Healthcare Facility Water Management Program Checklist

This checklist is intended to assist in the development of an all-hazards approach to water management in a healthcare facility, and may be used to:

- Evaluate a comprehensive water management program.
- Identify individuals to participate in the water management program.
- Assist in conducting assessments, including hazard analyses, environmental risk assessments, and infection control risk assessments.
- Inform water monitoring practices guided by the management program.

Depending on complexity of the building plumbing systems, a comprehensive program may include several water management plans. These plans should include areas within the system where control points are identified as well as monitoring methods and procedures.

Establish a Water Management Program Team

For all facility types, establish clear lines of communication to facilitate dialogue with representatives from the water utility/drinking water provider, as well as the local health department, on an as needed basis.

☐ Define membership (at a minimum, the following ‘roles’ should be represented; may include others depending on facility size, type
  - facility administration/ownership or C-Suite
  - facilities management
  - facilities engineer
  - infection prevention

☐ Develop a charter that defines roles and responsibilities of members, chair, meeting schedule, etc.

☐ Have you identified team members who should:
  ☐ Y ☐ N Be familiar with the facility water system(s)
  ☐ Y ☐ N Identify control locations and control limits
  ☐ Y ☐ N Identify and take corrective actions
  ☐ Y ☐ N Monitor and document program performance
  ☐ Y ☐ N Communicate to the C-suite, staff, health department, and representatives of the drinking water supplier (if needed)
  ☐ Y ☐ N Oversee the program
  ☐ Y ☐ N Access necessary resources to implement changes

☐ Develop the Water Management Policies and Procedures, Plans, and Protocols

Describe your building water systems

☐ Text description of the building water systems, campus water systems, etc.
☐ Develop flow diagrams that describes these systems
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Identify external hazards (i.e., compromised supply) and describe plans for mitigating or managing these events:

☐ Trace or no disinfectant residual upon entry into the building
☐ Water main breaks
☐ Low pressure events
☐ Flushing hydrants
☐ Boil Water Advisory
☐ Nearby construction
☐ Other (specify): __________________________

Identify areas where biofilms may be present and areas where opportunistic pathogens of premise plumbing may grow and spread

☐ Identify storage tanks and describe (water turnover rates, residence times, etc.)
☐ Identify areas of stagnation (dead legs, vacant units/rooms, etc.)
☐ Identify areas with hand-held showers, faucets with aerators/flow restrictors,
☐ Identify areas with no residual disinfectant
☐ Identify areas where temperatures can support microbial growth
☐ Identify locations of commodes and hoppers
  ☐ Y ☐ N Do all commodes and hoppers have covers that can be closed when flushing?
  ☐ Y ☐ N If no cover present, are they located in a separate room with a door that can closed?
☐ Identify sinks and sink locations
  ☐ Y ☐ N Do sinks in patient care areas have aerators and flow restrictors?
  ☐ Y ☐ N Identify electronic sinks/faucets and temperature setting for mixing valve
  ☐ Y ☐ N Do all sinks in patient care areas have drains that are offset from faucet flow stream?
  ☐ Y ☐ N Are there barriers (splash guards) between sinks and adjacent medication preparation areas and patient supplies?
  ☐ Y ☐ N If splash guards are not present, is medication prep and clean supply storage > 3 feet from sinks?

Conduct an Infection Control Risk Assessment (ICRA Adapt for potential water exposures both direct and indirect)

☐ Identify patients at increased risk (e.g., burn patients, patients with immune suppression, patients with lung disease/injury, patients with indwelling devices (e.g., central venous catheters, peritoneal dialysis catheters, etc.), patients with open wounds, patients undergoing endoscopy, etc.)
☐ Risk stratify procedures and processes
☐ Identify potential exposures to water

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Identify control point locations and determine how control measures will be applied using both the environmental assessment and ICRA

Decide how to monitor control measures (some examples)

☐ Water temperature
  See: Guidelines for Environmental Infection Control in Healthcare Facilities (https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html)

☐ Residual disinfectant

☐ Heterotrophic plate count (HPC)

☐ Total Organic Carbon

☐ Review trend data and report out of control results

☐ Determine frequency for monitoring

☐ Other (specify): ____________________________

Set control limits for control measures that will be monitored (water temperature, residual disinfectant, HPC, and/or total organic carbon).

Corrective Actions (some examples)

☐ Eliminate dead legs, unused branches

☐ Remove or repurpose high risk features (e.g., water features, decorative fountains)

☐ Flush taps/fixtures in vacant rooms

☐ Decontamination (shock treatment or remediation using supplemental treatment for short period of time)

☐ Change fixtures/hand held showers

☐ Point of use filtration; supplemental building disinfection systems
  Routine and intermittent supplemental disinfection (requires registration with State drinking water program); once one starts to treat water facility is now a small drinking water utility subject to drinking water regulations

☐ Raise hot water temperature if in tepid zone (16°C - 38°C)

☐ Other (specify): ____________________________

Outbreak and Contingency Response Plans

☐ Ability to detect, investigate, and respond to a sentinel infection or cluster that is potentially linked to a water source

☐ Collect epidemiologically linked samples

☐ Notify Health Department

☐ Arrange for molecular typing or relatedness testing

☐ Reassess water control measures and apply corrective actions

See also


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Verification: has the plan been implemented as designed and are you following it?

Validation: Determine what conditions, outcomes inform you that your program is effective

☐ Perform clinical surveillance for infections due to opportunistic pathogens of premise plumbing
See: From Plumbing to Patients: Water Management Programs for Healthcare Facilities
(https://www.cdc.gov/hai/prevent/water-management.html)

☐ Identify clusters and conduct an epidemiologic investigation

☐ Routine environmental sampling for Legionella (optional consideration)
Base decisions on building environmental assessment, water quality data, and context of whether disease is present or absent: Legionella Routine Environmental Sampling
(https://www.cdc.gov/legionella/wmp/monitor-water.html#env-sampling).

Documentation

☐ Team Roster: Names, titles, contact info, team responsibility, member roles

☐ Building Description: Location, building age, use, occupants, visitors, bed occupancy rate, additions or renovations, etc.

☐ Water system description: both text and process diagrams, location of attached equipment

☐ Control Measures: identify control measures, locations in the system where critical limits can be monitored and where controls can be monitored and applied

☐ Confirmatory procedures: verification steps, and validation to show effectiveness of the water management plan as designed

☐ Sampling and testing: document collection and transport methods, chain of custody, and laboratory identified performing assays if environmental testing is conducted, results

Communication Plan

☐ Notification to building staff/occupants that a plan is in place and provide team’s contact info; issue regular updates as plan is implemented or modified

☐ Reports to team, infection control, hospital administration, other affected parties if control limits are exceeded, and corrective actions to be applied

☐ Consider quarterly and annual reports: reports to management and occupants, consider part of facility quality review; since activity is part of Continuous Quality Improvement (CQI).

☐ Notification protocols with public health points of contact for when a sentinel infection or cluster is detected.