

Water Management: Splash Zones and Under Sink Storage

Philadelphia Department of Public Health
Healthcare-Associated Infections and
Antimicrobial Resistance Program

Disclosure & Acknowledgement

I have no actual or potential conflict of interest in relation to this program or presentation.

This presentation was developed by the Association for Infection Prevention and Control (APIC) Consulting Services with the aid of Ellen S. Novatnack, RN, BSN, CIC.

Objectives

The learner will be able to:

1. Identify a splash zone location.
2. Understand the splash zone and water pathogen risks and mitigation strategies.
3. Demonstrate under a sink storage considerations.

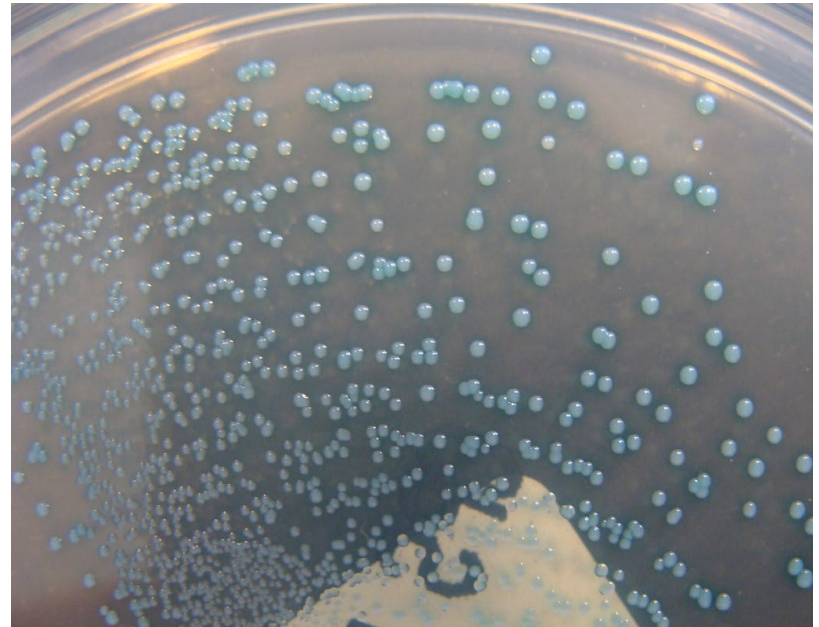
What is a splash zone?

- The area around a sink or other drain where contamination could occur to objects or people within that space
 - Resulting from the splash associated with handwashing or other activity at the sink
 - Can occur up to three feet from the sink or drain
- The Centers for Medicare & Medicaid Services (CMS) uses three feet to define the splash zone



What's in your plumbing?

- Gram-negative bacteria
- Non-fecal coliforms
- Non-tuberculosis mycobacteria
- Other bacteria
- Actinomyces
- Fungi
- Protozoa
- Multi-Drug Resistant Organisms (MDRO)



Regulatory Standards

- **CDC:** Reduce Risk from Water
- **CMS QSO-17-30:** Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD)
- **TJC:** New Standard for Water Management Program – Hospitals, Critical Access Hospitals, and Nursing Care Centers

Risks Associated with Sinks and Drains

- Stagnant water and waterborne bacteria in the sink's plumbing trap
- Biofilm forms in the drain
- Reservoir where antibiotic-resistant genes are transferred between bacterial species
- Can become contaminated with multidrug-resistant organisms (MDROs)
 - Outbreak of 19 *Serratia marcescens* bloodstream infections due to a contaminated tap water faucet



Know the Zone = Know the Risk

- Where is your splash zone?
 - Identify your 3-foot perimeter
 - Ensure that the area is clear of supplies
- Why is this of concern?
 - Bacterial colonization in plumbing pipes and fixtures
 - Splashes occur when flowing water hits the contaminated drain cover
 - Splashes of bacteria out of sink drains
 - Splashes from flushing a toilet or hopper
- What is the risk?
 - Contamination of resident supplies with waterborne pathogens
 - Dissemination of droplets or aerosols, which may contaminate the local environment, equipment, skin, or clothing of nearby healthcare personnel and residents



Splash Zone Risk Reduction



Clean and disinfect surfaces near the drain daily, including the faucet, faucet handles, surrounding countertop and sink basin.



Move items out of the splash zone and avoid storing supplies within three feet of splashing water.



Avoid preparing medications within three (3) feet of a sink.



Avoid placement of resident care items or personal items on counters next to sinks.



Do not discard waste down sinks.



Minimize discarding liquid nutritional supplements or other beverages down hand hygiene sinks or toilets.



Avoid the use of aerators on faucets.



Identify high-risk building areas based on the water management plan and implement mitigation.

Physical Barriers to Reduce Risks

Implement design and engineering strategies:

- Do not use of aerators on faucets.
- Create a physical separation between the sink and counter
- When space is limited, a splash guard can be mounted beside the sink
- Install and utilize hopper and toilet covers



What can be in the splash zone?



ALLOWED

- Soap dispenser
- Paper towel dispenser that is completely enclosed



NOT ALLOWED

- Clean supply storage
- Medication preparation
- Resident care items
- Personal items
- Preparing and processing specimens
- A sterile field
- Drinks and food
- Reusable, cleaned, and disinfected shared medical equipment (e.g., blood pressure cuffs, pulse oximeter probes)

Dedicated Clean & Dirty Sinks

CLEAN SINK

- Uses:
 - Handwashing
- Location:
 - Kitchen
 - Resident care unit
 - Medication room

DIRTY SINK

- Use to discard:
 - Resident waste
 - Liquid nutritional supplements
 - Other beverages
- Location:
 - Soiled utility room

Sink Splash Zone Signage Options

- [Adopt Water Zone Sign: Splash Zone | HQI](#)
- Create your own

Splash Zone



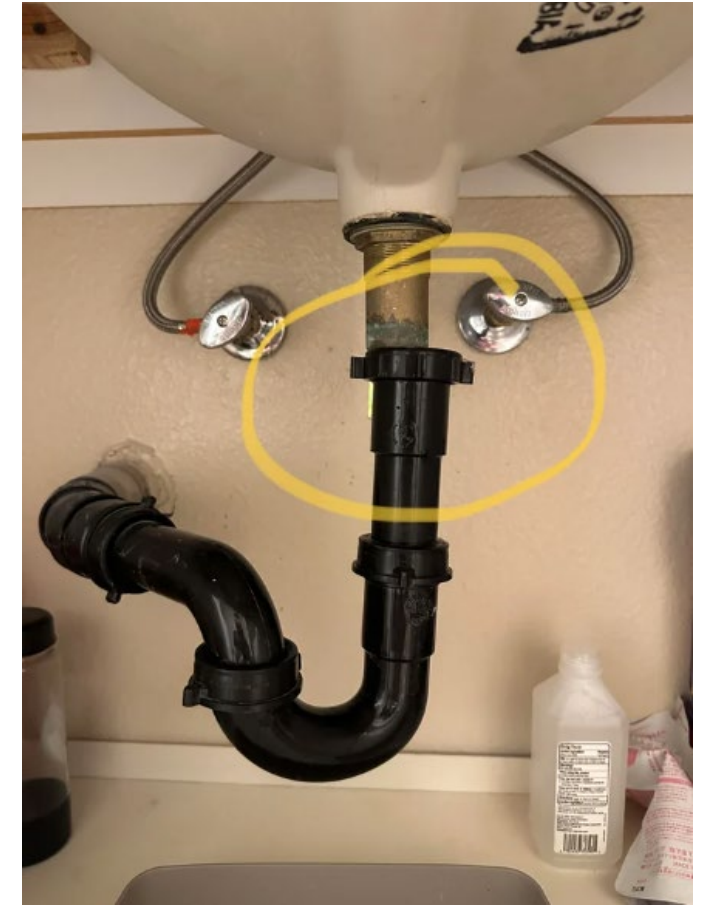
**Keep the
sink clear
and the
area clean**

Dedicated hand hygiene sink
– No disposal into this sink



Under Sink Storage Risks

- Leaks or moist environments
 - Damage stored items
 - Encourage growth of waterborne pathogens
- CDC does not support the under-sink storage of medical or surgical supplies or equipment
- Reagents and chemicals could adversely react if exposed to water/sewer/moisture



What can be stored under a sink?



ACCEPTABLE

- Trash bins
- Trash liners
- Sharps containers (unused)
- Cleaning chemicals



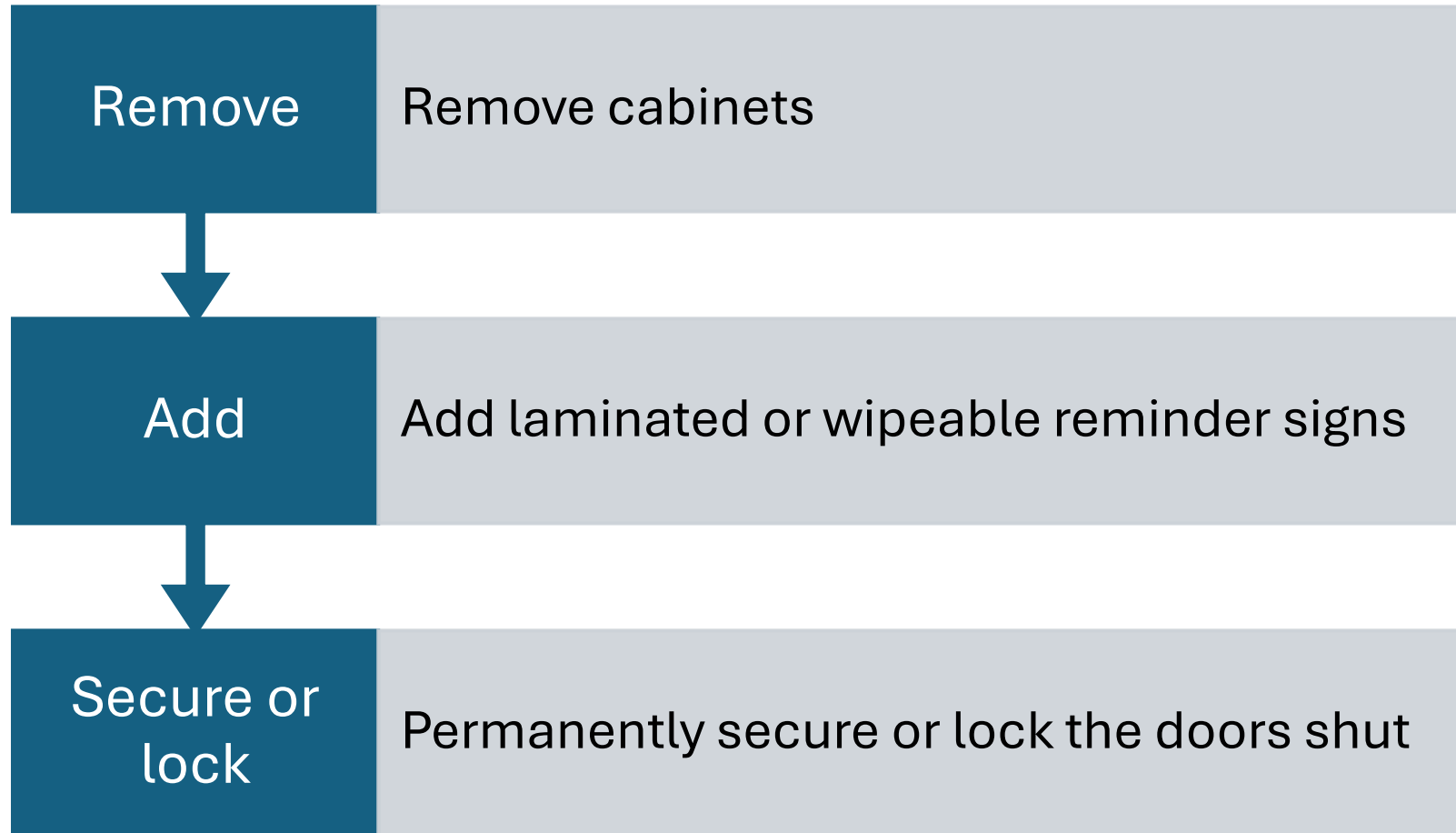
UNACCEPTABLE

- Medical supplies
- Surgical supplies
- Laboratory supplies
- Resident care equipment
- Linen
- Beverages, food, or items to deliver them
- Cleaning cloths

Know the Risk

- Complete a facility risk assessment to evaluate if under-sink storage is feasible by considering:
 - Resident population and services provided
 - If storage can be maintained safely
 - Type and quantity of item
 - If residents have contact with the item
- Balance feasibility with CMS requirements:
 - Provide a safe, sanitary, and comfortable environment
 - Help prevent the development and transmission of communicable diseases and infections

Under Sink Storage Risk Reduction



Environmental Rounds to Monitor Risks

Include:

- Under the sink storage auditing
- Splash zone observations

How:

- Adopt, adapt, create, or add to a standardized checklist
- Establish a regular schedule for conducting rounds
- Include staff members in the process, it's everyone's responsibility
- Summarize the findings
- Address areas of concern
- Provide feedback to staff and leadership

Environment Of Care: Splash Zone

Facility Name:

Date:

Floor or Wing(s):

Observer(s):

Component	Observation				Comments
	YES	NO	N/A	Not Seen	
Medication Room Sink and Splash Zone					
* The splash zone is the three-foot area around a sink or drain.					
The counter next to the sink is free of medication-related items.					
The counter next to the sink is free of resident care supplies.					
The counter next to the sink is free of drinks, food, or serving items.					
The counter next to the sink is free of sterile supplies.					
Medications are not prepared on the counter next to the sink.					
Lab specimens are not prepared or processed in the medication room.					* Specimens are considered biohazards and should not enter the medication room as it is considered clean.
The counter next to the sink is free of shared medical equipment.					*Only clean equipment can be stored in the medication room.
If items are within 3 feet of the sink, a physical barrier prevents contamination from spraying or splashing.					
If a physical barrier is present, it appears to be cleaned and disinfected daily.					
Staff do not discard resident waste, nutritional fluids, or other beverages down the sink.					
Sink surfaces, faucets, and handles are cleaned and disinfected daily.					
The sink and counter are sediment, lime, and scaling-free.					
Signs within the sink splash zone are laminated.					
The soap dispenser is functional and visually clean.					
The paper towel dispenser keeps the towels completely enclosed.					
A faucet aerator is not in use.					
The sink basin is not used for storage.					

Available Tools, References & Resources

[CDC Healthcare Facility Water Management Program Checklist](#)

Purpose:

- To assist in the development of an all-hazards approach to water management in a healthcare facility

Uses:

- 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

Available Tools, References & Resources

[Splash Zone Info Sheet | HQIN](#)

- <https://hqin.org/wp-content/uploads/2023/04/Splash-Zone-Infosheet.pdf>

[Splash Zone Sign | HQIN](#)

- <https://hqin.org/wp-content/uploads/2023/04/Splash-Zone-Sign.pdf>

[Splash Zone Rounding Checklist | HQIN](#)

- <https://hqin.org/wp-content/uploads/2023/09/Splash-Zone-Checklist.pdf>

[Infection Control Assessment and Response \(ICAR\) Tool for General Infection Prevention and Control \(IPC\) Across Settings](#)

- <https://www.cdc.gov/infectioncontrol/pdf/icar/IPC-mod11-water-exposure-508.pdf>

Available Tools, References & Resources

[Water Infection Control Risk Assessment \(WICRA\)](#)

- <https://www.cdc.gov/hai/pdfs/prevent/water-assessment-tool-508.pdf>

[Reduce Risk from Water](#)

- <https://www.cdc.gov/hai/prevent/environment/water.html>

[Intensive care unit sinks are persistently colonized with multidrug-resistant bacteria and mobilizable, resistance-conferring plasmids](#)

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10469867/>

[Outbreaks associated with preparation of medication close to sinks](#)

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7883772/>

Knowledge Check

Which photo(s) indicate the sink splash zones have been addressed?

1



2



3



4



For Questions, Please Contact:

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THANK YOU

