PURPOSE:
To maintain oxygenation by removing the secretions from the trachea to prevent occlusion of the airway.

CONSIDERATIONS:
1. Whenever possible, the patient should be encouraged to clear airway by directed cough or other airway clearance technique. The need for suctioning procedure needs to be established (i.e., coarse breath sounds, noisy breathing, etc.).
2. Tracheal suctioning may be accomplished by means of a suction catheter inserted through mouth, nose, tracheal stoma, tracheostomy or endotracheal tube.
3. Nasotracheal and oral-tracheal suctioning are clean procedures. Tracheostomy suctioning is generally a clean procedure. If tracheostomy is new (within 4 to 6 weeks) or patient is immuno-compromised, sterile technique should be used. If both oral/nasal tracheal suctioning must be done during the procedure, begin with tracheal suctioning then continue with oral/nasal suctioning.
4. Suctioning removes not only secretions but also oxygen. If patient has oxygen ordered, patient should be hyperoxygenated with 100% oxygen before and after suctioning. Be sure to return oxygen to previously prescribed liter flow and concentration after procedure is completed.
5. If patient has a tracheostomy tube, keep extra sterile tracheostomy tubes of the same size and obturator on hand in case of accidental expulsion or blocked tube.
6. If patient has a cuffed tracheostomy tube, deflation prior to suctioning is not required.
7. Indications that the patient requires suctioning include:
   a. Noisy, moist respirations.
   b. Increased pulse.
   c. Increased respirations.
   d. Non-productive coughing.
   e. More frequent or congested sounding coughs.
   f. Visible secretions.
   g. Increased shortness of breath.
8. Avoid unnecessary suctioning as the tracheal mucosa may become irritated and infection may be introduced.
9. If the patient is receiving nasotracheal suctioning, he/she should be instructed to take deep breaths as the catheter is advanced.
10. Tenacious secretions may be liquified by instilling 3-5 mL of normal saline into the trachea, if ordered by the physician. Humidification of the airway is essential to keeping secretions loose and easily removed. Keeping the patient well hydrated will also assist in maintaining loose secretions. Adequate humidification in the home environment is also important.
11. During performance of this procedure, the patient should be observed for:
   a. Hypoxia.
   b. Bronchospasm.
   c. Cardiac arrhythmias.
   d. Bloody aspirations.
   e. Hypotension.
12. To avoid damage to the airways and hypoxia, suction should be applied intermittently for periods not to exceed 5 to 10 seconds. Suction catheter should not be left in trachea for longer than 10 seconds. Suction should be set at <120 mmHg. Intermittent suction is applied as catheter is withdrawn only. Reoxygenate between attempts. Maximum number of attempts should be 2 suction passes/episode.
13. Suction catheter size should be no more than 1/2 (one-half) the internal diameter of the artificial airway to avoid greater negative pressure in the airway and potentially minimize the PaO2.
14. DO NOT force the suction catheter into the airway beyond resistance.

EQUIPMENT:
Oxygen source, if patient has oxygen ordered
Suction machine and suction catheter
Distilled water
Gloves
Clean suction catheter with control valve or Y connector (diameter should be no larger than half the diameter of tracheostomy tube)
Clean solution container
Impervious trash bag
Sterile, water-soluble lubricant, if catheter is to be inserted through the nasal passage
Tissues

PROCEDURE:
1. Verify physician’s order for suctioning.
2. Adhere to Standard Precautions.
3. Explain procedure to patient.
4. Prepare suction machine according to manufacturer’s instruction.
5. Set suction pressure between 100-120 mm Hg.
7. Place patient in semi-Fowler’s position to promote lung expansion.
8. Prepare suction catheter:
   a. Set up clean work field.
   b. Obtain clean suction catheters.
   c. Pour distilled water or sterile saline into clean solution container.
   d. Put on gloves.
   e. Connect suction catheter to suction machine and turn on machine.
9. Place catheter tip in distilled water, occlude catheter port with thumb and suction a small amount of water through the catheter.
10. Encourage patient to take several deep breaths prior to start of suctioning.
11. Suctioning procedure - Mouth, Throat:
   a. Dip catheter tip into sterile normal saline/sterile water to lubricate outside and facilitate insertion.
   b. Insert catheter into mouth and/or back of throat.
   c. Cover suction catheter port with thumb and suction intermittently while rotating catheter.
   d. Perform procedure intermittently until secretions are cleared.
12. Suctioning procedure - Nasal insertion:
   a. Lubricate tip of catheter with sterile, water-soluble lubricant.
   b. Remove oxygen delivery device, if applicable, and insert catheter into the nares during inhalation and gently advance the catheter without applying suction.
   c. Insert catheter about 20 cm in adults, 14-20 cm in older children, 14-20 cm in young children and 8-14 cm in infants.
   d. Cover suction catheter port and suction intermittently while rotating catheter. Apply intermittent suction while withdrawing the catheter.
   e. Perform procedure until secretions are cleared. Allow time between suction passes for ventilation and oxygenation. Avoid tiring patient or precipitating hypoxia.
   f. Rinse the catheter and connection tubing with normal saline or water until cleared. Dispose of the catheter once suctioning is completed.
13. Suctioning procedure - Tracheostomy:
   a. Check tracheostomy tube to make sure it is tied securely.
   b. Dip catheter tip into sterile, normal saline to lubricate outside and facilitate insertion.
   c. Insert catheter into tracheostomy or trach tube.
   d. DO NOT force catheter beyond point of resistance.
   e. Cover suction catheter port intermittently.
   f. Slowly withdraw and rotate catheter to clear secretions. DO NOT exceed 10 seconds.
   g. Before reinserting catheter allow patient to rest and encourage taking 2 or 3 deep breaths. Re-oxygenate patient, if needed.
   h. If fenestrated tracheostomy, change inner cannula without hole.
14. Rinse the suction catheter with distilled water between insertions.
15. Monitor patient's respiratory status during procedure. If patient becomes short of breath, agitated, or hypoxic, discontinue suctioning and oxygenate the patient.
16. At conclusion of procedure, instruct patient to take several deep breaths. Hyperoxygenate for several minutes if a patient has oxygen ordered.
17. Return oxygen liter and concentration rate to normal, if patient is on continuous oxygen.
18. Auscultate lungs; assess pulmonary status, skin color, and vital signs. Monitor the patient for adverse reactions.
19. Clear catheter and connecting tubing by aspirating remaining water solution.
20. Turn off suction. Disconnect catheter.
21. Discard soiled supplies in appropriate containers.

**AFTER CARE:**
1. Disassemble suction catheter and solution container and clean suction lines and reservoir bottle. *(See Cleaning and Disinfection of Respiratory Therapy Equipment.)*
2. Clean hands per appropriate hand hygiene procedure.
3. Document in patient's record:
   a. Patient's response to procedure.
   b. Amount, viscosity, odor and color of secretions.
   c. Findings of cardiopulmonary assessment before and after treatment.
   d. Oxygenation before, during and after treatment.
   e. Instructions given to patient/caregiver.
   f. Patient/caregiver understanding of instructions using the 'teach back' method.
   g. Communication with physician.