



**REGION 11  
CHICAGO EMS SYSTEM  
PROCEDURE**

Title: Advanced Airway Management
Section: Airway/Ventilatory Management
Approved: EMS Medical Directors Consortium
EMS Level: ALS

## **ADVANCED AIRWAY MANAGEMENT**

### **I. PEDIATRIC ADVANCED AIRWAY MANAGEMENT**

Pediatric patients  $\leq 8$  years of age should have their airway preferentially managed via bag valve mask and oral or nasal airway.

### **II. ADULT ENDOTRACHEAL INTUBATION**

#### **INDICATIONS**

Considered for patients with:

- Apnea
- Inadequate respiratory effort, or
- An inability to protect the patient airway (e.g., Glasgow Coma Scale less than or equal to 8)

#### **CONTRAINDICATIONS**

- Inability to visualize anatomical landmarks.

#### **EQUIPMENT**

- Oral airway
- Bag-valve-mask
- Oxygen
- Suction
- Stethoscope
- Appropriately sized endotracheal tube and stylet
- Appropriately sized Laryngoscope blade and handle
- 10 ml syringe
- Airway tube holder
- Pulse oximeter and capnography

#### **PROCEDURE**

1. Apply personal protective equipment.
2. Position patient to open airway, insert oral airway and maintain in-line stabilization for all suspected trauma patients.
3. Create seal with mask on patient's face and assist ventilation with bag-valve-mask device.
4. Assemble all equipment and test for function. Attach pulse oximeter.
5. Remove oral airway, insert laryngoscope blade to visualize vocal cords.
6. Insert the endotracheal tube until the cuff passes through the cords and remove the stylet if used.



**REGION 11  
CHICAGO EMS SYSTEM  
PROCEDURE**

Title: Advanced Airway Management
Section: Airway/Ventilatory Management
Approved: EMS Medical Directors Consortium
EMS Level: ALS

7. Immediately connect the EtCO<sub>2</sub> detector to the endotracheal tube and confirm placement with EtCO<sub>2</sub> waveform.
  8. If EtCO<sub>2</sub> waveform indicates **improper** endotracheal tube placement, immediately remove the endotracheal tube and ventilate the patient using the bag valve mask. Consider securing an airway with the Supraglottic Airway.
  9. If endotracheal tube placement cannot be visualized with direct laryngoscopy, return to step 3. May repeat for a total of two (2) attempts, then proceed to Supraglottic Airway insertion.
  10. All patients, once intubated, should have both lungs auscultated for adequate ventilation. Next auscultate the epigastric area for absence of air movement, then secure the endotracheal tube and insert oral airway. **Attach capnography and monitor continuously.**
  11. If inadequate lung sounds are auscultated on the **LEFT** side, the tube should be pulled back in 1 cm increments until equal breath sounds are heard.
  12. Lung sounds should be continually re-assessed throughout patient contact and whenever patient is moved or position changed. Continually reassess pulse oximeter and capnography.
  13. If at any time:
    - The bag becomes difficult to compress,
    - There is evidence of hypoperfusion (changes in vital signs, mental status or decreased capillary refill),
    - Change in tube position does not demonstrate clinical improvement,
- Tube placement verification should be reassessed by direct visualization. Reassess pulse oximeter and capnography. If the endotracheal tube is inappropriately placed, return to step 3.
14. Continue to assist ventilations as indicated.
  15. Documentation should include all airway insertion attempts.

## **II. KING AIRWAY INSERTION**

### **INDICATIONS**

- Airway management in a non-breathing person without a gag reflex
- Patient is over 4 feet in height.

### **CONTRAINDICATIONS**

- Patients under 4 feet in height.
- Intact gag reflex.
- Patients with known esophageal disease
- Patients who have ingested caustic substances



**REGION 11  
CHICAGO EMS SYSTEM  
PROCEDURE**

Title: Advanced Airway Management
Section: Airway/Ventilatory Management
Approved: EMS Medical Directors Consortium
EMS Level: ALS

**EQUIPMENT**

- King LTS-D Airway
- 14 French suction catheter
- Water-based lubricant
- 60 ml syringe
- Airway tube holder

**PROCEDURE**

1. Pre-oxygenate the patient.
2. Choose the correct size King Airway:
  - **Size 3** fits **4-5 feet** in height **Yellow** connector.
  - **Size 4** fits **5-6 feet** in height **Red** connector.
  - **Size 5** fits **6+ feet** in height **Purple** connector.
3. Inspect the King Airway for visible damage prior to insertion.
4. Test cuff to ensure there are no leaks.
5. Apply a water-based lubricant to the beveled distal tip and posterior aspect of the tube. Avoid getting lubricant near the ventilatory openings.
6. Position patient's head. The ideal position for the King Airway insertion is "sniffing position". The angle of the King Airway does not allow for insertion at a neutral angle.
7. Hold the King Airway at the connector with the dominant hand. With the non-dominant hand, hold the mouth open and apply chin lift, unless contraindicated by cervical spine precautions or patient position. Using a lateral approach, introduce tip into corner of mouth.
8. Advance the tip behind the base of the tongue while rotating tube back to midline so that the blue orientation line faces the chin of the patient.
9. Without exerting excessive force, advance the King Airway until base of connector is aligned with teeth or gums.
10. Inflate the cuffs with the minimum volume necessary to seal the airway. Inflation volumes are located the King Airway. Typical inflation volumes are as follows:
  - Size 3: 45-60 ml
  - Size 4: 60-80 ml
  - Size 5: 70-90 ml
11. Gently ventilate the patient using bag valve mask. If initial ventilations meet resistance perform the following:
  - Slowly pull back on King Airway while gently ventilating.
  - When ventilations suddenly become easy and free flowing with corresponding chest wall rise maintain that level of insertion.



**REGION 11  
CHICAGO EMS SYSTEM  
PROCEDURE**

Title: Advanced Airway Management
Section: Airway/Ventilatory Management
Approved: EMS Medical Directors Consortium
EMS Level: ALS

12. Confirm placement to ensure adequate ventilations by auscultation of lung sounds, observing adequate chest rise, and verification of end tidal CO2 waveform.
13. If necessary, add additional volume to cuff to maximize seal of the airway (within cuff size limits).
14. Secure King Airway to patient utilizing tape or appropriate commercial device.
15. Lubricate a 14 French suction catheter prior to inserting into the King Airway's gastric access lumen.
16. Document the size of King Airway used and the depth of insertion at teeth or lips.

***Note: The King Airway does not protect the airway from aspiration like endotracheal intubation does.***