

Epi-Ready Foodborne Illness Response Strategies Workshop

From Inception to Global Success



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Executive Summary

In conjunction with the [Centers for Disease Control and Prevention](#) (CDC) and [the Integrated Food Safety Centers of Excellence \(CoE\)](#), we work to support Foodborne Disease Outbreak Team Trainings (Epi-Ready) for state, tribal, local, and territorial (STLT) environmental health specialists, laboratorians, and epidemiologists.

Epi-Ready began with a conversation between two colleagues at the [National Environmental Health Association](#) (NEHA) who were discussing what could be done to strengthen the relationship between environmental health, epidemiology, and laboratory personnel. This discussion culminated into an idea for a two-day, in-person, team-based training course for investigators of foodborne illness outbreaks.

Since its pilot course in 2003, Epi-Ready has trained over 3,770 professionals representing all 50 states and has been held internationally.

This history of the Epi-Ready program was uncovered through a series of interviews, personal conversations, emails, and paper files of key partners involved through the last 20 years. It serves as a comprehensive report on the evolution and value of Epi-Ready since its inception. This is the first report of its kind, showcasing the history of the Epi-Ready training concept, the value it brings to the public health field, and the future of the training program.

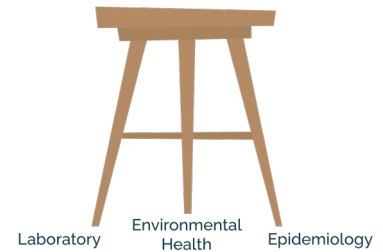
TWO DECADES OF EPI-READY (2001-2021)

- 2001** ▶ NEHA develops idea of foodborne illness disease outbreak investigation training programs and discusses project ideas with CDC.
- 2003** ▶ CDC and NEHA invited to observe a F.I.R.S.T course. Epi-Ready pilot held by NEHA, training 36 students.
- 2004** ▶ Epi-Ready was held six more times to 242 students.
- 2005** ▶ NEHA launches Train-the-Trainer Epi-Ready course.
- 2008** ▶ 87 courses provided in all 50 states with more than 3,700 students trained. NEHA modifies course with minor revisions.
- 2011** ▶ White House reports 2,400 students from all 50 states have gone through Epi-Ready training.
- 2012** ▶ Course revised and new printed materials added.
- 2015** ▶ Integrated Food Safety Centers of Excellence (CoE) Epi-Ready trainers begin providing Epi-Ready training to additional sites
- 2017** ▶ Tennessee CoE utilizes Epi-Ready Train-the-Trainer course to train small trainer groups who then provide Epi-Ready training to others.
- 2018** ▶ Course updated with content on new investigation methods, newly identified modules, expansion of written participant material, and revised instructor materials.
- 2021** ▶ Course revised with new additions and content layout.

What Is Epi-Ready?

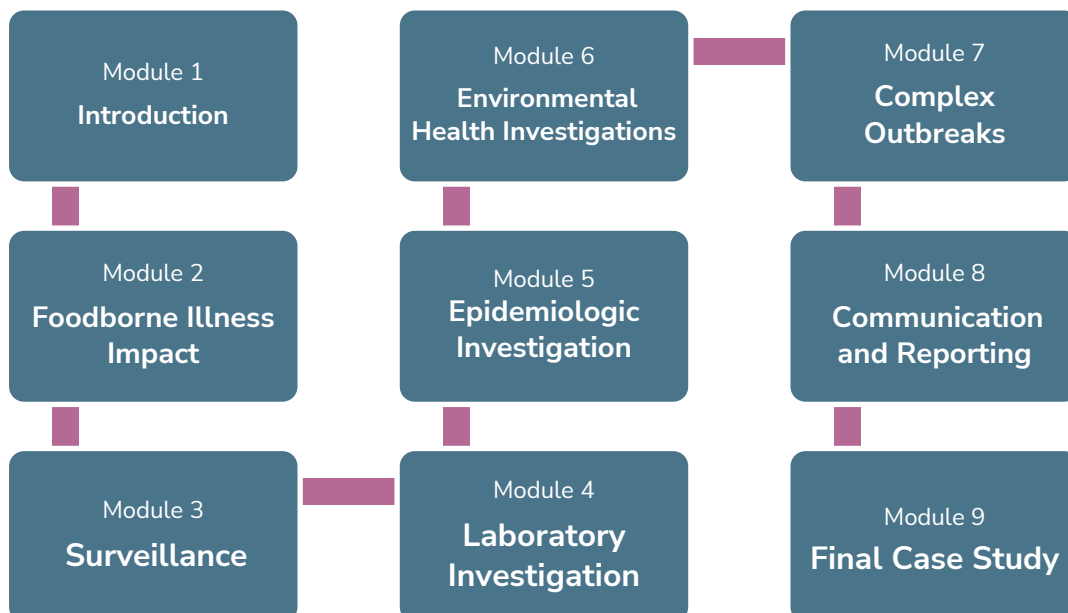
Epi-Ready, a multi-day training course that utilizes a team-based approach, teaches professionals how to respond to a foodborne illness outbreak efficiently and effectively by understanding the roles and responsibilities of the disciplines involved: epidemiology, laboratory, and environmental health. The goal of Epi-Ready is to train public health professionals and other involved personnel to rapidly identify and investigate a foodborne disease outbreak to allow for swift implementation of control measures to stop the outbreak and prevent future similar outbreaks.

Foodborne Illness Response Team



Epi-Ready's Foodborne Disease Outbreak Team Training courses promote highly trained epidemiology, laboratory, and environmental health workforces, skilled in properly conducting foodborne illness investigations. The Epi-Ready training workshop content is designed to follow the [Council to Improve Foodborne Outbreak Response \(CIFOR\) Guidelines](#). Topics are covered through a combination of lecture, question and answer sessions, interactive group exercises, and final case study. The course content includes agendas, course books, student manuals, 9 modules, epilogue, final case study, quizzes, guidance for instructors, ideas for local policies and procedures, and a slideshow for break and lunch times with food trivia games.

Attendees of the program have ranged from new hires to staff with more than 30 years of experience working in food safety.



Background

In 2001, our Research and Development Department brainstormed ways to support environmental health practitioners in foodborne illness investigations, ultimately leading to the idea of foodborne illness disease outbreak investigation training programs. Soon after, we approached CDC to discuss this project idea. We were then invited to one of CDC's weekly epidemiology meetings, a roundtable forum where epidemiologists discuss the latest outbreak investigations. Together with CDC staff, we discovered that when different agencies and departments come together for an outbreak investigation, they often come from different viewpoints and have differing priorities. For this reason, the attendees of the meeting identified a need for an overarching interagency and interdisciplinary foodborne illness outbreak investigation training.

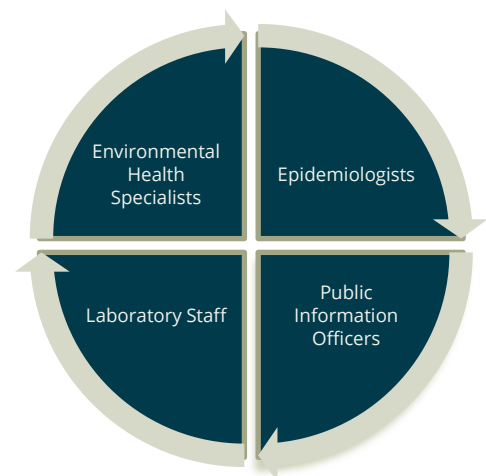
Later in 2001, we invited CDC to a roundtable at the NEHA Annual Educational Conference (AEC) in Minnesota, where local environmental health professionals and federal agencies involved in outbreak investigations discussed the pros and cons of a foodborne illness outbreak investigation training. As a result of this meeting, CDC informed us they would be interested in funding an iteration of foodborne illness outbreak investigation training. In cooperation with the Food Safety Office of the CDC, we were selected as the lead organization to develop a basic epidemiology training targeted to local environmental health professionals.

The Need for Training

To determine what types of epidemiology training were desired by environmental health professionals to strengthen their skillsets in investigation of foodborne disease outbreaks, we conducted an in-depth needs assessment of our members, including representatives from various local, state, and federal health department jurisdictions, academia, and private consultants across the nation. Through this needs assessment, we identified a common and consistent request for basic epidemiology training to build the confidence levels of environmental health professionals when dealing with reports of foodborne disease and bioterrorism.

Another high priority for local health departments as the "first responders" to disease outbreak reports from private citizens, physicians, or hospitals, was to know how to interact with their state epidemiologist. Many expressed that their confidence level would increase if they had this type of training because it would allow them to work with their state epidemiologist and medical community more effectively and competently.

Although most participants in the needs assessment responded they had access to a personal computer for training, there was a consistent request for one-on-one epidemiology training. Respondents also requested the training be regionalized to offer more opportunities for attendance.



We saw an opportunity to fulfil this request due to their regional affiliates throughout the United States that would welcome the opportunity to host a “regionalized” training of this type. We also saw the opportunity to sustain and maintain an effective epidemiology program, training members and sending them back to their respective jurisdictions.

Michigan F.I.R.S.T.

About five years prior to the creation of Epi-Ready, the Michigan Department of Community Health and Michigan Department of Agriculture identified a need to establish tasks and identify roles and responsibilities regarding foodborne outbreaks at the state level, giving local health departments instructions so that they could confidently conduct thorough and consistent foodborne outbreak investigations.

They found it important to understand the roles and responsibilities of each discipline within the foodborne outbreak response team: the epidemiologist, the laboratorian, and the sanitarian or environmental health professional. This identified need led to discussions and buy-in from leadership within these organizations.

The Michigan Department of Community Health, Michigan Department of Agriculture, and public health professionals teamed up to decide the best resources for local health departments to effectively investigate foodborne illnesses. In other words, what did the local health departments need to know, from start to finish, to investigate a foodborne illness?

The Foodborne Illness Response Strategies Training (F.I.R.S.T.) for Michigan was then created. The fundamentals of the training were based largely on the “Procedures to Investigate Foodborne Illness, Fifth Edition – 1999” guidelines from the International Association of Milk, Food and Environmental Sanitarians (now the International Association for Food Protection, or IAFFP).

A Foodborne Illness Response Strategy (F.I.R.S.T.) for Michigan

A two-day training program for successful foodborne illness outbreak investigations with an emphasis on teamwork.

Michigan Department of Community Health
MDCH

MICHIGAN ASSOCIATION FOR LOCAL PUBLIC HEALTH

Michigan Department of AGRICULTURE

EPI 'READY'

In early 2003, we were invited along with CDC to observe a F.I.R.S.T. course in Wayne County, Michigan. The course was well received and in March 2003, an epidemiology F.I.R.S.T. trainer presented detailed information on the course in a meeting in Decatur, Georgia to select personnel from CDC and NEHA. Here it was decided that NEHA would use the successful Michigan F.I.R.S.T. curriculum as the basic framework for the training program. In addition, content from the 2001 NEHA AEC roundtable discussions and the results of our needs assessment would also be used to develop the training.

At the end of the meeting one committee member asked another member, "Are we ready?" The member responded, "We are Epi-Ready!" This is how Epi-Ready came to be. By October of that same year, NEHA presented the pilot Epi-Ready course.

Instant Success

The pilot course in 2003 trained 36 students, and in 2004 Epi-Ready was held six more times and trained an additional 242 students. Epi-Ready was so well received and valued that it was mentioned as a recommended solution to the Conference for Food Protection's (CFP) issue 2004 II-001 Interdisciplinary training in foodborne illness investigations.

In 2008, Tom Dickey, our Assistant Manager in Research and Development at the time, was the recipient of the National Sanitation Foundation's (NSF) Food Safety Leadership Award in education and training on behalf of NEHA's Epi-Ready training.

In 2011, the White House, as published in the Federal Food Safety Working Group Report, had this to say about Epi-Ready:

"Since 2003, CDC has funded the National Environmental Health Association to coordinate four Epi-Ready Foodborne Disease Outbreak Team Training courses per year for local and state environmental health specialists, laboratorians, and epidemiologists. USDA has provided funding for live, interactive broadcasts of several of these Epi-Ready courses to remote sites that greatly increased the reach of the training. FDA staff have served as trainers as well as helping to guide the course content. The food safety agencies have also promoted a more highly trained environmental health workforce, which is skilled in properly conducting an environmental assessment during foodborne illness investigations. In total, more than 2,400 students from all 50 states have gone through Epi-Ready training."

NEHA Presents a Special Training Opportunity

"EPI-READY" A Workshop on Foodborne Disease Epidemiology and Surveillance Training

The National Environmental Health Association (NEHA), in cooperation with the Centers for Disease Control and Prevention, National Center for Infectious Disease-Food Safety Office (CDC/NCID) and the National Association of County and City Health Officials (NACCHO), is pleased to offer a special training opportunity for environmental health professionals working in city, county or state health or environmental protection agencies, and individuals or agencies that have collaborated with environmental health professionals in conducting foodborne disease outbreak investigations.

"EPI-READY" is a nationwide initiative intended to provide up-to-date "entry level" foodborne disease outbreak investigation and surveillance training. The primary objective is to present educational materials and implementation strategies designed to enhance the confidence and competence level of environmental health professionals. Training will include interactive group exercises, questions and answer sessions, and specific lectures on **public surveillance, outbreak determination, environmental assessment, epidemiological investigation, laboratory guidelines, and conducting outbreak reports writing**.

The pilot workshop will be hosted in Atlanta, Georgia on October 7-8, 2003 at the Atlanta Marriott Suites Midtown. The workshop will bring together the many health disciplines (e.g., environmental health, epidemiology, public health nursing, laboratory) involved in conducting a successful outbreak investigation to emphasize the importance of teamwork.

NEHA will select up to thirty (30) health professionals to participate in the pilot training in Atlanta, Georgia, and will reimburse all related expenses. This includes round-trip coach airfare, lodging and a per diem allowance for meals.

The **"EPI-READY"** Workshop will be conducted using the following schedule:

Travel to Atlanta, Georgia will be on Tuesday, October 7, 2003.

Training, October 7 10:00 AM - 6:00 PM

Wednesday, October 8 8:00 AM - 5:00 PM

Thursday, October 9 8:00 AM - 5:00 PM

Your return home will be Thursday evening, October 9th.

Please Note! This training will emphasize the importance of the teamwork involved in foodborne disease outbreak investigation. As a result we are strongly encouraging team applications. Teams should consist of three individuals from at least 2 separate health disciplines (e.g. environmental health professional, epidemiologist, and laboratory). If you do apply as a group, include the contact information for each team member in the application. If chosen, you will be expected to attend as a group.

Those wishing to participate should submit an application that addresses the following points: (Team applications should not exceed 3 pages and individual applications should not exceed 2 pages)

- Your name, position title with brief job description and length of time in the environmental health field, or related health discipline.
- History and experience of your department or agency in addressing foodborne disease outbreak investigation and surveillance activities.
- How foodborne disease outbreak investigation and surveillance training will rank as a priority in your current program.
- Any on-going foodborne disease outbreak investigation and surveillance programs that your agency currently has or that you would like to see established.
- Any special areas of interest that you feel is relevant to your collaboration for this workshop.
- A confirmation that you have the support of management to undertake and participate in an on-going foodborne disease outbreak investigation and surveillance program.

Applications should be submitted electronically to Kristie Bone at kbone@neha.org. US & Mail and hard applications will be accepted however electronic applications are preferred.

Applications must be received on or before the close of business (3:00 PM Eastern Time) Friday, August 29, 2003. Late notices and notification of successful applicants will be made by no later than the close of business (3:00 PM Eastern Time) Friday, September 12, 2003. All notifications will be made via e-mail.

Questions?

Any questions concerning the workshop or the application process should be directed to:

Kristie Bone
202-765-8000 Ext. 342
kbone@neha.org

Thomas Dickey
202-385-3133
tdickey@neha.org

NSF Presents 2008 Food Safety Leadership Awards

NSF International announced the 2008 recipients of its Food Safety Leadership Awards in March at the Food Safety and Security Summit in Washington, DC. NSF's Food Safety Leadership Awards program, now in its fifth year, recognizes the extraordinary efforts of individuals and organizations that have demonstrated outstanding dedication and achievement in foodservice safety.



(From left) William Fisher, NSF International Vice President, presents NSF's 2008 Food Safety Leadership Awards to Paul A. Lachance, Elizabeth A. Bugden, Tom Dickey, Christin Moe, Norm Fabola, Dennis Romer, Jan Singleton (accepting for Jeanne Gibson), and Daniel L. Engeljohn.

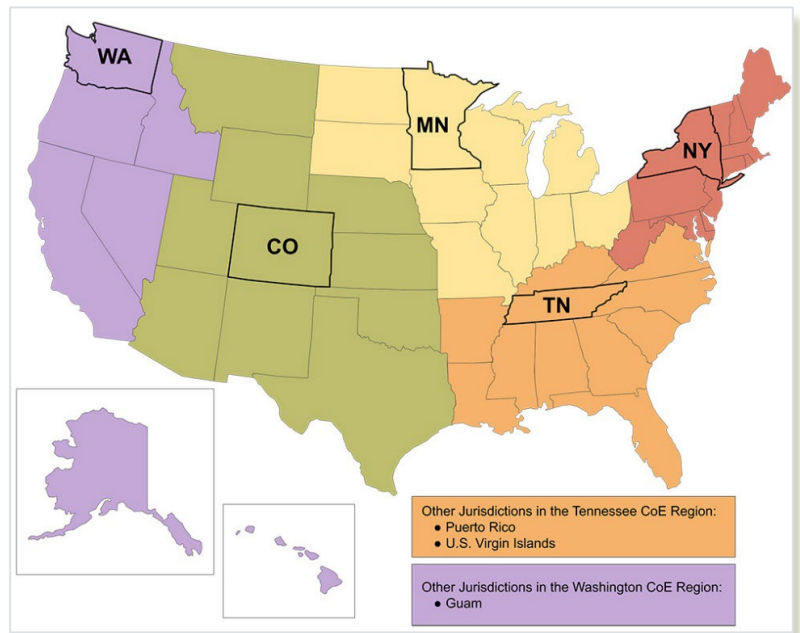
Train The Trainer

After the success of the pilot course in 2003, demand for Epi-Ready grew rapidly. In 2005, we launched the “Train-the-Trainer” course. By 2018, 87 trainings had taken place, all 50 states had been represented, and over 3,700 students were trained in Epi-Ready.

In the beginning, the course was mainly managed by us, through CDC funding, and occasionally held by other federal agencies and state preparedness programs. Due to demand for the training program, we began to conduct train-the-trainer modules to prepare participants to serve as instructors for the course, starting in Providence, Rhode Island in 2005, then in Alexandria Virginia, San Antonio Texas, and Frankfurt, Kentucky.

In September 2014, the [Integrated Food Safety Centers of Excellence \(CoE\)](#) attended the two-day Epi-Ready training, followed by an additional day-long train-the-trainer component. CoE Epi-Ready trainers began coordinating with out-of-state jurisdictions to provide Epi-Ready training to additional sites in Spring 2015 (Integrated Food Safety Centers of Excellence, 2014).

This change ushered in a new era of Epi-Ready, led by the CoEs. In 2017, the Tennessee CoE utilized this strategy to train smaller groups in Kentucky with the Epi-Ready Train-the-Trainer course, and these staff members began conducting training themselves.



Centers of Excellence and their corresponding territories (CDC, 2021dd).

The Evolution of Epi-Ready

Over the years, Epi-Ready training has evolved with advances in food safety science and best practices for outbreaks and investigations. Changes in course style, format, and delivery can also be attributed to feedback from course participants over the years.

In 2008, we were funded by CDC to modify the course with only minor revisions from its original 2003 course content. It was not until 2012, through a cooperative agreement between the [Council of State and Territorial Epidemiologists](#) (CSTE), that the course went through a major revision, resulting in new printed materials.

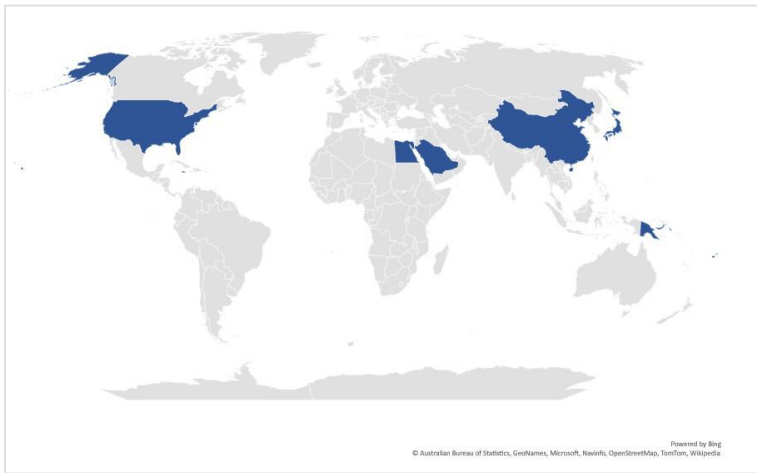


The original logo was created in 2003. It was discontinued a few years later.

The course had another major revision in collaboration with the [Association of Public Health Laboratories](#) (APHL) in 2018, which included updated content to the investigation methods, newly identified modules, the expansion of written participant material as well as revised instructor materials. In 2021 another major revision occurred with new additions to the course content and overhaul to the content layout. The revision in 2021 was the work of the CoEs, CDC, FDA, and NEHA.

Epi-Ready Around the Globe

Attendees have represented all 50 states, plus international attendance from China, Japan, Saudi Arabia, Jamaica, and Guam. As pictured, portions of Epi-Ready were used in the World Health Organization (WHO) courses in Papua New Guinea and Fiji. A modified Epi-Ready Course was taught in Dubai (UAE) with participants from other Emirates within the UAE (e.g., Abu Dhabi) and from Saudi Arabia, Oman, and Egypt).



Epi-Ready Across the Globe



Epi-Ready in Shanghai

Evaluation Guidance Toolkit

Given the importance of building the capacity of agencies and individuals to respond efficiently to a foodborne illness outbreak, it is necessary to assess the impact of the Epi-Ready training program and demonstrate how it is helping individuals and teams become adept in the investigation of foodborne illness outbreaks and reach successful outcomes.

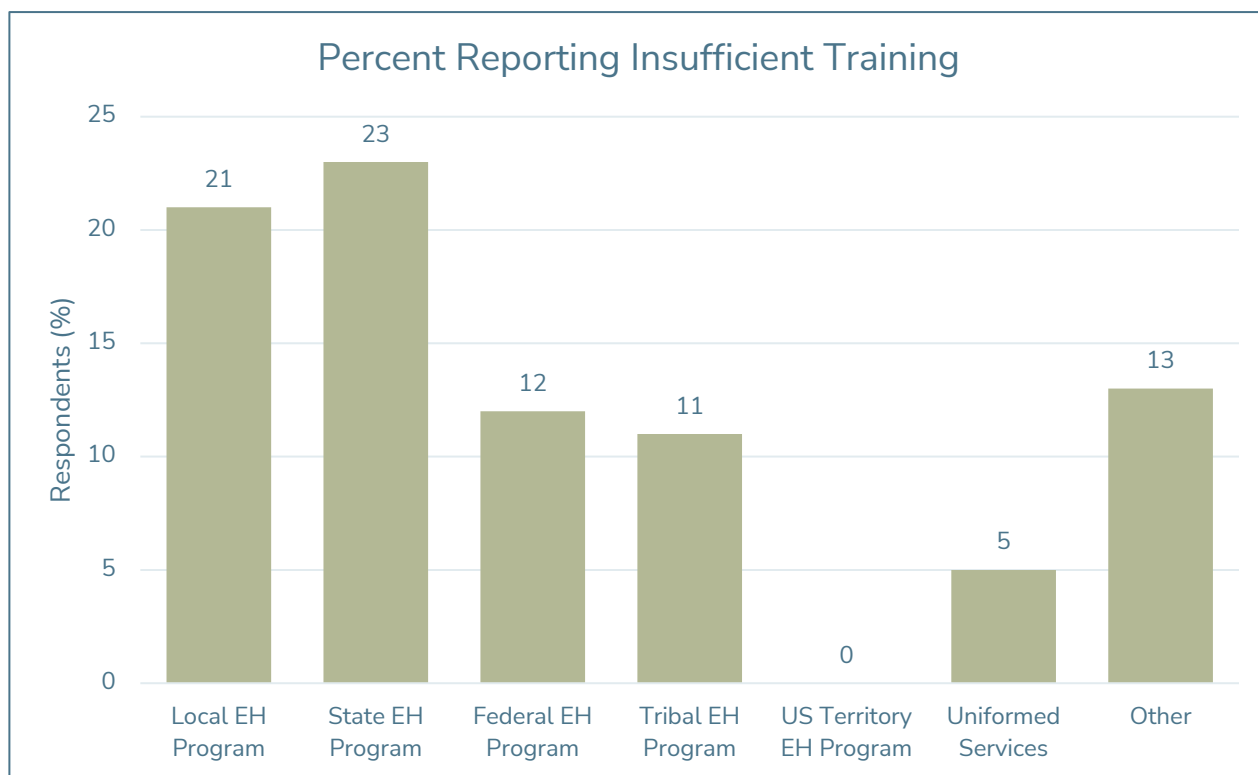
While the Epi-Ready training content and format is consistent across organizations who conduct it, it is equally important to establish standard and consistent evaluation practices for the training. Effective professional development builds the knowledge and skills of the workforce to improve capacity and core competencies. To determine if a training made a difference, evaluations must be included and prioritized to determine if the training activities achieved their purposes.

A new Epi-Ready Evaluation Guidance Toolkit with templates is in development. The purpose of this guide is to provide the rationale for developing and using a standardized Epi-Ready training evaluation

plan and resources, including standardized survey templates for a pre and post knowledge assessment, end-of-course evaluation, and follow-up post-training evaluation.

The Future of Epi-Ready

Through an extensive network of partnerships, Epi-Ready blossomed from a single conversation into a global training. What started off as an idea became a valuable and well-known foodborne illness response training.



The need for future Epi-Ready trainings is vital, now more than ever. In late summer of 2020, NEHA conducted a nationwide environmental health workforce needs assessment in response to the COVID-19 pandemic. This assessment uncovered a need for sufficient environmental health training. This assessment also revealed that, at average, over 60% of STLT respondents reported to be understaffed yet those that are currently employed are in need of adequate training as seen in the figure below.

While face-to-face team trainings are an important part of Epi-Ready, the goal is to build relationships and provide a team environment in which to train. The future of Epi-Ready is flexible and may look like either a hybrid or virtual training that is designed to bring more people together than is possible with strictly face-to-face trainings.

Epi-Ready continues to strive to remain timely, relevant, needed, valued, and exciting. Epi-Ready will provide a foundational training for the future environmental health workforce.

Voice of Participants

"Excellent training! I had a major food borne illness outbreak 2 months after the training and was able fall back on my training to help guide EHS staff through the investigation."

~ Epi Ready Richmond, VA 2018 participant

"The Conference for Food Protection (CFP) recognizes trainings, like Epi-Ready, as a recommended solution to interdisciplinary foodborne illness investigations and are "critical to the prevention and control of food borne disease"

~ Conference for Food Protection, 2004

"It is our hope that this collaborative process [Epi-Ready] will aid in management and prevention of future foodborne outbreaks in the State of Indiana by filling in gaps and updating site-specific procedures, providing models for new procedures where they did not exist; and training to program staff."

~ Indiana State Department of Health, Laboratories Newsletter December 2010

"Being new to the EPI team, this training has provided a better understanding of the team approach and how to investigate and discuss processes in the public."

~ Epi Ready Columbia, SC 2020 participant

"This was great training to bring all program areas involved in outbreak investigation to the table. It was a great learning opportunity to get training and acquire knowledge across epidemiology, laboratory and environmental practices for an effective outbreak investigation."

~ Epi Ready Washington, DC 2019 participant

"Epi-Ready training brought to the forefront more clearly what our epi partners do in the investigation and how that data is incorporated into the whole picture. In turn, I have an awareness of the broader scope of what is needed to conclude the outbreak when relating to the individuals involved."

~ Epi Ready Durham, NC 2017 participant