



Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

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

FROM: New York State Department of Health (NYSDOH)
Bureau of Communicable Disease Control (BCDC)

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

SUMMARY

- While legionellosis is diagnosed year-round, the incidence of illness usually increases during the summer and early fall. Investigations into potential time-space clusters of cases above baseline incidence are currently ongoing in Niagara and Onondaga Counties. Additionally, a cluster of legionellosis cases in New York City's Lenox Hill area is being investigated by the New York City Department of Health and Mental Hygiene.
- Providers should consider Legionnaires' Disease when evaluating patients presenting with signs of pneumonia and maintain a high index of suspicion for *Legionella* when evaluating patients with respiratory illness who live in, work in, or recently visited Niagara County, Onondaga County or Lenox Hill.
 - **In patients with suspected pneumonia, test for *Legionella* infection.** Legionnaires' Disease cannot be distinguished from other causes of pneumonia on clinical or radiologic grounds. Testing should be ordered on both culture of sputum or other respiratory secretions and urine antigen.
 - When ordering culture, specify the intent to identify *Legionella*, as laboratory procedures for identifying this organism are different from standard respiratory specimen cultures.
- Report cases promptly to the local health department where the patient resides. Public health staff may request that *Legionella* isolates be sent to the Department's Wadsworth Center for serogrouping and molecular typing.
 - LHD contact information is available at: https://www.health.ny.gov/contact/contact_information/.
 - If you are unable to reach the LHD where the patient resides, please contact the NYSDOH Bureau of Communicable Disease Control at 518-473-4439 during business hours or 866-881-2809 evenings, weekends, and holidays.

INFORMATION FOR HEALTHCARE PROVIDERS, FACILITIES AND CLINICAL LABORATORIES

Testing for *Legionella* guides clinical treatment of the patient and assists LHDs and NYSDOH with detecting outbreaks and linking cases to potential environmental sources of *Legionella pneumophila*. This is especially critical for persons at risk for Legionnaires' disease, including but not limited to persons > 50 years old, current or former cigarette smokers, and persons with chronic lung disease, or persons with immunocompromising conditions. The case-fatality rate is estimated to be 9% for community-acquired Legionnaires' disease. Empiric treatment of community-acquired pneumonia should include adequate coverage for *Legionella* with either a macrolide (e.g., azithromycin) or a fluoroquinolone (e.g., levofloxacin). Full detail on treatment regimens is available from the Infectious Diseases Society of America and the American Thoracic Society at: http://cid.oxfordjournals.org/content/44/Supplement_2/S27.full.pdf+html. Respiratory tract specimens should ideally be obtained before initiation of antibiotics, although antibiotics should not be delayed to obtain a specimen.

Diagnostic Testing

Culture of the organism from respiratory secretions or tissues is the gold standard for diagnosis. Culture has the added benefit of being able to compare clinical isolate(s) 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:

- The best specimens for culturing *Legionella* are sputum or bronchoalveolar lavage fluid. *Legionella* culture requires specialized media (buffered charcoal yeast extract agar {BCYE}). Please specifically request that the clinical specimen be cultured for *Legionella* (not a general respiratory bacterial culture), and alert your microbiology laboratory that legionellosis is in the 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.
- 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.
- Additional information for clinicians on Legionnaires' disease is available at the Centers for Disease and Control and Prevention's Legionellosis Resource Site: <https://www.cdc.gov/legionella/index.html>

INFORMATION FOR LOCAL HEALTH DEPARTMENTS:

NYSDOH is reminding LHDs of the following actions that should be taken locally:

- Regularly provide education to providers and healthcare facilities about legionellosis. Local educational efforts should emphasize the messages described above and should be repeated when appropriate (e.g. local increase in cases or during cluster or outbreak investigations).

- Interview cases as soon as possible, but within 3 business days of the report. If cases are potentially part of a cluster or outbreak, attempts to interview should occur sooner.
 - LHD staff should utilize the revised supplemental form, which is available at <https://commerce.health.state.ny.us/hpn/ctrldocs/cdess/CdessHelp/BlankForms/Legionellosis.pdf>
 - Once the interview is completed, CDESS should be promptly updated with the newly obtained information and a hard copy of the completed supplemental form should also be faxed to BCDC at (518) 474-7148. Forms should be faxed regardless of whether the interview is from a sporadic case or one associated with a cluster or outbreak.
 - Epidemiology staff should compare this information with that obtained from other reported cases and share appropriate, deidentified information with environmental health staff.
 - Environmental health staff should review the epidemiological information collected to identify possible points of exposure to *Legionella* for these cases. Based upon the environmental health risks identified, sample collection should be considered. Staff in the NYSDOH's Bureau of Water Supply Protection and the regional offices are available to assist by providing maps of the impacted areas for coordination of an environmental health response.
 - Environmental health staff should assess the cooling tower registry for compliance of cooling towers that are in close proximity of cases and work to either secure compliance or collect samples from noncompliant towers.
 - When an unusual increase in cases is identified, either by public health staff or via the Department's automated geo-temporal analysis, LHDs should use the Department's specially trained interview team to re-interview existing cases and directly interview any new cases during the investigation. Requests for interview assistance should be made by emailing the regional epidemiologist.
- Provide health education to the public about legionellosis, including but not limited to the following messages.
 - Certain host factors will place persons at greater risk for acquiring Legionnaires' disease. Persons with severe immunosuppression from organ transplantation or chronic underlying illness, such as hematologic malignancy or end-stage renal disease, are at the greatest risk for acquiring, and dying from, Legionnaires' disease.
 - Persons with diabetes mellitus, chronic lung disease, non-hematologic malignancy, HIV, persons over the age of 50, and persons with a current or past history of smoking are at moderately increased risk.
- Advise the public and providers when there is an unusual increase in cases and/or when a cluster or outbreak is being investigated. All efforts should be coordinated with BCDC and Department's Public Affairs Group, which can be reached at (518) 474-7354.

Questions regarding clinical or epidemiological information should be directed to your LHD or the NYSDOH Bureau of Communicable Disease Control at (518) 473-4439 and bcdc@health.ny.gov.

Questions regarding environmental issues should be directed to your LHD or the NYSDOH Bureau of Water Supply Protection (518) 402-7650 and hcf.legionella@health.ny.gov.