



CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

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/Page-Content/Resources-List-
Folder/Legionella-Action-Plan](https://www.dgs.ca.gov/FMD/Resources/Page-Content/Resources-List-Folder/Legionella-Action-Plan)

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Inbox for additional questions:

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Legionella and Legionnaires' Disease

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

CENTER FOR INFECTIOUS DISEASES

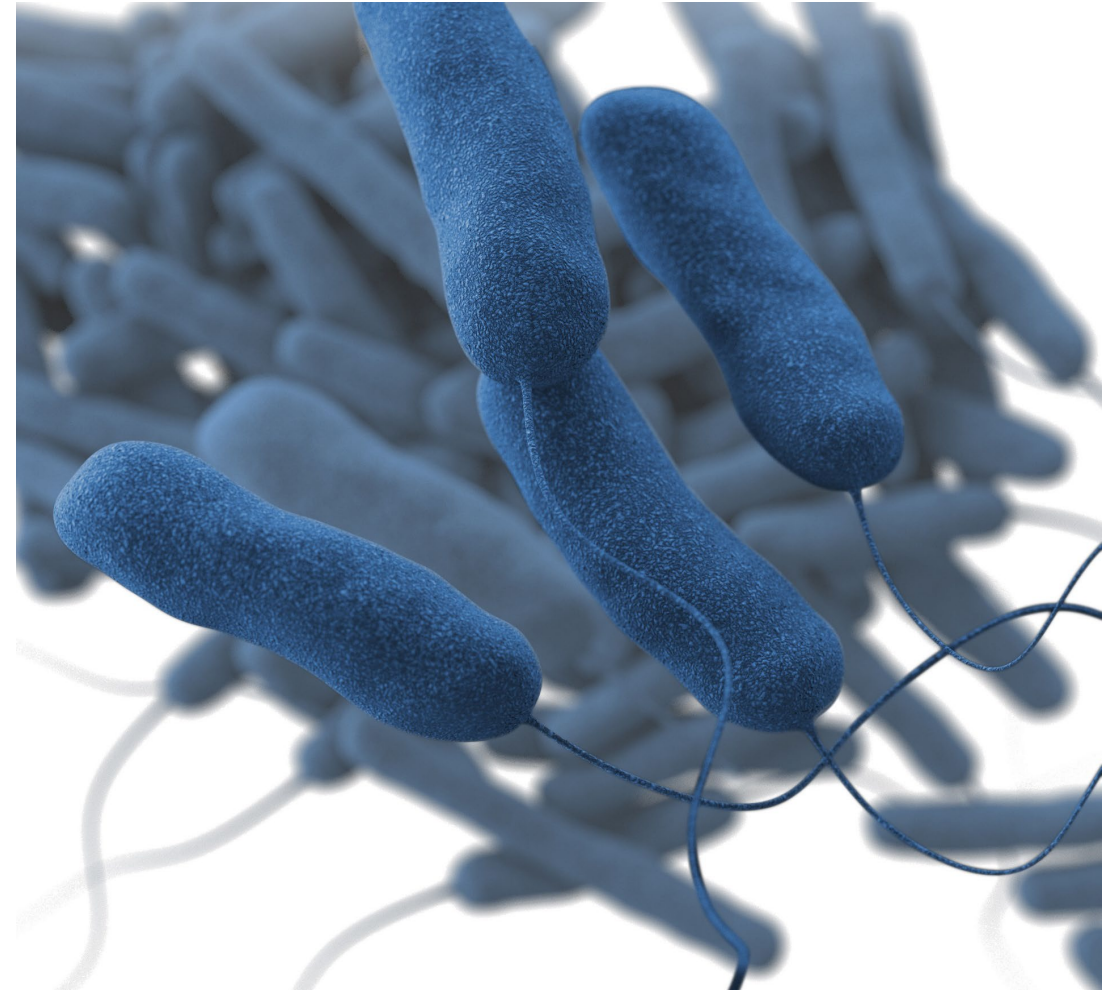
DIVISION OF COMMUNICABLE DISEASE CONTROL

INFECTIOUS DISEASES BRANCH



Legionella

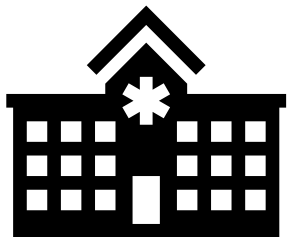
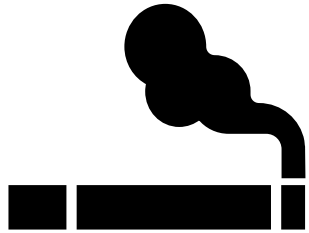
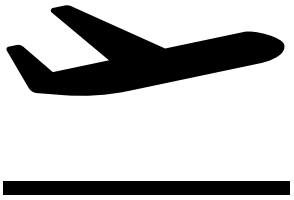
- Bacteria with ~60 strains
- Occur naturally in freshwater environments
- Grow and multiply in warm (77-113F) and stagnant conditions
- Potential for bacterial growth and spread within artificial or built water systems



Legionnaires' Disease (LD)

- Similar to other types of pneumonia, with common symptoms including cough, shortness of breath, fever, muscle aches, and headaches; other symptoms can include diarrhea, nausea, and confusion.
- Symptoms usually begin 2-14 days after a person is exposed to the bacteria.
- Common diagnostic tests for LD include a urine test, and/or testing of respiratory specimen (via PCR or culture).
- Most cases of LD are successfully treated with antibiotics.
- Infection is rare, with ~500 cases of LD reported per year in California.
- Very difficult to identify sources of illness given large number of potential exposures for most patients (e.g., in the home and community, during travel, etc.).

Personal Risk Factors for LD



Most people exposed to *Legionella* do not get sick, but people at increased risk include:

- People 50 years or older
- Current or former smokers
- People with a chronic lung disease (e.g., emphysema or chronic obstructive pulmonary disease)
- People with weak immune systems or who take drugs that weaken the immune system (e.g., after a transplant operation or chemotherapy)
- People with cancer
- People with underlying conditions, including diabetes, kidney failure, or liver failure

Transmission



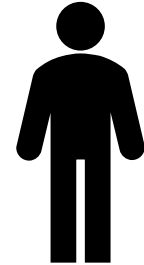
STEP 1

Freshwater containing *Legionella* is introduced to an artificial water system or built environment, where bacteria can grow and spread



STEP 2

Aerosols or mists are generated by water fixtures or features connected to the contaminated water system



STEP 3

Susceptible person breathes in aerosols or aspirates water containing *Legionella*, resulting in illness

Common Sources of Infection

- Large complex plumbing systems (e.g., like those in healthcare facilities, hotels, cruise ships, etc.)
- Showerheads and sink faucets
- Cooling towers (structures that contain water and a fan as part of centralized air cooling systems for buildings or industrial processes)
- Hot tubs
- Decorative fountains and water features
- Hot water tanks and heaters
- Aerosolizing devices in the home (e.g., humidifiers, respiratory therapy equipment, etc.)
- **Devices that generate more vs. fewer aerosols pose greater risk of transmission (e.g., hot tub vs. drinking fountain)**



Investigation & Response

- Clusters of 2+ cases associated with a common exposure (e.g., hotel spa) or single cases associated within healthcare facilities are investigated.
- Typical investigation steps include environmental sampling, remediation (i.e., flushing, disinfection, etc.), resampling, and long-term prevention.
- Point of use filters at water fixtures can further mitigate exposure risk.
- Best tool for long-term prevention is a water management plan (WMP).
- All building water systems are different; WMPs help buildings identify and systematically address conditions that allow for *Legionella* growth, in order to keep the water system well-controlled in the long-term.



SD Mission Valley Building

Legionella Responses

May 9, 2023



Outline

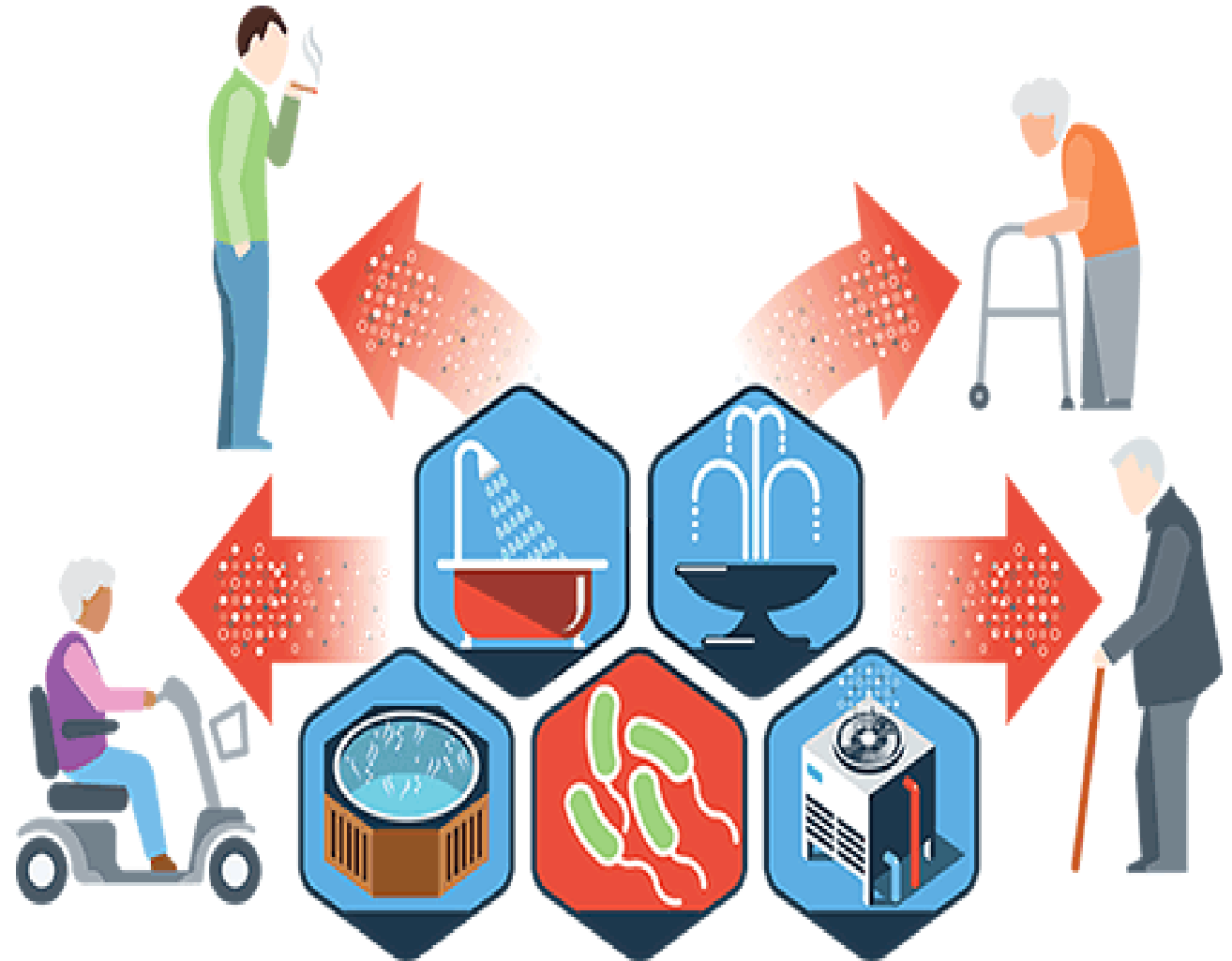
- I. Overview of Annual Responses
- II. SD Mission Valley Bldg./Testing & Responses
- III. Remediation Efforts/Next Steps



I. Overview of Annual Responses

2021 - 2022

Began educating ourselves regarding legionella ...



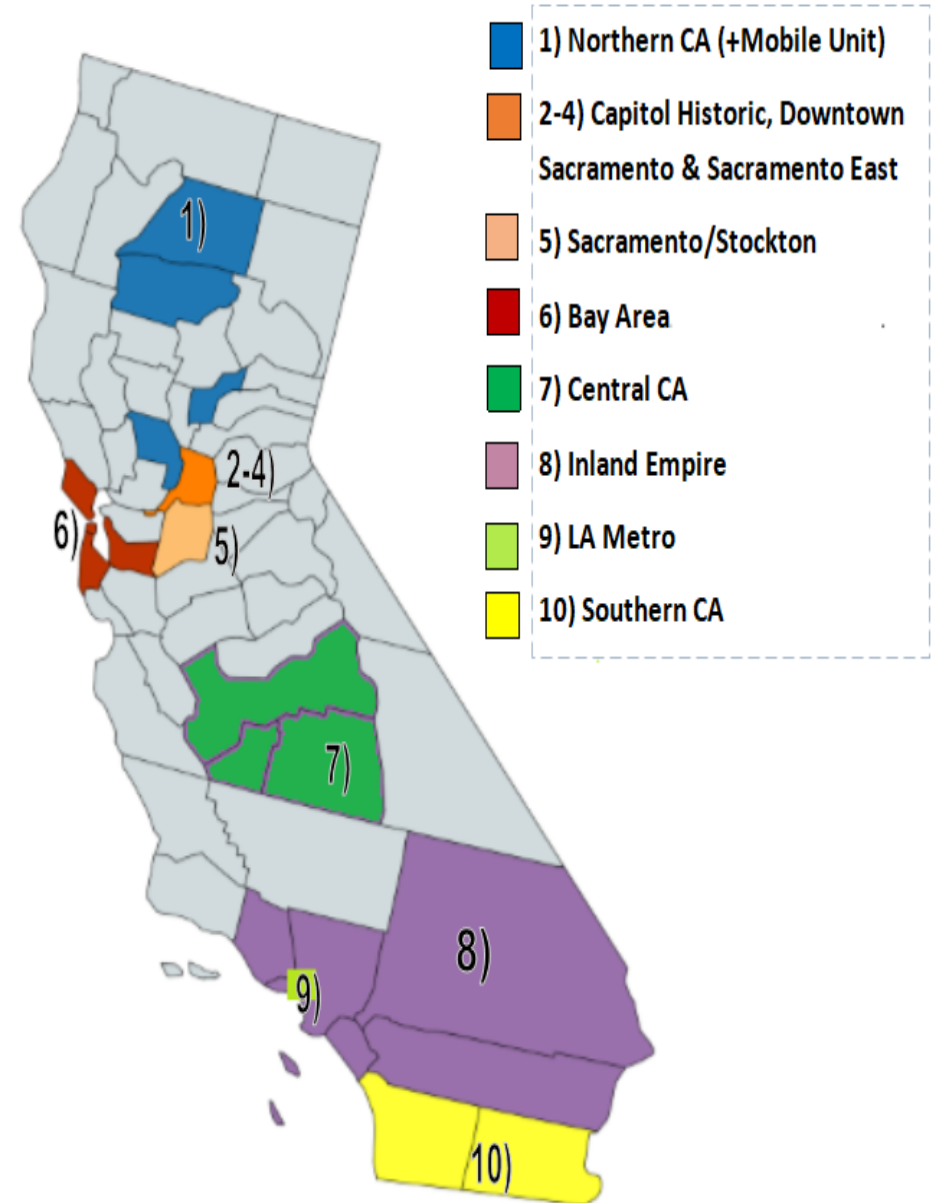
2022

- Began proactively testing within the DGS portfolio...
- Expanded Health & Safety Team



2022

- Based on initial test results expanded testing to all DGS buildings...



2023

- Consulted with experts to understand pros/cons of next steps...
- Discussed an initial action plan: Test, Remediate, Test Again and Create Water Mgmt. Plan



II. SD Mission Valley Bldg. - Testing & Responses



SD Mission Valley Building

We took extensive steps to immediately address the test findings...

Legionella can grow and spread in many areas of a building.

Effective water management programs can **REDUCE** the risk of Legionnaires' disease.

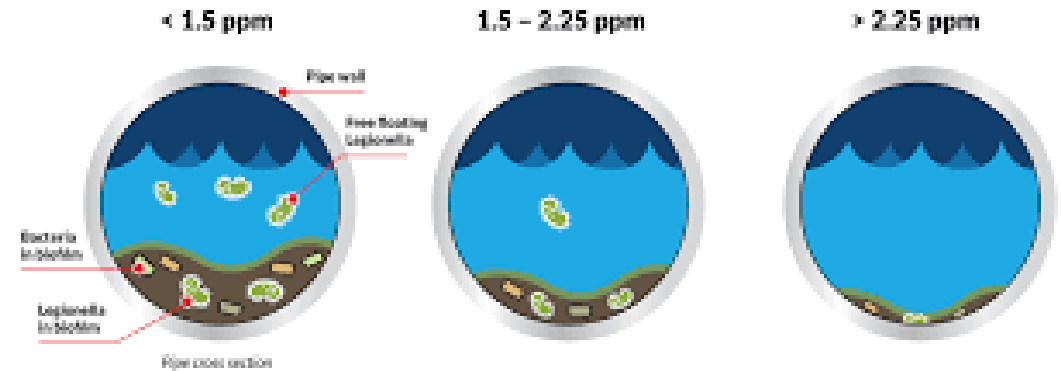
Legionella can make people sick when the germs grow in water and spread in droplets small enough for people to breathe in.

Legionella grows best in warm water that is not moving or that does not have enough disinfectant to kill germs.



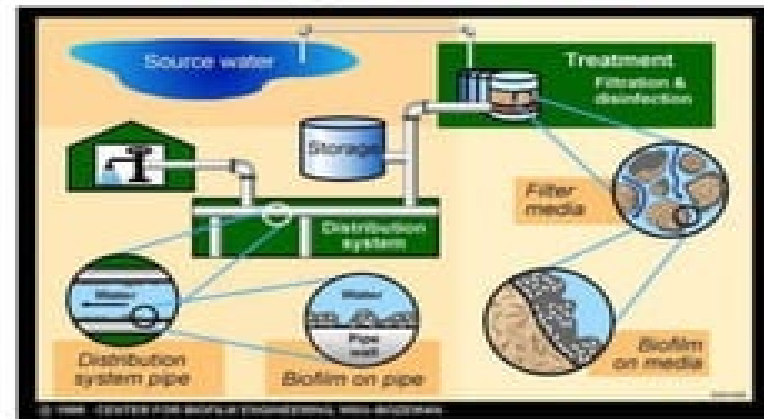
Testing and remediation will be the key moving forward...

Chloramine Levels



Legionella in Buildings

Plumbing Systems and Biofilms



III. Remediation Efforts / Next Steps

- Establish annual testing statewide
- Expert review of test results
- Water flushing of pipes
- Install faucet aerators
- Install medical filters
- Developing Water Management Plan



Ongoing Efforts

- Heightened cleaning of fountains and faucets
- Chemical remediation as necessary
- Ensure long term adoption of legionella remediation tasks (heightened cleaning, filter installations, aerator replacements etc.)
- Legionella Inquiry Inbox
- Establish DGS Legionella Webpage





Thank You



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