



Testimony

of

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before the

**New York City Council Committee on Health**

on

**Cooling Tower Systems**

October 23, 2018  
City Hall – Committee Room  
New York, NY

Good morning Chairs Levine and Cornegy, and members of the Health and Housing and Buildings Committees. I am Dr. Demetre Daskalakis, Deputy Commissioner for Disease Control at the New York City Department of Health and Mental Hygiene. I am joined by my colleague Corinne Schiff, Deputy Commissioner for Environmental Health. On behalf of Acting Commissioner Oxiris Barbot, thank you for the opportunity to testify on cooling tower systems and *Legionella* pneumonia – also known as Legionnaires’ disease – in New York City.

Bacteria, including *Legionella* bacteria, are found naturally in the environment. Although many species of *Legionella* exist in the environment, just a few are known causes of human disease. These bacteria are acquired by exposures to water mist in nature or by human-made water systems. When inhaled into the lungs, the bacteria may cause *Legionella* pneumonia. *Legionella* pneumonia is not contagious, so it is not passed from person-to-person, nor can it be acquired from drinking water. Most healthy people do not become ill if exposed to *Legionella*, and *Legionella* pneumonia is treatable with common, well-tolerated and often oral antibiotics. *Legionella* pneumonia is most commonly acquired by individuals with risk factors that may make them generally more susceptible to pneumonias, such as having chronic lung disease or a weakened immune system, or being over 50 years of age or a smoker.

Although the vast majority of cases of *Legionella* pneumonia are sporadic and related to unidentified natural or human-made environmental exposures, cooling towers are recognized as one of the water systems with high potential for dispersion of *Legionella*-containing water mist. To review, cooling towers are water systems found generally, though not exclusively, on the top of buildings, and are responsible for regulating the temperature of cooling systems such as central air conditioning or refrigeration. These towers release water mist or vapor into the environment in order to regulate the temperatures of building cooling systems. Although the vast majority of cooling towers perform this function without threat to human health, these towers may provide *Legionella* bacteria with an ideal environment for growth if not correctly maintained. With proper maintenance, including the use of chemicals, or biocides, that sterilize the water, these conditions may be disrupted, and bacterial growth can be prevented.

In 2015, after an outbreak of *Legionella* pneumonia in the South Bronx, the Administration and Council worked together to enact Local Law 77, which for the first time in the United States, sets standards for cooling tower system maintenance for building owners, and enables the City to better reduce and contain *Legionella* in cooling tower systems. In 2016, the Department created a new office to oversee building owners’ compliance with the local law, promulgated agency regulations setting out detailed implementation requirements and expanded the Department’s laboratory and disease surveillance activities and cooling tower system regulatory oversight capacity. We hired a highly skilled team, including specialized water ecologists who perform annual inspections of registered cooling tower systems. New York City now has the most rigorous cooling tower oversight in North America and is seen as a national model for this work.

The Department’s water ecologists annually inspect all registered cooling tower systems. These highly trained staff inspect all cooling tower equipment, assess the chemical treatment of the water in the cooling tower systems, and review maintenance and operational records, including water quality testing records for *Legionella* bacteria. These inspections are conducted to determine compliance with Local Law 77, and summonses are issued to building owners who fail to comply.

To improve compliance, the Department also provides training, technical assistance and resources for building owners, cooling tower operators and water treatment vendors, including guidance on how to safely bring the systems on and offline. Since 2016, the Department has performed over 11,000 inspections covering over 6,000 registered, active cooling towers.

In addition to cooling tower system oversight, we have a comprehensive disease surveillance system in place to identify and monitor disease. The surveillance system identifies possible cases of *Legionella* pneumonia in New York City, and it combines a review of mandated reportable disease results with syndromic surveillance, which is information such as patient symptoms and use of medications that signal the possible presence of disease. We receive mandated reports on approximately 100 different diseases of public health concern, including *Legionella*, and daily reports of syndromic data from emergency departments, urgent care, EMS, pharmacies and school nurses. Day in and day out, our expert staff work diligently to analyze data from these sources to identify any signals that may indicate a potential increase, cluster or outbreak. *Legionella* pneumonia is one of the diseases for which we get automated lab reporting, meaning we are notified of every positive test for *Legionella* in New York City, and we investigate each case through interviews with patients or their families and a review of their medical records.

On a daily basis, advanced computer algorithms are used to rapidly identify patterns of *Legionella* that may suggest a possible cluster of infections to be investigated for a common source of exposure to the bacteria. This system takes into account time, space and expected numbers of *Legionella* pneumonia to determine the possibility of a “community cluster.” Community clusters are most suggestive of a single source, such as that resulting from a mist generated by a contaminated cooling tower system. Cooling towers are the most commonly identified source of *Legionella* pneumonia in New York City.

When our disease surveillance indicates an unusual cluster of *Legionella* pneumonia, the Department quickly mobilizes to investigate that geographic area. While in the field for investigation efforts and on a routine basis, our experts are looking for cooling towers that may not be registered by observing surrounding rooftops and analyzing online satellite imagery. During an investigation, water ecologists are dispatched to collect samples of water from the cooling tower, review cooling tower system records to assess compliance with maintenance requirements and perform compliance activities. If a water sample tests positive for *Legionella* bacteria, the Commissioner issues an order to require timely disinfection, cleaning or other appropriate corrective action. We typically investigate several community clusters each year and are currently investigating a community cluster in Lower Washington Heights.

The two prongs of our approach – cooling tower system oversight and disease surveillance and response – are complementary to each other and enable us to quickly identify potential community clusters and work with property owners to ensure that issues are addressed immediately. We also encourage New Yorkers to seek medical attention for flu-like or pneumonia symptoms, such as fever, cough or difficulty breathing. In the event of a cluster, the Department actively conducts outreach in the affected area, via media alerts, community meetings and on-the-ground outreach to help ensure awareness and vigilance by community members, and we send health alerts to medical providers citywide.

Before turning to the legislation, I want to reiterate some key messages for the public: New York City's drinking water supply is safe, as are home air conditioning units; walking into air conditioned environments is also safe. This Council has been instrumental in helping the Department disseminate this messaging to New Yorkers, and I want to thank you for your commitment.

Regarding the bills being considered today, Introduction 1164 proposes mandated reporting on cooling tower oversight and *Legionella* pneumonia cases. The Administration fully supports the intent of this bill and is committed to transparency for New Yorkers. The Department issues an annual report on cooling tower system inspections and is happy to expand upon that report. The Department is also creating a public-facing website to provide information about building-specific inspection results that we think meets the intent of this bill. The website should go live in early 2019.

Introduction 1158 requires the Department to provide education and information to building owners and operators about cooling tower maintenance requirements. We support this bill. The Department currently hosts a regular Cooling Tower Academy and community-based education sessions, and we have an online self-assessment tool that has been very helpful for building owners and compliance improvement.

Introduction 1149 requires the Department of Buildings to digitize the certification process and send an electronic reminder to building owners and operators in advance of certification deadlines, and it requires owners to send inspection results directly to the Health Department. The Administration supports the intent of updating this process to be more user-friendly and streamlined. We have concerns about using a pre-populated certification form, as this form provides important operational information that may change year to year, such as components of the Maintenance Program and Plan and staffing, and we want the owner or operator to take the time to complete this form accurately to help improve compliance with the law. We look forward to speaking with Council further regarding this proposal.

Finally, Introduction 1166 would require the Department to conduct an assessment of potential determinants of *Legionella* pneumonia in the City and report on these findings to the Council. We support this bill and welcome the opportunity to share findings from the Department's existing and robust surveillance system.

Thank you for the opportunity to testify on this issue today. We are happy to take questions.