**Indications**

- To relieve tension pneumothorax as indicated by a combination of the following:
  - Severe dyspnea and/or difficulty with ventilation, especially with an intubated patient
  - ALOC and/or agitation
  - Absent or unequal breath sounds on affected side
  - Signs of shock
  - Neck vein distention
  - Paradoxical movement of the chest
  - Hyper-resonance to percussion on the affected side
  - Tracheal shift away from the affected side

**Equipment**

- 14g or larger ≥ 3 inches
- Heimlich or other one-way valve
- 10ml syringe

**Procedure Preparation**

- Choose appropriate site on the affected side:
  - If patient head is elevated, locate the second intercostal space, mid-clavicular line
  - If patient is flat, locate the 4th or 5th intercostal space, mid-axillary line
  - Prepare site with Betadine or chlorhexidine
  - Attach the large gauge IV needle to a large syringe

**Procedure**

- With the patient exhaling, introduce the needle at a 90° angle, just over the rib at the selected site
- Advancing slightly superior to the rib, continue until lack of resistance or a “pop” is felt as the needle enters the pleural space
- If the air and/or blood returns under pressure or is easily aspirated, continue to advance the catheter superiorly and remove the needle
- When no further air escapes, attach a one-way valve
- Secure the catheter with the valve in a dependent position
- Reassess patient