



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
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Commissioner

2013 ALERT # 19

Increase in Reported Legionellosis Cases

Please Share this Alert with All Emergency Medicine, Family Medicine, Primary Care, Critical Care, HIV Specialists, Infectious Disease, and Internal Medicine Staff in Your Facility

- The Health Department is investigating an increase in Legionnaires' Disease cases.
- To date, no common site or source of exposure has been identified, and the increase appears to be region-wide in the mid-Atlantic and Northeastern United States.
- When evaluating patients with pneumonia, providers should suspect Legionnaires' disease and perform urine antigen testing and sputum culture for *Legionella*.
- Report cases promptly to the Health Department, and send positive isolates to the Public Health Laboratory for confirmation, speciation, and molecular typing.

July 3, 2013

Dear Providers,

The Health Department has detected an increase in legionellosis reports from across the city. The disease is treatable with appropriate antibiotics, but providers should be aware of the increase so they can test and treat patients appropriately.

Legionellosis cases occur routinely. The total number of legionellosis cases reported to the Health Department recently is small, but it does reflect an increase from similar periods in previous years. In June 2013, 67 reports (66 from urine, 1 from sputum) were submitted, compared with a range from 9 to 43 cases during the previous 5 years. Investigation of cases is ongoing to determine if there is a common source, but none has been identified to date. Of note, other jurisdictions in the Northeastern and mid-Atlantic United States are also reporting an increase in legionellosis reports for June 2013, suggesting that the increase may be more due to the recent warm, wet, humid weather than local issues.

Legionnaire's disease presents as pneumonia. The disease is caused by the bacteria *Legionella*, an ubiquitous aquatic organism that thrives in warm environments (32°- 45°C). People do not become infected by drinking water, so it is safe to drink tap water. People become infected when they breathe in a mist or vapor containing the bacteria (i.e. from breathing in droplets sprayed from a hot tub that has not been properly cleaned and disinfected). Person-to-person transmission does not occur. While outbreaks of legionellosis have been linked to common sources such as hot tubs and cooling towers, most (80-90%) cases are sporadic and a specific water source is rarely identified. Ten years ago, in 2003, the Mid-Atlantic region experienced a sharp rise in Legionnaires' disease coinciding with a period of record-breaking rainfall.[1] No evidence of a common source or outbreak was identified and wet weather and humidity were associated with the increase.[2]

Symptoms of legionellosis develop 2-10 days after exposure. Legionellosis mainly affects persons with underlying risk factors. High risk groups include the elderly, cigarette smokers, persons with chronic lung or immunocompromising disease, and persons receiving immunosuppressive drugs. Macrolide antibiotics (e.g., azithromycin) and quinolones are effective antimicrobial agents for legionellosis.

In June, the rate of legionellosis in New York City was 0.8 cases per 100,000 persons. Rates were highest among males (1.2 per 100,000) and people over 60 years old (2.2 per 100,000). Rates per 100,000 were elevated throughout the five boroughs: 1.2 per 100,000 in Manhattan and the Bronx, and 0.6 per 100,000 in Staten Island, Queens and Brooklyn. Rates may continue to rise in all boroughs as testing increases.

Diagnosis of Legionnaire's Disease

Legionnaire's disease can be laboratory confirmed by urine antigen testing, serology, and sputum culture. The most commonly used approach is urine antigen testing, which rapidly detects the most common *Legionella* subtype, *L. pneumophila* serogroup 1. A negative urine antigen test, however, does not rule out infection from other *Legionella* species and serotypes.

If Legionnaire's disease is suspected, providers should attempt to obtain cultures from sputum or bronchoalveolar lavage fluid from any patient for whom they suspect legionellosis. Culture of the organism from respiratory secretions confirms the diagnosis and allows DOHMH to perform molecular typing. With molecular typing data, DOHMH can compare patient and environmental isolates to identify common sources of exposure. *Legionella* culture requires special media (Buffered Charcoal Yeast Extract). Therefore, you should alert your lab that you are considering legionellosis in your patient so that appropriate media are used. Serologic diagnosis requires paired sera, obtained 3-4 weeks apart to detect a fourfold rise in antibody titer to a level > 1:128. For diagnosis, convalescent serology must be obtained.

Additional information can be found at the Centers for Disease Control and Prevention's Legionellosis Resource Site at <http://www.cdc.gov/legionella/index.html>

What Providers Should Do

- Consider legionellosis in patients with community-acquired pneumonia.
- Obtain respiratory or tissue cultures **AND** utilize rapid urine antigen testing on all suspect cases.
- Report all cases to the Health Department. To report a suspect or confirmed case, consult on prophylaxis, or obtain additional information, call 866-692-3641. Providers can also report via fax (347-396-2632) or internet. Instructions and forms are available at <http://www.nyc.gov/html/doh/html/hcp/hcp-urf.shtml>.
- Send all positive *Legionella* isolates from respiratory or tissue specimens to the DOHMH Public Health Laboratory for confirmation and speciation. Send attention to:
General Microbiology
NYC Public Health Laboratory
455 1st Ave, Rm 136
New York, NY 10016
(212) 447-6783

As always, we appreciate your assistance in helping us identify and respond to communicable disease concerns in New York City.

Sincerely,
Marcelle Layton, MD

Marcelle Layton, MD
Assistant Commissioner
Bureau of Communicable Disease

[1] *Epidemiology and Infection* (2007); Increased Rainfall is Associated with Increased Risk for Legionellosis, 135:811-817.

[2] *Journal of Infectious Disease* (2005); It's Not the Heat, It's the Humidity: Wet Weather Increases Legionellosis Risk in the Greater Philadelphia Metropolitan Area, 192:2066-2073