

How is a Legionnaires' disease case identified?

- Most disease and outbreaks are caused by *Legionella pneumophila serogroup 1*.
- Legionellosis is a reportable disease in Missouri.
- Reports are typically received from medical providers and laboratories.
- Public health agencies follow up to determine if the illness meets the case definition for Legionnaires' disease.

Legionnaires' disease	
Clinical features	Fever, myalgia, and cough (according to the CSTE* case definition) These symptoms are typical but not required; additional symptoms (e.g., shortness of breath, headache, confusion, nausea, diarrhea) may be present
Pneumonia (clinical or radiographic)	Yes

Defining Healthcare-Associated Exposures

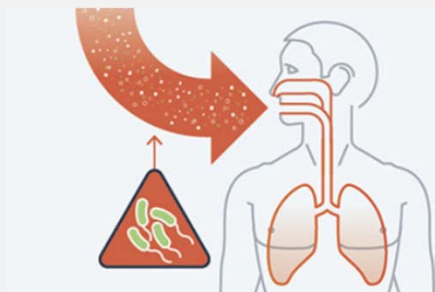
Hospitals	Long-term care facilities	Clinics
<ul style="list-style-type: none"> • Acute care hospitals (general or specialty) • Long-term acute care hospitals • Critical access hospitals • Children’s hospitals • Psychiatric hospitals 	<ul style="list-style-type: none"> • Skilled nursing facilities • Nursing homes • Inpatient hospice • Rehabilitation hospitals • Psychiatric residential treatment facilities 	<ul style="list-style-type: none"> • Outpatient clinics¹: general and specialty • Ambulatory (same day) surgery centers² • Outpatient rehabilitation clinics • Dialysis centers

¹ Examples of specialty clinics include outpatient cancer treatment centers, outpatient infusion centers, dental offices, or subspecialist offices that provide clinical care not affiliated with a hospital. Other healthcare facilities not listed here include associated sites such as pharmacies and outpatient laboratories.

² If a clinic visit or same-day surgery occurs within a hospital, the setting for that exposure is hospital, not clinic.

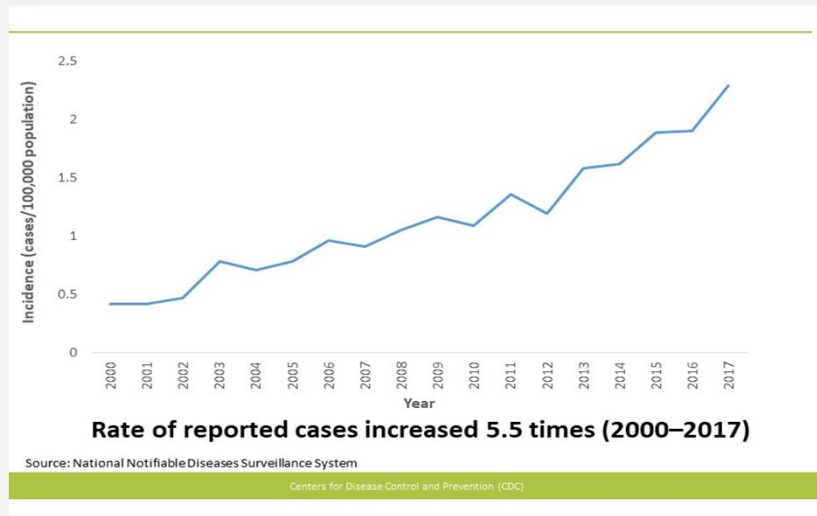
- **Definite Healthcare-Associated:** the patient spent the entire 10 days before the date of symptom onset in a healthcare facility
- **Possible Healthcare-Associated:** the patient spent a portion of the 10 date of symptom onset in a healthcare facility

Transmission and Epidemiology



- Those most likely to develop Legionnaires’ disease following an exposure are:
 - Current or former smokers
 - People with a chronic lung disease such as emphysema or chronic obstructive pulmonary disease (COPD)
 - People with a weakened immune system from diseases like cancer, diabetes, or kidney failure
 - People who take medication that weakens the immune system
- Case Fatality Rate
 - 10% in general population
 - 25% in healthcare-associated cases

Epidemiology of Legionnaires' Disease Current Trend



What if a case is identified as associated with my facility? *Public Health Authorities*

Chapter 192.020, RSMo.

192.020.1. It shall be the general duty and responsibility of the department of health and senior services to safeguard the health of the people in the state and all its subdivisions. It ... **shall make and enforce adequate orders, findings, rules and regulations to prevent the spread of such diseases** and to determine the prevalence of such diseases within the state. ...

19 CSR 20-20.040

- (1) The director shall use the legal means necessary to control, investigate, or both, any disease or condition ... which is a threat to the public health.
- (2) It shall be the duty of ... the director of the Department of Health ... to—
 - (A) Inspect any premises that they have reasonable grounds to believe are in a condition conducive to the spread of the disease; ...
 - (C) Collect ... any samples or specimens that may be necessary ...;
 - (G) Establish appropriate control measures which may include ... disinfection, ... closure of establishment, notification to potentially exposed individuals ... notification to the public ... and other measures considered by the department and/or local health authority as appropriate disease control measures ...

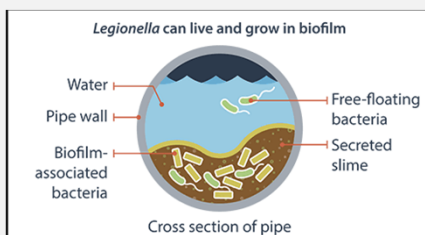
What if a case is identified as associated with my facility? *Public Health Control Measures*

- Several recommendations may be made to:
 - identify and notify persons who may have been exposed to *Legionella*
 - minimize the risk of possible further exposures
- Consider educating staff on the symptoms of Legionnaires' disease.
- Healthcare facilities should remind clinicians to test patients with healthcare-associated pneumonia who are at risk for Legionnaires' disease.
- An Environmental Assessment will likely be conducted.
- Samples will be collected if the facility is the subject of a "definite" healthcare-associated case or two "possible" healthcare-associated cases.
- If *Legionella* is detected, some immediate controls measures, mitigation, and follow up sampling will likely be recommended.

Environmental Assessment

Legionella commonly grow in:

- Cooling towers
- Showerheads and sink faucets
- Hot tubs and spas
- Decorative fountains and water features
- Hot water tanks and heaters
- Large plumbing systems



Facility Characteristics

- Map and blueprints of facility
- Occupancy rates, stories or levels, number of buildings
- Renovations and recent major construction

Water Supply Source

- Disinfectant method
- Water disruptions

Premise Plumbing

- Where and how water flows through building (hot water heaters, storage tanks, secondary disinfectant)

Water System Parameters

- Maintenance logs, routine testing results, WMP review
- Temperature, pH, and residual disinfectant

Sources of Exposure

- Potable water (showers, sinks)
- Whirlpool spa
- Cooling tower
- Decorative fountains and other water features

What should you do to minimize risk of Legionnaires' disease within your facility?

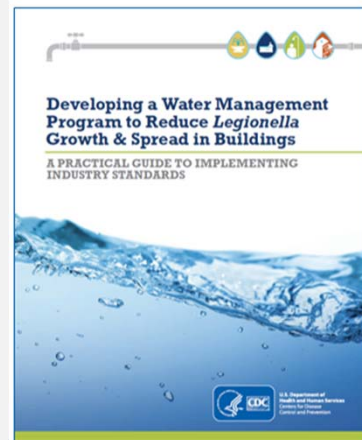
- **CMS: Requirement to Reduce *Legionella* Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD) (QSO 17-30-Hospitals/CAHs/NHs Revised 07.06.2018)**
- *Facilities must have water management plans and documentation that, at a minimum, ensure each facility:*
 - Conducts a facility risk assessment to identify where *Legionella* and other opportunistic waterborne pathogens could grow and spread in the facility water system.
 - Develops and implements a water management program that considers the ASHRAE industry standard and the CDC toolkit.
 - Specifies testing protocols and acceptable ranges for control measures, and document the results of testing and corrective actions taken when control limits are not maintained.
 - Maintains compliance with other applicable Federal, State and local requirements.
- *Note: CMS does not require water cultures for *Legionella* or other opportunistic water borne pathogens. Testing protocols are at the discretion of the provider.*

What should you do to minimize risk of Legionnaires' disease within your facility?

- Educate personnel about measures to prevent and control *Legionella*.
- Heighten suspicion for cases of healthcare-associated Legionnaires' disease and use appropriate methods for its diagnosis.
- Adhere to an appropriate water management plan. Basic water management principles include:
 - Keep hot water hot and cold water cold.
 - Keep water moving.
 - Ensure adequate disinfection of water.
 - Maintain equipment and premise plumbing. Preventive maintenance.
 - Continuously monitor water system and implement changes when needed!!
 - Check water parameters routinely.
 - Sampling can be used to validate effectiveness of water management.

Resources

- CDC (<https://www.cdc.gov/legionella/index.html>)
- CDC toolkit (<https://www.cdc.gov/legionella/wmp/toolkit/index.html>).
- The ASHRAE industry standard 188-2015 and 12-2000. (<https://www.ashrae.org/>)
- Healthcare Infection Control Practices Advisory Committee (HICPAC), Guidelines for Preventing Health-Care-Associated Pneumonia, 2003 (<https://www.cdc.gov/infectioncontrol/pdf/guidelines/healthcare-associated-pneumonia-H.pdf>)



Questions????

If you have questions or concerns, feel free to contact us at:

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