

BBC Sign in News Los Angeles Times

NEWS WEDNESDAY SEP 16, 2015 MOST POPULAR GOP DEBATE LOCAL ENTERTAINMENT SPORTS EDUCATION

US & Canada **South Bronx Legionnaires' disease outbreak**


Legionnaires' Disease Outbreak in the South Bronx – July-August 2015

Presented by Keren Landman, MD on behalf of the NYC Department of Health and Mental Hygiene, the NYC Public Health Laboratory, and the NYS Laboratory at Wadsworth

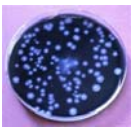
Legionnaires' outbreak widens to 10th floor in New York

About *Legionella pneumophila*

- Ubiquitous in environment, thrives in biofilms in man-made water systems
 - Transmitted by aerosolization of water in these systems
- Causes pneumonia in adults >65 or with comorbidities/smoking histories
 - Incubation period 2-14 days
- Difficult to culture
 - Culture is gold standard for environmental detection
 - NYS lab also uses PCR → rapid decision-making
- Usually clinically diagnosed by urine antigen
 - However, **no isolate → no clinical-environmental link**



Legionella with amoeba electron micrograph Barry Fields, CDC



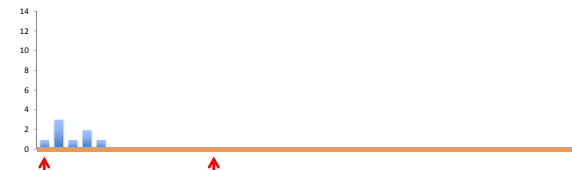
Legionella pneumophila on BCYE agar <http://bacterioweb.univ-fcomte.fr>

Cunha et al. 2015.

Legionnaires' disease surveillance at NYC DOHMH

- Case-reporting by clinical laboratories and health care providers
- Daily algorithms:
 - Cases with same Building Identification Number (BIN) over past year
 - Unusual disease clustering in space and time (SaTScan)

First signal

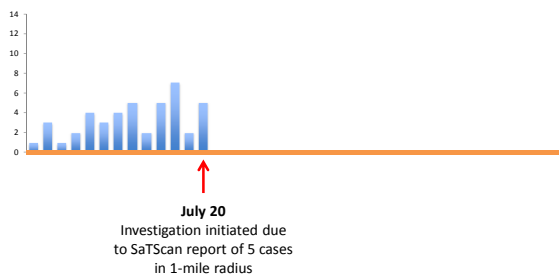


July 8
First case in cluster*

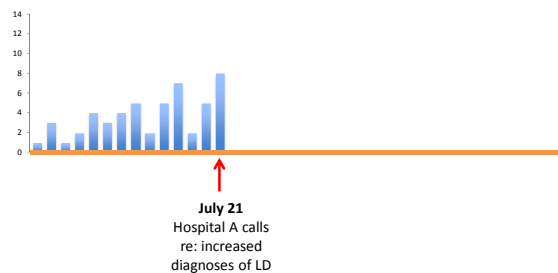
July 20
Investigation initiated due to SaTScan report of 8 cases in 1-mile radius

*Cases are presented by onset date.

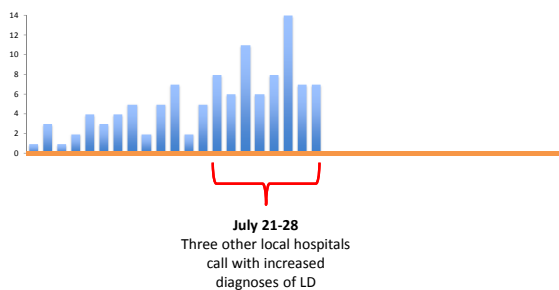
First signal



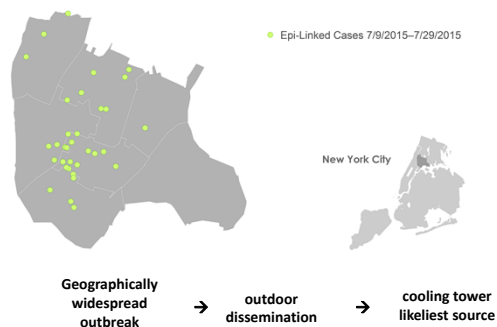
Contact from hospital infection control staff

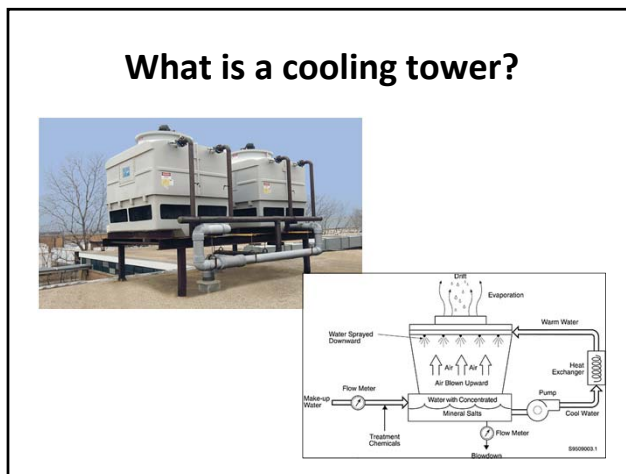
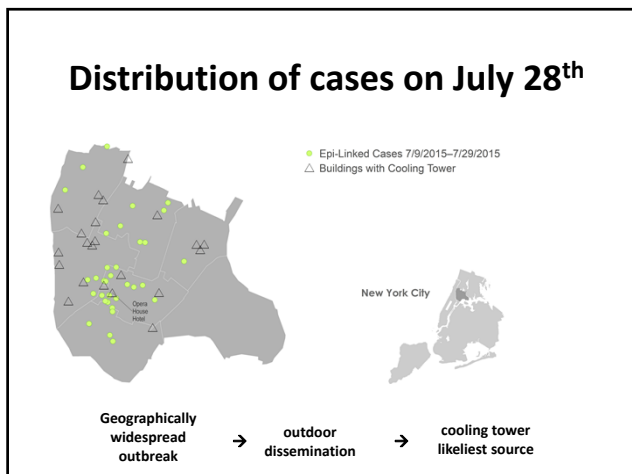


Additional hospitals' staff reach out



Distribution of cases on July 28th





Definitions

- **Outbreak zone**
 - 7 contiguous South Bronx ZIP codes in initial SaTScan cluster
- **Case definition**
 - Clinical/radiologic diagnosis of **pneumonia**
 - +
 - laboratory test** +ve for *Legionella* after July 9th, 2015
 - +
 - residence** in outbreak zone

Case/Source Finding

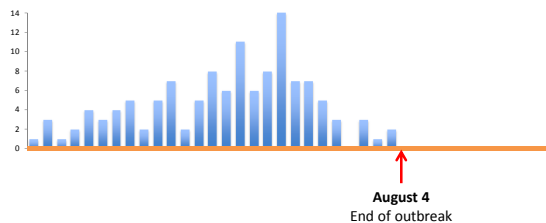
Human case-finding

- Press conferences
- Town halls
- Community outreach to organizations that serve high risk populations
- Telephone calls, in-person visits to Bronx Hospitals
- City-wide conference calls with hospitals
- Collaboration with Chief Medical Examiner
- Epi-X
- Health Advisory Network notifications (HANs)

Environmental source-finding

- No registry of all city CTs
 - Partial lists/canvassing from city/state agencies
- Old-fashioned epi
 - Notified of OoJ case with hotel stay at center of outbreak zone

End of outbreak



Patient Characteristics (n=133)

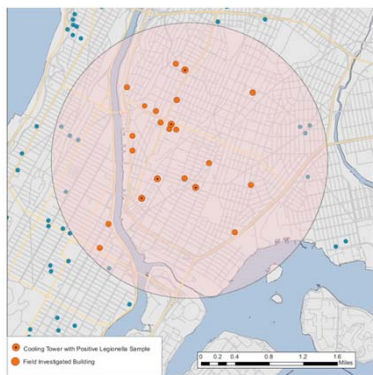
- 16 (12%) died
- Median age 55 (range, 29-90 years)
- 54% Black
- 87% with chronic health condition: diabetes, alcoholism, asthma, COPD
- 17% HIV-infected

Cooling tower testing

- 42 towers tested
- Testing algorithm:



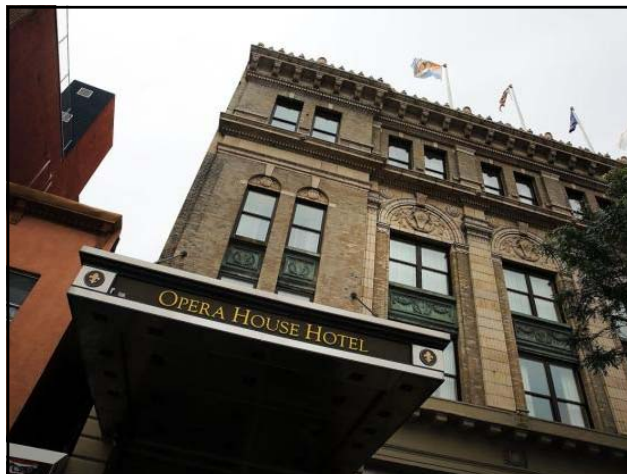
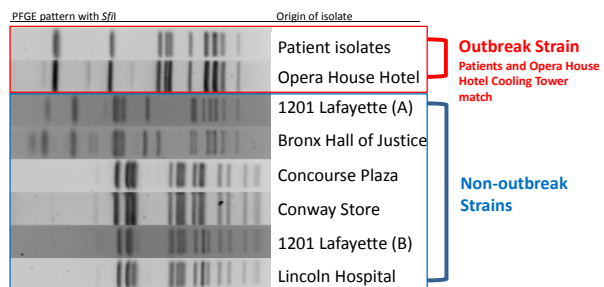
- Culture
- Immediate remediation



Cooling tower testing



Linking clinical and CT isolates by PFGE [list all origins or anonymize?]



Policy change

- No major U.S. city regulated CTs before this outbreak
- August 11th, 2015: New York City Council hearing on proposed CT legislation
 - Proposed law enforces registration and regular maintenance, testing, and remediation of CTs
- Legislation passed and signed by NYC mayor on August 19th, less than 1 month after the outbreak was declared

Acknowledgments

- NYC DOHMH Bureau of Communicable Diseases
- NYC Public Health Laboratory
- NYS Laboratory at Wadsworth

