**Procedure Guidelines**

<table>
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<th>Protocol Title:</th>
<th>Needle Thoracotomy/ Chest Needle Decompression</th>
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<td>Original Adoption Date:</td>
<td>08/2000</td>
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<td>Past Protocol Updates</td>
<td>08/2000,</td>
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<td>Date of Most Recent Update:</td>
<td>December 26, 2013</td>
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<td>Medical Director</td>
<td>Chad Torstenson M.D.</td>
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**Indications:**
The following is a list of possible patient presentations in which a needle thoracostomy should be considered:

A. Classic Tension Pneumothorax Signs and Symptoms
   - Progressive respiratory distress, tachypnea
   - Hypotension
   - Hypercapnia
   - JVD - jugular venous distention
   - Absent breath sounds on affected side
   - Signs and symptoms of shock
   - If patient intubated - increasing difficulty with ventilation
   - Hypoxia
   - Tracheal shift away from affected side
   - Hyperexpanded chest on affected side
   - Cyanosis
   - Narrowing pulse pressure
   - Tachycardia

**Contraindications:**
There are no contraindications when used in the setting of a tension pneumothorax.

**Possible Complications:**
1. Puncture of the lung.
2. Hemorrhage from the puncture of the intercostal vessels.
3. Hemorrhage from puncture of a pulmonary vessel.
**Preparation:**
1. Expose and cleanse anterior chest at level of 2nd intercostal space on the affected side.
2. Find 2nd intercostal space midclavicular line with gloved finger.

**Procedure:**
1. Using 14 gauge or larger, over the needle, catheter with syringe attached direct needle over the third rib into the second intercostal space. (The ARS for Needle Decompression should be used for Adult patients and a standard 14g IV Cath for pediatric patients.)
2. Apply enough pressure to push the needle through the intercostal muscle and into the pleural cavity.
3. You should pull back air in the syringe or if no syringe on the needle, you should hear a rush of air, either of these an indication of positive placement.
4. Remove the needle, leaving the catheter in place and secure with tape or provided device.
5. If extended transport time, connect to one-way valve. Heimlich Valve should be used for spontaneously breathing patients.