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Applicability:	<i>UNC Medical Center</i>

## Respiratory Care Department

### I. Description

Describes the practices followed by Respiratory Care personnel to reduce the risk of infection for patients and personnel.

### II. Rationale

Respiratory care provides equipment and respiratory treatments and procedures that are associated with a risk of infection. Appropriate cleaning and disinfection of reusable respiratory equipment and aseptic practices can reduce the infection risk.

### III. Policy

#### A. Personnel

1. Personnel should adhere to guidelines established by the Hospital Occupational Health Service (OHS); see [Infection Control and Screening Program – OHS](#).
2. Eating, drinking, applying cosmetics or lip balm and handling contact lenses are prohibited in work areas where there is a potential for contamination with blood or other potentially infectious materials.
3. Long hair should be secured so that it does not come into contact with patients or equipment during patient care.
4. Personnel will adhere to the [Exposure Control Plan for Bloodborne Pathogens](#) and [TB Control Plan](#). Personnel will wear personal protective equipment (e.g., protective eyewear, mask, gown and gloves) as needed when splash or splatter of blood or other potentially infectious material is likely.
5. Personnel will comply with all infection control policies, including tissue testing for negative pressure when appropriate, during sputum induction, aerosolized medication administration, bronchoscopy, any procedure which produces coughing, and when entering the rooms of patients on isolation precautions. Refer to the [Isolation Precautions Infection Control Policy](#).
6. Infection control education which includes mandatory bloodborne pathogen and tuberculosis training is required upon employment and annually via LMS.
7. Personnel will comply with infection control policies regarding hand hygiene (see ["Hand Hygiene and Use of Antiseptics for Skin Preparation"](#)). Hand hygiene should be performed using an approved antimicrobial (e.g., 2% CHG or alcohol-based hand rub):

- a. Before and after patient contacts
  - b. Before donning gloves to perform a procedure
  - c. After glove removal
  - d. Immediately after suctioning a patient
  - e. Between patients
  - f. After draining or handling items contaminated with ventilator condensate fluid
8. Artificial nail applications are prohibited for staff providing direct patient care.

## **B. Respiratory Care Equipment Exchange Policy**

Respiratory care equipment exchanges should be consistent with manufacturer's recommendations and be consistent with practice per Respiratory Care Clinical Practice Guidelines and CDC guidelines.

1. The following disposable circuits/tubings in use on a patient are changed every 30 days, when visibly soiled, or mechanically malfunctioning:
  - a. Ventilator circuit (i.e., ventilator tubing and exhalation valve, and the attached humidifier), heated wire circuit in the VDR ventilators
  - b. CPAP circuits (adult and pediatric)
  - c. Adult and Pediatric high flow oxygen system (Comfort Flow)
  - d. Intermittent percussive ventilation (IVP systems)
2. All nebulizers (e.g., aerosol tracheal mask, aerosol face mask, and mist tent, MetaNeb nebulizer) are changed every 48 to 72 hours. This includes the various plastic tubes, aerosol tubing, etc. Between treatments on the same patient, the small volume medication nebulizers will be rinsed with sterile water and air-dried. Do not store wet nebulizers in a plastic bag. If the nebulizer is visibly soiled, it should be rinsed with sterile water and air dried.
3. Nebulizers for CF patients are changed daily. If the patient or family brings in the NUK bottle sterilizer, it may be used to sterilize the nebulizer between uses. The device does need to be approved by Medical Engineering.
4. Emergency and floor stock equipment should be exchanged and replenished only as it is utilized in patient care or if outdated.
5. In-line suction catheters are changed once a week and as needed.
6. The HMEs (heat and moisture exchangers) are changed every seven days and if visibly soiled, resistance increases, or mechanically malfunctions. The HME should be kept elevated at all times. Medications aerosolized must be limited to those that do not have high viscosity (e.g., Mucomist, Tobramycin).
7. Blood gas syringes will not be sent to the lab via tube system with needle attached.

## **C. Patient Care/Equipment**

1. Disposable manual ventilation bags (MVBs) in use by a patient will be decontaminated with alcohol on a daily basis between 7:00 AM and 7:00 PM as described in Respiratory Care Department Policies. MVBs are single use items and may not be used on another patient. Grossly contaminated MVBs will be discarded and the patient given a new disposable MVB.

2. Liquid levels of humidifiers, nebulizers, and other inhalation apparatus in areas outside of the Critical Care Units may be filled with sterile water by non-respiratory care individuals. (Refer to 6a below.)
3. It is the responsibility of the Respiratory Care Department to process all reusable Respiratory Care equipment upon discontinuation from patient use. Respiratory care equipment that has contact with mucous membranes must be high-level disinfected or sterilized between patients. Reprocessing will include proper cleaning; disinfection sterilization and packaging for each specific type of respiratory apparatus (see Respiratory Care Cleaning Procedure in Respiratory Care Department). At no time shall any Respiratory Care equipment be transferred from one patient to another without first being returned to the Respiratory Care Department for reprocessing. Items designated as disposable or for single patient use will not be reprocessed. The Respiratory Care staff will be familiar with and follow the Infection Control Policy: "[Cleaning, Disinfection, and Sterilization of Patient Care Items.](#)"
4. During bronchoscopy in the applicable ICUs, the bronch cart supplies should be stored in the drawers of the cart. Supplies needed after start of the procedure should be accessed with clean hands. No supplies are stored on the top of the cart. The bronchoscope is cleaned and high-level disinfected following the procedure.
5. Respiratory care equipment cleaning and disinfection should be consistent with the manufacturer's recommendations and be consistent with practice per Respiratory Care Clinical Practice Guidelines and CDC guidelines.
  - a. Only sterile water will be used for the humidification source.
  - b. All nasal cannula, delivery tubing, and oxygen tubing are single patient use as labeled by the manufacturer and will be discarded after each patient use.
  - c. The external surfaces of shared equipment must be cleaned/disinfected between patient uses. After removing from the patient's room, the equipment (e.g., oximeter, IPV machine) should be thoroughly cleaned of visible soil and then wiped with an EPA-registered disinfectant detergent or 70% alcohol.
  - d. Sterile water dispensed aseptically is used to refill nebulizers and humidifiers. All sterile pour (irrigation) solutions are single-use and any unused portion must be discarded immediately after use.
6. Special assistance from health care providers is requested in the following areas:
  - a. Should it become necessary to fill one of the nebulizers or humidifiers, sterile water should be the only liquid placed in the reservoir containers. Residual solution from the water reservoir should be emptied prior to refilling.
  - b. Should the delivery tube need to be drained, empty the condensate in a waste receptacle and not back into the nebulizer reservoir. Care is taken not to allow condensate to drain toward the patient. The draining of condensate liquids back into the nebulizer will inoculate the reservoir container with any microorganisms that might be present in the tubing. Hand hygiene should be performed with an approved antimicrobial (e.g., 2% CHG) and water or a waterless antiseptic agent after performing this procedure or handling the fluid.
7. Inhalant medications used for aerosol treatments should be in single dose vials used with one patient only. If a multidose vial is used, refer to the Administrative Policy: [Medication Management: Use of Multi-Dose Vials of Parenteral Medications in Acute Care and Ambulatory Care Environments.](#)
8. O<sub>2</sub> analyzers are frequently used to check the oxygen concentration of ventilators and other respiratory therapy treatments. The electronic components of the analyzers (e.g. the box containing the readout mechanism and the electrical cord) are disinfected with 70% alcohol between patients. If known contamination with blood or body fluids has occurred, MetriGuard or a 1:10 dilution of bleach and water

should be used (expires in 30 days). If the unit has a T-piece that is a single-patient use item, it is discarded (i.e., it is not reused between patients). If the unit has a T-piece that is designated by the manufacturer as reusable, it is sterilized or high-level disinfected prior to use on a different patient.

9. Vibralung, an acoustic percussion airway clearance device is single patient use and is discarded at patient discharge. The hand piece and membrane (cone) are replaced weekly and the nebulizer if used is changed on a daily basis. The small volume medication nebulizer and hand piece will be rinsed with sterile water and air-dried.
10. If cell phones or pagers are taken into Contact Precautions rooms, they must be kept under the isolation gown. They should be touched only with clean hands. The units should be cleaned with alcohol, Sani-Cloths, or an EPA-registered disinfectant detergent daily and when visibly soiled.
11. Isolation and Sterile Techniques

The Respiratory Care Staff will be familiar with and observe all isolation/precaution and asepsis guidelines as provided in the Infection Control Policies: "[Isolation Precautions](#)", "[Cleaning, Disinfection and Sterilization of Patient Care Items](#)", and "[Patients with Cystic Fibrosis](#)." The Infection Preventionist should be consulted as needed by calling 984-974-7500 during business hours or paging 123-7427 after hours and on weekends and holidays.

12. Refer to the [Endoscope Infection Control Policy](#) for details of the procedure for cleaning and disinfection of Bronchoscopes and Bronchoscopy equipment.

## D. Implementation

Implementation of this policy will be the responsibility of the Director of Respiratory Care or his/her designee.

## IV. References

APIC. The APIC Text of Infection Control and Epidemiology, Vol. 1. Washington, DC. Pfeiffer JA. 2000: 71-1 – 71-8.

CDC Guideline for Prevention of Healthcare-Associated Pneumonia, 2003.

Infection control recommendations for patients with cystic fibrosis: Microbiology, important pathogens, and infection control practices to prevent patient-to-patient transmission; L. Saiman, J. Siegl, and the Cystic Fibrosis Foundation Consensus Conference on Infection Control Participants, AJIC, Vol. 1, No. 3, May, 2003.

## Attachments:

### Applicability

UNC Medical Center