

National Advisory Committee on Meat and Poultry Inspection

Preliminary 2004 FoodNet Data

Purpose

The Food Safety and Inspection Service (FSIS) has been a partner in the Foodborne Diseases Active Surveillance Network (FoodNet) since it began in 1996. FoodNet is a collaborative project of the Centers for Disease Control and Prevention (CDC), FSIS, the Food and Drug Administration (FDA) and 10 sites. The sites are Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado and New York. In 2004, the project area included 44.1 million people, or 15.2% of the U.S. population.

FoodNet monitors laboratory diagnosed cases of foodborne illness and related epidemiologic studies in order to help public health officials better understand the epidemiology of foodborne diseases in the United States. Laboratory diagnosed cases may be associated with known foodborne outbreaks or may be sporadic cases not outbreak related. The surveillance may also identify infections acquired from non-foodborne sources. The project aims to more precisely determine the national burden of foodborne diseases, to monitor foodborne disease trends and to determine the proportion of foodborne diseases attributable to specific foods and settings.

FSIS closely monitors data generated by the surveillance network. This document provides a summary of the data and information presented in the most current FoodNet publication, "Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food – 10 Sites, United States, 2004." The report can be accessed at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5414a2.htm>.

Discussion

In 2004, FoodNet surveillance identified a total of 15,806 laboratory-diagnosed cases of infections caused by:

- *Salmonella* (6,464 cases),
- *Campylobacter* (5,665 cases),
- *Shigella* (2,231 cases),
- *Cryptosporidium* (613 cases),
- *E. coli* O157:H7 (401 cases),
- *Yersinia* (173 cases),
- *Vibrio* (124 cases),
- *Listeria* (120 cases), and
- *Cyclospora* (15 cases).

FoodNet identified 52 cases of hemolytic uremic syndrome (HUS) in persons less than 15 years of age in 2003.

Healthy People 2010 objectives:

The overall incidence of cases in 2004 per 100,000 people was 14.7 for *Salmonella*, 12.9 for *Campylobacter*, and 0.9 for *E. coli* O157:H7. The overall incidence of cases per one million people was 2.7 for *Listeria*. For the first time, the incidence of *E. coli* O157:H7 infections in FoodNet fell below the national 2010 target of 1.0 case per 100,000 people. The decline in *Campylobacter* incidence reflects progress toward the national health objective of 12.3 cases per 100,000 people. The decline in *Listeria* incidence, to 2.7 cases per one million people in 2004, suggests that the revised national objective to reduce foodborne listeriosis to 2.5 cases per 1 million people by 2005 might be met with continued efforts. The 2004 *Salmonella* incidence of 14.7 per 100,000 people exceeds the national objective of the 6.8 cases per 100,000 people.

FoodNet developed a statistical model to monitor foodborne disease trends and to estimate statistically significant changes in the incidence of pathogens over time. This model takes into account increases in the population under surveillance since 1996. For the 2004 comparison, a three-year baseline or reference period, 1996 – 1998, was found to provide more stable and precise estimates than using the previous one-year period, 1996.

The estimated changes in incidence of infections (relative rate) between the baseline period and 2004 decreased for several pathogens:

- *Salmonella* (all serotypes) decreased 8% (CI = 1%--15%),
- *Salmonella* Typhimurium decreased 41% (CI = 34%--48%),
- *Campylobacter* decreased 31% (95% CI = 25%--36%),
- *E. coli* O157:H7 decreased 42% (CI = 28%--54%),
- *Listeria* decreased 40% (CI = 25%--52%),
- *Yersinia* decreased 45% (CI = 32%--55%), and
- *Cryptosporidium* decreased 40% (CI = 26%--52%).

The estimated incidence of infections with *Shigella*, *S. Enteritidis* and *S. Heidelberg* did not change significantly in 2004 compared with the baseline period. The estimated incidence of *S. Newport*, *S. Javiana*, and *Vibrio* infections increased 41% (CI = 5%--89%), 167% (CI = 75%--306%), 47% (CI = 7%--102%), respectively.

The report notes that the declines in the estimated incidences of infection occurred concurrently with several important food safety initiatives and education efforts. One initiative was the industry response to the FSIS 2002 notice to manufacturers to reassess control strategies for *E. coli* O157:H7 in the production of ground beef. Further, the report mentions the decline in *Campylobacter* incidence from the baseline period to 2004 (the majority of which occurred before 2001) as it might reflect efforts to reduce contamination of poultry and educate consumers about safe food-handling practices. The

incidence of infections caused by *Listeria* in 2004 was comparable to 2002 and an increase in incidence was noted in 2003. The report states that "...efforts must continue to prevent foodborne listeriosis." The report describes the decline in *Salmonella* incidence as modest when compared with those of other foodborne bacterial pathogens and "...greater efforts are needed to understand the complex epidemiology of *Salmonella* and to identify effective pathogen-reduction strategies."

Contact Persons

Dr. Reuben Varghese, Chief, Medical Affairs and Surveillance Branch
Human Health Sciences Division
Office of Public Health Science
Phone: 202-690-6409

Dr. Kristin Holt, FSIS Liaison to CDC
Human Health Sciences Division
Office of Public Health Science
Phone: 404-639-3379