Policies and Procedures

Title: **TRACHEOSTOMY TUBE CHANGE - PEDIATRIC**

I.D. Number: **1154**

Authorization: [X] SHR Nursing Practice Committee

Source: Nursing

Date Effective: October 2008

Date Revised: March 2015

Scope: **SHR & Affiliates**

DEFINITIONS:

**Fresh Tracheostomy Stoma** - stoma that has not yet had an initial tracheostomy tube change.

**Non-Established Tracheostomy Stoma** - stoma that has had an initial uncomplicated tracheostomy tube change (usually done at 7-10 days post-op but is not yet 14 days old).

**Established Tracheostomy Stoma** - stoma that is more than 14 days post-op and that has had two uncomplicated tracheostomy tube changes.

**Qualified Personnel for changing tracheostomy tubes:**

- **Fresh or Non-Established Tracheostomy Stoma**: Certified Registered Nurse (RN), Nurse Practitioner (NP) or Registered Respiratory Therapist (RRT) who has the knowledge and skill in tracheostomy tube change on targeted units.

- **Established Tracheostomy Stoma**: as above or certified Graduate Nurse (GN), Licensed Practical Nurse (LPN), Graduate Licensed Practical Nurse (GLPN) who has had the knowledge and skill in tracheostomy tube change with the assistance of RN / RRT or parents/caregivers who have received the education in this skill for a patient deemed appropriate by physician with the supervision of qualified health care personnel.

**Authorized Practitioner** - Physician, Registered Respiratory Therapist (RRT), (Nurse Practitioner) RN (NP) who has the knowledge and skill in tracheostomies.

1. **PURPOSE**

1.1. To provide safe tracheostomy tube changes within the pediatric population.

2. **POLICY**

2.1. Aseptic technique will be maintained for tracheostomy tube changes in hospital environment. Clean technique may be utilized in home environment.
2.2. **Routine Tracheostomy Tube Change**

2.2.1 The initial tracheostomy tube change will be performed, usually in the PICU setting, by the physician specialist, preferably the surgeon who performed the tracheostomy.

2.2.2 Once the surgeon has deemed that a stoma is established, subsequent scheduled tracheostomy tube changes are done by 2 qualified personnel. This requires a practitioner order and frequency will be determined according to the needs of the patient.

**Note:** Long term care only one qualified personnel, the RRT.

**Note:** Home care: home setting by 2 qualified personnel, the parent/caregiver and the nurse (second person) OR in the pediatric outpatient department by one qualified personnel

2.2.3 Tracheostomy tubes without inner cannula should be changed weekly to monthly, as per physician order and/or patient need.

**Note:** Secretions can build up in tracheostomy tube lumen resulting in increased work of breathing.

2.2.4 Tracheostomy tubes with inner cannula should be changed every thirty ((30) days as per physician order and/or patient need.

**Note:** Long term care / Home care: tracheostomy tubes should be changed every 3 months

2.2.5 Cuffed tracheostomy tubes following insertion and inflation of cuff require a pressure in cuff measurement by RRT and adjusted to be less than 20 cm H20. This is measured by a pressure gauge and/or inflating the cuff until no leak present (minimal occlusive volume)

**Note:** Home care: Physician will write specific instructions on cuff inflation. Parents/caregivers will be taught how to inflate/deflate cuff and with what volume of air.

**Note:** Complications resulting from excessive pressure on the tracheal wall include: ischemic necrosis leading to stenosis and tracheal rupture, perforation, scarring or fistula.

2.2.6 Tracheostomy tube changes are to be performed either before a meal/feed or at least 2 hours after a meal/feed to prevent risk of aspiration.

2.3. **Emergent Tracheostomy Tube Reinsertion**

2.3.1 Tracheostomy tubes may require reinsertion on an emergent basis due to airway obstruction or unplanned decannulation. An RN or LPN may perform this skill in an emergency situation when an authorized practitioner is not available.

**Note:** Home care: Parent/caregiver will receive education on how to perform this skill
Note: A tracheostomy stoma that is less than 1 week old will close quickly; therefore dislodgement of the tracheostomy tube during the first post-operative week is considered a medical emergency.

Note: A tracheostomy stoma that is more than 1 week old will close more slowly so the tube can usually be easily replaced.

2.3.2 Qualified personnel must accompany all tracheostomy patients upon transport and when the patient is off the unit in case of unplanned decannulation.

2.3.3 Supplies for emergent tracheostomy tube replacement/change must be available at the bedside and in a readily accessible location at all times including during transport or anytime the patient leaves the unit.

Note: A tracheostomy tray must be available on the unit for the first 14 days post-operatively or until after first tracheostomy tube change.

3. PROCEDURE

3.1 Routine Tracheostomy Tube Change

3.1.1 Check for the practitioner’s order to perform a routine tracheostomy tube change.

3.1.2 Make arrangements with another qualified personnel team member to assist.

3.1.3 Explain procedure to child and family as appropriate

3.1.4 Ensure that the necessary supplies are at the bedside or in a readily accessible location at all times and in working order:

- Tracheostomy tray in unit (for first 14 days post op)
- Tracheostomy tube of same type and size plus one size smaller.
- Tracheostomy ties (velcro securing device or twill tape)
- Manual ventilation device (MVD) of appropriate size with face mask
- High flow oxygen flow meter, tubing
- Suction regulator (continuous) with collection canister and tubing
- Suction catheter of appropriate size (homecare)
- 0.9% Normal Saline
- Mask with face shield and other PPE as required
- Gloves:
  - Sterile gloves: fresh tracheostomy (first 14 days)/ in PICU setting
  - Clean gloves for all other settings (keep tracheostomy tube entering the trachea sterile)
- Sterile normal saline to rinse catheter tubing
- Syringe - 10mL (cuffed tracheostomy only)
- Manometer device for measuring cuff pressure (cuffed tracheostomy only)

3.1.5 Perform hand hygiene and don mask with face shield, gown and glove as required.

3.1.6 Prior to insertion:

3.1.6.1 Inspect new tracheostomy tube and obturator.
3.1.6.2 Method 1: Without Inner Cannula:
   3.1.6.2.1 Insert obturator into the tube.
3.1.6.3 **Method 2:** With Inner Cannula:

3.1.6.3.1 Insert inner cannula supplied with tracheostomy tube and check that it can lock into place.

3.1.6.3.2 Remove inner cannula and insert the obturator into the outer cannula.

3.1.6.4 **Method 3:** Cuffed Trach pre-insertion cuff and Inflation test:

3.1.6.4.1 Inflate cuff, using a 10 mL syringe with the volume of air as ordered by the RRT or physician.

3.1.6.4.2 Observe for deflation over several minutes or immerse cuff only in sterile saline and observe for air leakage.

3.1.6.4.3 Deflate cuff, using a 10 mL syringe prior to insertion and taper back cuff to ease insertion using sterile gloves.

3.1.7 Position child in supine position with neck slightly extended (unless contraindicated). Using a rolled towel under the shoulders.

3.1.8 Clear the patient’s airway by suctioning the tracheostomy tube.

3.1.9 Oxygenate by hand ventilating with supplemental O2 or by increasing the ventilator FiO2 (if applicable).

3.1.10 Thread the securement device (velcro securing device / twill tape) through the opening on one side of the tube neck plate.

3.1.11 Lubricate outer tracheostomy cannula with normal saline.

3.1.12 Cuffed Tracheostomy: deflate the cuff before removing by withdrawing air slowly from balloon using a 10 mL syringe.

3.1.13 Undo velcro fasteners or cut the twill tapes on the tube in place while ensuring tracheostomy does not dislodge prematurely (second person assisting to hold).

3.1.14 Remove the old tracheostomy tube by grasping the tube phalange and remove in a smooth outward motion, following the curvature of the tube. Refer to appendix A.

3.1.15 Immediately insert the new tracheostomy tube with obturator, following the inward and downward curve of airway using gentle, inward pressure. Hold tracheostomy tube securely in place. Refer to Appendix A.

3.1.16 Immediately remove the obturator and supply oxygen as needed by patient (if applicable).

**Note:** For tracheostomy with inner cannula, insert inner cannula and lock in place.

**Note:** Cuffed Tracheostomy: Inflate the cuff to the prescribed volume of air with a syringe. RRT will order the volume of air to inflate and measure with a pressure gauge (minimal occlusive volume). Document the volume of air in the patient care plan and nursing record.

3.1.17 Secure the tracheostomy ties on tracheostomy tube holder allowing one finger to be placed between the securement device and the neck. This may need readjustment if dressing placed around tracheostomy stoma. Refer to Appendix A.

3.1.18 Suction again (if needed).
3.1.19 Place dressing on tracheostomy stoma site if required.

3.2 **Emergent reinsertion of a tracheostomy tube**

3.2.1 Call for help and stay with the child. Dial 321 and call a pediatric code blue. Notify MRP

*Note:* Long term care / Home care: Dial 911. Notify MRP.

3.2.2 If the tracheostomy tube is not completely dislodged, attempt to reinsert tracheostomy tube. Do not force

3.2.3 If tracheostomy tube is completely dislodged:

3.2.3.1 Insert new tracheostomy tube of same size into stoma quickly and smoothly.
3.2.3.2 If unable to insert, attempt to insert a smaller sized tube.
3.2.3.3 Remove obturator and insert inner cannula (if applicable
3.2.3.4 Secure tracheostomy with securement device.
3.2.3.5 Ventilate patient by attaching MVD directly to tracheostomy tube (If applicable)

*Note:  If stay sutures still present, pulling them upward and outward may reopen stoma and enable tracheostomy tube insertion.*

3.2.4 If unable to reinsert tracheostomy tube

3.2.4.1 Insert end of a sterile suction catheter (approximately one inch) into stoma to help maintain opening. DO NOT connect catheter to suction.
3.2.4.2 Ventilate through tracheostomy stoma using MVD, or ventilate by mouth using face mask while occluding tracheostomy stoma
3.2.4.3 If complete upper airway obstruction, gaping stoma or laryngectomy ventilate through stoma using MVD.

3.3 **Documentation**

3.3.1 Document on the progress or nursing record
- date, time, of procedure
- child’s response
- use of oxygenation during the procedure
- condition of stoma and surrounding skin
- presence of dressing around stoma site
- type and size of tracheostomy inserted
- child and family teaching
- volume of air to inflate the cuff (cuffed tube only)
- cuff pressures recorded on ventilation record nursing notes (PICU)

3.4 **Reporting**

3.4.1 Report immediately to the physician any difficulty during the procedure, including:
- Respiratory difficulties, desaturation, cyanosis, sustained change in vital signs
- Resistance or difficulty insertion
- Abnormal secretions, including bleeding
- Signs of infection at stoma site
4. REFERENCES


Related SHR Policies:
Emergency Airway Management Learning package
Suctioning – Pediatric / Neonate Patients Non-Ventilated with Tracheostomy #1051
Tracheostomy Care – Adult, Pediatric & Neonate #1184
Appendix A

TRACHEOSTOMY TUBE CHANGE PROCEDURE

Removing Old Trach Tube

Inserting New Trach Tube

Secure Trach Ties