



# State Hygienic Laboratory

## OUR IMPACT

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## DISEASE CONTROL



### INFECTIOUS DISEASE THREATS BY THE DECADE

**1970s**  
LEGIONELLA

**1980s**  
MRSA  
HIV

**1990s**  
NIPAH VIRUS  
WEST NILE VIRUS

**2000s**  
MONKEYPOX  
SARS

**2010s**  
ANTIBACTERIAL RESISTANCE  
EBOLA

### STEPS IN AN OUTBREAK INVESTIGATION

**DETECT** A POSSIBLE OUTBREAK

**FIND** CASES IN AN OUTBREAK

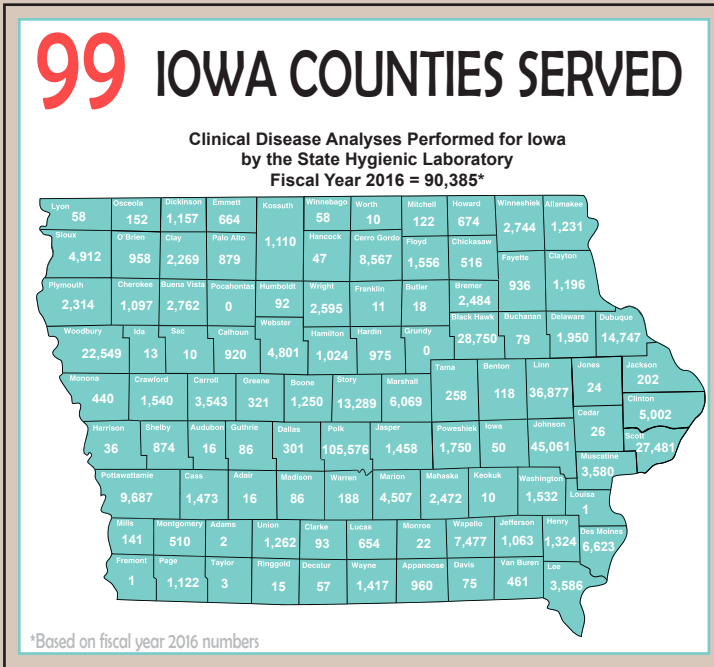
**GENERATE** HYPOTHESES THROUGH INTERVIEWS

**TEST** HYPOTHESES THROUGH ANALYTIC STUDIES AND LABORATORY TESTING

**SOLVE** POINT OF CONTAMINATION AND ORIGINAL SOURCE OF OUTBREAK VEHICLE

**CONTROL** OUTBREAK THROUGH RECALLS, FACILITY IMPROVEMENTS AND INDUSTRY COLLABORATION

**DECIDE** AN OUTBREAK IS OVER



### COMPONENTS OF DISEASE CONTROL



OUTBREAK INVESTIGATION



SURVEILLANCE



24-HOUR RESPONSE



RAPID DIAGNOSTICS



NEW TECHNOLOGIES AND METHODS

# OUR IMPACT - DISEASE CONTROL

## **SURVEILLANCE**

The State Hygienic Laboratory identifies the incidence and location of illnesses that affect population health, and does so in partnership with:

- Iowa Department of Public Health and local health departments
- The Centers for Disease Control and Prevention
- Health care facilities across Iowa
- Laboratory Response Network
- Food Emergency Response Network



## **OUTBREAKS**

The laboratory's Disease Control Division helps limit the spread of illnesses by rapidly identifying pathogens that cause outbreaks.

- Multiple foodborne outbreaks - *Salmonella*, *Listeria*
- Mumps primarily in Iowa's Regent universities
- Noroviruses often in long-term care and child-care facilities



## **SPECIALIZED TESTING**

As Iowa's public health laboratory, the State Hygienic Laboratory maintains expertise and capacity in many areas of specialized testing.

- Environmental Microbiology - food and water testing and foodborne outbreaks
- Microbiology - statewide antimicrobial resistance monitoring, rabies testing, foodborne pathogen testing
- Molecular - influenza surveillance
- Serology - Zika virus screening
- Maternal Screening - identification of genetic dispositions



## **NATIONAL LEADERSHIP**

Our laboratory scientists lead the nation in many areas of public health.

- Organism genotyping (*Mycobacterium*, *Salmonella*, *Shigella*, *E. coli*)
- Detecting *Cryptosporidium* and *Cyclospora*
- Laboratory Response Network (LRN) and Food Emergency Response Network (FERN) responses
- Advanced methods to detect pathogens at the molecular level

