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Monday, January 22, 2024

8:30 am – 9:15 am Plenary Sessions:

State of Outbreak Panel

588-702-24 • 0.75 contact hour(s) for this session

- **Matthew Wise**, PhD, Branch Chief, Outbreak Response and Prevention Branch, Centers for Disease Control and Prevention
- **Karen Blickenstaff**, MS, Microbiologist , FDA CORE
- **Carlota Medus,** PhD, Epidemiologist Supervisor, Minnesota Department of Health
- **Lauren Turner,** PhD, Lead Scientist, Virginia Division of Consolidated Laboratory Services

This panel will include a series of presentations to describe the current state of foodborne and enteric outbreak response. The Branch Chief of the Outbreak Response and Prevention Branch (ORPB) at the Centers for Disease Control and Prevention (CDC) will discuss broad outbreak trends over the past few years (outbreak solve rates and size), with supporting data from the National Outbreak Reporting System (NORS). An epidemiologist from ORPB and a laboratory scientist from the Enteric Diseases Laboratory Branch (EDLB) at CDC will discuss reoccurring, emerging, and persisting (REP) strains. Investigation of REP strains provides an opportunity to characterize new sources of enteric disease that can reoccur and periodically cause acute outbreaks; emerge and increase in frequency; or persist and cause illnesses over periods of months or years, despite investigation and prevention efforts. Understanding the source of illnesses that do not present as acute outbreaks will provide an important opportunity to collaborate with regulatory, industry, and academic partners to better understand the ways people become infected with enteric bacteria and may identify novel approaches to prevent illness .Finally, speakers from state and local public health departments will share their own successes and challenges with outbreak response (e.g., patients refusing to be interviewed by public health and new ways or methods of attempting to reach them, as well as patients refusing to share data with public health, including grocery store shopper-card records).

Objectives — At the conclusion of this session the participant will be able to:

- Identify outbreak trends from the National Outbreak Reporting System
- Describe successes and challenges with outbreak response at a state and local level

1:30 pm – 3:15 pm

Capitalizing on Health Equity

588-703-24 • 1.75 contact hour(s) for this session

- **Jennifer Adams**, BS, PulseNet Manager, Association of Public Health Laboratories
- **Lyndsay Bottichio**, DrPH, Associate Director-Surveillanc, information Management, CDC/DFWED
- **Jenafer Forester,** BS, REHS Program Supervisor, California Orange County Environmental Health Lab
- **Julia Latash,** MPH, Research Scientist, New York City Department of Health and Mental Hygiene
- **Mabel Low**, MPH, Health Communications Specialists, Centers for Disease Control and Prevention

This session will explore survey findings that were deployed by CDC DFWED and APHL. Additionally, the audience will hear from peers on health equity topics such as unlicensed food vendors in Orange County, California and New York City's successes and challenges with expanding language access and using interpretation and translation services to promote public health services and investigate outbreaks. Lastly, the Outbreak Response and Prevention Branch (ORPB) at CDC will describe success and challenges with risk communication during outbreaks and tailoring their messaging to reach communities that may be impacted.

Objectives — At the conclusion of this session the participant will be able to:

- Describe important findings from survey data on Health Equity.
- List challenges associated with interpretation and translation services to promote health services and investigate outbreaks.

4:00 pm – 5:15 pm

Capitalizing on New Technology

588-711-24 • 1.25 contact hour(s) for this session

- **Andrew Huang**, PhD, Microbiologist, Culture independent and Metagenomics Subtyping Team, CDC
- **Jo Williams**, PhD, Acting Team Lead, Culture independent and Metagenomics Subtyping Team, CDC
- **Heather Carlton,** PhD, Branch Chief, Enteric Disease Laboratory Branch, CDC
- **Laura Manning,** BA, Disgn Lead, Office of Public Health Data, Surveillance, and Technology, CDC
- **Asma Madad**, MPH, Senior Biologist, CORE Response Team 2, FDA
- **Adam Friedlander**, MS, Policy Analyst, FDA

Laboratory scientists and bioinformaticians from CDC's Enteric Diseases Laboratory Branch (EDLB) will discuss developments in a metagenomics pipeline pilot for solving undetermined outbreaks; updates on highly multiplexed amplicon sequencing (HMAs) for PulseNet surveillance subtyping; and PulseNet 2.0. As part of these presentations, EDLB laboratory scientists will revisit revamped metagenomics work to solve outbreaks of unknown etiology and highlight a new roadmap and opportunities for pilot collaboration with the Undetermined Outbreaks (UnO) project. Finally, the EDLB Branch Chief will cover plans for the retirement of BioNumerics at the end of 2024 and the development and launch of a new bioinformatics and data management infrastructure, PulseNet 2.0. PulseNet 2.0 is being developed in response to changing needs, including the ever-growing volume of WGS data uploaded to BioNumerics and workflows. Next, a CDC speaker will share updates on CDC's data modernization initiative (DMI) and data exchange. Finally, speakers from the U.S. Food and Drug Administration (FDA) will describe the issuance of FDA's Traceability Rule under the Food Modernization Safety Act (FSMA).

Objectives — At the conclusion of this session the participant will be able to:

- Describe how integrating new technologies will impact the current foodborne surveillance efforts
- List challenges associated with integrating new technologies into current workflows.

Tuesday, January 23, 2024

8:30 am – 10:00 am Lab Track Session

AMR & Data Viz

588-704-24 • 1.5 contact hour(s) for this session

- **Jack Marr**, MPH, Epidemiologists, Tennessee Department of Health
- **Arjun Prasad**, PhD, Staff Scientist, NCBI/NLM
- **Molly Steele,** PhD, Epidemiologist, Centers of Disease Control and Prevention

Data visualization can show the frequency of pathogen detection and can compare antimicrobial resistance patterns for analysis by public health epidemiologists. This session will discuss how data visualizations can be used for characterizing antimicrobial resistance patterns, using an interactive, scalable application for visualizing networks of highly dimensional genomic and epidemiological data, making this data sharable and actionable for public health partners.

Objectives — At the conclusion of this session the participant will be able to:

- Recognize potential use of publicly accessible data for visualization and analysis by public health epidemiologists.
- Compare frequency of pathogen detection in retail meats by meat type, year, and jurisdiction and compare antimicrobial resistance patterns in clinical cases and retail meat in Tennessee.
- Describe emerging threats to antibiotic efficacy in Tennessee and the United States for Salmonella.

10:30 am – 12:00 pm

CIDT and Metagenomics

588-705-24 • 1.5 contact hour(s) for this session

- **Gary Vestal**, PhD candidate, Research Fellow, Enteric Disease Laboratory Branch/Centers for Disease Control and Prevention
- **Stephanie Abromsaitis**, PhD, Chief-Foodborne & Waterborne Disease Section, California Department of Public Health-Microbial Disease Laboratory
- **Andrew Huang,** PhD, Bioinformatician, Centers of Disease Control and Prevention
- **A. Jo Williams-Newkirk,** PhD, Lead-Culture-Independent and Metagenomic Subtying Team (acting), Centers of Disease Control and Prevention/ELDB

Culture-independent diagnostic testing (CIDT) has become a valuable tool in clinical settings for obtaining results more rapidly and cost effectively than traditional culture-based sample workflows. However, with this advancement, public health labs have faced the challenge of assessing molecular characteristics of pathogens that has historically required a bacterial isolate. This session focuses on the impact of CIDT and pathogen isolation on public health lab surveillance of foodborne illness and how public health partners have collaborated to identify new technologies and developments in foodborne surveillance subtyping.

Objectives — At the conclusion of this session the participant will be able to:

- Recognize the challenges of complex infection analysis, and how they apply to enteric disease surveillance.
- Explain why enteroinvasive Escherichia coli might be present in a specimen that was positive for Shigella by a molecular culture-independent diagnostic test.
- Describe the use of metagenomics to solve outbreaks of unknown etiology.
- Define the need for culture-independent workflows in PulseNet.

1:30 pm – 3:15 pm

Advances in Public Health Through Foodborne Cluster Detection

588-706-24 • 1.75 contact hour(s) for this session

- **Eric Vaughn**, MPH, NGS Supervisor, DC DFS Public Health Lab
- **Elizabeth Burgess**, MS, Microbiologist, Michigan Department of Health and Human Services Bureau of Laboratories
- **Vanessa Chavez,** MPH, Epidemiologist/ Lab-Epi Connector and AR Coordinator, Kentucky Department of Public Health Division of Laboratory Services
- **Mary Katherine Crews,** MS, Public Health Specialist, USDA-FSIS
- **Kelley Hise**, MPH, Team Lead, PulseNet Response and Outbreak Management Team, Centers for Disease Control and Prevention
- **Kevin Bernard**, MS, Supervisor, New York City Public Health Laboratory

In this session, presenters will describe advances in foodborne illness cluster investigation through various laboratory, surveillance, database, and data dashboard enhancements. The session will highlight strategies that laboratories are using to modernize operations and tools for foodborne pathogen public health surveillance.

Objectives — At the conclusion of this session the participant will be able to:

- Identify ways to utilize a LIMS system for traceability in the laboratory.
- Describe an alternative way to improve data management, communication, and monitoring of clusters.
- Explain the value that FSIS places on early detection of potential outbreaks.
- Describe the morphology and phenotypes of Shigella spp, analyze sequencing data and understand the workflow of WGS.

4:00 pm – 5:30 pm

PulseNet: Now and Looking to the Future

588-707-24 • 1.5 contact hour for this session

- **Christine Lee**, PhD, Biologist, Centers for Disease Control and Prevention
- **Steven Stroika,** BS, PulseNet WGS Technical Lead
- **Lavin Joseph**, MS, Database Coordinator, Centers for Disease Control and Prevention
- **Molly Leeper**, MPH, *E.*coli/ *Shigella* database coordinator and *Salmonella sp* database analyst, Centers for Disease Control and Prevention

This session will start with a talk about laboratory preparedness for case surveillance of invasive *Cronobacter sakazakii* infections. The next talk will discuss the development of new whole genome sequencing databases such as *Vibrio*, *Cronobacter* and *C. botulinum*. Next, there will be a talk about the updates to PulseNet allele codes and enhancements for communication and cluster detection. The session will end with a discussion and demonstration of PulseNet 2.0 development.

Objectives — At the conclusion of this session the participant will be able to:

- Describe at least 3 laboratory methods for identifying Cronobacter species that can be used for verification or validation in public health laboratories.
- Define the new allele code system being used in the PulseNet national databases and how it can be used for communication and tracking. Explain the value that FSIS places on early detection of potential outbreaks.
- Explain how wgMLST and cgMLST can be used for Cronobacter sakazakii surveillan

Wednesday, January 24, 2024

8:30 am – 9:15 am Lab Track Session

Laboratory Late Breaker

588-708-24 • 0.75 contact hour(s) for this session

- **Ghassan M. Mater**, PhD, Professor & Chairperson, American University of Beirut
- **Karim Morey**, MS, M (ASCP), Lead Microbiologist III, Oregon State Public Health Laboratory
- **Kristin Jacob,** PhD, Next Generation Sequencing Specialist, Michigan Department of Health and Human Services

This session will explore genomic surveillance and molecular test used to identify foodborne outbreaks. Both domestically and internationally, officials are working on detecting clusters and foodborne threats. Audience will hear presenters experience with new/existing tools and instrumentation used by public health agencies and ways to improve current surveillance programs on a global scale.

Objectives — At the conclusion of this session the participant will be able to:

- Explain the investigators have conducted a phylogenetic analysis on Vibrio cholera O1 isolates, causative agents of cholera in Lebanon.
- Identify common pitfalls experienced when implementing Illumina NextSeq 2000 in PulseNet sequencing workflow.
- Evaluate the options to potentially replace specific conventional bacterial identification methods with WGS methods.

9:45 am – 11:00 am Plenary Sessions:

Capitalizing on Partnerships and Prevention

588-709-24 • 1.25 contact hour(s) for this session

- **Natalie Dyenson**, MPH, Chief Regulatory and Food Safety Officer, International Fresh Produce Association
- **Naomi Drexler**, DrPH, MPH, Epidemiologist, Centers for Disease Control and Prevention
- **Amy Saupe**, MPH, Senior Epidemiologist, Minnesota Department of Health
- **Kerri Brown**, MSPH, Outbreak Epidemiologist, Colorado Department of Public Health and Environment
- **Siobhan Dodds**, MPH, Epidemiologist 2, Tennessee Department of Health
- **Danny Ripley**, MPH, Environmental Health Specialist, Tennessee Department of Health
- **Dave Boxrud**, MS, Associate Service Fellow, Centers for Disease Control and Prevention

This session features talks on capitalizing on partnerships and prevention. International Fresh Produce Association will discuss how industry partners use, share, and interpret whole genome sequencing information to produce safer food and guide food safety interventions. Additionally, DFWED provide a high-level summary of the latest outbreak data in correctional settings followed by experiences from epidemiologists and environmental health specialists from state health departments. Lastly, CDC's Enteric Disease Laboratory Branch (EDLB) will describe their ongoing partnership with the Association of Public Health Laboratories and bioMérieux, a biotechnology company, to address false positive *Cryptosporidium* results from the BioFire instrument.

Objectives — At the conclusion of this session the participant will be able to:

- Identify at least one way that foodborne and enteric disease outbreak investigations can lead to improvements in food safety.
- Explain at least one example of how public health professionals are advancing health

equity on enteric disease across all levels of government.

11:00 am – 12:15 pm

Capitalizing on Communication

588-710-24 • 1.25 contact hour(s) for this session

- **Ketie Weston**, BSE, Program Manager, Partnership for Food Safety Education
- **Betsy Mitchell**, PhD, MA, Director, Division of Communication Science and Services, Centers for Disease Control and Prevention
- **Charlie Arnot**, BA, CEO, Center for Food Integrity, Founder and CEO of Look East

In this session the audience will hear from the executive director of the Partnership for Food Safety Education on what their agency is hearing from consumers and food safety educators about trust in the government, food safety, and the US food system. Additionally, the Director of CDC's Division of Communication Sciences and Services will describe CDC's tips and technologies for identifying and combatting misinformation and disinformation. They will describe a new resource with the audience, CDC's Playbook for Action. Lastly, the CEO of Center for Food Integrity will wrap things up with a talk on trust and truth in a "post-truth world," encouraging the audience that connecting on shared values is more important than simply being transparent with our data.

Objectives — At the conclusion of this session the participant will be able to:

- Describe at least one example of how laboratory scientists, epidemiologists, environmental health specialists, and health communicators collaborate in outbreak investigations.
- Explain communication efforts used between Public Health partners to advance the field.