

Meeting of the Board of Scientific Counselors Infectious Diseases (BSC ID)
Centers for Disease Control and Prevention (CDC)
Virtual Meeting Minutes
November 30, 2023

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Meeting of the Board of Scientific Counselors Infectious Diseases

On November 30, 2023, the Centers for Disease Control and Prevention's (CDC's) Board of Scientific Counselors Infectious Diseases (BSC ID) held a virtual public meeting to discuss recent outbreaks and disease surveillance strategies and to discuss a brief report from one of the Board's workgroups: the Food Safety Modernization Act Surveillance Working Group. The Board also voted on the agency's proposal to establish a workgroup on Wastewater Surveillance.

Welcome, Introduction, and Roll Call

BSC ID Chair, Dr. James LeDuc, Adjunct Professor in the Department of Microbiology and Immunology, University of Texas Medical Branch, called the meeting to order and conducted the roll call.

Board members were then asked to self-declare whether or not they have any conflicts of interest (COIs).

The following potential COI were reported by BSC ID members:

- Tina Tan is the President-Elect for the Infectious Disease Society of America (IDSA) Board of Directors
- Virginia Caine is the President-Elect for the National Medical Association
- Lauren Meyers is the Principal Investigator on a CDC Center for Forecasting and Analytics project
- Susan Philip – Department receives CDC Funding
- Christine Markham – Receives CDC, NIH, and IHS funding
- Erica Shenoy – Receives CDC and ASPR funding and is the Society for Healthcare Epidemiology of America Public Policy Committee Chair

The following additions to the BSC ID membership were announced:

- New liaison representatives:
 - Christine Markham (CDC/HRSA Advisory Committee on HIV, Viral Hepatitis, and STD Prevention and Treatment)
 - Erica Shenoy (Healthcare Infection Control Practices Advisory Committee)
- Sarah Wiley was announced as the BSC ID Designated Federal Officer (DFO)

Brief Agency Update

Dr. Debra Houry, CDC Deputy Director for Program and Science and Chief Medical Officer

CDC values the scientific expertise and invaluable feedback from the Board. The agency has seen many different concurrent and significant infectious disease threats such as COVID, flu, polio, and malaria and has also achieved scientific breakthroughs, powerful detection and diagnostic innovations.

CDC's Data Modernization Initiative is taking critical steps for data to flow more freely and easily between hospitals and other provider electronic health record systems. An example is that before the COVID pandemic less than 200 healthcare facilities were able to send electronic case reports to public health and now over 28,000 healthcare facilities can send automated electronic reports. All state jurisdictions can now receive these reports, not only for COVID, but also for other reportable conditions.

Agency Priorities

1. Rapidly identifying and responding to health threats, including work in the fall/winter respiratory season.
2. Addressing and getting upstream of the mental health and overdose crises.
3. Supporting young families.

An example of these priorities is reflected by the work of the National Center of Emerging and Zoonotic Infectious Diseases (NCEZID) and the Global Health Center (GHC) in collaboration with state and local public health officials to respond to the first cases of locally acquired malaria in the U.S. in 20 years.

The priorities help to deal with future and epidemic threats, and they also provide opportunities for the BSC's expertise to help address these threats.

Advanced diagnostic and detection capabilities that are increasingly automated improve our ability to signal a threat. CDC is exploring methods to look at threats through AI and machine learning that can help process massive amounts of data for greater insights, and the agency must prioritize the most important opportunities.

Seventy-five percent of funding currently goes to state, tribal, local, and territorial partners so they can respond to threats and improve infrastructure. As a national security asset, CDC needs the right investments and authorities to continue to identify and respond to threats quickly.

CDC guidelines and recommendations need to be grounded in both scientific evidence and operational reality. The work of the BSC continues to be critical to address the director's priorities for improvements in public health and infrastructure for the long-term. Building a strong and diverse public health workforce, modernizing public health data systems, and building up the nation's first epidemic forecasting center gets CDC's science out faster. CDC values the BSC's feedback.

DISCUSSION:

BSC member comments:

- The BSC had not convened during the pandemic. What is the role of BSC in terms of pandemic response? There was not a published after-action report that addresses the mitigation, isolation, quarantine, implementation of vaccination, and guidance to state and local elected officials regarding business and school closings in the future.
 - Dr. Houry appreciated the point, will follow up with the Office of Readiness and Response for any relevant documents, and noted that reviews were conducted throughout the response.
 - Note that the DFO later clarified that the Board had convened during the pandemic.
- The news has highlighted the challenges that CDC faces in regard to restricted funding lines and CDC's inability to move money in cases of emergency. Is this being resolved?
 - Dr. Houry noted that the agency has over 150 individual lines, which can make it difficult to be nimble and flexible. An infectious disease response reserve was created to allow the ability to have some flexibility during public health emergencies. However, it is a focused reserve.

- Regarding vaccine hesitancy among adults, can a Vaccines for Adults program be established for adults without the financial means to get vaccines?
 - Dr. Houry noted that CDC understands that there is a vaccine hesitancy, and there is a need to get essential vaccines to adults. Dr. Houry recognized the importance of the Vaccines for Adults program that has been proposed. CDC is currently looking at updated flu, COVID, and RSV vaccines and is designing campaigns for them. CDC has limited funding for this type of work, and these activities will likely be affected by recessions. We know that people listen to their doctors and that not enough physicians are recommending COVID vaccine. We have had about 400 meetings with different physician groups. CDC cannot be the only messenger for vaccines because these messages must also come from physicians. We need to increase our work on this with our partners.

BSC ID Updates

Sarah Wiley, Designated Federal Officer, and Senior Advisor, National Center for Emerging and Zoonotic Infectious Diseases, CDC

The BSC met in late 2020 and twice in 2022. Due to organizational changes the management of the BSC has moved to NCEZID. The Board maintains its broad purpose of providing advice across CDC's infectious disease programs and will work with all of the centers on areas that would benefit from the Board's strategic input.

Changes to CDC's structure are reflected in the BSC's updated charter, which took effect earlier this month. Several members have left the Board due to either competing priorities or the end of their service. CDC requested nominations for new members and has submitted a large nominations package that is pending approval. April 29-30, 2024, are the proposed dates for the next virtual meeting. The Board plans to meet in person towards the end of next calendar year.

The Board currently has 3 work groups: the Food Safety Modernization Act Surveillance Working Group, which has a planned discussion today; the Infectious Diseases Laboratory Work Group, which is undergoing a charge renewal and will likely assess the progress of our Advanced Molecular Detection activities; and the Acute Flaccid Myelitis (AFM) Task Force, which will continue to monitor strategies related to AFM clinical management and research.

Today's meeting will include discussion about a potential new work group that would provide input to the board on wastewater surveillance.

Ms. Wiley introduced Victoria Ramirez as the Committee Management Specialist who works closely with the DFO to manage the BSC ID.

Presentation and Discussion on Proposed Workgroup on Wastewater Surveillance

Dr. Amy Kirby, National Wastewater Surveillance System Lead, National Center for Emerging Zoonotic Infectious Diseases, CDC

- **Background:** Wastewater surveillance involves sampling raw, unfiltered sewage using a molecular test to measure how much of certain pathogens are in contributing community water systems. These data are used to determine trends. In September 2020, the National

Wastewater Surveillance System (NWSS) was formed to respond to the COVID-19 outbreak and track its trends. NWSS has rapidly grown and now covers 1500 sampling sites across 50 states, 3 territories, and 6 tribal communities, representing 144 million Americans (40% of US population). NWSS sites provide samples twice weekly that are tested by a network of 114 labs (public health, commercial, and university labs). The collected data flows into the NWSS data system and is shared with CDC centers, health departments, and publicly on the dashboard. Four CDC Centers of Excellence lead research and develop methods to advance wastewater surveillance.

- **Wastewater Surveillance Dashboard:** NWSS recently launched a new public dashboard to visualize SARS-CoV-2 wastewater data at national, state, and county levels. The new “Wastewater Viral Activity Level” metric displays trends in standard deviations from each site’s baseline to enable comparisons. The dashboard also shows variant tracking over time and across geographic areas based on wastewater sequencing. The goal is to drive innovation into wastewater surveillance capabilities for other pathogens and use cases.
- **Expanding Wastewater Surveillance beyond COVID:** NWSS was established as a flexible platform to monitor many pathogens, not just for SARS-CoV-2. NWSS can also be used for pandemic preparedness and emergency response. CDC is implementing new criteria for evaluating potential new wastewater targets for NWSS that include: 1) likelihood of Informing public health action; 2) detectable in wastewater; 3) available, adaptable assays, 4) number, temporal, and geographic distribution of cases; 5) Community support.
- **Proposal to the BSC ID:** CDC proposed establishing a wastewater surveillance workgroup to provide observations and findings to BSC ID regarding CDC’s efforts in implementation of wastewater surveillance nationally through NWSS. The workgroup would provide guidance on selecting priority pathogens and sampling approaches; best practices for implanting and managing in jurisdictions; and ethics, data integration, and resource limitations.

Wastewater Surveillance Discussion:

BSC member comments:

- Expressed excitement for the programs and interest in supporting the wastewater surveillance workgroup. The member commented on having a difficult time getting positive controls and that having a centralized and shared resources across collection sites is critical. They also commented on the lack of focus in the midwestern United States.
 - Dr. Kirby replied that NWSS is working on an open-source centralized network for sites to utilize and hopes to roll out it out in the beginning of 2024. She acknowledged a lack of wastewater sites in the midwestern United States and that she would appreciate ideas on how to rectify that.
- Noted interest in helping guide the program and that as teams develop better data sources, one of the challenges is translating the data and integrating it with other data sources.
 - Dr. Kirby replied that CDC is working on this internally. There are complications as there continue to be more pathogens with different clinical surveillance systems. CDC is open to ideas on how to present it externally on the CDC website, improved communications around wastewater surveillance, and translation into action for the public and health providers.
- Applauded CDC on the progress of the program. Increased community support may help bring on additional sites in areas that are currently underrepresented. Wastewater

surveillance can lead to improved health equity. Has CDC considered including agricultural sites as sampling locations?

- Dr. Kirby replied that health equity is a focus with NWSS. It can be difficult to get data from areas that are not on a wastewater system. NWSS is working to focus on both urban and rural areas.
- Regarding the new NWSS website, could local-level wastewater data guide public health action, how was the COVID baseline established, can the system be used for other pathogens, and what are the limitations of the data?
 - Dr. Kirby commented that there is very preliminary data that wastewater data may influence behavior change. Limitations are described on the website but the team will make this information more prominent.
- Wastewater surveillance ethics intersects with health equity and considerations for public communication.

BSC Action: The BSC unanimously voted to establish a BSC Wastewater Surveillance Workgroup.

Food Safety Modernization Act Surveillance Working Group (FSMA SWG) Annual Report

Dr. Virginia Caine, FSMA SWG Chair and Director and Chief Medical Officer of the Marion County Department of Public Health

The goal of the FSMA SWG is to provide advice and recommendations regarding the improvement of foodborne illness surveillance to the HHS Secretary (through the Board of Scientific Counselors Infectious Diseases) in these areas related to foodborne illness surveillance:

- Governmental coordination and integration
- Evaluating and improving surveillance systems
- External stakeholder collaboration and communication

FY 2023 Annual Report

- The FSMA SWG is charged with providing the “[HHS] Secretary, through at least annual meetings of the working group *and an annual report*, advice and recommendations on an ongoing and regular basis regarding the improvement of foodborne illness surveillance...” *Public Law 111-353 Sec. 205 (a) (2)*.
- The FY 2023 annual report was prepared based on the discussion from the FSMA SWG’s meeting held in December 2022. The draft was approved by the FSMA SWG and provided to the BSC members prior to today’s meeting.
- The FY 2023 Annual Report includes an introduction, a discussion of key topics, a discussion of resources, a section on next steps, and a list of FSMA SWG members. Key topics include the following: Foodborne Disease Surveillance and Data Access Enhancement such as PulseNet Modernization, Increased Access to Data with the Bacteria, Enterics, Amoeba, and Mycotics (BEAM) Dashboard, New Targets for the National Wastewater Surveillance System (NWSS), and *Cryptosporidium* Surveillance; Outbreak Investigation Challenges with Strong Ingredient

Collinearity; Investigation into Raw Frozen Breaded Stuffed Chicken Products; and CDC Updates including *Cronobacter* Surveillance.

- The workgroup provided responses to discussion questions that were posed by CDC during the meeting. These responses are the workgroup's advice and recommendations.

The FY 2023 Annual Report includes these points for consideration:

Foodborne Disease Surveillance and Data Access Enhancements

- PulseNet: these recommendations are specific to PulseNet and its transition and modernization to PulseNet 2.0.
 - FSMA SWG suggests that CDC could:
 - Consider the different capabilities of the variety of laboratories, large and small, and potential IT barriers.
 - Work with respiratory infection groups and companies performing culture-independent diagnostic tests (CIDTs) to learn from each other and, ultimately, to better detect cases that are being lost to CIDTs.
 - Reassess if the funding allocation is adequate.
- BEAM Dashboard
 - This is a fairly new CDC dashboard, and the workgroup provided significant feedback. This Dashboard is one of CDC's efforts to make surveillance data more accessible to partners in real time.
 - FSMA SWG suggests that CDC could:
 - Find ways to gain potential efficiencies by better integration of data from existing sources and having fewer places to access various data.
 - Explore potential benefits of coupling data with other spatial software.
 - Include states in determining how and when state data is captured and obtain more feedback from external partners.
 - Explore using the data to work with partners to elevate prevention strategies.
 - Continue to evaluate the utility and feasibility of dashboards.
- For both the BEAM Dashboard and PulseNet, FSMA SWG discussions revolved around ensuring a wide breadth of external feedback from partners and recognizing that one size doesn't fit all.
- NWSS
 - NWSS is planning to sample more pathogens including several enteric ones, such as norovirus.
 - FSMA SWG suggests that CDC could:

- Work toward a more strain-specific assay.
 - Better define the criteria used to add or modify targets (pathogens).
 - Consider adding geospatial aspects and including a notification alert.
 - Examine health equity aspects in future sampling strategies such as expanding sampling locations to be more representative of infection trends in the US.
- *Cryptosporidium* Surveillance (CryptoNet)
 - Only 1-2% of cases are currently reported to the CDC with 13 states participating in a pilot.
 - FSMASWG is interested in learning more about the direction of the pilot and its progress.
 - FSMA SWG suggests that CDC could:
 - Widen the pilot given that current reporting is limiting.
 - Explore ways to obtain data from other systems to ease the burden on states. Current methods, such as entering data in the System for Enteric Disease Response, Investigation, and Coordination (SEDRIC), can be a major task for some states.

Investigations

- Challenges Solving Multistate Foodborne Outbreaks with Strong Ingredient Collinearity
 - When strong collinearity occurs, it can be difficult to identify an outbreak vehicle. This can potentially cause delays in public health actions, and ultimately, may prevent identifying the source of contamination.
 - FSMA SWG suggests that CDC could:
 - Place more emphasis on local investigations with a return to the basics in training at the local, state, and tribal levels to paint a better picture of the cases for epidemiologists.
 - Modernize epidemiologic methods and integrate environmental health partners.
 - Support a cultural shift towards more preventative approaches including predictive models. These models should be developed in concert with various partners, recognizing resources will likely be needed.
- *Salmonella* and Raw Frozen Breaded Stuffed Chicken Products
 - Raw frozen breaded stuffed chicken products are responsible for the most *Salmonella* outbreaks that have a confirmed source.

- Survey data suggests that these meals are commonly consumed and may be undercooked through the use of insufficient appliances and following cooking instructions that may not heat the product thoroughly.
- Consumer based interventions were shown to be insufficient.
- FSMA SWG suggests that CDC could:
 - Engage with Centers of Excellence for enhanced training of public health officials, assisting with priority projects, and potentially having a role in consumer education.
 - Explore opportunities to further childhood and family food science education.
 - Factor in considerations from a health equity standpoint.

CDC Update on Cronobacter Surveillance

- Discussion at FSMA SWG meeting:
 - Exposure to powdered infant formula as a risk factor is not very meaningful, given it is a main source of nutrition for infants, unless a product lot, or bacterial strain can be pinpointed.
 - States need to be involved with confirmed cases and have specimens.
 - Stressed the importance of states having access to outbreak isolates as exposure information with such a commonly consumed product is not enough.
 - Product-specific details such as the lot code are also critical information.
- At the time of the December 2022 meeting, *Cronobacter* was reportable in Minnesota and Michigan, but was not a nationally notifiable disease.
- Overall, the FSMA SWG supported making it a nationally notifiable disease with some caveats.
- Since the workgroup's meeting, the Council of State and Territorial Epidemiologists (CSTE) members approved a position statement recommending invasive *Cronobacter* infections in infants be nationally notifiable (June 2023).
 - CDC has been preparing for this through enhanced surveillance and laboratory efforts including validation of a whole genome sequencing (WGS) protocol for PulseNet. CDC is also collaborating with partners on these enhancements, including with CSTE, the Association of Public Health Laboratories, and the Food and Drug Administration.
 - CDC is collaborating with CSTE and other partners to discuss surveillance, reporting, and implementation plans.

Future Topics and Directions

Potential future topics for FSMA SWG include (this is an abbreviated list from the presentation; all the potential future topics discussed are listed in the Annual Report).

- Cooperation with international partners and harmonization of methodologies with WGS/PulseNet international
- Confirmed dialogue on data modernization efforts (ex: BEAM, PulseNet)
- CIDT and impact on surveillance; progress with metagenomics development
- Climate-related impacts on foodborne illness
 - Shellfish and *Vibrio*, produce, changes in wildlife patterns
- Issues surrounding surveillance and response of shellfish-related outbreaks
- Updates on *Cronobacter* surveillance

Next Steps

- With the Board's approval, our next steps include submitting the workgroup's Annual Report to the HHS Secretary. The report typically is published on CDC's website the following calendar year. We soon will begin planning for the May 2024 FSMA SWG meeting.

BSC Action: After the presentation, the BSC unanimously voted to approve the FY 2023 FSMA SWG Annual Report to the HHS Secretary.

[Public Comments and Closing Comments](#)

Conference lines were opened for comments from the public. No comments were made. Dr. Wendi Kuhnert, NCEZID Deputy Director for Laboratory Readiness and Response, provided brief closing comments thanking the BSC ID members whose terms will soon end for their service and willingness to extend to support the functions of the Board.

[Meeting Adjournment](#)

With no additional business the Board chair closed the meeting at 2:58 PM ET, on November 30, 2023.

Attendees

BSC ID Members

Virginia Caine
Jeff Duchin
James LeDuc
Ilhem Messaoudi
Lauren Meyers
Susan Philip
Jennifer Rakeman
Emily Spivak
Tina Tan

Ex Officio Members

Debra Birnkrant
Emily Erbeling

Liaison Representatives

Christine Markham
Erica Shenoy

CDC Staff

Gretchen Alexander
Abu Anisuzzaman
Lauren Barna
Colin Basler
Dhwani Batra
Elise Beltrami
Oscar Bermudez
Megan Bias
Ally Binder
Emajja Bowen
Michael Bowen
Jennifer Bui
Maria Burgos
Edmund Burke
Renee Calanan
Molly Cantrell
Kasandra Carter

Kristina Cesa
Jorge Chavez
Athalia Christie
Elizabeth Coke
Rhonda Cole
Jennifer Cope
Angela Coulliette-Salmond
Kendra Cox
Michelle Daron
Demetre Daskalakis
Catherine Detinger
Laurie Dieterich
Peter Drotman
Brian Edlin
Christopher Elkins
Diana Ewetola
Amara Fazal

S. Nicole Fehrenbach
Jill Feinstein
Leah Fischer
Jason Folster
Kate Fowlie
Melissa Freeland
Cindy Friedman
Alida Gertz
Misha Harp
Anthony Harrington
Rita Helfand
Sonny Hoang
Peggy Honein
Holley Hooks
Libby Horter
Deb Houry
Tara Johnson

Martha Johnson
Shantrice Jones
Markus Kainulainen
Sarah Kidd
Michael Kinzer
Amy Kirby
Maja Kodani
Alfred Koroma
Alexandra Kossik
Matthew Kuehnert
Wendi Kuhnert
Sandeep Kumar
Gregory Lanman
Fernanda Lessa
Naeemah Logan
Mandy Lyons
Duncan MacCannell
Helen MacGregor
Mihnea Mangalea
Isaac Martinez
Grace Marx
Tapati Mazumdar
Zach McCormic
Sherri McGarry
Amy McMillen
Jennifer McQuiston
Alexandra Medley
Magdalena Medrzycki

Jeffrey Mercante
Candice Miller
Joel Montgomery
Susan Montgomery
Lyn Nguyen
Kunthea Nhim
Megin Nichols
Judith Noble-Wang
Melissa O'Connor
Wycliffe Odongo
Hanako Osuka
Elizabeth Painter
Jenny Park
Manisha Patel
Ashley Payne
Tiffany Pomares
Jordan Queen
Andrew Rainey
Maya Ramaswamy
Victoria Ramirez
Amanda Raziano
Jessica Ricaldi
Brian Richardson
Sergio Rodriguez
Makisha Rogan
Liliana Sánchez-González
Scott Santibanez
Janna Sayer

Sarah Schmedes
Craig Shapiro
Rieza Soelaeman
Jonathan Spencer
Michael Streit
Ashley Styczynski
David Sue
Rob Tauxe
Katie Thomas
Mitsuru Toda
Imelda Trejo Lorenzo
Diana Valencia
Susanna Visser
Valerie Waits
Jenna Webb
Michael Welton
Rachel West
Erin Whitehouse
Sarah Wiley
Emmalee Williams
Seymour Williams
Jessica Winberg
Olivia Yancey
Jessica Yocca
Jonathan Yoder
Brian Yoo
Emma Yu

Members of the Public

Eli Briggs
Nick Cox
Beth Daly
Rocelyn de Leon-Minch
Jamie Deeter
Lindsey Erickson
Janet Hamilton
Robert Hood-Cree
Ewa King
Peter Kyriacopoulos

Marcelle Layton
Brigette Manteuffel
Meghan McCully
C Mecher
Stephanie Morrison
Jim Nowicki
Matthias Strobl
Alexander Tin
Matthew Wallace
Nicole Zimmerman

Minutes Certification

I hereby certify that to the best of my knowledge, the foregoing minutes of the proceedings of the meeting of the Board of Scientific Counselors Infectious Diseases, on November 30, 2023, are accurate and complete.

James W. LeDuc
Chair, BSC ID

Date