Maine EMS recognizes 2 major classes of Blind Insertion Airway Devices (BIADs). The first class, periglottic devices, includes the LMA® and Cobra PLA®. The second class, transglottic or potentially transglottic devices, includes the Combitube® and King LT®. Any FDA-approved devices from these classes are approved for use.

A c-spine collar should be considered to help protect placement of all endotracheal intubations, periglottic and transglottic airway devices.

There are periglottic devices on the market that can be used to facilitate endotracheal intubation (i.e. ILMA®, LMA®). If these devices are placed without an attempt at endotracheal intubation, they may be treated as any other periglottic device. If they are used to assist in placing an endotracheal tube, that tube must be treated and confirmed as any other endotracheal intubation.

It is recommended to have NO MORE THAN one device per class (periglottic and/or transglottic). If a service elects to have multiple options per class, then training and maintenance in proficiency for all devices available are required.
Airway Management Checklist

1. **Airway adjuncts ready**
   - Suction
   - Oropharyngeal airway/2 nasopharyngeal airways
   - Nasal cannula for apneic oxygenation

2. **Intubation equipment ready**
   - Laryngoscope assembled and functional
   - ET tube ready with lubricant, bougie and syringe
   - Tube-securing device ready
   - Continuous end-tidal CO₂ monitor ready

3. **Back-up equipment ready**
   - Blind Insertion Airway Device (i.e. LMA®, iLMA®, or King®) available
   - Quick-trach or other surgical airway available. Consider surgical airway device

4. **Team ready**
   - Airway manager
   - Ventilator BVM operator
   - Assistant

5. **Plan discussed**

6. **Patient ready**
   - Non-rebreather, BVM, or CPAP Pre-oxygenation/de-nitrogenation
   - At least one IV/IO in place. Vascular access
   - Head elevated laryngoscope position (30 degree head-of-bed elevation) unless contraindicated
   - Patient positioning (unless contraindicated)
     - Ear-to-ster nal-notch
     - 30 degree head-of-bed elevation
   - BP cuff/pulse oximetry/cardiac monitor attached. Monitoring in place
   - Evaluate airway difficulty: 3-3-2 rule; dentures, recessed mandible, facial hair or trauma, e-collar in place
   - Prep for surgical airway as needed

7. **Post-intubation medications ready**
   - Post-intubation:
     - pain control:
       - fentanyl
     - sedation (*requires OLMC*):
       - midazolam OR ketamine

8. **Automatic ventilator settings (if available)**
   - Volume: 6-8 mL/kg
   - Rate: 16 (10 in asthma/COPD)
**Adult Airway Algorithm**

- This protocol is for use in patients whose age is greater than 12 years old or patients longer than the Broselow Tape® (or equivalent).
- An intubation attempt is defined as passing a bougie or the endotracheal tube past the teeth or the endotracheal tube inserted into the nasal passage.
- Continuous capnography is mandatory with all patients with BIAD or Endotracheal Tube; if prolonged use of BVM, consider use of capnography.
- The goal of airway management is adequate oxygenation, ventilation, and airway protection. If an effective airway is being maintained by BVM with OPA and/or NPA(s), it is acceptable to continue with basic airway measures rather than BIAD or Intubation.
- Consider addition of high-flow nasal cannula in addition to BVM/face-mask prior to intubation attempt if not meeting oxygenation goals. Keep in place during intubation attempt.

**Patients are more effectively ventilated with face-mask ventilation when:**
1) A two-person ventilation technique is used
2) ETCO₂ is used to guide ventilation
3) Avoiding hypo- and hyperoxia
4) Avoiding hypo- and hyperventilation
5) Minimizing peak airway pressure
6) When tolerated, both oral and nasal airways are placed

**Face mask ventilation can be achieved with a transport vent if so trained (Adult only)**

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[Diagram of Adult Airway Algorithm]

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**PEARLS for Endotracheal Intubation**
* Position the airway for best view of the cords – raise head to the sniffing position (i.e. earlobe in-line with sternal notch)
  * Preparation: (four cornerstones)
    1) ET tube
    2) Laryngoscope with backup blade
    3) Suction
    4) Bougie on every attempt
  * Always have a back-up plan should the primary strategy fail*
  *When advanced airways are placed, secure the tube with either a commercial tube holder or tape, rather than held manually*
Confirmation and Monitoring of Advanced Airways in Adults

Intubate Patient

Confirm ETT or Blind Insertion Airway Device placement with continuous wave form capnography. *, **, ***
AND
Confirm ETT and BIAD placement with physical exam, including absence of sounds over the epigastrium, presence of symmetric bilateral breath sounds, etc.

ETT placement correct

Secure ETT in place

Continue ETCO₂ monitoring en route to hospital and repeated evaluation of ETT placement via breath sounds assessment

Yes

Immediate direct visualization of ETT through vocal cords?***

ETT placement uncertain or equivocal findings for confirmation

ETT placement incorrect

Remove ETT and ventilate via BVM

No

Attempt correct ETT placement or continue BVM ventilation

* For cardiac arrest patients, consider placement of the ETT as well as lack of pulmonary circulation in the interpretation of ETCO₂ findings.

** Depending on the device used, ETCO₂ devices may not be applicable to the pediatric patient.

*** Nasotracheally-intubated patients should be assumed to have incorrect ETT placement if findings of breath sounds or ETCO₂ results are uncertain or equivocal.
• An intubation attempt is defined as passing a bougie or the endotracheal tube past the teeth or inserted into the nasal passage.
• Continuous capnography is mandatory with all patients with BIAD or Endotracheal Tube; if prolonged use of BVM, consider use of capnography.
• The goal of airway management is adequate oxygenation, ventilation, and airway protection. If an effective airway is being maintained by BVM with OPA or NPA(s), it is acceptable to continue with basic airway measures rather than BIAD or Intubation.
• Consider addition of high-flow nasal cannula in addition to BVM/face-mask prior to intubation attempt if not meeting oxygenation goals. Keep in place during intubation attempt.

Patients are more effectively ventilated with face-mask ventilation when:
1) A two-person ventilation technique is used
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PEARLS for Endotracheal Intubation
• Position the airway for best view of the cords—raise head to the sniffing position (i.e. earlobe in-line with sternal notch)
• Preparation: (four cornerstones)
  1) ET-tube
  2) Laryngoscope with backup blade
  3) Suction
  4) Bougie on every attempt
• Always have a back-up plan should the primary strategy fail
• When advanced airways are placed, the tube be secured with either a commercial tube holder or tape, rather than held manually

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**Pediatric-Airway-Algorithm**

- Consider supplemental O₂ and Monitoring
- **AEMT/Paramedic**
  - Blind Insertion Airway Device or Paramedic Intubation
  - Inadequate
  - Successful
  - Unsuccessful
- Failed Intubation Protocol
- **EMT**
  - Contact ALS
  - Failed Intubation Protocol
- **EMT**
  - Basic Measures First:
    - Open Airway
    - Nasal or Oral Airway
    - Bag-Valve Mask
  - Successful
  - Inadequate
- **All Providers**
  - Airway-Obstruction Procedures
  - Paramedic Direct Laryngoscopy
  - Unsuccessful
  - Failed Intubation Protocol

**All Providers**
- Assess A.B.C's including respiratory rate, effort, adequacy & Pulse-Oximetry
- AEMT/Paramedic Capnography
- Successful
- Obstruction
- Unsuccessful
A “failed” intubation or the “can’t intubate patient” is defined as two (2) unsuccessful intubation attempts by the most proficient technician on scene OR anatomy inconsistent with intubation attempts.

NO MORE THAN THREE (3) TOTAL ATTEMPTS PER PATIENT WITHOUT OLMC CONSULTATION.

- **Adequate oxygenation and ventilation with BVM?**
  - Yes → **Continue BVM**
  - No → **Facial trauma or unrelieved obstruction?**
    - Yes → **Paramedic** Surgical airway
    - No → **Blind Insertion Airway Device**

- **If SPO₂ drops <90% or it becomes difficult to ventilate with BVM** → **Notify OLMC or receiving hospital AS EARLY AS POSSIBLE regarding the patient’s difficult airway**

Continuous pulse oximetry and ETCO₂ monitoring should be utilized in all patients with difficult airways or respiratory distress.

**FOR PEDIATRIC PATIENTS REQUIRING SURGICAL AIRWAY** – Consider needle cricothyrotomy in patients < 10 years old OR if physiologically young enough that surgical landmarks are NOT identifiable.
Post-Intubation/BIAD Pain Control

All patients with an ETT or BIAD inserted who are **not** currently in cardiac arrest are at risk for pain, anxiety and self-extubation. Therefore, appropriate pain control and anxiolysis are required for all intubated patients. Signs of inadequate pain control/sedation include eye opening, coughing or gagging, sweating, tearing, new or worsening hypertension and/or tachycardia, tachypnea, or attempts to self-extubate.

**EMT**
1. Minimize stimulation

**ADVANCED EMT**
2. Place IV for anticipated medication administration

**PARAMEDIC**
3. Pain control
   a. Fentanyl 0.5 - 1 mcg/kg **IV/IO** every 15 minutes to a maximum cumulative dose of 5 mcg/kg

4. Anxiolysis - Contact **OLMC** for **ONE** of the following options:
   a. **Midazolam**
      i. 0.5 - 2.5 mg **IV/IO** every 5 minutes, may repeat x 3 to a max cumulative dose of 5 mg
      ii. 1-5 mg **IM** every 5 minutes, may repeat x 3 to a max cumulative dose of 10 mg

   **-OR-**

   b. **Ketamine**
      i. 0.2 mg/kg **IV/IO**, max single dose of 25 mg, may repeat x 1 in 5 minutes
      ii. 0.4 mg/kg **IM**, max single dose 50 mg, may repeat x 1 in 10 minutes

*It is important to avoid* hypotension in the critically ill patient, especially post cardiac arrest and head injury. Therefore, it is recommended to treat pain first and anxiolysis (if needed) second. Anxiolysis should be treated with **either** midazolam **OR** ketamine, not a combination of the two as this could cause profound hypotension.
Respiratory Distress with Bronchospasm #1
(COPD, Emphysema, Chronic Bronchitis, Asthma)

CAUTION: RESPIRATORY DISTRESS MAY BE DUE TO MULTIPLE OTHER CAUSES FOR WHICH OTHER TREATMENTS MAY BE INDICATED, INCLUDING THE FOLLOWING:

Pulmonary Edema, see Blue 11
Anaphylaxis, see Gold 1
Chest Trauma, see Green 10

EMT
1. O₂ as appropriate
2. If needed, assist ventilations with positive pressure ventilation using 100% O₂
3. Request ALS
4. For EMT level providers – assist with self-administered bronchodilator inhaler. Tell OLMC the name of the inhaler. OLMC will prescribe number of puffs

ADVANCED EMT
5. Cardiac monitor
6. Manage airway as needed, refer to Blue 3 or Blue 5
7. Contact OLMC to administer albuterol, 2.5 mg by nebulization
   (use 3 mL premix or 0.5 mL of 0.5% solution mixed in 2.5 mL of normal saline)
8. Consider CPAP in patients > 18 y/o.

Recall that CPAP should never take the place of bronchodilators and should be used only after or in concert with inhaled bronchodilators in patients with acute bronchospasm. If CPAP is going to be used in the asthmatic, continuous nebs must be administered simultaneously.

ADVANCED EMT/PARAMEDIC
9. For asthma only:
   a. Continuously nebulized albuterol if on CPAP
   b. Epinephrine (this is second-line for paramedics who should give Mag Sulfate first)
      i. ADULT – EPINEPHrine 0.3 mg IM of 1mg/1mL (1:3000) every 20 minutes
      ii. PEDIATRIC - EPINEPHrine dose which is as follows: < 25 kg, 0.15 mg IM [0.15mL of 1mg/mL], > 25 kg, 0.3 mg IM [0.3 mL of 1mg/mL] IM in anterolateral thigh every 20 minutes

PARAMEDIC
10. Adult/Pediatric
    a. Albuterol 2.5 mg by nebulization. May repeat 1 time; or
    b. Ipratropium bromide 0.5 mg / albuterol sulfate 2.5 mg nebulizer if greater than one (1) year of age and more significant in continued respiratory distress. and May repeat one time
11. Dexamethasone
   Adult: 10 mg IV/IM/IO x 1
   Pediatric: 0.6 mg/kg (single max dose of 10 mg) IV/IM/IO x 1

12. Contact OLMC for the following OPTIONS:
   a. Repeated or continuous albuterol by nebulization or inhaler.
   b. For patients in status asthmaticus
      i. Magnesium Sulfate
         1. ADULT - Magnesium Sulfate 2 grams IV/IO over 10 minutes, consider placing this medication on a pump.
         2. PEDIATRIC - Magnesium Sulfate 50 mg/kg IV/IO with a maximum dose of 2 grams over 10 minutes, consider placing this medication on a pump.
      ii. Epinephrine
         1. ADULT – EPINEPHrine 0.3 mg IM of 1mg/1mL (1:1000) every 20 minutes
         2. PEDIATRIC - EPINEPHrine dose which is as follows: < 25 kg, 0.15 mg IM [0.15mL of 1mg/mL], > 25 kg, 0.3 mg IM [0.3 mL of 1mg/mL] IM in anterolateral thigh every 20 minutes

*Asthmatic patients:
Airway management of asthmatic patients is primarily pharmacological, not mechanical. Therefore, the focus should be on taking those actions that enable the provider to provide inhaled bronchodilators and, in patients with severe bronchospasm, obtain rapid IV or IO access, administer IV dexamethasone, IV magnesium, and consider IM EPINEPHrine. Due to the pathophysiology of asthma, positive pressure ventilation (facemask, BIAD, or endotracheal intubation) rarely, if ever, is an effective treatment without pharmacological intervention. Therefore, unless the patient is apneic, provider supplemental oxygen via non-rebreather and focus on providing pharmacological interventions. CPAP, with the lowest PEEP setting possible, is a last resort and a bridge to intubation. Specifically, if CPAP is going to be used in the asthmatic, continuous nebs must be administered simultaneously and the provider must be prepared to intubate this patient.
Anxiolysis in CPAP

**EMT/Advanced EMT/Paramedic**

1. Attempt coaching

**PARAMEDIC**

2. Consider ondansetron 4 mg IV/IO/IM if CPAP causing nausea and bloating

3. If unable to achieve sufficient anxiolysis to tolerate CPAP with coaching, contact OLMC for one of the following anxiolytics:

   a. **Midazolam**
      i. 0.5 - 2.5 mg IV/IO every 5 minutes, may repeat x 3 to a max cumulative dose of 5 mg
      ii. 1-5 mg IM every 5 minutes, may repeat x 3 to a max cumulative dose of 10 mg

   -OR-

   b. **Ketamine**
      i. 0.2 mg/kg IV/IO, max single dose of 25 mg, may repeat x 1 in 5 minutes
      ii. 0.4 mg/kg IM, max single dose 50 mg, may repeat x 1 in 10 minutes
Avoid nitroglycerin in any patient who has used a phosphodiesterase inhibitor within the past 48 hours. Examples are: sildenafil (Viagra, Revatio), vardenafil (Levitra, Staxyn), tadalafil (Cialis, Adcirca) which are used for erectile dysfunction and pulmonary hypertension. Contact OLMC for options in patients who have taken such medicines.

If initial systolic BP is less than 100 mmHg, refer to "Cardiogenic Shock" protocol, Red 17

**EMT**
1. O₂ as appropriate. Assist ventilations (PPV) if needed
2. Assess for shock
3. If BP greater than 100 mmHg, place in sitting position
4. Request ALS

**ADVANCED EMT**
5. Cardiac monitor and 12-lead ECG
6. IV en route
7. Manage airway as needed, refer to Blue 3 or Blue 5

8. Contact OLMC for administration of nitroglycerin 0.4 mg tab or 1 spray SL. Repeat nitroglycerin at 2-minute intervals if systolic BP greater than 100 mmHg. After initiation of SL nitroglycerin, may place 1 inch of nitroglycerin ointment 2% to the chest wall if BP greater than 100 mmHg and remove nitroglycerin ointment 2% if BP less than 100 mmHg. If the patient has had nitroglycerin before and no IV is established, and systolic BP is greater than 100 mmHg, then it is OK to give nitroglycerin.

9. Consider use of CPAP

**PARAMEDIC**

10. Paramedic may perform all treatments above without medical control

11. Contact OLMC if above measures are not working
There are increasing numbers of patients being treated for pulmonary hypertension throughout the state of Maine. Pulmonary hypertension is a disease in which a patient's pulmonary arterial pressures are elevated and can be due to multiple factors, including heart disease, chronic lung disease, or thromboembolic disease. Additionally, in some cases of pulmonary hypertension, the etiology is uncertain. Patients manifest with multiple clinical symptoms, including dyspnea, chest pain and syncope. Pulmonary hypertension is NOT a disease that will be diagnosed in the prehospital setting. Increasingly, patients are being treated for the disease with medications that cause pulmonary vascular vasodilation, such as Remodulin.

**EMT**

**Transport Destination**

Preferably, patients suffering from pulmonary hypertension who are treated by a specialist should be transported to the hospital managing their disease for ALL emergencies whenever feasible or operationally reasonable. If operational circumstances or the patient's needs dictate otherwise, please transport to the closest reasonable facility. Please consult OLMC for any questions.

**ADVANCED EMT**

**Medication Interruption**

Remodulin and other medications used to treat pulmonary hypertension are provided by central access, typically through a pump. Patients are often treated with both IV and oral medications. Disruptions of the patient's IV medications can lead to increased symptoms. Most medication interruptions are NOT related to the pump, but rather the patient's central line and loss of access. In the case of interruptions of IV medication due to loss of central access:

1. Establish peripheral access

**PARAMEDIC**

2. Verify the patient's medication and dose
3. Re-initiate the patient's medication through the newly-established peripheral access
4. Consider the transport destination suggestions as listed above.

**PEARLS FOR PULMONARY HYPERTENSION COMPLICATIONS**

Most medications used to treat pulmonary hypertension have a high pH and if left running through a peripheral line too long (greater than 4 hours) may cause peripheral vein phlebitis and sclerosis. Please document the time the medication was initiated through the peripheral line and alert treating Emergency staff.

For any questions, please contact On-Line Medical Control.
Surgical Cricothyrotomy #1

The following protocol is an effort to maintain awareness of a procedure that occurs rarely in the Maine EMS system. Ultimately, this procedure should be practiced on a regular basis to maintain proficiency. PLEASE NOTE, this protocol describes a generally acceptable open cricothyrotomy and will differ from services that employ percutaneous kits. The inclusion of this protocol DOES NOT mandate that all providers use this exact procedural description. Providers should employ the procedure they are trained, practiced and most comfortable with. This protocol is one of multiple acceptable means to perform this procedure. Regardless of the procedure type, it is essential that Maine EMS paramedics are familiar with the available supplies and materials.

The primary indication for surgical cricothyrotomy is failure to maintain the airway (including oxygenation, ventilation, and protection) through other, less invasive means. In the Maine EMS experience, this has occurred predominantly in trauma cases with disruption of the face and normal airway anatomy and in choking patients. Even in some dramatic facial injuries, the airway may be adequately managed by sitting the patient up and leaning forward, as long as the other injury patterns allow.

Materials/Equipment for Surgical Cricothyrotomy
1. Cuffed tracheostomy tube or shortened/modified 6.0 - 7.0 ETT if no tracheostomy tube is available
2. Tracheal hook or bougie
3. Trouseau dilator (if available)
4. Syringe to inflate cuff
Cricothyroidotomy #2

Procedure:
1. Extend the neck when possible to ensure best access to the trachea. Swab/cleanse the area.
2. Immobilize the trachea with your non-dominant thumb and middle finger while palpating the cricothyroid membrane with your non-dominant index finger. NOTE: The cricothyroid membrane is immediately BELOW the thyroid cartilage.
3. Make a 3 - 5 cm **vertical** incision over the cricothyroid membrane through the skin and subcutaneous tissues. NOTE: Severe bleeding is possible with this procedure and may occur at this or the following steps. Be prepared to suction and provider direct pressure to control bleeding.
4. Palpate the membrane through the incision to confirm anatomy.
5. Make a small (1 cm or less) incision **horizontally** through the cricothyroid membrane.
6. Insert the tracheal hook or **bougie** in the opening of the membrane and rotate toward the head while maintaining hold of the thyroid cartilage with your non-dominant hand.
7. If Trousseau dilator available, insert into the incision site and spread vertical then rotate 90 degrees until the dilator is parallel with the neck.
8. Insert the cuffed tracheostomy tube or **modified ETT** tube into the incision site. Advance until the flanges rest on the skin of the neck (when using tracheostomy tube).
9. Carefully remove the dilator (if used), tracheal hook and obturator of the tracheostomy tube.
10. Inflate the balloon of the tracheostomy tube/ETT.
11. Ventilate and confirm position by physical exam and ETCO2.
12. Secure the tube in place.
13. Dress incision site.
**Tracheostomy Care #1**

**Indication:**
An adult or pediatric patient with an established tracheostomy with signs of respiratory distress or failure.

**Procedure:**
1. Consult the patient's caregiver for assistance.
2. Assess the tracheostomy tube looking for easily reversible causes of distress, including detached oxygen source, plugging, etc.
3. Administer high-flow O2 over the tracheostomy via non-rebreather mask or blow by.
4. If patient's respiratory distress continues, assist ventilation using a bag-valve-mask to the tracheostomy tube.
5. Suction the tracheostomy tube if unable to ventilate with BVM, course upper airway sounds or if respiratory distress continues despite BVM ventilation
   a. Use the patient's suctioning supplies or a tube that is no more than 1/2 the diameter of the tracheostomy tube.
   b. Use no more than 80 mmHg suction pressure in pediatric patients and 150 mmHg in adults
   c. If tracheostomy tube has a cannula, remove it prior to suctioning
   d. Determine the proper suction catheter depth by measuring the obturator. If no obturator is available, insert the suction catheter 2-3 inches into the tracheostomy tube. DO NOT force the suction catheter into the tracheostomy tube.
   e. Preoxygenate when possible for 30-60 seconds then insert the suction catheter to the desired depth. Apply suctioning while removing the catheter. Gently rotate the catheter while withdrawing. This should take 10-15 seconds.
6. Consider using 2 - 3 ml of saline or nebulized saline to help loosen thick secretions
7. If respiratory distress continues, consider likely cause and reference appropriate protocol

In the case of an adult or pediatric patient with established tracheostomy tube (greater than 1-2 weeks old), in respiratory distress or failure in which the above measures have not succeeded in improving respiratory status, consider replacing the tracheostomy tube. This protocol may also be appropriate for patients with dislodged tracheostomy tubes.

**PEARLS FOR TRACHEOSTOMY CARE**
There are many types of tracheostomy tubes on the market. One of the most common types is the Shiley. These tracheostomy tubes have an inner and outer cannula. **PLEASE NOTE:** only the inner cannula has a 15 mm adapter that will fit an Ambu Bag, the outer cannula will not. The inner cannula MUST be in place to ventilate the patient

ANY bleeding from the tracheostomy site should be evaluated emergently. Follow the Hemorrhage/Hemorrhagic Shock Protocols AND, in the case of severe hemorrhage from the tracheostomy site, hyperinflated the tracheostomy cuff with a 50 mLs syringe, in an effort to tamponade the bleeding vessel. Inflate slowly, to prevent cuff rupture. Depending on the make and model of the tube, inflating the entire 50 ml may not be possible.
Tracheostomy Care #2

**Indication for Tracheostomy Replacement:**
An adult or pediatric patient with an established tracheostomy (greater than 2-4 weeks old) with signs of respiratory distress or failure that have not improved with measures listed on the previous page. Also for patients dislodged tracheostomy. If tracheostomy tube is < 2 weeks old, refer to Blue 3 and attempt to secure airway from above.

**Necessary Equipment:**
Replacement tracheostomy tube if available (from the patient or care givers)
If not replacement tracheostomy tube is available, an ETT of similar internal diameter (see below)
If possible, water-based lubricant jelly

**Procedure:**
1. Place the patient on high flow O2 and monitor
2. Place patient in a semi-recumbent position with the neck slightly extended
3. Remove old stoma dressing and clean the site
4. Lubricate the new tracheostomy tube or replacement ETT
5. Deflate the old tracheostomy tube's balloon and remove during exhalation
6. Using the replacement tracheostomy tube's obturator insert the replacement tube at a 90 degree angle to the cervical axis.
7. Next, gently advance the replacement tracheostomy tube in a fluid fashion, using the natural curvature of the tube until the flange is flush against the neck.
8. Remove the obturator, if using a replacement tracheostomy tube and insert the hollow internal cannula.
9. If using an ETT as replacement, remove the old tracheostomy tube as described above, insert a Bougie into the stoma and directed downward. Slowly advance the lubricated ETT into the stoma. RECALL, when using an ETT as replacement, it need only be advanced a few centimeters into the stoma. Consider shortening the ETT by cutting the tube AFTER the takeoff for the balloon inflation.
10. Inflate the cuff of the replacement tracheostomy tube or ETT
11. Secure the device to the patient’s neck.

<table>
<thead>
<tr>
<th>Portex Cuffed D.I.C. Tracheostomy Tubes</th>
<th>Shiley Tracheostomy Tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tube Size (mm) and Color</strong></td>
<td><strong>Internal Diameter (mm)/ETT Equivalent</strong></td>
</tr>
<tr>
<td>6.0 (orange)</td>
<td>6.0/6.0</td>
</tr>
<tr>
<td>7.0 (green)</td>
<td>7.0/7.0</td>
</tr>
<tr>
<td>8.0 (white)</td>
<td>8.0/8.0</td>
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<tr>
<td>9.0 (blue)</td>
<td>9.0/9.0</td>
</tr>
<tr>
<td>10.0 (yellow)</td>
<td>10.0/10.0</td>
</tr>
</tbody>
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**PEARLS FOR TRACHEOSTOMY CARE**
Please Note - the internal diameter of an ETT is designated by the tube name - i.e. 6.0 tube has a 6.0 mm internal diameter.
If the tracheostomy is < 2 weeks old, the track is immature and there is risk of creating a false lumen if attempts to replace or change the tracheostomy are made.