

# UNIVERSITY OF TOLEDO HEALTH SCIENCE CAMPUS

SUBJECT: WATERBORNE PATHOGENS CONTROL

Procedure No: US-08-003

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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 waterborne contaminants in cooling towers, potable and aerosolizing water systems, with the purpose of providing a safe environment for staff, faculty, students, volunteers, patients and visitors.

## PROCEDURE

Scope of procedure:

This procedure applies to all areas of the University of Toledo Medical Center, including outside areas that include water fountains, pools, roofs and other mechanical systems.

### General Guidelines

All employees in the Facilities Maintenance and Biomedical Engineering departments shall use the appropriate protective equipment to prevent the exposure to organism transmission, especially through the breathing of mist, droplet infection and wind drift of water particles.

#### A. Infection Control Risk Assessment

The Infection Control and Facilities Maintenance staff have reviewed the following:

1. The history of documented waterborne pathogen nosocomial infections.
2. Areas in the hospital where high risk patients are likely to be housed and treated and have determined that the following four risk group areas exist:

**Highest Risk:** any area caring for immunocompromised patients and the following other areas – cardiac cath lab, central sterile supply, intensive care units, medical units, patient isolation rooms, oncology, operating rooms.

**High Risk:** Intensive Care Units, SICU and MICU; emergency room, specimen laboratories, procedure rooms, pharmacy, post-anesthesia care unit and clinical surgical units. (4CD)

**Medium Risk:** cardiology, echocardiography, endoscopy, nuclear medicine, physical therapy, radiology/MRI and respiratory therapy.

**Low Risk:** office areas

For patients who are identified in the “High” and “Highest” risk categories, special precautions must be taken to minimize the risk of contracting legionellosis, such as limiting access to aerosolizing water systems. Special patients, who are identified as extremely high risk due to their condition, will have individualized care plans that include specific treatment modalities to minimize exposure to airborne and waterborne pathogens.

Prior to construction in the hospital, a pre-construction infection control risk assessment (ICRA) will be performed and documented by Plant Operations/Facilities Maintenance, Infection Control, Environmental Health and Radiation Safety and other staff to determine specific actions to minimize patient exposure to air and waterborne pathogens.

## B. Operational Management of Risk

Operating procedures described below and are currently in use at the hospital. These procedures include specific maintenance protocols for:

1. Temperature standard for potable hot water. Temperature is evaluated during the annual legionella risk assessment.
2. Aerator removal and/or cleaning patient shower head cleaning as needed
3. Elimination of “dead-end” water lines during construction and renovation
4. Testing of potable water is conducted annually and as needed.
5. Chemical treatment and cleaning program for the cooling tower
6. Biocide treatment program for water system condensers
7. Inspection of cooling towers and evaporative coolers
8. Staff decontamination eyewash and shower testing procedure ([S-08-016](#))
9. Cleaning and sanitizing ice machines procedure ([HVAC-12](#))
10. Proper cleaning and sanitizing of pools and therapeutic tubs
11. Management of the hemodialysis reverse osmosis program (R/O)
12. Infection control procedures
13. Domestic Water Loss and Sewer Loss policies ([ADM-04](#); [ADM-41](#))

There are currently no specific active devices that have been installed in the hospital to limit the growth of waterborne pathogens, such as copper silver or chlorine dioxide systems.

## C. Remediation

In the event that infection control determines that a waterborne pathogen outbreak has occurred in the hospital, the following measures will immediately be implemented:

1. Appoint an ad hoc meeting with the Infection Control Committee chair, Infection Control staff, Safety and Health and Plant Operations/Facilities Maintenance manager to coordinate the plan for the water system decontamination.
2. Begin ongoing sampling of legionella to determine the possible source of the contamination.
3. Promptly disinfect the source of the contamination, if found.
4. Maintain all records of control measures that are taken, including maintenance procedures and environmental test results.
5. Report remedial action to appropriate local, state and federal authorities, as required.

D. Monitoring

- 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.

**References:** Current JC, ASHRAE and CDC guidelines for Water systems.

Source: Infection Control  
Facilities Maintenance  
EHRS Department

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