Needle Cricothyroidotomy

### Conditions
The candidate should perform this skill on a simulated under existing indoor, ambulance, or outdoor lighting, temperature, and weather conditions.

### Indications
A patient whose airway cannot be managed by BLS or other ALS airway procedures

### Red Flags
This procedure cannot be used if the trachea is transected, or if there is significant trauma to the cricoid cartilage or larynx. This technique is designed for short-term use only. Requires a highpressure source of oxygen, which poses a great risk for spraying blood and body fluids on rescuers, and can cause barotrauma in patients (pneumothorax, subcutaneous air, etc.). Does not isolate the airway; thus, aspiration of blood, emesis, etc., is a continued risk

Don appropriate standard precautions

#### Prepare Equipment
- Attach 3-way stopcock to oxygen source via tubing
- Attach extension tubing to stopcock
- Test to make sure flow is not obstructed
- Attach a 10 mL syringe to a large-bore plastic catheter with needle

#### Prepare Patient
- Position patient supine (if possible), hyperextending the head
- Maintain neutral cervical alignment if cervical trauma is suspected
- Locate cricothyroid membrane
  - Inferior to thyroid cartilage
  - Superior to cricoid cartilage
- Palpate the “notch” between the two
- Cleanse site thoroughly
  - Iodine or alcohol preferred (iodine must be dry to be effective)

#### Insert Needle Into Cricothyroid Membrane
- Stabilize cricoid and thyroid cartilages with one hand
- Insert needle/catheter, bevel up through skin and lower half of cricothyroid membrane
  - Toward the feet at approximately a 45-degree angle
  - Gently aspirate with attached syringe while inserting
- When syringe is able to aspirate air, stop advancing needle
- Continue to advance catheter downward and withdraw needle
- Immediately place needle in approved sharps container
- Advance catheter so that hub is flush with skin
- Attach oxygen source to catheter hub
- Ventilate at approximately 6 breaths per minute with 100% oxygen
  - Allow an inspiratory/expiratory ratio of 1:3
- Tape catheter to skin

#### Monitor Patient Closely
- Auscultate lung fields
- Look for improvement in patient condition
- Continuously monitor for complications and correct as needed
- Localized bleeding: Control with direct pressure
- Esophageal perforation: Discontinue insufflation
- Subcutaneous emphysema: Discontinue insufflation
<table>
<thead>
<tr>
<th><strong>Critical Criteria:</strong></th>
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<tbody>
<tr>
<td>__ Don standard precautions (gloves, mask, and eye protection recommended)</td>
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<tr>
<td>__ Insert needle/catheter at a 45-degree angle toward feet</td>
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<td>__ Aspirate syringe as needle is advanced</td>
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<td>__ Recognize incorrect placement</td>
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<td>__ Dispose of needle immediately into appropriate sharps container once</td>
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<td>__ Monitor patient continuously for desired effects and complications associated with procedure</td>
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