

## Appendix B. Training and Resources

### General PulseNet Resources

PulseNet is a national laboratory network that connects foodborne, waterborne, and One Health–related illness cases to detect outbreaks. PulseNet uses the DNA fingerprints of bacteria making people sick to detect thousands of local and multistate outbreaks. Since the network began in 1996, PulseNet has improved food safety systems through identifying outbreaks early. This allows investigators to find the source, alert the public sooner, and identify gaps in food safety systems that would not otherwise be recognized.

For more information about PulseNet USA, visit <https://www.cdc.gov/pulsenet/index.html>.

For more information about PulseNet International, visit [https://www.aphl.org/programs/food\\_safety/Pages/PulseNet-International.aspx](https://www.aphl.org/programs/food_safety/Pages/PulseNet-International.aspx).

For PulseNet Standard Operating Procedures, visit [https://www.aphl.org/programs/food\\_safety/Pages/PulseNet-International-SOPs.aspx](https://www.aphl.org/programs/food_safety/Pages/PulseNet-International-SOPs.aspx).

### Other Resources

#### **Association of Public Health Laboratories (APHL)**

The Association of Public Health Laboratories (APHL) works to strengthen laboratory systems serving the public’s health in the United States and globally. APHL has a wide array of training and education options to support the growth and development of public health laboratory scientists, including conferences and meetings, webinars, workshops, on-demand courses, toolkits, and other training documents. PulseNet has free courses available via APHL’s [Training Portal](#), a new digital repository for online courses and archived webinars, on PulseNet workflow for analysis and data reporting.

For more information about APHL’s Laboratory Training Program, visit <https://www.aphl.org/training/Pages/About-Laboratory-Training.aspx>.

Submission of Enteric Pathogens from Positive Culture-Independent Diagnostic Test Specimens to Public Health: Interim Guidelines

In 2016, APHL published interim recommendations for clinical laboratories on public health submission of specimens that have tested positive using culture-independent diagnostic tests to ensure accurate pathogen surveillance and monitor disease trends.

For APHL’s “Submission of Enteric Pathogens from Positive Culture-Independent Diagnostic Test Specimens to Public Health: Interim Guidelines,” visit [https://www.aphl.org/aboutAPHL/publications/Documents/FS-Enteric\\_Pathogens\\_Guidelines\\_0216.pdf](https://www.aphl.org/aboutAPHL/publications/Documents/FS-Enteric_Pathogens_Guidelines_0216.pdf).

*Campylobacter* Isolation and Characterization from Clinical Specimens Guidance for Public Health Laboratories

In 2023, APHL published guidance to provide a framework for the isolation and characterization of *Campylobacter* infections by public health laboratories. Accurate identification of *Campylobacter*-attributed illnesses will provide robust and comprehensive data to support surveillance activities, outbreak investigations and guide prevention and policy efforts.



For APHL's "Campylobacter Isolation and Characterization from Clinical Specimens Guidance for Public Health Laboratories," visit <https://www.aphl.org/aboutAPHL/publications/Documents/FS-Campylobacter-Diagnosis-Recommendations.pdf>.

To search APHL technical and informational publications, visit <https://www.aphl.org/Pages/reportsbriefsresults.aspx>.

## CaliciNet

CaliciNet is a national norovirus outbreak surveillance network of federal, state, and local public health laboratories in the United States. CDC launched CaliciNet in 2009 to collect information on norovirus strains associated with gastroenteritis outbreaks in the United States. Public health laboratories electronically submit laboratory data, including genetic sequences of norovirus strains, and epidemiology data from norovirus outbreaks to the CaliciNet database. The norovirus strains can be compared with other norovirus strains in the database, helping CDC link outbreaks to a common source, monitor norovirus strains that are circulating, and identify new emerging norovirus strains.

For more information about CaliciNet, visit <https://www.cdc.gov/norovirus/reporting/calicinet/index.html>.

CaliciNet data are updated monthly here: <https://www.cdc.gov/norovirus/reporting/calicinet/data.html>.

## CIFOR Outbreaks of Undetermined Etiology (OUE) Guidelines

The CIFOR Outbreaks of Undetermined Etiology (OUE) Guidelines include recommendations on "universal" collection, shipment, testing and retention of foodborne outbreak specimens, even in the early stages of an investigation. Based on syndromes and specific outbreak profiles, the guidelines are designed to provide adequate specimens for second-tier testing and pathogen discovery should an etiology prove elusive.

The OUE Guidelines cover both infectious and non-infectious agents. A companion [OUE Agent List](#) provides detailed information including incubation period, primary signs and symptoms, primary specimen(s) and key epidemiological information.

For more information about CIFOR's Outbreaks of Undetermined Etiology (OUE) Guidelines, visit <https://cifor.us/products/outbreaks-of-undetermined-etiology-oue-guidelines>.

## Guidelines for Specimen Collection

CDC published instructions for collecting stool specimens. The guidelines cover when to collect specimens, how much to collect, method for collection, storage of specimens after collection, and transportation of specimens.

For more information, visit <https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/specimen-collection.html>.



## Integrated Food Safety Centers of Excellence (Food Safety CoEs) Online Trainings and Resources

The Food Safety CoEs have developed numerous online trainings and resources related to foodborne illness. Resources span all disciplines and topics and are available online at no cost. Some of the trainings, videos, and guidance documents may be especially helpful when improving subtyping, reporting results, and cluster detection. Resources are continually being updated and added, so check back often.

For more information about Food Safety CoE resources, [visit https://foodsafetycoe.org/](https://foodsafetycoe.org/).

## National Respiratory and Enteric Virus Surveillance System (NREVSS)

The National Respiratory and Enteric Virus Surveillance System (NREVSS) is a laboratory-based system that monitors temporal and geographic circulation patterns (patterns occurring in time and place) of respiratory syncytial virus (RSV), human parainfluenza viruses (HPIV), human metapneumovirus (HMPV), respiratory adenoviruses, human coronavirus, rotavirus, and norovirus. In this surveillance system, participating U.S. laboratories voluntarily report weekly to CDC the total number of weekly aggregate tests performed to detect these viruses, and the weekly aggregate positive tests. They also report the specimen type, location, and week of collection. NREVSS allows for timely analysis of data to monitor viral seasons and circulation patterns.

For more information about NREVSS, visit <https://www.cdc.gov/surveillance/nrevss/index.html>.

## State Public Health Bioinformatics group (StaPH-B)

StaPH-B is a consortium of public health scientists interested in addressing the common barriers of impeding bioinformatics implementation in state public health laboratories. Their mission is to support the construction and maintenance of bioinformatics infrastructure within regional state PHLs; provide training for public health scientists on the fundamentals and practice of bioinformatics; develop bioinformatics resources including tools, pipelines, and documentation; and partner with CDC and APHL to ensure compatibility and utility of their efforts. Training materials from previous workshops and seminars are available on their website.

For more information about StaPH-B trainings, visit <https://staphb.org/training.html>.

## System for Enteric Disease Response, Investigation, and Coordination (SEDRIC)

CDC has worked with a private-sector partner to develop SEDRIC, a secure, web-based system to streamline and coordinate outbreak investigations. SEDRIC allows outbreak response teams in many different locations to work together faster and more effectively through real-time data sharing. SEDRIC is used by state, local, and federal health departments and regulatory agencies.

For more information about SEDRIC, visit <https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/sedric.html>.

