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Policy Area Infection Prevention  
Applicability UNC Medical Center

## 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 diagnostic and therapeutic procedures that may act as potential sources of infection for the patient or provider. Appropriate handling, cleaning, disinfection, and storage of equipment and supplies reduces the risk of infection to patients and healthcare providers.

### III. Policy

#### A. Personnel

1. Personnel should adhere to guidelines established by the Hospital Occupational Health Service (OHS); see the Infection Prevention policy: [Infection Control and Screening Program – Occupational Health Service](#).
2. Personnel should adhere to the following Infection Prevention policies where applicable:
  - a. [Ambulatory Care Clinical Services](#)
  - b. [Infection Prevention Guidelines for Adult and Pediatric Inpatient Care](#)
  - c. [Infection Prevention Guideline for Perioperative Services](#)
  - d. [Isolation Precautions](#)
  - e. [Patients with Cystic Fibrosis](#)

3. Personnel will adhere to the Infection Prevention policies: [Exposure Control Plan for Bloodborne Pathogens](#) and [Tuberculosis Control Plan](#). Personnel will wear personal protective equipment per standard precautions (e.g., protective eyewear, mask, gown and gloves) as needed when splash or splatter of blood or other potentially infectious material is likely.
4. Infection prevention education, including OSHA-required education for bloodborne pathogen and Tuberculosis training is required upon employment and annually via LMS.
5. Personnel will comply with the Infection Prevention policy: [Hand Hygiene and Use of Antiseptics for Skin Preparation](#).

## 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, and devices in use on a patient are changed per manufacturer recommendations, when visibly soiled, or mechanically malfunctioning:
  - a. Ventilator circuit (e.g., ventilator tubing and exhalation valve, and the attached humidifier), heated wire circuit in the VDR, HFOV, and HFJV ventilators
    - i. In-line suction catheters are an extension of the ventilator circuit and should be exchanged at the same time as the circuit
  - b. Noninvasive ventilator circuits (adult and pediatric)
  - c. Adult and pediatric high flow oxygen system
2. All disposable airway clearance device components (e.g., intrapulmonary percussive ventilation devices, acoustical percussors, and oscillating positive expiratory pressure devices) are changed every 48 to 72 hours. Between treatments on the same patient or when visibly soiled, the device components will be rinsed with sterile water and air-dried at least 3 feet away from the sink or separated by a splash guard. Do not store wet components in a plastic bag.
3. All disposable nebulizers components (e.g., aerosol tracheal mask, aerosol face mask, and mist tent) are changed every 48 to 72 hours. This includes the mouth piece, nebulizer cup, connectors, tubing, and mask. Between treatments on the same patient or when visibly soiled, the small volume medication nebulizers will be rinsed with sterile water and air-dried at least 3 feet away from the sink or separated by a splash guard. Do not store wet nebulizers in a plastic bag.
4. Disposable nebulizer and airway clearance device components for Cystic Fibrosis patients are changed daily. Hardware components of an airway clearance device are cleaned daily per the manufacturer's instructions.
5. Emergency and floor stock equipment should be exchanged and replenished only as it

is utilized in patient care or if outdated.

6. The HMEs (heat and moisture exchangers) are changed every seven days, 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).

## C. Patient Care/Equipment

1. Disposable manual resuscitator bags and their connectors in use on a patient will be cleaned with alcohol at least once daily and when visibly soiled. Grossly contaminated bags should be discarded and exchanged with a new one. Manual resuscitator bags are single patient-use items and may not be used on another patient.
2. Liquid levels of humidifiers, nebulizers, and other inhalation apparatus may be filled with sterile water in the following manner:
  - 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.
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 in accordance with the Infection Prevention policies: [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices](#) and [Sterilization of Reusable Patient-Care Items](#). 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.
4. During bedside bronchoscopy, 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 with practice per UNCMC policies, Respiratory Care clinical practice guidelines and CDC guidelines.
  - a. All oxygen delivery devices and tubing are single patient use as labeled by the manufacturer and will be discarded after each patient use or if grossly contaminated.
  - b. The external surfaces of shared equipment must be cleaned/disinfected between patient uses. After removing from the patient's room, the

equipment (percussive devices, airway pressure devices, etc.) should be thoroughly cleaned with an EPA-registered disinfectant per manufacturer's instructions.

- c. 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.
  - d. Metered Dose Inhaler (MDI) spacers are single patient use and must be cleaned per manufacturer instructions or when visibly soiled.
  - e. Home equipment used in the inpatient setting (e.g., bottle sterilizers used for nebulizers, Tyvaso inhalation systems, chest wall oscillation vest systems) should be cleaned per manufacturer recommendations by the patient.
6. 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 Patient Care policy: [Medication Management: Use of Multi-Dose Vials of Parenteral Medications in Acute Care and Ambulatory Care Environments.](#)
7. 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 per manufacturer's recommendations. If the unit has a T-piece that is a single-patient use item, it is discarded after use. 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.

## D. Implementation

Implementation of this policy will be the responsibility of the Director of Respiratory Care or their designee.

## IV. References

Fornof, M. (2014). Respiratory Care Services. In *APIC Text of Infection Control and Epidemiology* (4th ed., Vol.2, pp. 67-1-67-5). Arlington, VA: Association of Professionals in Infection Control and Epidemiology.

Saiman, L., Siegel, J., LiPuma, J., Brown, R., Bryson, E., Chambers, M.,...Weber, D. (2014). Infection Prevention and Control Guideline for Cystic Fibrosis: 2013 Update. *Infection Control and Hospital Epidemiology*, 35(S1), S1-S67.

Tablan, O., Anderson, L., Besser, R., Bridges, C., & Hajjeh, R. (2004). Guidelines for Preventing Health-Care-Associated Pneumonia, 2003: Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee. *Morbidity and Mortality Weekly Report*, 53, 1-36.

## V. Related Policies

[Infection Prevention Policy: Ambulatory Care Clinical Services](#)

[Infection Prevention Policy: Exposure Control Plan for Bloodborne Pathogens](#)

<a href="#"><u>Infection Prevention Policy: Hand Hygiene and Use of Antiseptics for Skin Preparation</u></a>
<a href="#"><u>Infection Prevention Policy: High-Level Disinfection (HLD) - Manual Reprocessing of Reusable Semi-Critical Medical Devices</u></a>
<a href="#"><u>Infection Prevention Policy: Infection Control and Screening Program: Occupational Health Service</u></a>
<a href="#"><u>Infection Prevention Policy: Infection Prevention Guidelines for Adult and Pediatric Inpatient Care</u></a>
<a href="#"><u>Infection Prevention Policy: Infection Prevention Guidelines for Perioperative Services</u></a>
<a href="#"><u>Infection Prevention Policy: Isolation Precautions</u></a>
<a href="#"><u>Infection Prevention Policy: Patients with Cystic Fibrosis</u></a>
<a href="#"><u>Infection Prevention Policy: Sterilization of Reusable Patient-Care Items</u></a>
<a href="#"><u>Infection Prevention Policy: Tuberculosis Control Plan</u></a>
<a href="#"><u>Patient Care Policy: Medication Management: Use of Multi-Dose Vials/Pens of Injectable Medications and Vaccines in Acute Care and Ambulatory Care Environments</u></a>

## Approval Signatures

Step Description	Approver	Date
Policy Stat Administrator	Kimberly Novak-Jones: Nurse Educator	10/2020
	Thomas Ivester: CMO/VP Medical Affairs	10/2020
	Emily Vavalle: Dir Epidemiology	10/2020
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