ADVANCED AIRWAY MANAGEMENT

Effective Date February 7, 2014
Replaces June 2012
Review November 2016

I. Purpose

The purpose of Policy 700-M01: Advanced Airway Management is to provide clinical guidelines for the establishment and management of an advanced airway in the prehospital setting. This policy includes guidelines for adult and pediatric intubation, as well as the use of endotracheal tubes, King tubes, and Bougie devices.

II. Definition

A. Endotracheal intubation is the preferred method of airway management in adults who are suffering from respiratory arrest or failure. In pediatric patients Bag Valve Mask (BVM) ventilation is the preferred method of airway management. Endotracheal intubation is allowable only when BVM cannot be effectively used. BLS personnel may use any of the simple adjuncts but the use endotracheal or esophageal/tracheal double lumen airway devices (ETDLA) is reserved for ALS personnel.

B. Definition: Intubation Attempt – An intubation attempt is defined as the introduction of an endotracheal tube or King Tube past the patient’s teeth.

The table below is the required elements for every patient care record that an Endotracheal Tube is utilized.
III. Endotracheal Intubation

A. Documentation Points

| ✓ Size of ET tube               | ✓ Visualization of vocal cords |
| ✓ Number of attempts            | ✓ Suction required             |
| ✓ ET Tube measurement (cm) at teeth | ✓ Chest rise with ventilation |
| ✓ Ventilation compliance       | ✓ Bulb syringe check documented if |
| ✓ Capnography used             | ✓ ETCO2/Capnography reading   |
| ✓ Equality of lung sounds      | ✓ Absence of epigastric sounds |
| ✓ Method for securing ET tube  | ✓ Any complications with intubation procedure |

B. Indications for Intubation

<table>
<thead>
<tr>
<th>Adult</th>
<th>Pediatric</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Airway Obstruction</td>
<td>• Airway Obstruction</td>
</tr>
<tr>
<td>• Respiratory Arrest and/or Failure</td>
<td>• Respiratory Arrest and/or Failure</td>
</tr>
<tr>
<td>• GCS &lt; or = 8</td>
<td>• GCS &lt; or = 8</td>
</tr>
<tr>
<td>• Need for prolonged ventilation support</td>
<td>• Need for prolonged ventilation support</td>
</tr>
<tr>
<td>• Severe hemorrhage with poor perfusion</td>
<td>• Severe hemorrhage with poor perfusion</td>
</tr>
<tr>
<td>• Severe flail chest or pulmonary contusion</td>
<td>• Severe flail chest or pulmonary contusion</td>
</tr>
<tr>
<td>• Multi-system trauma and abnormal mental status in which BVM cannot be used properly</td>
<td>• Multi-system trauma and abnormal mental status in which BVM cannot be used properly</td>
</tr>
<tr>
<td>• Inhalation Injury with erythema/edema at cords</td>
<td>• Inhalation Injury with erythema/edema at cords</td>
</tr>
<tr>
<td>• Patient is at risk for aspiration</td>
<td>• Patient is at risk for aspiration</td>
</tr>
</tbody>
</table>
C. Contraindications

<table>
<thead>
<tr>
<th>Adult</th>
<th>Pediatric</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Isolated medical respiratory arrest with suspected hypoglycemia or</td>
<td>• Isolated medical respiratory arrest with suspected hypoglycemia or</td>
</tr>
<tr>
<td>narcotic overdose</td>
<td>narcotic overdose</td>
</tr>
<tr>
<td>• Maxillo-facial trauma with</td>
<td>• Maxillo-facial trauma with</td>
</tr>
<tr>
<td>unrecognizable facial landmarks</td>
<td>unrecognizable facial landmarks</td>
</tr>
<tr>
<td>• Patients actively seizing</td>
<td>• Patients actively seizing</td>
</tr>
<tr>
<td>• Patients with an active gag reflex</td>
<td>• Patients with an active gag reflex</td>
</tr>
<tr>
<td></td>
<td>• Effective BVM ventilation</td>
</tr>
<tr>
<td></td>
<td>• Spontaneous respirations</td>
</tr>
<tr>
<td></td>
<td>• Head injury</td>
</tr>
<tr>
<td></td>
<td>• Delayed transportation due to one prior intubation attempt.</td>
</tr>
<tr>
<td></td>
<td>• One additional attempt is allowed en route.</td>
</tr>
</tbody>
</table>
## D. Equipment for Endotracheal Intubation

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngoscope handle</td>
<td>☐</td>
</tr>
<tr>
<td>Macintosh blades (sizes 2, 3, 4)</td>
<td>☐</td>
</tr>
<tr>
<td>Miller blade – (sizes 0, 1, 2, 3, 4) extra bulbs</td>
<td>☐</td>
</tr>
<tr>
<td>Suction device and catheter</td>
<td>☐</td>
</tr>
<tr>
<td>ET tubes 2.5–9.0 (3 each size)</td>
<td>☐</td>
</tr>
<tr>
<td>Stylet</td>
<td>☐</td>
</tr>
<tr>
<td>(ETTI) Bougie device</td>
<td>☐</td>
</tr>
<tr>
<td>Water soluble lubricant</td>
<td>☐</td>
</tr>
<tr>
<td>Pulse oximetry monitor</td>
<td>☐</td>
</tr>
<tr>
<td>End tidal CO2 monitor (colorimetric or capnography)</td>
<td>☐</td>
</tr>
<tr>
<td>OPA: sizes 000-6 12 cc Syringe</td>
<td>☐</td>
</tr>
<tr>
<td>Magill forceps (adult/pediatric)</td>
<td>☐</td>
</tr>
<tr>
<td>Extra batteries</td>
<td>☐</td>
</tr>
<tr>
<td>Stethoscope</td>
<td>☐</td>
</tr>
<tr>
<td>1” Waterproof tape/tube holder</td>
<td>☐</td>
</tr>
<tr>
<td>Bag-valve-mask (BVM)</td>
<td>☐</td>
</tr>
</tbody>
</table>
### E. Preparation

<table>
<thead>
<tr>
<th>Task</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain C-spine immobilization as indicated</td>
<td></td>
</tr>
<tr>
<td>Assure an adequate BLS airway. Note if gag reflex</td>
<td></td>
</tr>
<tr>
<td>Pre-oxygenate with 100% oxygen and assist ventilations if needed. DO NOT hyperventilate the patient.</td>
<td></td>
</tr>
<tr>
<td>Monitor pulse oximetry for hypoxemia and Bradycardia</td>
<td></td>
</tr>
<tr>
<td>Check laryngoscope for light and blade size</td>
<td></td>
</tr>
<tr>
<td>Estimate blade size</td>
<td></td>
</tr>
<tr>
<td>• With laryngoscope blade held next to patient's face the blade should reach between lips and larynx</td>
<td></td>
</tr>
<tr>
<td>• If in doubt choose a blade too long than too short</td>
<td></td>
</tr>
<tr>
<td>Check suction</td>
<td></td>
</tr>
<tr>
<td>Select ET size and length</td>
<td></td>
</tr>
<tr>
<td>Stylet should NOT extend beyond distal ET</td>
<td></td>
</tr>
<tr>
<td>Ensure that the ET cuff inflates with air</td>
<td></td>
</tr>
<tr>
<td>Apply lubricant to ET cuff area</td>
<td></td>
</tr>
<tr>
<td>Position patient into sniffing position if no c-spine precautions</td>
<td></td>
</tr>
</tbody>
</table>
F. Endotracheal Intubation Procedure – Adult

- Oxygenate with 100% oxygen prior to performing suctioning
- Use assistant to apply cricoid pressure and do not release until cuff (if equipped) is inflated
- If needed use external laryngoscopy
- Separate lips away from the teeth
- Insert blade into right corner of mouth
- While inserting the blade sweep the tongue to the left side of the mouth
- Proceed until epiglottis is visualized. If using the Miller blade the epiglottis may not be visible
- Suction as needed. Note color, viscosity, and contents of suctioned material
- Lift laryngoscope blade toward an imaginary point 10 feet directly above patient’s feet
- When cords are visualized pass ET tube into right corner of mouth and insert between vocal cords.
  - Be certain to observe the tube pass the cords
- Intubation attempts should not last >30 seconds
- Position tube depth and inflate cuff if equipped
- Apply CO2 detector\(^1\)
  - If the end-tidal CO2 indicator demonstrates exhaled carbon dioxide (changes from purple to yellow color), the tube should be secured
  - If the end-tidal CO2 indicator does not change color (remains purple), no carbon dioxide is being exhaled

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\(^1\) In a patient with pulses, no color change indicates incorrect endotracheal tube placement (esophageal). The tube should be removed and re-intubation attempted. In a patient without pulses, this may represent correct placement but requires further confirmation with esophageal detector bulb. If capnography device available apply to ETT and monitor CO2.
- Assess tube placement with esophageal detector bulb
  - If the esophageal detector bulb rapidly inflates (< 5 seconds) this indicates tracheal placement, and the tube should be secured
  - If the esophageal detector bulb inflates slowly or there is no air return, the patient should have the tube removed and re-intubation should be attempted

- If placement is confirmed as above then give several breaths via bag while listening to the stomach (absence of gastric sounds) and then each lung. Note presence and symmetry of lung sounds and chest rise. If chest does not rise, extubate and re-intubate.

- Secure the tube with tape or ET holder and ventilate. Mark the tube at the level of the lips

- Download or attach the capnography data to the PCR

Continued monitoring includes both physical exam findings and use of a colorimetric end-tidal CO2 indicator or capnography. Reassessment shall occur after any patient movement, or transfer of care, and should include esophageal detector bulb in pulseless patients who are not exhaling carbon dioxide. Reassessment and documentation shall occur at a minimum every 5 minutes to include but not limited to oximetry, capnography, assessment of lung sounds and tube placement.
### G. Endotracheal Intubation Procedure – Pediatric

- Limit intubation attempt to 20 seconds in newborns
- Use immobilization device to prevent neck extension and tube dislodgement
- Head and neck position
  - Children age > 2 years (without C-spine injury): Head extension with pillow under occipital and chin lifted into sniffing position
  - Infants age < 2 years: The occipital naturally extends the head. Lift chin to sniffing position
- Oxygenate with 100% oxygen prior to performing suctioning
- Use assistant to apply cricoid pressure and do not release until cuff (if equipped) is inflated
- If needed use external laryngoscopy
- Separate lips away from the teeth
- Suggested laryngoscope blades:
  - Child <8 y/o: #2 Macintosh blade (curved)
  - Term infant: #1 Miller blade (straight)
  - Premature infant: #0 Miller blade (straight)
  - Use uncuffed endotracheal tubes in ages < 8 years
- Insert blade into right corner of mouth
- While inserting the blade sweep the tongue to the left side of the mouth
- Proceed until epiglottis is visualized. If using the Miller blade the epiglottis may not be visible
- Suction as needed: Note color, viscosity, and contents of suctioned material
- Lift laryngoscope blade toward an imaginary point 10 feet directly above patient’s feet
- When cords are visualized pass ET tube into right corner of mouth and insert between vocal cords.
  - Be certain to observe the tube pass the cords

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• Intubation attempts should not last >30 seconds

• Position tube depth and inflate cuff if equipped

• Apply CO2 detector\(^2\)
  - If the end-tidal CO2 indicator demonstrates exhaled carbon dioxide (changes from purple to yellow color), the tube should be secured
  - If the end-tidal CO2 indicator does not change color (remains purple), no carbon dioxide is being exhaled

• Assess tube placement with esophageal detector bulb
  - If the esophageal detector bulb rapidly inflates (< 5 seconds) this indicates tracheal placement, and the tube should be secured
  - If the esophageal detector bulb inflates slowly or there is no air return, the patient should have the tube removed and re-intubation should be attempted

• If placement is confirmed as above then give several breaths via bag while listening to the stomach (absence of gastric sounds) and then each lung. Note presence and symmetry of lung sounds and chest rise. If chest does not rise, extubate and re-intubate.

• Secure the tube with tape or ET holder and ventilate. Mark the tube at the level of the lips

• Download or attach the capnography data to the PCR

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\(^2\) In a patient with pulses, no color change indicates incorrect endotracheal tube placement (esophageal). The tube should be removed and re-intubation attempted. In a patient without pulses, this may represent correct placement but requires further confirmation with esophageal detector bulb. If capnography device available apply to ETT and monitor CO2.
IV. Procedure – Bougie Device with Endotracheal Intubation

- Perform laryngoscopy as per oral tracheal intubation procedure, and obtain the best possible laryngeal view
- Holding the ETTI in your right hand and the angles tip pointing upward, gently advance the ETTI anteriorly (under the epiglottis or over the posterior notch) to the glotic opening (vocal cords)
- Gently advance the device until resistance is encountered at the carina.
  - Because this device can potentially cause pharyngeal/tracheal perforation, NEVER FORCE the ETTI
  - IF no resistance is encountered and the entire length of the ETTI is inserted, the device is in the esophagus
- The ETTI is correctly placed when you see the device going through the cords, when you feel the washboard effect of the tip on the trachea, and/or when you meet resistance while advancing the ETTI (ETTI is at the carina)
- Once positioned, withdraw the ETTI until the mark is aligned with the lip and advance the lubricated ETT over the ETTI and into the trachea. This indicates that the tip is well beyond the cords and the proximal end has enough length to slide the ETT over.
  - If resistance is encountered – caused by the ETT catching on the arytenoids or aryepiglottic folds – withdraw the ETT slightly, rotate 90 degrees and reattempt. If this is unsuccessful. Use a smaller tube
- Once the ETT is in position, while holding the ETT, remove the ETTI through the ETT.
- Because this is a blind intubation, ETCO2 must be present to confirm tracheal placement

A. Contraindications

- Do not use on endotracheal tubes smaller than 6.0.
- Unfamiliarity with procedure
V. King Airway Intubation

The table below is the required elements for every patient care record that a King Airway is utilized.

A. Documentation Points

| ✓ Size of King Airway | ✓ Suction required |
| ✓ Number of attempts  | ✓ Chest rise with ventilation |
| ✓ Ventilation compliance | ✓ ETCO2/Capnography |
| ✓ Capnography used     | ✓ Absence of epigastric |
| ✓ Equality of lung sounds | ✓ Any complications with |
| ✓ Method for securing King Airway |

B. Indications

The King tube is for use in unconscious patients with absent gag reflex who require assisted ventilation when endotracheal intubation cannot be accomplished. The King Airway can be used as primary airway adjunct based on paramedic assessment of the patient’s airway or in cardiac arrest.

C. Contraindications

- Responsive patients with a gag reflex
- Patients who are under 4 feet tall
- Patients in whom esophageal disease is suspected
- Patients in whom caustic substance ingestion is suspected
D. King Airway Intubation Procedure

<table>
<thead>
<tr>
<th>King Airway size</th>
<th>Patient Criteria</th>
<th>Connector Color</th>
<th>Inflation Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4-5 FEET TALL</td>
<td>YELLOW</td>
<td>40-55 mls</td>
</tr>
<tr>
<td>4</td>
<td>5-6 FEET TALL</td>
<td>RED</td>
<td>50-70 mls</td>
</tr>
<tr>
<td>5</td>
<td>GREATER THAN 6 FEET</td>
<td>PURPLE</td>
<td>60-80 mls</td>
</tr>
</tbody>
</table>

- Test cuff inflation system by injecting the maximum inflation volume listed in table above for the size of the tube.
- Deflate cuffs completely before insertion, leaving syringe attached to connector.
- Lubricate the beveled distal tip and posterior aspect of the tube avoiding introduction of lubricant in or near the ventilatory openings. Ensure adequate lubrication to avoid kinking of the tube back upon itself.
- Oxygenate the patient with high flow oxygen.
- Position the patient’s head (ideal position is the sniffing position but the neutral position can be used).
- Holding the King at the connector, hold the patient’s mouth open and apply chin lift unless contraindicated due to trauma and/or Spinal immobilization:
- With the King rotated laterally 45-90 degrees, such that the blue orientation line is touching the corner of the mouth, introduce tip into the mouth and advance behind the base of the tongue. Never force the tube into position.
- As the tip passes under tongue rotate tube back to midline (blue orientation line faces chin).
- Without exerting excessive force, advance the King until base of connector aligns with teeth or gums.
- Inflate the cuffs based on the listed volumes for the tube size used.
- Attach bag, valve device and verify placement by ALL of the following criteria:
  - Rise and fall of chest
  - Bilateral breath sounds
  - Absent epigastric sounds
o CO2 measurement (capnography)

• If there is any question about the proper placement of the king Airway, deflate the cuffs and remove the airway. Ventilate the patient with BVM for 30 seconds and repeat insertion procedure.

• Continue to monitor the patient for proper airway placement throughout prehospital treatment and transport.

E. King Tube Image

a. Documentation

• Document time of placement of airway
• Document evaluation of success of placement
• Document maintenance checks of placement
ADVANCED AIRWAY MANAGEMENT – ADULT / PEDIATRICS

Effective: June 2012
Replaces: New June 2012
Review: November 2016

Introduction
Endotracheal intubation is the preferred method of airway management in adults who are suffering from respiratory arrest or failure. In pediatric patients Bag Valve Mask (BVM) ventilation is the preferred method of airway management. Endotracheal intubation is allowable only when BVM cannot be effectively used. BLS personnel may use any of the simple adjuncts but the use endotracheal or esophageal/tracheal double lumen airway devices (ETDLA) is reserved for ALS personnel.

Definition: Intubation Attempt – An intubation attempt is defined as the introduction of an endotracheal tube past the patient’s teeth.

The table below is the required elements for every patient care record that an Endotracheal Tube is utilized.

**Documentation Points**

| ✓ Size of ET tube | ✓ Visualization of vocal cords |
| ✓ Number of attempts | ✓ Suction required |
| ✓ ET Tube measurement (cm) at teeth | ✓ Chest rise with ventilation |
| ✓ Ventilation compliance | ✓ Bulb syringe check documented if used |
| ✓ Capnography used | ✓ ETCO2/Capnography reading |
| ✓ Equality of lung sounds | ✓ Absence of epigastric sounds |
| ✓ Method for securing ET tube | ✓ Any complications with intubation procedure |

**Adult Intubation Indications**
- Airway obstruction
- Respiratory arrest
- Respiratory failure
- Airway obstruction
• Glasgow Coma Scale <=8
• Need for prolonged ventilatory support
• Severe hemorrhage with poor perfusion
• Severe flail chest or pulmonary contusion
• Multiple trauma and abnormal mental status where BVM cannot be used effectively
• Inhalation Injury with erythema/edema at cords
• Protection from aspiration

**Contraindications**
• Isolated medical respiratory arrest with suspected hypoglycemia or narcotic overdose
• Maxillo-facial trauma with unrecognizable facial landmarks
• Patients actively seizing
• Patients with an active gag reflex

**Equipment (adult/pediatric)**
• Laryngoscope handle
• MacIntosh blades (sizes 2, 3, 4)
• Miller blade – (sizes 0, 1, 2, 3, 4) extra bulbs –
• Suction device and catheter
• ET tubes 2.5–9.0 (3 each size)
• Stylet
• Water soluble lubricant
• Pulse oximetry
• End tidal CO2 monitor (colorimetric or capnography)
• OPA: sizes 000-6 12 cc Syringe
• Magill forceps (adult/pediatric)
• Extra batteries
• Stethoscope
• 1” Waterproof tape/tube holder
• Bag-valve-mask (BVM)

**Preparation**
• Maintain C-spine immobilization as indicated
• Assure an adequate BLS airway. Note if gag reflex.
• Pre-oxygenate with 100% oxygen and BVM
• Monitor pulse oximetry for hypoxemia and bradycardia
• Check laryngoscope for light and blade size
• Estimate blade size
  o With laryngoscope blade held next to patient's face the blade should reach
    between lips and larynx
  o If in doubt choose a blade too long than too short
• Check suction
• Select ET size and length
• Stylet should NOT extend beyond distal ET
• Test cuff with air
• Apply lubricant to cuff area.
• Position patient into sniffing position if no c-spine precautions

Procedure
• Oxygenate prior to performing suctioning whenever possible.
• Use assistant to apply cricoid pressure and do not release until cuff (if
  equipped) is inflated
• If needed use external laryngoscopy
• Separate lips away from the teeth.
• Insert blade into right corner of mouth
• While inserting the blade sweep the tongue to the left side of the mouth
• Proceed until epiglottis is visualized. If using Miller blade the epiglottis may
  not be visible
• Suction as needed. Note color, viscosity, and contents of suctioned material
• Lift laryngoscope blade toward an imaginary point 10 feet directly above
  patient’s feet
• When cords are visualized pass ET tube into right corner of mouth and insert
  between vocal cords.
  o Be certain to observe the tube pass the cords.
• Intubation attempts should not last >30 seconds
• Position tube depth and inflate cuff if equipped.
• Apply CO2 detector.
  o If the end-tidal CO2 indicator demonstrates exhaled carbon dioxide
    (changes from purple to yellow color), the tube should be secured.
  o If the end-tidal CO2 indicator does not change color (remains purple), no
    carbon dioxide is being exhaled.
    ➢ In a patient with pulses, no color change indicates incorrect
      endotracheal tube placement (esophageal). The tube should be
      removed and reintubation attempted.
    ➢ In a patient without pulses, this may represent correct placement but
      requires further confirmation with esophageal detector bulb.
      • If capnography device available apply to ETT and monitor CO2.
Assess tube placement with esophageal detector bulb
- If the esophageal detector bulb rapidly inflates (< 5 seconds) this indicates tracheal placement, and the tube should be secured.
- If the esophageal detector bulb inflates slowly or there is no air return, the patient should have the tube removed and reintubation should be attempted.
- If placement is confirmed as above then give several breaths via bag while listening to the stomach (absence of gastric sounds) and then each lung. Note presence and symmetry of lung sounds and chest rise. If chest does not rise, extubate and re-intubate.
- Secure the tube with tape or ET holder and ventilate. Mark the TUBE at the level of the lips.

Continued monitoring includes both physical exam findings and use of a colorimetric end-tidal CO2 indicator or capnography. Reassessment shall occur after any patient movement, or transfer of care, and should include esophageal detector bulb in pulseless patients who are not exhaling carbon dioxide. Reassessment and documentation shall occur at a minimum every 5 minutes to include but not limited to oximetry, capnography, assessment of lung sounds and tube placement.
- Attach capnography strip to PCR.

**Pediatric Intubation**

**Indications**
- See adult indications above.

**Contraindications**
- See adult contraindications above
- Effective BVM ventilation
- Spontaneous respirations
- Head injury
- Delayed transportation due to one prior intubation attempt. One additional attempt is allowed en route.

**Equipment**
See adult equipment above.
- Backboard, cervical collar or other immobilization device to limit neck extension

**Procedure**
• See Adult Procedure above
• Head and neck position
  o Children age > 2 years (without C-spine injury)
    ➢ Head extension with pillow under occipital
    ➢ Chin lifted into sniffing position
  o Infants age < 2 years
    ➢ Occipital naturally extends head
    ➢ Chin lifted to sniffing position
• Suggested laryngoscope blades
  o Child <8 y/o: #2 Macintosh blade (curved)
  o Term infant: #1 Miller blade (straight)
  o Premature infant: #0 Miller blade (straight)
• Use un-cuffed endotracheal tubes in ages < 8 years
• Limit intubation attempt to 20 seconds in newborns
• Use immobilization device to prevent neck extension and tube dislodgement.

Endotracheal Intubation with Introducer (ETTI/ Bougie)

Indications:
• Patients with Grade III and IV laryngeal views, may be used with any patient.
• Patients with airway edema regardless of laryngeal view
• Anatomic conditions that preclude either adequate visualization for intubation by conventional means

Contraindications:
• Do not use on endotracheal tubes smaller than 6.0.
• Unfamiliarity with procedure

Procedure:
• Perform laryngoscopy as per oral tracheal intubation procedure, and obtain the best possible laryngeal view
• Holding the ETTI in your right hand and the angles tip pointing upward, gently advance the ETTI anteriorly (under the epiglottis or over the posterior notch) to the glotic opening (vocal cords)
• Gently advance the device until resistance is encountered at the carina.
  o Because this device can potentially cause pharyngeal/ tracheal perforation, NEVER FORCE the ETTI.
  o IF no resistance is encountered and the entire length of the ETTI is inserted, the device is in the esophagus.
• The ETTI is correctly placed when you see the device going through the cords, when you feel the washboard effect of the tip on the trachea, and/or when you meet resistance while advancing the ETTI (ETTI is at the carina).
• Once positioned, withdraw the ETTI until the mark is aligned with the lip and advance the lubricated ETT over the ETTI and into the trachea. This indicates that the tip is well beyond the cords and the proximal end has enough length to slide the ETT over.
  o If resistance is encountered – caused by the ETT catching on the arytenoids or aryepiglottic folds – withdraw the ETT slightly, rotate 90 degrees and reattempt. If this is unsuccessful. Use a smaller tube.
• Once the ETT is in position, while holding the ETT, remove the ETTI through the ETT.
• Because this is a blind intubation, ETCO2 must be present to confirm tracheal placement.

King Airway
The table below is the required elements for every patient care record that a King Airway is utilized.

Documentation Points

| ✓ Size of King Airway | ✓ Suction required |
| ✓ Number of attempts | ✓ Chest rise with ventilation |
| ✓ Ventilation compliance | ✓ ETCO2/Capnography reading |
| ✓ Capnography used | ✓ Absence of epigastric sounds |
| ✓ Equality of lung sounds | ✓ Any complications with procedure |
| ✓ Method for securing King Airway |

Indications
For use in unconscious patients with absent gag reflex, who require assisted ventilation when Endotracheal intubation cannot be accomplished. Can be used as primary airway adjunct based on paramedic assessment of the patient’s airway or in cardiac arrest.

Contraindications:
• Responsive patients with a gag reflex
• Patients who are under 4 feet tall
• Patients in whom esophageal disease is suspected
• Patients in whom caustic substance ingestion is suspected.
Equipment
King LTS-D Airway (3 sizes 3, 4, 5)
Use appropriate size for patient based on table criteria below

<table>
<thead>
<tr>
<th>King Airway size</th>
<th>Patient Criteria</th>
<th>Connector Color</th>
<th>Inflation Volumes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
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<td>5</td>
<td>GREATER THAN 6 FEET</td>
<td>PURPLE</td>
<td>60-80 mls.</td>
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</table>

Procedure
A. Test cuff inflation system by injecting the maximum inflation volume listed in table above for the size of the tube.
B. Deflate cuffs completely before insertion, leaving syringe attached to connector.
C. Lubricate the beveled distal tip and posterior aspect of the tube avoiding introduction of lubricant in or near the ventilatory openings. Ensure adequate lubrication to avoid kinking of the tube back upon itself.
D. Oxygenate the patient with 100% O2
E. Position the patient’s head (ideal position is the sniffing position but the neutral position can be used).
F. Holding the King at the connector, hold the patient’s mouth open and apply chin lift unless contraindicated due to trauma and/or Spinal immobilization,
   a. With the King rotated laterally 45-90 degrees, such that the blue orientation line is touching the corner of the mouth, introduce tip into the mouth and advance behind the base of the tongue, Never force the tube into position.
   b. As the tip passes under tongue rotate tube back to midline (blue orientation line faces chin).
   c. Without exerting excessive force, advance the King until base of connector aligns with teeth or gums.
   d. Inflate the cuffs based on the listed volumes for the tube size used.
   e. Attach bag, valve device and verify placement by ALL of the following criteria:
      • Rise and fall of chest
      • Bilateral breath sounds
      • Absent epigastric sounds
      • CO2 measurement (capnography)
f. If there is any question about the proper placement of the king Airway, deflate the cuffs and remove the airway. Ventilate the patient with BVM for 30 seconds and repeat insertion procedure,
g. Continue to monitor the patient for proper airway placement throughout prehospital treatment and transport.

Documentation:
- Document time of placement of airway
- Document evaluation of success of placement
- Document maintenance checks of placement