

Wisconsin HAI Education Series

April 24, 2025



WISCONSIN DEPARTMENT
of HEALTH SERVICES



Waterborne Environment of Care Tours: Common Trends

Healthcare-Associated Infections (HAI)
Prevention Program
Bureau of Communicable Disease
Division of Public Health

Presenters



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Agenda

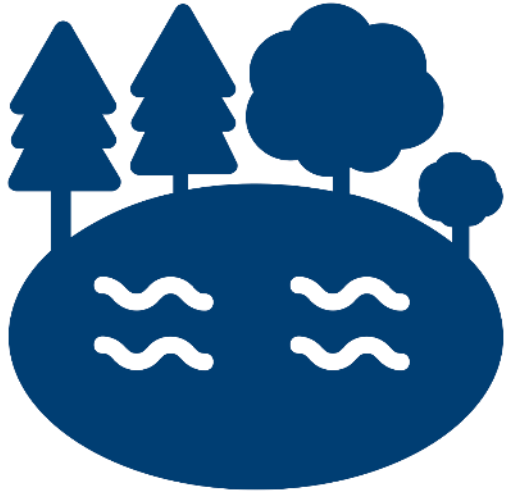
- *Legionella* background and transmission
- What is a Division of Public Health (DPH) environment of care tour?
- Common themes: Infection control findings
- Common themes: Premise plumbing findings



Background and Transmission

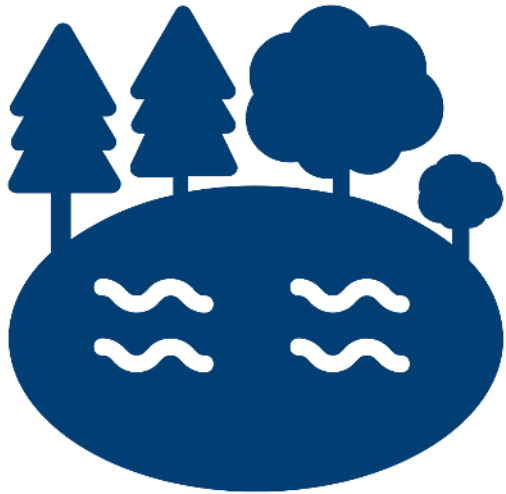


Legionella Bacteria: Growth Conditions

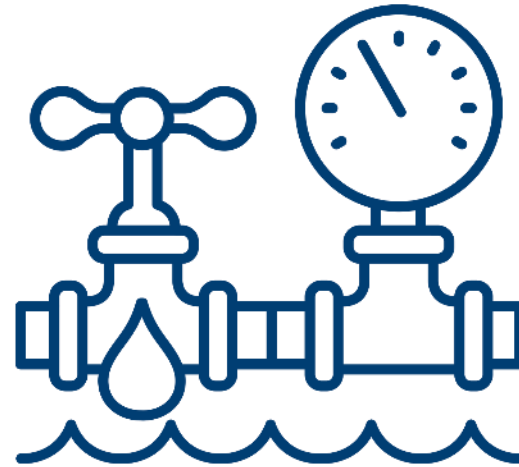


Legionella naturally occur in fresh water.

Legionella Bacteria: Growth Conditions

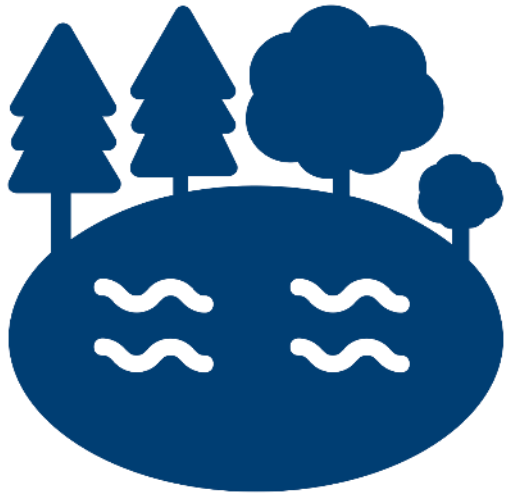


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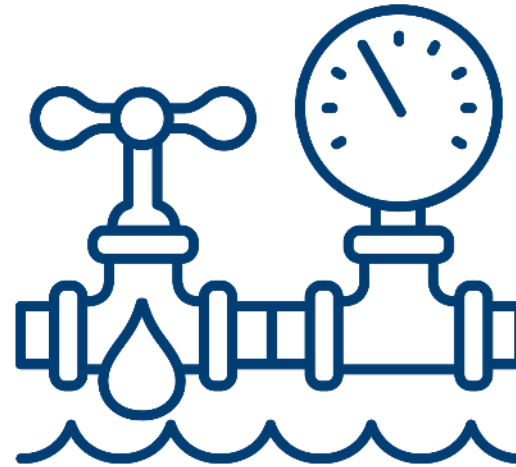


Public water systems or private wells deliver incoming water to buildings.

Legionella Bacteria: Growth Conditions



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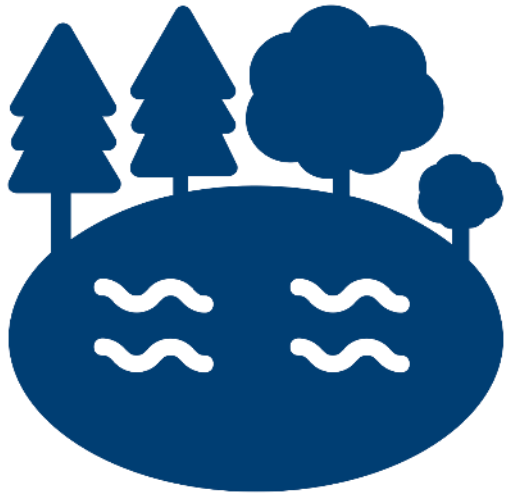


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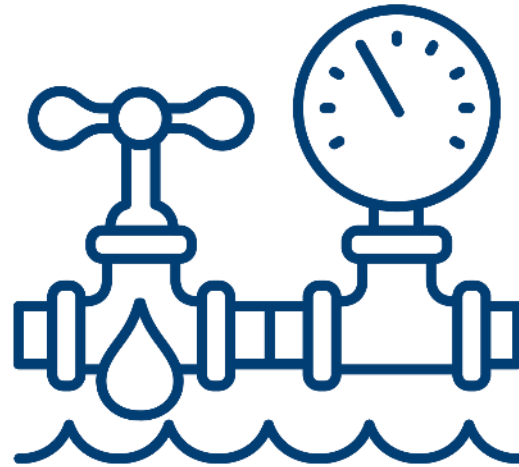


Water is delivered to fixtures and devices for use.

Legionella Bacteria: Growth Conditions



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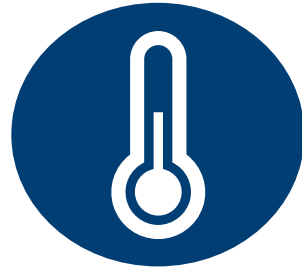


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Legionella Bacteria: Growth Conditions



Legionella grow and amplify in water **77°F** to **113°F**.

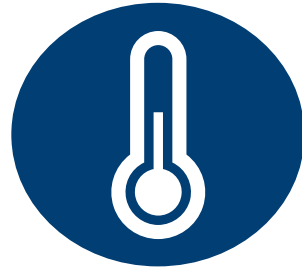
The Hot Water Dilemma

Anti-scald regulations

Prevent *Legionella*

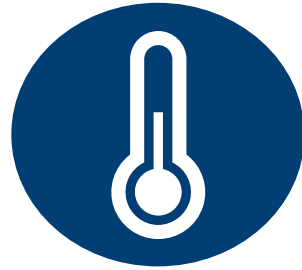


Legionella Bacteria: Growth Conditions



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Legionella Bacteria: Growth Conditions

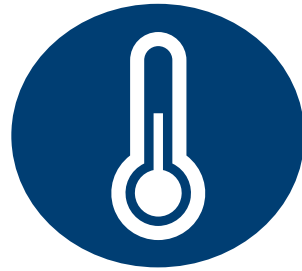


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Stagnation and **biofilm** formation contribute to *Legionella* growth.

Legionella Bacteria: Growth Conditions



Legionella grow and amplify in water **77°F** to **113°F**.



Stagnation and **biofilm** formation contribute to *Legionella* growth.



Legionella is transmitted by **inhalation** or **aspiration** of contaminated water.

Examples of Exposure Sources



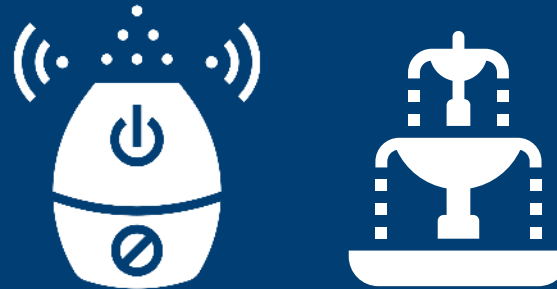
Showers and
faucets



Hot tubs



Cooling towers



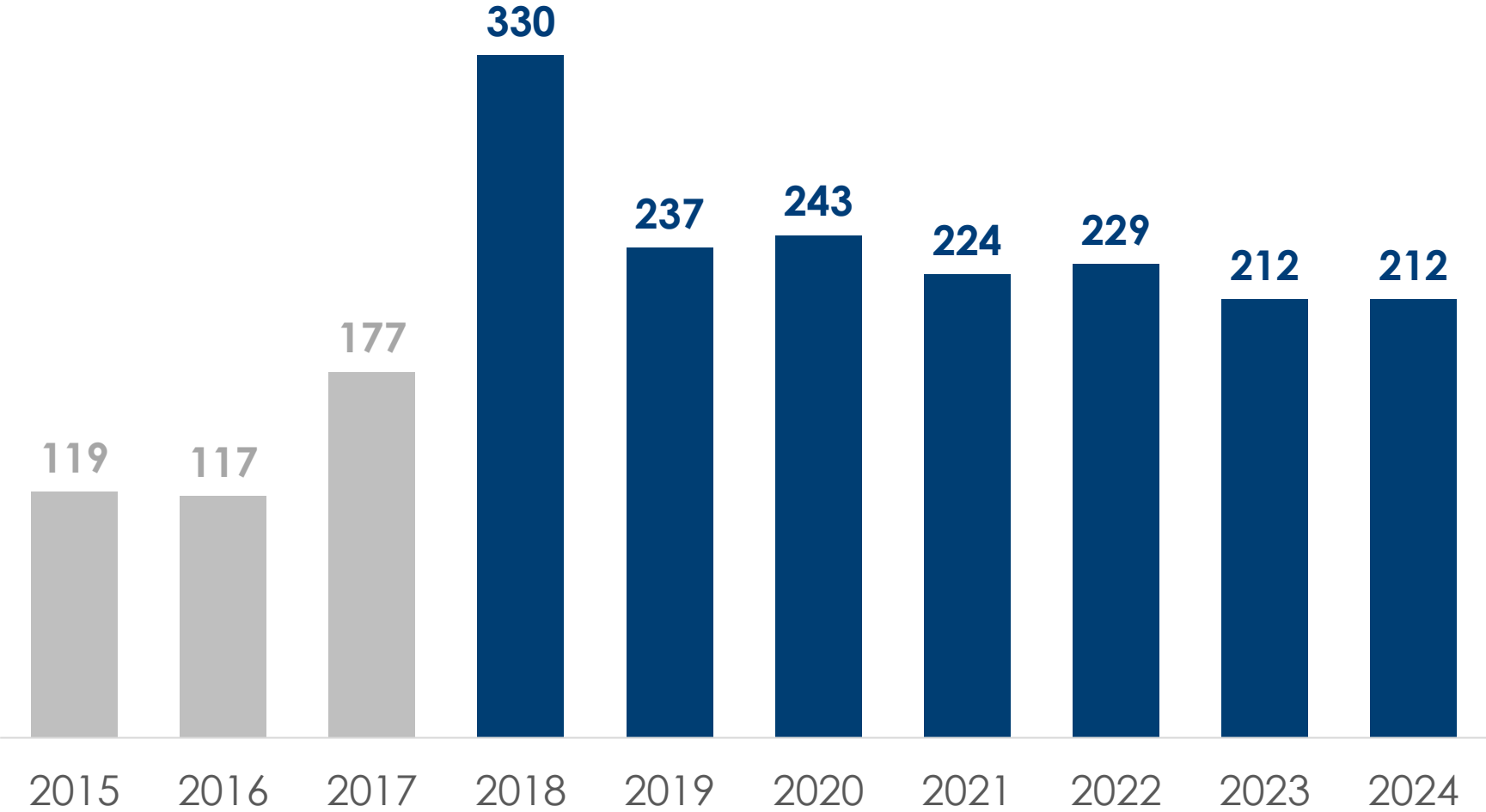
Devices

Wisconsin Legionellosis Burden



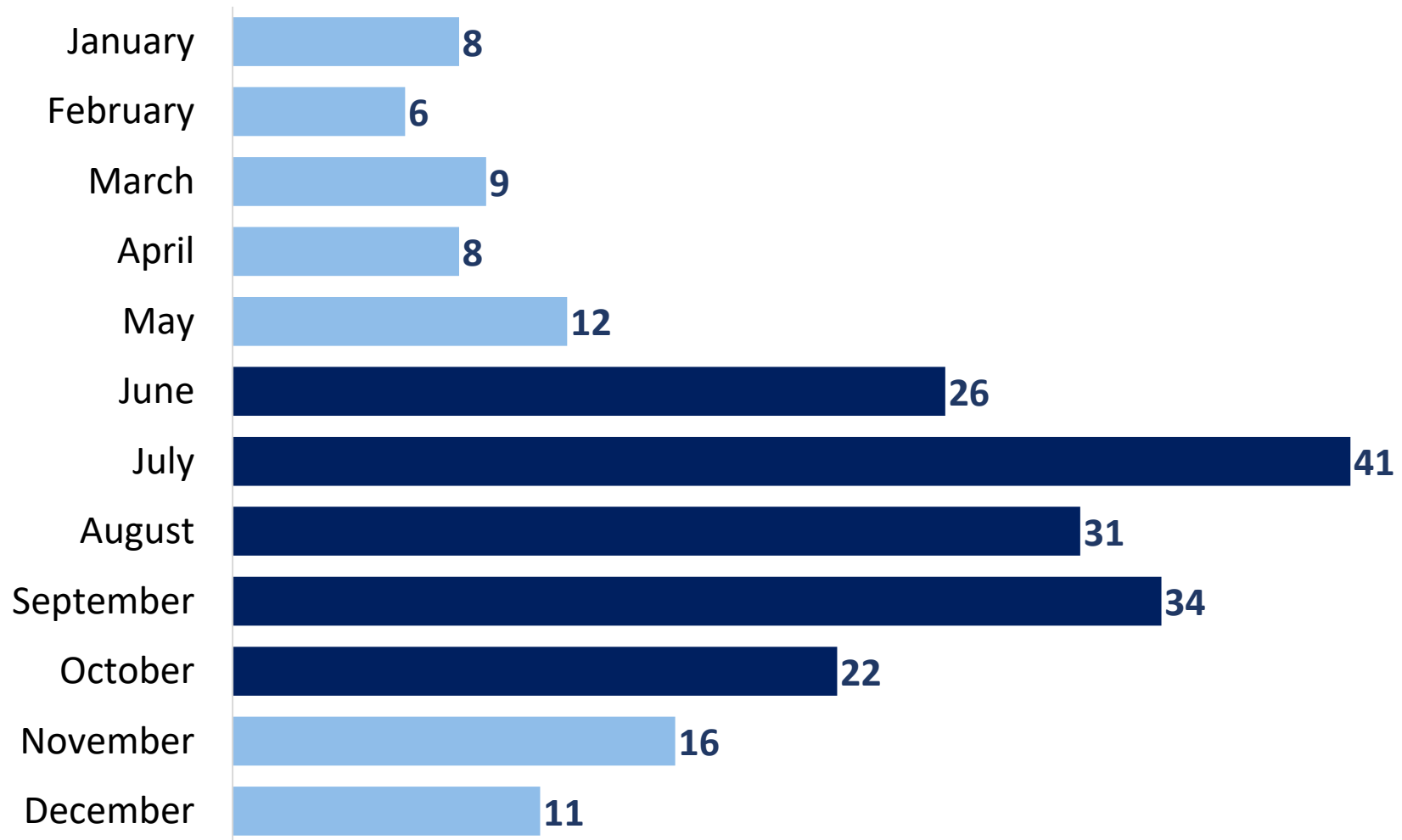
Lab-Confirmed Legionnaires' Disease Cases

From **2020–2024** Wisconsin averaged **224** cases per year.



Seasonality of Legionnaires' Disease

Average confirmed Legionnaires' disease cases by month, 2020-2024.



Over **half** of Legionnaires' disease cases in Wisconsin are from the **southeastern region**.



All other
regions
46%



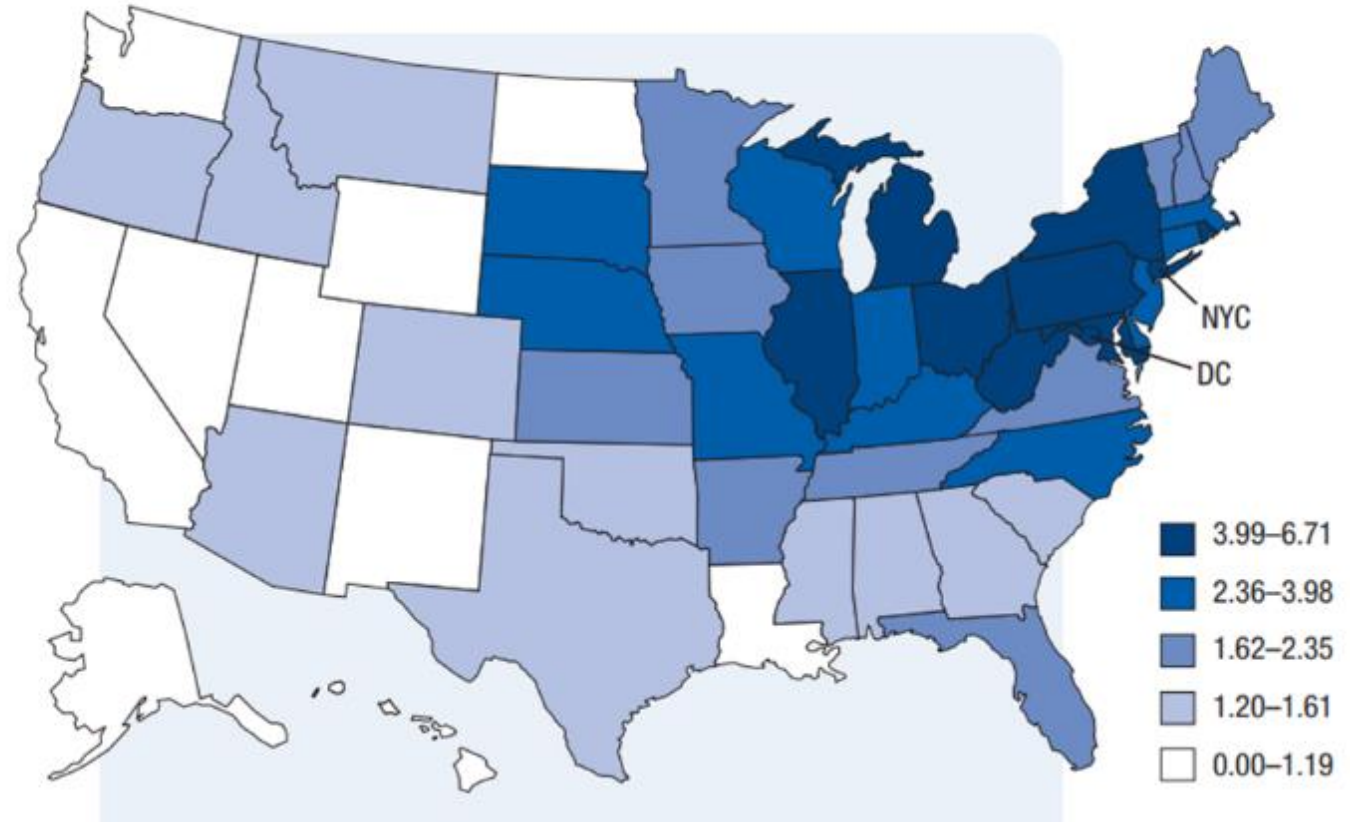
**Southeastern
54%**

Data from 2020-2024

Legionnaires' Disease Nationally

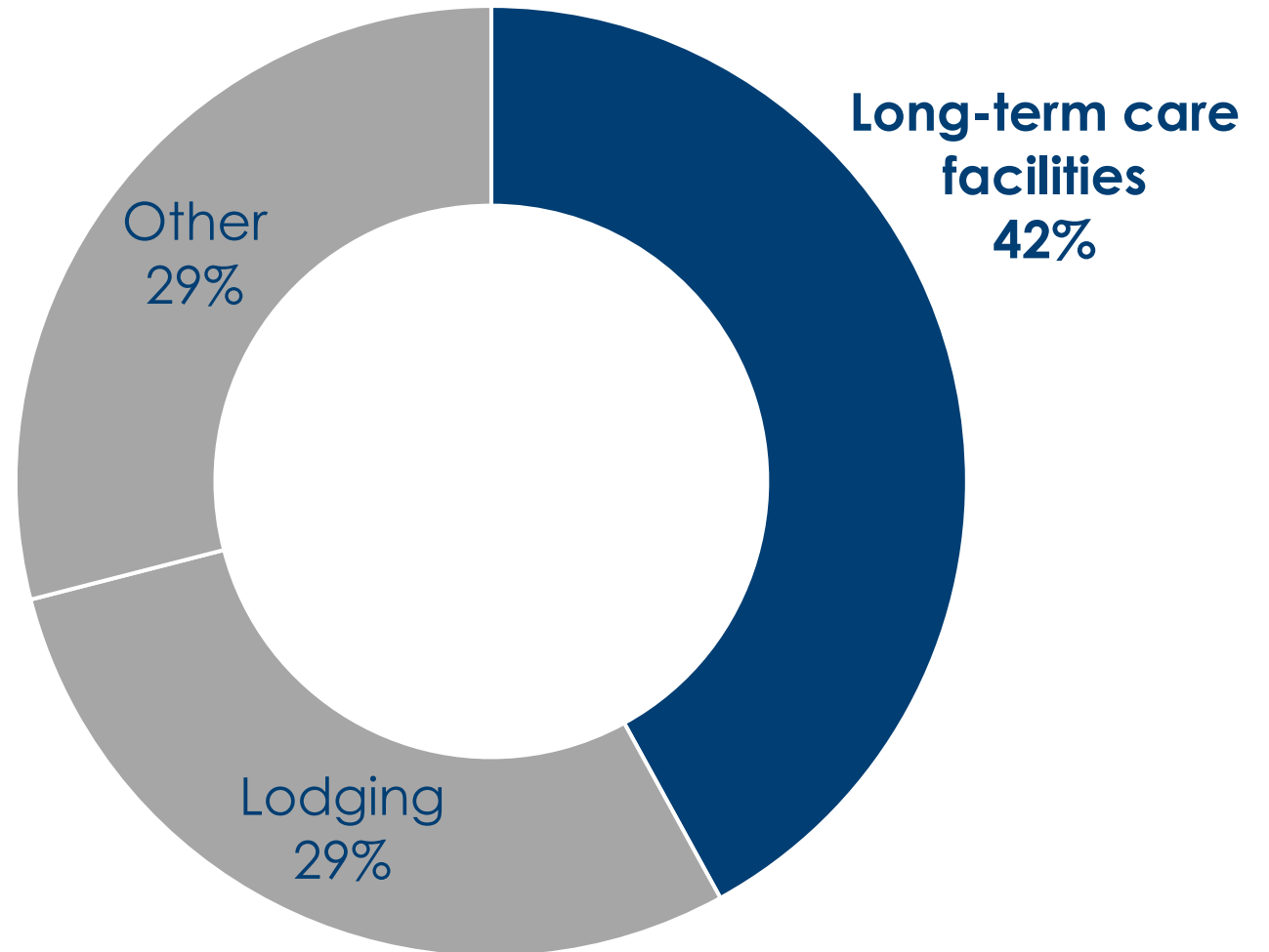
Wisconsin has **high** rates of Legionnaires' disease compared to many other states in the U.S.

Figure 3b. Crude incidence^a rates of reported confirmed cases of Legionnaires' disease^b by jurisdiction of residence^c—NNDSS,^d United States, 2019.^{e,f}



Legionella Investigations in Wisconsin

Nearly half of *Legionella* facility investigations are at **long-term care facilities**.



Data from 2016 to 2024, n=52

DPH Environment of Care Tours



DPH Environment of Care Tours

- Share **infection control** and **water management** best practices with interested facilities.
- Provide an onsite, in-person assessment for recommendations that are **facility-specific**.



DPH Environment of Care Tours

Environment of care tours are a collaboration between:

Infection
Preventionists

Legionella subject
matter experts

DPH Environment of Care Tours

DPH completed **11** proactive waterborne environment of care tours in 2024.



Indications for an Environment of Care Tour

- Possible facility-associated legionellosis **case**
- Troubleshooting positive **environmental *Legionella*** test results
- Planned **construction**, renovation, or new building



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This list is not exhaustive!



What Happens During an Environment of Care Tour?

- Discussion of **water management** best practices
- Assessment of **infection control** practices
- Assessment of facility's **water distribution system**
- Assessment of water-aerosolizing **devices**



Observations from Infection Control



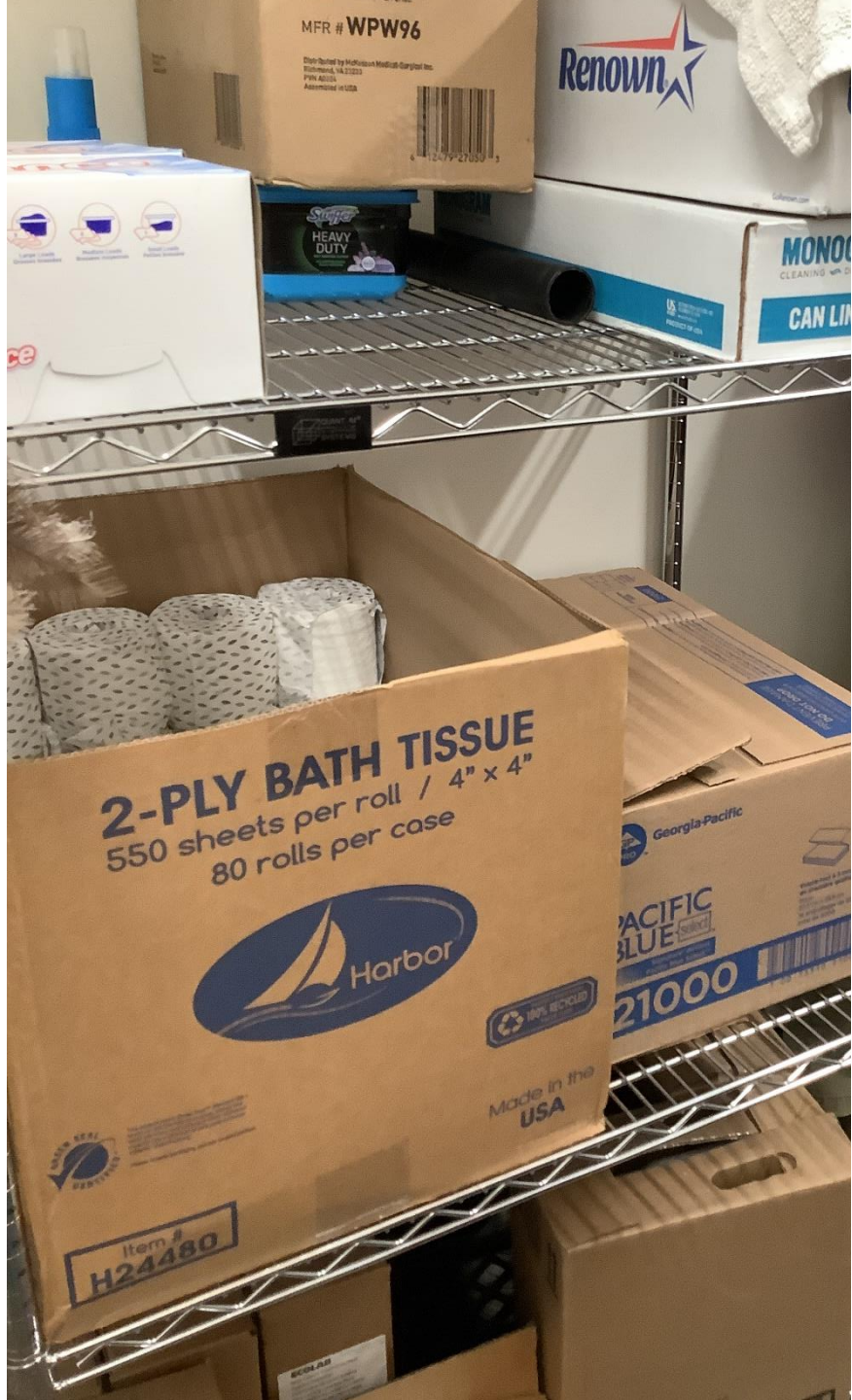




































Observations from Premise Plumbing





Cooling Towers



Stagnant Water Considerations



Is there piping that leads to **no usable plumbing fixture** (dead end) in your facility?



Are there plumbing fixtures or devices in your facility that are **not used** (functional dead ends)?



Are there **unoccupied** areas of the facility?



Dead Ends: Functional and Capped or Valved



Utility and Biohazard Room

- Dead leg/end
- Clinic sink
- Functional dead end



Dead Ends

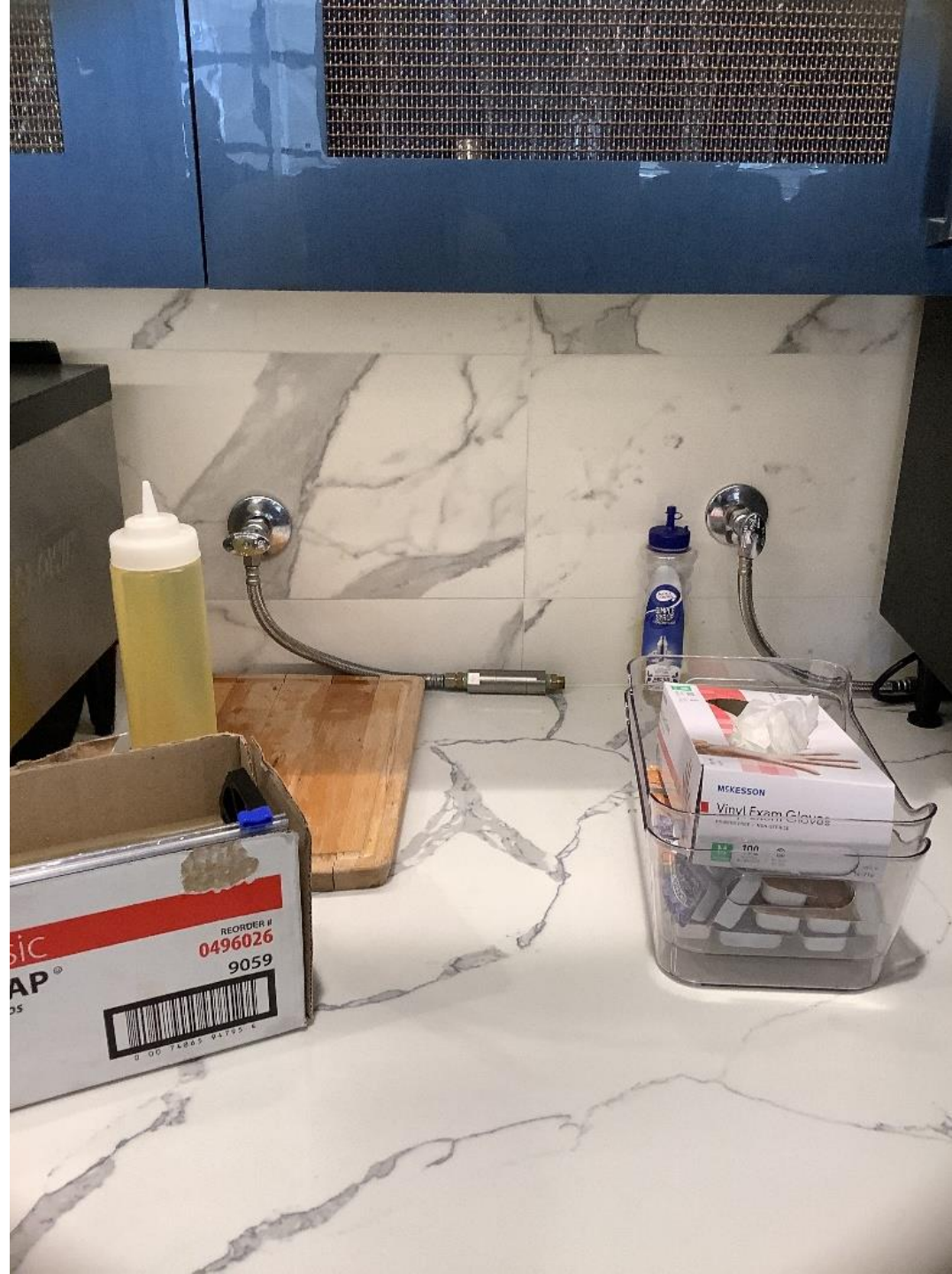
- Unused shower
- Used as storage
- Functional dead end



Dead Ends

- Unused mop sink
- Functional dead end
- Faucet needs repair









Employee Locker Room

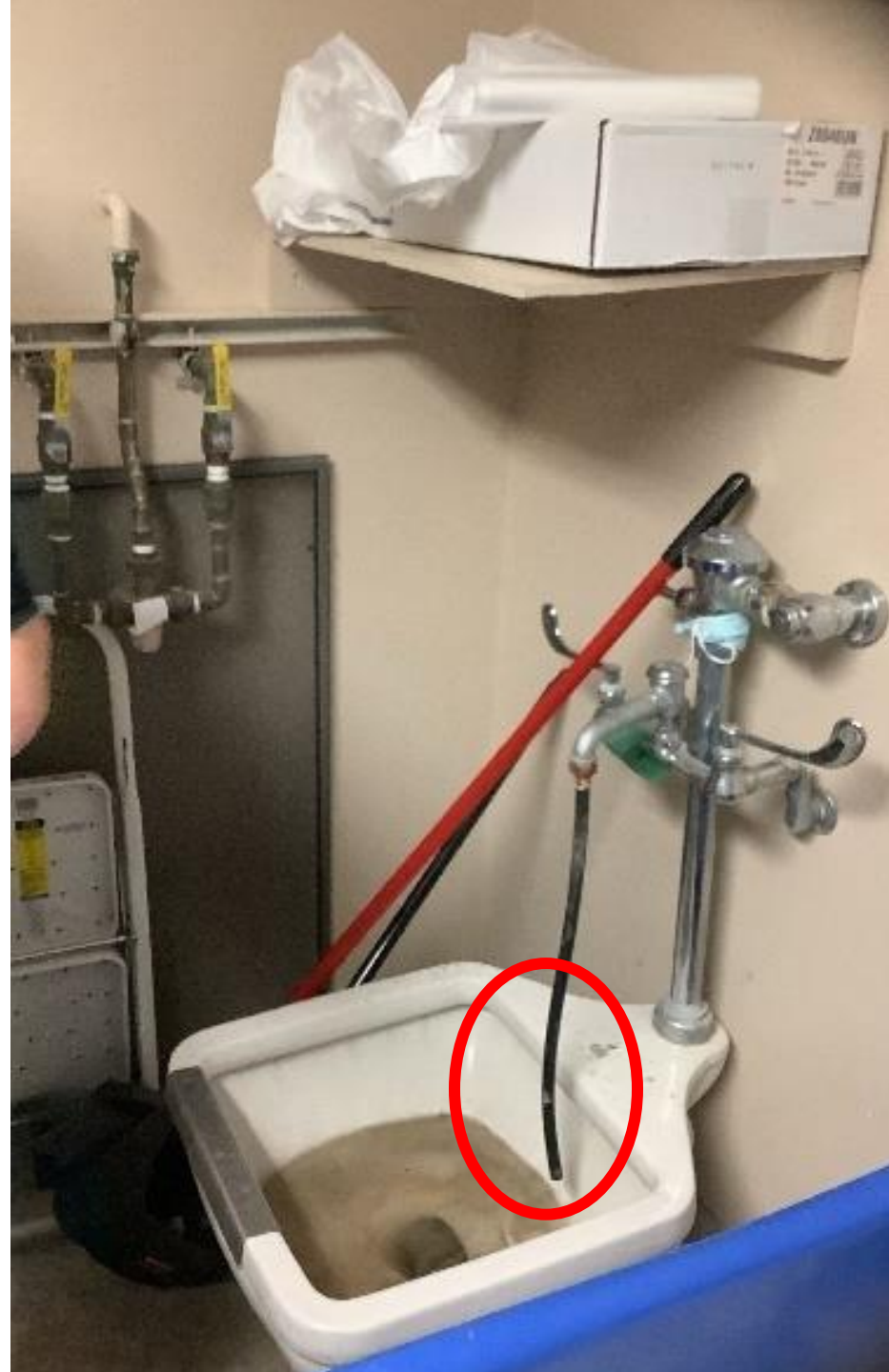
Capped pipes

- Cannot be flushed.
- Create dead ends.
- Lead to dead water.



Backflow Concerns in the Water Distribution System















Protecting Food from Contamination

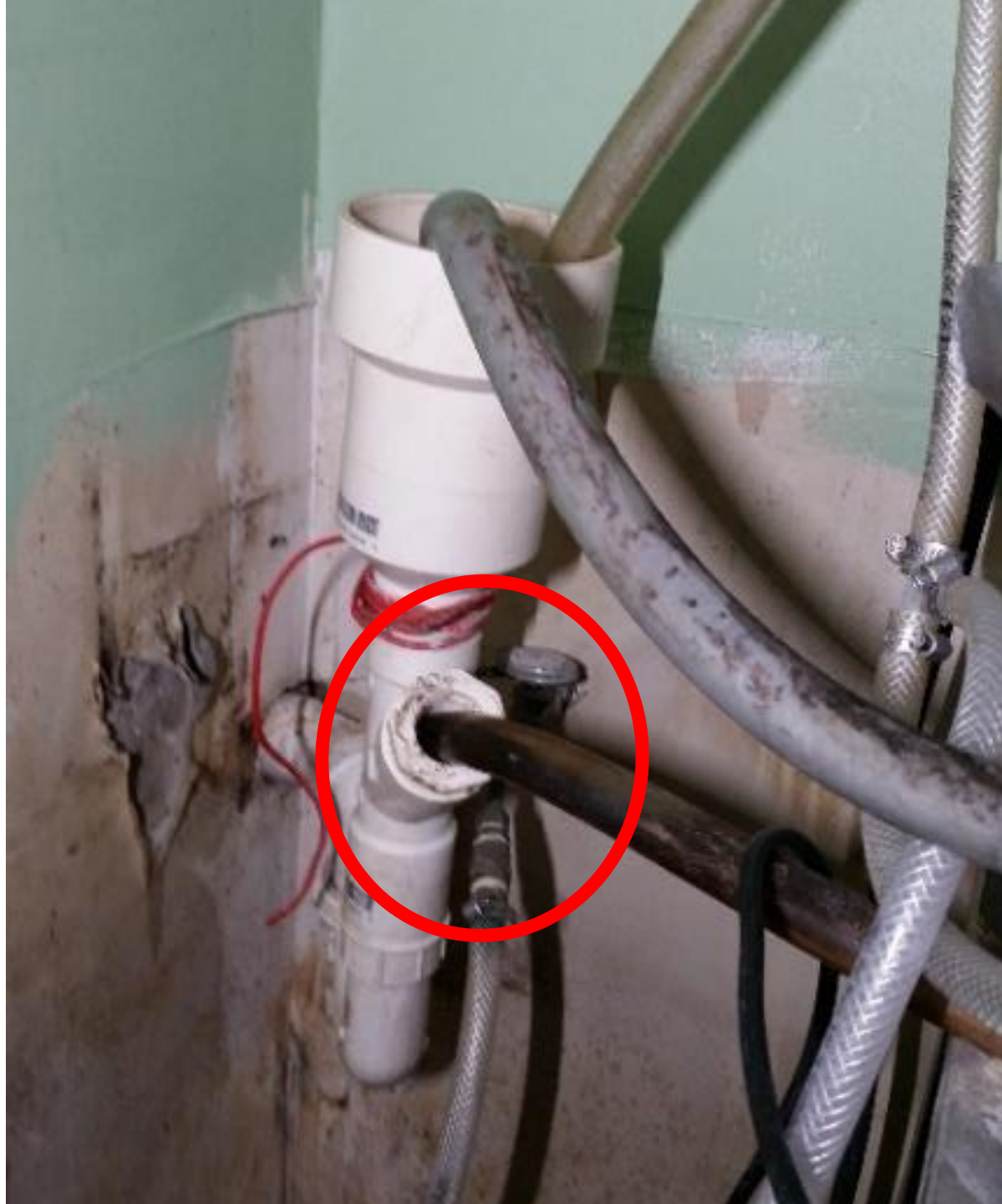












Summary



Take Home Points

- Be proactive about water management and infection control practices!
- DPH staff are here to help!



General Rules for Legionella Prevention



Keep **hot** water **hot**.



Keep **cold** water **cold**.



Keep water **moving**.

Questions?



HAI Prevention Program Contacts



Email: dhswhaipreventionprogram@dhs.wisconsin.gov



Phone: 608-267-7711



Website: www.dhs.wisconsin.gov/hai/contacts.htm

HAI Prevention Program IPs

Region 1: Anna Marciniak; Phone: 608-590-2980

Region 2: Jennifer Kuhn; Phone: 608-772-4768

Region 3: Tess Hendricks; Phone: 608-338-9071

Region 4: Rebecca LeMay; Phone: 608-609-1918

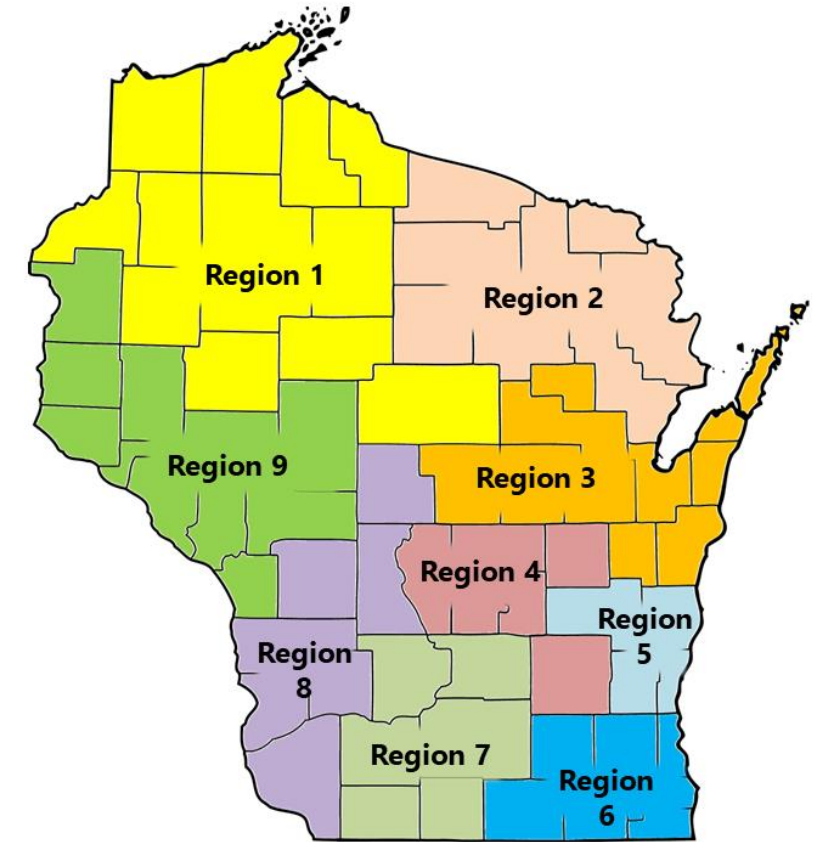
Region 5: Greta Michaelson; Phone: 608-867-4647

Region 6: Paula Pintar; Phone: 608-471-0499

Region 7: Beth Ellinger; Phone: 608-219-3483

Region 8: Ashley O'Keefe; Phone: 608-556-8608

Region 9: Nikki Mueller; Phone: 608-628-4464



HAI Infection Prevention Education webpage



- HAI: Home
- For Health Professionals
- For Patients & Families
- Infection Prevention Education**
- Infection Preventionist Starter Kit
- Multidrug-Resistant Organisms
- Precautions
- HAI Data
- National Healthcare Safety Network
- Antimicrobial Stewardship




HAI Infection Prevention Education

IPs play an essential role in facility infection prevention policy development, surveillance, and risk assessment. IPs also serve as a resource to other staff and programs within their facilities. The resources on this page are intended to connect health care facility infection preventionists (IP) with education materials to support their role in preventing, detecting, and responding to healthcare-associated infections (HAI).

Webinars

HAI Education Series

The HAI Education Series provides educational presentations on topics including infection prevention, HAIs, antibiotic stewardship, disease surveillance, and outbreak response for health care staff in all setting types, local and Tribal health departments, and other health care partners. Each session features a new, timely topic presented by the Department of Health Services (DHS) program staff, HAI infection preventionists, partner organizations, or other external subject matter experts.

The HAI Education Series is a monthly webinar series, typically held the fourth Thursday of each month. Register for the [HAI Education Series](#) .

HAI Education Series recordings



Upcoming HAI Education Session

Date: May 22, 2025

Topic: Why Oral Health Matters



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