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Policy Area Infection Prevention  
Applicability UNC Medical Center

## Respiratory Care Department

### I. Description

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

### II. Policy

#### A. Staff

1. Staff should adhere to the following Infection Prevention policies where applicable:
  - a. [Hand Hygiene](#)
  - b. [Infection Prevention Guidelines for Safe Patient Care](#)
  - c. [Exposure Control Plan for Bloodborne Pathogens](#)
  - d. [Isolation Precautions](#)
  - e. [Patients with Cystic Fibrosis](#)
  - f. [Tuberculosis Control Plan](#)

#### B. Respiratory Care Equipment Exchange Policy

Respiratory care equipment exchanges should be consistent with the manufacturer's instructions for use (MIFU) and be consistent with practice per Respiratory Care clinical practice guidelines

and CDC guidelines.

1. The following disposable circuits, tubing, and devices in use on a patient are changed per MIFU, 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 on Mondays, Wednesdays, and Fridays. Change frequency should not exceed 72 hours. This includes the mouthpiece, 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 MIFU.
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 \(excluding ALL flexible endoscopes\)](#) 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. If a disposable bronchoscope is used, follow the MIFU for proper disposal. For details regarding cleaning and high-level disinfecting, refer to the Infection Prevention Policy: [Endoscope](#).
5. Respiratory care equipment cleaning, and disinfection should be consistent with the MIFU and with practice per UNC Hospitals 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 MIFU. For Enteric Precautions, sporicidal cleaning agents (e.g., bleach Sani-Cloths) are preferred for cleaning shard equipment.

- 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 MIFU 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, home NIPPV machines, or home ventilators) should be cleaned per MIFU 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 Medications and Vaccines in Acute, Operative, 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 MIFU. 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. Pulmonary Diagnostic Services**

1. Personal Protective Equipment (PPE)
  - a. Respirators are worn by all staff caring for patients suspected of tuberculosis and other airborne infectious diseases, otherwise surgical masks and protective eyewear are to be worn during all bronchoscopies.
  - b. Refer to the Infection Prevention policy: [Isolation Precautions](#) to determine the need for additional PPE during pulmonary function testing or bronchoscopies for patients on isolation.
2. Airborne Isolation
  - a. When pulmonary function testing rooms are used for patients with known or suspected tuberculosis or other conditions requiring Airborne Isolation, that patient should be tested at the end of the day in an appropriate Airborne Infection Isolation Room (AIIR) when there are no other patients in that testing room.
    - i. An Airborne Isolation Precautions sign will be displayed at the room entrance(s).
    - ii. Respirators (e.g., N95 or powered air purifying respirator (PAPR))

should be available by the entrance door.

- iii. If testing is performed in an AIIR, the room should remain closed for at least 30 minutes after the patient is removed and any personnel entering the room during that time must wear a respirator. An AIIR is a private room with negative air pressure (corridor positive with respect to the room), >6 air changes per hour or  $\geq 12$  air changes per hour for newer construction, and direct out-exhausted air.
- iv. If an AIIR is not available, a HEPA unit should run during the test and remain running for an additional 30 minutes after the patient leaves the room. Any person entering the room before the 30 minutes is complete must wear a respirator.
- b. When the Bronchoscopy Suite is used for a patient known or suspected of having tuberculosis or other condition requiring Airborne Isolation, staff will perform a tissue test to verify negative pressure. Results will be recorded on a log kept in the department.
  - i. An Airborne Isolation Precautions sign will be displayed on the outside door to the Bronchoscopy Suite.
  - ii. Respirators will be available by the entrance door.

### 3. Equipment

- a. Spirometry Equipment
  - i. All pulmonary function laboratory devices and equipment must be used, cleaned, and disinfected according to the MIFU.
  - ii. All single use items must be discarded after each patient use and may not be used for more than one patient.
  - iii. Disposable filters are used with all pulmonary function equipment. A new filter is used for each patient.
- b. Requirements for equipment used with cystic fibrosis (CF), immunosuppressed, or patients requiring transmission-based isolation precautions:
  - i. Spirometers must have tubing changed after each use and between patients.
  - ii. The 2-way valve on the flow sensor is changed between patients.
- c. Bronchoscopy Equipment
  - i. Any staff member responsible for reprocessing and high-level disinfecting bronchoscopes shall refer to the Infection Prevention

policies: [Endoscope](#) and/or [High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices \(excluding ALL flexible endoscopes\)](#) for a detailed procedures and processes related to reprocessing semi-critical bronchoscopy equipment

- ii. Bronchoscope carts are cleaned with an EPA-registered disinfectant after each case. Supplies in drawers should be accessed with clean hands.

## E. Implementation

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

## III. Responsible for Content

Infection Prevention

## IV. References

Schweon S, Danko J, Addressing: Respiratory Care Services. In: Dean R, Popescu S, eds. *APIC Text*. 2023. Available at [https://text.apic.org/toc/infection-prevention-for-practice-settings-and-service-specific-patient-care-areas/respiratory-care-services - book\\_section\\_89525](https://text.apic.org/toc/infection-prevention-for-practice-settings-and-service-specific-patient-care-areas/respiratory-care-services - book_section_89525). Accessed April 30, 2026.

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: Cleaning and Disinfection of Non-Critical Items](#)

[Infection Prevention Policy: Endoscope](#)

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

[Infection Prevention Policy: Hand Hygiene](#)

[Infection Prevention Policy: High-Level Disinfection \(HLD\) - Manual Reprocessing of Reusable Semi-Critical Medical Devices \(excluding ALL flexible endoscopes\)](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Safe Patient Care](#)

[Infection Prevention Policy: Infection Prevention Guidelines for Perioperative Services](#)

[Infection Prevention Policy: Isolation Precautions](#)

[Infection Prevention Policy: Patients with Cystic Fibrosis](#)

[Infection Prevention Policy: Sterilization of Reusable Patient-Care Items](#)

[Infection Prevention Policy: Tuberculosis Control Plan](#)

[Patient Care Policy: Medication Management: Use of Multi-Dose Medications and Vaccines in Acute, Operative, and Ambulatory Care Environments](#)

[Respiratory Care Policy: Equipment Cleaning and Packaging](#)

[Respiratory Care Policy: Pulmonary Function Laboratory](#)

## All Revision Dates

07/2026, 09/2023, 10/2020, 06/2017, 06/2014, 06/2011, 06/2008, 07/2005, 01/2004

## Approval Signatures

| Step Description          | Approver                             | Date    |
|---------------------------|--------------------------------------|---------|
| Policy Stat Administrator | Judith Strubin: Mgr Program-IP       | 07/2026 |
|                           | Emily Vavalle: HCS Exec Dir          | 07/2026 |
|                           | Infection Prevention                 |         |
|                           | Sherie Goldbach: Project Coordinator | 07/2026 |

## Applicability

UNC Medical Center

## Standards

No standards are associated with this document