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Because Water Matters

Preparing for the Latest AAMI Regulations & ASHRAE 514 Guidance

APIC Sierra Chapter

Shane Sullivan

APIC SIERRA

NEPHROS

Navigating Latest AAMI Regulations & ASHRAE Guidance for Healthcare

- **Learning Objective #1**
  - Water Quality in Reprocessing – Why does it matter?
  - Is the testing just Guidance or is it actually Required?
  - What is tested? Frequency & Why?
- **Learning Objective #2**
  - What are the most Significant Changes within ASHRAE 514?
  - What are some of the Physical, Chemical and Microbial Hazards?
  - Vulnerable Patient Populations & Specialty Areas…
- **Learning Objective #3**
  - Medical and non-medical equipment that use and are cleaned with water
  - What are the capabilities, limitations and warning labels on your filtration you cannot ignore and how can that impact your preventative maintenance too?
  - What's the primary reason an FDA Cleared Class II device is specifically called out in this guidance?

"In wine there is wisdom, in beer there is freedom, in water there is ....."

- Benjamin Franklin

ASHRAE

STANDARD

ANSI/ASHRAE Standard 514-2023

Risk Management for Building Water Systems: Physical, Chemical, and Microbial Hazards

Approved by the ASHRAE Standard Committee on June 24, 2023 and by the American National Standards Institute on July 25, 2023.

This Standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the Standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

The latest edition of an ASHRAE Standard may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 180 Technology Parkway, Peachtree Corners, GA 30092. E-mail: orders@ashrae.org. Fax: 678-539-2129. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

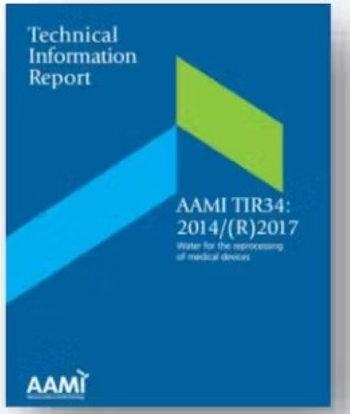
 ISSN 1041-2336

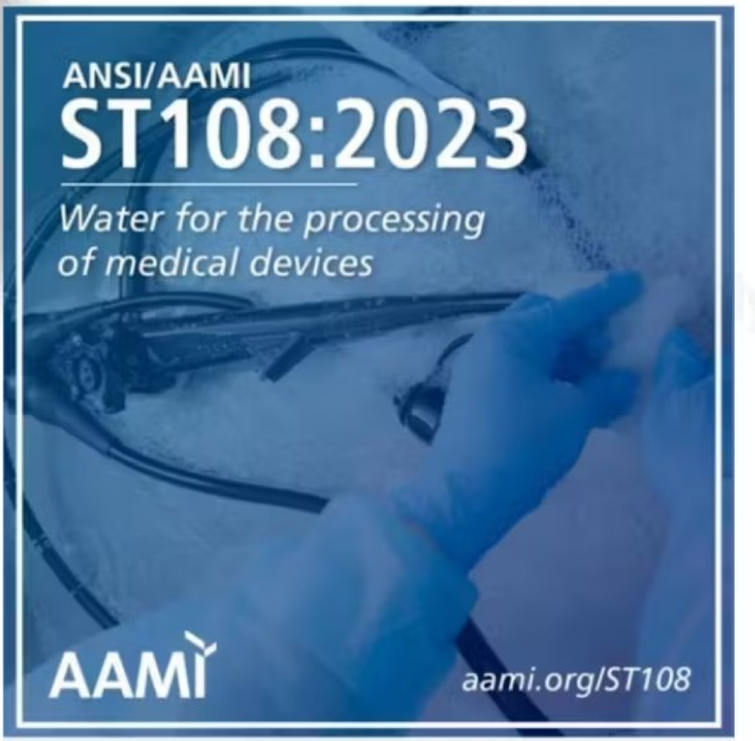
ANSI

NEW

What Is The Goal Of ANSI/AAMI ST108

- AAMI TIR34 TIR = Technical Information Report – 34
  - 2014 – (R) 2017
- Updated 2023 throughout the **ANSI/AAMI ST108** standard
- How **water quality** impacts Sterile Processing
- **Requirements** for a Sterile Processing testing program that is compliant with the ANSI/AAMI ST108 standard
- Guidance toward **development, implementation** and support for the SPD ST108 program across your network



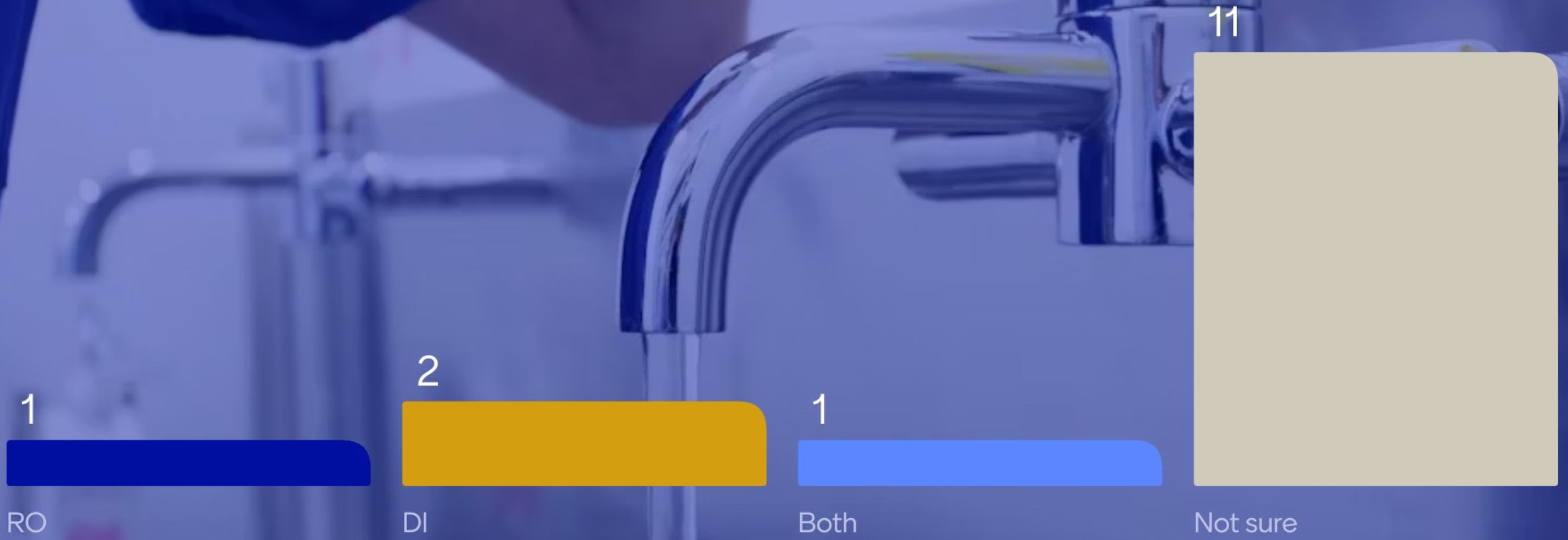


aami.org • 2 min read

Just Published: ANSI/AAMI ST108: Water for the processing of medical devices ›

Mentimeter

What do you currently use in your SPD unit?



RO Water

- Uses a Semipermeable Membrane to remove Solids
- RO water is still saturated with Salts and Oxygen
- Removes most of the minerals in the water making if higher in acidic PH
- Roughly 50% of the water is rejected to drain
- Works under high pressure
- Fails / Performance degrades over time
- Bacteria can actually grow through….with inactivity and high pressure

- Organic Chemicals
- Chlorine
- Lead
- Silicates
- Pesticides
- Herbicides
- Arsenic
- Asbestos
- Radionuclides
- Cysts

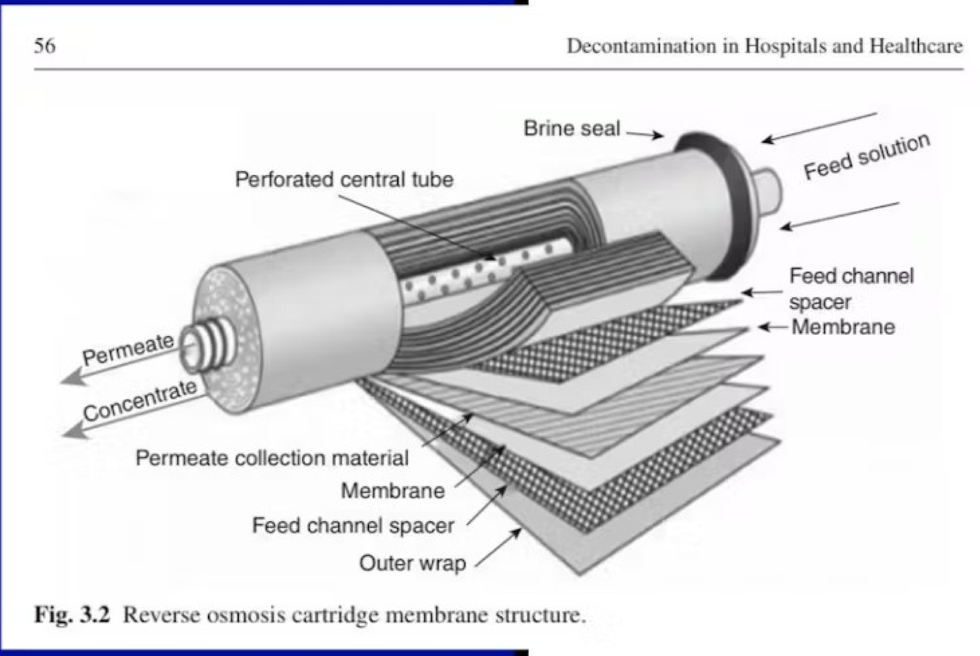


Fig. 3.2 Reverse osmosis cartridge membrane structure.

Mentimeter

So What's Missing?

So What's Missing?

Bacteria & Endotoxin!

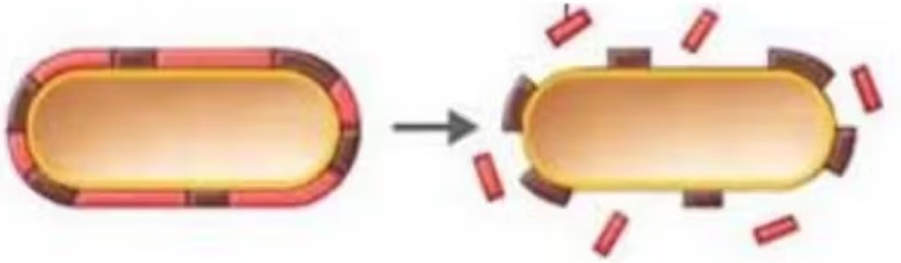
SPD Water Quality Categories

Utility Water

- Water Used for Flushing, Washing and Rinsing
- Water from the tap that might require further treatment to achieve the specifications (pH and hardness)

Critical Water

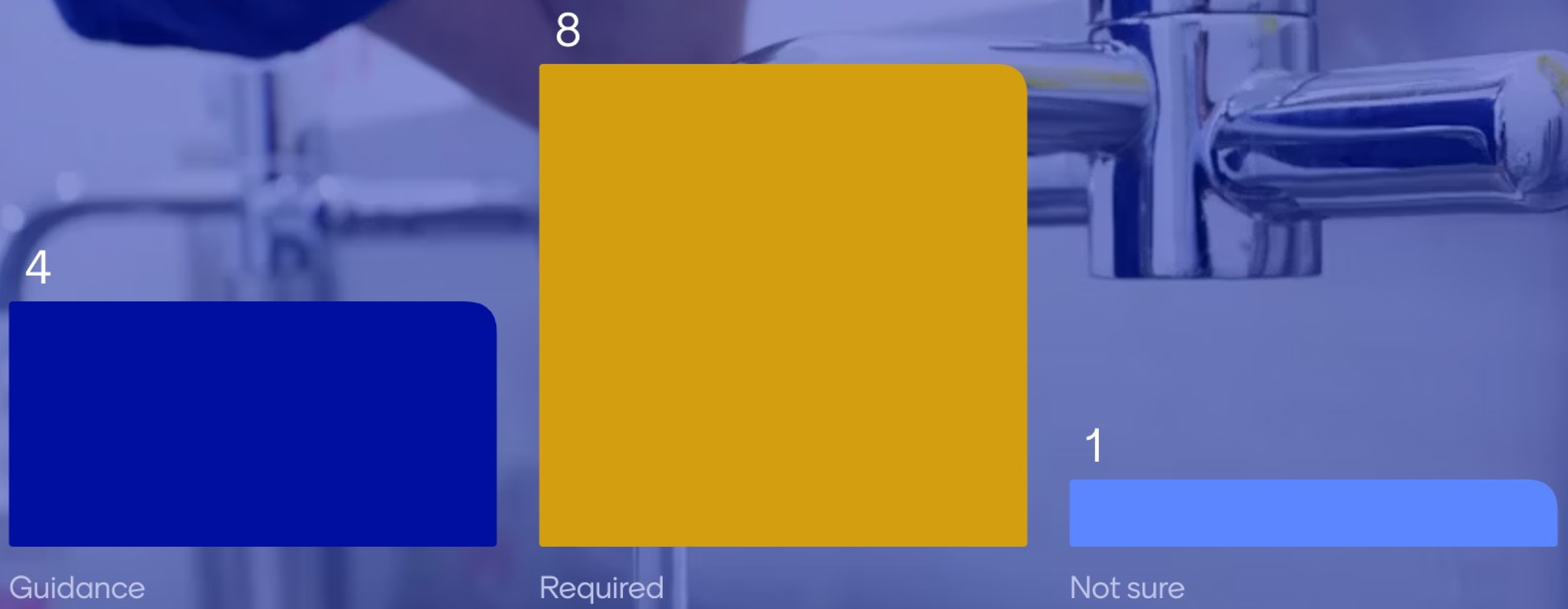
- Water Used for Final Rinsing, or Steam Rinsing
- Extensively treated, typically by Deionization System (DI), Reverse Osmosis (RO), Distillation
- Extensive treatment ensures that microorganisms and the inorganic/organic materials are removed through methods such as ultrafiltration (bacteria and endotoxin)



Bacteria Endotoxin

Mentimeter

Is testing Guidance or Required?



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SPD Testing Per ST108 – What's New

- **Steam** Added as Individual Component
- **Alkalinity** Replaced Chlorides
- Color and Turbidity Visual Evaluation

Summary of Recommended Water Quality Levels for Medical Device Processing in Accordance with ST108-2023				
Analyte	**Units**	**Utility Water Flushing/Washing**	**Critical Water Final Rinse**	**Steam* (if Used)**
		Target Level	**Target Level**	**Target Level**
pH	Units	6.5-9.5	5.0-7.5	5.0-9.22**
Conductivity	µS/cm	< 500	< 10	<10
Alkalinity	mg/L	< 400	< 8	<8
Hardness	mg/L	< 150	< 1	<1
Bacteria	cfu/ml	< 500	< 10	N/A
Endotoxin	EU/ml	N/A	< 10	N/A
Color & Turbidity	Visual	Colorless, clear, no sediment		

*Steam sampled as condensate

**The pH range for steam is wider than for critical water as some steam may not be generated locally but from a central system. The need for treatment chemicals in the boiler at a distant location (plant) may result in higher pH requirements. pH <7.5 should be avoided.

ST108 Testing & Frequency

Table 6—Frequency for water quality monitoring at point-of-water-use

Water quality measurement	Type of testing	Routine monitoring sampling site	Minimum frequency of testing*		
			Utility Water	Critical Water	Steam
pH	pH meter** or Colorimetric dipsticks (sample tested within 15 minutes)	At the point the distribution loop enters the processing area or first POU on the distribution loop	Quarterly	Monthly	Quarterly
Conductivity	Conductivity meter** or Colorimetric dipsticks	At the point the distribution loop enters the processing area or first POU on the distribution loop	Quarterly	Monthly	Quarterly
Total Alkalinity	Colorimetric dipsticks or Alkalinity test kit**	At the point the distribution loop enters the processing area or first POU on the distribution loop	Quarterly	Monthly	Quarterly
Total hardness	Determination of ppm as $CaCO_3$ by Colorimetric dipsticks, Titration kit** ,or Handheld meter**	At the point the distribution loop enters the processing area or first POU on the distribution loop	Quarterly	Monthly	Quarterly
Bacteria	Heterotrophic plate count (see Annex H)	Each location of point-of-use in department	Quarterly	Monthly	N/A
Endotoxin	LAL test (see Annex H)	Each location of point-of-use in department	N/A	Monthly	N/A
Visual Inspection	Visual Inspection of inside of equipment - Look for residue, staining, scaling, and discoloration (Annex I)	Spray Arms/Inside Chamber Walls/Inside Interior of Machine	Daily	Daily	Daily

*NOTE 1 The recommendations for frequency of testing in this table are the recommended minimum frequency. If problems or issues arise with the water quality, it may be necessary to increase the frequency until they are resolved.

**NOTE 2 Test type needed to measure Critical Water and Steam levels. Steam condensate must be filled to the brim, sealed, and allowed to cool before testing to prevent carbon dioxide absorption.

ST108 REQUIRES routine testing with monthly & quarterly specifications. This table is for testing at the point of generation. Testing must also be done at the point of use.

Potential Solutions for Out-Of-Range Results

Elevated Hardness?

- Install / Improve Softener System

Elevated Conductivity?

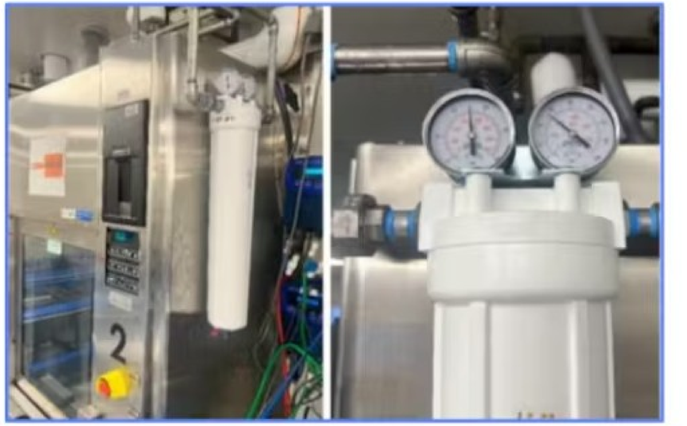
- Install Bypass Polisher

Elevated Bacteria/HPC?

- Flush, Disinfect or Install FDA Cleared Class II Biological Filter*

Elevated Endotoxin?

- Flush, or Install FDA Cleared Class II Biological / Endotoxin Filter*



***Examples of In-Line / Point-Of-Use Filter(s) Bacteria-Virus-Endotoxin**

Is Your SPD Program Currently Aligned with ST108?

Are you capable of testing in-house?

- How many unique systems are used (# of RO/DI systems feeding)?

Who is responsible for testing and documentation in your Hospital today?

- Facilities / Engineering or Biomed responsible for water equipment (DI/RO, WH, Softeners) and quality.

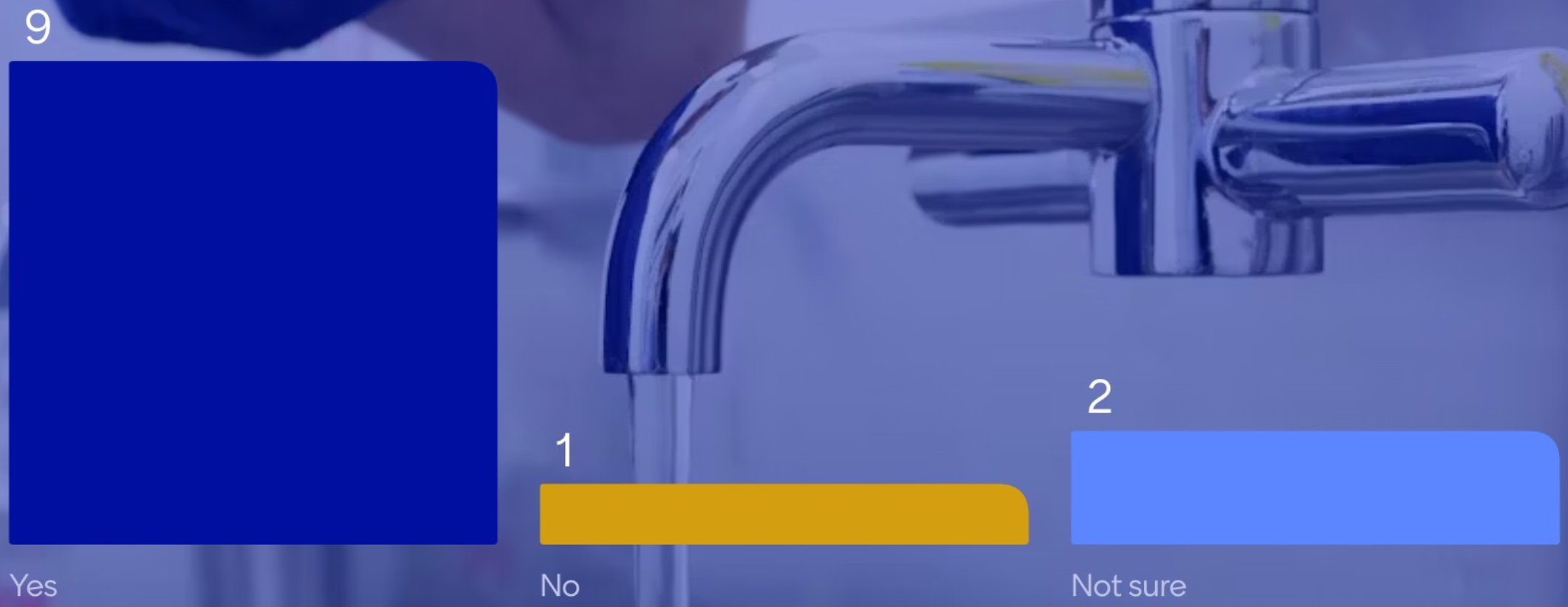
Have you qualified a 3rd party tester?

Mentimeter

ASHRAE was formed as the American Society of Heating, Refrigerating and Air-Conditioning Engineers

Mentimeter

Have you updated your Water Management Program in the past 12-months?



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ASHRAE 514 Overview

- Includes the same 7-Step Risk Management Methodology as ASHRAE 188, but expands **beyond the single-pathogen (*Legionella)* focus**
- **Now aligns with the Centers for Medicare and Medicaid Services (CMS) and The Joint Commission (TJC),** *"bodies designed to ensure compliance with federal regulatory standards for hospitals… [whose goal] is to ensure quality care and patient safety"*
  - **CMS has approved The Joint Commission as having standards and a survey process that meets or exceeds the established federal requirements**. The Joint Commission is one of several organizations approved by CMS to certify hospitals. If a hospital is certified by The Joint Commission, they are deemed eligible to receive Medicare and/or Medicaid reimbursement.*

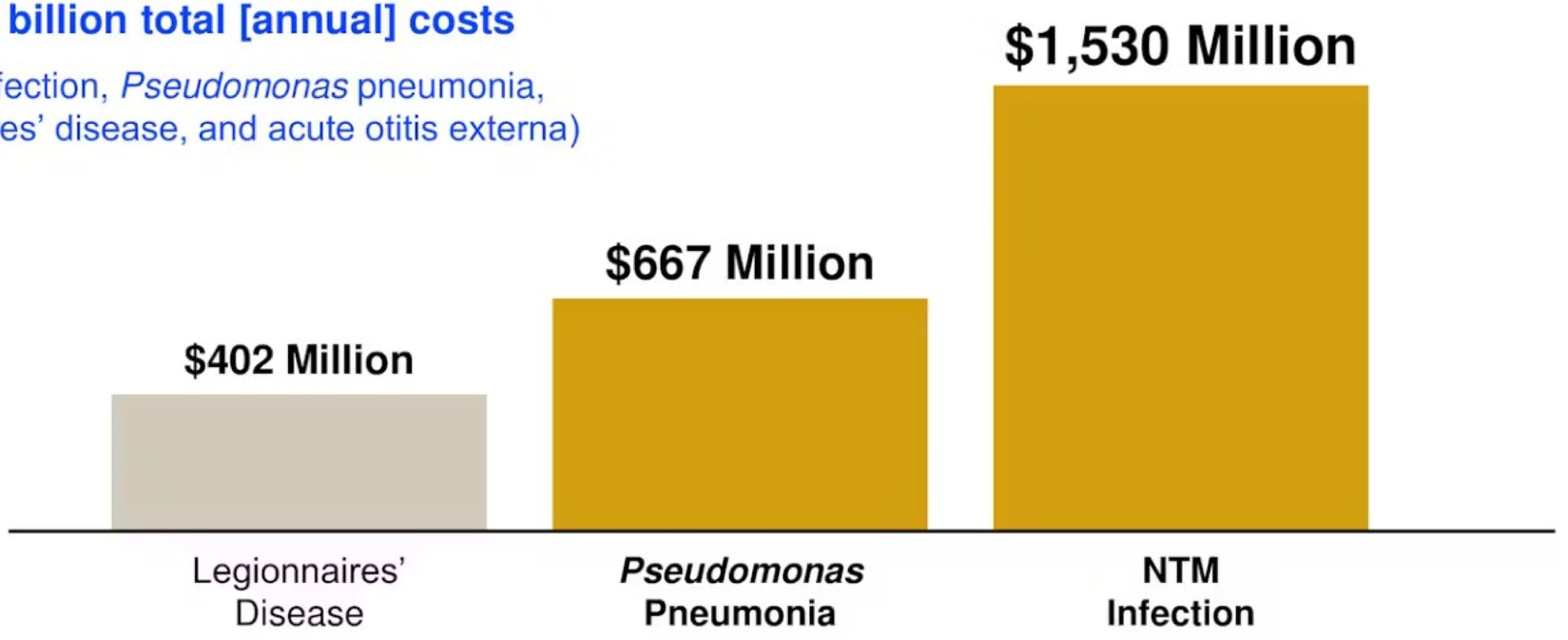
Source: https://www.r1rcm.com/news/the-joint-commission-vs.-cms-requirements-whats-the-difference#:~:text=The%20Centers%20for%20Medicare%20and,quality%20care%20and%20patient%20safety.

The Monetary Cost Of Waterborne Diseases

Direct Annual U.S. Healthcare Costs For 3 Of The Top 4 Waterborne Infection Types

4 infection types accounted for 89% of $3.33 billion total [annual] costs

(NTM infection, *Pseudomonas* pneumonia, Legionnaires' disease, and acute otitis externa)



Centers for Disease Control and Prevention (CDC), "Estimating Waterborne Infectious Disease Burden by Exposure Route, United States, 2014"

Protect Your Facility From Blind Spots And Avoid…

Legionella bacteria found in hospital ice machines at UPMC Presbyterian

LUIS FÁBREGAS AND ADAM SMELTZ | Friday, May 2, 2014, 12:03 a.m.

The main entrance of UPMC Presbyter

Legionella bacteria in ice ma
Presbyterian contributed to
sickened two others, hospit
Thursday, calling it an unus
because a patient aspirated

In consequence, these all can lead to adverse **pregnancy** outcomes such as preterm birth and even neonatal sepsis. ... **Klebsiella pneumoniae** may be cause of sepsis in the newborn, mainly in patients with some predisposing factors, including prematurity or those carrying an intravenous catheter. Jan 29, 2015

academic.oup.com › femsle › article

First report of a Klebsiella pneumoniae ST466 strain causing ...

News > Medscape Medical News

Maryland NICU Still Taking Action After *Pseudomonas* Exposure

Alicia Ault
August 18, 2016

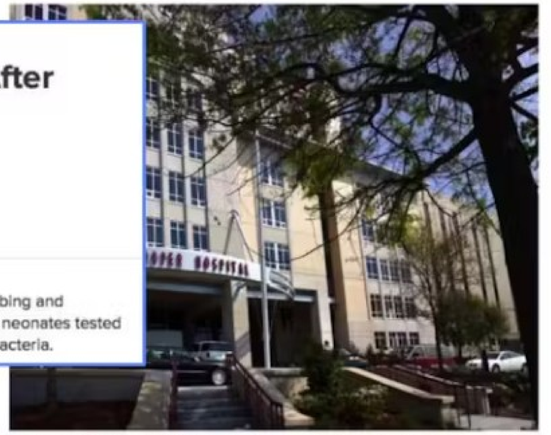
1 Read Comment

A hospital in the Washington, DC, suburbs is treating the plumbing and disinfecting the neonatal intensive care unit (NICU) after three neonates tested positive for the potentially deadly *Pseudomonas aeruginosa* bacteria.

TOP STORY

Dozens of Roper Hospital patients developed waterborne bacterial infection after surgery

By Lauren Sausser lsausser@postandcourier.com Apr 13, 2018 (...)



Roper Hospital on Calhoun Street identified that its water supply was tainted with bacteria that infected more than two dozen women following breast reconstruction surgery. File/Staff

Buy Now

Pathogens of concern:

Legionella

Pseudomonas

***Nontuberculous Mycobacteria* (NTM)**

E. Coli

Acinetobacter

Burkholderia

Klebsiella

Acanthamoeba

Hartmanella

Stenotrophomonas

Elizabethkingia

ASHRAE 514 Recommendations

A few specific areas of deployment:

- Emphasis high-risk **“Vulnerable” patients** (like a burn unit)
- **Medical devices** utilizing water for operation or washing:
- **Non-medical equipment** that uses, or is, washed with water (includes ice machines and water / bottle filling stations).
- **Specialty Areas** (ie. Pharmacy / Med Prep, Infusion, Dialysis)

IF you are using Filtration as a Corrective Action or Control Measure

- ASHRAE 514 explicitly recommends **the use of Class II filters** *“…to provide a barrier to transmission of microbial hazards in potable water in areas of the facility used to house or treat inpatients…”*

The Why Behind FDA 510(k) Class II Clearance

- **Performance validation of products in use environment**
- **Stringent regulatory controls**
- **Verified and accurate performance claims**
- **ACCOUNTABILITY!**

FDA 510(k)-Cleared as Class II medical devices *and provide water suitable for:*

- *Drinking*
- *Wound cleaning*
- *Surgical handwashing*
- *Medical equipment cleaning*

ASHRAE 514 – (Appendix G) Specialty Units

Dialysis	a. Water for use in dialysis is regulated; AAMI standards should be followed [J62,J65, J66, J67, J68, J69, J70]. b. Consideration of effects of *building water system* water *treatment* on dialysis patients (*disinfectants/disinfection byproducts*) and on compatibility with reverse osmosis membranes c. Facilities with *supplemental disinfection* systems should conside cially the exchange frequency of carbon prefiltration. **Additional Resources Typical at this Location:** • CDC Recommendations for Dialysis: www.cdc.gov/dialysis/guide • Conditions for Coverage for End-Stage Renal Disease Facilities: v Legislation/CFCsAndCoPs/Downloads/ESRDfinalrule0415.pdf

Chloramine – added to water to prevent bacterial proliferation. It can cause hemolytic anemia (see Table 1 for other causes of hemolysis in patients on dialysis).

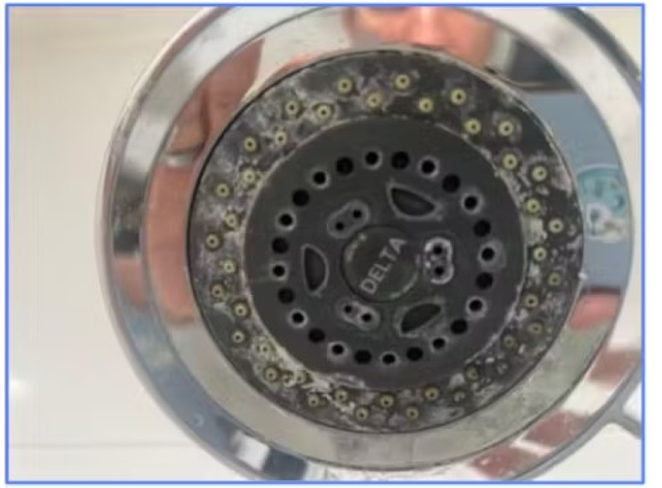
Health Problem	Possible Water Contaminant
Anemia	Al, chloramines, Cu, Zn
Bone Disease	Al, Fl
Hemolysis	Cu, nitrates, chloramines
Hypertension	Ca, Na
Hypotension	Bacteria, Endotoxin, Nitrates
Metabolic Acidosis	Low pH, sulfates
Neurological deterioration	Al
Nausea and vomiting	Bacteria, Ca, Cu, endotoxin, low pH, Mg, nitrates, sulfates, Zn
Death	Al, Fl, endotoxin, bacteria, chloramine

Blind Spot: Aerators / Sinks

- Aerators (sinks)
- Low-flow and stagnant water is a breeding ground for biofilm and pathogens like *Legionella*

Blind Spot: Shower Heads

- Shower heads and handles are designed to hold water, which then may become stagnant
- Low-flow and stagnant water is a breeding ground for biofilm and pathogens like Legionella



ASHRAE 514 Checklist: Healthcare Environment (s)

HOSPITALS

General Inpatient Care

- ❑ General care (patient room)
- ❑ Airborne infection isolation (patient room)
- ❑ Intensive care (patient room)
- ❑ OB nursery and NICU
- ❑ Obstetric-LDRP (patient room) including jetted tubs
- ❑ Protective environment (patient room)

Specialized Patient Care

- ❑ Cardiopulmonary and respiratory therapy
- ❑ Dialysis
- ❑ Infusion therapy
  - ❑ Chemotherapy
  - ❑ Nuclear
  - ❑ Hematology/Oncology
- ❑ Physical therapy
  - ❑ Spas/Fitness areas
  - ❑ Therapy tubs, pools, showers
  - ❑ Medical wellness spas
- ❑ Protective environments (PE) treatment (not patient room)
  - ❑ Bone marrow transplant
  - ❑ Burn units
  - ❑ Solid
  - ❑ Organ transplant

OUTPATIENT

Specialized Outpatient Facilities

- ❑ Cardiopulmonary and respiratory therapy
- ❑ Dialysis
- ❑ Infusion therapy
  - ❑ Chemotherapy
  - ❑ Nuclear
  - ❑ Hematology/Oncology
- ❑ Physical therapy
  - ❑ Spas/Fitness areas
  - ❑ Therapy tubs, pools, showers
  - ❑ Medical wellness spas
- ❑ Protective environments (PE) treatment (not patient room)
  - ❑ Bone marrow transplant
  - ❑ Burn units
  - ❑ Solid
  - ❑ Organ transplant
- ❑ Specialty care
  - ❑ Cardiology
  - ❑ Gastrointestinal
  - ❑ Pulmonary (includes Bronchoscopy)
- ❑ Surgery
  - ❑ ORs general and specialized
  - ❑ Emergency – trauma
  - ❑ Procedure rooms
  - ❑ Class 2 and 3 imaging rooms

ASHRAE 514 Checklist: Devices / Equipment / Components

MEDICAL DEVICES

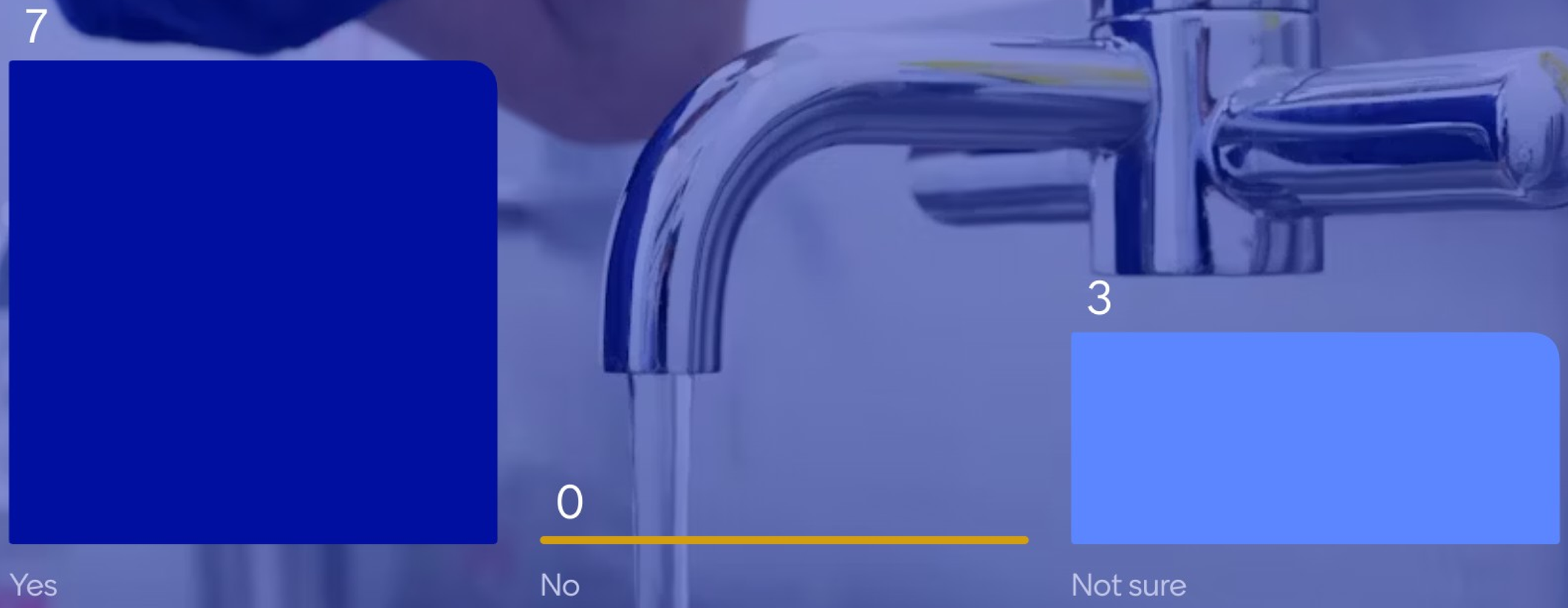
- ❑ Birthing tubs, pools
- ❑ Dental unit waterlines
- ❑ Extracorporeal membrane oxygenation (ECMO) devices
- ❑ Heater-cooler devices
- ❑ Hydrotherapy tanks and pools
- ❑ Patient / Resident showers
- ❑ Patient / Resident sinks
- ❑ Respiratory care devices that use water for filling and / or cleaning
  - ❑ Nebulizers
  - ❑ Continuous positive airway pressure (CPAP)
- ❑ Respiratory care devices that use water for filling and / or cleaning:
  - ❑ Nebulizers
  - ❑ Continuous positive airway pressure (CPAP)
- ❑ Reusable medical devices:
  - ❑ Endoscopes
  - ❑ Arthroscopes
  - ❑ Instruments
- ❑ Spray hoppers
- ❑ Water baths used for thawing or warming materials

OTHER EQUIPMENT AND COMPONENTS

- ❑ Decorative water features:
  - ❑ Decorative fountains
  - ❑ Fish tanks
  - ❑ Water walls
- ❑ Electronic sensor faucets
- ❑ Faucet aerators
- ❑ Humidifiers
- ❑ Ice machines

Mentimeter

Are ice machines and drinking / bottle filling stations on your current Water Management Program?



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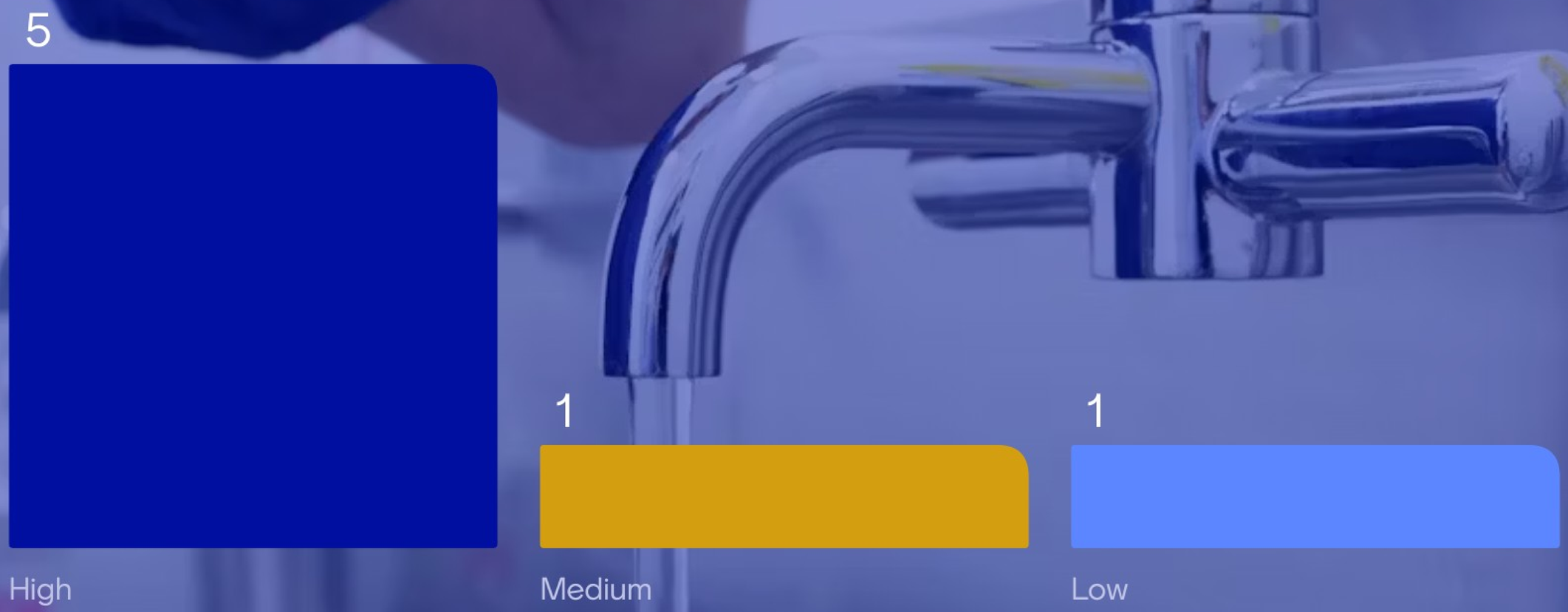
Mentimeter

What's the impact of filtration on your MRO and Infection Control



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Mentimeter

ASHRAE 514 Standard & Ice Machines

"Ice machines" are referenced **28 times** in the document

Ice machines are referenced several multiple times in conjunction with recommendation of FDA Class II filters…

G4.1.6 Measures for Blocking or Preventing Direct or Indirect Transmission of Microbial Hazards from Contaminated Water. Point-of-use and inline filters tested in accordance with ASTM F838, *Standard Test Method for Determining Bacterial Retention of Membrane Filters Utilized for Liquid Filtration* [J61], and validated for *total retention/F838*, or for a level of performance based on the *Designated Team's risk assessment*, can provide a barrier to *transmission* of *bacteria* in *potable* water. In the United States, point-of-use and inline filters used to provide a barrier to *transmission* of *microbial hazards* in *potable* water in areas of the facility used to house or treat inpatients should be *FDA Class II*. Outside the United States, point-of-use and inline filters used to provide a barrier to *transmission* of *microbial hazards* in *potable* water in areas of the facility used to house or treat inpatients should be approved by the *authority having jurisdiction* (*AHJ*).

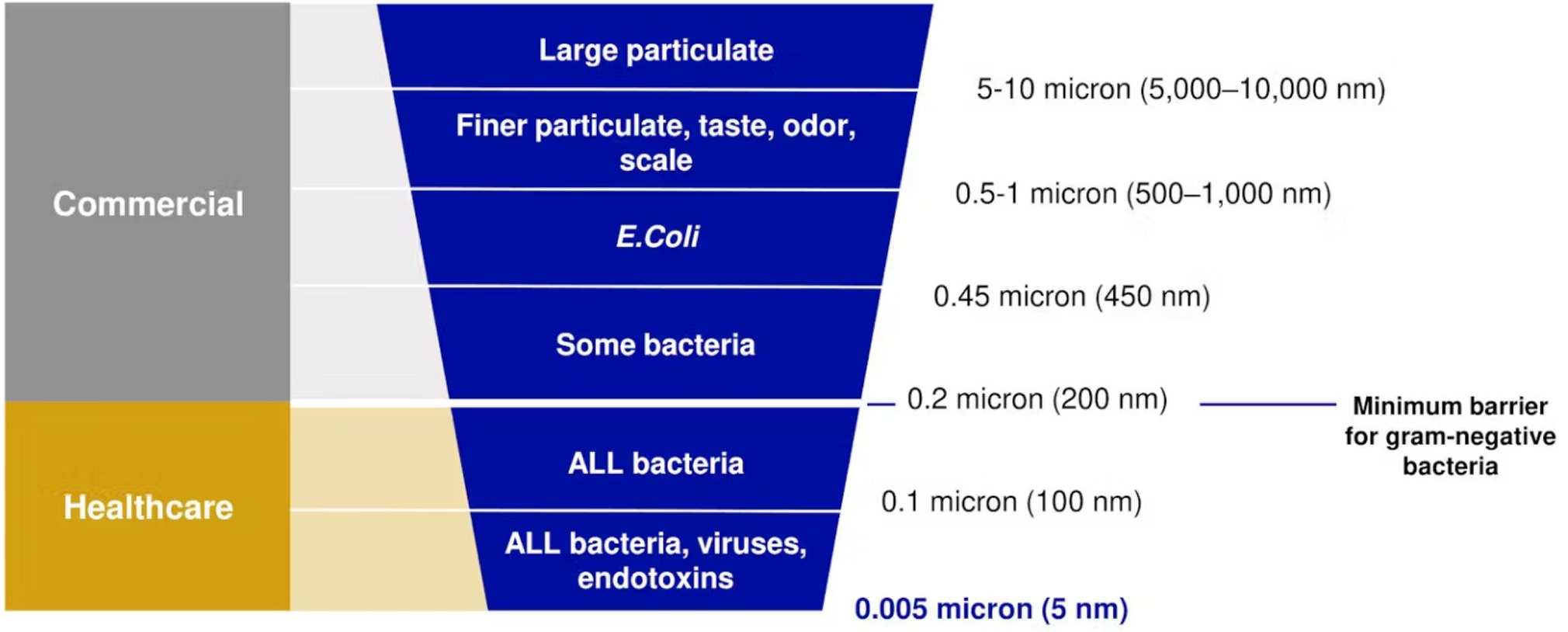
d. **Water supplied to or used in nonmedical devices/equipment used for patient or resident care.** USP sterile water or water filtered by *FDA Class II* filters that are tested in accordance with ASTM F838 [J61] and validated for *total retention/F838*, or by a filter with a class and level of performance based on the *Designated Team's risk assessment*, should be supplied to or used in *humidifiers* (nonsteam), ice machines, misters, or other items used for patient or resident care determined by the *Designated Team*. *Tap* water may be used in *humidifiers* (nonsteam), ice machines, misters, or other items used for patient or resident care if such use is deemed acceptable by the *Designated Team* based on the manufacturer's instructions for use, or in accordance with a *risk assessment* based on the intended use.

Ice machines are also called out in their own section

Ice machines	In health care environments, routine maintenance and cleaning of ice machines is essential. Follow the manufacturer's instructions for use and maintenance. USP sterile water or water filtered by *FDA Class II* filters that are tested in accordance with ASTM F838 [J61] validated for *total retention/F838* or a filter with a class and level of performance based on the *Designated Team's risk assessment* should be supplied to, used in, or used to rinse ice machines for patient or resident care as determined by the *Designated Team*. *Tap* water may be supplied to, used in, or used to rinse ice machines used for patient or resident care if such use is deemed acceptable by the *Designated Team* based on a *risk assessment*. a. Devices carry the potential for *pathogen growth* and *transmission* to patients, including NTM. b. *Aspiration* may occur when patients/residents ingest ice or ice chips. c. Activated carbon inline filters should not be used with ice machines unless followed by an *FDA Class II* filter that is validated for *total retention/F838*. Ice machine management is addressed in this standard. **Additional Resources Typical at this Location:** • "Nosocomial legionellosis traced to a contaminated ice machine" [J84] • "Microbial contamination of ice machines is mediated by activated charcoal filtration systems" [J84]

Ice Machine Filtration

A multi-barrier solution



Blind Spot: Commercial Filtration

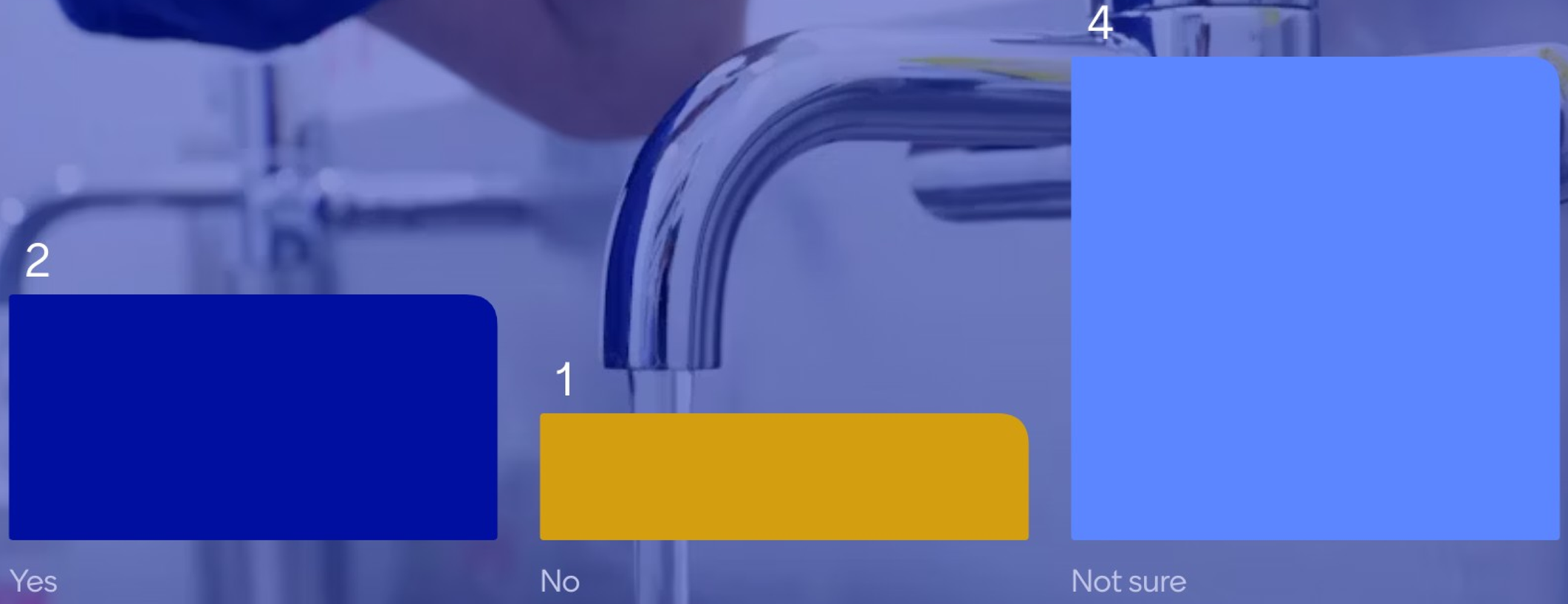
- **Pre-filters**
  - Rust/sediment are food sources for bacteria
  - Clear housings promote growth of bacteria if exposed to light
  - **Not a barrier for bacteria**

- **Carbon-based filters****
  - Control odor, taste and scale
  - May promote growth of bacteria
  - **Not a barrier for bacteria**

** IF you have a carbon based medial you MUST have an FDA Cleared Class II biological filter immediately after

Mentimeter

Does a carbonless filter contain the same warning label?



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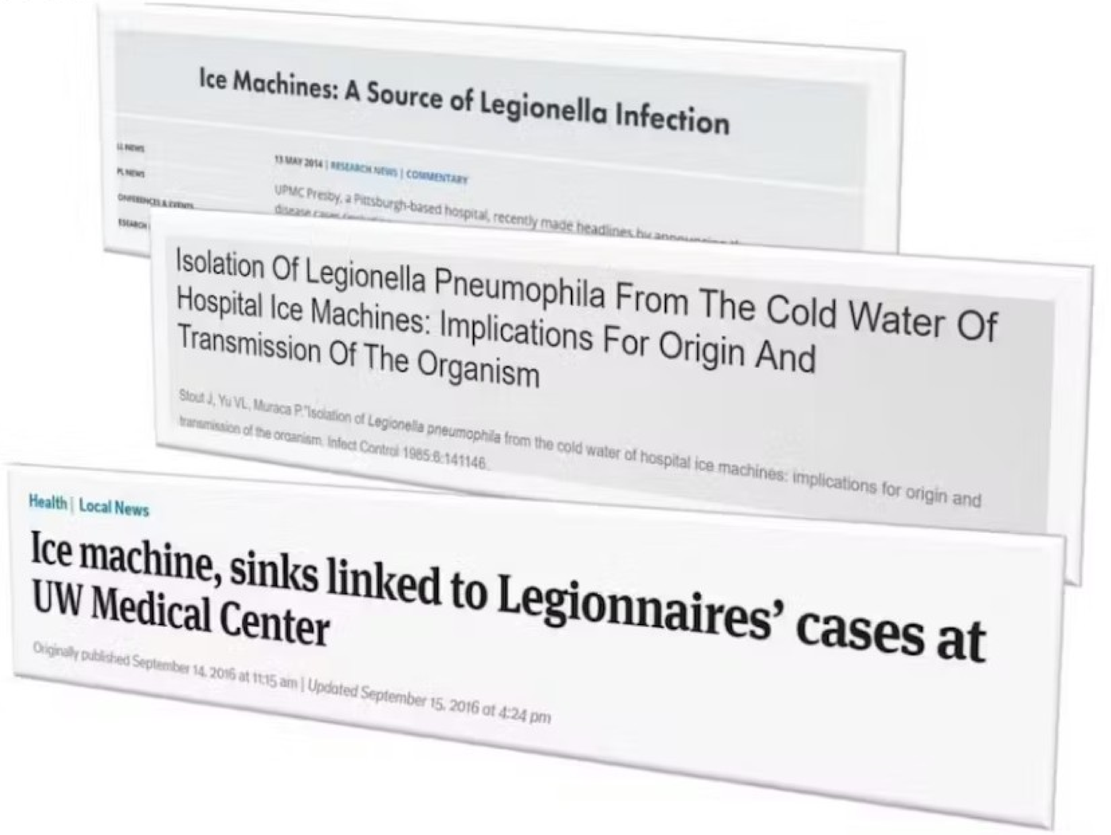
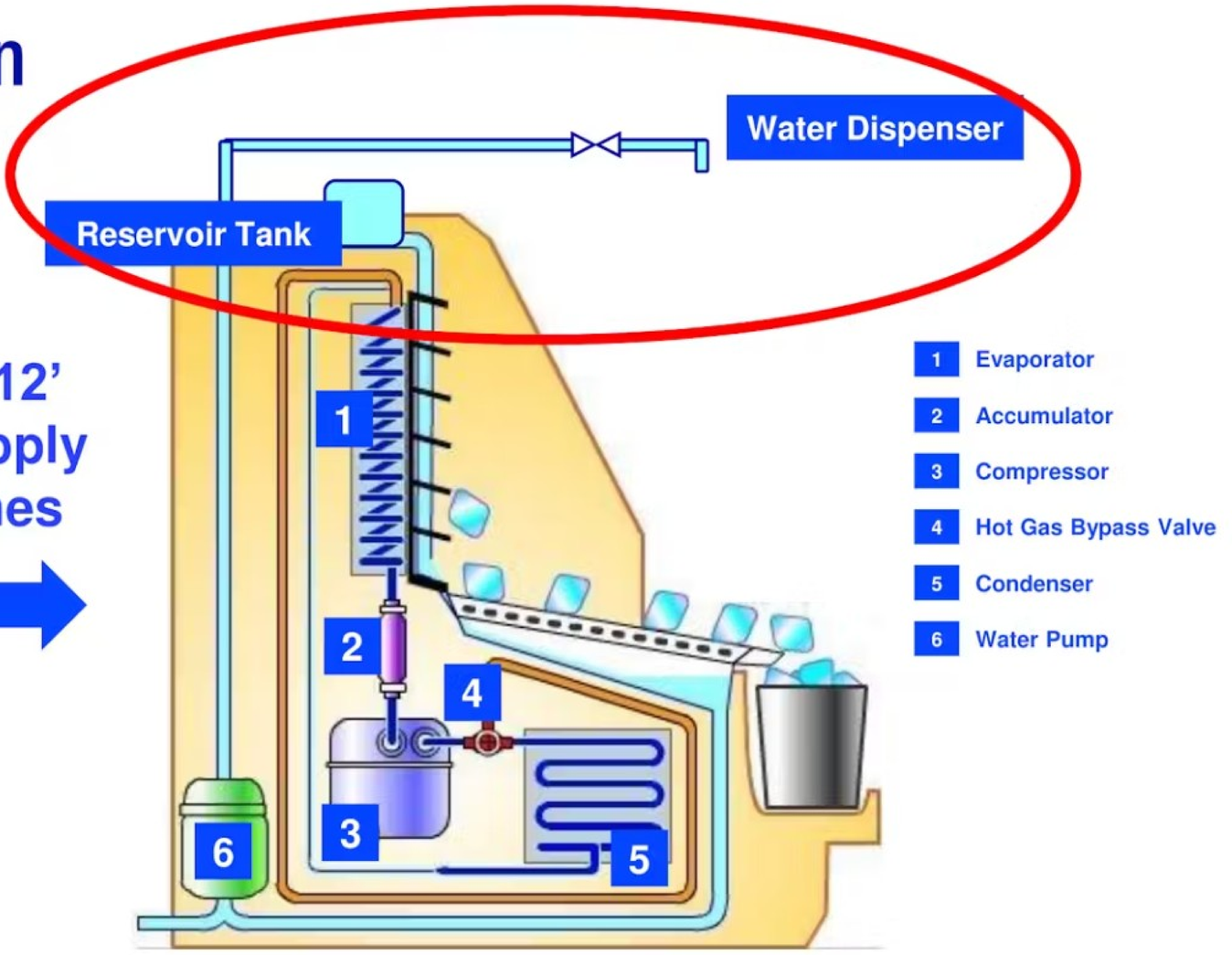
Maintenance of Ice Machines & Challenges

- Lack of maintenance will cause problems with CMS/CDPH/TJC
- Improper sanitization can lead to:
- Discolored ice
- Deposits on the chutes
- Bad odors
- ”Mold” on the dispensers
- High bacteria counts
- Legionella and other Waterborne Pathogens…



Ice Machine Filter Installation

3-12’ supply lines



Can You Identify Any Potential Risks?

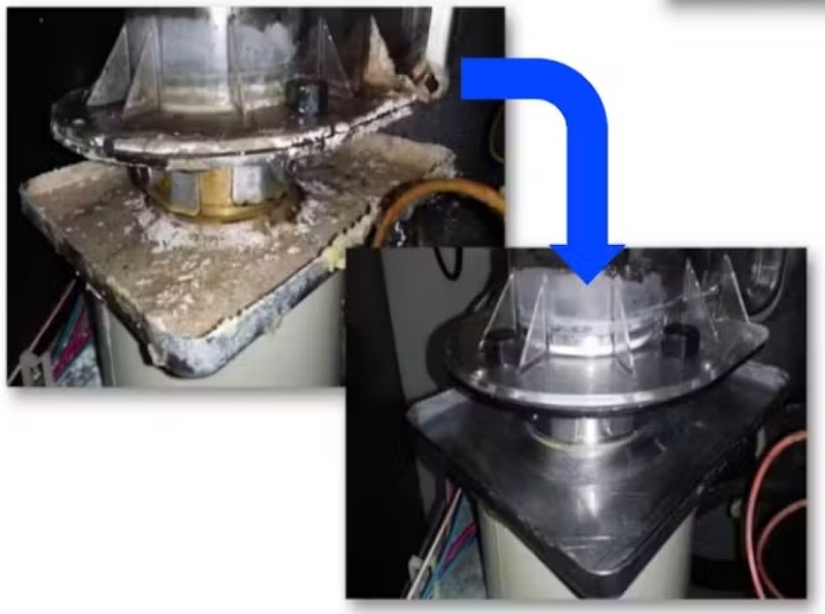
- Translucent tubing (before and after filters) is contaminated
- No flush port hose attached
- Post-filter lines are set up to serve more than just the ice machine
- Filter capacity (3K gallons) requires quarterly (not semi-annual) replacement for the ice machine alone
- **BOTH filters contain the warning label**

Before And After – Photo Documentation is KEY:

Ice Bin
Before

Ice Bin
After

Spout Drain Tray



Reservoir

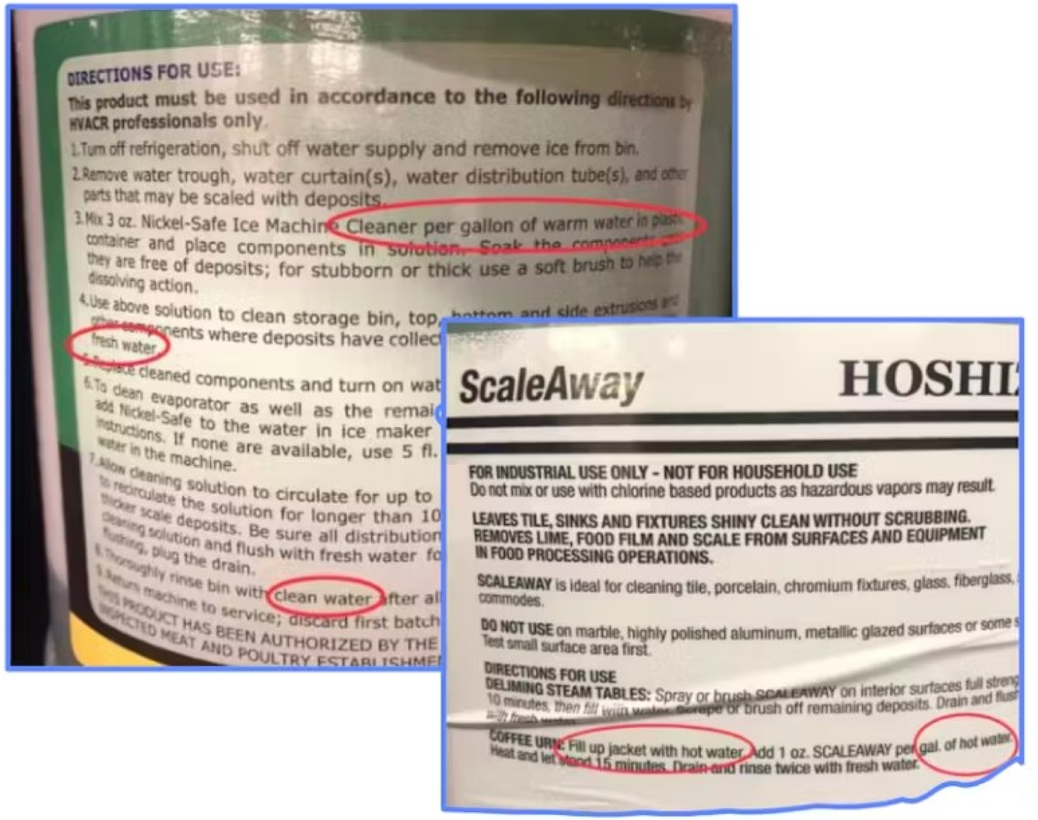
The Ice Machine Maintenance Process

Typical instructions reference:

- Warm water
- Fresh water
- Clean water
- Hot water

Our recommendations:

- Dilute de-scaling fluid **with filtered water**
- Dilute sanitizing fluid **with filtered water**
- Rinse equipment **with filtered water**



Ice machine / equipment cleaning stations should ALWAYS have filtered water

Quat-Sanitizers contain Nitrates and Nitrites that actually FEED pathogens such as NTM and Pseudomonas

A Closer Look At How We Can Begin To Improve Your Cleaning Process

Image 2: DSU-H: Filter #001: Container on the left displays the backwashed water (unfiltered) while the container on the right (labeled "Filtered") displays the filtered water from the DSU-H filter.

(D) Requirement for your Water Management Programs

What Does A Good Service Report Look Like?

Precept

Precept Environmental - Ice Machine Quarterly Sanitization

Utopia Medical Center	Date Conducted	2020-10-19
1250 Paradise Street	Ice Machine ID	ICE-4-CW-020
Santa Monica CA 90404	Brand	Follett
	Model	25CT400A
Attention:	Start Time	05:52 am
Billy Bob Smith	End Time	09:46 am
	Total Completion Time	03:54:30

Utopia Medical Center has developed a Management Program for the ice machines at the facility that is intended to help meet the expectations of the Department of Health as well as the Joint Commission and Environment of Care Standards. The goal of the program is to facilitate planning for all necessary maintenance for facility ice machines to help ensure ice and water produced by the units meet safe drinking water standards, with particular emphasis on absence of total coliform and *E. coli* bacteria (USEPA Safe Drinking Water Act).

The following report consists of the process and procedure used during each Ice Machine Sanitization project. This process is based on best-known guidelines for proper sanitization, **as well as the manufacturer recommendations for each brand and model.**

The following procedures were conducted:

	Sanitization Procedures		
Yes	Turn the unit off, and remove front and side panels		
Yes	Make buckets of descaler, and sanitizer per manufactures recommendation		
Yes	Remove exterior, and interior components and soak in descaler, or sanitizer		
Yes	Descale the ice and water chutes, drain tubes, transport tubes, reservoir, drip tray, splash curtains, etc...		
Yes	Rinse components in recommended chlorine sanitizing solution		
Yes	Reassemble system components		
Yes	Clean condenser coils per manufactures recommendation		
Yes	Add Follet Safeclean descaler		
Yes	Turn the unit on, and circulate the descaler for > or = 15 minutes		
Yes	Flush the descaler per manufacturer recommendation		
Yes	Add the recommended amount of chlorine sanitizer solution to reservoir	PPM	200
Yes	Allow sanitizer to make ice for > or = 20 minutes		
N/A	Dispose of ice		
Yes	Flush sanitizing solution per manufacturer		
Yes	Make ice with clean water for > or = to 15 minutes		
Yes	Dispose of ice		
Yes	Sanitize ice dispenser per manufacturer recommendations		
Yes	Sanitize ice bin per manufacturer recommendations		
Yes	Polish exterior and return for service	Finish Time:	09:46 am

Notes/Comments:
4th Floor CW Room 4366

Precept

Photo Documentation

The following photos highlight some of the pre and post sanitization conditions:

Water Reservoir- Before

Water Reservoir- After

Evaporator and Insulation-Before

Evaporator and Insulation-After

Ice Hopper-Before

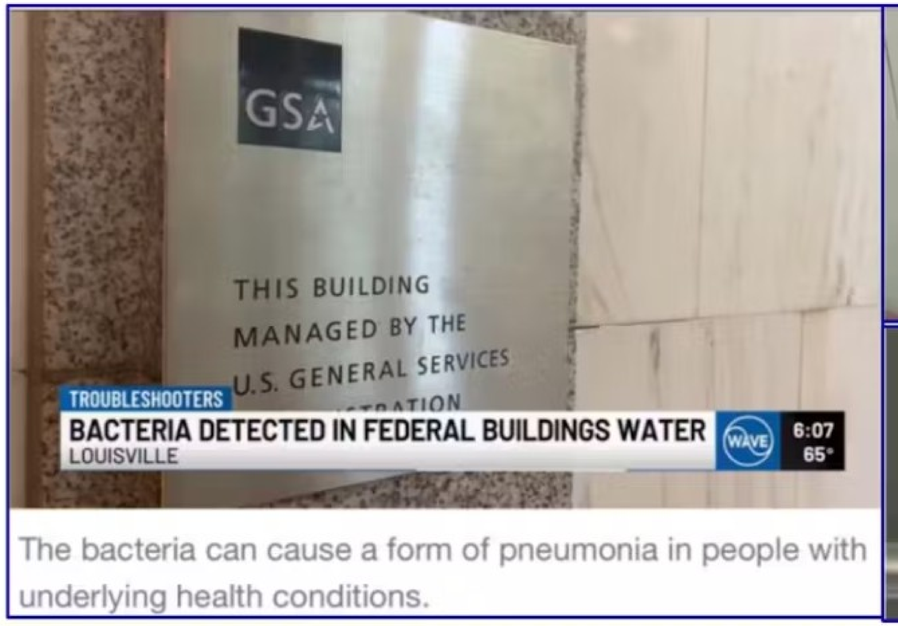
Ice Hopper-After

Legionella Testing In GSA Buildings

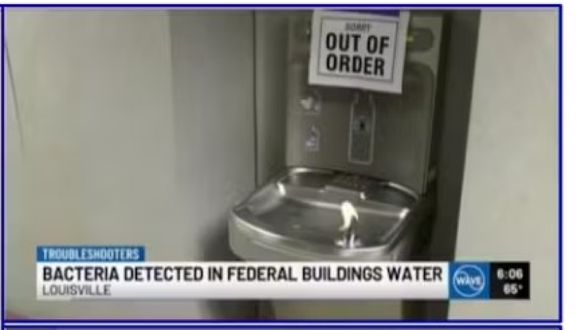
GSA Order: Drinking Water Quality Management (PBS 1000.7A)

GSA Order: Drinking Water Quality Management (PBS 1000.7A)

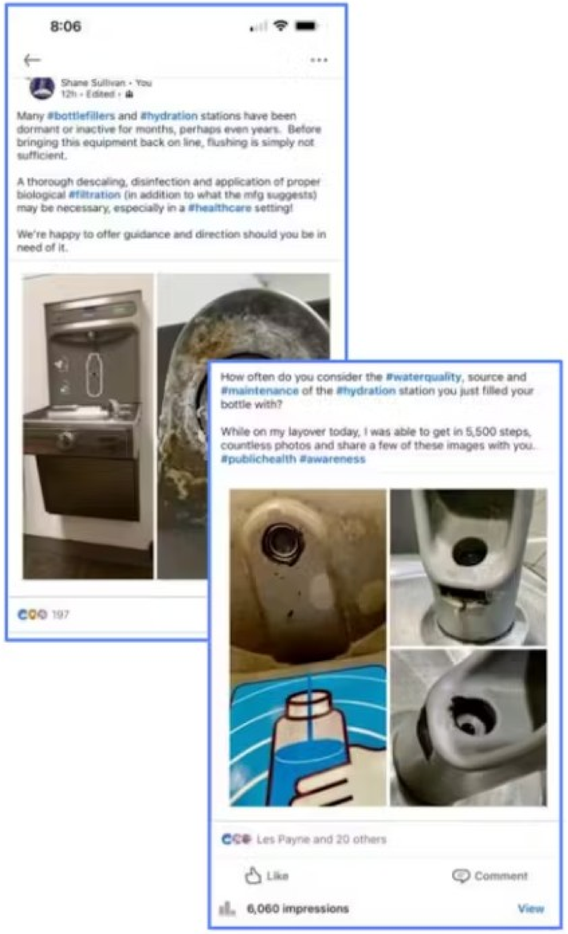
- Mandates **regular testing** for GSA managed buildings
- Testing program assesses the effectiveness of water treatment systems
- Allows facility managers to detect *Legionella* early on
- GSA's water quality management strategy is designed to align with the industry's best practices

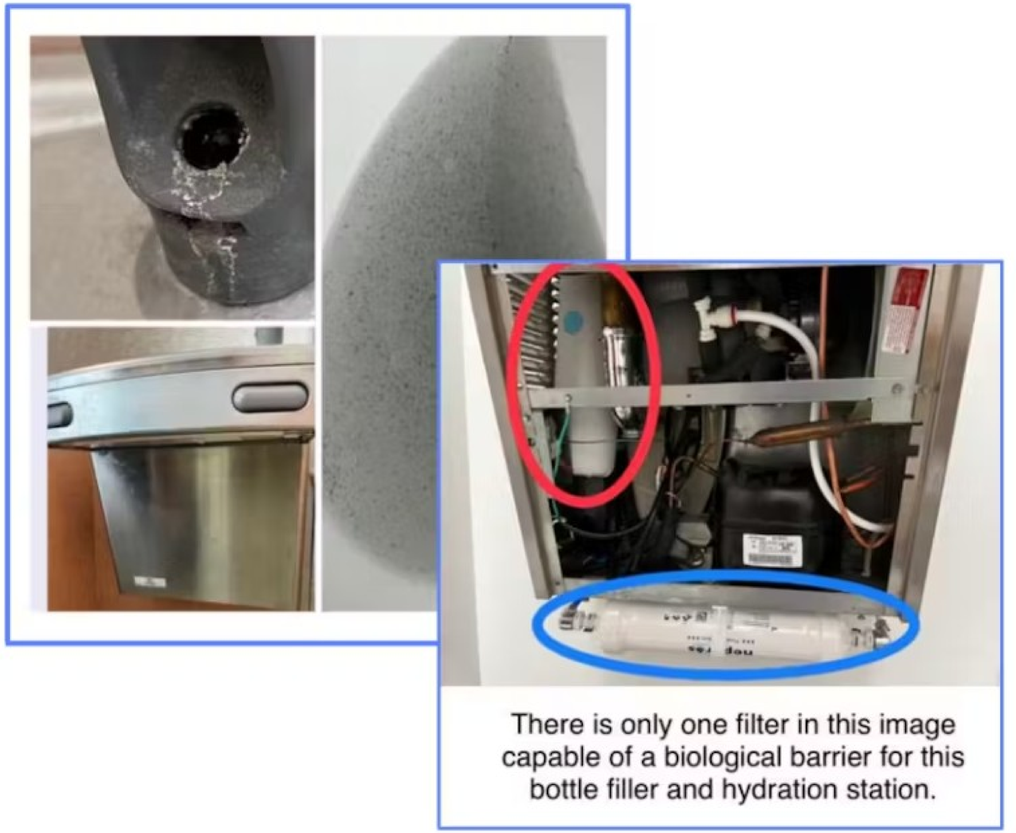


The bacteria can cause a form of pneumonia in people with underlying health conditions.



Let's Not Forget Drinking Water Fountains & Bottle Fillers





Are Emergency Eyewash Stations On Your Risk Assessment Today....?

Mentimeter

Compromised Water Events – Prepared or Advised?

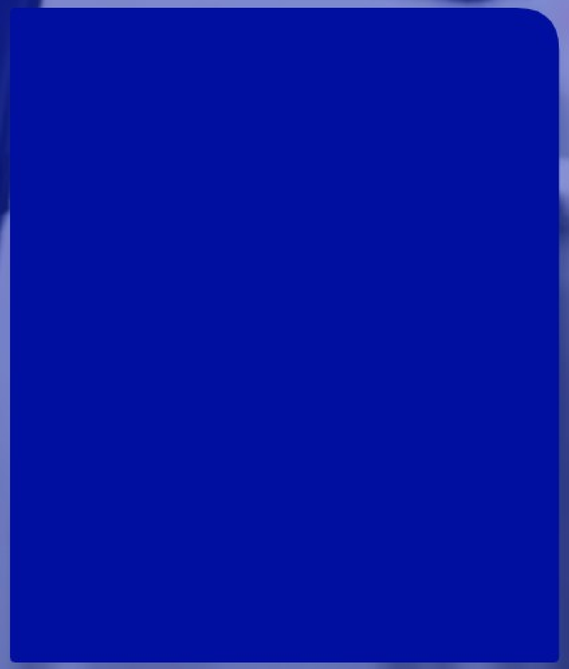
Municipal water:

- Natural disasters
- Water main break
- Road work
- Construction or demolition
- Hydrant flushing
- Storm drain overflow

Premise plumbing:

- Plumbing repairs
- Renovations
- New construction

Was this session valuable for you or your organization?



Very valuable

0

Somewhat valuable

0

Not valuable

0

Need more time to process