PURPOSE:
To ensure a consistent standardized practice for all endotracheal intubations

PROCEDURE
Equipment / Special Instructions
- Broselow tape
- Laryngoscope blade and handle
- Oropharyngeal airway
- Endotracheal tube (ETT)
- Stylet
- 10 cc syringe
- Suction equipment
- Stethoscope
- Bag valve mask (BVM) with supplemental O₂
- End tidal CO₂ (if available)
- Tube check device - i.e. Esophageal Detector Device (EDD)
- Tube tie or clamp
- Appropriate filter (i.e. Barrierbac “S” ®)

A. To determine ETT size in pediatric patients ≥1 year of age, use the following equation: age/4 +4.
B. Ensure the tip of the stylet is 1-2 inches proximal from the tip of the ETT. Bend the other end of the stylet around the hub of the ETT to ensure it doesn’t slip into the ETT during the intubation process.
C. The measurement of the ETT at the teeth is generally three (3) times that of the ETT size.
D. Auscultation may reveal a right main stem intubation, in which case, withdraw the ETT slightly after deflating the tube, then proceed back to procedure #11.
E. Auscultate over the epigastric area first so as to quickly rule out an esophageal intubation. Auscultating over the neck will detect cuff leakages.
F. In a pulseless patient, avoid interrupting chest compression for longer than 10 seconds.
G. Each time the patient is moved, auscultate to ensure the patency of the ETT. Consider using a cervical collar to stabilize the neck in non-trauma patients as this will decrease movement and subsequent involuntary extubation.

H. Complications listed in procedure # 14 are not necessarily reasons to avoid any further intubation attempts. Address the associated complication, re-evaluate the patient’s needs and determine if they still qualify for intubation.

I. If intubation fails, the patient should receive adequate ventilation/oxygenation for 15-30 seconds before a re-attempt is made.

J. If the patient is combative or agitated, refer to the Auxiliary-Combative Patient Medical Directive in the ALS PCS.

K. At least two primary and one secondary ETT placement confirmation methods must be used. Primary methods; visualization, auscultation and chest rise. Secondary methods; ETCO2, EDD, other.

L. If urgent definitive airway management is required, the Advanced Care Paramedic (ACP) should proceed to intubation and bypass procedure #7.

M. The maximum number of intubation attempts is two (2)

N. Alternative rescue airways should be readily available in the event of failed intubation.

**Method**

1. Ensure that the patient qualifies for intubation or contact a Base Hospital Physician (BHP) for further direction.

2. Communicate the need for intubation, and its effects to the patient and family members whenever possible.

3. Assemble the laryngoscope, check the ETT cuff for leaks and insert the stylet into the ETT.

4. Attempt basic maneuvers as needed: positioning, suctioning, pharyngeal airway insertion, and intermittent positive pressure ventilation (IPPV) with a BVM in addition to application of 100% oxygen. Initiate cardiac monitoring and pulse oximetry (if available).

5. When required, administer topical anesthesia and other adjuncts:
   - Administer lidocaine spray pre intubation in the hypopharynx or directly onto the vocal cords.
   - Dose of lidocaine spray for topical anesthesia: lidocaine spray (10mg/spray). Maximum dose is 5mg/kg. Do not exceed 20 sprays total.

6. **ADULT:** Place the patient in the sniffing position if possible, open their mouth and insert the entire laryngoscope blade sweeping from right to left displacing the tongue to the left. When using a curved blade, advance the tip of the blade into the vallecula. If using a straight blade, insert the tip under the epiglottis.

7. **PEDIATRIC:** Elevate the patient’s body or shoulders, allowing proper alignment with their head. Place the child in the sniffing position if possible, open their mouth and insert the entire laryngoscope blade sweeping from right to left, pinning the tongue and epiglottis against the hypopharynx.

8. Following the line of the laryngoscope handle, pull upward to reveal the vocal cords. Never use a prying motion with the handle.

9. Insert the ETT along the right side of the mouth and follow the curve of the laryngoscope blade, eventually visualizing the distal end of the tube and the cuff passing through the vocal cords. Advance
the tube past the cords approximately 1 to 2.5 cm (0.5 to 1 inch). In the average adult, tube placement at the teeth is typically between 19-23 cm.

10. Remove the laryngoscope. While holding the ETT firmly in place, remove the stylet.

11. Inflate the cuff with 8-10 cc of air and carefully auscultate while a qualified health professional ventilates the patient with the BVM.

12. Assuming no air is heard over the epigastric area and air movement is heard over all lung fields, note the depth of the ETT, insert an oropharyngeal airway or bite block, and secure the ETT in place.

13. If available, attach the end tidal CO₂ detector to formulate a reading and continue ventilating the patient accordingly.

14. Discontinue the intubation attempt if complications occur, or as directed by the BHP. Potential complications include:
   • vomiting
   • dysrhythmias
   • c-spine injury
   • soft tissue injuries i.e. damage to teeth, lips, pharynx or larynx
   • vocal cord injury
   • inadvertent esophageal intubation
   • intubation of a bronchus

15. Document the intubation on the patient care record as per the Ministry of Health and Long Term Care Emergency Health Services Branch Ambulance Call Report Documentation Standards and your Service Provider policy which includes:
   • size of ETT used
   • depth of the ETT
   • ETT confirmation via 3 methods
   • resulting end tidal CO₂ reading
   • time of attempt
   • preferred method for documenting tube placement verification is via a documented signature from either an emergency room (ER) physician or respiratory therapist (RT). If this is not possible (due to availability, time constraints), another acceptable method would be via verbal confirmation by either ER physician or RT and documented as “verbal confirmation of ETT placement provided by Dr. X” in the remarks section on the patient care record.

16. Document patient condition before and after intubation

References and Related Documents
• Caroline, N. (2016). Emergency Care in the Streets, Seventh Edition
• ALS PCS, February 2016, Version 3.3
• OBHG Reference and Educational Notes, September 2015
• Advanced Cardiovascular Life Support, Provider Manual, 2015