

LFFM Invests in State Laboratories to Protect our Food Supply

Strengthening state food safety laboratories and response networks has been key to creating an effective, integrated food safety system in the United States. The FDA's Laboratory Flexible Funding Model program is an essential funding source for this system—and it must be sustained.

State laboratories provide testing crucial to ensuring a safe food supply. State capacity for nationwide surveillance far exceeds what the US Food and Drug Administration (FDA) would be able to complete, even at full federal staffing levels. State contributions to public health are an efficient use of resources, but they are not possible without sustained support.

For more than a decade, the FDA has committed substantial resources to fortifying an effective Integrated Food Safety System, notably by strengthening state laboratory networks. Starting with an initial investment of \$50 million—and by sustaining that investment over 12 years—FDA facilitated 53 state food testing laboratories becoming accredited to the ISO/IEC 17025 standard or expanding their accreditation scope. This initiative laid the groundwork for Domestic Mutual Reliance, enabling the use of state laboratory data in federal regulatory actions.

Since 2020, the FDA's Laboratory Flexible Funding Model (LFFM) cooperative agreement program has enhanced the ability of state laboratories to conduct foodborne investigations by:

- Expanding state surveillance for swifter identification and containment of foodborne outbreaks
- Enhancing laboratory capabilities through the development of new tests and use of novel technologies, such as DNA sequencing
- Strengthening laboratory networks to quickly respond to emergencies
- Building trust through the Domestic Mutual Reliance data sharing program.

Below are examples of testing breakthroughs, successful partnerships and prevented outbreaks that the LFFM has made possible so far.

Surveillance Sampling: Keeping an Eye on the Food Supply

The LFFM has enabled the establishment of a robust surveillance sampling system at the state level. This system provides valuable knowledge about hazards in our food supply that can inform prevention strategies and mitigate risks moving forward.

Identifying Contaminated Product

In summer 2022, several state Rapid Response Teams (RRTs) were activated and launched two investigations into [contamination events](#) of *Listeria monocytogenes* in peaches. By working with interstate partners and leveraging collective resources, the states' RRTs were able to conduct thorough investigations, identify potentially contaminated product and remove it from commerce without links to any human illness.



Stone fruits have been linked to several past outbreaks, including a 2014 multi-state outbreak of listeriosis—the first reported link between human listeriosis and stone fruit—and a 2020 multi-state outbreak of *Salmonella enteritidis* that caused 101 reported illnesses and 28 hospitalizations.

Controlling an Outbreak Through Genetic Links

Genomic sequencing of pathogens can help identify links between outbreak clusters, increasing our ability to trace the source of contamination. Recent examples of this include:

- After a sample of Brand A kibbled dog food tested positive for *Salmonella* at the South Carolina Department of Health and Environmental Control in 2023, DNA sequencing showed that the strain was highly genetically related to a cluster of seven clinical cases in seven states, with six of them affecting children under the age of one. Brand A voluntarily recalled all affected lots.
- When the Hawaii State Laboratories Division identified a sample of cotija cheese that tested positive for *Listeria monocytogenes* (L. mono), DNA sequencing linked the sample to 25 clinical cases spanning over a decade. Within a mere 3.5 weeks, a cold-case outbreak was solved and stopped.

Precise and Complete Recalls

Ensuring that recalls encompass the full extent of contaminated products is essential for protecting the public's health. State LFFM laboratories have played a significant role in fully defining product recalls:

- Over the past four years, LFFM laboratories have detected several positive L. mono findings in enoki mushrooms. Two laboratories found an outbreak strain of L. mono in brands and products that had not yet been included in a recall announcement, preventing potential future illnesses.
- Following the identification of lead and chromium contamination in fruit puree pouches, state LFFM grantees assisted in a 2024 FDA targeted lead analysis survey focusing on ground cinnamon products from discount retailers. State testing expanded the reach of this FDA assignment, identifying additional brands and lots with elevated lead levels. Results from four LFFM samples were used to support an FDA consumer advisory.

Providing Nimble Testing Capabilities

When emergencies arise, state LFFM laboratories quickly pivot to support FDA with sample collection and surge testing:

- Twelve states assisted with FDA's investigation of lead and chromium in cinnamon-containing fruit purees, collecting 97 samples in four business days.
- Two states provided critical support to FDA by testing for *Legionella* on domestic cruise vessels, a testing capability FDA laboratories do not currently possess. These states tested more than 22 samples that involved over 315 sub-samples of bulk water and environmental swabs.
- Three states provided surge capacity for FDA and other states by testing 115 samples of powdered infant formula for *Cronobacter sakazakii*.

GenomeTrakr: Leveraging the Power of DNA Sequencing

The LFFM program plays a pivotal role in advancing the groundbreaking initiatives of the GenomeTrakr network, contributing to an expanding repository of genomic sequences derived from food, environmental and clinical samples. GenomeTrakr supports FDA's blueprint for a New Era of Smarter Food Safety, emphasizing the deployment of smart tools and methodologies for prevention and outbreak response.

Supported by LFFM funding, 31 GenomeTrakr laboratories have sequenced over 15,000 isolates, enriching the NCBI database and enhancing the potential for early detection of illness clusters and outbreak sources. Numerous states have effectively utilized sequencing to expedite investigations of large-scale, multi-state outbreaks, as well as smaller local incidents. The investment in whole genome sequencing technology at the state level, coupled with robust IT infrastructure and bioinformatics support, continues to yield profound and lasting benefits for food safety.

Elevating Testing Capabilities

The LFFM program has supported the growth of state laboratory capabilities and capacities through method development and other special projects, allowing the food safety community to better understand the contaminants in our food supply, respond to emergencies and conduct thorough investigations. LFFM funding has allowed states to contribute needed data to many FDA projects, including:

- Implementing L. mono enumeration methods in 21 laboratories
- Testing almost 4,000 samples of various commodities in support of Total Diet Study projects
- Supporting multi-lab validations and method extensions for FDA compendial methods
- Building dead-end ultrafiltration (DEUF) capability for STEC, *Cyclospora* and *Salmonella* in 14 laboratories.
- Monitoring for circulating SARS-CoV-2 variants of concern in wastewater in 20 laboratories
- Expanding the National Antimicrobial Resistance Monitoring System (NARMS) program by 33%.

FERN Laboratories: Responding to Emergencies

The LFFM continues to support the vital efforts of the Food Emergency Response Network (FERN), which has established local, state and federal response mechanisms to quickly respond to emergency situations threatening the food supply. The LFFM supports FERN's vital readiness plans, ensuring the capacity and capabilities of state governmental food laboratories to test for microbiological, chemical and radiological contaminants in food.

Through the LFFM funding, FERN has expanded radiochemistry capability and capacity from 5 to 18 laboratories, filling a huge resource and knowledge gap at the state level.

Building Trust through Domestic Mutual Reliance

A cornerstone of FDA's Blueprint for a New Era of Smarter Food Safety is Domestic Mutual Reliance, which enables working partnerships between FDA and state regulatory counterparts. The LFFM program bolsters Domestic Mutual Reliance by empowering states to provide trustworthy and defensible laboratory data to federal regulators. For example, 40 states (80%) participate in the LFFM's sample collection and analysis tracks, expanding FDA's reach by providing a wide range of analytical and geographical coverage of the US food supply. The ability to leverage state-level data and resources decreases response time, reduces redundant testing and nurtures a preventive and risk-focused food safety framework that benefits both federal and state entities.

LFFM Funding is Critical for Food Safety

The LFFM has become an indispensable source of funding for state food safety laboratories—expanding their capacity to respond to and prevent foodborne outbreaks, strengthening laboratory networks and fortifying the national food safety system.

This foundational support should be sustained and funded at the maximum level possible.

For more information, contact the Association of Public Health Laboratories at foodsafety@aphl.org.

