

Exhibit 2

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**MORBIDITY AND MORTALITY
WEEKLY REPORT**

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Preliminary FoodNet Data on the Incidence of Foodborne Illnesses — Selected Sites, United States, 2000

Each year in the United States, an estimated 76 million persons contract foodborne illnesses (1). CDC's Emerging Infections Program Foodborne Diseases Active Surveillance Network (FoodNet) collects data about nine foodborne diseases in eight U.S. sites to quantify and monitor foodborne illnesses (2–5). This report describes preliminary surveillance data for 2000 and compares them with 1996–1999 data. The data indicate the relative frequency of diagnosed infections, demonstrate substantial regional variation, and suggest trends in incidence. FoodNet provides data for monitoring foodborne illnesses and interventions designed to reduce them.

In 1996, active surveillance began for laboratory-confirmed cases of *Campylobacter*, *Escherichia coli* O157, *Listeria monocytogenes*, *Salmonella*, *Shigella*, *Vibrio*, and *Yersinia enterocolitica* infections in Minnesota, Oregon, and selected counties in California, Connecticut, and Georgia. In 1997, surveillance for laboratory-confirmed cases of *Cryptosporidium* spp. and *Cyclospora cayentanensis* infections was added, and 12 Georgia counties and Fairfield County in Connecticut were added to the surveillance area. In 1998, the surveillance area for Connecticut became statewide and active surveillance began in selected counties in Maryland and New York. In 1999, the remaining counties in Georgia and eight counties in the metropolitan Albany, New York, area were added. In 2000, 11 counties in Tennessee and Contra Costa County in California were added, bringing the FoodNet surveillance population to 29.5 million persons (10.8% of the 1999 U.S. population) (6). To identify cases, surveillance personnel contact each clinical laboratory in their surveillance area either weekly or monthly depending on the size of the clinical laboratory. Cases represent the first isolation of a pathogen from a person by a clinical laboratory; most specimens were obtained for diagnostic purposes from ill persons.

Preliminary incidence figures for 2000 were calculated using the number of cases of diagnosed infections that FoodNet had identified at clinical laboratories as the numerator and 1999 population estimates as the denominator (6). Final incidence rates will be calculated when 2000 population census counts are available.

2000 Surveillance

The data for 2000 are presented in two ways: from the five original sites and from the expanded eight site population. The eight site data are likely to represent better the national picture. During 2000, 12,631 laboratory-confirmed cases of nine diseases under surveillance were identified: 4640 of campylobacteriosis, 4237 of salmonellosis, 2324 of

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shigellosis, 631 of *E. coli* O157 infections, 484 of cryptosporidiosis, 131 of yersiniosis, 101 of listeriosis, 61 of *Vibrio* infections, and 22 of cyclosporiasis. Among the 3686 *Salmonella* isolates serotyped, 862 (23%) were serotype Typhimurium, 565 (15%) were serotype Enteritidis, 399 (11%) were serotype Newport, and 248 (7%) were serotype Heidelberg. Among the 2192 *Shigella* isolates with a known species, 85% were *S. sonnei* and 13% were *S. flexneri*. Among the 52 *Vibrio* isolates with known species, 35 (67%) were *V. parahaemolyticus*, five (10%) were *V. cholerae* nontoxicogenic, and four (8%) were *V. vulnificus*.

Overall in 2000, incidence of diagnosed infections per 100,000 population was highest for *Campylobacter*, followed by *Salmonella* and *Shigella* (Table 1). Substantial variation in incidence was reported among the sites for many pathogens. The most frequently isolated pathogens varied by site (Figure 1), with *Campylobacter* most common in five sites and *Salmonella* most common in three. The incidence of laboratory-diagnosed campylobacteriosis ranged from 6.6 per 100,000 population in Tennessee to 38.2 in California. The incidence of diagnosed infection with *Salmonella* was less variable, ranging from 8.9 in Oregon to 18.0 in Georgia. Rates for infections with specific *Salmonella* serotypes also varied. Infection with *S. Typhimurium* ranged from 1.9 in California to 3.7 in Tennessee, *S. Enteritidis* from 1.0 in Georgia and Tennessee to 5.1 in Maryland, and *S. Newport* from 0.3 in Oregon to 3.5 in Tennessee. Incidence of shigellosis ranged from 1.1 in New York to 18.8 in Minnesota, *E. coli* O157 infections ranged from 0.5 in Maryland to 4.6 in Minnesota, and yersiniosis varied from 0.2 in Minnesota to 0.9 in California. The incidence of cryptosporidiosis ranged from 0.2 in Maryland to 3.9 in Minnesota. Listeriosis ranged from 0.1 in Minnesota to 0.5 in Connecticut, and diagnosed *Vibrio* infections ranged from 0 in New York to 0.9 in California.

TABLE 1. Incidence* of diagnosed infections for pathogens at the five original sites, 1996–2000, and for all eight sites, 2000, by year and pathogen — Foodborne Diseases Active Surveillance Network, United States

Pathogen	Original five sites					All sites
	1996	1997	1998	1999 [†]	2000 [†]	2000
<i>Campylobacter</i>	23.5	25.2	21.4	17.5	20.1	15.7
<i>Cryptosporidium</i>	NR [‡]	3.7 [‡]	2.9 [‡]	1.8 [‡]	2.4 [‡]	1.5
<i>Cyclospora</i>	NR [‡]	0.4 [‡]	0.1 [‡]	0.1 [‡]	0.1 [‡]	0.1
<i>Escherichia coli</i> O157	2.7	2.3	2.8	2.1	2.9	2.1
<i>Listeria</i>	0.5	0.5	0.6	0.5	0.4	0.3
<i>Salmonella</i>	14.5	13.6	12.3	13.6	12.0	14.4
<i>Shigella</i>	8.9	7.5	8.5	5.0	11.6	7.9
<i>Vibrio</i>	0.2	0.3	0.3	0.2	0.3	0.2
<i>Yersinia</i>	1.0	0.9	1.0	0.8	0.5	0.4

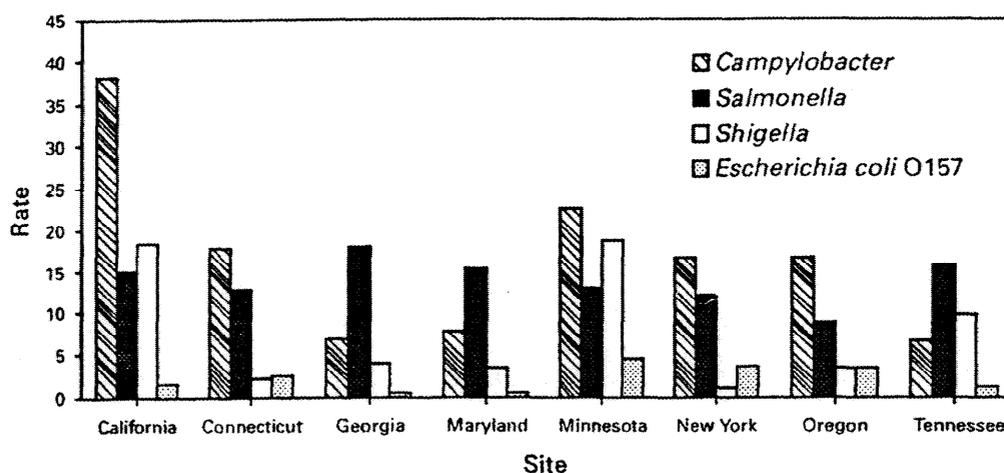
*Per 100,000 population.

[†]Urine isolates excluded because urine isolates were not reported before 1999.

[‡]Not reported.

[‡]Rates from 1997–2000 for *Cyclospora* and *Cryptosporidium* were calculated using the 1997 catchment area. Connecticut, Minnesota, and selected counties in California began data collection at the beginning of 1997; Oregon and other selected counties in California began this process in the middle of the year. Only full-year data are included in these rate calculations.

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FIGURE 1. Incidence* of diagnosed infections, by pathogen and site — Foodborne Diseases Active Surveillance Network†, United States, 2000

*Per 100,000 population.

† Reporting was statewide in Connecticut, Georgia, Minnesota, and Oregon, and from selected counties in California, Maryland, New York, and Tennessee.

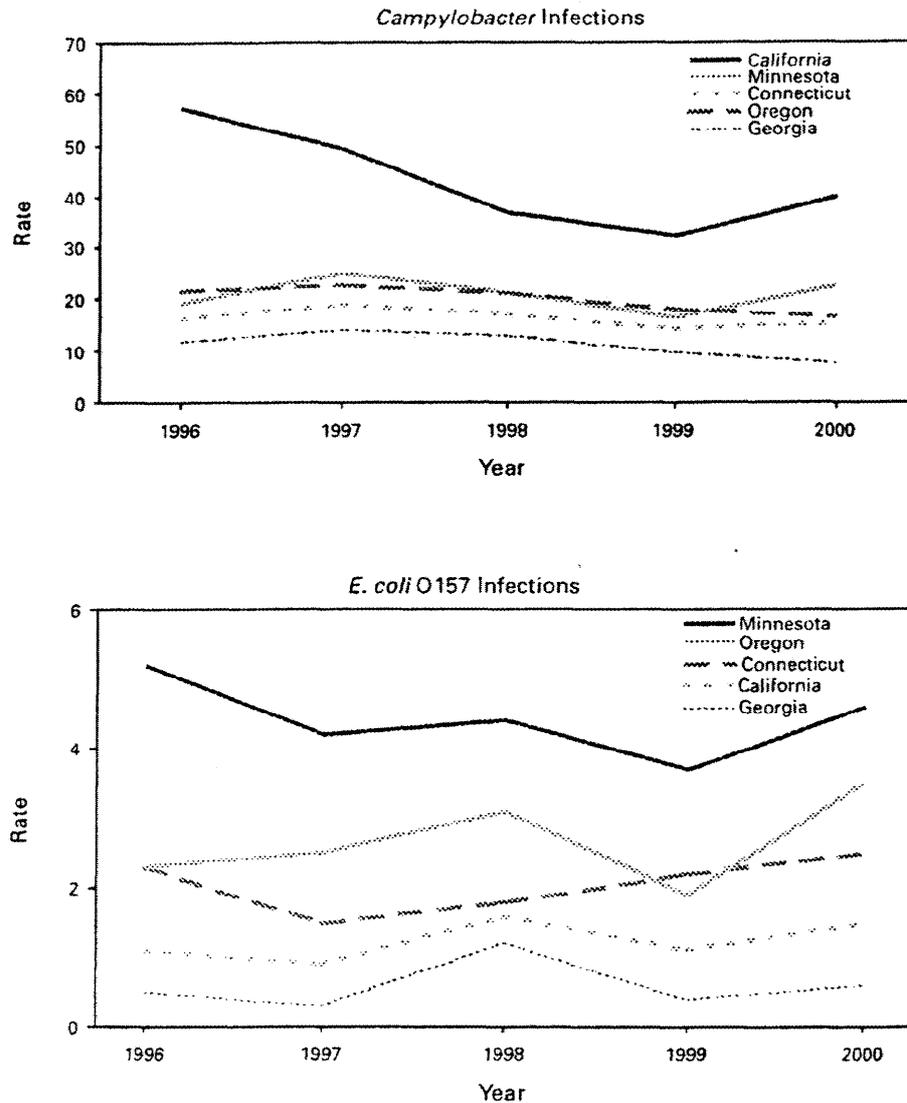
1996–2000 Rate Comparison

The number of sites and the population under surveillance nearly doubled since FoodNet began in 1996. To provide consistency, only data from the original five sites were examined to determine temporal trends (Table 1). Comparing 1996 with 2000, the incidence of laboratory-diagnosed campylobacteriosis declined in the original five sites combined, and in four of the five original sites individually. The magnitude and pattern of change varied by site; for example, California, Connecticut, and Minnesota reported an increase in 2000 compared with 1999 (Figure 2). The incidence of diagnosed salmonellosis declined in all five sites combined and in each of the five original sites. Comparing 1996 with 2000, the incidence of infection with each of the two most common serotypes of *Salmonella* also declined, from 3.9 to 2.7 for *S. Typhimurium* and from 2.5 to 1.8 for *S. Enteritidis*. The incidence of listeriosis declined overall and in each of the sites. The incidence of cryptosporidiosis and cyclosporiasis also declined after surveillance began in 1997. In comparison, the overall incidence of shigellosis varied substantially from year to year and from site to site; the incidence increased in all sites combined and in four of the five individual sites. Large increases occurred in California and Minnesota during 2000. The overall incidence of *E. coli* O157 infections increased in the combined five sites and in four of the five original sites separately. Substantial year-to-year fluctuation occurred in the rates of *E. coli* O157 infections in individual sites, and marked variation occurred from site to site (Figure 2).

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FIGURE 2. Incidence* of diagnosed *Campylobacter* and *Escherichia coli* O157 infections at the five original sites, by year — Foodborne Diseases Active Surveillance Network, United States, 1996–2000



* Per 100,000 population.

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Editorial Note: In 2000, FoodNet completed the fifth year of active surveillance for infections caused by pathogens often transmitted through food. In all 5 years of FoodNet data collection, *Campylobacter* was the most frequently diagnosed pathogen, followed by *Salmonella*, *Shigella*, and *E. coli* O157; however, substantial regional and year-to-year variation occurred. Differences in calendar year 2000 rates between the expanded and original populations reflect regional differences in pathogen isolation rates. Despite year-to-year variation and regional fluctuations, the general magnitude of incidence and the relative order of pathogens have remained the same, indicating that this expanded system will be useful for measuring progress toward the 2010 national health objectives for infections with *Campylobacter* (12.3 per 100,000), *E. coli* O157:H7 (1.0 per 100,000), *Salmonella* (6.8 per 100,000), and *Listeria* (0.25 per 100,000) (7).

The incidence of listeriosis in 2000 was lower than in previous years; however, additional data are required to determine whether these rates represent year-to-year variation or a sustained trend. Although the incidence of laboratory-diagnosed *Salmonella* and *Campylobacter* declined from 1996 to 2000, the year-to-year variations make overall trends difficult to measure precisely. A trend in the incidence of diagnosed *E. coli* O157 cannot be discerned, although the incidence increased from 1999 to 2000 in the original five sites. The substantial overall increase in shigellosis was caused primarily by large increases in Minnesota and California resulting from outbreaks (8; T. Aragon, San Francisco Department of Public Health, personal communication, 2001). An estimated 80% of shigellosis is transmitted by nonfoodborne routes (1).

Determining the cause of a change in incidence of infections is complex because foodborne pathogens are transmitted by a variety of food and nonfood routes. For example, although foods of animal origin are the major source of *Salmonella* and *E. coli* O157 infection, transmission through fresh produce and direct contact with animals has been increasingly recognized. The changes in incidence of foodborne infections within FoodNet sites occurred in the context of the introduction of the HACCP (Hazard Analysis Critical Control Point) regulations for meat and poultry in processing plants, increased attention to egg and fresh produce safety through good agricultural practices, industry efforts, food safety education, increased regulation of imported food, and other prevention measures. Data from outbreak investigations and comparison of FoodNet data with the results of systematic microbiologic sampling of meat, poultry, and other foods will help evaluate the impact of prevention measures.

The findings in this report are subject to at least three limitations. First, although FoodNet surveillance encompassed approximately 10% of the U.S. population in 2000, these data are subject to substantial local variation and may not be representative nationally, particularly in analyses restricted to the five original sites. Second, FoodNet data are limited to laboratory-confirmed illnesses, and most foodborne illnesses are neither laboratory-confirmed nor reported to state health departments. For example, although clinical laboratories in FoodNet sites routinely test stool specimens for *Salmonella* and *Shigella* and almost always test for *Campylobacter*, only approximately 50% routinely test for *E. coli* O157 and fewer test routinely for other pathogens. Variations in testing for pathogens might account for some variations in incidence. Third, some laboratory-confirmed illnesses reported to FoodNet can be acquired through nonfoodborne routes (e.g., contaminated water, person-to-person contact, and direct animal exposure); therefore, the reported rates do not represent foodborne sources exclusively. Additional analyses of FoodNet surveillance data, foodborne outbreak data (9), and surveys of

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clinical laboratories, health-care providers, and consumers will facilitate further interpretation of FoodNet data and help track temporal trends in foodborne illnesses. Further surveillance and comparison of the expanded geographic base are necessary to determine which changes represent year-to-year variation and which are definitive trends.

In 2001, selected counties in Colorado and Maryland will be added to the FoodNet area, bringing the FoodNet surveillance population to approximately 33.1 million persons (12% of the 1999 U.S. population). The 2000 FoodNet final report will include incidence figures and other information, such as illness severity, and will be available later in 2001 at the FoodNet World-Wide Web site, <http://www.cdc.gov/foodnet>. Because the population within the FoodNet sites has increased since 1999, the final 2000 rates will be somewhat lower than the preliminary rates. Preliminary reports from the 2000 decennial census suggest that population increases might have been greater than estimated by postcensal figures; therefore, the final adjusted rates might be lower than the preliminary rates by a greater margin than in previous years.

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Occupational and Take-Home Lead Poisoning Associated With Restoring Chemically Stripped Furniture — California, 1998

The Occupational Lead Poisoning Prevention Program (OLPPP) of the California Department of Health Services and a county health department investigated cases of lead poisoning in six furniture workers and their families in 1998. The investigation, initiated after a blood test of a worker's child revealed an elevated blood lead level (BLL), found that lead remaining in previously painted or coated stripped wood was carried from the workplace on clothes and shoes and was the source of the child's lead exposure and subsequent poisoning. Employers in industries in which workers restore or build using stripped wood should assess lead exposure and, when necessary, should establish a comprehensive lead safety program.

During a routine medical examination, the 18-month-old child of a worker received a BLL test at his mother's request. The result, 26 $\mu\text{g}/\text{dL}$, met the CDC-recommended criterion for a lead poisoning case requiring clinical management (i.e., BLLs $\geq 20 \mu\text{g}/\text{dL}$) (1). A