



Flint Area Community Health and Environment Partnership

Flint Water Interagency Coordinating Committee Meeting

July 8, 2016





What is FACHEP?

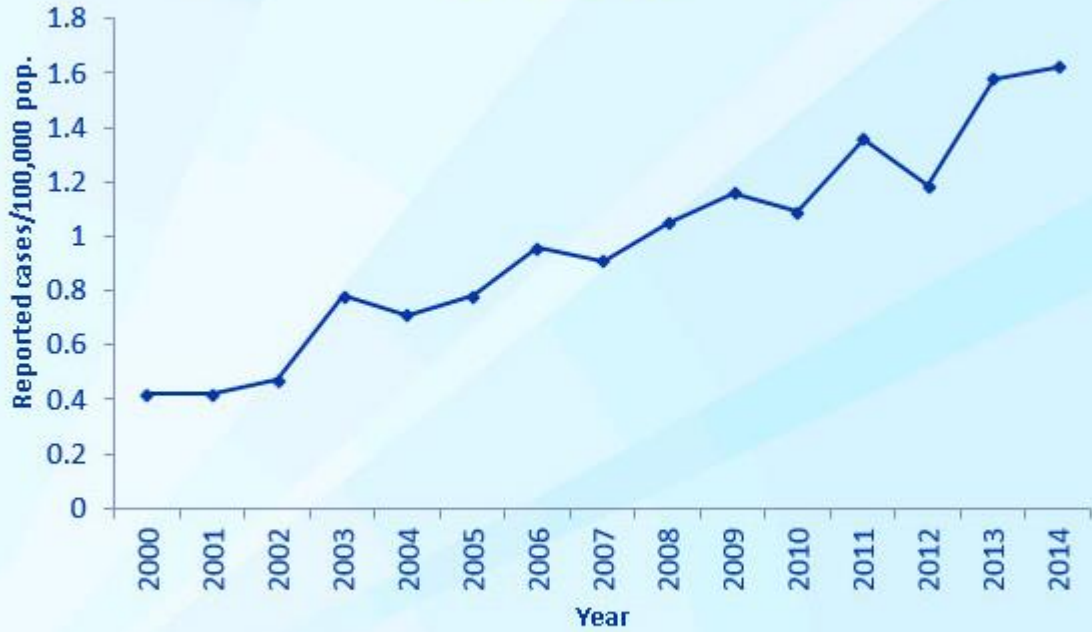
In January 2016, we were requested to conduct an independent evaluation the possible connection between changes in water quality in Flint and the incidence of Legionnaires' disease

Phase I (March 1-May 31) – Identify knowledge gaps and develop plan to improve health of Flint residents related to Legionnaires' disease

Phase II (June 1-December 31, 2017) – Implement plan to address gaps in understanding and reduce risk of Legionellosis in Flint

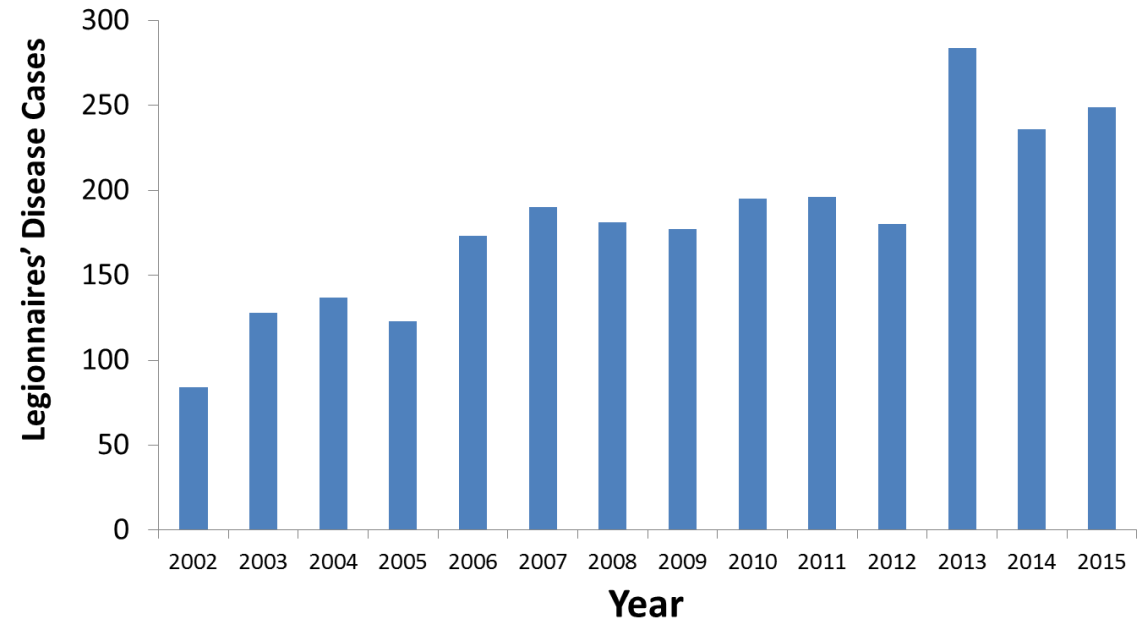


Reported cases of legionellosis 2000–2014



National Notifiable Diseases Surveillance System

Reported cases of legionellosis in Michigan



Phase I Objectives

- Engage key community partners
- Identify deficiencies that may inhibit (1) rapid identification of Legionella risk and (2) associated risk mitigation
- Facilitate interagency communications
- Assemble ***independent***, multidisciplinary, multi-institutional team of experts to assist Flint residents and city, county and state in addressing cases of Legionella



Multi-Disciplinary Team

Shawn McElmurry, PhD, PE; **Yongli Zhang**, PhD., Civil & Environmental Engineering, Wayne State University (WSU)

Paul Kilgore, MD, MPH, Pharmacy Practice, WSU.

Matt Seeger, PhD, Communications, WSU.

Mark Zervos, MD, **Mary Perri**, Division Infectious Diseases, Henry Ford Health System.

Laura Sullivan, PhD, Mechanical Engineering, Kettering

Ben Pauli, PhD., Liberal Studies, Kettering.

Joanne Sobeck PhD; **Joanne Smith-Darden**, PhD; **Poco Kernsmith**, PhD; **Susan Lebold**, JD, LMSW; **Tam E. Perry**, PhD; School of Social Work, WSU

Jessica Robbins-Ruszkowski, PhD, Institute of Gerontology, Department of Anthropology, WSU

Michele Swanson, PhD, Microbiology and Immunology, University of Michigan (UM)

Nancy Love, PhD, PE, Civil & Environmental Engineering, UM

Rick Sadler, PhD, Family Medicine, Michigan State University (MSU)

David Mushinski, PhD, Economics, Colorado State University (CSU)

Sammy Zahran, PhD, Center for Disaster and Risk Analysis, CSU

Susan Masten, PhD, PE, Civil & Environmental Engineering, MSU



Phase II Objectives

1. Reduce the occurrence of Legionellosis-associated cases, hospitalizations and deaths to levels at or below those seen in years prior to 2014.
2. Define potential sources of Legionella exposure in residential households and high-risk facilities.
3. Develop evidence-based approaches for reducing exposure to *Legionella* among Flint residents.
4. Strengthen existing capacity in infrastructure, institutions and groups of individuals that enhances community resilience in addressing common threats to the health and welfare of community residents.

Phase II Activities

- Coordinated, transparent, and timely communications
- Education and outreach to improve recognition and prevention of Legionellosis
- Monitor for Legionella in households in Flint and comparison areas
- Assist facilities in mitigating the growth of Legionella within water systems
- Connect residents to community resources, social services, and health care
- Develop resources, tools, methods, protocols, and lessons learned

Phase II Enhanced monitoring

Enhanced water quality assessment

- Full water chemistry
 - Anions (chloride, sulfate, etc.)
 - Cations (calcium, iron, etc.)
 - Nutrients (phosphorus, nitrogen)
 - Organic Carbon (total, assimilable, etc.)
 - Free chlorine
 - Others (pH, temperature, etc.)
- Detailed biology
 - Intact cell counts
 - Legionella (culturable and PCR)
 - DNA sequence-based typing and whole-genome sequencing

Rigorous sampling design

- Statistically robust (284 homes in Flint)
- Comparison/control groups
- Internal and external quality control





What's next?

- Implement water sampling plan
- Work closely with public health and community partners to identify possible sources of legionella and reduce any further risk to the community
- Encourage early identification and treatment, particularly for at risk populations:
 - Current and former smoker
 - 50 years or older
 - Chronic lung or respiratory conditions
 - Immune compromised

For more information, go to contact the Genesee County Health Department or visit flint.wayne.edu





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