CDC and Food Safety

Foodborne illness is a common, costly—yet preventable—public health problem. CDC estimates that 1 in 6 Americans get sick from contaminated foods or beverages and 3,000 die each year. The U.S. Department of Agriculture estimates that foodborne illnesses cost $15.6 billion dollars each year.

What is CDC's role in food safety?

Food safety depends on strong partnerships. CDC, the U.S. Food and Drug Administration (FDA), and the U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service collaborate at the federal level to promote food safety. State and local health departments and food industries also play critical roles in all aspects of food safety.

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

CDC takes action by:

- Tracking the occurrence of foodborne illnesses
- Managing the DNA fingerprinting network (PulseNet) for foodborne-illness causing bacteria in all states to detect outbreaks
- Facilitating and leading outbreak investigations
- Monitoring antibiotic-resistant infections
- Collaborating with state and local health departments to develop new and better methods to detect, investigate, respond to, and control outbreaks
- Defining the public health burden of foodborne illness
- Attributing illnesses to specific foods and settings
- Targeting prevention measures to meet food safety goals
- Providing data and analyses to inform food safety action and policy, such as the FDA Food Safety Modernization Act regulations and USDA's stronger *Salmonella* and *Campylobacter* standards for poultry

Whole genome sequencing improves outbreak detection, investigation, and control

CDC scientists have started using whole genome sequencing to show which bacterial strains are most alike genetically—which indicates those infections may have the same source.

Whole genome sequencing provided a crucial clue during an investigation of a multistate *Listeria* outbreak linked to soft cheeses that killed 3 people and sickened 30. The traditional technique of DNA fingerprinting allowed scientists to identify five rare *Listeria* strains in the outbreak. Sequencing the bacteria provided even more detail about those five strains, showing that although they appeared to be quite different by the traditional technique, they were actually closely related genetically.

Listeriosis linked to soft cheeses sickened 30 people and killed 3.

With that clue, investigators knew to look for a single source for the outbreak, which led them to one dairy. They later learned that the dairy had a long-standing issue with *Listeria* contamination in its manufacturing facility.

National Center for Emerging and Zoonotic Infectious Diseases
Division of Foodborne, Waterborne, and Environmental Diseases

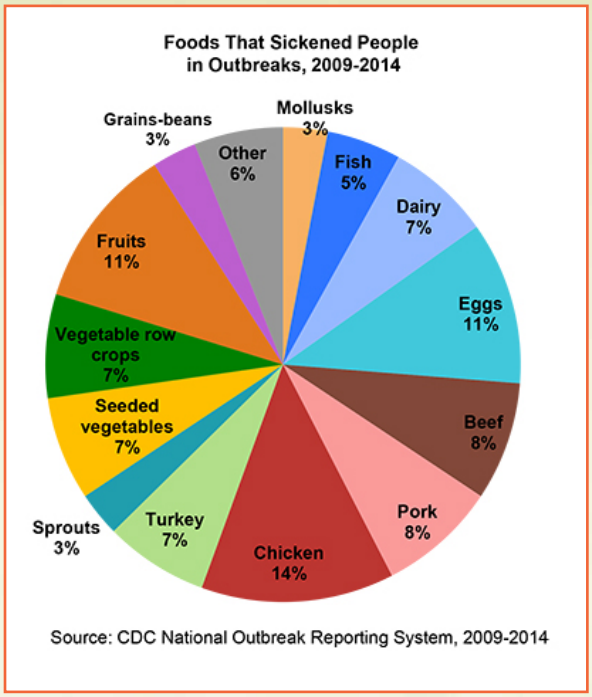
http://www.cdc.gov/foodsafety March 2016

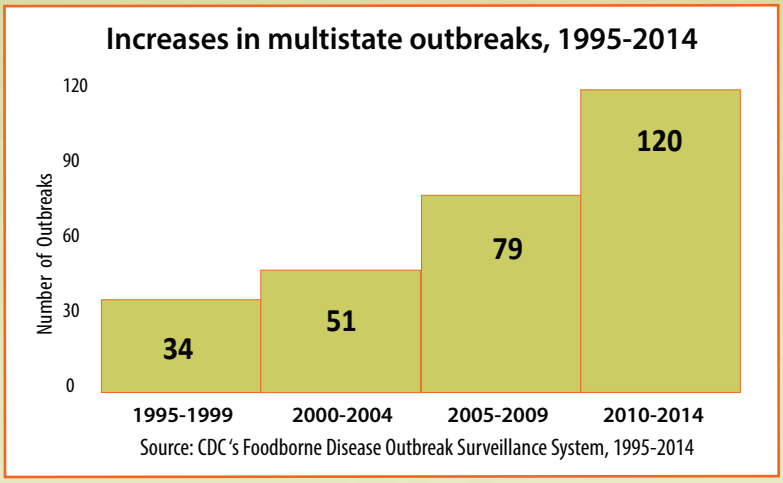
Challenges to America's Food Safety

Sometimes foods we love to eat and rely on for good health are contaminated with bacteria that cause illness and can be deadly for certain people. More progress is needed to protect people and reduce food-borne illnesses in America.

Challenges to food safety will continue to arise in unpredictable ways, largely due to:

- Changes in our food production and supply, including more imported foods
- Changes in the environment leading to food contamination
- Finding more multistate outbreaks
- New and emerging bacteria, toxins, and antibiotic resistance
- Unexpected sources of foodborne illness, such as ice cream and raw sprouted nut butter





The threat of antibiotic resistance

Antibiotic resistance in foodborne bacteria is a growing food safety challenge that is made worse by overuse of antibiotics in humans and food animals. CDC estimates that every year, over 400,000 people in the United States are sickened with resistant *Salmonella* or *Campylobacter*.

The National Antimicrobial Resistance Monitoring System (NARMS), a partnership of CDC, FDA, and USDA, will play an expanded role under the President's initiative for Combating Antimicrobial-Resistant Bacteria (CARB) by:

- Increasing markedly the number of *Salmonella* bacteria samples isolated from ill people that are tested for antibiotic resistance
- Increasing the number of isolates of other foodborne bacteria, including *Campylobacter*, that are tested for antibiotic resistance
- Collecting more date from ill people (for example, patient history, food exposure, travel history) to better understand why people get sick from resistant infections

The future of food safety depends on:

- Helping to building state capacity for surveillance and outbreak response through the Centers of Excellence, Foodborne Disease Centers for Outbreak Response Enhancement (FoodCORE), FoodNet, and OutbreakNet Enhanced
- Developing and sharing whole genome sequencing technology with all 50 state PulseNet laboratories
- Developing and improving ways to integrate and share surveillance data with partners and the public
- Working with other countries and international agencies to improve surveillance, investigation, and prevention of food-borne infections around the world