

Questions and Answers

2011 Preliminary FoodNet Data

July 27, 2012

Overview of FoodNet

What is FoodNet?

FoodNet is the Foodborne Diseases Active Surveillance Network (FoodNet). Established in 1996, [FoodNet](#) collects information to track incidence and trends of infection with nine pathogens transmitted commonly through food. FoodNet conducts detailed and accurate surveillance for *Campylobacter*, *Cryptosporidium*, *Cyclospora*, *Listeria*, *Salmonella*, Shiga toxin-producing *Escherichia coli* (STEC) O157 and non-O157, *Shigella*, *Vibrio*, and *Yersinia* infections diagnosed by laboratory testing of samples from patients. It is a collaborative program among CDC, 10 state health departments, the U.S. Department of Agriculture's Food Safety and Inspection Service, and the Food and Drug Administration. More information about FoodNet is found at www.cdc.gov/foodnet/index.html.

Are the data from FoodNet representative of the entire United States?

The FoodNet surveillance area includes approximately 47 million people or 15% of the U.S. population. Since its launch in 1996, FoodNet has increased from five sites to 10 sites, which has improved its representativeness. The population of the FoodNet surveillance area generally resembles the entire U.S. population demographically. However, the percentage of persons of Hispanic ethnicity is slightly lower in the population of FoodNet sites.

How is the incidence of infections in FoodNet influenced by outbreaks?

Most cases are not related to outbreaks. For 2011, the overall trends for most pathogens would not have been substantially different if outbreak-related cases were excluded from the totals. However, in 2011, 32% of *Listeria* cases reported to FoodNet were associated with a large, multistate outbreak due to contaminated cantaloupe.

What are some limitations of the FoodNet data?

- FoodNet relies on diagnoses made in clinical laboratories. Some infectious agents, such as norovirus, that are transmitted commonly through food are not under surveillance in FoodNet, because these pathogens are usually not identified in clinical laboratories. Also, changing laboratory diagnostic practices may affect the reported incidence of infection for some pathogens, even if the true incidence has not changed. FoodNet is monitoring the effect of these diagnostic changes.
- Many illnesses are acquired from nonfood sources, so incidence rates do not reflect foodborne transmission exclusively.
- Differences in health care-seeking behaviors may contribute to observed differences in incidence between different age groups.
- Hospitalizations and deaths reported to FoodNet may or may not be due to the specific infection reported, since any hospitalization and death is reported if it occurs in the seven days before or after the diagnosis of infection.

Where can I find past FoodNet reports?

Past reports are at <http://www.cdc.gov/foodnet/reports.htm>

2011 Preliminary FoodNet Data

What does the preliminary 2011 FoodNet data show?

In 2011, FoodNet identified nearly 19,000 infections. The most frequent cause of infection was *Salmonella*, followed by *Campylobacter*, *Shigella*, *Cryptosporidium*, and Shiga toxin-producing *E. coli* (STEC).

Children under 5 had the highest incidence of *Campylobacter*, *Cryptosporidium*, *Salmonella*, Shiga toxin-producing *E. coli* (STEC) O157 and non-O157, *Shigella*, and *Yersinia* infection. Adults 65 years or older had the highest incidence of *Cyclospora*, *Listeria*, and *Vibrio* infection. Thirteen percent of infections occurred in adults aged ≥65 years old.

For more information please see the following [tables and figures](#).

Tables

Table 1. Foodborne Diseases Active Surveillance Network (FoodNet) Surveillance Area, by State and County, 1996–2011

Tables 2a and 2b. Number and incidence of laboratory-confirmed bacterial and parasitic infections, and postdiarrheal hemolytic uremic syndrome (HUS), by year and pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States, 1996–2011

Tables 3a and 3b. Number and incidence of laboratory-confirmed bacterial and parasitic infections in 2011 and postdiarrheal hemolytic uremic syndrome (HUS) in 2010, by site and pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Tables 4a and 4b. Number and incidence of laboratory-confirmed bacterial and parasitic infections in 2011, by pathogen and age group, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 5. Number and incidence of laboratory-confirmed *Salmonella* infections caused by the top 10 *Salmonella* serotypes, 2011, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 6. Number and incidence of top 5 laboratory-confirmed Shiga toxin-producing *E. coli* (STEC) non-O157 infections, by serogroup, 2011, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 7. Number and incidence of laboratory-confirmed *Vibrio* and other *Vibrionaceae* species infections, by species, 2011, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 8. Percent change (and 95% confidence interval) in incidence of laboratory-confirmed bacterial and parasitic infections in 2011 compared with average annual incidence for 1996–1998 and for 2006–2008, by pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 9. Percent change (and 95% confidence interval) in incidence of laboratory-confirmed *Salmonella* infections with the top 10 *Salmonella* serotypes 2011 compared with average annual incidence for 1996–1998 and for 2006–2008, by pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 10. Overall change (and 95% confidence interval) in incidence of laboratory-confirmed bacterial infections in 2011 compared with average annual incidence for 1996–1998 and for 2006–2008, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 11. Number and percentage of hospitalizations in 2011, by pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Tables 12a–e. Number and percentage of hospitalizations in 2011, by age group and pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 13. Number of deaths and case fatality ratio (CFR) in 2011, by pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Table 14. Number of deaths and case fatality ratio (CFR) in 2011, by age group and pathogen, Foodborne Diseases Active Surveillance Network (FoodNet), United States

Figures

Figure 1. Percent change in incidence of laboratory-confirmed bacterial and parasitic infections in 2011 compared with average annual incidence during 1996–1998, by pathogen, FoodNet

Figure 2. Relative rates of laboratory-confirmed infections with *Campylobacter*, STEC O157, *Listeria*, *Salmonella*, and *Vibrio* compared with 1996–1998 rates, by year, FoodNet 1996–2011

Figure 3. Relative rates of laboratory-confirmed infections with *Shigella*, *Yersinia*, and *Cryptosporidium* compared with 1996–1998 rates, by year, FoodNet 1996–2011

Figure 4. Percent change in incidence of laboratory-confirmed bacterial and parasitic infections in 2011† compared with average annual incidence during 2006–2008, by pathogen, FoodNet

Figure 5. Percent change in incidence of laboratory-confirmed *Salmonella* infections with the top *Salmonella* serotypes in 2011 compared with average annual incidence during 1996–1998, by serotype, FoodNet

Figure 6. Relative rates of laboratory-confirmed *Salmonella* infections with the top *Salmonella* serotypes in 2011 compared with 1996–1998 rates, by year, FoodNet 1996–2011

Figure 7. Relative rates of laboratory-confirmed *Salmonella* infections with the top *Salmonella* serotypes in 2011 compared with 1996–1998 rates, by year, FoodNet 1996–2011

Figure 8. Percent change in incidence of laboratory-confirmed *Salmonella* infections with the top *Salmonella* serotypes in 2011 compared with average annual incidence during 2006–2008, by serotype, FoodNet

Figure 9. Relative rates of laboratory-confirmed infections with *Campylobacter*, STEC O157, *Listeria*, *Salmonella*, *Vibrio*, and *Yersinia*, and overall measure of change, compared with 1996–1998 rates, by year, FoodNet 1996–2011

Questions about specific populations

Why is the incidence of so many foodborne infections higher in young children? What are some risk factors for these infections in young children?

The incidences of *Campylobacter*, *Cryptosporidium*, *Salmonella*, *Shigella*, STEC O157, STEC non-O157, and *Yersinia* infection were highest among children aged <5 years. Young children are more likely than persons in other age groups to be brought in for medical attention for diarrheal illness, but this is just part of the explanation. The immune system in young children is not fully developed. Studies in young children have identified various food and nonfood exposures—like visiting a farm, riding in a shopping cart near raw meat or poultry, and contact with baby chicks, turtles, and water frogs—that also can increase the risk of infection with the pathogen tracked in FoodNet.

Why are the hospitalization and death rates for so many of these infections higher in older adults?

For infections with most pathogens under FoodNet surveillance, persons aged ≥ 65 years are at greater risk than other persons for hospitalization and death. This is probably because many older adults have other health issues that put them at higher risk for severe illness if they get one of these infections. Severe illness is more likely to require medical attention, including hospitalization, and more likely to result in death. These data highlight the need for prompt diagnosis and treatment in this age group as well as for careful attention to food safety.

For more information about specific pathogens, visit [CDC and Food Safety Foodborne Illness A-Z](#).