Orotracheal Intubation

Indication: Patients who require active airway management or assisted ventilation due to:
(1) depressed mental status with loss of protective airway reflexes,
(2) failure to oxygenate with less invasive methods (e.g. CPAP, NRB, NC),
(3) failure to ventilate with less invasive methods, or
(4) anticipated loss of airway prior to hospital arrival (e.g. rapidly progressive angioedema).

NOTE: Please refer to Airway Management and Intubation Guidelines for peri-intubation recommendations.

PATIENTS AGED 12 YEARS AND YOUNGER MAY NOT BE ENDOTRACHEALLY INTUBATED.
ALL ENDOTRACHEAL TUBES MUST BE CONFIRMED BY WAVEFORM CAPNOGRAPHY.

PROCEDURE:

1. **Pre-oxygenate the patient with positive pressure** (BVM) and 100% oxygen. **Consider placing apneic oxygenation** (nasal cannula with flush-flow oxygen at >15LPM) on the patient to prolong the time until desaturation.
2. **Position the patient for success.** If there are obstacles (e.g. furniture, walls), the patient should be moved to a location that is better for the intubator. If there are no contraindications (e.g. suspected cervical spinal injury), the patient should be placed into a "sniffing position" so that the ear lobes are parallel with the sternum (see picture). In large or obese patients, a "ramp" of towels or pillows may be used to position the patient.
3. **Prepare all primary and backup equipment before the intubation attempt.** Prepare to lead the attempt with suction. Identify a backup strategy (e.g. EGD or BVM). **Consider the use of an Airway Checklist.**
4. **Scissor the mouth open with the right hand and insert the laryngoscope** into the mouth. Advance the blade slowly, identifying anatomic landmarks during advancement. If utilizing a Macintosh blade, advance above (anterior to) the epiglottis to enter the vallecula. If utilizing a Miller blade, identify and lift the tip of the epiglottis.
5. If, after optimal patient positioning and laryngoscopy technique, a suboptimal or partial view of the vocal cords is obtained, **consider using External Laryngeal Manipulation.**
   NOTE: Limit each intubation attempt to a maximum of 30 seconds. Consider aborting the attempt early if there is a precipitous drop in SpO2. The patient should be adequately ventilated and pre-oxygenated between each attempt.
   NOTE: Paramedics are not permitted to make more than two intubation attempts before choosing an alternate airway strategy.
6. **Intubate the trachea:**
   - If using a **bougie (recommended)**, insert the bougie through the vocal cords with the coudé tip facing up (anteriorly). Once the bougie is in the trachea, ask an assistant to load an endotracheal tube onto the bougie and then hold the bougie while the endotracheal tube is advanced over the bougie into the trachea. If the endotracheal tube hangs at the vocal cords, this is usually resolved by rotating the endotracheal tube 90 degrees counter-clockwise.
   - If using a **malleable stylet**, insert the styleted endotracheal tube between the vocal cords.
7. **Confirm tube placement using Waveform Capnography and bilateral breath sounds, and document confirmation.**
   - After 3 ventilations, $EtCO_2$ should be >10mmHg, or comparable to pre-intubation values.
   - If $EtCO_2$ < 10mmHg, evaluate the quality of the waveform and quickly recheck patient circulation (e.g. pulses) and equipment. If $EtCO_2$ still <10mmHg with poor waveform, immediately remove the endotracheal tube and ventilate by BVM.
8. Inflate the cuff of the endotracheal tube.
9. Secure the tube in position and note the depth of insertion.
10. Consider post-intubation analgesia with Fentanyl or sedation with Midazolam or Ketamine.