

<b>Crush Injury/Syndrome</b>	
<b>ADULT</b>	<b>PEDIATRIC</b>
<b>BLS Procedures</b>	
Perform spinal precautions as indicated Determine Potential vs. Actual Crush Syndrome Administer oxygen as indicated	
<b>ALS Prior to Base Hospital Contact</b>	
Potential for Crush Syndrome <ul style="list-style-type: none"> <li>• IV/IO access</li> <li>• Maintain body heat</li> <li>• Release compression</li> <li>• Monitor for cardiac dysrhythmias</li> </ul>	
<b>Communication Failure Protocol</b>	
Crush Syndrome <ul style="list-style-type: none"> <li>• Initiate 2<sup>nd</sup> IV/IO access</li> <li>• <b>Normal Saline</b> <ul style="list-style-type: none"> <li>○ IV bolus – 1 Liter                             <ul style="list-style-type: none"> <li>• Caution with cardiac and/or renal history</li> </ul> </li> </ul> </li> <li>• <b>Sodium Bicarbonate</b> <ul style="list-style-type: none"> <li>○ IV mix – 1 mEq/kg                             <ul style="list-style-type: none"> <li>• Added to 1<sup>st</sup> Liter of Normal Saline</li> </ul> </li> </ul> </li> <li>• <b>Albuterol</b> <ul style="list-style-type: none"> <li>○ Nebulizer – 5 mg/6 mL                             <ul style="list-style-type: none"> <li>• Repeat x 2</li> </ul> </li> </ul> </li> <li>• <b>Morphine</b> – Per Policy 705 - Pain Control</li> <li>• Maintain body heat</li> <li>• Release compression</li> <li>• Monitor for cardiac dysrhythmias</li> <li>• For cardiac dysrhythmias:                             <ul style="list-style-type: none"> <li>○ <b>Calcium Chloride</b> <ul style="list-style-type: none"> <li>• IV – 1 g over 1 min</li> </ul> </li> </ul> </li> </ul>	Crush Syndrome <ul style="list-style-type: none"> <li>• Initiate 2<sup>nd</sup> IV/IO access if possible or establish IO</li> <li>• <b>Normal Saline</b> <ul style="list-style-type: none"> <li>○ IV/IO bolus – 20 mL/kg                             <ul style="list-style-type: none"> <li>• Caution with cardiac and/or renal history</li> </ul> </li> </ul> </li> <li>• <b>Sodium Bicarbonate</b> <ul style="list-style-type: none"> <li>○ IV mix– 1 mEq/kg                             <ul style="list-style-type: none"> <li>• Added to 1<sup>st</sup> Liter of Normal Saline</li> </ul> </li> </ul> </li> <li>• <b>Albuterol</b> <ul style="list-style-type: none"> <li>○ Less than 2 years old                             <ul style="list-style-type: none"> <li>• Nebulizer – 2.5 mg/3 mL                                     <ul style="list-style-type: none"> <li>○ Repeat x 2</li> </ul> </li> </ul> </li> <li>○ 2 years old and greater                             <ul style="list-style-type: none"> <li>• Nebulizer – 5 mg/6 mL                                     <ul style="list-style-type: none"> <li>○ Repeat x 2</li> </ul> </li> </ul> </li> </ul> </li> <li>• Maintain body heat</li> <li>• Release compression</li> <li>• Monitor for cardiac dysrhythmias</li> <li>• For cardiac dysrhythmias:                             <ul style="list-style-type: none"> <li>○ <b>Calcium Chloride</b> <ul style="list-style-type: none"> <li>• IV/IO – 20 mg/kg over 1 min</li> </ul> </li> </ul> </li> </ul>
For continued shock <ul style="list-style-type: none"> <li>• <i>Repeat Normal Saline</i> <ul style="list-style-type: none"> <li>○ IV bolus – 1 Liter</li> </ul> </li> </ul>	For continued shock <ul style="list-style-type: none"> <li>• <i>Repeat Normal Saline</i> <ul style="list-style-type: none"> <li>○ IV/IO bolus – 20 mL/kg</li> </ul> </li> </ul>
<b>Base Hospital Orders only</b>	
For persistent hypotension after fluid bolus: <ul style="list-style-type: none"> <li>• <b>Epinephrine 0.1 mg/mL</b> <ul style="list-style-type: none"> <li>○ Slow IV/IOP – 0.1 mg (1 mL) increments over 1-2 minutes</li> </ul> </li> <li>▪ Repeat every 3-5 min Max 0.3 mg (3 mL)</li> </ul>	For persistent hypotension after fluid bolus: <ul style="list-style-type: none"> <li>▪ <b>Epinephrine 0.1mg/mL</b> <ul style="list-style-type: none"> <li>○ Slow IV/IOP – 0.01 mg/kg (0.1 mL/kg) over 1-2 min</li> </ul> </li> <li>▪ Repeat every 3-5 min Max 0.3 mg (3 mL)</li> </ul>
Consult with ED Physician for further treatment measures	Consult with ED Physician for further treatment measures
Additional Information: <ul style="list-style-type: none"> <li>• Potential Crush Syndrome – Continuous crush injury to torso or extremity above wrist or ankle for 2 hours or less.</li> <li>• Crush Syndrome – Continuous crush injury to torso or extremity above wrist or ankle for greater than 2 hours.</li> <li>• If elderly or cardiac history is present, use caution with fluid administration. Reassess and treat accordingly.</li> <li>• Dysrhythmias are usually secondary to Hyperkalemia. ECG monitor may show: Peaked T-waves, Absent P-waves, widened QRS complexes, bradycardia</li> <li>• Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting a second IV (if feasible) for administration of Calcium Chloride</li> </ul>	

Effective Date: July 1, 2018  
Next Review Date: June 30, 2020

Date Revised: June 14, 2018  
Last Reviewed: June 14, 2018



VCEMS Medical Director