

# UNIVERSITY OF TOLEDO HEALTH SCIENCE CAMPUS

SUBJECT: AIRBORNE PATHOGENS CONTROL

Procedure No: US-08-002

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## PROCEDURE STATEMENT

All employees in the Facilities Maintenance and Biomedical Engineering departments will adhere to the following general guidelines.

## PURPOSE OF PROCEDURE

To provide guidance regarding adequate and effective control of airborne contaminants, with the purpose of providing a safe environment for patients, staff and visitors.

## PROCEDURE

Scope of procedure:

This procedure applies to the ventilation systems that service areas in the hospital including, but not limited to operating rooms, catheterization lab, endoscopy, isolation rooms (negative pressure), outpatient surgery, sterile central supply, clinical laboratory areas, general and intensive care rooms in the hospital and the pharmacy.

General Guidelines:

1. Air-handling equipment and ventilation systems will be installed and repaired in order to complement the original design specifications for the equipment within the scope of its use.
2. Appropriate personal protective equipment shall be used during testing, repair and filter replacement to prevent exposure to potentially dangerous airborne contaminants if determined to be present during the performance of maintenance activities.
3. Special precautions must be used when systems are serviced in areas where patients with compromised immune systems are being housed or treated.

**Responsibilities:** Plant Operations staff are responsible for adhering to the following requirements.

A. Design of ventilation systems:

- Equipment selection shall be within the guidelines of the AIA, ASHRAE, and applicable state and local guidelines for ventilation systems in healthcare facilities.
- Current design principles should be used to ensure that proper humidity and temperature control will be incorporated.
- The mechanical systems designer(s) shall incorporate concepts to minimize the growth of bio-organisms relative to the placement of filter banks, cooling coils, condensing systems, air inlets and exhausts.
- Heat recovery devices, if used, must be designed and installed so that incoming fresh air is not contaminated.
- Insulation shall be installed in a manner that minimizes bacterial contamination.
- Pre-filters must be installed so that post-filters are protected.

B. Installation of ventilation systems:

- Only contractors who are experienced with the installation of healthcare ventilation systems should be employed.
- Contractors shall ensure that the ductwork is free of dirt and debris and that there are no gaps between the filter frame and air handling unit. The air handling units must be cleaned prior to installation.
- Duct joints must be smooth to minimize air flow reductions.
- Drip pans must be pitched to drain ensure proper drainage and to minimize the chance of stagnant water.
- Quality workmanship must be provided for all installation and repair projects.

C. Maintenance of ventilation systems:

- All preventive maintenance of the heating, ventilating and air conditioning (HVAC) systems are performed according to the manufacturer recommendations and generally accepted mechanical systems field practices.
- All filters are changed on a regular basis or when manometer readings indicate that earlier replacement is necessary.
- Louvers and dampers are inspected, adjusted and air exchange tests are conducted and documented as needed to ensure that adequate ventilation and appropriate pressure relationships are maintained; system balancing must be performed whenever airflow tests indicate that re-balancing is necessary.
- Ductwork in the operating rooms and protective environment areas such as the Pharmacy chemo prep area are on an annual preventative maintenance schedule and are cleaned, when required.
- General maintenance that includes checking pulleys, belts, screens, intake areas for debris (including vermin) and drip pans, shall be checked during rounds and according to the ongoing preventive maintenance schedule.
- Patient Airborne Infection Isolation (All) rooms (negative pressure) are monitored continuously, when in use, by the clinical staff with pressure monitors that are mounted on the outside of each isolation room.
- When patients who require airborne isolation are occupying a All room, an automated monitoring/alarm system will be in place. These negative pressure monitors/alarms are tested semi-annually and calibrated as necessary by Facilities Maintenance.

D. Ventilation system monitoring and reporting:

- The facilities computerized Building Automation System (BAS) provides continuous monitoring and alarms whenever parameters reach the alarm set point. Facilities Maintenance staff monitors the BAS alarms and provide timely repairs and adjustments, as necessary.
- Any malfunctions that are noted in the HVAC systems must be reported immediately to the Facilities Maintenance Department.
- Facilities Maintenance provides reports to the Infection Control Committee regarding the operation, monitoring of temperature and humidity and repair of the HVAC systems that impact the clinical environment.

**References:** Current JCAHO, AIA, ASHRAE and CDC guidelines for HVAC systems.

Source: Infection Control  
Facilities Maintenance  
Environmental Health and Radiation Safety

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