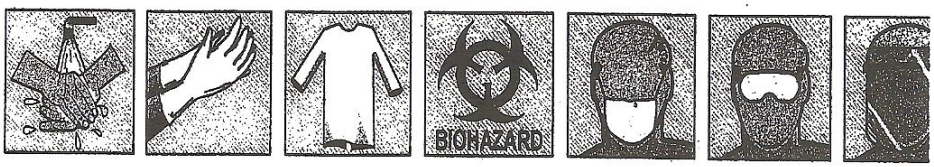
Suctioning the Lower Airway (Endotracheal [ET] or Tracheostomy Tube)

Protective Barriers
(as necessary to prevent exposure to blood or body fluids)



Handwashing | Gloves | Gown | Designated Waste Disposal | Mask | Goggles | Face Shield

Purpose

The purpose of this procedure is to remove secretions, maintain a patent airway, and prevent infection of the lower respiratory tract.

Preparation

1. Verify that there is a physician's order for this procedure. Review the physician's orders or facility protocol for suctioning.
2. Review the resident's care plan to assess for any special needs of the resident.
3. Obtain baseline vital signs and oxygen saturation from the resident's medical record.
4. Obtain information about the resident's medical history, including date of intubation (tracheostomy), respiratory signs and symptoms, and risk factors for increased secretions, decreased airway clearance and/or airway obstruction (i.e., Chronic Obstructive Pulmonary Disease [COPD], chest trauma, abdominal surgery, and smoking).
5. Assemble the equipment and supplies as needed.
6. Test equipment before use. Determine if suction equipment is generating appropriate negative pressure. **Use lower negative pressure with older residents whose oral mucosa is fragile.**
   a. **Wall** suction units should be set between **100-120 mm Hg.**
   b. **Portable** suction devices should have negative pressure set at **10-15 mmHg.**

General Guidelines

1. Complications of suctioning the lower airway include trauma to the airway, infection, hypoxia, hypoxemia, and cardiac dysrhythmias (resulting from hypoxemia). To minimize the risk of complications, apply the following guidelines:
   a. Suction only as needed, based on assessment of the resident's level of respiratory distress;
   b. Use sterile equipment to avoid widespread pulmonary and systemic infection (**Note:** Suctioning of the lower airway is a **sterile** procedure. All equipment that comes in contact with the lower airway must be sterile.);
   c. Hyperinflate the resident with a manual resuscitation (Ambu) bad (as ordered) before and after suctioning; and
   d. Hyperoxygenate the resident by increasing the oxygen flow (as ordered) before the procedure and between suctioning. (**Note:** After the procedure, oxygen should be readjusted as ordered to prevent oxygen toxicity and increased CO2 in COPD residents.)
2. Monitor the resident's pulse and oxygen saturation (see procedure entitled *Pulse Oximetry*) during suctioning. If pulse decreases more than 20 beats per minute (BPM) or increases more than 40 BPM, or oxygen saturation drops below 90 percent (or 5 percent from baseline) discontinue suctioning and re-ventilate and re-oxygenate the resident.

Equipment and Supplies
Equipment and Supplies (continued)

The following equipment and supplies will be necessary when performing this procedure.

1. Sterile suction catheter kit; *
2. Sterile drape;
3. Sterile cup;
4. Sterile gloves;
5. #10 to #16 French catheter (catheter outer diameter should not exceed one-half the

internal diameter of the tube);
6. Sterile gauze;
7. Towel or Chux pad;
8. 100 cc sterile saline or sterile water;
9. Resuscitation (Ambu) bag with supplemental oxygen;
10. Wall or portable unit;
11. Tubing (approximately 6 feet); and
12. Personal protective equipment (e.g., gowns, gloves, mask, etc., as needed).

* Most of the equipment/supplies listed above are contained in the sterile suctioning kit. However, they are listed individually because there may be times when you will need to obtain and assemble such supplies without the benefit of a kit.

Assessment

1. Identify the following risk factors for impaired airway clearance or aspiration:
   a. Impaired cough or gag reflex;
   b. Dysphagia;
   c. Weak respiratory muscles (from injury, abdominal surgery, etc.);
   d. COPD;
   e. Pulmonary infection;
   f. Presence of feeding tube;
   g. Smoking; and/or
   h. Decreased level of consciousness.
2. Assess for the following signs and symptoms of respiratory distress/hypoxia/hypoxemia:
   a. Diminished breath sounds;
   b. Tachypnea;
   c. Dyspnea;
   d. Gurgling, crackling or wheezing upon inspiration;
   e. Cyanosis;
   f. Decreased oxygen saturation (SpO2);
   g. Restlessness; and/or
   h. Drooling, secretions or vomitus in mouth.

Steps in the Procedure

1. Provide for resident privacy.
2. Explain the procedure to the resident.
3. Perform hand antisepsis.
4. Put on gloves.
5. Put on mask and protective eyewear (goggles or face shield), as indicated.
6. Assist the resident to semi-Fowler's position with head turned toward you. If the resident is unconscious, place in lateral position facing you.
7. Connect one end of suction tubing to suction unit and place the other end near the resident.
8. Turn on suction unit and adjust to appropriate negative pressure (100-120 mmHg for wall unit or 10-15 mmHg for portable unit).
9. Remove gloves.
10. Open suction catheter kit.
11. Place sterile drape across the resident's chest.
12. Remove sterile cup, touching only the outside.
13. Fill cup with 100 cc sterile saline or sterile water.
14. Apply sterile gloves. **The dominant hand will remain sterile.**
15. Holding the catheter in dominant hand and the tubing in the non-dominant hand, connect the catheter to the tubing.
16. Suction a small amount of water from the cup to verify negative pressure. Rest catheter tip on sterile surface (e.g., sterile drape or open catheter kit).
17. Remove oxygen or humidity delivery device using non-dominant hand.
18. Hyperinflate and hyperoxygenate the resident using an Ambu bag connected to supplemental oxygen.
19. Manually ventilate ("bag") the resident 4 to 5 times, coordinating with natural breaths. Remove bag.
20. Instruct the resident to inhale.

Steps in the

Procedure (continued)	21. Upon inhalation, insert the catheter into airway (ET tube or tracheostomy tube) **without applying suction.** Advance the catheter until resistance is met and/or resident coughs (at the carina). Pull back 1 to2 cm. 22. Apply intermittent suction and slowly withdraw catheter while rotating between thumb and forefinger. Limit suction time to no more than 10 seconds. 23. Re-ventilate and oxygenate the resident for a minimum of one minute between suctions. 24. Rinse catheter and tubing with sterile saline or sterile water until clear. 25. Assess cardio-pulmonary status. 26. Repeat steps 20 through 24, if necessary. Limit suction passes to a maximum of three. 27. Suction the oral or nasal cavity. (**Note:** Oropharyngeal and nasopharyngeal suctioning contaminate the catheter. Do not re-insert catheter into ET or tracheostomy tube.) 28. Replace oxygen or humidity delivery device. 29. If the resident's physical or medical condition permits, assist the resident to a position that promotes deep breathing and coughing. 30. Turn off suction. 31. Disconnect catheter from tubing. Wrap catheter around gloved hand. Pull the glove off and over the catheter. Discard in designated receptacle. 32. Remove drape and discard in designated receptacle. 33. Discard water or saline in commode. Dispose of cup in designated receptacle. 34. Empty and rinse collection container if necessary or as indicated by facility protocol. 35. Discard personal protective equipment in designated receptacles. Wash and dry your hands thoroughly. 36. Apply clean gloves and provide oral hygiene for the comfort of the resident, if indicated. 37. Perform hand antisepsis. 38. Reposition the bed covers. Make the resident comfortable. 39. Place the call light within easy reach of the resident. 40. If the resident desires, return the door and curtains to the open position.
Documentation	The following information should be recorded in the resident's medical record: 1. The date and time that the procedure was performed. 2. The type and size of catheter used. 3. Amount of negative pressure (mmHg) used to suction. 4. Amount, color and characteristics of secretions (color, odor, thickness, etc.). 5. The resident's response to the procedure. 6. Cardio-pulmonary status, including lung sounds, during the procedure. 7. Assessment data before and after the procedure. 8. If the resident refused the treatment, the reason(s) why and the intervention taken. 9. The signature and title of the person performing the procedure.
Reporting	1. Notify the supervisor if the resident refuses the procedure. 2. Report other information in accordance with facility policy and professional standards of practice.