

# Community Health Assessment Quarterly

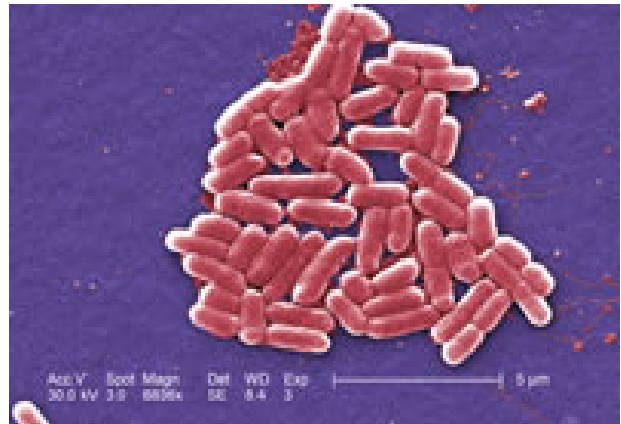
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## Food Safety

Most of us have fond memories of summer picnics and barbeques with family and friends during the summer months. But how safe is the food we are eating? The incidence of foodborne illness due to contaminated food has been in the news in recent months, calling attention to the safety of the nation's food supply. Foodborne illness can be caused by bacteria, viruses, parasites or chemical contamination. Recent outbreaks have involved a *Salmonella* outbreak in peanut butter products, *E. coli* contaminated beef, and infant formula contaminated with melamine (an industrial chemical) that was imported from China.

Foodborne illnesses are a major health burden in the United States, causing symptoms that range from mild diarrhea and vomiting to life-threatening conditions like severe dehydration or kidney failure. Milder cases are often not detected because individuals do not seek medical care. While everyone is potentially at risk, very young children, the elderly, and individuals with weakened immune systems are most likely to experience serious effects from foodborne illness. In the United States, diarrhea is the second most common infectious illness, accounting for one in every six diagnoses.<sup>1</sup> Most of these illnesses are preventable, and investigation of foodborne illness outbreaks by local health departments helps identify the sources as well as prevention measures. Tracking individual foodborne illnesses and investigating outbreaks are important public health functions.



E. coli Bacteria

Photo credit: Janice Haney Carr  
Centers for Disease Control and Prevention

### *Risk Factors*

Foodborne illness risk factors include inadequate cooking, improper holding temperature, contaminated preparation/cooking equipment and poor personal hygiene of food preparers. Food can become contaminated at many points along the path from farm to table. Some of the most common foodborne illnesses are caused by *E. coli*, *Salmonella*, and *Campylobacter*, which are all bacterial pathogens. These bacteria can grow if proper food handling practices are not followed correctly. Correct practices include cooking poultry, meats and seafood adequately; keeping food at the correct temperature (hot foods are kept hot and cold foods are kept cold); washing hands thoroughly; and avoiding cross-contamination of raw meats with ready to eat foods. Summer sees more outbreaks of *E. coli* than other seasons.<sup>2</sup> Of the 68 reportable *E. coli* cases in Oregon in 2008, 49 (72%) occurred during June thru September.

### Foodborne Illness in Multnomah County

In Multnomah County, rates for *E. coli*, *Salmonella*, and *Campylobacter* illness have declined since the early 1990's; however, as of 2007, Multnomah County has not yet met the Healthy People 2010 goal for the number of cases per 100,000 population for both *Salmonella* and *Campylobacter* infections. In 2004 the target rate for *E. coli* infection was met, but the rate has risen slightly over the last three years and currently does not meet the Healthy People 2010 goal.

Chart 1

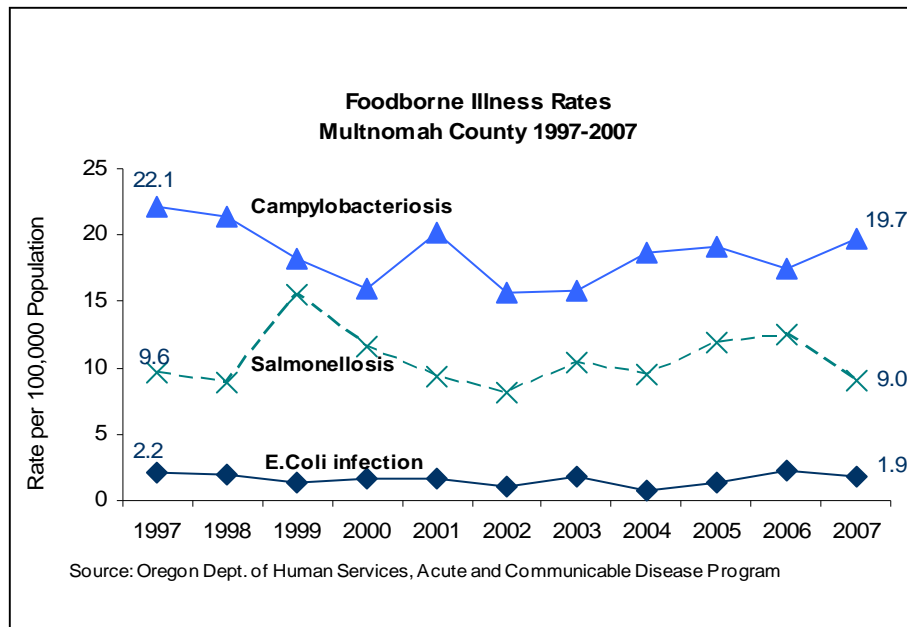


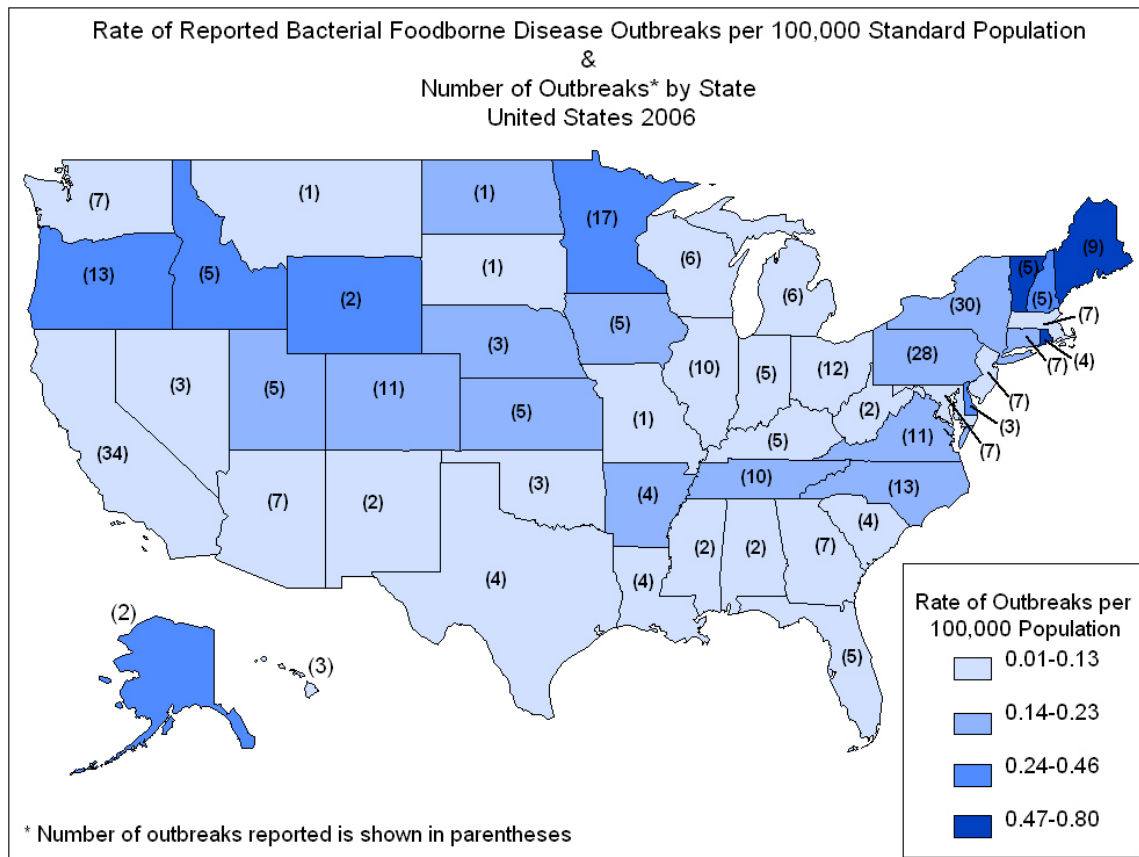
Table 1  
Cases per 100,000 Population

Bacterial Pathogens	Healthy People 2010 Target	Multnomah County
<i>E. coli</i>	1.0	1.9
<i>Salmonella</i>	6.8	9.0
<i>Campylobacter</i>	12.3	19.7

The Centers for Disease Control and Prevention (CDC) collects data on foodborne disease outbreaks from all states and territories through the Foodborne Disease Outbreak Surveillance System. An outbreak of foodborne illness occurs when a group of people consume the same contaminated food and two or more of them become infected with the same illness. Data on foodborne disease outbreaks in the United States reported during 2006 (the most recent year for which data have been analyzed) showed there were 1,270 foodborne disease outbreaks reported, resulting in 27,634 cases and 11 deaths. The number of outbreaks from all pathogens reported by each state or territory ranged from zero to 76. An increasing rate reported from a state can be attributed to better surveillance, investigation, or reporting, and might not be indicative of an actual higher rate of outbreaks. Among outbreaks caused by a single food item, the most common foods were poultry (21%), leafy vegetables (17%), and fruits/nuts (16%).<sup>3</sup>

Figure 1 shows the rate of bacterial foodborne outbreaks per 100,000 standard population and the number of outbreaks reported by state.

Figure 1



Adapted from Morbidity and Mortality Weekly Report, Centers for Disease Control and Prevention. June 12, 2009 / 58(22);609-615.

**Costs associated with foodborne illness**

Food contamination creates an enormous social and economic burden on communities and their health systems. In the U.S., diseases caused by the major pathogens alone are estimated to cost up to \$44 billion annually in medical costs and lost productivity. Significant economic losses in the agriculture and food retail industries, which account for approximately 13 percent of the U.S. gross domestic product, can occur as a result of major outbreaks. Agriculture and food retail industries are the largest industries and employers in the United States. Americans spend more than \$1 trillion on food annually.<sup>4</sup>

**Multnomah County Health Department's role in food safety**

In 2008 Multnomah County Health Department performed approximately 10,460 inspections of restaurants, special events, street vendors, hotels and motels, child care centers, schools, and adult foster care settings. Health inspectors make sure that foods are kept at the proper temperature, hand washing facilities are available and used, and facilities are practicing proper sanitation methods. Critical violations found in inspections are compared with contributing factors identified in outbreaks. In addition to inspections, 18,114 Food Handler Cards were issued. Food handlers must study the Food Handler manual and pass an exam before obtaining a food handler card within 30 days of beginning work.

Multnomah County's Communicable Disease Program Nurses and Environmental Health Specialists investigate reports of people infected with suspected foodborne diseases. Of the 79 people with *Salmonella* reported in 2008, 13 people may have gotten sick during foreign travel, while the remainder were likely to have acquired the infection locally. In 2008 the Communicable Disease Program Nurses and Environmental Health Specialists followed-up on 438 cases of foodborne illness. In addition to investigating individual cases, the Health Department conducted an average of five foodborne outbreak investigations per year over the last five years.

Multnomah County Health Department recently received a \$40,000 Food Defense grant from the Food and Drug Administration (FDA). The overall goal of the project is to develop new guidelines and materials that are specific to restaurants, and to increase restaurant operators' ability to prepare for and respond to emergencies. The project will assess risk factors and create ways to incorporate food safety strategies into the ongoing work of public health food service inspections.

### *United States Government's role in food safety*

There are multiple federal agencies involved with food safety including the Food and Drug Administration, the U.S. Department of Agriculture, the Centers for Disease Control and Prevention, the Environmental Protection Agency, and the Department of Homeland Security. The Food and Drug Administration (FDA) regulates approximately 80 percent of the food supply in the United States. The FDA is part of the U.S. Department of Health and Human Services (HHS). In March, 2009 the Trust for America's Health and the Robert Wood Johnson Foundation released a report examining problems with the fragmented current system, and proposed ways to improve food safety functions at the HHS to better protect the nation's food supply. Suggestions for improvements included the following:

- Modernize meat and poultry inspection laws

- Increase funding for HHS food safety programs and align resources with the highest-risk threats
- Improve coordination among federal, state, and local food agencies<sup>4</sup>

State and local food safety agencies are hampered by chronic under-funding, and barriers to collaboration.<sup>5</sup> It will take local and federal agencies, working with global partners like the World Health Organization (WHO), to develop policies that will further promote the safety of food. Food production has become globalized, and the food production chain has become more complex. Policies need to cover the food chain from production to consumption. This will include strengthening food safety systems, promoting good manufacturing practices, and educating retailers and consumers about appropriate food handling.<sup>6</sup>

#### References:

<sup>1</sup> National Institute of Allergy and Infectious Diseases, National Institutes of Health. January 15, 2008.

<sup>2</sup> Oregon Public Health Division, *2007 Oregon Communicable Disease Summary*.

<sup>3</sup> Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report, June 12, 2009 / 58(22);609-615.

<sup>4</sup> Trust for America's Health, *Keeping America's Food Safe: A Blueprint for Fixing the Food Safety System at the U.S. Department of Health and Human Services*; <http://www.healthyamericans.org>

<sup>5</sup> Taylor M and David S. 2009. *Stronger Partnerships for Safer Food: An Agenda for Strengthening State and Local Roles in the Nation's Food Safety System*, Department of Health Policy, School of Public Health and Health Services, The George Washington University.

<sup>6</sup> World Health Organization. *Food Safety and Foodborne Illness*. March 2007.

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#### **Community Health Assessment**

**Quarterly** is published four times per year, by Multnomah County Health Department Health Assessment and Evaluation Office 426 SW Stark St 9<sup>th</sup> Floor, Portland OR 97204. If you have questions or comments, please contact Diane McBride by email at [diane.e.mcbride@co.multnomah.or.us](mailto:diane.e.mcbride@co.multnomah.or.us), or by phone at 503-988-3663 x26567. This publication is available online at: [http://www.mchealth.org/hra/haq/summer2009\\_food-safety.pdf](http://www.mchealth.org/hra/haq/summer2009_food-safety.pdf)