CDC/NCID

For more information about FoodNet, see the Foodnet website:
http://www.cdc.gov/ncidod/dbmd/foodnet/foodnet.htm

From the Foodborne and Diarrheal Diseases Branch (FDDB), Division of Bacterial and Mycotic Diseases

the Catchment

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Inside this issue:

We need your help!
Some of you have suggested that we change the name of this newsletter. What do you think the name of the FoodNet newsletter should be? Do you like name of *The Catchment* just as it is? If you have any suggestions or comments, please contact Samantha Yang at (404) 639-2206 or e-mail: say9@cdc.gov
Thanks!

FoodNet Widens Reach: Catchment Area Expands in 1999

Beginning January 1, 1999, the FoodNet catchment area will expand to include 32.2 million people, or 12% of the American population. The growth in surveillance coverage results from the introduction of an eighth site consisting of selected counties in Tennessee, the addition of eight counties in New York, and expansion to statewide coverage in Georgia. This increase in persons covered by surveillance helps FoodNet to formulate more precise estimates of the burden of foodborne diseases in the United States. Welcome, all new FoodNet Team members!

To learn more about the FoodNet site in Tennessee and its coordinator, Dr. Allen Craig, turn to page 2

FoodNet Activities in 1999

As in previous years, FoodNet in 1999 is conducting and coordinating a variety of activities aimed at increasing our understanding of foodborne disease. Active surveillance of laboratory-confirmed cases of *Campylobacter, Cryptosporidium, Cyclospora,* Shiga toxin-producing *E. coli* O157, *Listeria, Salmonella, Shigella, Vibrio,* and *Yersinia* infections in all FoodNet sites continues as the central activity. Other FoodNet projects this year include the following:

Case-control studies of Shiga toxin-producing *E. coli* O157, *Cryptosporidia,* and *Listeria* to identify risk factors for infection with these pathogens

Continuation of isolate collection and testing to monitor for antimicrobial resistance
All FoodNet sites are sending to CDC for antimicrobial resistance testing the following:
Every tenth non-typhoidal *Salmonella* isolate
Every fifth *E. coli* O157 isolate
Every tenth *Shigella* isolate (new in 1999)
Every *Salmonella* Typhi isolate (new in 1999)
One *Campylobacter* isolate every week

Continuation of active surveillance for HUS
Surveillance for hemolytic uremic syndrome (HUS) was initiated in 1997 in five FoodNet sites. In 1998, a serologic assay for antibodies to O157 lipopolysaccharide was provided to all sites, along with equipment and reagents for screening stools for non-O157 Shiga toxin-producing *E. coli*. In 1999, all eight sites are participating in HUS surveillance. The information collected will help to determine the incidence and etiology of diarrhea-associated HUS.

Repeat survey of all clinical laboratories receiving stool specimens from patients within FoodNet sites
Substantial variation in stool handling, processing, and culturing methods demonstrates the need for standard approaches and laboratory practice guidelines. Results of this survey of current laboratory practices will assist in developing stool culturing guidelines for clinicians.

Continuation of *Enterococcus*/*Campylobacter* antimicrobial resistance study
In July 1998, the public health laboratories in four FoodNet sites (Minnesota, Oregon, Georgia, and Maryland) began forwarding each month to CDC for antimicrobial resistance testing the following:
Enterococcus isolates collected from 10 human stool samples
Enterococcus and *Campylobacter* isolates collected from 10 retail poultry samples
This study will help determine the prevalence of antimicrobial-resistant *Enterococcus* and *Campylobacter.*

Continuation of population survey
Following completion of the second population survey in February 1999, the third population survey will be administered beginning July 1999 in all eight FoodNet sites. These surveys will provide data to help estimate the burden of foodborne illness.
To all of you who have helped to initiate, plan, and maintain these FoodNet projects, thank you!

An Overview of Abstracts Presented

Following is an overview of FoodNet Abstracts presented at the 36th Annual Meeting of the Infectious Diseases Society of America, Denver, Colorado, November 12-15, 1998.

Abstract title	Authors	Some findings
Antimicrobial Agent Use Increases Infections with Resistant Bacteria: a FoodNet Case-control Study of Sporadic, Multiresistant *Salmonella* Typhimurium DT104 Infections, 1996-1997	MK Glynn, S Reddy, T Fiorentino, B Shiferaw, D Vugia, M Bardsley, J Bender, F Angulo, and the FoodNet Working Group	Patients were more likely to have taken antimicrobial agents in the 4 weeks before illness onset then were controls during a similar time period. Patients were also more likely to have taken antimicrobial agents to which DT104 is resistant than were controls.
Chicken, a Newly Identified Risk Factor for Sporadic *Salmonella* serotype Enteritidis (SE) Infections in the United States: A Case-Control Study in FoodNet Sites	A Kimura, S Reddy, R Marcus, P Cieslak, J Mohle-Boetani, H Kassenborg, S Segler, D Swerdlow, and the FoodNet Working Group	Traveling outside the U.S. was a risk factor for SE infection. Among those who did not travel outside the U.S., illness was associated with eating chicken outside the home.
Eggs Identified as a Risk Factor for Sporadic *Salmonella* serotype Heidelberg Infections: A Case-Control Study in FoodNet Sites	T Hennessy, L Cheng, H Kassenborg, S Desai, J Mohle-Boetani, R Marcus, B Shiferaw, S Reddy, F Angulo, and the FoodNet Working Group	Infection with *S.* Heidelberg was associated with eating eggs prepared outside the home, particularly runny eggs.
Salmonella Infections from Reptiles in FoodNet Sites: the Resurgence of a Preventable Illness	J Mermin, L Hutwagner, D Vugia, P Kirley, J Bender, J Koehler, T McGivern, R Marcus, F Angulo, and the FoodNet Working Group	Illness was associated with having a reptile or amphibian in the home and touching a reptile.
Fluoroquinolone-Resistant *Campylobacter* Infections in the United States: A Pilot Case-Control Study in FoodNet Sites	CR Friedman, S Yang, J Rocourt, K Stamey, D Vugia, R Marcus, S Segler, B Shiferaw, FJ Angulo, and the FoodNet Working Group	This study confirmed the existence of ciprofloxacin-resistant *Campylobacter* in California, Connecticut, Georgia, and Oregon FoodNet sites. Although foreign travel was identified as a risk factor, most patients with fluoroquinolone-resistant *Campylobacter* infection acquired their infections in the United States.
Breast Feeding Decreases Risk of Salmonellosis Among Infants in FoodNet Sites	S Yang, J Rocourt, B Shiferaw, H Kassenborg, M Bardsley, R Marcus, P Kirley, L Slutsker, and the FoodNet Working Group	Patients were less likely to have been breast fed during the 5 days before illness onset than controls during a similar time period. Other factors associated with illness included eating any solid food and drinking any type of water.

Welcome to FoodNet: Tennessee site and Dr. Allen Craig, site coordinator

Eleven counties in Tennessee, with an estimated 2.7 million population, are joining FoodNet this year. These counties are Cheatham, Sumner, Williamson, and Wilson. Their inclusion is funded by a portion of the CDC Emerging Infections Program grant, recently through 1997. Since graduating from EIS, Dr. Craig has acted as Deputy State Epidemiologist in Tennessee. He currently supervises immunizations. According to Dr. Craig, "Our staff is very excited about joining FoodNet. This program will allow us to better under-our outbreak detection and investigation skills."

Dr. Allen Craig, who is based in Communicable and Environmental Disease Services at the Tennessee Department of Health, coordinates the IHS Navajo Reservation for 8 months during the investigation of the 1993 Four Corners hantavirus outbreak. Dr. Craig worked as an served as a clinician for 10 years in the Indian Health Service (IHS) in Shiprock, New Mexico. He was acting Chief Medical Officer for

FoodNet data at work: Supporting CDC's Response to *Healthy People 2010* Goals

As part of its mission to improve the health of Americans, the U.S. Department of Health and Human Services (DHHS) issues health promotion and disease prevention initiatives every 10 years. Each initiative contains specific health improvement goals and objectives. For example, the first initiative, titled *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention*, listed goals to be achieved by 1990, such as reducing mortality among four age groups and increasing independence among older adults. *Healthy People 2000*, the second and current national prevention initiative, includes three broad goals: increasing the span of healthy life, reducing health disparities, and achieving access to clinical preventive services.

Healthy People 2010, the third such DHHS initiative, is now being written, and FoodNet is involved. Dr. Tom Van Gilder, CDC liaison to the Healthy People 2010 Committee, says that FoodNet surveillance data are helping to formulate the goals for reducing the incidence of foodborne disease. For example, FoodNet data on the number of persons with *Salmonella*, *Campylobacter*, *E. coli* O157:H7, *Listeria*, and parasitic infections will be used to support the proposed goals for reducing the incidence of these infections. Dr. Van Gilder adds, " It is interesting to see how the list of those interested in FoodNet data and the number and variety of projects relying on such data continue to grow."

F O C U S

USDA's Pathogen Reduction and HACCP *Salmonella* Performance Standards and Testing Program

As industry improves control over the safety aspects of meat and poultry production, a decline in the incidence of foodborne illness is anticipated. Dr. Phyllis Sparling, who is the USDA/Food Safety Inspection Service (FSIS) liaison at CDC and FSIS Technical Project Officer for FoodNet, says that FoodNet provides both baseline and year-to-year data from which to measure the impact of USDA's Hazard Analysis and Critical Control Point (HACCP) system and pathogen reduction activities on foodborne illness.

To give you an idea about USDA's current efforts to reduce foodborne illness, we've put together some information about its Pathogen Reduction and HACCP Systems.

The Rule on Pathogen Reduction and HACCP Systems

To reduce pathogens that cause foodborne illness, FSIS published its rule on Pathogen Reduction and HACCP Systems in July 1996. The rule established new requirements for all meat and poultry products, which are gradually being phased in to all slaughter and processing plants. Under this rule, 1) all are required to adopt the system of process controls known as HACCP to prevent food safety hazards, 2) slaughter plants are required to conduct microbial testing for generic *E. coli* to verify that their process control systems are effective in preventing fecal contamination, 3) plants must adopt and follow written Standard Operating Procedures for Sanitation, and 4) slaughter plants and plants that produce ground product must meet pathogen reduction performance standards for *Salmonella*.

Salmonella Performance Standards and Testing Program

The testing program

Because *Salmonella* is one of the most common causes of foodborne illness, is present on all types of raw meat and poultry products, and is a pathogen for which testing methods are available, USDA targeted *Salmonella* in a performance standards and testing program. USDA for the first time set microbiological standards for raw products. To verify that plants have met the standards, FSIS takes samples of the products and analyzes them for *Salmonella*. If salmonellae are consistently present in a plant at levels above the standard, the plant must take corrective action, because its system for contamination prevention is not effective.

The requirements for standard operating procedures for sanitation in all plants and generic *E. coli* testing in slaughter plants became effective in January 1997. The requirements for HACCP and *Salmonella* performance standards are being phased in based on plant size. Large plants were required to implement those requirements in January 1998, and small plants by January 1999. Very small plants have until January 2000.

The second progress report

FSIS recently released its second progress report that evaluated data from nine months of testing for *Salmonella* in large meat and poultry plants. The following are highlights of the report:

- For large broiler, swine, and ground beef plants for which data are adequate, 87 (90%) of the 97 plants have met the *Salmonella* performance standards.
- *Salmonella* prevalence on broiler carcasses dropped from 20% before HACCP Systems were implemented to 11% afterwards.
- *Salmonella* prevalence for swine carcasses dropped from 9% before to 6% after HACCP was implemented.
- *Salmonella* prevalence for ground beef dropped from 8% before to 4% after HACCP was implemented.

For more details about USDA's Pathogen Reduction and HACCP *Salmonella* Performance Standards and Testing Program access the website of FSIS/USDA at **http://www.fsis.usda.gov/OPHS/salmdata.htm**

the Catchment
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Foodborne Diseases Active Surveillance Network (FoodNet)
Population 32.2 million

Eight Emerging Infections Program (EIP) Sites

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Note to readers:

We're eager to spotlight other studies in future ***"Catchment"*** issues. Is there a study you would like to know more about? ***Please contact us!***