



ELC

A High-Burden State Perspective

**PulseNet/OutbreakNet
Midwest/Central Regional
Meeting 2019**

About Us

- Ohio is the 7th most populous state (11.7 million)
 - 88 counties – 113 local city, county, and combined health jurisdictions
 - 46th in public health funding per person¹
- Decentralized investigations (home-rule)
 - One central state PH laboratory
 - Isolate/specimen submission voluntary
 - Annual request letter & shipping assistance

About Us - Laboratory

- ELC ~10% of overall lab budget
 - >50% of microbiology staff (7.8 FTE's fund 13 staff)
- ELC Projects
 - PulseNet – 1998
 - CaliciNet – 2009
 - FoodCORE – 2010
 - NoroSTAT – 2012
 - WGS Listeria Pilot – 2015
 - CryptoNet – 2017
 - ...and 10 others
- 12 scientists and managers involved in ELC writing;
8 levels of agency review

Isolate Numbers PFGE (WGS)

| | 2015 | 2016 | 2017 | 2018 |
|----------------------|-----------|------------|-------------|-------------|
| Salmonella | 1412 (82) | 1537 (512) | 1335 (1295) | 1338 (1331) |
| STEC | 257 (139) | 249 (181) | 246 (245) | 311 (307) |
| Shigella | 19 (4) | 106 (9) | 121 (20) | 111 (32) |
| Campylobacter | 7 (0) | 10 (6) | 98 (94) | 96 (88) |
| Listeria | 44 (37) | 38 (38) | 21 (21) | 0 (20) |
| TOTAL | 1739 | 1940 | 1821 | 1876 |
| % WGS | 15 | 38 | 92 | 95 |

- 2017-2018 Increased Salmonella WGS to 99%
- Increased Campy and Shigella surveillance

Lab Challenges

- Turn around times for WGS
 - Mol. serotype and MALDI ID currently 1 day
- New equipment
 - Sequence and analyze new organisms
- Bioinformatics (especially non-PulseNet organisms)
- Reagent/Supply costs & purchasing

About Us - Epidemiology

- ELC funding supports a portion of 6 full-time epidemiologists' salaries
- Same ELC projects as the lab with special focus on NoroSTAT and FoodCORE for Epi Staff
- FoodCORE Team of 5 student interviewers
- Coordinate ELC grant application with ODH Lab and ODH Food Safety Program

Reported Cases of Select Foodborne/Enteric Illnesses

| | 2015 | 2016 | 2017 |
|----------------------|-------|-------|-------|
| Salmonella | 1,373 | 1,528 | 1,394 |
| STEC | 265 | 263 | 280 |
| Shigella | 748 | 1,076 | 634 |
| Campylobacter | 1,786 | 1,962 | 2,085 |
| Listeria | 25 | 36 | 28 |

Epidemiology Achievements

- FoodCORE Team conducts interviews for 85% of LHDs; cases with complete exposure data increased from less than 50% to an average of 80%
- NoroSTAT/NORS: 95% of all enteric outbreaks entered with complete preliminary data within a week of report to ODH
- Weekly multi-agency partners call with ODH and ODAg (Epi, Food Safety, and Lab)
- Shipping account and supplies to LHD for specimens

Epidemiology Challenges

- Increase clusters/outbreaks identified using new molecular testing (WGS) at ODH Lab
- Education of LHD staff on new technology
- Additional case load if add routine interviews of Campylobacter and Shigella to FoodCORE
- Specimen collection and submission
- WGS Data analysis/Bioinformatics

Questions?

Eric Brandt, BS

Laboratory Scientist

Ohio Department of Health

(614) 644-4670

eric.brandt@odh.ohio.gov

Scott Nowicki, MPH

Epidemiologist

Ohio Department of Health

(614) 644-7033

scott.nowicki@odh.ohio.gov