Written counseling - for documentation of an incident serious in nature or repeated offenses of a minor nature.
- Probation - for conveying the importance of the expected standard.
- Suspension - for occurrences perceived to be a threat to public health and safety.

Continued.
CONTINUOUS QUALITY IMPROVEMENT PLAN

To ensure complete objectivity and transparency, cases that result in real or perceived conflict of interest on the part of EMS Division staff are passed along to the REMAC’s Medical Review Committee, a committee that convenes upon request, to review cases referred by the EMS System Medical Director.

The EMS Division uses known and referenceable sources as the benchmark for monitoring activity including, but not limited to: NY State DOH Policy Statements; SEMAC / STAC Guidance Documents; NY State BLS Protocols; Suffolk County ALS Protocols; Suffolk County ALS Policies and Procedures; REMAC / RTAC Guidance Documents; certification-specific NY State DOH-approved curricula; and AHA Consensus Guidelines.

For instances that exceed routine and regular CQI, the EMS Division reserves the right, per requirements of NY State DOH Policy Statement 84-26, to report activity contrary to a technician’s level of certification to the NY State DOH for investigation.

The EMS Division will make every effort to resolve remedial activities within a reasonable time frame, based on scheduling and other demands, generally within a one (1) to two (2) week time period. The goal is to put a qualified and capable technician back on the ambulance as quickly as possible. However, the EMS Division has the responsibility to balance remedial efforts with ensuring that EMS providers are capable of providing quality care with reduced liability exposure to the provider, the agency and the county.

It is the responsibility of the EMS Provider to ensure that all agencies in which that provider is credentialed and authorized are aware of restrictions and/or remedial activity. EMS Providers that are restricted may not perform any skill or level of care while restricted.

In cases where a provider is either a volunteer or salaried provider, in multiple agencies, EMS Division staff will make every effort to contact all known agencies and inform them of the issues. EMS Providers at both BLS and ALS levels who have had their privileges suspended reserve the right to appeal a decision, in writing, to the Chief of Education & Training and the EMS System Medical Director. The appeal will be forwarded to the REMAC Chair, who will be asked to convene a Medical Review Committee.

The REMAC’s Medical Review Committee ruling will be final, and include either of the following dispositions:

- Agree with and abide by the decisions of the EMS System Medical Director.
- Overrule the decision of the EMS System Medical Director and repeal the suspension.
- Modify the decision of the EMS System Medical Director by either reducing or lengthening the suspension.
APPENDIX 10

Entry Requirements for Suffolk Regional Emergency Medical Advisory Committee (REMAC)-approved ALS Provider Credentialing and Authorization and Re-Credentialing / Re-Authorization

The Suffolk County Department of Health Services, EMS Division, is the region’s designated Regional EMS Program Agency, and serves as the Suffolk County EMS System Administrator. Clinical care is performed under the general supervision of the Regional EMS Medical Director. The EMS Program Agency is responsible for managing the REMAC credentialing and authorization process for ALS providers, required upon initial entry into the regional EMS System and re-credentialing and re-authorization of ALS providers, on an as needed basis, as protocols are revised. In order for a NY State certified EMT-Critical Care or EMT-Paramedic to function at the ALS level, and/or to perform any advanced, diagnostic, or therapeutic procedures in Suffolk County, he/she must also be regionally CREDENTIALED AND AUTHORIZED.

INITIAL CREDENTIALING & AUTHORIZATION

This process is typically used for currently certified individuals from another region seeking membership or employment in a Suffolk County-approved agency, or certified providers in a Suffolk County-approved agency that attain certification EMT-Paramedic through an NY State-approved Course Sponsorship.

CREDENTIALED is defined as meeting minimum standard pre-requisite eligibility criteria for ALS authorization, completing an online protocol and policies in-service session, and passing a qualifying protocol exam. Pre-requisite Eligibility Criteria includes:

• Current NY State EMT-Critical Care or EMT-Paramedic Certification;
• Current AHA Advanced Cardiac Life Support (ACLS) Certification (Paramedics Only)
• Successful completion of a Suffolk County EMS-sponsored CPAP course: and
• Familiarity with the current edition of the Suffolk County EMS ALS Policies and Protocols Manual, obtained from the EMS Division.

Once the pre-requisite eligibility requirements are satisfied, the candidate must then:

• Complete the Suffolk Regional Emergency Medical Advisory Committee (REMAC) ALS online credentialing course; and
• Sit for the Suffolk County ALS Protocol Exam, at the appropriate certification level. This written exam is a minimum of fifty (50) questions based on current ALS Policies, Protocols and Suffolk County EMS System Standard Operating Procedures contained in the ALS Policies and Protocols Manual. A minimum score of 80% is needed to pass. The candidate may not use any resources during the exam. Suffolk County EMS Division staff reserve the right to add additional questions to ensure competency in the subject material.

Continued.
Entry Requirements for Suffolk Regional Emergency Medical Advisory Committee (REMAC)-approved ALS Provider Credentialing and Authorization and Re-Credentialing / Re-Authorization

Depending on the actual score, EMS Division staff provides remedial services to ensure appropriate knowledge of the subject material and reserves the right to administer an alternate written exam, under the same rules as the original exam.

Once the candidate successfully completes the exam, they are considered CREDENTIALED. This status alone does not allow an ALS provider to perform at the ALS level.

AUTHORIZATION is defined as the ability to provide ALS care under the delegated practice of the Regional EMS System Medical Director. In order to receive authorization to perform ALS, the provider must be a member or employee of an agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services. He/she may only operate in the system when acting as an agent of his/her agency, or when specifically requested to assist another agency that has an Ambulance Services Agreement with the Suffolk County Department of Health Services, per the requirements outlined in the Suffolk County Interagency Utilization of ALS Personnel Policy.

NOTE: Commercial and hospital-based ambulance services operating in the Suffolk Region providing routine inter-facility transportation or specialty care transportation are responsible for developing their own agency-specific credentialing and authorization requirements and are outside the scope of the Suffolk County EMS System.

Generally speaking, CREDENTIALING AND AUTHORIZATION occurs simultaneously, but may occur independently. From time to time, providers seek to become credentialed prior to admission into an agency in the Suffolk County EMS System. This is acceptable, and the candidate may complete the credentialing process. Authorization will occur after documentation of membership in a Suffolk County-approved agency is provided. Once the process is complete, the EMS Division issues a picture ID card documenting regional authorization.

The EMS Division passes this information along to Suffolk County Medical Control, responsible for maintaining the credentialed and authorized technician database and ensuring the medical control orders are forwarded to properly identified, credentialed and authorized ALS providers.

Credentialed and authorized EMT-Critical Care technicians that upgrade to EMT-Paramedic are required to complete the Suffolk County ALS Protocol Exam at the EMT-Paramedic level, administered by the EMS Division, in accordance with the testing and remediation practices previously described. The candidate will receive an updated regional authorization card at the higher level upon return of the previously issued card.
APPENDIX 10 – Continued.

Entry Requirements for Suffolk Regional Emergency Medical Advisory Committee (REMAC)-approved ALS Provider Credentialing and Authorization and Re-Credentialing / Re-Authorization

An EMT-CC or EMT-P that is NO LONGER a member of a recognized agency automatically loses his/her AUTHORIZATION and MAY NOT continue to function as an advanced provider in the system. The provider is responsible for returning the regional authorization picture ID card to the EMS Division upon separation of service. The EMS Division notifies Suffolk County Medical Control and the provider’s name is purged from the database. Should the provider seek reinstatement by way of membership or employment with a new Suffolk County-approved agency, the EMS Division will determine the pathway to re-authorization based on length of absence, quality improvement reviews, and other factors deemed necessary.

RE-CREDENTIALING & RE-AUTHORIZATION

RE-CREDENTIALING / RE-AUTHORIZATION is defined as the periodic refreshing of a provider’s ALS status. Generally speaking, re-credentialing/re-authorization is required whenever there are substantive changes to medical protocols, introduction of new medications and/or introduction of new practical skills/therapeutic modalities. In order to maintain operating privileges, an EMT-CC or EMT-P must complete all EMS System protocol or policy updates in the prescribed format and time frame established by the Regional EMS System Medical Director, which is based on the relative complexities of the changes being introduced.

The Regional EMS System Medical Director, has the responsibility of ensuring appropriate prehospital medical care, and with the EMS Division and Suffolk County Medical Control, manages a comprehensive countywide Quality Improvement Program. EMS System authorization may be restricted, suspended pending successful remediation, or revoked, per the progressive remedial and disciplinary actions documented in the EMS Division’s Quality Improvement Plan.

Suffolk County EMS offers protocol in-service sessions and administers exams and the schedule can be found on the web site www.suffolkremsco.com under “Headlines” or by calling the EMS Division Office at 631-852-5080.
## APPENDIX 11

### DESIGNATED EMS FIELD PHYSICIANS

<table>
<thead>
<tr>
<th>MD 1</th>
<th>Greg Pigott, MD</th>
<th>EMS System Medical Director</th>
</tr>
</thead>
<tbody>
<tr>
<td>MD 103</td>
<td>Maury Greenberg, MD</td>
<td>Brookhaven Town Fire Marshall</td>
</tr>
<tr>
<td>MD 105</td>
<td>Michael Torelli, MD</td>
<td>Exchange VAC</td>
</tr>
<tr>
<td>MD 107</td>
<td>Jack Geffken, DO</td>
<td>Centerport VAC</td>
</tr>
<tr>
<td>MD 108</td>
<td>David Kugler, MD</td>
<td>Melville FD</td>
</tr>
<tr>
<td>MD 110</td>
<td>Carl Goodman, DO</td>
<td>Port Jefferson VAC</td>
</tr>
<tr>
<td>MD 132</td>
<td>Frank Adipietro, MD</td>
<td>Shelter Island VAC</td>
</tr>
<tr>
<td>MD 134</td>
<td>David Seres, MD</td>
<td>Ocean Beach FD</td>
</tr>
<tr>
<td>MD 136</td>
<td>Jason Winslow, MD</td>
<td>Copiague FD</td>
</tr>
<tr>
<td>MD 137</td>
<td>Augustus Mantia, MD</td>
<td>Hauppauge FD / St. James FD</td>
</tr>
<tr>
<td>MD 138</td>
<td>Brian Blaustein, DO</td>
<td>Commack VAC / Sayville VAC</td>
</tr>
<tr>
<td>MD 139</td>
<td>Scott Coyne, MD</td>
<td>Suffolk County PD</td>
</tr>
<tr>
<td>MD 140</td>
<td>Richard Hindes, MD</td>
<td>Suffolk County PD</td>
</tr>
<tr>
<td>MD 141</td>
<td>Noah Finkel, MD</td>
<td>Suffolk County PD</td>
</tr>
<tr>
<td>MD 142</td>
<td>Richard Boccio, MD</td>
<td>Suffolk County PD</td>
</tr>
<tr>
<td>MD 144</td>
<td>Frank Nyberg, MD</td>
<td>Bay Shore VAC</td>
</tr>
<tr>
<td>MD 145</td>
<td>Chris Ng, MD</td>
<td>Selden FD</td>
</tr>
<tr>
<td>MD 146</td>
<td>Matthew Goldman, MD</td>
<td>Sayville VAC</td>
</tr>
<tr>
<td>MD 147</td>
<td>Charles Dalmedo</td>
<td>Shirley VAC</td>
</tr>
<tr>
<td>MD 148</td>
<td>Susan O’Malley, MD</td>
<td>Mastic Beach VAC</td>
</tr>
<tr>
<td>MD 149</td>
<td>Michael Guttenberg, MD</td>
<td>Commack VAC</td>
</tr>
<tr>
<td>MD 150</td>
<td>Ben Zabar, MD</td>
<td>Saltaire FD</td>
</tr>
<tr>
<td>MD 444</td>
<td>Ethan Brandler, MD</td>
<td>Huntington Community VAC</td>
</tr>
</tbody>
</table>

The physicians denoted in *italics type* are members of the Suffolk County Disaster Medical Response Team (DMRT) Medical Control Physicians employed at University Hospital Stony Brook and are classified as Designated EMS Physicians outside the Medical Control setting.
APPENDIX 12

FACE, LEGS, ACTIVITY, CRY, CONSOLABILITY (FLACC) Pain Scale

Normally used for infants, the FLACC Pain Scale is a good assessment tool to help the provider determine, to a relatively accurate level, the level of pain experienced by any patients who cannot communicate.

<table>
<thead>
<tr>
<th>Categories</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested</td>
<td>Frequent to constant frown, quivering chin, clenched jaw</td>
</tr>
<tr>
<td>Legs</td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking or legs drawn up</td>
</tr>
<tr>
<td>Activity</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
<td>Arched, rigid, or jerking</td>
</tr>
<tr>
<td>Cry</td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers; occasional complaint</td>
<td>Crying steadily, screams or sobs, frequent complaints</td>
</tr>
<tr>
<td>Consolability</td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging, or being talked to; distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>

*Note:* Each of the five categories Face (F), Legs (L), Activity (A), Cry (C), and Consolability (O) is scored from 0-2, which results in a total score between 0 and 10.

APPENDIX 13

INITIAL CASE REVIEW - FIELD REPORT PROCEDURE AND FORM

As part of our expanding quality improvement initiative, the Emergency Medical Services (EMS) Division has developed a mechanism to give EMS providers an opportunity to document their concerns about issues that may arise during any phase of out-of-hospital emergency medical care. Examples may include, but are not limited to, interactions with other providers, agencies, receiving hospitals and Medical Control.

The form has been distributed to each ambulance service with recommendations to duplicate and keep available at your headquarters. The form gives you the opportunity to initiate the review of a particular concern and provides a follow-up mechanism where feedback can be used to help identify and resolve a problem. The goal is to encourage a partnership approach to patient care among the many components of our emergency medical services system.

The procedure for using the form is as follows:

1. Generate the form, listing the details and your concerns about the issue.

2. Mail the form to:

   Suffolk County EMS Division
   360 Yaphank Ave., Suite 1B
   Yaphank, New York 11980
   Attn: Chief, Education & Training

3. A review of the incident will be performed.

4. The individual generating the report will receive a written summary of the review and recommendations for remedial action, should it be required.

NOTE: The form may also be sent via FAX to 631-852-5028 or as a .pdf file via email to william-michael.masterton@suffolkcountyny.gov.

A sample copy is provided on the next page.
INITIAL CASE REVIEW - FIELD REPORT PROCEDURE AND FORM

Suffolk County Emergency Medical Services System
Initial Case Review Field Report

QUALITY IMPROVEMENT DOCUMENT
CONFIDENTIAL INFORMATION

Report Date:_______________________   Incident Date:_______________________

Medical Control Run # (when applicable):___________________________

Report Submitted By: ________________________  ______________________
________________________  ______________________
________________________  _______________________

Description of event:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Continue on separate sheet if necessary

SCEMS/ICRFR/Quality Improvement Program Document. Information is used for quality improvement purposes and protected by the Health Insurance Portability and Accountability Act (HIPAA) guidelines.
APPENDIX 14

INTER-AGENCY UTILIZATION OF ADVANCED LIFE SUPPORT PERSONNEL

This policy has been developed to assist you in providing timely prehospital ALS care, comply with NY State BLS protocols for Consideration of ALS Intercept, reduce exposure to liability and encourage a cooperative partnership within our EMS system.

It is incumbent on ambulance services to ensure that those individuals having access to ALS equipment are properly trained, credentialed and authorized to operate in the Suffolk County ALS System. This policy does not allow for unauthorized response by individuals to calls outside their response area. However, in the interest of good patient care, ambulance services are encouraged to take advantage of the assistance of on-scene personnel and call for ALS intercept with pre-designated and approved mutual aid services when appropriate.

1. ALS intercept agreements between agencies should be in writing and agreed upon by each ambulance service in advance. ALS intercept should be requested when it is reasonable to expect that ALS personnel can arrive at the scene quicker than the patient can arrive at the appropriate hospital.

2. An Advanced EMT who is outside his/her normal response area and who is willing to assist the responding ambulance service that may have ALS equipment but no ALS personnel available should identify themselves to the officer-in-charge or senior medical personnel by presenting their:

- Name
- NY State certification level and number
- Suffolk County EMS System-affiliated ambulance service photo identification card
- Suffolk REMAC Credentialing/Authorization Card

3. NY State certification cards, ambulance service identification cards, and Suffolk REMAC credentialing/authorization cards should be available for inspection by the officer-in-charge or senior medical personnel, and are required documentation on any out-of-county deployment.

4. The officer-in-charge or senior medical personnel shall verify the validity of this information by reviewing the cards. In the event that no identification cards are available, Medical Control may be contacted for authentication.

Upon proper authentication, prehospital emergency medical care should be rendered consistent with the Suffolk County ALS protocols and ambulance service standard operating procedures. The officer-in-charge shall remain in charge of “the scene” and the ALS provider shall be in charge of “the patient.”
CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

Requires separate credentialing mechanism for credentialed and authorized EMT-CC and EMT-P.

Indication:

For the adult patient (≥ age 18) who presents with moderate to severe respiratory distress, when signs / symptoms of cardiogenic or non-cardiogenic pulmonary edema are present, AND the systolic BP is 120 mmHg or higher.

Inclusion Criteria:

- Be at least 18 years of age;
- Be alert and orientated, and able to make an informed decision;
- Be able to maintain an open and patent airway on their own;
- Have a blood pressure of at least (≥) 120 mmHg systolic; and
- Have moderate to severe respiratory distress accompanied with the signs; and symptoms of cardiogenic or non-cardiogenic pulmonary edema.

Exclusion Criteria:

- Less than 18 years of age;
- Systolic blood pressure less than (<) 120 mmHg;
- Need for immediate endotracheal intubation or other methods of airway control;
- Depressed level of consciousness;
- Patients who are unable to control their own airway;
- Major Trauma, facial burns, impending respiratory or cardiac arrest;
- Uncooperative patient;
- Pregnancy;
- Pneumothorax, anaphylaxis, pulmonary embolism, or aspiration;
- Bronchospasm or wheezing, unless cardiac asthma is suspected;
- Active Vomiting; or
- Less than or equal to (≤) two (2) months status post gastric by-pass surgery.

Cautions: CPAP is to be immediately discontinued if:

- An immediate need for advanced airway control arises;
- The patient cannot tolerate the mask for any reason; or
- Systolic BP drops to less than (<) 120 mmHg.
APPENDIX 16

TIBIAL PLACEMENT EZ-IO™ DEVICE

Indications:
Adult or pediatric patients in critical need of vascular access for volume replacement or medication administration and who have either poor vein selection, or where there are two (2) unsuccessful intravenous attempts. This procedure may be done under standing orders or upon medical direction by a duly authorized physician.

Contraindications:
- Patients known, or appearing to be less than (<) 3 Kg
- Fractured tibia or femur
- Knee replacement by history
- Severe osteoporosis or tumor of the leg
- Infection over the insertion site
- Inability to locate landmarks for insertion
- Excessive tissue over the insertion site

Procedure:
1. Assemble and prepare all equipment, including your bag of normal saline with tubing purged.
2. Don appropriate PPE and take universal precautions.
3. Prep site with an alcohol wipe.
4. Locate the patella, tibial tuberosity, and flat surface of the tibia.
5. Verify that target zone is one (1) finger width medial to the tibial tuberosity.
6. Open the EZ-IO™ cartridge and attach the needle set to the driver - ensuring that the devices snap into place.
7. Remove the cap from the needle by rotating clockwise until loose and pull it free.
8. Stabilizing the leg with one hand, position the driver over the site at a 90 degree angle to the bone surface at the appropriate landmark and power the needle through the skin only to the bone surface.
9. Ensure the 5 mm mark (closest to the flange) on the catheter is visible. If the mark is not visible, do not proceed as the needle set is not long enough to penetrate the IO space.
10. Adult – applying firm, steady pressure, power the needle set into the bone until the flange touches the skin or a sudden lack of resistance is felt.
11. PEDIATRIC PATIENTS – insert the needle until it enters the marrow space, usually there will be a “POP” sensation.
12. While supporting the needle set with one hand, pull straight back on the driver to detach it from the needle set.

Continued.
APPENDIX 16 – Continued.

TIBIAL PLACEMENT EZ-I0™ DEVICE

13. Grasping the hub firmly with one hand, rotate the stylet counter clockwise until loose, pull it from the hub, place it in the stylet cartridge, and place in a biohazard container.

14. Confirm placement by: visible blood at the tip of the stylet; aspiration of marrow; free flow of IV fluid without evidence of leakage or extravasation.

15. Rapidly infuse a 10 cc flush of normal saline.

16. Secure catheter and IV tubing with tape.

17. Watch for soft tissue swelling.

* If the adult patient is conscious, slowly administer 20 mg of 2% (preservative free) Lidocaine IO infusion prior to the initial bolus, may be repeated x 1 if needed to achieve analgesia. IO fluid administration causes pain for conscious patients and is related to intramedullary pressure. Lidocaine has proven to be an extremely effective treatment for this pain.*
APPENDIX 17

TIBIAL PLACEMENT BONE INJECTOR GUN (BIG™)

Indications:

Adult or pediatric patients in critical need of vascular access for volume replacement or medication administration and who have either poor vein selection, or where there are two (2) unsuccessful intravenous attempts. This procedure may be done under standing orders, or upon medical direction by a duly authorized physician.

Contraindications:

- Patients known, or appearing to be less than (<) 3 Kg
- Fractured tibia or femur
- Knee replacement by history
- Severe osteoporosis or tumor of the leg
- Infection over the insertion site
- Inability to locate landmarks for insertion
- Excessive tissue over the insertion site

Procedure:

1. Assemble and prepare all equipment, including your bag of normal saline with tubing purged.
2. Don appropriate PPE and take universal precautions.
3. Prep site with an alcohol wipe.
4. Locate the patella, tibial tuberosity, and flat surface of the tibia.
5. Verify that target zone is one (1) finger width medial to the tibial tuberosity.
6. Open the appropriate BIG™ cartridge
   - Greater than 40 kg Adult “BLUE” needle, 15 gauge, 2.5 cm fixed depth
   - 3 kg – 39 kg Pediatric “RED” needle, 18 gauge, 1.5 cm maximum depth
   - Birth to 6 years of age: From tibial tuberosity go 0.5” medially and 0.5” distally
   - 6 years to 12 years of age: From tibial tuberosity go 0.5” medially and 0.5”-1.0” distally
7. Choose desired depth for pediatric patients:
   - Depth adjustment: 0-3 years (.5-1 cm); 3-6 years (1-1.5 cm); 6-12 years (1.5 cm)
8. Single hand place on site and remove safety “RED” latch device.
9. Trigger BIG 90 degrees to leg and remove BIG.
10. While supporting the needle set with one hand, pull straight back on the stylet trocar, and place in a biohazard container.
11. Confirm placement by: visible blood at the tip of the stylet; aspiration of marrow; free flow of IV fluid without evidence of leakage or extravasation.
12. Fix the cannula with safety latch and connect infusion set.
13. Rapidly infuse a 10 cc flush of normal saline.
14. Secure catheter and IV tubing with tape.
15. Watch for soft tissue swelling.

* If the adult patient is conscious, slowly administer 20 mg of 2% (preservative free) Lidocaine IO infusion prior to the initial bolus, may be repeated x 1 if needed to achieve analgesia. IO fluid administration causes pain for conscious patients and is related to intramedullary pressure. Lidocaine has proven to be an extremely effective treatment for this pain.*
Indications:

Adult or pediatric patients in critical need of vascular access for volume replacement or medication administration and who have either poor vein selection, or where there are two (2) unsuccessful intravenous attempts. This procedure may be done under standing orders or upon medical direction by a duly authorized physician.

Contraindications:

- Patients known, or appearing to be less than (<) 3 Kg
- Fractured humerus
- Shoulder replacement by history
- Severe osteoporosis or tumor of the arm
- Infection over the insertion site
- Inability to locate landmarks for insertion
- Previous significant orthopedic procedures (IO within 24-48 hours, prosthesis)
- Excessive tissue over the insertion site

Procedure:

1. Assemble and prepare all equipment, including your bag of normal saline with tubing purged.
2. Don appropriate PPE and take universal precautions.
3. Prep site with an alcohol wipe.
4. The humeral insertion site is identified by:
   - Place the patient supine, with arms next to the body and the hands over the umbilicus.
   - The acromion and coracoid processes of the scapula are located, establishing the points for placement of the operator’s thumb and index finger.
   - An imaginary line is then drawn from the operator’s thumb to his or her index finger. The humeral insertion site is 2 finger-widths distal from the midpoint of that line, which is the head of the humerus.

Note: In some patients, such as those with large muscle mass, the insertion site is an additional 1 finger-width medially

5. Open the appropriate BIG™ cartridge
   - Greater than 40 kg Adult “BLUE” needle, 15 gauge, 2.5 cm fixed depth
   - 3 kg – 39 kg Pediatric “RED” needle, 18 gauge, 1.5 cm maximum depth
6. Choose desired depth for pediatric patients:
   - Depth adjustment: 0-3 years (.5-1 cm); 3-6 years (1-1.5 cm); 6-12 years (1.5 cm)
7. Single hand place on site and remove safety “RED” latch device.
8. Trigger BIG 90 degrees to arm and remove BIG.

Continued.
9. While supporting the needle set with one hand, pull straight back on the stylet trocar, and place in a biohazard container.
10. Confirm placement by: visible blood at the tip of the stylet; aspiration of marrow; free flow of IV fluid without evidence of leakage or extravasation.
11. Fix the cannula with safety latch and connect infusion set.
12. Rapidly infuse a 10 cc flush of normal saline.

* If the adult patient is conscious, slowly administer 20 mg of 2% (Preservative free) Lidocaine IO infusion prior to the initial bolus, may be repeated x 1 if needed to achieve analgesia. IO fluid administration causes pain for conscious patients and is related to intramedullary pressure. Lidocaine has proven to be an extremely effective treatment for this pain.*

13. Secure catheter and IV tubing with tape.
14. Watch for soft tissue swelling.
APPENDIX 19

HUMERAL PLACEMENT EZ-IO™ DEVICE

Indications:

Adult or pediatric patients in critical need of vascular access for volume replacement or medication administration and who have either poor vein selection, or where there are two (2) unsuccessful intravenous attempts. This procedure may be done under standing orders, or upon medical direction by a duly authorized physician.

**EZ-IO 45mm:** (recommended for the proximal humerus application, patients with excessive tissue over the insertion site or when a black line not visible after penetration into the tissue)

**EZ-IO 25mm:** (commonly for 40 kg and over)

**EZ-IO 15mm:** (commonly for 3-39 kg, consider tissue density over the landmark desired)

Contraindications:

- Patients known, or appearing to be less than (<) 3 Kg
- Fractured humerus
- Shoulder replacement by history
- Severe osteoporosis or tumor of the arm
- Infection over the insertion site
- Inability to locate landmarks for insertion
- Previous significant orthopedic procedures (IO within 24-48 hours, prosthesis)
- Excessive tissue over the insertion site

Procedure:

1. Assemble and prepare all equipment, including your bag of normal saline with tubing purged.
2. Don appropriate PPE and take universal precautions.
3. Prep site with an alcohol wipe.
4. Locate appropriate site. **Proximal Humerus** – Insertion site is located directly on the most prominent aspect of the greater tubercle. Slide thumb up the anterior shaft of the humerus until you feel the greater tubercle, this is the surgical neck. Approximately 1 cm (depending on patient anatomy) above the surgical neck is the insertion site.
5. Open the EZ-IO™ cartridge and attach the needle set to the driver-ensuring that the devices snap into place.
6. Remove the cap from the needle by rotating clockwise until loose and pull it free.
7. Stabilizing the arm with one hand, position the driver over the site at a 90 degree angle to the bone surface at the appropriate landmark and power the needle through the skin only to the bone surface.
8. Ensure the 5 mm mark (closest to the flange) on the catheter is visible. If the mark is not visible, do not proceed as the needle set is not long enough to penetrate the IO space.
9. On adult patients when accessing the proximal humerus using the 45mm Needle Set, you may stop by releasing trigger when the hub is almost flush with the skin.
10. On pediatric patients when you feel a decrease in resistance indicating the Needle Set has entered the medullary space, release the trigger.

Continued.
11. While supporting the needle set with one hand, pull straight back on the driver to detach it from the needle set.
12. Grasping the hub firmly with one hand, rotate the stylet counter clockwise until loose, pull it from the hub, place it in the stylet cartridge, and place in a biohazard container.
13. Confirm placement by: visible blood at the tip of the stylet; aspiration of marrow; free flow of IV fluid without evidence of leakage or extravasation.
14. Rapidly infuse a 10 cc flush of normal saline.

If the adult patient is conscious, slowly administer 20 mg of 2% (Preservative free) Lidocaine IO infusion prior to the initial bolus. IO fluid administration causes pain for conscious patients and is related to intramedullary pressure. Lidocaine has proven to be an extremely effective treatment for this pain.

15. Secure catheter and IV tubing with tape.
16. Watch for soft tissue swelling.
**APPENDIX 20**

**NEEDLE CRICOTHYROTOMY**

**Paramedic Skill Only**

**Indications:**

This is a temporary procedure to provide oxygenation in the presence of upper airway obstruction. This procedure shall be performed after attempts at insertion of the endotracheal tube or supraglottic airway are unsuccessful and the airway cannot be controlled. Use of a jet-insufflator is required for ventilation through a needle cricothyrotomy and delivers a large volume of oxygen under high pressure.

**Equipment:**

- Large bore catheter (12-14 gauge over-the-needle)
- Alcohol preps
- 5 ml or 10 ml syringe
- Adhesive tape
- Jet Insufflator
- Oxygen source

**Procedure:**

1. Ensure that the patient is supine, and that the cricothyroid membrane has been identified. If a cervical spine injury is suspected use in-line stabilization.

2. Stabilize the larynx using the thumb and middle finger of one gloved hand.

3. With the other gloved hand, palpate the small depression below the thyroid cartilage and slide the index finger down to locate the cricothyroid membrane.

4. Insert the needle of the syringe at a downward angle (45-60 degree) towards the patient’s carina, while aspirating air with the syringe during insertion. (Air entering the syringe will be the indicator that the needle has entered the trachea).

5. Remove the syringe and needle while advancing the catheter.

6. Secure the catheter in place with adhesive tape.

7. Connect the Jet Insufflator to the catheter and begin to ventilate by pressing in on the colored (gray) plunger. Once the chest begins to rise, release the plunger to ensure adequate exhalation.

8. The paramedic should deliver twenty (20) breaths per minute and continue to monitor ventilatory support by assessing adequacy of ventilations and checking for complications, such as pneumothorax or inadequate chest deflation.
**APPENDIX 21**

**KING AIRWAY**

**Indications:** The Pharyngo-Esophageal King Airway Device is a latex-free airway device that may be used on the **Adult or Pediatric** patient in **CARDIAC ARREST** or **RESPITATORY ARREST** without a gag reflex, if intubation is not successful or a difficult airway is anticipated based on assessment of the patient’s anatomy. The device comes in multiple sizes, each of which is to be carried, and choice is made based on patient height parameters, as indicated below.

**Description:** Similar to the Combi tube, the King Airway utilizes two (2) balloons to isolate the hypopharynx and laryngeal inlet. The ventilation then passes through the outlets at the distal end into the trachea. The King Airway is not a definitive airway as the tube does not pass below the vocal cords. Features include: a curved tube with a 15 mm standard ventilation circuit connector; and ventilation ports between the proximal inflatable cuff (seals the oropharynx) and distal inflatable cuff (seals the esophagus).

<table>
<thead>
<tr>
<th>Size</th>
<th>2</th>
<th>2.5</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connector color</strong></td>
<td>Green</td>
<td>Orange</td>
<td>Yellow</td>
<td>Red</td>
<td>Purple</td>
</tr>
<tr>
<td><strong>Patient size</strong></td>
<td>35-45 in</td>
<td>42-51 in</td>
<td>4-5 feet</td>
<td>5-6 feet</td>
<td>&gt;6 feet</td>
</tr>
<tr>
<td><strong>Cuff volume</strong></td>
<td>25-35 mL</td>
<td>30-40 mL</td>
<td>45-60mL</td>
<td>60-80 mL</td>
<td>70-90 mL</td>
</tr>
</tbody>
</table>

**Contraindications:**

- Responsive patients with an intact gag reflex;
- Patients with known esophageal disease, i.e. esophageal varices; or
- Patients known or suspected to have ingested caustic substances.

**NOTE:** Medications cannot be administered through the King Airway.

**Instructions for use:**

- Choose appropriate size based on patient’s height.
- Test cuffs by inflating to recommended volume of air and deflate cuffs completely before attempting to insert.
- Generously lubricate tube using a water soluble lubricant.
- Pre-oxygenate patient with 100% O2.
- Have suction available.

**Insertion:**

1. Position the head in a slightly sniffing position, unless spinal injury is known or suspected, then maintain cervical alignment and keep the head in a neutral position.
2. Insert King, rotated 45-90 degrees laterally, into mouth.
3. Gently advance the tube rotate tube to midline.
4. Advance tube until base of connector aligns with teeth or gums.
5. Inflate cuffs with minimum volume necessary to seal the airway according to tube size.
6. Attach to resuscitator bag and ventilate using 100% O2 source.

Continued.
APPENDIX 21 – Continued.

KING AIRWAY

7. Assure chest rise and fall. Auscultate breath sounds.
8. Secure tube, using a commercially approved device, noting depth of tube placement.

Notes:

• Once in the hospital, the King Airway may continue to be used to ventilate a patient similar to an endotracheal tube. You can ventilate using a bag-valve or ventilator utilizing a standard connector and utilize adjuncts such as end-tidal carbon dioxide monitoring.
• As with an endotracheal tube, adequacy of ventilation should be based on multiple criteria such as adequate chest rise, auscultation of breath sounds, wave form capnography, and/or adequate oxygenation.
• The esophageal balloon will prevent gastric decompression, so conversion to an endotracheal tube would be needed to achieve this task.
• The King Airway may be left in place for several hours, until more optimal airway management can be achieved.
APPENDIX 22

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

An increasing number of individuals are discharged home implanted with a left ventricular assist device or left ventricular assist system (LVAD / LVAS) to sustain life while either waiting for a heart transplant, treatment for congestive heart failure, or as destination therapy. The most common device being used in our community is the HeartMate II left ventricular assist system. In pulsatile flow VAD patients with a HeartMate 3© centrifugal device, patients may have a palpable pulse (pulse is generally set to 30 BPM) in the setting of a normally functioning device, yet may not have a readily measurable blood pressure. This appendix shall provide guidance to the EMS provider when encountering a patient with such device regardless of whether the emergency is due to the device or not.

An LVAD / LVAS is a surgically implanted, battery-powered pump that helps the left ventricle pump adequate amounts of blood to the body. The LVAD / LVAS is implanted in the upper abdomen and connected to a power supply located outside the body. Blood is sent through a tube in the left ventricle into the LVAD / LVAS, which pumps the blood through another tube into the aorta and throughout the body. An LVAD / LVAS can be implanted in people who are candidates for a heart transplant as a "bridge to transplant." Some patients may experience improved heart function while the LVAD / LVAS is in place, which may make the transplant unnecessary. In patients who are ineligible for a heart transplant, the LVAD can be a "destination therapy," that is, the LVAD / LVAS is implanted permanently.

A patient may request emergency medical services for a problem that may or may not be related to the device, or cardiac in nature. The patient and family are likely to be very well trained in responding to emergencies related to the device. Refer to the expertise of the patient and family when possible. This material is not a substitute for additional education from appropriately trained individuals. Ascertain, and make note of: pump model; installing institution; and institution VAD coordinator phone number from a tag located on the pocket controller. Patients may also have a medical bracelet, necklace, or wallet card with this information.

Warnings and Precautions:

- Patient may not have a palpable pulse or measurable blood pressure even when the pump is providing adequate circulation.
- An LVAD / LVAS patient’s ECG heart rate will differ from the pulse rate since the LVAD / LVAS is not synchronized with the native heart rate.
- LVAD / LVAS patients should be assessed for signs of circulation as an indication of adequate perfusion (capillary refill, skin color, warmth).
- Check with family for DNR or MOLST instructions.
- The use of automated blood pressure monitoring devices may not yield accurate data. Manual auscultation with a Doppler (if available) to assess blood pressure is recommended.
- Keep the Power Module (PM) / Power Base Unit (PBU) away from water. If the PM / PBU comes in contact with water, the pump may stop, or the patient may receive a serious electrical shock.
- Connect the device to a properly tested, grounded and dedicated AC outlet when necessary. Do not use an adapter for an ungrounded wall outlet or power strip.

Continued.
APPENDIX 22 – Continued.

- Do not connect to an outlet controlled by a wall switch.
- In the event that the LVAD / LVAS stops operating, attempt to restore pump function immediately. In the event that the LVAD / LVAS stops operating and blood is stagnant in the pump for more than a few minutes, there is risk for stroke or thromboembolism.

LEFT VENTRICULAR ASSIST DEVICE (LVAD)

- Disconnecting both System Controller power leads at the same time will result in a loss of pump function. One System Controller power lead must be connected to a power source at all times.
- Disconnecting the percutaneous (skin) lead from the Controller System will result in loss of pump function. The System controller must be reconnected as quickly as possible to resume pump function.
- Do not force connections. You can break a pin which will interfere with proper functioning of the device.
- At least one (1) set of fully-charged spare batteries and back System Controller should remain with the patient at all times.
- Do not disconnect controller from patient unless instructed by Medical Control.

Handling Emergencies Related to the LVAD / LVAS:

An emergency condition exists whenever the device is potentially or actually unable to pump an adequate amount of blood. These conditions are signified by a HAZARD ALARM symbol and CONTINUOUS AUDIO TONE. Always defer to the patient and family if the System Controller needs to be replaced or any other emergency involving the device. Contact Medical Control if family or patient is unable to assist.

**There is no back up pump.** In the event that LVAD / LVAS stops operating, all attempts must be made to restore function immediately by:

- Checking the percutaneous lead connection to the System Controller;
- Switch power source; and/or
- Replacing the System Controller.

Emergency Scenarios

- Assess airway and breathing. Treat airway obstruction or respiratory distress per protocol. Treat medical or traumatic conditions per protocol;
- Assess circulation;
- Auscultate (listen with a stethoscope) over the precordial / epigastric (heart / upper stomach) area for a motorized “hum” and simultaneously visualize the controller for a green light or lit screen;
- Assess perfusion based on mental status, capillary refill, and skin color;
- In continuous flow VAD patients (HeartMate II©, HeartWare©, or axial flow device), the absence of a palpable pulse is normal even in the setting of a normally functioning device. Patients may not have a readily measurable blood pressure.
- In pulsatile flow VAD patients with a HeartMate 3© centrifugal device, patients may have a palpable pulse (pulse is generally set to 30 BPM) in the setting of a normally functioning device, yet may not have a readily measurable blood pressure;
- Perform CPR only when there are no signs of flow or perfusion (the person is unresponsive, pulseless, and there is no evidence of the pump functioning [eg: no motor “hum”]);

Continued.
APPENDIX 22 – Continued.

- Assess pump function;
- Ascertain, and make note of: pump model; installing institution; and institution VAD coordinator phone number from a tag located on the pocket controller. Patients may also have a medical bracelet, necklace, or wallet card with this information;
- Perform a secondary assessment and treat per appropriate protocol;
- **Notify the receiving facility promptly and consider early consultation with the VAD coordinator or medical control, regardless of the patient’s complaint;**
- Assure that patient has the power unit, extra batteries, and backup controller for transport; and
- A trained support member should remain with patient.

A. LVAD / LVAS Failure – Continuous Alarm (Red Heart) – LVAD / LVAS may have stopped:

- The patient's own heart is intact and *may* provide minimal cardiac output while the LVAD / LVAS is stopped.
- ALS providers should place the patient on a cardiac monitor and fully assess the patient. Medical Control should be contacted for treatment orders and to assist with a destination decision.

When an emergency condition exists, unless the patient is in extremis, the patient should be transported to Stony Brook University Hospital (LVAD Center) if it is no more than twenty (20) minutes past the closest hospital. Medical Control may be contacted for assistance with a transportation destination decision.

**KEY POINTS/CONSIDERATIONS**

- Community patients with VADs are typically entirely mobile and independent.
- Trained support members include family and caregivers who have extensive knowledge of the device, its function, and its battery units. They may act as a resource to the EMS provider when caring for a VAD patient.
- One set of fully charged batteries provides 8-10 hours of power.
- If the battery or power is low, the batteries need to be replaced immediately.
- Assist with the replacement of batteries if directed by patient / caregiver.
- **Never disconnect both batteries at once as this can cause complete loss of VAD power.**
- Keep the device components dry.
- The most common complication in VAD patients is infection. VAD patients are susceptible to systemic illness, sepsis, and septic shock due to their abdominal driveline as a conduit of infection.
- Patients with a VAD are highly preload dependent and afterload sensitive. Low flow alarms are frequently due to MAP >90 mmHg. The devices are sensitive to alterations in volume status and careful volume resuscitation is often necessary.
- VAD patients are heavily anticoagulated and susceptible to bleeding complications.
- Patients may have VF / VT and be asymptomatic.

**Controller Device Normal Values:**

<table>
<thead>
<tr>
<th></th>
<th>Heartmate II©</th>
<th>Heartmate 3©</th>
<th>HVAD©</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed</td>
<td>8,000-10,000 RPM</td>
<td>5,000-6,000 RPM</td>
<td>2400-3200 RPM</td>
</tr>
<tr>
<td>Power</td>
<td>4-7 watts</td>
<td>3-7 watts</td>
<td>3-6 watts</td>
</tr>
<tr>
<td>Flow</td>
<td>4-8 L/min</td>
<td>3-6 L/min</td>
<td>3-6 L/min</td>
</tr>
<tr>
<td>Pulsatility Index (PI)</td>
<td>4-6</td>
<td>1-4</td>
<td>NA</td>
</tr>
</tbody>
</table>
APPENDIX 23

MUCOSAL ATOMIZATION DEVICE (MAD) / NASAL ADMINISTRATION DEVICES

Indications:

- For administration of specific medications if IV is unable to be established.

Contraindications:

- Epistaxis
- Nasal trauma
- Septal abnormality
- Nasal congestion
- Mucous discharge
- Destruction of nasal mucosa from surgery or past cocaine abuse

Procedure:

1. Inspect nostrils for mucus, blood or other problems that might inhibit absorption.
2. Fill syringe with appropriate dose.
3. Expel air from syringe.
4. Attach the MAD device via luer lock.
5. Briskly compress the syringe plunger to deliver half of the medication dose into the nostril.
6. Move the device over to the opposite nostril and administer the remaining medication dose.

Medications that may be administered via IN route:

Narcan
Midazolam
Glucagon
Fentanyl
Finding ordered dose:

\[ x = \frac{(\text{volume on hand}) \times (\text{ordered dose})}{(\text{concentration on hand})} \]

Finding units per kilogram:

\[ x = \frac{(\text{ordered dose}) \times (\text{weight [kg]})}{1 \text{ kg}} \]

Finding the concentration of a solution:

\[ x = \frac{\text{solute (grams or milligrams of drug)}}{\text{solvent (liters or milliliters of volume)}} \]

Calculating an IV drip:

\[ x = \frac{\text{IV bag volume}}{\text{Amount of drug in bag}} \times \frac{\text{unit ordered}}{1 \text{ min.}} \times \frac{\text{administration set (gtt)}}{1 \text{ mL}} \]

Milliliters per hour to drops per minute:

\[ x = \frac{\text{order amount (mL)}}{\text{order time (min.)}} \times \frac{\text{administration set (gtt)}}{1 \text{ mL}} \]
APPENDIX 25

MEDEVAC INTERFACE

Medevac Request Procedure:

The EMS provider should make every effort to request medevac services from the Suffolk County Police Aviation Section through an on-scene police unit. If there is no PD unit on-scene, and only if there is no PD unit on-scene, you should request through Suffolk County Fire-Rescue Communications. You should be prepared to provide the following information:

- The agency requesting;
- The location of the potential landing zone;
- The injury or illness; and the
- Number of victims.

<table>
<thead>
<tr>
<th>In certain instances, the Medevac may be placed on “stand-by” by dispatch prior to your arrival. Providers should remember to confirm as needed, or cancel the request, as soon as feasible after arrival on-scene and assessment of the scene and the patient.</th>
</tr>
</thead>
</table>

- Selecting an appropriate landing zone should be a coordinated effort between both rescue and police personnel. **Pilots will have the final authority on the landing zone.**

- The landing zone should be at a minimum of 100 x 100 ft. in a **daytime landing** and 150 x 150 ft. in a **nighttime landing, or during windy conditions.**

- The landing zone should not contain snow, ice, sand, dirt, or other loose debris. Report any such conditions to the on-scene sector car.

- Notify the pilot of any obstacles, such as overhead wires, light poles, trees, etc.

- Warning lights may be placed at the corners of the landing zones. Avoid traffic cones, or other objects that are likely to be blown away by rotor wash. Headlights, spotlights, or other warning lights should **never be pointed directly at the aircraft, as this impacts the pilot’s vision.**

- Secure pedestrian or vehicle traffic from the landing zone (200 ft. minimum). Landing zone should be at least **100 feet** from rescue operations.

Rescue Personnel Procedures:

- If the ambulance is already at the landing zone when the helicopter arrives, leave the patient in the ambulance until the flight medic has examined the patient, and rendered any additional pre-flight care that is necessary prior to flight. The EMS provider caring for the patient should be prepared to give a brief patient report to the flight medic.

- The patient should be secured on a backboard with straps. Any patient care devices, such as endotracheal tubes, IVs, splints, sheets, blankets, etc. **must** be secured prior to approaching the aircraft.

Continued.
MEDEVAC INTERFACE

- Rescue and EMS personnel should be prepared to assist with the transfer of the patient into the aircraft, MINDFUL OF ALL SAFETY PRECAUTIONS.

Landing Zone Safety Pointers:

- Never approach the aircraft until advised to do so by the flight crew;

- Approach and depart only from the front of the aircraft, in view of the pilot. *Never approach from the rear*;

- Never approach from an uphill slope;

- Never shine any lights directly at the aircraft or use any flash bulbs during landing and lift off procedures;

- Secure all blankets and patient care equipment to the stretcher;

- Loading and unloading of patient and equipment will be under the direction of the flight crew;

- *The flight crew will open and close the doors of the aircraft.*
**APPENDIX 26**

**MEDICATION DRIP CHART – DOPAMINE**

All Dopamine Infusions must be run on a rate-limiting device (dial-a-flow)

200mg in 250cc

Table displays ml/hr.

<table>
<thead>
<tr>
<th>WEIGHT LBS/KG</th>
<th>10 mcg/kg/min</th>
<th>15 mcg/kg/min</th>
<th>20 mcg/kg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>79lbs/36kg</td>
<td>28</td>
<td>40</td>
<td>54</td>
</tr>
<tr>
<td>84lbs/38kg</td>
<td>28</td>
<td>42</td>
<td>56</td>
</tr>
<tr>
<td>88lbs/40kg</td>
<td>30</td>
<td>44</td>
<td>60</td>
</tr>
<tr>
<td>99lbs/45kg</td>
<td>34</td>
<td>48</td>
<td>68</td>
</tr>
<tr>
<td>110lbs/50kg</td>
<td>38</td>
<td>56</td>
<td>76</td>
</tr>
<tr>
<td>121lbs/55kg</td>
<td>42</td>
<td>62</td>
<td>82</td>
</tr>
<tr>
<td>132lbs/60kg</td>
<td>44</td>
<td>68</td>
<td>90</td>
</tr>
<tr>
<td>143lbs/65kg</td>
<td>48</td>
<td>74</td>
<td>98</td>
</tr>
<tr>
<td>154lbs/70kg</td>
<td>52</td>
<td>78</td>
<td>104</td>
</tr>
<tr>
<td>165lbs/75kg</td>
<td>56</td>
<td>84</td>
<td>112</td>
</tr>
<tr>
<td>176lbs/80kg</td>
<td>60</td>
<td>90</td>
<td>120</td>
</tr>
<tr>
<td>187lbs/85kg</td>
<td>64</td>
<td>96</td>
<td>128</td>
</tr>
<tr>
<td>198lbs/90kg</td>
<td>68</td>
<td>102</td>
<td>136</td>
</tr>
<tr>
<td>209lbs/95kg</td>
<td>71</td>
<td>106</td>
<td>142</td>
</tr>
<tr>
<td>220lbs/100kg</td>
<td>74</td>
<td>112</td>
<td>148</td>
</tr>
<tr>
<td>231lbs/105kg</td>
<td>79</td>
<td>118</td>
<td>158</td>
</tr>
<tr>
<td>242lbs/110kg</td>
<td>81</td>
<td>124</td>
<td>162</td>
</tr>
<tr>
<td>253lbs/115kg</td>
<td>86</td>
<td>130</td>
<td>172</td>
</tr>
<tr>
<td>264lbs/120kg</td>
<td>90</td>
<td>136</td>
<td>180</td>
</tr>
<tr>
<td>275lbs/125kg</td>
<td>94</td>
<td>140</td>
<td>188</td>
</tr>
<tr>
<td>286lbs/130kg</td>
<td>98</td>
<td>146</td>
<td>196</td>
</tr>
<tr>
<td>292lbs/135kg</td>
<td>101</td>
<td>152</td>
<td>202</td>
</tr>
<tr>
<td>308lbs/140kg</td>
<td>105</td>
<td>158</td>
<td>210</td>
</tr>
<tr>
<td>319lbs/145kg</td>
<td>108</td>
<td>163</td>
<td>216</td>
</tr>
</tbody>
</table>
APPENDIX 27

MEDICATION DRIP CHART – EPINEPHRINE

1mg of 1:10,000 Epinephrine in 250 cc of N.S. = (4 mcg/ml)
All Epinephrine Infusions must be run on a rate-limiting device (dial-a-flow)

<table>
<thead>
<tr>
<th>Flow Rate (mcg/min)</th>
<th>Rate Limiting (ml/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mcg/min</td>
<td>30 ml/hr.</td>
</tr>
<tr>
<td>3 mcg/min</td>
<td>45 ml/hr.</td>
</tr>
<tr>
<td>4 mcg/min</td>
<td>60 ml/hr.</td>
</tr>
<tr>
<td>5 mcg/min</td>
<td>75 ml/hr.</td>
</tr>
<tr>
<td>6 mcg/min</td>
<td>90 ml/hr.</td>
</tr>
<tr>
<td>7 mcg/min</td>
<td>105 ml/hr.</td>
</tr>
<tr>
<td>8 mcg/min</td>
<td>120 ml/hr.</td>
</tr>
<tr>
<td>9 mcg/min</td>
<td>135 ml/hr.</td>
</tr>
<tr>
<td>10 mcg/min</td>
<td>150 ml/hr.</td>
</tr>
</tbody>
</table>

MEDICATION DRIP CHART – NOREPINEPHRINE

4 mg Norepinephrine (Levophed™) in 1,000 mL of Normal Saline
400 mcg / 100mL = 4 mcg/mL

All Norepinephrine Infusions must be run on a rate-limiting device (dial-a-flow).

<table>
<thead>
<tr>
<th>Flow Rate (mcg/minute)</th>
<th>Rate Limiting (ml/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 mcg/minute</td>
<td>75 ml/hr.</td>
</tr>
<tr>
<td>10 mcg/minute</td>
<td>150 ml/hr.</td>
</tr>
<tr>
<td>15 mcg/minute</td>
<td>225 ml/hr.</td>
</tr>
<tr>
<td>20 mcg/minute</td>
<td>300 ml/hr. (OPEN)</td>
</tr>
</tbody>
</table>
APPENDIX 28  
NEEDLE DECOMPRESSION

Indication:

To emergently treat a patient with a life threatening tension pneumothorax.

Pathophysiology of a Tension Pneumothorax:

Tension occurs due to a disruption of the visceral and parietal pleura. A one-way valve is formed during inspiration and pressure rises causing a lung to collapse on the effected side. The mediastinum begins to shift towards the side of the unaffected side due to an increase pressure build up in the pleural space. Cardiac output begins to decrease as venous return is inhibited. Remember some patients may require a second decompression and the chest wall may be thicker than three (3) inches deep.

Etiology:

- Blunt or penetrating trauma
- Barotrauma secondary to positive pressure ventilation.
- Chest compressions
- Conversion of a spontaneous pneumothorax

Signs and Symptoms:

- Severe dyspnea / tachypnea
- Absent or diminished breath sounds on the affected side
- Tracheal deviation
- Hyperresonance
- Chest pain
- Decreased level of consciousness
- Hemodynamic compromise (tachycardia, hypotension)

Procedure:

1. Administer 100% oxygen, consider assisting ventilations with BVM.
2. Locate anatomic landmark
3. (Angle of Louis) and the 2nd intercostals space – above the 3rd rib, midclavicular.
4. Prepare the area that is going to be punctured by swabbing with an alcohol wipe.
5. Use the fingers of the non-dominant hand to stretch the skin.
6. Insert a large-bore appropriate length over-the-needle catheter, into the 2nd intercostal space, just above the 3rd rib.
7. Insert needle and catheter perpendicular to the chest wall.
8. Once the needle is in the pleural space, listen for the hissing sound of escaping air.
9. Remove the needle, (be careful not to kink the catheter) and secure the catheter in place with tape.
10. Auscultate for bi-lateral lung sounds.
In NY State, nerve agent antidote may only be used under the direction of a physician. In multi/mass casualty situations, IT IS NOT necessary to get a separate order for each specific patient. Therefore, when there are multiple patients exhibiting similar casualty pattern, Medical Control must be contacted as soon as possible for a physician order to deploy Mark I or DuoDote Kits.

This protocol is for use with ADULT patients (> 15 years of age / > 36 kg. body weight) who exhibit signs/symptoms of a nerve agent or organophosphate poisoning and is to be used under the direction of Medical Control or on-scene EMS Field Physician by EMS providers who have been appropriately trained and have the necessary personal protective equipment to operate in chemically contaminated environment. In case of accidental exposure to a nerve agent or organophosphate, individuals should not administer Mark I Kits / DuoDote to themselves. Contact Medical Control ASAP for incident-specific orders if patients or crew members exhibits signs/symptoms of exposure or field detection equipment identifies a nerve agent or organophosphate-based vapor or liquid.

NOTE: Medical Control should be contacted ASAP for age / weight specific dosing for PEDIATRIC PATIENTS (< age 15 / < 36 kg. body weight).

THIS MEDICAL PROTOCOL IS TO BE USED AFTER DECONTAMINATION HAS BEEN PERFORMED AND THE APPROPRIATE LEVEL OF PERSONAL PROTECTIVE EQUIPMENT HAS BEEN IDENTIFIED.

- IDENTIFY SIGNS / SYMPTOMS OF ORGANOPHOSPHATE EXPOSURE
  - Salivation
  - Lacrimation
  - Urination
  - Defecation
  - Gastrointestinal
  - Emesis
  - Miosis & Muscle Contractions
  - Altered Mental Status
  - Seizure

**IF ANTIDOTE IS INDICATED – CONTACT SUFFOLK COUNTY MEDICAL CONTROL AT 631-689-1430.**

- ESTABLISH TRIAGE – S.T.A.R.T. Method. If NOT BREATHING / NOT RESPONSIVE, and multiple patients present, apply Noxious Stimuli Triage (NST)
- If No Response to NST - Tag Expectant and Move to Next Patient

Continued.
NERVE AGENT / ORGANOPHOSPHATE POISONING PROTOCOL
FOR BASIC & ADVANCED LIFE SUPPORT PROVIDERS
FOR USE IN MULTI-CASUALTY / MASS CASUALTY SITUATIONS

ASYMPTOMATIC PATIENTS

- Monitor for signs / symptoms q 10-15 minutes and re-triage accordingly

FOR MILD / MODERATE EXPOSURE

(runny nose, increased oral secretions, fatigue, pinpoint pupils, dim vision, sweating, chest tightness, dyspnea, nausea)

- Provide airway support (suction, high-flow oxygen) to ensure patient is not hypoxic
- Administer one (1) Mark I Kit/DuoDote. *Atropine must be given first.*
- Reassess patient q 5 minutes – if secretions still present:
- Administer a second Mark I Kit/DuoDote. *Atropine must be given first.*
- Reassess patient q 5 minutes – if secretions still present:
- Administer a third Mark I Kit/DuoDote. *Atropine must be given first.*
  (maximum individual dose = three (3) Mark I kits)

FOR SEVERE EXPOSURE

(all of the above plus severe dyspnea, loss of bowel/bladder function, seizure, paralysis)

- Provide airway support (suction, high-flow oxygen) to ensure patient is not hypoxic.
- Administer three (3) Mark I Kits / DuoDote. *If Mark I used Atropine must be given first. No more than three (3) doses of 2-PAM (1.8g) are to be administered in the field.*
- Establish large bore IV and give fluid bolus 250-500 cc Normal Saline
- Reassess patient q 5 minutes – if secretions still present: Atropine 2 mg. IV/IM may be repeated every five (5) minutes until secretions dry or a maximum total dose of 20 mg. is administered
- Consider Diazepam or Midazolam IVP, if available, as ordered by Medical Control or EMS Field Physician.
APPENDIX 30

“NO PATIENT FOUND” POLICY

PURPOSE:

The purpose of this policy is to assist EMS personnel with clear guidance for managing situations when an individual for whom an EMS provider has been dispatched to, responds and encounters an individual, who denies injury/illness and has no apparent injury/illness when assessed by the EMS provider. The addition of the term “Patient Encounter” refers to visual contact with an individual during an EMS response, and the term “No Patient Found” replaces the term “Unfounded,” thereby eliminating confusion.

POLICY:

1. A “Patient” is any person who is injured or ill or in need of treatment by medical personnel. This includes any person that has activated the EMS system OR for whom the EMS system has been activated for an ambulance response, OR any person that presents themselves to EMS personnel with a medically related complaint such that it could be reasonably inferred that the person is seeking or in need of medical attention. Appropriate paperwork will be completed, including a Prehospital Care Report (PCR), or electronic equivalent.

2. A “No Patient Found” is for use in the following situations:
   - No physical person found on EMS arrival after an adequate investigation of the surrounding area; or
   - Unintentional / accidental activation of an emergency medical alert system; or
   - After an adequate investigation it is reasonably certain that the person or persons on-scene did not request an ambulance, and the person:
     - Denies any injury / illness complaints;
     - Does not appearing to have an actual or potential injury / illness;
     - Is capable of making competent decisions regarding refusal of care;
     - Does not have a mechanism of injury is present; and
     - Where EMS personnel on scene ascertain this information having not performed anything other than a visual assessment.
   - After following the criteria of “No Patient Found” the highest ranking EMT on-scene must thoroughly document the circumstances of the alarm on the PCR. The PCR may be completed with a disposition code of 009 “No Patient Found.”

3. Any individual who is given any level of assessment or examination beyond a visual observation, such as a physical assessment / examination, vital signs, treatment or any diagnostic assessment constitutes patient care and the individual is considered a “Patient” requiring appropriate disposition.

4. Anytime the EMS provider on-scene feels that an individual has actual OR potential for an injury / illness, the individual becomes a “Patient” and the EMS provider must follow appropriate patient treatment protocol / RMA policy.

5. Lift assist is a situation that has a high potential for injury, both from the fall and from the conditions that may have precipitated the fall. An individual requiring a lift assist is considered a “Patient” and the EMS provider must follow appropriate patient treatment protocol / RMA policy.
APPENDIX 31

NON-INVASIVE CO-OXIMETRY AT CARBON MONOXIDE EMERGENCIES

Carbon Monoxide (CO) is a common by-product of incomplete combustion, present whenever fossil fuels are burned. CO is a colorless, odorless, tasteless, non-irritating gas, and is a SYSTEMIC ASPHYXIANT that interferes with oxygen transportation throughout body and interferes with oxygen utilization at the cellular level.

Because you can’t see, taste, smell, or sense CO, the gas can cause irreparable harm or death before you know it is even present in your environment. CO has a Vapor Density of 0.97, which means that its weight, relative to the ambient air, is slightly less than/just about equal to that of the ambient air, which has a value of 1.0. That means that CO will not float, and seek out higher areas, nor will it sink, and collect in low lying areas. Rather, CO will be carried throughout the structure, following natural air currents and flow patterns. Potential sources that should be sought out at an alarm include, but are not limited to:

- Blocked Chimney Opening
- Clogged Chimney
- Portable Heaters / Space Heaters
- Gas Clothes Dryers
- Wood-burning Fireplace / Stove
- Gas Stoves & Ovens
- Gas Heaters (Forced Air/Hot Water)
- Corroded or Disconnected Water Heater Vent Pipes
- Leaking Chimney Pipe or Flue
- Auto Exhaust in Garage
- Yard Equipment Exhaust in Garage
- Using Gas Grills in Enclosed Spaces
- Using gasoline generators in / around buildings
- Fire Scenes: Refer to Emergency Incident Rehab Policy for emergency responders operating at fire scenes.

While fire department or hazardous materials responders conduct atmospheric monitoring activities, EMS personnel should be seeking out occupants to ensure that individuals are not patients, with the following in mind:

Everyone is at risk for CO-related illness or death; some individuals are more vulnerable, including: unborn babies of pregnant females**; infants; children; the elderly; individuals with history of heart or lung disease; and individuals under the influence of alcohol or drugs. Severity of symptoms influenced by four (4) main factors: concentration of CO in the environment; duration of exposure; activity; and rate/work of breathing.

In addition, the dose/rate/weight relationship directly proportional to progression of signs & symptoms of exposure, therefore, signs & symptoms play a far greater role in identifying exposed people that a SpCO value. REMEMBER – The use of pulse oximetry (SpO2) in individuals exposed to CO will produce false high SpO2 readings.

Continued.
APPENDIX 31 – Continued.

NON-INVASIVE CO-OXIMETRY AT CARBON MONOXIDE EMERGENCIES

At low levels, symptoms can include: headache/impaired judgment; dizziness / confusion / loss of memory / AMS; weakness / fatigue / sleepiness; visual disturbances; vertigo / tinnitus; nausea, vomiting; chest tightness; dyspnea; and at higher levels can progress rapidly through these signs & symptoms to loss of consciousness; seizure; coma; and death.

AT ANY TIME THAT AN INDIVIDUAL EXPRESSES ANY CHIEF COMPLAINT, OR HAS ABNORMAL VITAL SIGNS, HE/SHE BECOMES A PATIENT AND ALL APPLICABLE POLICIES AND PROTOCOLS MUST BE FOLLOWED.

EXPOSURE TO CO IS A HIGH RISK CRITERIA, REQUIRING MEDICAL CONTROL CONTACT, INCLUDING CASES WHERE SpCO MEASUREMENT IS TAKEN AND WHEN THERE ARE ANY LEVELS OF CO IN THE ATMOSPHERE ABOVE NORMAL LEVELS.

Non-invasive CO-oximetry may be used by any EMS provider trained and authorized in its use. If SpCO greater than or equal to (≥) 12% – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

If SpCO less than (<) 12% BUT signs of CO exposure are present – TREAT with 100% oxygen and TRANSPORT to the closest emergency department.

ANY PATIENT WITH ASSOCIATED BURNS SHALL BE TRANSPORTED IN ACCORDANCE WITH THE BURN DESTINATION DECISION POLICY REGARDLESS OF THEIR CARBON MONOXIDE LEVEL.

If SpCO less than (<) 12% and NO SIGNS OF CO EXPOSURE AND NORMAL VITAL SIGNS AND ATMOSPHERIC MONITORING LEVELS ARE WITHIN NORMAL LIMITS, no further medical monitoring is needed. Advise individuals to pay attention for the appearance of the signs & symptoms noted above and to seek medical attention if signs & symptoms develop. An emergency incident log must be established to document history, physical exam, SpCO reading and disposition. Per the High Risk RMA Criteria, Medical Control must be contacted in situations where there is atmospheric monitoring indicating elevated levels of CO in the atmosphere, and/or any non-invasive CO-oximetry reading greater than (>12) regardless of the presence or absence of signs/symptoms.

WHEN IN DOUBT CONTACT MEDICAL CONTROL FOR PHYSICIAN CONSULTATION.

The following reference table provides expected signs or symptoms that can be predicted based on percentage of CO detected in the blood. This is only a guideline, based on a variety of variables that the EMS provider may not be aware of.

Patients should be transported to the closest appropriate emergency department, NOT directly to a hospital with a hyperbaric chamber, unless that hospital is in your catchment area. Hyperbaric therapy for patients with CO exposure is ordered based on abnormal neurological examination and laboratory confirmed blood values (>25% CoHb). In addition, hyperbaric chambers may not be readily available upon your arrival and 100% oxygen via non-rebreather facemask changes blood saturation.

Continued.
### SpCO Expected signs / symptoms

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3%</td>
<td>Normal non-smoker</td>
</tr>
<tr>
<td>4-10%</td>
<td>Mild headache, shortness of breath with exertion</td>
</tr>
<tr>
<td>10-20%</td>
<td>Moderate headache, fatigue, shortness of breath</td>
</tr>
<tr>
<td>20-30%</td>
<td>Severe headache, blurred vision, nausea, dizzy, irritable, cardiac ischemia</td>
</tr>
<tr>
<td>30-40%</td>
<td>Muscle weakness, vomiting, vertigo, confusion</td>
</tr>
<tr>
<td>40-50%</td>
<td>Arrhythmias, syncope</td>
</tr>
<tr>
<td>50-60%</td>
<td>Seizures, shock, apnea, coma</td>
</tr>
</tbody>
</table>

**NOTE:** Medical Control MUST BE CONTACTED for any pregnant female patient exposed or potentially exposed to CO, regardless of absence of signs / symptoms, OR an SpCO reading of 0% or higher.
APPENDIX 32

ORAL (PO) BODY TEMPERATURE MEASUREMENT PROTOCOL

The physical and mental demands associated with firefighting and other emergency operations in hazardous situations, coupled with environmental dangers of extreme heat and humidity or extreme cold create conditions that may have an adverse impact on the safety and health of emergency response personnel. Adequate rest and rehydration activities and routine medical monitoring of emergency response personnel have become commonplace in the out-of-hospital setting. The Federal Emergency Management Agency and the United States Fire Administration have issued Emergency Incident Rehabilitation SOPs that designate a Rehabilitation Sector (Rehab) as a sector within the EMS operations component of the Incident Command System (ICS).

Routine medical monitoring and evaluation in the Rehab Sector consists of the measurement of heart rate and oral body temperature (POBT) as primary vital signs associated with the assessment for medical problems that may result from working in extreme conditions. Firefighters, hazardous materials technicians and other emergency responders are routinely required to wear personal protective ensembles that inhibit the natural cooling process, thereby placing emergency responders at greater risk for succumbing to heat related emergencies. Obtaining an oral body temperature measurement is a skill that can be performed by any certified EMS provider when engaged in emergency incident rehabilitation activities at the scene of an incident.

This protocol is for the routine medical monitoring of otherwise healthy emergency response personnel and is not intended for use on patients who present to EMS with an acute onset illness or injury. Oral body temperature shall be obtained as part of the routine medical monitoring or medical evaluation of emergency response personnel engaged in activities requiring the use of personal protective equipment that inhibits the natural cooling process, placing emergency responders at greater risk for succumbing to heat related emergencies. Oral body temperature measurements are preferred over tympanic as POBT more closely reflects core body temperature, is less subject to false readings from ambient / radiant heat loss near the head, and more accurate as the tympanic membrane dissipates heat faster than core, leading to a false low reading.

- Follow the manufacturer’s recommendations regarding the application of a single-patient use thermometer. Oral temperature should be obtained as early in the rest phase as possible and in accordance with the FEMA / USFA Rehabilitation guidelines. The oral temperature measurement must be taken prior to the administration of fluids by mouth for rehydration.

- Follow the event recording and disposition guidelines of the FEMA / USFA Rehabilitation SOPs or your agency’s emergency incident rehabilitation plan. When performing Rehab as part of routine medical monitoring, a PCR IS NOT necessary. An Emergency Incident Rehab Log Sheet should be used to record all activity in the rehab sector and should be retained with the agency’s alarm records.

- An emergency responder becomes a patient when he / she verbalizes a chief complaint. When this occurs, all applicable policies and protocols should be adhered to. A PCR IS NOW REQUIRED.

Contraindication: This protocol does not allow for the routine use of oral body temperature measurement when dealing with patients who access emergency medical services personnel following sudden onset of illness or injury.
APPENDIX 33

PAIN ASSESSMENT SCALES

It is sometimes difficult to determine the effectiveness of treatment based upon minimally adverse signs and symptoms. Along with that, having a pain range divided into few parts (mild, moderate, severe) might be too broad to help the provider determine how aggressive they should be in further treatment. Both the Borg Scale and Wong-Baker Scale allow for a more precise measurement of the level of patient distress, which lets patients objectively convey what they are subjectively feeling. In addition, these scales are quite useful in purely determining trending, as would other vital signs.

BORG SCALE

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Nothing at all</td>
</tr>
<tr>
<td>0.5</td>
<td>Very, very slight (just noticeable)</td>
</tr>
<tr>
<td>1</td>
<td>Very slight</td>
</tr>
<tr>
<td>2</td>
<td>Slight</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
</tr>
<tr>
<td>4</td>
<td>Somewhat severe</td>
</tr>
<tr>
<td>5</td>
<td>Severe</td>
</tr>
<tr>
<td>6</td>
<td>...</td>
</tr>
<tr>
<td>7</td>
<td>Very severe</td>
</tr>
<tr>
<td>8</td>
<td>...</td>
</tr>
<tr>
<td>9</td>
<td>Very, very severe(almost maximal)</td>
</tr>
<tr>
<td>10</td>
<td>Maximal</td>
</tr>
</tbody>
</table>

WONG-BAKER SCALE – Faces that coincide with a number.

APPENDIX 34

PEDIATRIC GUIDELINES

The BROSELOW TAPE is required for use on all pediatric patients. The tape should be used to measure the pediatric patient to estimate the body weight and provides you with pertinent weight based pharmaceutical and procedural information. To use the tape, place the patient’s heel at the “Measure From This End” notation. Pull the tape taut and note the level of the head. The top of the patient’s head coincides with the appropriate color-coded section.

- ALL MEDICATIONS delivered via the ET tube should be diluted with 1-3 cc of NS for infants and with 3-5 cc of NS for toddlers, school aged children, and adolescents.

- ALL MEDICATIONS delivered via the IV/IO route should be followed by a 10-20 cc NS flush.

- IO ACCESS should only be attempted after two (2) unsuccessful IV attempts.

- IN ROUTE may be used for Midazolam in pediatric seizures, Narcan for pediatric opiate OD, Glucagon (double the dose that is listed per Broselow tape) and fentanyl for pediatric pain management.

- BAG VALVE MASKS should not have a “pop-off” value, or the “pop-off” valve, if present, should be disabled if adequate chest rise is not achieved.

Vital Sign Parameters for Pediatric Patients by Age Group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Respiratory Rate</th>
<th>Heart Rate</th>
<th>Systolic BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn (birth – 1 month)</td>
<td>30-60</td>
<td>100-160</td>
<td>**</td>
</tr>
<tr>
<td>Infant (1 month – 12 months)</td>
<td>25-40</td>
<td>100-160</td>
<td>&gt; 60**</td>
</tr>
<tr>
<td>Toddler (1 – 3 years)</td>
<td>25-30</td>
<td>90-140</td>
<td>&gt; 75**</td>
</tr>
<tr>
<td>Preschool (3 – 6 years)</td>
<td>20-25</td>
<td>80-140</td>
<td>&gt; 80</td>
</tr>
<tr>
<td>School Age (6 – 12 years)</td>
<td>18-25</td>
<td>70-120</td>
<td>&gt; 85</td>
</tr>
<tr>
<td>Adolescent (13 – 18 years)</td>
<td>12-20</td>
<td>60-110</td>
<td>&gt; 90</td>
</tr>
</tbody>
</table>

**In infants and children three (3) years and younger, the presence of a strong central pulse should be substituted for a blood pressure reading."
Follow BLS protocols on Newborn Delivery
Provide PPV at 40 bpm if ventilation is inadequate and HR <100
After 90 seconds, attach oxygen

If HR <60, chest compressions 120/min at 3:1 ratio
Compressions should be 1/3 to 1/2 chest depth

If heart rate continues to be < 60 despite compressions:
IV/IO
Epinephrine 0.01mg/kg (0.1 ml/kg of 1:10,000)

Consider ET

Continued.
<table>
<thead>
<tr>
<th>EYES</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not open eyes</td>
<td>Opens eyes in response to painful stimuli</td>
<td>Opens eyes in response to speech</td>
<td>Opens eyes spontaneously</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VERBAL</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No verbal response</td>
<td>Inconsolable, agitated</td>
<td>Inconsistently insensible, moaning</td>
<td>Cries but consolable, inappropriate interactions</td>
<td>Smiles, orients to sounds, follows objects, interacts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MOTOR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No motor response</td>
<td>Extension to pain (decerebrate response)</td>
<td>Abnormal flexion to pain for an infant (decorticate response)</td>
<td>Infant withdraws from pain</td>
<td>Infant withdraws from touch</td>
<td>Infant moves spontaneously or purposefully</td>
<td></td>
</tr>
</tbody>
</table>

**Best eye response: (E)**

4. Eyes opening spontaneously  
3. Eye opening to speech  
2. Eye opening to pain  
1. No eye opening or response

**Best verbal response: (V)**

5. Smiles, oriented to sounds, follows objects, interacts  
4. Cries but consolable, inappropriate interactions  
3. Inconsistently insensible, moaning  
2. Inconsolable, agitated  
1. No verbal response

**Best motor responses: (M)**

6. Infant moves spontaneously or purposefully  
5. Infant withdraws from touch  
4. Infant withdraws from pain  
3. Abnormal flexion to pain for an infant (decorticate response)  
2. Extension to pain (decerebrate response)  
1. No motor response

Any combined score of less than eight (< 8) represents a significant risk of mortality.
APPENDIX 35

POST INTUBATION MANAGEMENT WITHOUT RSI

This policy is designed for the patient who becomes awake and agitated post intubation and may be used by an EMT-CC or EMT-P that is not RSI credentialed, or part of an RSI-approved agency.

An EMT-CC or EMT-P who is credentialed as part of the RSI program and in an RSI-approved agency should refer back to the post intubation standing orders in the RSI protocol.

Standing orders for any patient who is intubated, following proper tube confirmation and the patient awakens:

EMT-CC:

- Midazolam 0.05-0.1 mg/kg IV/IO to a maximum single dose of 5 mg for sedation, if SBP is above 90 mm/Hg

AND/OR

- Fentanyl 1 mcg/kg IV/IO to a maximum single dose of 100 mcg for analgesia

- Contact Medical Control if desired analgesia is not obtained

EMT-P:

- Midazolam 0.05-0.1 mg/kg IV/IO to a maximum single dose of 5 mg. Midazolam can be repeated once, as needed, for additional sedation if SBP remains above (> 90 mm/Hg

AND / OR

- Fentanyl 1 mcg/kg IV/IO to a maximum single dose of 100 mcg

- Repeat Fentanyl 1 mcg/kg IV/IO as needed, for additional analgesia if SBP remains above (> 90 mm/Hg

AND / OR

- Ketamine 1-1.5 mg/kg IV/IO.

- Repeat Ketamine 1-1.5 mg/kg IV/IO, as needed, for additional analgesia and sedation if SBP remains above (> 90 mm/Hg

Contact Medical Control if desired analgesia is not obtained.
APPENDIX 36

PULSE OXIMETRY

Pulse oximetry is an adjunctive measurement that may be performed by any certified EMS provider. *At no time should oxygen be withheld from a patient in respiratory distress or when a treatment protocol requires the administration of oxygen.* Pulse Oximetry must be used in conjunction with ETCO2 Waveform Capnography for any patient with a pulse that is intubated (ETI or supraglottic.)

Oxygen saturation measured peripherally (SpO2) is a useful adjunct to supplement the physical assessment and may serve as an early warning sign of respiratory failure prior to the traditional physical indicators of hypoxia.

Most patients should have an SpO2 level of between 97% – 99%. Oxygen saturation below 90% in most patients identifies respiratory impairment and serves to quantify the effects of other therapies, including increased oxygenation, suctioning, ventilatory assistance and pharmacological agents. As with all other adjunctive tools, pulse oximetry is a supplement to patient assessment, not a replacement for it.

Users should be aware that inaccurate readings from the light-sensitive probe may be effected by:

- Decreased distal circulation (hypotension, delayed capillary refill, cool skin, pallor);
- Bright sunlight or fluorescent lights;
- Extreme patient movements;
- Moisture in the sensor;
- Loose clips;
- Dark or Metallic – flecked nail polish;
- Fake fingernails;
- Sickle-Cell Disease; or
- Diagnostic Imaging Dyes

Hemoglobin saturated with compounds other than oxygen, for example, carbon monoxide, or patients predisposed to the hypoxic drive (COPD), may lead to a false high reading. Methemoglobinemia (caused by excessive nitroglycerin ingestion, nitrous oxide and some topical anesthetics) has the same effect. Always consider mechanism of illness / injury when measuring oxygen saturation.
APPENDIX 37

RECEIVING HOSPITALS / HOSPITAL DESIGNATIONS

NY State DOH Policy requires transport to the closest appropriate hospital, based on services available and patient needs. While it is not required, it is allowable for agencies on the western-most border to transport to appropriately designated hospitals in Nassau County.

**DESIGNATED 911 RECEIVING HOSPITALS**

Brookhaven Memorial Hospital Medical Center  
Eastern Long Island Hospital  
Good Samaritan Hospital Medical Center  
Huntington Hospital  
John T. Mather Memorial Hospital  
Peconic Bay Medical Center  
Southampton Hospital  
Southside Hospital  
St. Catherine of Siena Hospital  
St. Charles Hospital  
University Medical Center Stony Brook

**Northport VA Hospital is not a regionally designated emergency receiving hospital. NVA Hospital acknowledges that hospital care has becomes more specialized, and neighboring hospitals have received specialty designations, and concurrently, veteran patients are increasing in numbers and medical complexities. Therefore, veteran patients who are classified by the applicable Emergency Medical Dispatch (EMD) Determinant Code, and/or present with signs/symptoms and/or chief complaint indicative of ischemic chest pain / STEMI, CVA / TIA, trauma, burns, and obstetrical/gynecological emergencies should not be transported to the NVAH hospital. Similarly, pediatric patients should not be transported to the NVAH. Patients not fitting these EMD Determinant Codes, or with signs/symptoms unrelated to these presenting problems for which there are more appropriate hospitals, may be transferred by ambulance to the NVAH. As a reminder, the NVAH does have 800 MHz radio capabilities and pre-arrival notification of inbound patients’ should be made on the “Hospital North” talk group.**

**TRAUMA CENTERS**

University Medical Center Stony Brook          Level I including pediatric capabilities  
Good Samaritan Hospital Medical Center         Level II including pediatric capabilities  
Southside Hospital                             Level II  
Brookhaven Memorial Hospital Medical Center    Level III  
Huntington Hospital                            Level III  
Peconic Bay Medical Center                     Level III  
Southampton Hospital                           Level III

Continued.
APPENDIX 37

RECEIVING HOSPITALS / HOSPITAL DESIGNATIONS – Continued.

REGIONAL BURN CENTER

University Medical Center Stony Brook

PCI / STEMI CENTERS

Brookhaven Memorial Hospital Medical Center
Good Samaritan Hospital Medical Center
Huntington Hospital
Southside Hospital
St. Catherine of Siena Hospital
University Medical Center Stony Brook

DESIGNATED STROKE CENTERS

Brookhaven Memorial Hospital Medical Center
Good Samaritan Hospital Medical Center
Huntington Hospital
Peconic Bay Medical Center
John T. Mather Memorial Hospital
Southampton Hospital
Southside Hospital
St. Catherine of Siena Hospital
St. Charles Hospital
University Medical Center Stony Brook

HOSPITALS WITH NO OB/GYN SERVICES

Brookhaven Memorial Hospital Medical Center
Eastern Long Island
John T. Mather Hospital

HOSPITALS WITH SANE CENTER AFFILIATIONS

Good Samaritan Hospital Medical Center
Peconic Bay Medical Center
University Medical Center Stony Brook
APPENDIX 38

EMERGENCY INCIDENT REHABILITATION (REHAB)

The physical and mental demands associated with firefighting and other emergency operations in hazardous situations, coupled with environmental dangers of extreme heat and humidity or extreme cold create conditions that may have an adverse impact on the safety and health of emergency response personnel. Additionally, in specific types of response activities, emergency responders may be exposed to Carbon Monoxide as a by-product of incomplete combustion, which places them at increased risk for occult exposure.

Adequate rest and rehydration activities and routine medical monitoring of emergency response personnel has become commonplace in the out-of-hospital setting. The Federal Emergency Management Agency (FEMA) and the United States Fire Administration (USFA) have issued Emergency Incident Rehabilitation SOPs that designate a Rehabilitation Sector (Rehab) as a sector within the EMS operations component of the Incident Command System (ICS).

Routine medical monitoring and evaluation in the Rehab Sector consists of the measurement of heart rate and orally acquired body temperature as primary vital signs associated with the assessment for medical problems that may result from working in extreme weather conditions. Firefighters, hazardous materials technicians and other emergency responders are routinely required to wear personal protective ensembles that inhibit the natural cooling process, thereby placing emergency responders at greater risk for succumbing to heat related emergencies.

Obtaining an oral body temperature measurement is a skill that can be performed by EMT-Bs, EMT-CCs and EMT-Ps when engaged in emergency incident rehabilitation activities at the scene of an incident. This protocol is for the routine medical monitoring of otherwise healthy emergency response personnel and is not intended for use on patients who present to EMS with an acute onset illness or injury.

Oral body temperature shall be obtained as part of the routine medical monitoring or medical evaluation of emergency response personnel engaged in activities requiring the use of personal protective equipment that inhibits the natural cooling process, placing emergency responders at greater risk for succumbing to heat related emergencies.

1. Follow the manufacturer's recommendations regarding the application of oral (PO) single patient use thermometers. Oral temperature should be obtained as early in the rest phase as possible and in accordance with the FEMA / USFA Rehabilitation guidelines. The oral temperature measurement must be taken prior to the administration of fluids by mouth for rehydration.

2. Follow the event recording and disposition guidelines of the FEMA/USFA Rehabilitation SOPs or your agency’s emergency incident rehabilitation plan AND THE FOLLOWING STANDARD OPERATING PROCEDURE. When performing Rehab as part of routine medical monitoring, a PCR IS NOT necessary. An Emergency Incident Rehab Log Sheet should be used to record all activity in the rehab sector and retained with the agency fire alarm report.

Continued.
3. If at any time, an emergency responder presents with a chief complaint, signs / symptoms, and / or abnormal vital signs, the responder becomes a patient, a PCR is required, and all applicable NY State and Suffolk County Policies and Protocols must be followed.

4. Follow the manufacturer's recommendations regarding the application of non-invasive SpCO measurement devices.

**Contraindication:** This protocol does not allow for the routine use of oral body temperature measurement when dealing with patients who access emergency medical services personnel following sudden onset of illness or injury or to use a SpCO measurement to facilitate a Refusal of Medical Attention on an emergency responder.

i. Oral temperature readings with single-patient use thermometers are to be used. Other measurement devices, i.e.: tympanic or rectal are expressly prohibited by the SREMAC. Readings from tympanic thermometers are affected by the ambient temperature and may be less accurate in settings where the ambient temperature varies.

ii. Oral body temperature measurement is not authorized in the assessment and treatment of any patient outside the scope of Emergency Incident Rehabilitation sector operations, unless authorized and so ordered by an approved EMS Medical Control physician.


**Purpose:**

To serve as a monitoring standard for BLS & ALS providers operating in an Emergency Incident Rehabilitation Sector. Rest, rehydration, rehab evaluation, and nutrition, are key components in supporting firefighters and other emergency responders operating in personal protective clothing for prolonged periods of time, as this activity often times impedes the body’s natural cooling process. Other health hazards, such as exposure to carbon monoxide, hydrogen cyanide gas, and other atmospheric hazards are common in specific types of emergency response. Carbon monoxide is a colorless, odorless, tasteless toxic gas and is a product of incomplete combustion of any carbon-based material, and generally presents with vague flu-like symptoms, fatigue, or other general complaints. The addition of non-invasive CO-oximetry is an effective tool in measuring carboxyhemoglobin levels in the field.

This policy covers any event, including drills, fire-ground operations, hazardous materials incidents, technical rescues, lengthy extrications and any other event where emergency response personnel are wearing personal protective equipment and fluid loss, heat-related emergencies or exposure to carbon monoxide is a concern.

Consider the activation of a Suffolk County EMS Field Physician if more than one (1) agency will be requiring incident rehab and / or operations are expected to last for long periods of time.

Continued.
REST

Avoid going from hot directly to air conditioning. Ideally, there should be a ten (10) minute wait in ambient temperature. Firefighters should follow the “2 air bottle rule” or forty five (45) minutes work time maximum. Typically one (1) ten (10) minute rest period is appropriate unless otherwise indicated by the results of the evaluation.

REHYDRATION STRATEGY

Rehydrate emergency responder with at least 12 oz. water or sports drink. Do not use carbonated beverages or caffeine. NOTE: PO Body temperature should be obtained prior to allowing the emergency responder to drink cold liquids.

EVALUATION

- Observe for behavioral changes, such as change in affect, loss of motor coordination/dexterity, or emotional decompensation.
- Measure Heart Rate and Oral (PO) Body Temperature.
- If temperature greater than (>) 100.6 F, do not allow emergency responder to don PPE for the remainder of the event.
- If heart rate greater than (>) 110 bpm & temperature is less than (<) 100.6 F, one (1) additional ten (10) minute rest period is indicated.
- If heart rate does not return to normal after twenty (20) minutes continuous rest, the emergency responder becomes a patient and is transported to the closest emergency department.

NOTE: Emergency responders should be taken out of service and treated and transported to the closest emergency department per protocol whenever:

- Signs / symptoms of heat stroke;
- Altered Mental Status of any kind;
- PO temp greater than (>) 101 degrees F;
- Irregular heart beat;
- HR greater than (>) 150 bpm at any time and greater than (>) 140 bpm after rest;
- SPB greater than (>) 200 at any time; or
- DBP greater than (>) 120 at any time.
At any time that an emergency responder complains of an injury or expresses any chief complaint, or has abnormal vital signs, he/she becomes a patient and all applicable policies and protocols must be followed, particularly if the following presentations occur:

- Chest pains;
- SOB / Dyspnea;
- AMS;
- Headache (major sign of dehydration);
- Persistent tachycardia;
- Orthostatic vital signs;
- Self-monitoring of urine – reported dark color/strong smell; or
- Nausea / Vomiting

*Any EMS provider who is trained and authorized in its use may use Non-invasive CO-oximetry in conjunction with rest and rehydration activities to determine the carboxyhemoglobin level of emergency responders.*

For an SpCO greater than or equal to \( (>\) 12\%\) – TREAT with 100\% oxygen and TRANSPORT to the closest emergency department.

For an SpCO less than \(<\) 12\% BUT signs of CO exposure are present – TREAT with 100\% oxygen and TRANSPORT to the closest emergency department.

For an SpCO less than \(<\) 12\% and NO SIGNS OF CO EXPOSURE AND NORMAL VITAL SIGNS – no further medical monitoring is needed. An emergency incident rehabilitation log must be maintained to document rehab activities and filed with the department’s fire report. Emergency responders should be instructed to seek medical attention if signs or symptoms develop over time.

**ANY PATIENT WITH ASSOCIATED BURNS SHALL BE TRANSPORTED IN ACCORDANCE WITH THE BURN DESTINATION DECISION POLICY REGARDLESS OF THEIR CARBON MONOXIDE LEVEL.**

**REMEMBER** – The use of pulse oximetry (SpO2) in individuals exposed to CO will produce false high SpO2 readings.

Patients should be transported to the closest appropriate emergency department, NOT directly to a hospital with a hyperbaric chamber, unless that hospital is in your catchment area. Hyperbaric therapy for patients with CO exposure is ordered based on failed neurological examination and laboratory confirmed blood values \( (> 25\% \text{ CoHb})\). In addition, hyperbaric chambers may not be readily available upon your arrival and 100\% oxygen via non-rebreather facemask changes blood saturation.

Continued.
The following reference table provides expected signs or symptoms that can be predicted based on percentage of CO detected in the blood. This is only a guideline, based on a variety of variables that the EMS provider may not be aware of.

**SpCO Expected signs/symptoms**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Signs and Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3%</td>
<td>Normal non-smoker</td>
</tr>
<tr>
<td>4-10%</td>
<td>Mild headache, shortness of breath with exertion</td>
</tr>
<tr>
<td>10-20%</td>
<td>Moderate headache, fatigue, shortness of breath</td>
</tr>
<tr>
<td>20-30%</td>
<td>Severe headache, blurred vision, nausea, dizzy, irritable, cardiac ischemia</td>
</tr>
<tr>
<td>30-40%</td>
<td>Muscle weakness, vomiting, vertigo, confusion</td>
</tr>
<tr>
<td>40-50%</td>
<td>Arrhythmias, syncope</td>
</tr>
<tr>
<td>50-60%</td>
<td>Seizures, shock, apnea, coma</td>
</tr>
</tbody>
</table>

*WHEN IN DOUBT CONTACT MEDICAL CONTROL FOR PHYSICIAN CONSULTATION.*

**NUTRITIONAL/CARBOHYDRATE STRATEGY**

During emergencies that occur over several days and include multiple operational periods, it is likely that rehab operations will be expanded to include providing snacks and/or meals concurrent with other rehab activities.

Simple carbohydrates are present in fluids and power bars and their key ingredients are rapidly available and are indicated when quick bursts of energy are needed. Complex carbohydrates are present in pastas and breads, and their key ingredients are available over longer periods of time, as they account for a more sustained release of energy.
APPENDIX 39

RMA CHECKLIST

<table>
<thead>
<tr>
<th>Name:</th>
<th>Age:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of Call:</td>
<td>PCR #:</td>
<td></td>
</tr>
</tbody>
</table>

I. Assessment of Patient (Complete each item, circle appropriate response)

Oriented to:
Person          Yes  No
Place          Yes  No
Time          Yes  No
Situation         Yes  No
Altered level of consciousness      Yes No
Head injury         Yes  No
Alcohol or drug ingestion by exam or history    Yes  No

Medical Control

Contacted by:   ____ Phone   ____ Radio   at ________ hours.

___________Unable to contact (explain in comments)

Orders:

___________Indicated treatment and / or transport may be refused by patient.
___________Use reasonable force and / or restraints to provide indicated treatment.
___________Use reasonable force and / or restraint to transport.
___________Patient refusal against medical advice.

Other:______________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

Patient Advised of the following: (Complete each item, circle appropriate response)

Medical treatment/evaluation recommended………………   Yes  No
Ambulance transport recommended……………………   Yes  No
Further harm could result without medical treatment or evaluation………………………………………………   Yes No

Continued.
RMA CHECKLIST

Transport by means other than ambulance could be hazardous

In light of patient’s present illness / injury………… Yes  No
Patient provided with refusal advice sheet……….. Yes  No
Patient would not accept refusal advice sheet……….. Yes  No

Disposition

_____Refused all EMS services.
_____Refused transport, accepted field treatment.
_____Refused field treatment, accepted transport.
_____Released in care of self/relative/friend
_____Released in custody of law enforcement agency.

Additional Comments, if needed:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Patient Information Sheet provided to patient.  Yes  No

Signature of
Patient:_________________________________________________________ Date:_____________

Signature of
Witness:________________________________________________________ Date:_____________

Signature of
Provider:_______________________________________________________ Date:_____________
Dear Patient;

Please read and keep this form!

This form has been given to you because you have refused treatment and/or transport by the responding ambulance service. *Your health and safety are our primary concern.* Even though you have decided not to accept the advice of the EMS provider, please remember the following:

- The evaluation and/or treatment provided to you by the ambulance service is not a substitute for medical evaluation and treatment by a doctor. You are advised to get medical evaluation and treatment by a doctor.

- Your condition may not seem as bad to you as it actually is. Without treatment, your condition or problem could become worse. If you are planning to get medical treatment, a decision to refuse treatment or transport by the ambulance service may result in a delay that could make your condition or problem worse.

- Medical evaluation and / or treatment may be obtained by calling your doctor, if you have one, or by going to any hospital emergency department in this area, all of which are staffed 24 hours a day by emergency physicians. You may be seen at these emergency departments without an appointment.

- If you change your mind or your condition becomes worse and you decide to accept treatment and transport by the ambulance service, please do not hesitate to call them back and they will do their best to help you.

- Don’t wait! When medical treatment is needed, it’s usually better to get it right away.

I have received a copy of this information sheet.

Patient Signature___________________________________ Date_________________________________
The purpose of this policy statement is to provide guidance to EMS providers on their responsibilities, and the responsibilities of school district personnel during responses to school incidents and school bus accidents involving minors.

The potential number of patients, the frequent presence of uninjured children who do not require hospitalization, the jurisdiction of the school district and the responsibilities of EMS providers often raise conflicting issues of jurisdiction, consent, treatment, and transportation. The roles and responsibilities of the school district and the EMS agency must be identified in advance of any incident, by jointly developing operations plans so that a common understanding of their respective expectations and responsibilities are well defined.

EMS personnel are there to see to the physical well-being of those who may be injured or potentially injured, render appropriate emergency medical care as dictated by mechanism of illness/injury, operational policy and clinical protocol, and to remove patients from the scene to a hospital as quickly and efficiently as possible.

The New York State Education Law §912 places legal guardianship of the children involved on the school board/school district, including for the health and welfare of all children and the administration of emergency medical evaluation and care for all ill or injured pupils while in their charge. During the transportation phase, the transportation company acts as an agent of the school district during transportation and the bus driver in turn is able to make legal decisions for the children until the arrival of school board/school district/bus company representatives. In Decision 10,587 (1981), the New York State Education Commissioner ruled that the responsibility for the student’s safety shifts from the parent/guardian to the school board / school district / bus company from the point of pick up by the school bus in the morning, to drop off by the school bus in the afternoon.

There is no NY State or Suffolk County EMS policy that states that all children must be taken to the hospital if an ambulance is required at the scene. Proper dispositions include one of the following:

- Transportation to the hospital;
- Refusal of Medical Assistance, per Suffolk County RMA Policy, in the presence of a legal guardian; or
- No Patient Found designation.
EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS.

Complete documentation on a PCR, or electronic equivalent, and Suffolk County RMA Checklist is required for cases where a child is a patient and is transported, or in cases where an RMA is executed.

General Guidelines:

- If a child has a complaint, or if the EMS provider observes an actual or potential physical injury / illness, or where there is a mechanism of injury, the EMS provider is permitted to render patient care and transport consistent with prehospital protocols and procedures under implied consent. If there is any doubt, always advocate for emergency department evaluation.

- EMS Providers are expected to treat school board/school district/bus company representatives as if they were the child’s parent / legal guardian. Clearly state any of your findings, assessment, and treatment to them. Clearly articulate your concerns about real or potential illness / injury. If there is any doubt, always advocate for emergency department evaluation.

- If the child presents themselves without an actual or potential physical injury / illness and the EMS provider also feel that there is no actual or potential injury / illness or significant mechanism of injury, the school board / school district / bus company representative can make legal decisions for the child and can sign a Refusal of Medical Assistance (RMA) sheet as if they were the child’s parent / legal guardian.

- It is acceptable to use a Prehospital Care Report (PCR), or electronic equivalent, for each child involved in the school incident or bus accident if the EMS provider chooses to do so. It is also acceptable to use a single PCR to document your assessment and actions, list the names of the children involved and obtain a single signature from the school board / school district / bus company representative.

- Accountability and the disposition of each and every child is paramount. Documentation should be shared with school board / school district / bus company representatives to ensure that your records match theirs and all children are accounted for, before the alarm is cleared.

- There are circumstances where some children may be “patients” and received treatment and transportation to a hospital, while others may not. Likewise, there may be circumstances where the occupant(s) of another vehicle are “patients” and the bus, by nature of its unique size and construction protects occupants resulting in “no patients.” Accountability and disposition records should include an accounting of which children were transported to the hospital, by name, and by ambulance company, and which children remained at the scene and were turned over to their legal guardian.

Continued.
EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

In cases where parents or other legal guardians arrive at the scene, no child should be released to his / her parent or other legal guardian without proper validation from school board / school district / bus company representatives.

*This sample form may be duplicated and used to document response as an addendum to agency reports to document accountability for cases where a PCR and RMA Checklist are not required.*

Alarm#:_________________     Date: ___________________   Time:_______________________

Fire/EMS Agency:_________________________________________________________________

Location of Incident:_______________________________________________________________

School District:____________________ School Representative:___________________________

Transportation Company:__________________________________________________________

Bus Operator:____________________________________________________________________

Police Officer (Name / Badge #):___________________________________________________

The following children were involved in a school bus incident. They have been triaged and have been found to offer no complaint, no actual or no potential injury / illness and no significant mechanism of injury. School board, school district/bus company representatives have been advised to **CALL 911 IMMEDIATELY** if there is change in any of the children that raises any suspicion of a potential injury. The appropriate School Representative has made the legal decision to assume legal responsibility for the children.
EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

1. Print: ________________________________________________
   DOB / AGE_____________________

2. Print: ________________________________________________
   DOB / AGE_____________________

3. Print: ________________________________________________
   DOB / AGE_____________________

4. Print: ________________________________________________
   DOB / AGE_____________________

5. Print: ________________________________________________
   DOB / AGE_____________________

6. Print: ________________________________________________
   DOB / AGE_____________________

7. Print: ________________________________________________
   DOB / AGE_____________________

8. Print: ________________________________________________
   DOB / AGE_____________________

9. Print: ________________________________________________
   DOB / AGE_____________________

Continued.
EMS RESPONSE TO SCHOOL INCIDENTS AND SCHOOL BUS ACCIDENTS

School Representative:

Print Name:_______________________________________

Signature:_________________________________________ Date:_______________

Highest Ranking EMS Provider on Scene:

Print Name:_______________________________________

Signature:_________________________________________ Date:_______________

Witness:

Print Name:_______________________________________

Signature:_________________________________________ Date:_______________
APPENDIX 41

TRANSPORTATION OF SERVICE ANIMALS

From time to time, EMS personnel in Suffolk County may encounter situations in which a patient requiring treatment and transportation to a hospital is being assisted by a service animal. Questions may arise about the proper transportation of a patient’s service animal in an ambulance. According to the NYS DOH BEMS Policy Statement 07-01, Service Animals “in the last several decades, the concept of a service dog has expanded greatly, with dogs helping the hearing-impaired, people who use wheelchairs and those who have many other kinds of physical challenges.”

The Americans with Disabilities Act made the rights of people who use service animals the law. The U.S. Department of Justices (DOJ) defines any guide dog, signal dog, or other animal as individually trained to provide assistance to an individual with a disability. If the animal meets this definition, it is considered a service animal under the Americans with Disabilities Act (ADA) regardless of whether it has been licensed or certified by a state or local government. A service animal is NOT considered a pet.

New York State Agriculture and Markets Article 7 §108 defines different types of Service Animals, as follows:

- "Guide dog" means any dog that is trained to aid a person who is blind and is actually used for such purpose, or any dog owned by a recognized guide dog training center located within the state during the period such dog is being trained or bred for such purpose; and
- "Service dog" means any dog that has been or is being individually trained to do work or perform tasks for the benefit of a person with a disability, provided that the dog is, or will be, owned by such person or that person's parent, guardian or other legal representative.

Service animals may include dogs of any breed or size as well as other animals including, but not limited to birds, primates and ponies. The EMS provider may ask the following types of questions when presented with a service animal:

- “Is this a service dog?” or “Does your animal have legal allowances?”
- “Is the service animal required because of a disability?”

The EMS provider may NOT ask about the nature or extent of the patient’s disability except as it relates to patient care.

When transporting a patient with a service animal, every effort should be made to do so in a safe manner for the patient, the animal and the crew members. Regardless of the purpose of the animal, if the animal is a potential threat to health or safety of anyone involved in response, the animal may be excluded from transport. If possible, the animal should be secured in some manner in order to prevent injury to either the animal or the crew during transport. Safe transport devises may include:

- Crates, cages, specialty carriers; or
- Seatbelts or passenger restraints using a specialized harness or seat belt attachments.

In certain situations it may not be possible for the animal to be transported with the patient. In those situations, every effort should be made to ensure safe care and transportation of the animal by alternative means (animal control personnel, police, family members, etc.). EMS should notify the receiving facility of the presence of a service animal accompanying the patient, either in the ambulance, or by alternate transportation.
APPENDIX 42

DEFINITION OF SYMPTOMATIC AND UNSTABLE PATIENTS

The use of cardiac medications and electrical therapies, even in warranted situations, can have side effects, untoward effects, and/or adverse effects, both physiological and psychological, upon the patient and their prognosis. It is therefore necessary to understand the proper times and conditions in patient status that these therapies, or lower dosages of them, are required. For this reason, a definitive demarcation between the definitions of “symptomatic” and “unstable” must be made.

**Symptomatic Patients** (recall the classic definition of symptoms) include those patients with complaints that include:

- Lightheaded, Dizzy;
- Nausea;
- Short-of-breath;
- Palpitations / Fluttering in chest; or
- Chest discomfort (pain, pressure, tightness)

Patients undergoing a medical or trauma emergency might show these symptoms, but could still be perfusing well. The major things to look for in **UNSTABLE** patients are **SIGNS** of inadequate perfusion.

**Signs of unstable hemodynamic status:**

- Anxiety
- Confusion
- Sleepiness
- Stupor
- Unresponsiveness
- Signs of respiratory failure
- SBP under 90
- Combativeness
- Lethargy
- Rales/Crackles upon auscultation of lung sounds
- Weak, rapid pulse
- Pale, Cyanotic or Ashen skin
- Cool, moist skin

The presence of a systolic BP under 90 alone does not constitute an unstable patient, nor does simply the presence of chest pain (especially if the patient is on beta-blockers). Look for concomitant signs/symptoms to confirm. Smaller patients, as well as athletes, might have lower blood pressure as their norm.
APPENDIX 43

CONTRAINDICATIONS TO FIELD TERMINATION OF RESUSCITATION

The following conditions mandate continued resuscitation and transport of patients in cardiac arrest. Field determination of termination is NOT to be followed when:

- The patient is pregnant;
- The patient has been struck by lightning;
- The arrest has occurred in a public place;
- The patient is in an environment that puts them into hypothermia; or
- The patient can be identified as an organ donor.

**NOTE:** The decision to terminate resuscitative efforts is dependent on many case-by-case variables and should be carefully thought out, weighing all possible options. Decisions should be made in the interests of the best possible care for the patient and, when applicable, the patient’s family.
APPENDIX 44

USE OF RESTRAINT POLICY

A number of factors may contribute to a patient’s abnormal behavior, including metabolic causes secondary to low blood sugar, hypoxia, or head trauma, the use of mind altering substances, or psychiatric pathology. Signs and symptoms associated with a “behavioral emergency” should be considered of a medical nature, and patients should be transported to the closest emergency department for evaluation. Medical Control may be contacted in cases where questions about necessity of restraint or care arise. BLS providers should consider ALS Intercept. As always, transport should not be delayed.

Patients have the right to refuse treatment and/or transport if they are of legal age and are capable of making an informed decision. A person is considered capable until proven otherwise. There are situations in which the interests of the general public outweigh an individual’s right to liberty, including:

- the individual is threatening self-harm or suicide; and / or
- the individual presents a threat to third parties, including medical care-givers.

The purpose of this policy is to provide guidelines on the use of humane medical restraint in out-of-hospital situations for patients who are violent, potentially violent, or who may harm themselves or others, regardless of the underlying cause, when restraint is necessary to limit mobility or temporarily immobilize such patients. Providers are to use the minimum and least restrictive amount of humane restraint necessary to safely accomplish patient care and transportation with regard to safety for both the patient and provider dependent on body size and strength, type of abnormal behavior, and mental state.

Indications for restraint include:

- behavior or threats that imply or create a danger to the patient and others;
- the need for safe and controlled access for medical care (medical restraint); or
- involuntary treatment / transportation of irrational or uncontrollable combative patients (behavioral restraint).

To provide care and transportation without the patient’s informed consent, EMS providers must be able to document a reasonable belief that the patient would be a threat to self or others. If, during your scene assessment, a patient is encountered who threatens the safety of your crew, retreat and await assistance from law enforcement personnel to assure scene safety.

- in the presence of law enforcement personnel, and after other methods of de-escalating the patient have failed; or
- under standing orders, without law enforcement presence, in situations where crew safety is paramount, based on changes in the patient’s mental/behavioral status.

Continued.
Restraints should only be used in an emergency or crisis situation where the patient is non-compliant with direction, does not follow orders, or when the actions of the patient may result in physical harm to self or others. Once restraints have been applied, they should not be removed until transfer of care occurs at the hospital, under the direction of accepting hospital personnel.

Soft restraints are approved for use by EMS providers. Hard restraints, such as handcuffs, cable ties, restraints that require a key and other like restraint devices are not approved for EMS providers. When soft restraints are necessary such activity will be undertaken in a manner that protects the patient’s health and safely preserves his/her dignity, rights, and well-being.

The method of restraint used shall allow for adequate monitoring of vital signs and shall not restrict the ability to protect the patient’s airway or compromise neurological or vascular status. Restrained extremities should be evaluated for the presence of circulation and motor function every five (5) minutes, with findings documented on the PCR.

In ideal circumstances, four (4) point restraints should be applied (each limb), and upper arm muscle groups should be isolated by restraining the arms in opposite directions. Once the decision to restrain is made, the team should act quickly, and four (4) persons should approach the patient, each pre-assigned to a separate limb.

EMS personnel must ensure that the patient’s position does not compromise the patient’s respiratory/circulatory systems, or does not preclude any necessary medical intervention to protect the patient’s airway should vomiting occur.

If the patient is spitting, EMS providers should cover the patient’s face with an oxygen mask, with oxygen flowing, if indicated. Alternatively, a surgical mask may be used as a personal protective barrier, if oxygen is not indicated. Under no circumstances should an EMS provider hold pillows, towels, or other objects over a patient’s face.

*Patients are to be transported in the supine or left lateral recumbent position. NEVER PLACE A PATIENT FACE DOWN TO RESTRAIN. Fractures, dislocations and positional asphyxia are common complications to the restraint process, and care should be taken to avoid. DO NOT transport a patient in the prone position.*
APPENDIX 44 – Continued.

USE OF RESTRAINT POLICY

- *NEVER* restrain a patient’s hands and feet behind the patient, *i.e.* hog-tying.

- *NEVER* “sandwich” patients between backboards, scoop-stretchers, or lying flat as a restraint.

In situations where EMS providers encounter patients under arrest, or in cases where law enforcement personnel have applied handcuffs or plastic ties, assessment should include ensuring sufficient slack in the restraint device to allow unrestricted abdomen and chest wall movement.

**NOTE:** If a patient is restrained by law enforcement personnel with handcuffs or other lockable devices, law enforcement personnel must accompany the patient to the hospital in the ambulance. In other circumstances where restraints are applied by EMS providers, and the patient represents a safety risk, EMS providers should request that law enforcement personnel accompany the patient and crew to the hospital for safety purposes.

In cases where restraints are applied, complete and thorough documentation on the PCR is essential, and should include specific information as to:

- the reasons restraints were needed, and reasonable force was necessary;
- the need for treatment / transport was explained to the patient regardless of capability;
- evidence of the patient’s incapability to make an informed decision;
- whether the restraints were applied by law enforcement or EMS agency and under whose orders the restraints were applied;
- failures of less restrictive measures to de-escalate the incident; and
- on-going assessment regarding the monitoring of airway, breathing and circulation, including circulation and motor function in the restrained extremities.
APPENDIX 45

CHEMPACK PROGRAM

Please refer to the appendices in this manual for specific information on medications contained in Mark I Kits / DuoDote Kits.

If EMS providers encounter patients with the signs / symptoms of nerve agent / organophosphate poisoning, Suffolk County FRES must be contacted to initiate the response procedures for release of Chempack assets. Medical Control must also be contacted to get required medical approval for the use of chemical agent antidote. This authorization is for the event, and does not require a patient-specific order for every patient.

Each Chempack has enough antidote to treat approximately 1000 patients.

HUB HOSPITALS feed themselves, SPOKE HOSPITALS and/or the EMS SYSTEM; as follows:

<table>
<thead>
<tr>
<th>HUB HOSPITAL</th>
<th>SPOKES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Samaritan Hospital</td>
<td>Good Samaritan and EMS System</td>
</tr>
<tr>
<td>St Catherine of Siena Hospital</td>
<td>St. Catherine and Huntington</td>
</tr>
<tr>
<td>Southside Hospital</td>
<td>Southside</td>
</tr>
<tr>
<td>Brookhaven Memorial Hospital</td>
<td>Brookhaven</td>
</tr>
<tr>
<td>University Hospital</td>
<td>University, EMS System, St. Charles, J.T. Mather</td>
</tr>
<tr>
<td>Peconic Bay Medical Center</td>
<td>Peconic Bay Medical Center, EMS System, Eastern LI</td>
</tr>
<tr>
<td>Southampton Hospital</td>
<td>Southampton, EMS System</td>
</tr>
</tbody>
</table>

NY State DOH Fielding Logic:

In effort to forward deploy chemical agent antidote into local communities, in preparation for a large-scale mass intoxication scenario, the NY State Department of Health (DOH) maintains the CHEMPACK Program, in partnership with the Centers for Disease Control (CDC) Strategic National Stockpile (SNS) Program. Chempack assets are for treatment of exposure to nerve agent/organophosphate-based chemicals only. The hospitals listed below are referred to as HUB HOSPITALS, meaning that they have Chempack stored at the facility:

Brookhaven Memorial Hospital    East Patchogue, NY
Good Samaritan Hospital         West Islip, NY
Peconic Bay Medical Center      Riverhead, NY
Southampton Hospital            Southampton, NY
Southside Hospital               Bay Shore, NY
St. Catherine of Siena Hospital Smithtown, NY
University Hospital Stony Brook Stony Brook, NY

Continued.
CHEMPACK PROGRAM

The hospitals listed below are referred to as SPOKE HOSPITALS, meaning that they DO NOT have Chempack stored at the facility, but are fed by a specific pre-determined HUB HOSPITAL:

- Eastern Long Island Hospital   Greenport, NY
- Huntington Hospital    Huntington, NY
- J.T. Mather Hospital    Port Jefferson, NY
- St. Charles Hospital    Port Jefferson, NY

Chempack assets are for treatment of NERVE AGENT / ORGANOPHOSPHATE EXPOSURE only; and includes:

- Mark I auto-injectors (Atropine 2.0 mg and Pralidoxime 600 mg {2PAM})
- Atropine for IV use
- Pralidoxime (2-PAM) for IV use
- Diazepam (Valium) auto injectors
- Diazepam (Valium) for IV use
- Atropen (Atropine 0.5 mg for pediatrics) auto-injector
- Atropen (Atropine 1.0 mg for pediatrics) auto-injector
- Sterile water
APPENDIX 46

MINIMUM EQUIPMENT / SUPPLIES REQUIREMENTS

The items listed in this section must be available for every patient. However, the nature of the call and the proximity of the patient to the ambulance may permit some discretion as to what specific equipment and supplies are brought to the patient’s side. This is a list of minimums; a greater quantity may be carried if so desired.

<table>
<thead>
<tr>
<th>BOLUS MEDICATION</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenosine</td>
<td>6 mg in 2 ml</td>
<td>6</td>
</tr>
<tr>
<td>Amiodarone</td>
<td>150 mg in 3 ml</td>
<td>3</td>
</tr>
<tr>
<td>Atropine Sulfate</td>
<td>1 mg in 10 ml</td>
<td>7</td>
</tr>
<tr>
<td>Calcium Chloride</td>
<td>100 mg in 1 ml/10cc prefilled syringe</td>
<td>2</td>
</tr>
<tr>
<td>50% Dextrose</td>
<td>25G in 50 ml</td>
<td>3</td>
</tr>
<tr>
<td>25% Dextrose</td>
<td>2.5G in 10 ml</td>
<td>7</td>
</tr>
<tr>
<td>10% Dextrose</td>
<td>100 mg/ml bags</td>
<td>2 – ONLY NEEDED IF D50% UNAVAILABLE</td>
</tr>
<tr>
<td>Diazepam</td>
<td>As packaged by supplier</td>
<td>Per agency plan and NYS allowances</td>
</tr>
<tr>
<td>Diltiazem</td>
<td>25 mg/5 ml</td>
<td>3</td>
</tr>
<tr>
<td>Diphenhydramine</td>
<td>50 mg in 1 ml</td>
<td>2</td>
</tr>
<tr>
<td>Epinephrine 1:1,000 (IM or SC)</td>
<td>1 mg in 1 ml</td>
<td>2</td>
</tr>
<tr>
<td>Epinephrine 1:10,000 (IV)</td>
<td>1 mg in 10 ml</td>
<td>20</td>
</tr>
<tr>
<td>Etomidate</td>
<td>20 mg in 10 ml</td>
<td>4</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>As packaged by supplier</td>
<td>Per agency plan and NYS allowances</td>
</tr>
<tr>
<td>Furosemide</td>
<td>100 mg in 10 ml</td>
<td>2</td>
</tr>
<tr>
<td>Glucagon</td>
<td>1 mg in kit</td>
<td>5</td>
</tr>
<tr>
<td>Hydrocortisone Sodium Succinate</td>
<td>1 G vial</td>
<td>3</td>
</tr>
<tr>
<td>Hydroxocobalamin</td>
<td>Optional</td>
<td>Per agency plan</td>
</tr>
<tr>
<td>Ketamine</td>
<td>As packaged by supplier</td>
<td>Per agency plan and NYS allowances</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>15 mg in 1 ml or 30 mg in 1 ml</td>
<td>4</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>100 mg in 5 ml 2%</td>
<td>1</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>5 G in 10 ml</td>
<td>2</td>
</tr>
<tr>
<td>Midazolam</td>
<td>1 mg/mL and 5 mg/mL vials and Tubex syringes</td>
<td>Per agency plan and NYS allowances</td>
</tr>
</tbody>
</table>

Continued.
### MINIMUM EQUIPMENT / SUPPLIES REQUIREMENTS

#### BOLUS MEDICATION – continued

<table>
<thead>
<tr>
<th>Medication</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methylprednisolone</td>
<td>125 mg in 2 ml</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1 G vial</td>
<td>3</td>
</tr>
<tr>
<td>Metoprolol Tartrate</td>
<td>5 mg in 5 ml</td>
<td>4</td>
</tr>
<tr>
<td>Morphine Sulfate</td>
<td>As packaged by supplier</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Per agency plan and NYS allowances</td>
<td></td>
</tr>
<tr>
<td>Naloxone</td>
<td>2 mg in 2 ml</td>
<td>10</td>
</tr>
<tr>
<td>Ondansetron</td>
<td>4 mg/2 ml</td>
<td>4</td>
</tr>
<tr>
<td>Rocuronium</td>
<td>50 mg/5 ml</td>
<td>6</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td>50 mg in 50 ml</td>
<td>2</td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>200 mg / 10 ml</td>
<td>3</td>
</tr>
<tr>
<td>Thiamine</td>
<td>100 mg in 1 ml</td>
<td>2</td>
</tr>
<tr>
<td>Vecuronium</td>
<td>10 mg / 10 ml OR 20 mg / 20 ml</td>
<td>3</td>
</tr>
</tbody>
</table>

#### IV INFUSION MEDICATION

<table>
<thead>
<tr>
<th>Medication</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dopamine</td>
<td>400 mg in 10 ml</td>
<td>2</td>
</tr>
<tr>
<td>Norepinephrine</td>
<td>4 mg/4 ml</td>
<td>2</td>
</tr>
</tbody>
</table>

#### INHALATION MEDICATION

<table>
<thead>
<tr>
<th>Medication</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albuterol</td>
<td>2.5 mg in 3 ml dose</td>
<td>4</td>
</tr>
<tr>
<td>Ipratropium</td>
<td>0.5 mg in 2.5 ml</td>
<td>4</td>
</tr>
<tr>
<td>Nitrous Oxide</td>
<td>Optional</td>
<td>1 setup</td>
</tr>
</tbody>
</table>

#### INTRAVENOUS SOLUTION

<table>
<thead>
<tr>
<th>Medication</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9% Normal Saline</td>
<td>1000 ml bag</td>
<td>1</td>
</tr>
<tr>
<td>0.9% Normal Saline</td>
<td>250 ml bag</td>
<td>1</td>
</tr>
<tr>
<td>0.9% Normal Saline</td>
<td>100 ml bag</td>
<td>2</td>
</tr>
</tbody>
</table>

#### ORAL MEDICATION

<table>
<thead>
<tr>
<th>Medication</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>81 mg child chewable</td>
<td>2 bottles</td>
</tr>
<tr>
<td>Instant Glucose</td>
<td>23 G Tube</td>
<td>1 Tube</td>
</tr>
</tbody>
</table>

Continued.
**SUBLINGUAL MEDICATION**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitroglycerin OR</td>
<td>0.4 mg tabs/bottle</td>
<td>2 bottles</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>0.4 mg metered spray</td>
<td>2 spray bottles</td>
</tr>
</tbody>
</table>

**ECG MONITORING, DEFIBRILLATION, CARDIOVERSION, PACING, 3 Lead/12 Lead**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacing/Defibrillation Pads (Adult)</td>
<td>2 sets</td>
<td>2 sets</td>
</tr>
<tr>
<td>Pacing/Defibrillation Pads (Pediatric)</td>
<td>2 sets</td>
<td>2 sets</td>
</tr>
<tr>
<td>Extra Battery for Unit</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Monitoring electrodes</td>
<td>As supplied</td>
<td>6 for single lead 16 for 12 lead</td>
</tr>
<tr>
<td>Cables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring (3 lead and 12 lead)</td>
<td>1 set</td>
<td>1 each</td>
</tr>
<tr>
<td>Defibrillation</td>
<td>1 set</td>
<td>1 each</td>
</tr>
<tr>
<td>Pacing</td>
<td>1 set</td>
<td>1 each</td>
</tr>
<tr>
<td>Extra ECG Paper</td>
<td>1 pack/roll</td>
<td>1</td>
</tr>
<tr>
<td>Means of communicating voice with Medical Control (cell phone/800 MHz)</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Means of transmitting single lead and 12 lead rhythm strip to Medical Control</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Razor</td>
<td>As supplied</td>
<td>1</td>
</tr>
</tbody>
</table>

**VENIPUNCTURE / MEDICATION ADMINISTRATION**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aseptic cleaner</td>
<td>As supplied</td>
<td>10</td>
</tr>
<tr>
<td>Tourniquets</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>IV catheters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 gauge</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>20 gauge</td>
<td>As supplied</td>
<td>3</td>
</tr>
<tr>
<td>18 gauge</td>
<td>As supplied</td>
<td>3</td>
</tr>
<tr>
<td>16 gauge</td>
<td>As supplied</td>
<td>3</td>
</tr>
<tr>
<td>14 gauge</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>IV Administration set (10 or 15 gtt/cc)</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>IV Extension set w/medication port(s)</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Adjustable rate-limiting IV flow device</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Arm board</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Medication labels</td>
<td>As supplied</td>
<td>6</td>
</tr>
<tr>
<td>Sharps container</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Transparent IV Site Covers</td>
<td>As supplied</td>
<td>3</td>
</tr>
</tbody>
</table>
### MINIMUM EQUIPMENT / SUPPLIES REQUIREMENTS

#### VENIPUNCTURE/MEDICATION ADMINISTRATION – continued

<table>
<thead>
<tr>
<th>Item</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 cc with Luer lock</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>30 cc with Luer lock</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>20 cc with Luer lock</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>10 cc with Luer lock</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>5 cc with Luer lock</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>3 cc with 23 gauge, 1.25 inch needle</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>1 cc with 25 gauge, 0.75 inch needle</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Needles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 gauge, 1.5 inch</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>20 gauge, 1.5 inch</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Tubex injector</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Mucosal Atomizer Device</td>
<td>As supplied</td>
<td>4</td>
</tr>
<tr>
<td>Saline Lock with flush</td>
<td>As supplied</td>
<td>2</td>
</tr>
</tbody>
</table>

#### NEBULIZERS

<table>
<thead>
<tr>
<th>Item</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult “T” Line</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Pediatric Mask</td>
<td>As supplied</td>
<td>1</td>
</tr>
</tbody>
</table>

#### ADULT AND PEDIATRIC TIBIAL OR HUMERAL INSERTION DEVICE

<table>
<thead>
<tr>
<th>Item</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete unit</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>IO needles (Obese, Adult, Pediatric)</td>
<td>As supplied</td>
<td>2 each</td>
</tr>
<tr>
<td>Broselow Tape</td>
<td>As supplied</td>
<td>1</td>
</tr>
</tbody>
</table>

#### ENDOTRACHEAL INTUBATION KIT

<table>
<thead>
<tr>
<th>Item</th>
<th>Customary Packaging</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngoscope handle to hold all blades</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Extra batteries and bulbs (if not fiber optic)</td>
<td>As supplied</td>
<td>2</td>
</tr>
<tr>
<td>Pediatric straight blades; Size 0, 1 &amp; 2</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>Adult straight and curved blades; Size 2, 3, 4 &amp; 5</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>Adult ET tubes # 6.0, 6.5, 7.0, 7.5, 8.0 and 8.5 cuffed</td>
<td>As supplied</td>
<td>2 each</td>
</tr>
<tr>
<td>Pediatric ET tubes # 2.0, 2.5, 3.0, 3.5, 4.0, 4.5 uncuffed, 5.0 and 5.5 cuffed</td>
<td>As supplied</td>
<td>2 each</td>
</tr>
<tr>
<td>Adult and pediatric stylet</td>
<td>As supplied</td>
<td>2 each</td>
</tr>
<tr>
<td>Adult and pediatric Magill forceps</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>10 ml syringe</td>
<td>As supplied</td>
<td>2</td>
</tr>
</tbody>
</table>

Continued.
APPENDIX 46 – Continued.

MINIMUM EQUIPMENT / SUPPLIES REQUIREMENTS

<table>
<thead>
<tr>
<th>ENDOTRACHEAL INTUBATION KIT</th>
<th>CUSTOMARY PACKAGING</th>
<th>AVAILABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water soluble lubricant</td>
<td>As supplied</td>
<td>1 tube</td>
</tr>
<tr>
<td>One inch tape</td>
<td>As supplied</td>
<td>Several rolls</td>
</tr>
<tr>
<td>Oral airways S/M/L Adult &amp; Pediatric</td>
<td>As supplied</td>
<td>2 each</td>
</tr>
<tr>
<td>Adult and Pediatric Bag Valve Mask</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>Suction unit, tubing and catheters</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>End-tidal CO2 Detector</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Pulse Oximeter</td>
<td>As supplied</td>
<td>1</td>
</tr>
<tr>
<td>Stethoscope (Adult &amp; Pediatric)</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>Mechanical Tube Holder</td>
<td>As supplied</td>
<td>1 each (A&amp;P)</td>
</tr>
<tr>
<td>Combi-tube (37SA and 41A) [Option]</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
<tr>
<td>King Airway (Size 2, 2.5, 3, 4 and 5) [Option]</td>
<td>As supplied</td>
<td>1 each</td>
</tr>
</tbody>
</table>

In addition to the ALS equipment and supplies identified on the above list, the usual and customary assortment of BLS equipment and supplies should also be brought to the patient’s side. This includes, but is not limited to: BP Cuff; stethoscope; penlight; assorted dressings; bandages and tape; pocket face mask; oxygen with standard delivery devices (masks / cannulas); nasopharyngeal airways; isolation supplies (gloves / masks / goggles); cervical collar; and backboard. A complete second allotment of disposable items such as medications should be carried in the ambulance in case you are dispatched to a second call prior to restocking. The following items should also be carried in a quantity sufficient to initiate treatment of at least three (3) additional patients in cases of an MCI. This includes, but is not limited to: cervical collars; assorted sizes of trauma dressings; bandages and tape; IV setups/fluids; triangular bandages and backboards (space permitting).
APPENDIX 47

MANUFACTURER – SPECIFIC ENERGY SETTINGS

Overview:

Each cardiac monitor manufacturer utilizes a complex electrical algorithm to analyze, measure, and create electrical current for cardioversion and defibrillation. The common goal for all of these devices is to positively influence aberrant conduction pathways with the least amount of energy with the least amount of damage to the myocardium yet with the highest degree of efficacy. Since chest impedance is very patient-specific, the use of biphasic waveform technology has emerged as the industry standard for electrical therapy, which allows the device to deliver patient-specific electrical current. Standard energy settings for defibrillation should be used and settings for synchronized cardioversion are listed below. Equivalents are based on protocol dosages incrementally from 50J to 360J.

<table>
<thead>
<tr>
<th>ZOLL Devices – Defibrillation</th>
<th>ZOLL Devices – Cardioversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>200J, 300J, 360J</td>
<td>75J, 120J, 150J, 200J</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHYSIO-CONTROL Devices – Defibrillation</th>
<th>PHYSIO-CONTROL Devices – Cardioversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>200J, 300J, 360J</td>
<td>1-360J Selectable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHILIPS Devices – Defibrillation</th>
<th>PHILIPS Devices – Cardioversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>200J, 300J, 360J</td>
<td>50J, 100J, 150J, 200J</td>
</tr>
</tbody>
</table>
APPENDIX 48

AUTOMATIC TRANSPORT VENTILATOR (ATV)

EFFECTIVE: JULY, 2017

This protocol is intended for use by EMT-Ps in agencies authorized by their Service Medical Director, in accordance with training supplied by their Service Medical Director, approved by the EMS System Medical Director, and with strict Quality Improvement review and data sharing mechanism in place. This protocol is permissive under the preceding conditions but not required. Only ATVs, meeting the specifications contained herein, and approved by the REMAC, may be used.

This protocol for use when a patient requires mechanical ventilation and is already intubated with either an endotracheal tube, a REMAC-approved Supraglottic airway, or has a tracheostomy in place, in order to provide consistent assisted ventilations.

NOTES: May be used in cardiac arrest undergoing CPR with chest compressions; May be used with a mechanical thoracic compression device; May be used in patients who have been paralyzed and sedated by RSI; and/or May be used in patients who are more than 40 kg estimated weight.

1. Set up your ventilator to assure that the oxygen source and circuit are functioning properly
2. Attach the ventilator to the disposable circuit tubing and then to the patient (either on the end of the ETT, REMAC-approved Supraglottic airway or tracheostomy)
3. Set the ventilator rate to provide a minimum of 10 breaths per minute.
4. Set the ventilator to provide a tidal volume of 6 – 8 ml/kg estimated ideal body weight based on REMAC-approved tidal volume chart.
5. You may select 5 cm of H2O of PEEP (positive end expiratory pressure) (not for use if the patient is in cardiac arrest).
6. Check the ventilator alarm by occluding the patient valve assembly outlet.
7. Attach capnography end-tidal CO2 monitoring device.
8. Attach pulse oximetry device.
9. Ensure that the patient is on a cardiac monitor.
10. Assess ventilations and auscultate for bilateral breath sounds, observe for proper chest rise and fall and adjust tidal volume to achieve desired results
11. Monitor and document HR, BP, RR, pulse oximetry and end-tidal CO2 every 5 minutes while the ventilator is attached – and if the patient’s vital signs deteriorate check the patient’s breath sounds immediately to check for a tension pneumothorax or for tracheal tube dislodgement, check the ventilator circuit and make adjustments as needed to provide adequate ventilation, and consider removal of the ventilator and assisting ventilations with bag-valve-mask device.
12. If the ventilator alarm sounds, check the patient’s vital signs and capnography immediately, check the ventilator circuit and make any adjustments as necessary to provide assisted ventilations, and consider removal of the ventilator and assisting ventilations with bag-valve-mask device.

Ventilator Specifics

To qualify as a ventilator, any device may be used regardless of vendor, manufacturer or model as long as the device:

- provides 100% oxygen;
- has an adjustable rate;
- has an adjustable tidal volume;
- provides 5cm H2O of PEEP;
- has an alarm that will notify the providers if there is a problem with the circuit;
- allows for patient spontaneous breathing over the ventilator device; and
- has a disposable circuit that will allow each patient use to be free of possible infectious secretions.
2011 Guidelines for Field Triage of Injured Patients

Measure vital signs and level of consciousness

- Glasgow Coma Scale ≤13
- Systolic Blood Pressure (mmHg) <90
- Respiratory Rate ≤10 or ≥29 breaths per minute, or need for ventilatory support
- ≤20 in infant aged <1 year

Assess anatomy of injury

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long-bone fractures
- Crushed, dislocated, mangled, or pulsatile extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paraplegia

Transport to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system.

Assess mechanism of injury and evidence of high-energy impact

- Falls
  - Adults: >20 feet (one story is equal to 10 feet)
  - Children: >10 feet or two or three times the height of the child
- High-risk auto crash
  - Intrusion, including roof: >12 inches occupant site; >18 inches any site
  - Election (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with a high risk of injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle crash >20 mph

Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.

Assess special patient or system considerations

- Older Adults
  - Risk of injury/death increases after age 55 years
  - SBP ≤110 may represent shock after age 65
  - Low impact mechanism (e.g. ground level falls) may result in severe injury
- Children
  - Should be triaged preferentially to pediatric capable trauma centers
- Anticoagulants and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration
- Burns
  - Without other trauma mechanism: triage to burn facility
  - With trauma mechanism: triage to trauma center
- Pregnancy >28 weeks
- EMS provider judgment

Transport according to protocol

When in doubt, transport to a trauma center.

Find the plan to save lives, at www.cdc.gov/FieldTriage

National Center for Injury Prevention and Control
Division of Injury Response
ADENOSINE

Class
Endogenous nucleotide

Description
Adenosine is primarily formed from the breakdown of adenosine triphosphate (ATP). Both compounds are found in every cell of the human body and have a wide range of metabolic roles. Adenosine slows tachycardias associated with the AV node via modulation of the autonomic nervous system without causing negative inotropic effects. It acts directly on sinus pacemaker cells and vagal nerve terminals to decrease chronotropic and dromotropic activity. Adenosine is the drug of choice for paroxysmal supraventricular tachycardia (PSVT) and can be used diagnostically for stable, wide-complex tachycardias of unknown type after two doses of lidocaine.

Onset & Duration
Onset: Almost immediate
Duration: 10 seconds

Adult Dosage: 6 mg rapid IV/IO push; may repeat at 12 mg rapid IV/IO push.
 Pediatric Dosage: 0.1 mg/kg IV/IO rapid push (max. 6 mg.); repeat at 0.2 mg/kg rapid IV/IO push (max. 12 mg.).

Indications
Conversion of PSVT to sinus rhythm

Contraindications
Second or third degree AV block; Sick sinus syndrome; Hypersensitivity to adenosine, Wolff-Parkinson White (WPW) syndrome.

Adverse Reactions
Facial flushing; lightheadedness; paresthesia; headache; diaphoresis; palpitations; chest pain; hypotension; nausea; metallic taste; shortness of breath

Drug Interactions
Methylxanthines (for example caffeine and theophylline) antagonize the action of adenosine; Dipyridamole potentiates the effect of adenosine; reduction of adenosine dose may be required; Carbamazepine may potentiate the AV-nodal blocking effect of adenosine.

Special Considerations
Pregnancy safety: category C; may produce bronchoconstriction in patients with asthma or bronchopulmonary disease; at the time of conversion asystole or new rhythms may result. These generally last a few seconds without intervention. Adenosine is not effective in atrial flutter or fibrillation.

How Supplied
Parenteral for IV injection in 3 mg/mL in 2 mL flip-top vials.
ALBUTEROL SULFATE

Class
Relatively selective beta-2 adrenergic bronchodilator

Description
B-agonist agents are considered sympathomimetic that is selective for beta-2 adrenergic receptors. It relaxes smooth muscles of the bronchial tree peripheral vasculature by stimulating adrenergic receptors of the sympathetic nervous system.

Onset & Duration

Onset: 5-15 minutes after inhalation; 30 minutes PO
Duration: 3-4 hours after inhalation; 4-6 hours PO (variable as per agent)

Adult Dosage: 2.5 mg, one unit dose, repeat as necessary every 5-15 minutes.
Pediatric Dosage – Same as adult.

Indications
Relief of bronchospasm in patients with reversible obstructive airway disease; prevention of exercise induced bronchospasm.

Contraindications
Prior hypersensitivity reaction to B-agonist; cardiac dysrhythmias associated with tachycardia; tachycardia caused by digitalis intoxication.

Adverse Reactions
Tachycardia; restlessness; apprehension; headache; dizziness; nausea; palpitations; increase in blood pressure; dysrhythmias; hypokalemia

Drug Interactions
Sympathomimetics may exacerbate adverse cardiovascular effects. Antidepressants may potentiate the effects on the vasculature. Beta blockers may antagonize B-agonists. B-agonists may potentiate diuretic induced hypokalemia.

How Supplied
Solution for aerosolization: 0.083%, 2.5mg in 3 mL.

Special Considerations
Pregnancy safety: Category C. May precipitate angina pectoris and dysrhythmias; should be used with caution in patients with diabetes mellitus, hyperthyroidism, prostatic hypertrophy, or seizure disorder.
**AMIODARONE**

**Class**
Antiarrhythmic, Class III

**Description**
Acts directly on the myocardium to delay repolarization and increase the duration of the action potential. This results in the prolongation of the effective refractory period in all cardiac tissue. Amiodarone also possesses the weak ability to block the sodium channels, which decreases the rate of membrane depolarization and impulse conduction. It also depresses automaticity in both SA and AV nodes. Amiodarone also noncompetitively inhibits both alpha and beta-receptors. Amiodarone does cause relaxation in both smooth and cardiac muscle, which causes a decrease of coronary and peripheral vascular resistance that leads to a reduction of afterload.

**Indications**
Ventricular fibrillation and pulseless ventricular tachycardia. Amiodarone may also been used in ventricular tachycardia with a pulse and supraventricular tachycardias that have been recurrent and/or refractory.

**Contraindications**
Hypersensitivity to amiodarone, cardiogenic shock, severe bradycardias, sinus node dysfunction, heart blocks

**Adverse Reactions**
Bradycardia; hypotension; congestive heart failure; nausea; vomiting

**Drug Interactions**
Beta blockers can cause hypotension and bradycardia. Digoxin increases the chance of toxicity.

**Special Considerations**
Amiodarone must be diluted with a minimum of 15 cc of 0.9% NS. Rapid infusion leads to decrease in blood pressure and heart rate.

**Incompatible Solutions**
**DO NOT** mix Amiodarone with Furosemide or Heparin Sodium.

**How Supplied**
150 mg/3 cc vial

**Adult Dosage:**
V-Tach w/ pulse: 150 mg in 100cc over 10 minutes
V-Tach/ V-Fib Arrest: 300mg IV/IO Bolus; may repeat 150 mg IV/IO bolus

**Pediatric Dosage:** 5 mg/kg IV/IO over 20-60 minutes
ASPIRIN

Class
Platelet Aggregator Inhibitor/Anti-Inflammatory Agent

Description
Aspirin is an anti-inflammatory agent and an inhibitor of platelet function. This makes it a useful agent in the treatment of various thromboembolic diseases such as acute myocardial infarction.

Onset & Duration

Onset: Varied
Duration: Varied

Adult Dosage: 324 mg PO

Indications
New chest pain suggestive of acute myocardial infarction (AMI).

Contraindications
Aspirin is contraindicated in patients with known hypersensitivity to the drug. It is relatively contraindicated in patients with active ulcer disease and asthma.

Adverse Reactions
Aspirin can cause heartburn, GI bleeding, nausea, vomiting, wheezing, and prolonged bleeding.

Drug Interactions
When administered together, aspirin and other anti-inflammatory agents may cause an increased incidence of side effects and increased blood levels of both drugs. Administration of aspirin with antacids may reduce the blood level of the drug by decreasing absorption.

How Supplied
Aspirin is supplied in tablets (chewable and standard) containing 160 mg and 325 mg of the drug. Enteric-coated aspirin (Ecotrin) is available for those with a tendency for GI upset with aspirin therapy.
ATROPINE SULFATE

Class
Anticholinergic

Description
Atropine is a parasympatholytic (anticholinergic) that is derived from parts of the Atropa belladonna plant.

Onset & Duration

Onset: Minutes after IV administration
Duration: 3-5 minutes

Adult Dosage:
Symptomatic Bradycardia: 0.5 mg IV; repeat to max of 3.0 mg.
Organophosphate Overdose/Nerve Agent Exposure: 2 mg IV/IO

Pediatric Dosage:
(MINIMUM single dose 0.1 mg to avoid reflex Bradycardia, MAXIMUM single dose 0.5 mg.)
Neonatal Resuscitation: 0.02 mg/kg IV/IO. Pediatric Bradycardia: 0.02 mg/kg IV/IO
Organophosphate/Nerve Agent: (<12 years old: 0.02-0.05 mg/kg IV/IO, >12 years old: 2 mg IV/IO)

Indications
Hemodynamically-significant bradycardia; Asystole

Contraindications
None in emergency situations.

Adverse Reactions
Atropine sulfate can cause blurred vision, dilated pupils, dry mouth, tachycardia, drowsiness and confusion.

Drug Interactions
Few in the prehospital setting.

How Supplied
Atropine is supplied in prefilled syringes containing 1.0 milligrams in 10 milliliters of solution.
CALCIUM CHLORIDE

Class
Calcium Supplement

Description
Calcium chloride provides elemental calcium in the form of the cation (Ca++). Calcium chloride replaces calcium in cases of hypocalcemia. Calcium chloride causes a significant increase in the myocardial contractile force and appears to increase ventricular automaticity. Calcium chloride is an antidote for magnesium sulfate and can minimize some of the effects of calcium channel blocker usage.

Onset & Duration

Onset: IV – immediately
Duration: IV – rapid excretion

Adult Dosage: Asystole/PEA/Post-Arrest with ROSC/Beta or Calcium-channel blocker OD: 500 to 1000mg (0.5g to 1.0g) IV/IO

Pediatric Dosage: The safety and efficacy of this drug for use in children has not been established.

Indications
Known or suspected hyperkalemia (eg, renal failure), (elevated potassium).
Known or suspected hypocalcemia (decreased calcium).
Calcium channel blocker overdose. (Diltiazem, Verapamil, Nifedipine)

Contraindications
Patients receiving digitalis, hypercalcemia and hypercalciuria (e.g., in hyperparathyroidism, vitamin D overdosage)

Adverse Reactions
Arrhythmias (bradycardia and asystole); Hypotension (Vasomotor collapse may ensue if IV injection is too rapid); Syncope; Nausea; Vomiting; and Cardiac Arrest

Drug Interactions
Calcium chloride will interact with sodium bicarbonate and form a precipitate. The IV line should be flushed between calcium chloride and sodium bicarbonate administration. In addition, calcium chloride can cause elevated digoxin levels, and possibly digitalis toxicity.

How Supplied
Prefilled syringes: 1,000 mg in 10 ml of solution (10 ml of a 10% solution)

Special Considerations
Injections should be made slowly though a small needle into a large vein in order to avoid too rapid an increase in serum calcium and extravasation of calcium solution into surrounding tissue.

DEXTROSE
### Description
The term dextrose is used to describe the six-carbon sugar d-glucose, the principal form of carbohydrate used by the body. D50 is used in emergency care to treat hypoglycemia and to manage coma of unknown origin.

### Onset & Duration

<table>
<thead>
<tr>
<th>Onset</th>
<th>≤ 1 minute, depends on degree of hypoglycemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>Depends on the degree of hypoglycemia</td>
</tr>
</tbody>
</table>

**Adult Dosage:** 25g (50cc) IV/IO Bolus of 50% Solution or 10% 250mL IVB;

**Pediatric Dosage (0.5 to 1g/kg)**
Neonatal Resuscitation (10% Solution): 5 to 10 MilliLITERS/kg IV/IO Bolus

### Indications
Hypoglycemia; altered level of consciousness; coma of unknown etiology; seizure of unknown Etiology; refractory cardiac arrest (controversial)

### Contraindications
There are no significant contraindications for IV administration of dextrose in emergency care.

### Adverse Reactions
Warmth; pain and burning from medication infusion; thrombophlebitis; rhabdomyolysis

### Drug Interactions
There are no significant drug interactions with other emergency medications.

### Special Considerations
Pregnancy safety: NA; draw blood sample before administration if possible; extravasation may cause tissue necrosis; use a large vein and aspirate occasionally to ensure route patency.

### How Supplied
- D50W = 25 g/50 ml prefilled syringe
- D10W in 100 ml bag (100mg/ml)

**NOTE:** D10% can also be made by diluting D50% with Normal Saline at 1:4 ratio.

---

Continued.
# Pediatric D_{10} Dosage Chart

<table>
<thead>
<tr>
<th>Patient Weight</th>
<th>Dose Desired</th>
<th>Volume to Administer</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 kg</td>
<td>1.5 g</td>
<td>15 mL</td>
</tr>
<tr>
<td>4 kg</td>
<td>2.0 g</td>
<td>20 mL</td>
</tr>
<tr>
<td>5 kg</td>
<td>2.5 g</td>
<td>25 mL</td>
</tr>
<tr>
<td>6-7 kg</td>
<td>3.25 g</td>
<td>32.5 mL</td>
</tr>
<tr>
<td>8-9 kg</td>
<td>4.25 g</td>
<td>42.5 mL</td>
</tr>
<tr>
<td>10-11 kg</td>
<td>5.25 g</td>
<td>52.5 mL</td>
</tr>
<tr>
<td>12-14 kg</td>
<td>6.5 g</td>
<td>65 mL</td>
</tr>
<tr>
<td>15-18 kg</td>
<td>8.25 g</td>
<td>82.5 mL</td>
</tr>
<tr>
<td>19-23 kg</td>
<td>10.5 g</td>
<td>105 mL</td>
</tr>
<tr>
<td>24-29 kg</td>
<td>13.5 g</td>
<td>132.5 mL</td>
</tr>
<tr>
<td>30-36 kg</td>
<td>16.5 g</td>
<td>165 mL</td>
</tr>
</tbody>
</table>

**Base:** D_{10} is equivalent to a 10% solution of Dextrose in Normal Saline.

10% Dextrose = 10 grams of Dextrose in 100mL = 10,000 mg / 100mL =

0.1 mg/mL of Dextrose is equivalent to 0.5 mg/5 mL

One 250mL bag of 10 % Dextrose administers 25g of Dextrose.
DIAZEPAM (Valium)

Class
Benzodiazepine (sedative-hypnotic, anticonvulsant)

Description
Diazepam is frequently prescribed to treat anxiety and stress. In emergency care, it is used to treat alcohol withdrawal and grand mal seizure activity. Diazepam acts on the limbic, thalamic, and hypothalamic regions of the CNS to potentiate the effects of inhibitory neurotransmitters, raising the seizure threshold in the motor cortex. It may also be used in conscious patients during cardioversion to induce amnesia and sedation. Though the drug is still widely used as an anticonvulsant, it is relatively weak and of short duration. Rapid IV administration may be followed by respiratory depression and excessive sedation.

Onset & Duration
Onset: (IV) 1-5 minutes  Duration: (IV) 15 min-1 hour
(IM) 15-30 minutes  (IM) 15 min-1 hour
(PR) Varied  (PR) Peak concentration 1.5 hours

Adult Dosage: Seizures: 5-10 mg IV/IO (5 mg over 5 minutes)
Sedation: 5-15 mg IV/IO (over 5-10 minutes prior to cardioversion/pacing)

Pediatric Dosage: Seizures: 0.5 mg/kg PR (Maximum dose 10 mg.)

Indications
Seizure activity; acute anxiety states; acute alcohol withdrawal; muscle relaxant; preoperative sedation

Contraindications
Hypersensitivity to the drug; acute narrow angle glaucoma; open-angle glaucoma

Adverse Reactions
Hypotension; reflex tachycardia; respiratory depression, ataxia; psychomotor impairment; confusion; nausea

Drug Interactions
Diazepam may precipitate CNS depression and psychomotor impairment when the patient is taking CNS depressant medications; Diazepam should not be administered with other drugs because of possible precipitation (incompatible with most fluids; should be administered into an IV of normal saline solution).

Special Considerations
Pregnancy safety: Category D; may cause local venous irritation; has short duration of anticonvulsant effect; reduce dose by 50% in elderly patients; resuscitation equipment should be readily available.

How Supplied: Tablet: 2, 5, 10 mg; Sustained released capsule; Parenteral: Vials, ampules, Tubex; Oral solution
DILTIAZEM (Cardizem)

Class
Calcium Channel Blocker

Description
Diltiazem is a calcium ion antagonist. It inhibits calcium ion influx across cell membranes during cardiac depolarization, decreases SA and AV conduction and dilates coronary and peripheral arteries and arterioles. It slows the rapid ventricular rate associated with atrial fibrillation and atrial flutter, and reduces coronary and peripheral vascular resistance. Diltiazem has a nearly equal effect on vascular smooth muscle and AV conduction.

Onset & Duration
Onset: IV – immediately
Duration: IV – 4 to 6 hours

Adult Dosage: 20 mg (0.25 mg/kg) IV over 2 minutes. May repeat in 15 minutes at 20 to 25 mg (0.35 mg/kg) over 2 minutes.

Indications
Rapid ventricular rates associated with atrial fibrillation and atrial flutter. Used after adenosine to treat refractory PSVT in patients with narrow QRS complex and adequate blood pressure.

Contraindications
Severe hypotension; Second or third degree AV block; sick sinus syndrome; ventricular tachycardia, wide-QRS tachycardias of uncertain origin; poison / drug-induced tachycardia; Wolff-Parkinson-White syndrome.

Adverse Reactions
Hypotension; bradycardia; heart block; chest pain; and asystole
Nausea and vomiting; headache; fatigue; drowsiness

Drug Interactions
Avoid use in patients with poison - or drug - induced tachycardia. Diltiazem should not be administered to patients receiving intravenous beta blockers because of an increased risk of congestive heart failure, bradycardia, and asystole.

Continued.
How Supplied
Parenteral for IV injection in 5.0 mg/ml and 10 ml vials

Special Considerations
Diltiazem requires refrigeration. Diltiazem must be used with caution in patients with liver or kidney disease, congestive heart failure, atrioventricular conduction abnormalities, and/or hypotension. Medical Control should be alerted to these conditions, and the dose should be reduced to HALF the normal dose.

NOTES:

Dosage Forms and Packaging:
Liquid form must be kept refrigerated or discarded one month after removal from refrigeration.

Continuous Infusion:
In-hospital maintenance infusion 5 to 15 mg/hour, titrated to heart rate.

Standard Solution:
Dilute 100 mg (20 ml) in NS 80ml (mg/ml).

Pediatric Dosage:
The safety and efficacy of this drug for use in children has not been established.
DIPHENHYDRAMINE (Benadryl)

Class
Antihistamine

Description
Diphenhydramine is a potent antihistamine that blocks H1 and H2 histamine receptors.

Onset & Duration
Onset: 1-3 hours
Duration: 6-12 hours

Adult Dosage: 25-50 mg IV/IM/IO

Pediatric Dosage: 1-2 mg/kg Slow IV/IO or IM

Indications
Anaphylaxis; Allergic Reactions

Contraindications
Diphenhydramine should not be used in patients with hypersensitivity to the medication, or for the management of lower respiratory disease, i.e. asthma. Diphenhydramine should not be used for neonates, premature infants, or nursing mothers. Diphenhydramine should be used with caution in patients with narrow-angle glaucoma.

Adverse Reactions
Diphenhydramine can cause hypotension, headache, palpitations, tachycardia, drowsiness, and disturb coordination. Can cause increased intraocular pressure. Can also cause excitation in children.

Drug Interactions
The sedative effects of Diphenhydramine can be potentiated by the administration of CNS depressants, other antihistamines, narcotics and alcohol. May increase anticholinergic effects in patients taking MAO inhibitors.

How Supplied
Diphenhydramine is supplied in ampules and prefilled syringes containing 50 mg of the medication in 1 ml of saline.
**DOPAMINE**

**Class**
Sympathomimetic

**Description**
Dopamine is chemically related to epinephrine and norepinephrine. It acts primarily on alpha-1 and beta-1 adrenergic receptors, increasing systemic vascular resistance and exerting a positive inotropic effect on the heart. In addition, the actions of this drug on dopaminergic receptors dilate renal and splanchnic vasculature, maintaining blood flow. Dopamine is commonly used to treat hypotension associated with cardiogenic shock.

**Onset & Duration**
- **Onset**: 2-4 minutes
- **Duration**: 10-15 minutes

**Indications**
Hypotension; shock; low cardiac output states

**Contraindications**
Patients with pheochromocytoma

**Adverse Reactions**
Dose-related tachydysrhythmias; hypertension; increased myocardial oxygen demand

**Drug Interactions**
May be deactivated by alkaline solutions (sodium bicarbonate and furosemide); MAO inhibitors and bretylium may potentiate the effect of dopamine; sympathomimetics and phosphodiesterase inhibitors exacerbate dysrhythmia response; beta-adrenergic antagonists may blunt inotropic response; when administered with phenytoin, hypotension, bradycardia, and seizures may develop.

**How Supplied**
200 mg/5ml, 400 mg/5 ml prefilled syringe and ampule for IV infusion (IV piggyback)

**Special Considerations**
Pregnancy safety: category C; infuse through a large, stable vein to avoid the possibility of extravasation injury; monitor patient for signs of compromised circulation
DOPAMINE DOSING CHART
All Dopamine Infusions must be run on a rate-limiting device (dial-a-flow).

200 mg in 250 cc

Table displays ml/hr.

<table>
<thead>
<tr>
<th>WEIGHT LBS/KG</th>
<th>10 mcg/kg/min</th>
<th>15 mcg/kg/min</th>
<th>20 mcg/kg/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>79 lbs/36 kg</td>
<td>28</td>
<td>40</td>
<td>54</td>
</tr>
<tr>
<td>84 lbs/38 kg</td>
<td>28</td>
<td>42</td>
<td>56</td>
</tr>
<tr>
<td>88 lbs/40 kg</td>
<td>30</td>
<td>44</td>
<td>60</td>
</tr>
<tr>
<td>99 lbs/45 kg</td>
<td>34</td>
<td>48</td>
<td>68</td>
</tr>
<tr>
<td>110 lbs/50 kg</td>
<td>38</td>
<td>56</td>
<td>76</td>
</tr>
<tr>
<td>121 lbs/55 kg</td>
<td>42</td>
<td>62</td>
<td>82</td>
</tr>
<tr>
<td>132 lbs/60 kg</td>
<td>44</td>
<td>68</td>
<td>90</td>
</tr>
<tr>
<td>143 lbs/65 kg</td>
<td>48</td>
<td>74</td>
<td>98</td>
</tr>
<tr>
<td>154 lbs/70 kg</td>
<td>52</td>
<td>78</td>
<td>104</td>
</tr>
<tr>
<td>165 lbs/75 kg</td>
<td>56</td>
<td>84</td>
<td>112</td>
</tr>
<tr>
<td>176 lbs/80 kg</td>
<td>60</td>
<td>90</td>
<td>120</td>
</tr>
<tr>
<td>187 lbs/85 kg</td>
<td>64</td>
<td>96</td>
<td>128</td>
</tr>
<tr>
<td>198 lbs/90 kg</td>
<td>68</td>
<td>102</td>
<td>136</td>
</tr>
<tr>
<td>209 lbs/95 kg</td>
<td>71</td>
<td>106</td>
<td>142</td>
</tr>
<tr>
<td>220 lbs/100 kg</td>
<td>74</td>
<td>112</td>
<td>148</td>
</tr>
<tr>
<td>231 lbs/105 kg</td>
<td>79</td>
<td>118</td>
<td>158</td>
</tr>
<tr>
<td>242 lbs/110 kg</td>
<td>81</td>
<td>124</td>
<td>162</td>
</tr>
<tr>
<td>253 lbs/115 kg</td>
<td>86</td>
<td>130</td>
<td>172</td>
</tr>
<tr>
<td>264 lbs/120 kg</td>
<td>90</td>
<td>136</td>
<td>180</td>
</tr>
<tr>
<td>275 lbs/125 kg</td>
<td>94</td>
<td>140</td>
<td>188</td>
</tr>
<tr>
<td>286 lbs/130 kg</td>
<td>98</td>
<td>146</td>
<td>196</td>
</tr>
<tr>
<td>292 lbs/135 kg</td>
<td>101</td>
<td>152</td>
<td>202</td>
</tr>
<tr>
<td>308 lbs/140 kg</td>
<td>105</td>
<td>158</td>
<td>210</td>
</tr>
<tr>
<td>319 lbs/145 kg</td>
<td>108</td>
<td>163</td>
<td>216</td>
</tr>
</tbody>
</table>
**DUO-DOTE AUTO-INJECTOR**

**Class**
Nerve agent/organophosphate antidote

**Description**
Auto-injector containing 2.1 mg of atropine sulfate and 600 mg Pralidoxime Chloride.

**Onset & Duration**

**Onset:** IM – Highly dependent on exposure route, duration, and underlying patient condition.

**Duration:** IM – Highly dependent on exposure route, duration, and underlying patient condition.

**Indications**
Signs/symptoms that include salivation, lacrimation, urination, defecation, GI discomfort, emesis, miosis, altered mental status, and/or seizure following exposure to nerve agent or organophosphate-based pesticide/insecticide.

**Contraindications**
There are no known contraindications in an emergency.

**Adverse Reactions**
Additional atropine maybe needed to halt secretions, highly dependent on exposure route, duration, and underlying patient condition.

**Drug Interactions**
No known drug interactions in an emergency.

**Special Considerations**
Medical Control Physician or designated EMS Field Physician must authorize the use of antidote for a patient, or in the case of a mass intoxication setting, the scene. In MCI scene, independent patient orders are not needed once the release of nerve agent antidote is made by a physician.

**Adult Dosage**
1 Duo-Dote for mild/moderate symptoms, 3 Duo-Dotes for severe symptoms. Additional atropine may be needed until secretions dry. Pralidoxime is given to a maximum individual dose of 1.8 grams (3 doses).

**Pediatric Dosage**
Weight-based per the Broselow Pediatric Antidote for Chemical Emergencies Tape.
EPINEPHRINE

Class
Sympathomimetic

Description
Epinephrine stimulates alpha, beta-1, and beta-2 adrenergic receptors in dose-related fashion. It is the initial drug of choice for treating bronchoconstriction and hypotension resulting from anaphylaxis as well as all forms of cardiac arrest. It is useful in managing reactive airway disease, but beta-adrenergic agents are often used initially because of their bronchial specificity and oral inhalation route. Rapid injection produces a rapid increase in systolic pressure, ventricular contractility and heart rate. In addition, epinephrine causes vasoconstriction in the arterioles of the skin, mucosa, and splanchnic areas and antagonizes the effects of histamine.

Onset & Duration
Onset: (SQ) 5-10 minutes; (IV) 1-2 minutes
Duration: 5-10 minutes

Adult Dosage:
Asthma/COPD: 0.3-0.5 mg IM
Anaphylaxis: 0.3-0.5 mg IM; Infusion (1:10,000) 0.1 mg (1 mL) over 5 minutes IV/IO
Symptomatic Bradycardia: Infusion 2-10 µg/min IV/IO
Cardiac Arrest: 1 mg (1:10,000) IV/IO

Pediatric Dosage:
Neonatal Resuscitation: 0.01 mg/kg IV/IO (0.1 mL/kg of 1:10,000) Max 1 mg; 0.01 mg/kg (1:1,000) IV/IO Max Dose 1 mg
Bradycardia: 0.01 mg/kg IV/IO (0.1 mL/kg of 1:10,000); Infusion (1:10,000) 2-10 µg/minute IV/IO
Cardiac Arrest: 0.01 mg/kg (1:1,000) IV/IO; 0.1 mg/kg (1:1,000) IV/IO
Asthma: 0.01 mg/kg (1:1,000) IM MAX dose 0.3mg
Stridor: 0.5 mL/kg of 1:1,000, MAX of 5 mL, diluted in 3 mL NS
Anaphylaxis: 0.15 mg (1:1,000) IM; Infusion (1:10,000) 2-10 µg/minute IV/IO
Cardiac Arrest: 0.01 mg/kg (1:10,000) IV/IO; 0.1 mg/kg (1:1,000) IV/IO
Hypoperfusion: Infusion (1:10,000) 2-10 µg/minute

Indications
Bronchial asthma; acute allergic reaction; cardiac arrest; asystole; pulseless electrical activity; ventricular fibrillation unresponsive to initial defibrillatory attempts

Contraindications
Hypersensitivity; hypovolemic shock; narrow-angle glaucoma

Continued.


Adverse Reactions
Headache; nausea; restlessness; weakness; dysrhythmias; hypertension; precipitation of angina pectoris

Drug Interactions
MAO inhibitors and bretylium may potentiate the effect of epinephrine; beta-adrenergic antagonists may blunt inotropic response; sympathomimetics and phosphodiesterase inhibitors may exacerbate dysrhythmia response; may be deactivated by alkaline solutions (sodium bicarbonate, furosemide).

How Supplied

Parenteral: 1 mg/ml (1:1,000), 0.1 mg/ml (1:10,000) ampule and prefilled syringe
Autoinjector (EpiPen): 0.5 mg/ml (1:2,000); 0.01 mg/ml (1:100,000) pediatric

Special Considerations
Pregnancy safety: Category C; syncope has occurred after epinephrine administration to asthmatic children; may increase myocardial oxygen demand
EPINEPHRINE MEDICATION DRIP CHART
1 mg of 1:10,000 Epinephrine in 250 cc of N.S. = (4 mcg/ml)

All Epinephrine Infusions must be run on a rate-limiting device (dial-a-flow).

<table>
<thead>
<tr>
<th>Rate (mcg/min)</th>
<th>Flow (ml/hr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>3</td>
<td>45</td>
</tr>
<tr>
<td>4</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
</tr>
<tr>
<td>6</td>
<td>90</td>
</tr>
<tr>
<td>7</td>
<td>105</td>
</tr>
<tr>
<td>8</td>
<td>120</td>
</tr>
<tr>
<td>9</td>
<td>135</td>
</tr>
<tr>
<td>10</td>
<td>150</td>
</tr>
</tbody>
</table>

NOREPINEPHRINE MEDICATION DRIP CHART
4 mg Norepinephrine (Levophed™) in 1,000 mL of Normal Saline
400 mcg / 100mL = 4 mcg/mL

All Norepinephrine Infusions must be run on a rate-limiting devise (dial-a-flow).

<table>
<thead>
<tr>
<th>Rate (mcg/minute)</th>
<th>Flow (mL/hr.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>75</td>
</tr>
<tr>
<td>10</td>
<td>150</td>
</tr>
<tr>
<td>15</td>
<td>225</td>
</tr>
<tr>
<td>20</td>
<td>300 (OPEN)</td>
</tr>
</tbody>
</table>
ETOMIDATE

Class
General Anesthetic

Description
Etomidate is an ultra-short-acting, non-barbiturate hypnotic without analgesic activity. The drug has a shorter duration of action than other short-acting barbiturates, a rapid recovery, and a wide safety margin. Etomidate has a rapid onset of action and a low cardiovascular risk profile, and therefore is less likely to cause a significant drop in blood pressure than induction agents.

Indications
To induce anesthetic sedation for medical procedures, such as ETT or Cardioversion.

Contraindications
Hypersensitivity

Adverse Reactions
Apnea; hyperventilation; hypoventilation; hiccups; snoring; and laryngospasm. Nausea and vomiting. Arrhythmias, bradycardia or tachycardia. Hypotension or hypertension. Myoclonic and tonic skeletal muscle movements.

Drug Interactions
Etomidate potentiates the effects of CNS depressants such as alcohol, antidepressants, H1 blockers, opiate agonists, muscle relaxants, phenothiazines, barbiturates and benzodiazepines.

Special Considerations
It has no analgesic properties and should be administered with an analgesic for any painful procedures. Use with caution during lactation. Use with caution in the elderly and patients with hepatic disease.

Onset/Duration

Onset of action of less than 1 minute
Duration usually between 2-4 minutes

Adult Dosage: 0.2-0.4 mg/kg over 30-60 seconds for MFI
0.15 mg/kg for sedation

Pediatric Dosage: Same as adult.
FENTANYL CITRATE

Class
Narcotic analgesic

Description
Phenylpiperidine derivative; produces pharmacologic effects and degree of analgesia similar to morphine.

Onset & Duration
Onset: IV – immediately  Onset: IM/IN – 7 to 8 minutes

Indications
Severe pain and is used with anesthesia.

Contraindications
Known hypersensitivity; respiratory depression; severe hemorrhage; shock; children under 2 years old; and Myasthenia gravis

Adverse Reactions
Hypotension; bradycardia; respiratory depression; apnea; nausea/vomiting; dizziness; sedation; diaphoresis; muscle rigidity; and palpitations

Drug Interactions
Other CNS depressants drugs (e.g. barbiturates, tranquilizers, narcotics and general anesthetics) will have additive or potentiating effects with fentanyl.

How Supplied
Parenteral for IV/IM & IN injection in 2 ml ampules (50 mcg/ml)

Special Considerations
Check for the presence of a fentanyl patch prior to administration. Resuscitation equipment and a narcotic agonist such as naloxone should be readily available to manage apnea. Pregnancy class B.

Adult Dosage
1 mcg/kg slow IV to maximum 100 mcg per dose. May be repeated, titrated to effect, with a maximum individual dose of 200 micrograms. Half dose for IN administration (50 mcg per dose).
FUROSEMIDE (Lasix)

Class
Diuretic

Description
Furosemide is a potent diuretic that inhibits the reabsorption of sodium and chloride in proximal tubule, distal tubule, and the loop of Henle.

Onset & Duration
Onset:  (PO) 30-60 minutes; (IV) 5 minutes
Duration:  2 hours

Adult Dosage:  0.5-1.0 mg/kg over 1 to 2 minutes; If no response, double dose.

Pediatric Dosage:  1 mg/kg IV (max 20 mg)

Indications
Edema; Congestive Heart Failure

Contraindications
Anuria; Hypersensitivity

Adverse Reactions
Hypotension; dehydration; dry mouth; ototoxicity; tinnitus; hypochloremia; hypokalemia; Hyponatremia; hyperglycemia

Drug Interactions
Digitalis toxicity may be potentiated by the potassium depletion that can result from Furosemide administration; increases the ototoxic potential of aminoglycoside antibiotics; lithium toxicity may be potentiated by sodium depletion.

How Supplied
Tablet:  20, 40, 80 mg
Parenteral:  10 mg/ml in 2 ml ampule, 100 mg/ml in 10 ml vial

Special Considerations
Pregnancy safety – Furosemide has been known to cause fetal abnormalities.
Light sensitive, should be protected from light.
GLUCAGON

Class
Pancreatic hormone; insulin antagonist

Description
Glucagon is a hormone secreted by the alpha cells of the pancreas. When released, it elevates blood glucose levels by increasing the breakdown of glycogen to glucose and inhibiting glycogen synthesis. In addition, glucagon exerts positive inotropic action on the heart and decreases renal vascular resistance. The drug is only effective in treating hypoglycemia if liver glycogen is available. Therefore it may be ineffective in chronic hypoglycemia, starvation, and adrenal insufficiency. Glucagon also causes relaxation of smooth muscle of the stomach, duodenum, small bowel, and colon.

Onset & Duration
Onset: IM/IN: Within 1 minute
Duration: IM/IN: 3-6 minutes

Adult Dosage: 0.5-1.0 mg IM or 2 mg IN
Calcium or Beta – Blocker Overdose: 3 mg IM, or 2 mg IN (1 mg administered in each nostril)

Pediatric Dosage: 0.5-1 mg/kg IM or 2 mg/kg IN; In patients less than 20 kg, 20 to 30 μg/kg IM/IN (half the desired dose administered in each nostril).

Indications
Altered level of consciousness where hypoglycemia is suspected; May be used as an inotropic agent in beta-blocker overdose.

Contraindications
Hypersensitivity; Patients with pheochromocytoma

Adverse Reactions
Tachycardia; hypertension; nausea; and vomiting

Drug Interactions
There are no significant drug interactions with other medications.

Special Considerations
Pregnancy safety. Should not be considered a first-line choice for hypoglycemia. Intravenous glucose must be administered if the patient does not respond to a second dose of Glucagon.

How Supplied
Glucagon is supplied in a combination package containing 1 mg (1 unit) of the medication. This comes in a powder form that must be reconstituted with the diluting solution prior to administration. Once reconstituted, glucagon should be administered after mixing.
HALOPERIDOL (Haldol)

Class: Antipsychotic Agent

Description
Inhibits central nervous system (CNS) catecholamine receptors; strong antidopaminergic and weak anticholinergic. Acts on CNS to depress subcortical areas, mid-brain and ascending reticular activating system in the brain.

Onset and Duration
Onset: 10 minutes
Peak Effect: 30-45 minutes
Duration: Variable (generally 12-24 hours)

Adult Dosage: 2-5 mg IV/IM
Pediatric Dosage: Not Recommended

Indications
Adult behavioral emergency, agitated, and aggressive patients who present a danger to themselves or to others and who cannot be safely managed otherwise.

Contraindications
Known hypersensitivity to medication or similar; children; Parkinson’s disease; CNS depression; suspected head injury

Adverse Reactions
Extrapyramidal symptoms (dystonic reaction); restlessness, spasms; Parkinson-like symptoms; drooling; hypotension; orthostatic hypotension; nausea; vomiting; blurred vision

Drug Interactions
Enhanced CNS depression and hypotension in combination with alcohol, and antagonizes amphetamines and epinephrine. Other CNS depressants may potentiate effects.

Special Considerations
Violent patients should be physically restrained while the medication is administered; May mask subsequent evaluation. Pregnancy Safety not established. Treat hypotension secondary to Haloperidol with fluids.

How Supplied
1 ml vial, 5 mg/ml
HYDROCORTISONE SODIUM SUCCINATE (Solu-Cortef)

Class
Corticosteroid

Description
Reduces inflammation by multiple mechanisms. It replaces the steroids that are lacking in adrenal insufficiency.

Onset & Duration

Onset:  IV – 1 hour  
Duration:  IV 8-12 hours

Adult Dosage:  4 mg/kg slow IV Bolus/ IM

Pediatric Dosage:  2 mg/kg bolus IV/ IM, not to exceed 100 mg, if available

Indications
Adrenal insufficiency

Contraindications
Known hypersensitivity; systemic fungal infections; premature infants

Adverse Reactions
Headache; vertigo; CHF; hypertension; fluid retention; nausea

Drug Interactions
Incompatible with Heparin and Metaraminol.

How Supplied
Parenteral for IV injection – 100, 200 or 500 mg powder in vials (requires reconstitution with solution provided)

Special Considerations
Pregnancy Class C; Exceeding max dosage of 100-500 mg may be acceptable in emergency situations.

NOTES:

Dosage Forms and Packaging:
Store at controlled room temperature (59° to 86° F). Requires reconstitution with solution provided.
HYDROXOCOBALAMIN (Cyanokit)

Class
Cyanide antidote

Description
Hydroxylated active forms of vitamin B 12. One molecule binds with cyanide to form cyanocobalamin (vitamin B12) which is then excreted through the renal system.

Onset & Duration
Onset: IV – 1 to 3 minutes

Adult Dosage: IVP 5 grams/ 200 ml NS in 15 minutes (15 ml/min). Maximum total dose of 10 grams.

Pediatric Dosage: 70 mg/kg over 15 minutes

Indications
Known or suspected cyanide poisoning

Contraindications
No specific contraindications known.

Adverse Reactions
Transient elevation in blood pressure, temporary red discoloration of skin and urine.

Drug Interactions
Incompatible with any other medications.

How Supplied
Single kit with two (2) 250 ml glass vials, each containing 2.5 gm per vial, two (2) sterile transfer spikes, one (1) IV infusion set, and one (1) quick use reference guide.

Special Considerations
Must be administered in a dedicated IV.
IPRATROPIUM BROMIDE (Atrovent)

Class
Anticholinergic

Description
Ipratropium is an anticholinergic (parasympatholytic) bronchodilator that is chemically related to atropine.

Onset & Duration

Onset: Varied
Duration: Varied

Adult Dosage: Unit Dose

Pediatric Dosage: 0.5 mg – unit dose

Indications
Bronchial asthma, reversible bronchospasm associated with chronic bronchitis and COPD.

Contraindications
Ipratropium should not be used in patients with hypersensitivity to the medication. It is not indicated for use in the treatment of acute bronchospasm where rapid response is required. Ipratropium should be used with caution for patients with history of narrow-angle glaucoma, epigastric disease, or hypersensitivity to the medication.

Adverse Reactions
Ipratropium can cause palpitations, anxiety, dizziness, headache, nervousness, rash, nausea, vomiting, dry mouth, bronchospasm, bronchitis and allergic reaction.

Drug Interactions
There are few in the prehospital setting.

How Supplied
Ipratropium is supplied in unit dose vials containing 500 micrograms (0.02% inhalation solution) diluted in 2.5 ml saline.
KETAMINE HYDROCHLORIDE

Class
Dissociative Anesthetic; Mild Hallucinogenic

Description
Nonbarbiturate, dissociative anesthetic (NDMA receptor antagonist), but at higher doses may bind to opiate/opioid receptors.

Onset & Duration

<table>
<thead>
<tr>
<th>Onset</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV – 15 to 30 seconds</td>
<td>IV – 10 to 15 minutes</td>
</tr>
<tr>
<td>IM – 1 to 3 minutes</td>
<td>IM – 15 to 25 minutes</td>
</tr>
</tbody>
</table>

Indications
Severe pain; induction and maintenance of anesthesia/sedation; chemical sedation in excited delirium

Contraindications
Hypersensitivity; patients with significant hypertension where a significant elevation in blood pressure would constitute a serious hazard

Adverse Reactions
Respiratory depression or laryngospasm especially following rapid administration, vomiting, elevation in heart rate and blood pressure, however hypotension and bradycardia have also been noted.

Drug Interactions
Prolonged sedation if administered with narcotics.

Dosage
5 mL multi-dose vial contains 100 mg/mL
Ketamine is dosed on ideal body weight.

Pain Management
0.1 to 0.2 mg/kg IV/IO max 20mg. 0.4 mg/kg IM/IN max 40 mg.

Sedation/Induction
1 to 2 mg/kg IV/IO

Agitation
Up to 2 mg/kg IV/IO or up to 4 mg/kg IM
KETROLAC TROMETHAMINE (Toradol)

**Class**
Non-Steroidal Anti-Inflammatory Drug (NSAID)

**Description**
Inhibits the production of prostaglandins in inflamed tissue, which decreases the responsiveness of pain receptors.

**Onset & Duration**

**Onset:** IV/IM – Following IM or IV injection, the onset of analgesia occurs in about 30 minutes, with a peak effect around 1-2 hours.

**Duration:** IV/IM – of 4-6 hours

**Adult Dosage:**
- 30 mg IV over 15 seconds.
- 60 mg IM slowly and deeply into muscle.

**Pediatric Dosage:** Not recommended for use in pediatric population.

**Indications**
Short-term management of moderately to severe acute pain.

**Contraindications**
It should not be administered to patients who report allergies to the drug or allergies aspirin or the nonsteroidal anti-inflammatory drugs. Patients with a history of peptic ulcer disease or GI bleed, patients with renal insufficiency, hypovolemic patients, pregnancy (third trimester), nursing mothers, stroke or suspected stroke or head trauma, need for major surgery in the immediate or near future.

**Adverse Reactions**
Headache; drowsiness; dizziness; abdominal pain; dyspepsia; nausea and vomiting; diarrhea

**Drug Interactions**
Ketorolac, when administered with other NSAIDS (including ASA), can worsen the side effects associated with the use of drugs in this class.

**How Supplied**
Parenteral for IV/IM injection – 30 mg/ml vial
- 15 mg/ml vial

**Special Considerations**
Older than 65 years of age, renal impairment, or weight less than 50 kg (110 lbs);
Pregnancy class C; class D in third trimester.

**NOTES:**
- **Dosage Forms and Packaging:** Store at controlled room temperature (59° to 86° F).
- Protect from light.
LIDOCAINE

Class
Antidysrhythmic

Description
Lidocaine is a local surface or block anesthetic, used as a precursor to medical procedures. Blunts cough reflex in cases of RSI on patients with increased intracranial pressure (ICP).

Onset & Duration:

<table>
<thead>
<tr>
<th>Onset</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-90 seconds</td>
<td>2-4 hours</td>
</tr>
</tbody>
</table>

Adult Dosage:
For pre-intubation with suspected increased ICP: 1.0-1.5 mg/kg IV bolus; Maximum individual dose 100 mg
For topical anesthetic: 20-40 mg of 2% (preservative free) lidocaine at injection site.

Pediatric Dosage: Not recommended for use in the pediatric population.

Indications:
Anesthetic for IO insertion on conscious patients. Select cases of Rapid Sequence Induction (RSI).

Contraindications
Hypersensitivity; Stokes-Adams syndrome; Second or third degree heart block in the absence of an artificial pacemaker

Adverse Reactions
Lightheadedness; confusion; blurred vision; hypotension; cardiovascular collapse; bradycardia; CNS depression (altered level of consciousness, irritability, muscle twitching, seizures) with high doses

Drug Interactions
Metabolic clearance of lidocaine may be decreased in patients taking beta-adrenergic blockers or in patients with liver dysfunction; Apnea induced with succinylcholine may be prolonged with large doses of lidocaine; Cardiac depression may occur if lidocaine is given concomitantly with IV phenytoin; Additive neurological effects may occur with procainamide.

Special Considerations
Pregnancy safety: Category B; Therapeutic plasma levels of lidocaine between 2-6 meg/ml suppresses ventricular dysrhythmias. A 75-100 mg bolus maintains adequate blood levels for only 20 minutes; If bradycardia occurs in conjunction with PVCs, always treat the bradycardia first with atropine, epinephrine, and/or dopamine; Exceedingly high doses of lidocaine can result in coma or death; Avoid lidocaine for reperfusion dysrhythmias after thrombolytic therapy.

How Supplied

<table>
<thead>
<tr>
<th>Prefilled Syringes</th>
<th>Ampules</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mg in 5 ml of solution</td>
<td>100 mg in 5 ml of solution</td>
</tr>
<tr>
<td>1 and 2 g additive syringes</td>
<td>1 and 2 g vials in 30 ml of solution</td>
</tr>
<tr>
<td></td>
<td>5 ml containing 100 mg/ml</td>
</tr>
</tbody>
</table>
**MAGNESIUM SULFATE**

**Class**  
Electrolyte, CNS depressant

**Description**  
Magnesium sulfate reduces striated muscle contractions and blocks peripheral neuromuscular transmission by reducing acetylcholine released at the myoneural junction. In emergency care, magnesium sulfate is used to manage seizures associated with toxemia of pregnancy. Other uses include uterine relaxation (to inhibit contractions of premature labor), as a bronchodilator after beta-agonist and anticholinergic agents have been used, replacement therapy for magnesium deficiency, as a cathartic to reduce the absorption of poisons from the GI tract, and in the initial therapy for convulsions. Magnesium sulfate is gaining popularity as an initial treatment in the management of various dysrhythmias, particularly torsades de pointes, and dysrhythmias secondary to a tricyclic antidepressant overdose or digitalis toxicity. The drug is also considered as a class IIa agent (probably helpful) for refractory ventricular fibrillation and ventricular tachycardia after administration of lidocaine or bretylium doses.

**Onset & Duration:**

<table>
<thead>
<tr>
<th>Onset</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate</td>
<td>3-4 hours</td>
</tr>
</tbody>
</table>

**Adult Dosage:**  
Pre-eclampsia: 1-4 g IV/IO.  
Torsades: VT without pulse: 2 g / 10cc IV/IO/EJ; VT w/pulse: 1 g / 100 cc/ 10 minutes.  
Asthma: 2 g / 100 cc/ 10 minutes.

**Pediatric Dosage:**  
(Maximum dose 2 g)  
Torsades: VT without pulse: 25 – 50 mg/kg IV/IO Bolus; VT w/ pulse: 25-50 mg/10-20 minutes.

**Indications**
Seizures of eclampsia (toxemia of pregnancy); Torsades de Pointes

**Contraindications**  
Heart Block

**Adverse Reactions**
Diaphoresis; facial flushing; hypotension; depressed reflexes; hypothermia; reduced heart rate; circulatory collapse; respiratory depression

**Drug Interactions**
CNS depressant effects may be enhanced if the patient is taking other CNS depressants. Serious changes in cardiac function may occur with cardiac glycosides.

**Special Considerations**
Pregnancy safety: Magnesium sulfate is administered to treat toxemia of pregnancy. It is recommended that the drug not be administered in the 2 hours before delivery, if possible. IV calcium gluconate or calcium chloride should be available as an antagonist to magnesium if needed; Convulsions may occur up to 48 hours after delivery, necessitating continued therapy. The “cure” for toxemia is delivery of the baby; Magnesium must be used with caution in patients with renal failure, since it is cleared by the kidneys and can reach toxic levels easily in those patients; Prophylactic administration of magnesium sulfate for patients with acute myocardial infarction should be considered.

**How Supplied**
5 and 10 ml of a 10% solution in prefilled syringe
MARK I AUTO-INJECTOR

Class
Nerve Agent/Organophosphate Antidote

Description
Auto-injector containing 2 sequentially-numbered auto-injectors. #1 contains 2 mg of atropine sulfate and #2 contains 600 mg Pralidoxime Chloride. Medications must be given in numerical order.

Onset & Duration
Onset: IM – Highly dependent on exposure route, duration, and underlying patient condition.
Duration: IM – Highly dependent on exposure route, duration, and underlying patient condition.

Indications
Signs/symptoms that include salivation, lacrimation, urination, defecation, GI discomfort, emesis, miosis, altered mental status, and/or seizure following exposure to nerve agent or organophosphate-based pesticide/insecticide.

Contraindications
There are no known contraindications in an emergency.

Adverse Reactions
Additional atropine maybe needed to halt secretions, highly dependent on exposure route, duration, and underlying patient condition.

Drug Interactions
No known drug interactions in an emergency.

Special Considerations
Medical Control Physician or designated EMS Field Physician must authorize the use of antidote for a patient, or in the case of a mass intoxication setting, the scene. In MCI scene, independent patient orders are not needed once the release of nerve agent antidote is made by a physician.

Adult Dosage:
1 Mark I Kit for mild/moderate symptoms, 3 Mark I Kits for severe symptoms. Additional atropine may be needed until secretions dry. Pralidoxime is given to a maximum individual dose of 1.8 grams (3 doses).

Pediatric Dosage:
Weight-based per the Broselow Pediatric Antidote for Chemical Emergencies Tape.

NOTE: Mark I Kits are being replaced in the industry, per manufacturing processes, by Duo-Dote kits. Mark I kits and Duo-dotes are essentially interchangeable.
METHYLPREDNISOLONE (Solu-Medrol)

Class
Steroid

Description
Methylprednisolone is a synthetic steroid with potent anti-inflammatory properties.

Onset & Duration

Onset: 1-2 hours
Duration: 8-24 hours

Adult Dosage: 125 mg IV/IO/IM (or 1-2 mg/kg)

Pediatric Dosage: 2 mg/kg IV/IO/IM Maximum 60 mg.

Indications
Severe anaphylaxis; asthma; COPD; decompensate shock

Contraindications
There are no major contraindications to the use of methylprednisolone in acute management of severe anaphylaxis. A single dose of methylprednisolone is all that should be given in the prehospital phase of care and long-term steroid use can cause gastrointestinal bleeding, prolonged wound healing, and suppression of adrenocortical steroids. Methylprednisolone should be used with caution with patients having hypersensitivity to the medication.

Adverse Reactions
Methylprednisolone can cause fluid retention, congestive heart failure, hypertension, abdominal distention, vertigo, headache, nausea, malaise, hiccups, potassium loss, arrhythmia and anaphylaxis.

Drug Interactions
There are few in the prehospital setting.

How Supplied
Methylprednisolone is supplied in Mix-O-Vials containing 125 mg or compressed gram vials of the medication. This comes in a powder form that must be reconstituted in the Mix-O-Vial system prior to administration. Once reconstituted, methylprednisolone should be used within 48 hours.
**Class**
Selective Beta-Blocker

**Description**
Metoprolol affects beta-1 adrenoreceptors, mainly located in cardiac muscle. At higher doses it also inhibits beta-2 adrenoreceptors, chiefly located in the bronchial and vascular musculature. Effects of Metoprolol included slowing of the sinus rate and decreasing AV nodal conduction resulting in reduction of heart rate and cardiac output, reduction of systolic blood pressure, reduction of reflex orthostatic tachycardia, and inhibition of catecholamine-induced tachycardia.

**Onset & Duration**

<table>
<thead>
<tr>
<th>Onset</th>
<th>IV – 10 to 20 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>IV – 4 to 8 hours</td>
</tr>
</tbody>
</table>

**Adult Dosage:** 5 mg Slow IVP (monitor BP, Pulse and EKG) Every 5 minutes to maximum of 15 mg.

**Pediatric Dosage:** Not Applicable

**Indications**
Rapid ventricular rates associated with atrial fibrillation and atrial flutter. Used after adenosine to treat refractory PSVT in patients with narrow QRS complex and adequate blood pressure

**Contraindications**
Metoprolol is contraindicated in sinus bradycardia, heart block, cardiogenic shock, systolic blood pressure < 100 mmHg, or signs of CHF or COPD.

**Adverse Reactions**
Hypotension; bradycardia; CHF; shortness of breath; wheezing; nausea and vomiting; gastric pain; confusion; drowsiness; rash; tinnitus

**Drug Interactions**
In hypertension and angina patients with CHF controlled by digitalis and diuretics, Metoprolol should be administered with extreme caution since beta blockade carries the potential of further decreasing myocardial contractility and precipitating more severe failure.

**How Supplied**
Parenteral for IV injection in 1.0 mg/ml and 5 ml vials

**Special Considerations**
Patient with Bronchospastic Disease, Diabetes and Hypoglycemia, or Thyrotoxicosis should in general not receive beta blockers.
**Class**
Benzodiazepine

**Description**
Reversibly interacts with gamma-amino butyric acid (GABA) receptors in the CNS causing sedative, amnesic, anxiolytic, hypnotic effects and anticonvulsant activity.

**Onset & Duration**

<table>
<thead>
<tr>
<th>Onset</th>
<th>IV/IM/IN – 1-3 minutes, dose dependent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>IV/IM/IN – 2-6 hours, dose dependent</td>
</tr>
</tbody>
</table>

**Indications**
Sedation; prevent shivering; seizure; agitation and medical procedures (e.g. cardioversion, RSI)

**Contraindications**
Acute narrow-angle glaucoma; shock; coma; alcohol intoxication; overdose; depressed vital signs

**Adverse Reactions**
Headache; respiratory depression; apnea; hypotension; nausea and vomiting; hiccups; pain at the injection site

**Drug Interactions**
Should not be used in patients who have taken central nervous system depressants.

**How Supplied**
1 mg/mL and 5 mg/mL vials and Tubex syringes

**Special Considerations**
Requires continuous monitoring of respiratory and cardiac function. Pregnancy Class D.

**Adult Dosage: (Maximum 0.1 mg/kg)**

- **Seizure** – up to 2.5 mg IVP or 5.0 mg IM/IN
- **Agitation** – up to 2.5 mg IVP or 5.0 mg IM/IN
- **RSI** – up to 5.0 mg IVP
- **Cardioversion** – up to 5.0 mg IV/IM or 10mg IM/IN

**Pediatric Dosage:**
Maximum (under age 6 – 6 mg; over age 6 – 10 mg) 0.1 mg/kg IM/IN, per Pediatric Dosing Tape/Chart

**Dosage Forms and Packaging:**
Store at controlled room temperature (59° to 86° F). Protect from light.
MORPHINE SULFATE

Class
Opioid analgesic

Description
Morphine sulfate is a natural opium alkaloid that increases peripheral venous capacitance and decreases venous return ("chemical phlebotomy"). It promotes analgesia, euphoria, and respiratory and physical depression. Secondary pharmacological effects of morphine include depressed responsiveness of alpha-adrenergic receptors (producing peripheral vasodilation) and baroreceptor inhibition. In addition, because morphine decreases both preload and afterload, it may decrease myocardial oxygen demand. Morphine sulfate is a schedule II drug.

Onset & Duration
Onset: Immediate
Duration: 2-7 hours

Adult Dosage: Up to 10 mg IV/IM
Pediatric Dosage: Weight based Pediatric Tape/Chart 0.1 mg/kg IM/IO (maximum 10 mg.)

Indications
Chest pain associated with myocardial infarction; Moderate to severe acute and chronic pain; Should be used with caution in chronic pain syndromes; Pulmonary edema, with or without associated pain.

Contraindications
Hypersensitivity; Diarrhea caused by poisoning; Hypovolemia; Hypotension; Head injury or undiagnosed abdominal pain; Patients who have taken MAO inhibitors within 14 days.

Adverse Reactions
Hypotension; nausea and vomiting; tachycardia or bradycardia; palpitations; syncope; facial flushing; respiratory depression; euphoria; bronchospasm; dry mouth; allergic reaction

Drug Interactions
CNS depressants may potentiate effects of morphine (respiratory depression, hypotension, and sedation); Chlorpromazine may potentiate analgesia; MAO inhibitors may cause paradoxical excitation.

Special Considerations
Pregnancy safety: Category C; Narcotics rapidly cross the placenta. Safety in neonates has not been established; Use with caution in older adults, those with asthma, and those susceptible to CNS depression; May worsen bradycardia or heart block in inferior myocardial infarction (vagotonic effect); Naloxone and resuscitation equipment should be readily available.

How Supplied
Morphine is supplied in tablets, suppositories, and solution; In emergency care, morphine sulfate is usually administered IV; Parenteral preparations are available in many strengths; A common preparation is 10 mg in 1 ml of solution, ampules, and Tubex syringes.
NALOXONE (Narcan)

Class
Synthetic opioid antagonist

Description
Naloxone is a competitive narcotic antagonist used in the management and reversal of overdoses caused by narcotics and synthetic narcotic agents. Unlike other narcotic antagonists, which do not completely inhibit the analgesic properties of opiates, naloxone antagonizes all actions of morphine.

Onset & Duration
Onset: Within 2 minutes, patient dependent
Duration: 30-60 minutes, patient dependent

Adult Dosage: 0.4-2 mg IV/IM; 2 mg IN (Can give up to 10 mg over time period of less than 10 minutes. Should be administered 1 mg in each nare.)

Pediatric Dosage: 0.1 mg/kg IV/IO; May repeat up to 2 mg total dose.

Indications
For the complete or partial reversal of CNS and respiratory depression induced by opioids: Narcotic agonist: morphine sulfate, heroin, hydromorphone (dilaudid), methadone, meperidine (Demerol), paregoric, fentanyl citrate (sublimaze), oxycodone (percodan), codeine, propoxyphene (Darvon); Narcotic agonist and antagonist: butorphanol tartrate (stadol), pentazocine (talwin), nalbuphine (nubain); Decreased level of consciousness; Coma of unknown origin.

Contraindications
Hypersensitivity; Use with caution in narcotic-dependent patients who may experience withdrawal syndrome (including neonates of narcotic-dependent mothers).

Adverse Reactions
Tachycardia; hypertension; dysrhythmias; nausea and vomiting; diaphoresis

Drug Interactions
Is incompatible with bisulfite and with alkaline solutions.

How Supplied
0.02 mg/ml (neonate), 0.4 mg/ml, 1 mg/ml

Special Considerations
Pregnancy safety: Category B; May not reverse hypotension; Caution should be exercised when administering naloxone to narcotic addicts (may precipitate withdrawal with hypertension, tachycardia, and violent behavior).
**NITROGLYCERINE**

**Class**
Vasodilator

**Description**
It was originally believed that nitrates and nitrites dilated coronary blood vessels, thereby increasing blood flow to the heart. It is now believed that atherosclerosis limits coronary dilation and that the benefits of nitrates and nitrites result from dilation of arterioles and veins in the periphery. The resulting reduction in preload and to a lesser extent in afterload decreases the work load of the heart and lowers myocardial oxygen demand. Nitroglycerin is very lipid soluble and is thought to enter the body from the GI tract through the lymphatics rather than the portal blood.

**Onset & Duration**

**Onset:** 1-3 minutes  
**Duration:** 20-30 minutes

**Adult Dosage:** 0.4 mg SL every 5 minutes for a maximum of 3 doses.  
**Pediatric Dosage:** Medication not recommended for use in pediatrics.

**Indications**
Ischemic Chest Pain; hypertension; congestive heart failure

**Contraindications**
Hypersensitivity; pericardial tamponade; restrictive cardiomyopathy; constructive pericarditis

**Adverse Reactions**
Transient headache; postural syncope; reflex tachycardia; hypotension; nausea and vomiting; allergic reaction; muscle twitching; diaphoresis

**Drug Interactions**
Other vasodilators may have additive hypotensive effects.

**How Supplied**

- **Tablets (sublingual):** 0.15 mg (1/400gr), 0.3 mg (1/200gr), 0.4 mg (1/150gr), 0.6 mg (1/100gr)  
- **Aerosol (translingual):** 0.4 mg metered dose; Parenteral: 0.5 mg/ml, 0.8 mg/ml, 5.0 mg/ml  
- **Tablets (sustained release):** 2.6 mg, 6.5 mg, 9 mg; Capsules (sustained release): 6.5 mg, 9 mg  
- **Topical:** 2% ointment

**Special Considerations**
Pregnancy safety: Category C; Susceptibility to hypotension in older adults increases; Nitroglycerine decomposes when exposed to light or heat; Must be kept in airtight containers; Active ingredients of nitroglycerine “stings” when administered sublingually.
NITROUS OXIDE

Class
Analgesic Gas

Description
Nitrous Oxide is a blended mixture of 50% nitrous and 50% oxygen. Nitrous Oxide is a CNS depressant with analgesic properties, and must be self-administered by a patient.

Onset & Duration:
Onset: Immediate
Duration: Only as long as patient is inhaling gas.

Adult Dosage: Self-dosing inhalation, PRN
Pediatric Dosage: Same as adult.

Indications
Pain Management

Contraindications
Nitrous Oxide should not be used by any patient who cannot comprehend verbal instructions or who is intoxicated with alcohol or other drugs. Nitrous Oxide should not be administered to a patient with an altered mental status that may be due to a head injury, or to any patient with COPD, where the high concentration of oxygen (50%) may result in respiratory depression. Nitrous Oxide may result in pneumothorax in patients with COPD as a result of increased diffusion into closed spaces, i.e. blebs. Nitrous Oxide should not be administered to patients with abdominal pain, abdominal distention, or to patients with suspected chest injury. Nitrous Oxide may decrease cardiac output. Nitrous Oxide should not be administered to any female patient who is in the first trimester of pregnancy. Nitrous Oxide should not be used in patients with a hypersensitivity to the medication.

Adverse Reactions
Nitrous Oxide can cause dizziness, lightheadedness, altered mental status, hallucinations, nausea and vomiting.

Drug Interactions
Nitrous Oxide can potentiate the effects of other CNS depressants such as narcotics, sedatives, hypnotics and alcohol.

How Supplied
Nitrous Oxide is supplied in a compressed gas cylinder system where both gasses are fed into a blender that delivers the fixed 50% 50% mixture. The blender is designed to shut off if the oxygen cylinder becomes depleted.
## NOREPINEPHRINE (Levophed)

### Class
Sympathomimetic

### Description
Alpha-adrenergic: Peripheral vasoconstriction  
Beta-adrenergic: Inotropic agent and coronary artery vasodilation

### Onset & Duration
**Onset:** Rapid  
**Duration:** Diminishes 1 to 2 minutes after IV cessation

### Adult Dose
ROSC/Medical Shock: 0.1 to 0.5 mcg/kg/min if SBP < 90 mmHg

### Pediatric Dose
0.05 to 0.5 mcg/kg/minute as determined by Medical Control

### Indications
Shock/Hypoperfusion

### Contraindications
Hypovolemic Shock

### Adverse Reactions
Tissue necrosis upon extravasation; reflex bradycardia

### Drug Interactions

### How Supplied
4 mg/4 mL  1 mg/mL
ONDANSETRON HYDROCHLORIDE (Zofran)

Class
Serotonin receptor antagonist; Antiemetic

Description
Blocks action of serotonin, which is a natural substance that causes nausea and vomiting.

Onset & Duration
Onset: IV/IM – 30 minutes
Duration: IV/IM – 3-6 hours

Adult Dosage: 4 mg IV/IM; May be repeated 1 time to a maximum dose of 8 mg.
Pediatric Dosage: 40 kg or less: 0.1 mg/kg single dose IV/IM
Over 40 kg: 4 mg single dose IV/IM

Indications
For the prevention and control of nausea or vomiting.

Contraindications
Known allergy to Ondansetron or other 5-HT3 receptor antagonists, History of Long QT syndrome.

Adverse Reactions
Headache; abnormal ECG; prolonged QT interval; second-degree AV block; constipation; diarrhea

Drug Interactions
Not recommended if patient is taking Apomorphine, Mesoridazine, Pimozide, or Thioridazine.

How Supplied
Parenteral for IV/IM injection – 2 mg/mL vial

Special Considerations
Pregnancy class B

NOTES:
Brand Name: Zofran
Dosage Forms and Packaging:
Store at controlled room temperature (59° to 86° F). Protect from light.
ROCURONIUM (Zemuron)

Class
Neuromuscular Blocker

Description
Antagonizes motor endplate acetylcholine receptors (non-depolarizing neuromuscular blocker) (muscle paralysis).

Onset & Duration
Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 1-2 hours

Adult Dosage
1 mg/kg IV push

Pediatric Dosage: Not for use on pediatric patients.

Indications
Rapid-sequence intubation

Contraindications
A history of “Long QT Syndrome," problems with circulation, or if ever had an allergic reaction to another anesthetic medication. Inability to control airway or support ventilations.

Adverse Reactions
Apnea; respiratory depression; tachydysrhythmias; bronchospasm; nausea; vomiting
Decrease dose for patients with renal disease.

Drug Interactions
Use of inhalation anesthetics will enhance neuromuscular blockade.

How Supplied
Parenteral for IV injection – 10 mg/mL vials.

Special Considerations
FDA pregnancy category B. Fentanyl or Etomidate should be used in any conscious patient before undergoing neuromuscular blockade.

NOTES:
Dosage Forms and Packaging: Store at controlled room temperature (59° to 86° F).
SODIUM BICARBONATE

**Class**
Buffer

**Description**
Sodium Bicarbonate reacts with hydrogen ions to form water and carbon dioxide and therapy can act to buffer metabolic acidosis. Increasing the plasma concentration of bicarbonate causes blood pH to rise.

**Onset & Duration:**
- **Onset:** 2-10 minutes
- **Duration:** 30-60 minutes

**Adult Dosage:**
- Cardiac Arrest: 1 mEq/kg (8.4%) IV/IO
- Crush Injury: 50 mEq (8.4%) IV/IO over 5 minutes, every 30 minutes.

**Pediatric Dosage:**
- Neonatal Resuscitation (less than 1 month of age) (4.2%) 1 mEq/kg Slow IV/IO

**Indications**
- Known preexisting bicarbonate-responsive acidosis
- Intubated patient with continued long arrest interval
- Tricyclic antidepressant overdose
- Alkalization for treatment of specific intoxications
- Hyperkalemia

**Contraindications**
- In patients with chloride loss from vomiting and GI suction
- Metabolic and respiratory alkalosis
- Hypocalcemia
- Hypokalemia

**Adverse Reactions**
- Metabolic acidosis
- Hypoxia
- Rise in intracellular PC02 and increased tissue acidosis
- Electrolyte imbalance (tetany)
- Seizures
- Tissue sloughing at injection site

**Drug Interactions**
- May precipitate in calcium solutions
- Alkalization of urine may increase half-lives of certain drugs
- Vasopressors may be deactivated

**How Supplied**
- **Tablets:** 300 mg, 325 mg, 600 mg, 625 mg
- **Injection:** 4% (2.4 mEq/5 ml), 4.2% (5 mEq/10 ml), 5% (297.5 mEq/500 ml), 7.5% (8.92 mEq/10 ml and 44.6 mEq/50 ml), 8.4% (10 mEq/10 ml and 50 mEq/50 ml)

**Special Considerations**
- Pregnancy safety: Category C
- When possible, blood gas analysis should guide bicarbonate administration
- Bicarbonate administration produces carbon dioxide, which crosses cell membranes more rapidly than bicarbonate, potentially worsening intracellular acidosis
- May increase edematous or sodium-retaining states
- May worsen congestive heart failure
SUCCINYLCHOLINE

Class
Neuromuscular blocker, depolarizing; muscle relaxant

Description
Ultra-short-acting depolarizing skeletal muscle relaxant that mimics acetylcholine as it binds with the cholinergic receptors on the motor end plate, producing a phase 1 block as manifested by fasciculations (muscle paralysis).

Onset & Duration

Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 5-10 minutes

Adult Dosage: 1.25 mg-1.75 mg/kg IV push
Pediatric Dosage: 2 mg/kg for infants; 1-1.5 mg/kg for children

Indications
Rapid-sequence intubation

Contraindications
Burns; malignant hyperthermia; penetrating eye injuries; acute narrow-angle glaucoma; inability to control airway or support ventilations

Adverse Reactions
Apnea; respiratory depression; bradydysrhythmia; tachydysrhythmias; salivation; rhabdomyolysis; malignant hyperthermia; hyperkalemia; post procedure muscle pain

Drug Interactions
Oxytocin, beta blockers, and organophosphates may potentiate effects.

How Supplied
Parenteral for IV injection – 20 mg/mL vials.

Special Considerations
Pregnancy class C; Neuromuscular blockade in 0.5 to 1 minute. IV administration in infants and children can potentially result in profound bradycardia. Fentanyl or Etomidate should be used in any conscious patient before undergoing neuromuscular blockade.

NOTES:
Dosage Forms and Packaging: Store at controlled room temperature (59° to 86° F).
VECURONIUM BROMIDE (Norcuron)

Class
Neuromuscular Blocker

Description
Antagonizes motor endplate acetylcholine receptors (non-depolarizing neuromuscular blocker) (muscle paralysis).

Onset & Duration

Onset: IV – 1 minute
Peak Effect: 1-3 minutes
Duration: IV – 45-90 minutes

Adult Dosage 0.1 mg/kg IV push
Pediatric Dosage: 0.1-0.3 mg/kg IV/IO

Indications
Rapid-sequence intubation

Contraindications
Acute narrow-angle glaucoma; penetrating eye injuries; myasthenia gravis; hepatic or renal failure; allergic reaction to another anesthetic medication; inability to control airway or support ventilations

Adverse Reactions
Apnea; respiratory depression; tachydysrhythmias; bronchospasm; excessive salivation

Drug Interactions
Use of inhalation anesthetics will enhance neuromuscular blockade.

How Supplied
10 and 20 mg powder (requires reconstitution before administration)

Special Considerations