



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Thomas Farley, M.D., M.P.H.
Commissioner

2011 Advisory #23: Increase in Legionnaires' Disease in the Bronx

- The Health Department has noted an increase in cases of Legionnaires' Disease, particularly among Bronx residents.
- Providers should have a high level of suspicion for Legionnaires' disease when evaluating patients presenting with signs of pneumonia.
 - Culturing *Legionella* from sputum or bronchoalveolar lavage specimens is the preferred method of diagnosis.
 - Urinary antigen testing is also recommended.
- Report cases promptly to the NYC Department of Health and Mental Hygiene and submit all *Legionella* isolates to the Public Health Laboratory.

Please Distribute to All Clinical Staff in Internal Medicine, Pediatrics, Geriatrics, Primary Care, Infectious Diseases, Emergency Medicine, Family Medicine, Laboratory Medicine and Infection Control

October 5, 2011

Dear Colleagues,

Since August 2011, the NYC Department of Health and Mental Hygiene (DOHMH) has noted an increase of cases of Legionnaires' disease, particularly in the Bronx. Preliminary data indicate that rates of disease for August and September will be higher in the Bronx than in NYC overall (2.2 cases/100,000 Bronx residents vs 1.0 cases/100,000 NYC residents). During August and September of this year we have seen 86 cases in all of NYC. For comparison, from 2006-2010 we saw between 52-73 cases (median 56) during August and September in NYC.

The highest rates within the Bronx are in Northeast Bronx (8 cases, 4.2 cases /100,000 residents) and Crotona-Tremont (8 cases, 3.7 cases/100,000 residents). DOHMH is currently investigating whether or not there are any common exposures. Higher rates of legionellosis in the Bronx have been noted in the past, and no common sources have been identified. We remind practitioners, especially those treating patients from the Bronx, to test for *Legionella* when evaluating patients with pneumonia.

Legionnaires' disease is caused by the bacteria *Legionella* and is characterized by pneumonia, occurring 2-14 days after exposure to an environmental source. *Legionella* is a ubiquitous aquatic organism that thrives in warm environments (32°- 45°C). Exposure occurs through inhalation of contaminated aerosols from devices such as cooling towers, whirlpool spas, showers, and faucets, and through aspiration of contaminated water. **Person-to-person transmission has not been demonstrated.** Groups at high risk include the elderly, cigarette smokers, persons with chronic lung or immunocompromising disease, and persons receiving immunosuppressive drugs. The case-fatality rate ranges from 5-30%. Patients should be treated with either a macrolide or quinolone that covers *Legionella*.

Diagnostic Testing: We recommend that all patients have respiratory specimens cultured for *Legionella*. Please note the following regarding the diagnosis of legionellosis:

- **Culture:** Culture of *Legionella* from respiratory secretions or tissues is the gold standard diagnostic test. Culture also allows DOHMH to use molecular typing to compare isolates from patients with those from the environment. *Legionella* culture requires special media (Buffered Charcoal Yeast Extract). **Please alert your microbiology laboratory that you are considering legionellosis in your patient.** The best specimens for culturing *Legionella* are sputum or bronchoalveolar lavage fluid.
- **Serology:** Serologic diagnosis requires paired sera, 3-4 weeks apart to detect a fourfold rise in antibody titer to a level > 1:128. A single antibody titer of any level is not diagnostic of legionellosis. For diagnosis, convalescent serology must be obtained.
- **Urine antigen testing:** Urine antigen testing is widely available as a rapid method for detecting *L. pneumophila* serogroup 1, which accounts for most *Legionella* cases. A negative urine antigen test, however, does not rule out infection from other *Legionella* species and serotypes. Depending on clinical suspicion, physicians should consider collecting respiratory specimens for culture or blood specimens for serology.

Additional information can be found at the Centers for Disease and Control and Prevention's Legionellosis Resource Site at <http://www.cdc.gov/legionella/index.htm>. We also recommend the following reference: Fields BS, Benson RF, Besser RE Legionella and Legionnaires' disease: 25 years of Investigation. *Clin Microbiol Rev.* 2002 Jul;15(3):506-26.

In summary, DOHMH requests your assistance with the following:

- Maintain a high index of suspicion for legionellosis among all patients with pneumonia, and specifically request both culture and urine antigen testing for legionellosis when indicated.
- Report all cases to DOHMH. Report suspect or confirmed cases electronically via NYC DOHMH's Reporting Central Home Page (you must have a NYC MED account to access Reporting Central at <http://nyc.gov/health/nycmed>; instructions for setting up a NYC MED account are available at <http://www.nyc.gov/html/doh/html/hcp/hcp-urf1.shtml>). You may also report using the "Universal Reporting Form" September 2009 version (downloadable form at <http://www.nyc.gov/html/doh/html/hcp/hcp-urf.shtml>); fax to the Bureau of Communicable Disease at 347-396-2632. To report by telephone or to obtain additional information, please contact the Bureau of Communicable Disease at:
During business hours: 347-396-2600
After hours, contact the Poison Control Center: 212-764-7667 or 1-800-222-1222
- Obtain respiratory or tissue cultures **AND** utilize rapid urine antigen testing on all suspect cases. Please **send all positive cultures** to the NYCDOHMH Public Health Laboratory for serotyping and molecular testing. Send attention to:

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

If you have any laboratory related questions, please call Jennifer Rakeman, Associate Director, Microbiology or Lillian Lee, Chief of Microbiology, at 212-447-6783.

As always we appreciate our ongoing collaboration with healthcare providers in New York City to help us detect and control emerging infectious diseases.

Sincerely,

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