# Crush Injury/Syndrome

## BLS Procedures
Perform spinal precautions as indicated
Determine Potential vs. Actual Crush Syndrome
Administer oxygen as indicated
Maintain body heat

## ALS Standing Orders
Potential for Crush Syndrome
- IV/O access
- Release compression
- Monitor for cardiac dysrhythmias

## Communication Failure Protocol

### Crush Syndrome
- Initiate 2nd IV/O access
- **Normal Saline**
  - IV/O bolus – 1 Liter
  - Caution with cardiac and/or renal history
- **Sodium Bicarbonate**
  - IV/O mix – 1 mEq/kg
  - Added to 1st Liter of Normal Saline
- **Albuterol**
  - Nebulizer – 5 mg/6 mL
  - Repeat as needed
- **Pain Control** – Per Policy 705.19
- Release compression
- Monitor for cardiac dysrhythmias
- For cardiac dysrhythmias:
  - **Calcium Chloride**
    - IV/O – 1 g over 1 min

### Crush Syndrome
- Initiate 2nd IV/O access if possible or establish IO
- **Normal Saline**
  - IV/O bolus – 20 mL/kg
  - Caution with cardiac and/or renal history
- **Sodium Bicarbonate**
  - IV/O mix – 1 mEq/kg
  - Added to 1st Liter of Normal Saline
- **Albuterol**
  - Patient less than 30 kg
    - Nebulizer – 2.5 mg/3 mL
    - Repeat as needed
  - Patient greater than 30 kg
    - Nebulizer – 5 mg/6 mL
    - Repeat as needed
- **Pain Control** – Per Policy 705.19
- Release compression
- Monitor for cardiac dysrhythmias
- For cardiac dysrhythmias:
  - **Calcium Chloride**
    - IV/O – 20 mg/kg over 1 min

### Base Hospital Orders Only

#### For continued shock
- **Repeat Normal Saline**
  - IV/O bolus – 1 Liter

#### For persistent hypotension after fluid bolus:
- Epinephrine 10 mcg/mL
  - 1 mL (10 mcg) q 2 minutes, slow IV/O push
  - Titrate to SBP of greater than or equal to 90 mm/Hg

### For continued shock
- **Repeat Normal Saline**
  - IV/O bolus – 20 mL/kg

### For persistent hypotension after fluid bolus:
- Epinephrine 10 mcg/mL
  - 0.1 mL/kg (1 mcg/kg) q 2 minutes, slow IV/O push
  - Max single dose of 1 mL or 10 mcg
  - Titrate to SBP of greater than or equal to 80 mm/Hg

Consult with ED Physician for further treatment measures

### Additional Information:
- Refer to VCEMS Policy 735 for additional information on preparing push dose epinephrine solution.
- Potential Crush Syndrome – Continuous crush injury to torso or extremity above wrist or ankle for 2 hours or less.
- Crush Syndrome – Continuous crush injury to torso or extremity above wrist or ankle for greater than 2 hours.
- If elderly or cardiac history is present, use caution with fluid administration. Reassess and treat accordingly.
- Dysrhythmias are usually secondary to Hyperkalemia. ECG monitor may show: Peaked T-waves, Absent P-waves, widened QRS complexes, bradycardia
- Calcium Chloride and Sodium Bicarbonate precipitate when mixed. Strongly consider starting a second IV (if feasible) for administration of Calcium Chloride

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