



## Department of Health

JAMES V. McDONALD, MD, MPH  
Commissioner



NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE  
Michelle Morse, MD, MPH  
Acting Health Commissioner

**DATE:** July 1, 2025

**TO:** Healthcare Providers, Healthcare Facilities, Clinical Laboratories, and Local Health Departments (LHDs)

**FROM:** New York State Department of Health  
New York City Department of Health and Mental Hygiene (NYC Health Department)

### HEALTH ADVISORY: LEGIONELLOSIS

*For All Clinical Staff in Internal Medicine, Pulmonary and Intensive Care Medicine, Geriatrics, Primary Care, Infectious Diseases, Emergency Medicine, Family Medicine, Laboratory Medicine, and Infection Control/Epidemiology*

#### Summary

- New York State (NYS) has a high burden of legionellosis, with increased incidence during the summer and early fall.
- Clinicians should remain alert for possible cases of legionellosis at this time of year and conduct appropriate diagnostic testing.
  - Legionnaires' disease cannot be clinically distinguished from other causes of pneumonia.
  - Test for *Legionella* by respiratory culture, polymerase chain reaction (PCR), and urine antigen, especially if testing for other respiratory infections has been negative; refer to the diagnostic testing table [below](#) for additional information.
  - Confirmed *Legionella* isolates from any clinical [specimen](#) should be submitted to the NYS Department of Health (DOH) Wadsworth Center Laboratories or the New York City (NYC) Public Health Laboratory (PHL) for serogrouping and whole genome sequencing (WGS).
- Report legionellosis cases promptly to the [local health department](#) (LHD) where the patient resides.
  - Cases in NYC residents should be reported to the NYC Health Department by calling the Provider Access Line at 866.692.3641.
  - If you are unable to reach the LHD for cases outside of NYC, contact the NYS Department of Health Bureau of Communicable Disease Control (BCDC) at 518.473.4439 or by email at [epiLegionella@health.ny.gov](mailto:epiLegionella@health.ny.gov) during business hours or 866.881.2809 during evenings, weekends, and holidays.

#### Definitions

Legionellosis is a bacterial disease caused by *Legionella* species. There are multiple types of legionellosis:

- **Legionnaires' disease:** characterized by illness with pneumonia diagnosed radiographically or clinically
- **Pontiac fever:** a milder, self-limiting illness without pneumonia
- **Extrapulmonary legionellosis:** rare; characterized by extrapulmonary infection

## **Epidemiology**

Legionellosis occurs year-round, with increased incidence during the summer and early fall.

Incidence of legionellosis in NYS:

- In 2024, 21 community-acquired and 46 facility-related clusters or outbreaks were investigated in NYS, including NYC.
- The statewide incidence rate, including NYC, was 4.1 cases per 100,000 population, with the highest burden in residents of counties located in Western and Capital District New York.

The national [case-fatality rate](#) is estimated to be 10% for community-acquired and 25% for healthcare-acquired Legionnaires' disease.

## **Legionnaires' Disease**

**Clinical Presentation:** Clinical suspicion of Legionnaires' disease should be elevated for individuals presenting with pneumonia, especially if they report recent travel, recent inpatient care at a healthcare facility, recent exposure to hot tubs, or if the patient lives in a congregate setting such as a skilled nursing facility. People at higher risk for Legionnaires' disease include persons aged 50 years or older; current or former smokers; and persons with chronic lung disease, immunocompromising conditions, systemic malignancy, or comorbid conditions such as diabetes or renal/hepatic failure.

**Testing:** Respiratory tract specimens for *Legionella* culture should ideally be obtained before initiation of antibiotics, although antibiotics should not be delayed in order to obtain a specimen. Cultures can be ordered after the initiation of antibiotics. See the Diagnostic Testing table below for more details.

**Treatment:** Empiric treatment of community-acquired pneumonia in hospitalized patients should include adequate coverage for *Legionella* with either a macrolide (e.g., azithromycin) or a respiratory fluoroquinolone (e.g., levofloxacin). The CDC provides detailed information on [clinical guidance](#) and treatment regimens for Legionella infections.

## **Public Health Reporting**

- Report cases promptly to the [LHD](#) where the patient resides.
  - Cases residing in NYC should be reported to the NYC Health Department by calling the Provider Access Line at 866.692.3641 during business hours or 212.764.7667 evenings, weekends, and holidays.
  - If you are unable to reach the LHD for cases residing outside of NYC, contact the NYS Department of Health BCDC at 518.473.4439 during business hours or 866.881.2809 during evenings, weekends, and holidays.
- Laboratories should send all *Legionella* isolates to the appropriate PHL for serotyping and WGS as outlined in the NYS Laboratory [Reporting of Communicable Diseases](#).
  - Cases in residents of NYC: send isolates to the NYC PHL using PHL [eOrder](#). Select *Legionella* serotyping and send isolates to 455 1<sup>st</sup> Avenue, New York, NY 10016.
  - Cases in residents outside of NYC: send isolates to the NYS Wadsworth Center [Bacteriology Laboratory](#).

Questions regarding clinical or epidemiological information should be directed to your LHD or the NYS Department of Health BCDC at 518.473.4439 or [epiLegionella@health.ny.gov](mailto:epiLegionella@health.ny.gov). For questions pertaining to NYC residents, call the NYC Health Department Provider Access Line at 866.692.3641.

## **Diagnostic Testing**

Testing for Legionnaires' disease guides clinical treatment and assists LHDs and NYS with detecting outbreaks and linking cases to potential environmental sources.

<b><u>Test</u></b>	<b><u>Specimen Type</u></b>	<b><u>Advantages</u></b>	<b><u>Challenges</u></b>
Culture (gold standard)	<ul style="list-style-type: none"><li>• Lower respiratory secretions (sputum)</li><li>• Tissue</li></ul>	<ul style="list-style-type: none"><li>• Provides confirmatory lab evidence of Legionnaires' disease</li><li>• Detects ALL species and serogroups</li><li>• Whole genome sequencing (WGS) can be conducted and used to compare clinical and environmental isolates to identify a potential source</li></ul>	<ul style="list-style-type: none"><li>• Clinicians must specifically request the specimen be cultured for <i>Legionella</i> (not a general respiratory bacterial culture) as specialized media (buffered charcoal yeast extract [BCYE] agar) is required</li><li>• To ensure culture viability, pure colony isolates should be streaked on sealed BYCE agar plates or slants and transported at room temperature</li><li>• Cultures should not be frozen</li></ul>
Polymerase chain reaction (PCR)	<ul style="list-style-type: none"><li>• Lower respiratory secretions (sputum)</li><li>• Tissue</li></ul>	<ul style="list-style-type: none"><li>• Provides confirmatory lab evidence of Legionnaires' disease</li><li>• Detects <i>L. pneumophila</i> serogroup 1 as well as other species and serogroups</li></ul>	<ul style="list-style-type: none"><li>• WGS cannot be performed on PCR tests; a culture should be obtained perform WGS for comparison to environmental isolates to identify potential source of infection in outbreaks</li></ul>
Urine antigen testing (UAT)	<ul style="list-style-type: none"><li>• Urine</li></ul>	<ul style="list-style-type: none"><li>• Provides confirmatory lab evidence of Legionnaires' disease</li><li>• ONLY reliably detects <i>L. pneumophila</i> serogroup 1</li></ul>	<ul style="list-style-type: none"><li>• Cannot identify or rule out infection with other <i>Legionella</i> species/ serogroups</li><li>• Cannot be used for WGS</li><li>• Cannot be used to identify potential environmental source of infection in outbreaks</li></ul>
Serology	<ul style="list-style-type: none"><li>• Blood</li></ul>	<ul style="list-style-type: none"><li>• Can only diagnose acute Legionnaires' disease infection retrospectively</li></ul>	<ul style="list-style-type: none"><li>• A single antibody titer is NOT diagnostic for legionellosis</li><li>• Requires collection of two specimens, 3–4 weeks apart, to detect a fourfold rise in antibody titer to a level &gt;1:128</li><li>• Cannot be used to identify potential environmental source of infection in outbreaks</li></ul>

## **References**

- Local Health Department Contact Information: [https://www.health.ny.gov/contact/contact\\_information/](https://www.health.ny.gov/contact/contact_information/)
- CDC Clinical Guidance for *Legionella* Infections: <https://www.cdc.gov/legionella/hcp/clinical-guidance/index.html>
- Case Fatality Rate: <https://www.cdc.gov/mmwr/volumes/66/wr/mm6622e1.htm>
- NYS Guidance for Reporting Legionnaires' Disease: <https://www.health.ny.gov/professionals/diseases/reporting/communicable/>
- NYS Laboratory Reporting of Communicable Diseases: [https://www.wadsworth.org/sites/default/files/WebDoc/CDRG%20NYState%202020\\_101920%202.pdf](https://www.wadsworth.org/sites/default/files/WebDoc/CDRG%20NYState%202020_101920%202.pdf)
- Wadsworth Laboratory Specimen Submission Guidelines: <https://www.wadsworth.org/programs/id/bacteriology/submission-guidelines>
- NYC PHL eOrder: [https://www1.nyc.gov/account/login.htm?spName=a816-phleorder.nyc.gov-PHLeOrder&samlContext=us1\\_8176884\\_dabf54ad-9076-4cf8-a44b-c6ddfdb45bdf](https://www1.nyc.gov/account/login.htm?spName=a816-phleorder.nyc.gov-PHLeOrder&samlContext=us1_8176884_dabf54ad-9076-4cf8-a44b-c6ddfdb45bdf)