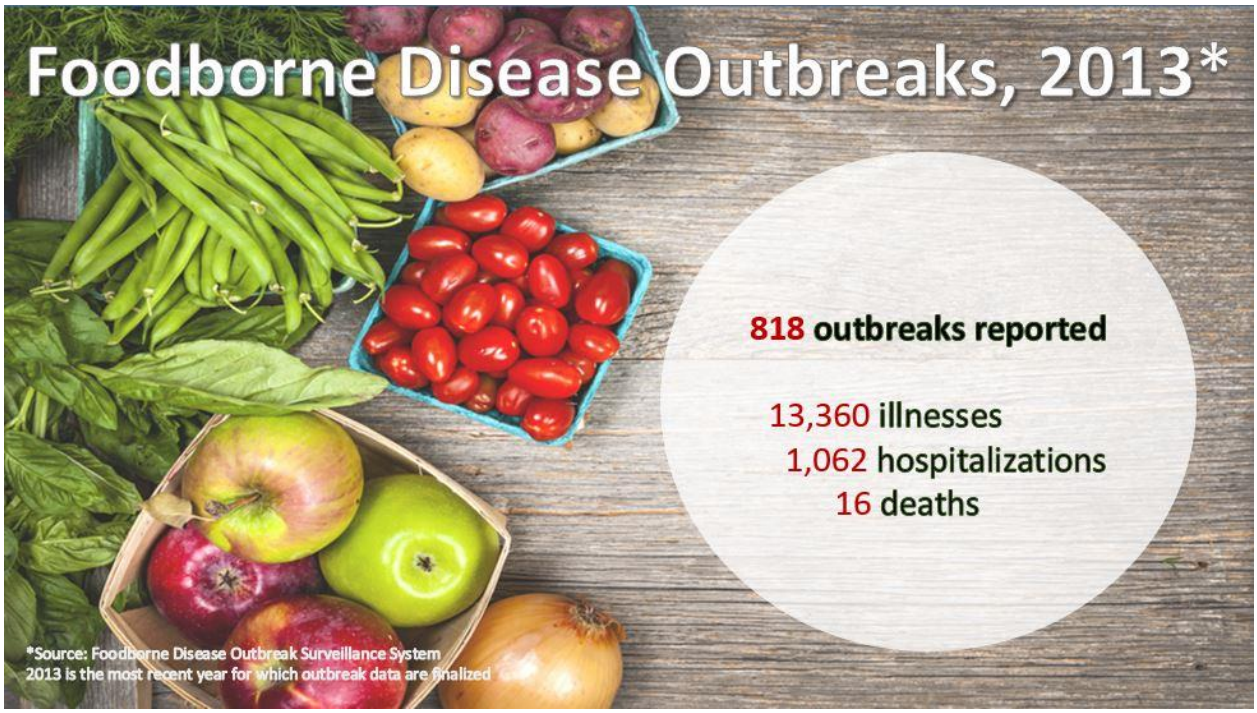
Questions and Answers

Surveillance for Foodborne Disease Outbreaks
United States, 2013



In May 2015, CDC published an annual report of foodborne disease outbreaks that occurred in 2013 and updated its Foodborne Outbreak Online Database (FOOD) with data on outbreaks through 2013. Read through the questions and answers below to learn more.

FAST FACTS

Foodborne disease outbreaks, 2013

During January 1, 2013 through December 31, 2013, public health departments reported 818 foodborne disease outbreaks; these outbreaks resulted in 13,360 illnesses, 1,062 hospitalizations, and 16 deaths.

Outbreaks and Agents, 2013

- 439 outbreaks were caused by a single, confirmed agent
- The most common causes of outbreaks
    - Norovirus caused 35%
    - *Salmonella* caused 34%

Outbreak-related illnesses, 2013

- 9,359 outbreak-related illnesses were caused by a single, confirmed agent and 965 (10%) resulted in hospitalization
- The most common causes of outbreak-related illnesses
    - Norovirus caused 40%
    - *Salmonella* caused 38%

KEY DATA

What are the main findings from the report?

- 818 foodborne disease outbreaks reported, resulting in
    - 13,360 illnesses
    - 1,062 hospitalizations
    - 16 deaths
    - 14 food recalls

What agents caused the most outbreaks?

- 439 outbreaks were caused by a single, confirmed agent. Most commonly reported agents
    - Norovirus caused 35% of outbreaks
    - *Salmonella* caused 34% of outbreaks

What agents caused the most outbreak-related illnesses?

- 9,359 outbreak-related illnesses were caused by a single, confirmed agent and 965 (10%) illnesses resulted in hospitalization
- The most common agents resulting in outbreak-related illnesses:
    - Norovirus caused 40%
    - *Salmonella* caused 38%

What pathogen-food category pairs (agents and foods) were responsible for the most outbreaks and outbreak-related illnesses, hospitalizations, and deaths?

The pathogen-food category pairs (agents and foods) responsible for the most outbreak-related illnesses, hospitalizations, and deaths were

- **Outbreaks**
  - Scombroid toxin (histamine fish poisoning) in fish (25 outbreaks)
  - Ciguatoxin in fish (15 outbreaks)
  - *Vibrio parahaemolyticus* in mollusks (13 outbreaks)
- **Illnesses**
  - *Salmonella* in chicken (700 illnesses)
  - *Salmonella* in pork (436 illnesses)
  - *Salmonella* in seeded vegetables (268 illnesses)
- **Hospitalizations**
  - *Salmonella* in chicken (213 hospitalizations)
  - Hepatitis A in fruits (71 hospitalizations)
  - *Salmonella* in pork (65 hospitalizations)
- **Deaths**
  - *Listeria* in dairy (3 deaths)

Where were most foods that caused outbreaks prepared?

- 60% in a restaurant
- 14% by a caterer or at a banquet facility
- 12% at home

How many multistate outbreaks were reported?

Twenty-six multistate outbreaks were reported during 2013.

- Eleven were caused by *Salmonella*
- Four by Shiga toxin-producing *E. coli*
- Four by *Listeria*
- Four by *Vibrio parahaemolyticus*
- One by hepatitis A
- One by *Cyclospora*
- One by niacin

For more information about selected multistate foodborne disease outbreaks, please visit the CDC's List of Selected Multistate Foodborne Outbreak Investigations web page.

GENERAL QUESTIONS

What factors influence outbreak investigation and reporting by state, local, and territorial public health agencies?

Outbreak detection, investigation, and reporting are influenced by many factors such as

- Available resources (time, staff, and laboratory capacity)
- Health department priorities
- Outbreak characteristics (size, severity)

Why do we use outbreak information to prevent foodborne illnesses?

When illnesses occur outside an outbreak setting, it is usually impossible to know what food or other exposure caused them. Therefore, although only a small proportion of illnesses occur as part of recognized and reported outbreaks, outbreak investigations provide some of the best data about the sources of foodborne illnesses.

How can this information be used to prevent foodborne illnesses?

Examining outbreak data can offer insights into the pathogens, agents, and foods causing foodborne illnesses, and into the factors that contribute to their occurrence. Public health officials use this information for foodborne illness prevention, education, and policy.

Why is the food unknown for so many reported outbreaks?

It is not always possible to determine what food is responsible for an outbreak. There are good reasons why excellent investigations sometimes do not identify the food source. For example, sometimes many of the same foods were eaten by most of the people who became sick, sometimes the number of people ill is very small, or sometimes the outbreak is identified after people's memories have faded. We can learn a lot even without knowing the responsible food. For example, information about the pathogen, the setting (e.g., restaurant, home, school), the number ill, and whether someone died is useful in designing prevention measures.

CDC encourages states to report all foodborne outbreak investigations, even if the food is not determined. Even well-conducted investigations may be unable to identify the food that caused the outbreak.

Why is the etiology (cause) unknown for so many reported outbreaks?

Infections caused by bacteria, chemical agents and toxins, parasites, and viruses are often diagnosed using specific laboratory tests that can identify the pathogen.

Too often, outbreaks are identified after the optimal time to obtain specimens from ill people and so laboratory tests are negative; sometimes health departments are unable to obtain specimens for laboratory analysis. In outbreaks in which timely specimens were obtained and a pathogen is not identified by the usual tests done by clinical laboratories, the cause may be a pathogen that is

not identified by tests done in the clinical laboratory. In these outbreaks, specimens should be sent to the state public health laboratory so that additional tests can be done there or at CDC.

CDC encourages states to report all foodborne disease outbreak investigations, even if the etiology is not determined. Even well-conducted investigations may not be able to identify the etiology or cause of the outbreak.

Can data reported for 2013 be compared with previous years?

CDC made changes to the Foodborne Disease Outbreak Surveillance System in 2009 and implemented a new food categorization scheme in 2011. These changes must be considered in making any comparisons with previous years.

Where can I go for more information on foodborne disease outbreaks?

- Full Reports
- Individual outbreak data including etiology, locations, and food vehicles through 2013:
  - Foodborne Outbreak Online Database (FOOD)
- Foodborne disease outbreak investigations and surveillance data from previous years:
  - Foodborne Outbreaks
- Foodborne disease prevention and current product recalls and alerts:
  - CDC and Food Safety
  - FoodSafety.gov
- Information on the new Food Safety Modernization Act and CDC's role:
  - CDC and the Food Safety Modernization Act
- Resources on reporting foodborne disease outbreaks for state and local health departments:
  - The National Outbreak Reporting System (NORS)

BACKGROUND

State and local health departments report the results of foodborne disease outbreak investigations to CDC. CDC posts annual summaries on the Food Safety FDOSS Annual Summaries of Foodborne Outbreaks web page.

- CDC also maintains a web-based platform for searching CDC's Foodborne Disease Outbreak Surveillance System database called the Foodborne Outbreak Online Database (FOOD).
  - Report of outbreaks that occurred in 2013 have now been added to that database
  - The FOOD tool provides access to national information and is intended to be used for limited descriptive summaries of outbreak data.
  - Please see the FOOD FAQ and Foodborne Outbreak Tracking and Reporting for more information.
- Summaries of outbreak investigations provide important snapshots of the human health impact of foodborne disease outbreaks and the agents, foods, settings, and contributing factors (for example, food not kept at the right temperature) involved in these outbreaks.

- In comparing data between years, it is important to note that changes were made to the foodborne disease outbreak surveillance system in 2009 and a new food categorization scheme was implemented in 2011.