

# CDC and Food Safety

**Foodborne illness is common, costly, and preventable.**



CDC estimates that each year **1 in 6** Americans get sick from contaminated food or beverages and **3,000** die from foodborne illness.



USDA estimates that foodborne illnesses cost the United States more than **\$15.6 billion** a year.

**CDC provides the vital link between foodborne illness and the food safety systems of government agencies and food producers.**

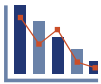
## CDC helps make food safer by:



Working with partners to determine the major sources of foodborne illnesses and number of illnesses, investigate multistate foodborne disease outbreaks, and implement systems to prevent illnesses and detect and stop outbreaks. Government partners include state and local health departments, the U.S. Food and Drug Administration (FDA), and the U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service. The food industry, animal health partners, and consumers also play essential roles.



Helping state and local health departments improve the tracking and investigation of foodborne illnesses and outbreaks through [surveillance systems](#) such as [PulseNet](#), the [System for Enteric Disease Response, Investigation, and Coordination](#) (SEDRIC), and other programs.



Using data to determine whether prevention measures are working and where further efforts and additional targets for prevention are needed to reduce foodborne illness.



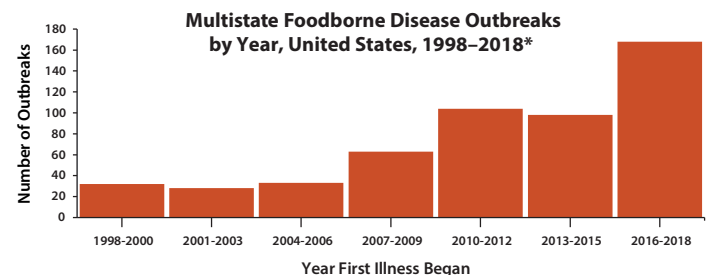
Working with other countries and international agencies to improve tracking, investigation, and prevention of foodborne infections in the United States and around the world.

## Using Advanced Technology to Find Outbreaks

[Whole genome sequencing](#) (WGS) is a tool used to generate a DNA “fingerprint.” CDC scientists and partners use WGS data to determine if strains of bacteria have similar DNA fingerprints, which could mean they come from the same source—for example, the same food or processing facility. PulseNet scientists from 83 U.S. laboratories have the tools to generate, analyze, and share WGS results. When PulseNet scientists detect a group of illnesses caused by the same strain, disease detectives investigate the illnesses to determine whether they came from the same source.

WGS has dramatically improved our ability to link foodborne illnesses and detect outbreaks that previously would have gone undetected. WGS provides more detailed genetic information than previous DNA fingerprinting methods and helps CDC and our partners:

- Detect possible outbreaks with more precision.
- Investigate and solve outbreaks while they are still small.
- Link ill patients to likely sources of infection.



\* Source: CDC Foodborne Disease Outbreak Surveillance System



**U.S. Department of Health and Human Services**  
Centers for Disease Control and Prevention

For more information and accessible version: [www.cdc.gov/foodsafety/cdc-and-food-safety.html](http://www.cdc.gov/foodsafety/cdc-and-food-safety.html)

## Finding More Outbreaks Helps Make Food Safer

In recent years, even before WGS became routine, better methods for detecting outbreaks and wider distribution of foods led to an increase in the number of multistate foodborne disease outbreaks that CDC and partners detected and investigated. Outbreak investigations often reveal problems on the farm, in processing, or in distribution that can lead to contamination before food reaches homes and restaurants. Lessons learned from these investigations help make food safer.

## Finding Non-Outbreak Illness Sources

Most foodborne illnesses—93% of *Salmonella*, 82% of *E. coli* O157, 96% of *Listeria*, and nearly 100% of *Campylobacter* illnesses—are not associated with recognized outbreaks. Public health officials use outbreak and other data to [estimate the major food sources](#) for all illnesses caused by these four priority bacteria. They are also evaluating methods to combine WGS data on isolates from ill people, foods, and animals with epidemiologic data to predict the most likely foods responsible for particular illnesses. This research can help public health officials, regulators, industry, and consumers know which foods should be targeted for additional prevention efforts.

## Challenges to America's Food Safety

Foods we love and rely on for good health sometimes contain bacteria and other germs that can make us sick. Prevention efforts that focus on the foods and germs responsible for the most illnesses are needed to reduce foodborne illness in the United States.

Challenges to food safety will continue to arise, in part because of:

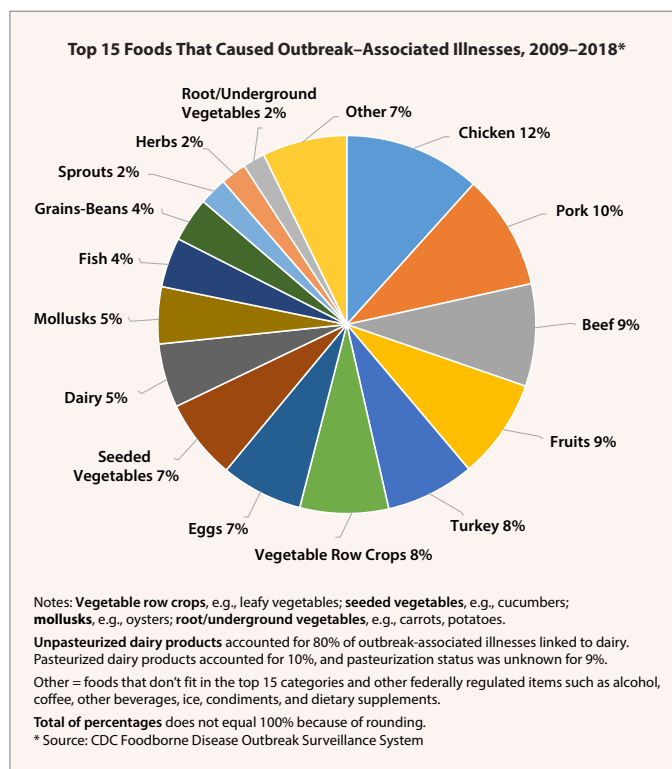
- Changes in food production and our food supply, which mean a single contaminated food can make people sick in different parts of the country.
- New and emerging antibiotic resistance.
- Unexpected sources of foodborne illness, such as flour and onions.

## Threat of Antibiotic Resistance

Antibiotic-resistant bacteria develop the ability to survive or grow despite being exposed to antibiotics designed to kill them or halt their growth. Antibiotic resistance is a global health challenge spreading through people, animals, and the environment. People can get antibiotic-resistant infections through food. Infections with resistant bacteria cause more severe or dangerous illness and often require more costly treatments with higher risks for side effects. Improving appropriate use of antibiotics in people and animals can help stop antibiotic resistance from spreading.

Slowing the emergence of resistant bacteria and preventing foodborne antibiotic-resistant infections are complex challenges. CDC works with partners to address these issues by:

- Supporting public health departments and partners through the [Antibiotic Resistance Solutions Initiative](#) and strengthening their ability to perform WGS on enteric bacteria such as *Salmonella* to determine which outbreaks are caused by resistant strains.
- Using laboratory and epidemiologic data to detect emerging antibiotic resistance and determine how resistant strains spread.



CDC estimates that three common enteric bacteria—nontyphoidal *Salmonella*, *Campylobacter*, and *Shigella*—cause **740,000** antibiotic-resistant infections each year in the United States.

- Supporting the work of FDA and USDA to [improve antibiotic use](#) in veterinary medicine and agriculture.
- Ensuring veterinarians and livestock and poultry producers have tools, information, and training on antibiotic use.
- Working within the [One Health](#) framework, across human, animal, and environmental sectors, to improve food safety and health of people and animals.