For the purpose of this policy, client will be used when referring to clients, patients, and residents.

**DEFINITIONS:**

**Artificial Airway** - A tube or tube-like device that is inserted through the nose, mouth or into the trachea to:
- Create a route for mechanical ventilation
- Allow easy access of suctioning
- Relieve mechanical airway obstruction
- Protect the airway from aspiration related to impaired cough or gag reflexes

*Note:* For the purpose of this policy, artificial airways include endotracheal (ET) tubes and tracheostomy tubes.

**Endotracheal Tube (ETT)** - A type of tracheal tube that is inserted through the mouth (orotracheal) or nose (nasotracheal). Typically an ETT is constructed of polyvinyl chloride. Most ET tubes have an inflatable cuff to seal the trachea and bronchial tree against air leakage and aspiration of gastric contents, blood, secretions, and other fluids.

**Tracheostomy Tube** - A type of tracheal tube. This 2-3" long curved metal or plastic tube is inserted into the trachea through a surgical incision in the neck or with a percutaneous dilatation technique. Several types of tracheostomy tubes are available, with or without a cuff, for neonatal, pediatric and adult uses.

**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 post-op).

**Established Tracheostomy Stoma** - Stoma that is more than 14 days post-op and that has had 2 uncomplicated tracheostomy tube changes.
Open Suctioning Technique – Client is not connected to a ventilator or is temporarily disconnected from the ventilator and is suctioned with a regular suction catheter.

Closed Suctioning Technique – Utilizes an in-line suction catheter with client remaining attached to ventilator and may be recommended for clients with high oxygen requirements or increased levels of positive end-expiratory pressure (PEEP). Closed technique reduces de-recruitment of alveoli and subsequent atelectasis. It also minimizes aerosolization of contaminated secretions and may prevent nosocomial infections.

Qualified Personnel for Suctioning Artificial Airways:

- **For Fresh Tracheostomy Stoma:** Certified Registered Nurse (RN)/Grad Nurse (GN)/Registered Psychiatric Nurse (RPN) who has the knowledge and skill in suctioning artificial airways on targeted units, Registered Nurse (Nurse Practitioner) RN(NP), Registered Respiratory Therapist (RRT), Physiotherapist (PT), Paramedics and Students (RN, RT, PT, EMT) under direct supervision.

- **For Non-Established Stoma:** as above, and certified Licensed Practical Nurse (LPN)/Grad Licensed Practical Nurse (GLPN) who has the knowledge and skill in suctioning artificial airways on targeted units (refer to SHR Nursing Policy & Procedure Manual: Licensed Practical Nurse (LPN) Added Skills (Assigned Functions) #1071).

- **For Established Stoma:** as above.

Authorized Practitioner – Physician, Registered Respiratory Therapist (RRT), Registered Nurse (Nurse Practitioner) RN (NP) who has the knowledge and skill in suctioning artificial airways.

1. **PURPOSE**

   1.1 To promote effective and safe suctioning practices

2. **POLICY**

   2.1 **Special Considerations**

   2.1.1 Nursing staff will notify the Respiratory Therapy department as soon as possible when a client is admitted or transferred to the unit with an artificial airway.

      **Note:** In sectors where a RRT is not available, nursing staff will notify an authorized practitioner.

   2.1.1.1 In the acute care setting, a RRT will assess clients with an artificial airway at a minimum of once every 24 hours and more often if clinically required.

   2.1.1.2 In sectors where a RRT is not available, the client with an artificial airway will be assessed by an authorized practitioner every 24 hours and more often if clinically required.

   2.1.2 When planning transfers of clients with tracheostomies to rural, home care, or long-term care, nursing staff will alert the receiving site as soon as possible, so appropriate resources and/or staff training can be determined and put into place. Avoid transfers on weekends and bank days.

   2.1.3 Suction only when clinically indicated based on client assessment in order to:

      - Maintain patency of the artificial airway by removing secretions or foreign objects from the trachea and artificial airway when the client is unable to expectorate on his/her own.
- Decrease the potential for infection that may result from accumulated secretions.
- Obtain a sputum specimen for diagnostic purposes.

**Note:** Routine suctioning is contraindicated.

2.1.4 Clients should be encouraged to cough up secretions independently.

2.1.5 Instillation using sterile NS is not recommended.

2.1.6 Secretions will be mobilized through the use of postural drainage, percussion, vibration, or patient ambulation if indicated, prior to suctioning.

2.1.7 For information on tracheostomy care and accidental decannulation, refer to policy # 1184 – Tracheostomy Care – Adult, Pediatric & Neonate

2.2 **Infection Control**

2.2.1 Perform hand hygiene before and after client contact.

2.2.2 Aseptic technique will be used for suctioning artificial airways.

2.2.3 The use of personal protective equipment (PPE) for staff performing suctioning is mandatory. This includes face/eye protection and sterile/non-sterile gloves as appropriate (i.e. open vs. closed technique). The use of other appropriate equipment for standard precautions may be considered (i.e. gown).

2.2.4 Elevate head of bed (HOB) 30-45° unless contraindicated.

2.2.5 All equipment and supplies should be appropriately disposed of or disinfected.

3. **PROCEDURE**

3.1 Assess the client’s respiratory status. If necessary, encourage coughing or suction the client to remove secretions.

**Note:** Secretions will be mobilized through the use of postural drainage, percussion, vibration, or patient ambulation if indicated, prior to suctioning.

3.2 Gather supplies that are required at bedside. Refer to Appendix A.

**Note:** Use smaller suction catheters whenever possible. Refer to Appendix B for corresponding suction catheter sizes.

3.3 Explain procedure to client/family and how they may assist as appropriate.

3.4 Administer analgesics, if required, before performing suctioning, especially if tracheostomy is recent.

3.5 Position client in semi-Fowler’s or Fowler’s position, with neck slightly extended (unless contraindicated).

3.6 Perform hand hygiene and don PPE.

3.7 Check suction equipment to ensure proper set-up and functioning properly.
3.8 Hyperoxygenate clients prior to suctioning if indicated.

3.8.1 Methods of hyperoxygenation include:
- increasing FiO₂ per ventilator for ventilated clients
- use of a manual resuscitation device connected to oxygen flow meter at flush
- increasing the oxygen flow of oxygen device in use
- having the client take 2-3 deep breaths while receiving a higher than normal concentration of oxygen

3.9 Check negative pressure of the suction regulator and set suction as low as possible while still keeping it high enough to clear secretions effectively.

**Note:** Appropriate wall suction range for adults is 80-120mmHg.

**Note:** Suction on portable suction units may be pre-set or may need to be adjusted.

3.10 **Open Suctioning Technique**

3.10.1 Keeping catheter sterile at all times, attach sterile catheter to non-sterile suction tubing.

3.10.2 Don PPE and sterile gloves.

3.10.3 Lubricate catheter and tubing by dipping the tip in sterile normal saline and suctioning a small amount of solution (can be done directly from the bottle – discard bottle after each use).

3.10.4 On inhalation, insert catheter until resistance is met, then withdraw 1 cm.

**Note:** Do not apply suction while inserting catheter. Take care to avoid traumatizing the trachea or carina.

3.10.5 Apply suction while withdrawing and rotating the catheter.

**Note:** Limit duration of each suction event to less than 15 seconds.

**Note:** If contamination occurs, change the catheter and sterile gloves before re-suctioning.

3.10.6 Clear the catheter and connecting tubing with sterile normal saline before reinserting and at the end of the procedure. After completion, remove and discard the suction catheter.

3.11 **Closed Suctioning Technique**

**Note:** The closed suctioning technique facilitates continuous mechanical ventilation and oxygenation while suctioning.

**Note:** The catheter is part of the circuit and is changed by RRT with each circuit change and when contaminated.

3.11.1 Perform hand hygiene, then apply clean gloves and PPE as indicated.

3.11.2 Pick up suction catheter enclosed in plastic sleeve with dominant hand.
3.11.3 On inhalation, insert catheter until resistance is met, then withdraw 1 cm.

**Note:** Do not apply suction while inserting catheter. Take care to avoid traumatizing the trachea or carina.

3.11.4 Apply suction while withdrawing and rotating the catheter.

**Note:** Limit duration of each suction event to less than 15 seconds.

3.11.5 Withdraw catheter completely into plastic sheath so it does not obstruct the airway.

3.11.6 Irrigate the catheter after completion of suctioning or if secretions accumulate. Ensure the catheter is fully retracted out of the airway. Open the cap on the irrigation port and attach a sterile 0.9% saline ampule or syringe with sterile normal saline. Intermittently depress and release the thumb control while squirting saline into the irrigation port until the catheter and chamber are clear. Use caution to ensure irrigation fluid does not enter ETT or tracheostomy tube. After completion, remove and discard the sterile saline ampule or syringe, do not leave attached to the irrigation port.

3.12 **Monitoring**

3.12.1 The following should be monitored before, during and after suctioning procedure:

- Breath sounds
- Oxygen saturation
- Respiratory rate and pattern
- Heart rate and blood pressure, if indicated
- Sputum characteristics
- Cough characteristics
- Intracranial pressure, if indicated and monitoring capabilities available
- Ventilator parameters, if applicable
- Patient response and comfort

3.13 Repeat suctioning procedure until secretions are cleared from the airway and breath sounds are improved.

**Note:** Limit catheter passes to the minimum necessary - usually should not exceed two passes.

3.13.1 Allow adequate time (at least 1 minute) between suction passes for the client to rest and re-oxygenate. Hyperoxygenate the client prior to additional suctioning passes if clinically indicated.

3.14 Properly dispose of suction supplies.

3.15 Remove and discard PPE. Perform hand hygiene.

3.16 Suction canister & tubing if used should be changed q 48 hours and when visibly soiled.
3.17 **Follow-up Care**

3.17.1 If clinically indicated, hyperoxygenate for at least 1 minute following suctioning as described in 3.8.1.

3.17.2 Auscultate chest for improvement and/or changes in breath sounds.

3.17.3 Monitor closely for any adverse reactions and until all physiological parameters have returned to baseline values.

3.17.4 Ensure there are enough supplies available for the next suctioning event. Do not overstock supplies.

3.18 **Oral Care**

3.18.1 Oral cavity should be assessed every shift.

3.18.2 Oral care should be routinely performed per unit specific standards.

3.18.3 Perform hand hygiene and don clean gloves to provide oral care.

3.18.4 Oral care includes:

   - Tooth brushing to prevent plaque buildup every 12 hours and as needed.
   - Oral cleansing to promote healing and maintain integrity of the oral tissues.
     - Should be done every 2-4 hours in the intubated clients.
   - Antiseptic agent for oral swabbing to prevent or reduce bacterial load and colonization per unit specific standards.
   - To minimize the risk of aspiration, suctioning of secretions from the back of the oropharynx should be performed every 6 hours, as needed, and prior to deflating the tracheostomy cuff.

   **Note:** The oropharynx may be suctioned with a Yankauer tip or the same catheter used for tracheal suctioning, provided the oropharynx is suctioned last.

   - Application of a water-based mouth moisturizer to provide moisture and maintain the integrity of the oral mucosa.

3.18.5 Yankauer suction tip should be changed q 48 hours & when visibly soiled.

3.19 **Documentation and Reporting**

3.19.1 Charting on the Progress Record, Flow Sheet or Ventilator Record, as per unit policy, following the procedure. Include the following specifics:

   - Reason for suctioning
   - Time of suctioning
   - Amount, consistency, color and odor of secretions
   - Client response including changes in vital signs
   - Client/family education
   - If applicable:
     - Hyperoxygenation
     - Instillation of sterile normal saline
     - Specimen sent
     - Any complications and actions taken
3.19.2 Document when oral care has been provided.

3.19.3 Communicate concerns, complications, and/or recommendations to the physician or authorized practitioner and RRT (if applicable) and document in progress notes.

4. REFERENCES


Appendix A

TRACHEOSTOMY EQUIPMENT & SUPPLIES

Note: Supplies should be available in a readily accessible location. If kept at client’s bedside, supplies should be stored in such a way as to avoid contamination (i.e. not within 2 meters of head of client with droplet risk contamination).

- Tracheostomy Insertion Tray (until tracheostomy is established)
- Manual ventilation device or other barrier device, such as a pocket mask
- Oxygen flow meter
- Suction regulator (continuous/tracheal) with collection canister and tubing
- Yankauer suction device (if required for mouth care/oral suctioning)
- Tracheostomy tube obturator (in a plastic bag, taped to the head of the bed)
- Spare tracheostomy tubes (as listed below):
  - Tracheostomy tube of same size and type (i.e. cuffed or uncuffed)
  - Tracheostomy tube one size smaller and type
- 10 ml syringe for inflating/deflating cuff (if tracheostomy is cuffed)
- Clean gloves
- Sterile gloves if tracheostomy is fresh or client is immunocompromised or in critical care
- Facial protection (i.e. mask with attached visor) and other PPE as required
- Humidification supplies (tracheostomy mask, corrugated tubing, humidity bottle, sterile water) OR Humidity filter (heat moisture exchange (HME) attachments)

Supplies for Tracheostomy Care:
- Tracheostomy Care Tray (if non-disposable inner cannula)
- Disposable inner cannulas of appropriate size (if applicable)
- Dressing set (if required)
- Sterile cotton tip applicators
- Sterile 0.9% Sodium Chloride, 15 ml ampoules for stoma cleaning and lubricating inner cannula
- Tracheostomy dressings
- Tracheostomy twill ties or Velcro holders
- Refer to Tracheostomy Care Policy #1184 for tracheostomy care

Supplies for Tracheostomy Suctioning:
- Tracheal suction catheters of appropriate size (see Appendix C for size chart)
- 0.9% Sodium Chloride, sterile 250 ml bottle
- Sterile 0.9% Sodium Chloride, 15 ml ampoules, for instillation if required
- Sterile 0.9% Sodium Chloride, in a syringe or ampoule, for irrigating closed suctioning catheter if applicable
- Sterile gloves and PPE
- Pulse oximetry
- Stethoscope
- Sterile sputum trap for specimen collection if applicable
**CORRESPONDING SIZES**

<table>
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</table>

*These are the most commonly used tracheostomy tubes. There are other sizes and types. To determine the correct suction catheter to use, double the inner diameter (ID) and use the next smallest size catheter. Ex: 6.0 mm ID X 2 = 12, next smallest catheter is 10 Fr.*