



NEW YORK CITY DEPARTMENT OF  
HEALTH AND MENTAL HYGIENE  
Dave A. Chokshi, MD  
Commissioner

## 2021 Health ALERT #25 Investigation of a Legionnaires' Disease Cluster in Central Harlem

*Please Share this Alert with All Primary Care, Family Medicine, Emergency Medicine, Internal Medicine, Infectious Disease, Pulmonary Disease, Intensive Care, Laboratory Medicine and Infection Control Staff in Your Facility*

- **The Health Department is investigating a cluster of 9 patients who tested positive for *Legionella* and reside in Central Harlem (ZIP codes 10037 and 10039)**
  - **Providers should have a high index of suspicion for *Legionella* when evaluating patients with respiratory illness or sepsis who live in, work in, or have visited this area of Manhattan from early August 2021 onwards**
- **Patients with suspected or confirmed pneumonia should be tested for *Legionella* infection using both urine antigen and sputum/respiratory culture.**
  - **When ordering a sputum culture, alert your laboratory to test for *Legionella* since special microbiologic techniques are required to isolate this organism.**
  - **The Health Department requires culture data to help identify potential environmental sources of exposure to *Legionella*; urine antigen testing alone does not provide the data needed to make these links.**
  - **Culture yield is greatest when sputum/respiratory samples are taken early in the patient's course, but do not delay initiating antimicrobial therapy to obtain cultures.**
  - **Use a history of geographic exposure to central Harlem area (particularly ZIP codes 10037 and 10039) in the 14 days before developing symptoms to trigger simultaneous urine antigen and culture testing, rather than waiting to send cultures in response to a positive urine antigen test.**
- **Empiric treatment of pneumonia should include a macrolide or fluoroquinolone that has activity against *Legionella*.**
- **Report all confirmed or suspect cases of Legionnaires' disease to the New York City Health Department**

August 18, 2021

Dear Colleagues,

The New York City (NYC) Health Department is investigating a cluster of 9 patients who tested positive for *Legionella* and reside in central Harlem (10037 and 10039 ZIP code areas). Diagnosis dates for these patients ranged from 8/9/21 to 8/17/21. Seven patients are  $\geq 50$  years of age. There have been no deaths associated with this cluster. There are no common sources of exposure among these patients, other than living in the same area of the city. The Department is currently testing all cooling towers in the affected area to determine the potential source of exposure.

The Health Department is requesting that providers test for *Legionella* when evaluating adults with symptoms of pneumonia using BOTH urine antigen and sputum/respiratory culture, especially if they report residing, working or visiting (for at least 8 hours) central Harlem since August 1, 2021. Testing for *Legionella* guides clinical treatment of the patient and assists the Health Department in detecting and characterizing outbreaks. Testing for and empirically treating *Legionella* is especially critical for persons at high risk for Legionnaires' disease, including persons  $\geq 50$  years old, cigarette smokers, and persons with chronic lung disease, or persons with immunocompromising conditions. The estimated case-fatality rate is 9% for community-acquired Legionnaires' disease. Presenting symptoms of Legionnaires' disease are similar to those of COVID-19, and providers should consider further evaluation of patients with respiratory symptoms who have a negative test for COVID-19. Use recommended treatment options for pneumonia that include macrolides and fluoroquinolones with activity against *Legionella* species (See published guidelines at [Legionnaires Disease and the Updated IDSA Guidelines for Community-Acquired Pneumonia | Clinical Infectious Diseases | Oxford Academic \(oup.com\)](#)). Do not withhold empiric therapy for *Legionella* while awaiting *Legionella*-specific testing.

*Although urine antigen is a fast and convenient way to diagnose Legionella infection, culture data are needed by the Health Department to allow us to link cases to potential environmental sources of exposure to Legionella. Please order both tests if the patient has a geographic exposure from living, working, or traveling through the central Harlem area in the 14 days before developing symptoms. If a patient has a positive urine antigen test, please order a sputum/respiratory culture for Legionella as soon as possible to maximize yield while the patient is being treated with antibiotics. Do not hold antibiotics to wait for culture results.*

### **Diagnostic Testing**

Culture of the organism from respiratory secretions or tissues is the gold standard for diagnosis. Culture has the added benefit of enabling comparison of clinical isolates to environmental isolates to identify a potential source of infection in the setting of a potential outbreak. Please note the following regarding the diagnosis of legionellosis:

- *Legionella* culture requires specialized media (buffered charcoal yeast extract agar {BCYE}). The best specimens for culturing *Legionella* are sputum or bronchoalveolar lavage fluid. Please specifically order a sputum culture for *Legionella* (not a general respiratory bacterial culture) and alert your microbiology laboratory that legionellosis is in your differential diagnosis.
- Urine antigen testing (UAT) is widely available as a rapid method for detecting *Legionella*. UAT is most sensitive for detecting *L. pneumophila* serogroup 1. Although *L. pneumophila* serogroup 1 accounts for most *Legionella* cases, a negative UAT does not rule-out infection due to other *Legionella* species and serotypes. Furthermore, UAT does not allow for molecular comparison of organisms to help determine the environmental source. Providers should also obtain respiratory specimens for culture to diagnose legionellosis in patients with suspected or UAT-confirmed cases.
- Serologic diagnosis is less useful for diagnosing acute infection and requires paired sera, collected 3–4 weeks apart to detect a fourfold rise in antibody titer to a level  $> 1:128$ . A single antibody titer is not diagnostic for legionellosis; convalescent serum must be obtained for comparison.

## **Recommendations for Providers**

To help the NYC Health Department identify cases of Legionnaires' disease:

- Maintain a high index of suspicion for legionellosis among all adults with pneumonia, whether community-acquired or nosocomial.
- Specifically request both respiratory culture and UAT for *Legionella* detection.
- Report all suspect and confirmed cases to the Health Department's Provider Access Line at 1-866-692-3641.
- Send all *Legionella* isolates to the NYC Health Department Public Health Laboratory (PHL) for serotyping and molecular testing. Submit the necessary laboratory requisition online through PHL's eOrder (an internet-based application developed by PHL).

### **PHL eOrder Electronic Requisition Submission Process:**

PHL test request form can be completed via eOrder. Once you have confirmed an existing facility account or created a new facility\*, please follow the steps below:

- Once logged in select 'Order New Test'.
- On the Test Information page, search for and select "**Legionella Serotyping**".
- Enter all the required fields in red, select 'Add Test' and press continue.
- Enter patient information and press continue.
- Review all entered information on the next page and submit the order.
- Once the test request form is completed, print the system-generated PDF and place it in the specimen bag.

\*To create a new facility please refer to:

<https://www1.nyc.gov/assets/doh/downloads/pdf/labs/phl-eorder-new-facility-flowchart.pdf>

For additional information on test ordering please refer to:

<https://www1.nyc.gov/assets/doh/downloads/pdf/labs/phl-eorder-test-ordering-flowchart.pdf>


Send specimens to:

Public Health Laboratory  
455 First Ave, Room 136  
New York, NY 10016

For laboratory-related questions, please call the PHL Microbiology Section at [212-447-6783](tel:212-447-6783).

Additional information on Legionnaires' disease is available at the Centers for Disease Control and Prevention's Legionellosis Resource Site: [cdc.gov/legionella](http://cdc.gov/legionella). As always, we appreciate your on-going collaboration to help us address infectious disease concerns in the city.

Sincerely,



Darrin O. Taylor, MPA  
Acting Deputy Commissioner  
Division of Disease Control