Care of the Pediatric Tracheostomy Patient

Assessment
- Respiratory Effort: RR, flaring, retractions, use of accessory muscles, audible stridor, decreased oxygen saturation
- Any use of respiratory support (oxygen, ventilator), tube type
- Bilateral chest expansion and adequacy of breath sounds
- Correct airway placement/patency: quality of breath sounds, aeration, unobstructed breathing, color of skin, lips, mucous membranes, nailbeds, LOC
- If the tube is cuffed, amount of air in cuff. Presence of audible vocalization when applicable
- Secretions: Amount, normal-clear with no-odor, Infection-yellow/green with foul smelling odor, Blood-bright red notify physician
- Condition of stoma and neck skin. Comfort level of child.

Suctioning
- Suction catheter sizing:
  - The size of the suction catheter depends on the size of the trach tube. (Inner diameter X 2 = French size)
  - Size 6, 8 or 10 French are typical sizes for neonatal and pediatric trach tubes.
  - The diameter of the suction catheter should ideally be one half of the diameter of the tracheostomy tube and never larger than 2/3 the inner diameter. If this is exceeded, severe interference with ventilation will occur.
- Suction Depths
  - Shallow Suctioning: Suction secretions visible at the opening of the trach tube.
  - Deep Suctioning (Measured Depth): Inserting the suction catheter to the tip of the trach tube and apply suction. Do not routinely suction past the tip of the trach tube. Measured Depth may be obtained by placing a catheter or inline suction catheter through an extra tube of the same size tube so it is just past the end of the tube.

Stoma Care
- Trach care involves: cleaning the skin around the trach tube and changing the ties or trach tube holder
- It is best to do trach care first thing in the morning, before bedtime, and as needed in between.
- Trach care is not recommended immediately following meals- the child may cough, vomit and aspirate.
- Remember to suction prior to trach care if there are secretions present. This eliminates the need to stop and suction during the procedure or the risk of sputum being sprayed on the caregiver.
- Should be performed per institution policy and at least Q Day and PRN at home.
- Powders and lotions should not be used around the stoma site.
- If an ointment is ordered to treat a rash/irritation, apply it sparingly to the area only.
- Ensure that the stoma/neck remains dry

Trach Tube Change
- Because mucus may build up on the inside of the trach tube, the tube will need to be changed periodically as ordered by the MD. All trach changes require two people (unless this is not possible in an emergency). Change the tube either prior to eating or wait 2 hours after eating. This prevents the possibility of coughing and aspiration.
- The trach tube should be changed if:
  - Cannot pass the suction catheter through the trach tube
  - Cannot feel or hear breathing through the trach and the child is becoming pale or blue.
  - The child has increasing respiratory distress and the chest wall is pulled in with no relief after suctioning.
- Risk Factors associated with difficult tube changes
  - Scarring of the stoma, calcification, distorted or obscured by granulation tissue.
  - If trachea is deviated or rotated.
- If trach is narrowed or smaller than normal.
- If the patient is obese.
- If the trach is new or recent. If the tube must be replaced in an emergency.

**Strategies for difficult trach tube changes:**
- The obturator helps make insertion easier. Always keep an obturator on hand should the tube need an emergency change.
- Reposition the child.
- If unable to insert, remove and allow the child to breathe. Then try insertion again. If not successful, attempt inserting a trach tube one size smaller.
- Try spreading the skin around the stoma and inserting the tube.
- Give supplemental oxygen and or use resuscitation bag if needed.

**During the procedure:**
- Always wash hands.
- Prepare new trach prior to change (apply trach tube ties or trach tube holder to new trach tube) and ensure that the obturator is in place. The obturator acts as a guide to facilitate insertion.
- Lubricate the tip of the tube with either a water soluble lubricant or NS Note: **Do not use petroleum as a lubricant.**
- Suction the old trach prior to the change.
- When removing the old trach tube, follow the angle of the tube. When inserting the new tube, insert in a smooth curving motion directing the tip of the tube toward the back of the neck in a downward and inward arc (like inserting a suction catheter). Remember to take out the obturator once the new trach tube is in place.
- **Note: Do not force the tube.**

**Safety Considerations**
- When transporting child make sure patient has humidity source (trach collar, HME), same size trach tube (with ties), stepdown trach, suction, oxygen, and bag/mask (Travel Bag).
- Never leave infant/small child unattended in upright position such as swings, infant seats, and head of bed. Lower jaw may fall forward if infant gets sleepy & could occlude the tracheostomy.
- Monitor size of objects that they cannot accidentally be placed in the trach.
- When orally feeding, cover the trach with a humidity collar or nose.
- Never leave the child unattended in the tub and do not put the child in the shower.
- Avoid clothes with high tight necklines that could cover the tracheostomy.
- Never use powder.

**Trach Occlusion**
- Position patient’s head and open airway, attempt to ventilate.
- Visualize stoma for proper tube placement.
- Attempt to pass suction catheter and apply suction. If no secretions are obtained and patient still has course breath sounds, instill a small amount of saline. The routine use of saline lavage is not recommended.(assess adequacy of humidity)
- If unable to achieve patency remove the trach tube and replace with new trach.

**Trach Dislodgement**
- If patient appears comfortable with no respiratory distress and pink color replace the trach tube with a new sterile trach tube.
- If patient demonstrates signs of respiratory distress with color change: reinsert old trach tube and assess patient, once stable replace with sterile trach tube. Or occlude trachea and ventilate bag & mask.

**Unable to Recannulate**
- Attempt to recannulate with a new trach tube, If unsuccessful, reposition head and attempt cannulation.
- If unsuccessful, attempt placement of smaller trach tube and contact physician.
- If patient is unstable, occlude stoma site and give bag valve ventilation as needed **Call 911 out of Hospital**