

*epi*TRENDS

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Foodborne Outbreaks

Some foodborne outbreaks are identified through laboratory testing, while others are recognized when individuals or healthcare providers report illnesses. Investigation of outbreaks may be conducted by a single public health worker or may involve staff from multiple offices in multiple agencies. The investigation goals are similar, to confirm the outbreak, to identify the source, to eliminate ongoing risks, and inform those at risk to prevent additional cases.

Reporting Outbreaks

A wide range of pathogens can cause foodborne illnesses ([see Table](#)). Many bacterial agents are tracked nationally and characterized by whole genome sequencing which can detect clusters of cases. However, many ill individuals do not seek health care and are not tested so laboratory reports represent only a fraction of the total group affected. In addition, other agents such as viruses and parasites are not routinely sequenced so clusters are less likely to be spotted. The result is that only a small proportion of those with foodborne illnesses are reported to public health agencies. The Centers for Disease Control and prevention (CDC) estimate is that nationally only 3% of foodborne illnesses are reported and only 68% of foodborne illness outbreaks are identified.

In Washington, during the last decade there have been 21 to 66 foodborne outbreaks reported annually, involving 339 to 1,016 cases total. Since the beginning of 2024 there have been 46 foodborne outbreaks reported. Comparatively in 2023, 41 foodborne outbreaks were identified. Several local outbreaks of foodborne illness were identified in 2024. Both *Campylobacter* and Shiga toxin-producing *E. coli* (STEC) infections were linked to raw milk. Norovirus was identified at two workplace luncheons. *Salmonella* cases were linked to a single location of a national diner. *Salmonella* was also associated with a private family event. For more information on foodborne disease outbreaks, please see the Department of Health (DOH) Annual Communicable Disease Reports (Resources).



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During 2024 there have been several national outbreaks of foodborne illnesses. *Salmonella* cases were linked to Italian charcuterie meats. STEC cases were linked with organic walnuts. More recently, STEC cases were associated with a large fast-food chain.

Table: Major Foodborne Pathogens

Bacterial	Bacterial Toxins	Viral	Parasitic
<i>Brucella</i> spp.	<i>Bacillus cereus</i>	Astrovirus	<i>Cryptosporidium</i> spp.
<i>Campylobacter</i> spp.	<i>Clostridium botulinum</i>	Hepatitis A virus	<i>Cyclospora cayetanensis</i>
<i>Listeria monocytogenes</i>	<i>Clostridium perfringens</i>	Norovirus	<i>Giardia intestinalis</i>
<i>Salmonella</i> , incl. Typhoid Fever	<i>Staphylococcus aureus</i>	Rotavirus	<i>Toxoplasma gondii</i>
<i>Shigella</i> spp.		Sapovirus	<i>Trichinella</i> spp.
STEC (O157 and non-O157)			
<i>Vibrio cholera</i> (toxigenic)			
<i>Vibrio</i> spp. (<i>cholerae</i> , <i>vulnificus</i> , <i>parahaemolyticus</i>)			
<i>Yersinia enterocolitica</i>			

Outbreak Investigations

An outbreak may be identified through laboratory-based surveillance or through a complaint. There are state and national systems to identify clusters of laboratory confirmed cases of a common agent, particularly a specific strain of an agent. Using a standard interview for the agent, cases are interviewed and common exposures identified, such as a specific food item or a commercial source of food. Investigators may also request shopper card records or receipts to identify food items of interest. Information from those affected is critical for solving outbreaks. Detailed food histories are often the only way to identify common exposures.

Outbreaks are also detected through complaint-based investigations, such as implicating an event or a restaurant. Both ill and non-ill complainants are interviewed about any symptoms and 3-day food histories are collected. Without clinical testing, investigators hypothesize what agent(s) are causing the illness based on the symptoms, incubations, durations, and severity of illness among complainants and the biology of known agents.

Further interviews, product testing, or environmental inspection may confirm the source of an outbreak. Public health actions, such as closing a food establishment for deep cleaning or requiring food worker testing, can then be taken to prevent more illnesses.

Foodborne Illness Notification System

The Washington Integrated Food Safety Center of Excellence (CoE) is a collaboration between the Washington State Department of Health and the University of Washington. The goal is to provide a regional training hub to support foodborne surveillance and outbreak activities in partner states and territories. The Washinton CoE serves the western region including Alaska, Guam, Hawaii, Oregon, Idaho, California, Nevada, and Washington.





One of the CoE’s recent initiatives, in collaboration with the DOH Environmental Health Services Food Safety team, was the launch of the Washington Foodborne Illness Notification System (FINS) in July 2024. FINS is an online, public facing survey that allows individuals to report concerns about Washington food establishments 24/7. The FINS tool is currently available in English and Spanish, there are plans to expand access to additional languages in the

future. The purpose of a centralized food complaint system is to improve reporting of foodborne illness outbreaks so that public health interventions can be taken.

The FINS website can be used to report:

- A suspected or laboratory-confirmed case of foodborne illness
- A food safety concern at an establishment including a restaurant, store, event, or food delivery service

A person reporting illness will be asked what they ate, their symptoms, other known illnesses, and a 3-day food history. A reported food safety concern could be a food handler not using gloves or a visibly dirty food establishment. The appropriate local health jurisdiction reviews the FINS report and determines whether action is needed. The response could involve inspecting the food establishment or contacting the reporter for more information. Through its actions, the local health jurisdiction protects the public and prevents further illnesses.

Resources

Department of Health

[Foodborne Illness](#)

[Foodborne Illness Outbreaks](#)

[Foodborne Illness Outbreak Surveillance in Washington](#)

[FINS website](#)

[DOH Annual Reports](#)

Centers for Disease Control and Prevention

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[Foodborne Illness--Major Pathogens, Expanded Tables](#)

[You Can Help the CDC Solve Foodborne Outbreaks](#)

Foodborne Illness Outbreak Surveillance in Washington

The Washington State Department of Health is responsible for surveillance, monitoring, and response to foodborne illness outbreaks. By doing this, we can:

- Quickly remove contaminated food products from stores, restaurants, and homes to limit additional spread
- Prevent further illness from spreading between people
- Correct food preparation practices to prevent contamination and spread of pathogens

What is a foodborne illness outbreak?

When two or more people get the same illness from the same contaminated food or drink, the event is called a **foodborne illness outbreak**. Not all recalls, alerts, and advisories result in an outbreak of foodborne illness. Outbreak detection and control can take several weeks. It requires collaboration across local, state and federal partners.

Foodborne outbreaks can occur for a variety of reasons, including contaminated ingredients, cross-contamination between foods, contamination by a food handler, time or temperature mishandling after cooking, and improper cooking.

Foodborne outbreak investigation process

DETECTION	HYPOTHESIS	TESTING	CONTROL
<ul style="list-style-type: none">• One or more people start to feel ill• Sick people visit a health care provider and give a sample — typically stool• Health care provider tests the sample to identify a pathogen• Public health labs then test the sample again to identify the specific strain	<ul style="list-style-type: none">• Interview sick people to learn about their exposures (food, water, animals) before their sickness• Gather receipts for purchased food purchase receipts• Review exposure information and look for common foods across cases with the same pathogen strain	<ul style="list-style-type: none">• Perform traceback: identify the lot numbers, distribution and origin of suspected foods• Test suspected foods from homes, restaurants, or stores for the pathogen of interest• Compare the food pathogen to the human illness pathogen	<ul style="list-style-type: none">• Recall implicated foods from stores and restaurants• Educate the public on steps to take to protect themselves• Inspect facilities or restaurants to learn how the food was contaminated• Take action to ensure similar contamination does not occur again