



# QUARTERLY REPORT

MARION COUNTY HEALTH DEPARTMENT  
Health & Services Building  
3180 Center Street NE  
Salem OR 97301-4592



2nd Quarter

June 2001

Vital Statistics Quarter Ending: June 2001	2nd Quarter		Year to Date	
	2001	2000	2001	2000
<b>BIRTHS</b>				
<b>TOTAL DELIVERIES</b>	1175	1242	2373	2414
Delivery in Hospital	1108	1174	2257	2282
Teen Deliveries (10-17 years)	67	68	116	132
<b>DEATHS</b>				
<b>TOTAL</b>	628	626	1271	1235
Medical Investigation	46	38	90	79
Homicide	01	01	04	03
Suicide	07	06	16	13
Accident - MVA	09	04	14	07
Accident - Other	13	05	20	15
Natural/Undetermined/Pending	16	22	36	41
Non-Medical Investigation (All Natural)	582	588	1181	1156
Infant Deaths	03	07	08	09
Fetal Deaths	05	02	08	08
<b>COMMUNICABLE DISEASES</b>				
E-Coli: 0157	07	02	07	02
Hepatitis A	0	07	06	16
Acute Hepatitis B	06	04	13	11
Chronic Hepatitis B	14	11	22	24
Meningococcus	06	0	08	02
Pertussis	05	01	06	03
Tuberculosis	03	07	06	03
<b>SEXUALLY TRANSMITTED DISEASE</b>				
PID (Pelvic Inflammatory Disease)	01	02	12	22
Chlamydia	209	188	384	412
Gonorrhea	25	10	34	41
AIDS	01	06	02	09

## Foodborne Illness and the Public's Health

Karen Landers MD MPH,  
Health Officer

### SCENARIO

A patient presents to your office with symptoms of diarrhea, abdominal cramps, fever, and headache. Two other patients who work in the same business office have called with a similar illness. A catered lunch (deli sandwiches/deli salads) was held the previous workday.

### YOU MAKE THE CALL\*:

- Most likely diagnosis?
- Most appropriate test to confirm the etiology?
- Report to the local health department?

\*Answers provided at the end of this article.

Annually approximately 267,000,000 episodes of diarrhea leading to 612,000 hospitalizations and 3,000 deaths occur among adults in the United States. An etiologic agent is identified in less than 10% of these cases. Data from the 2000 Foodborne Disease Surveillance Network which represents about 10% of the U.S. population and in which Oregon participates, reveals that *Campylobacter* remains the most frequently diagnosed pathogen among foodborne illnesses followed by *Salmonella*, *Shigella*, and *E. coli* O157. (See graph)

Continued

However, development of improved immunoassays has identified enteric viruses such as Norwalk virus, rotavirus, astrovirus, and enteric adenovirus as significant causative agents in nonbacterial diarrheal outbreaks. Using these assays, researchers demonstrated that Norwalk-like viruses (NLVs) caused 96% of the 90 outbreaks of nonbacterial gastroenteritis reported to Centers for Disease Control and Prevention (CDC) from January 1996-June 1997. Research has also implicated NLVs in childhood gastroenteritis. Although rotavirus is the leading cause of severe childhood diarrhea, a prospective Finnish study which followed children from 2 months of age to 2 years found NLV's in 20% of stool samples collected during acute gastroenteritis.

Here's a brief look at one of foodborne illnesses' biggest contributors.

Norwalk virus is the prototype of a group of genetically and antigenically diverse RNA viruses. NLV-caused gastroenteritis has an average incubation period of 12-48 hours and illness lasts 12-60 hours. Illness is characterized by nausea, vomiting, abdominal cramps and diarrhea. Constitutional symptoms such as fever, headache, chills and myalgia are frequently reported. Fecal-oral spread is the main transmission route with a fecally-contaminated vehicle (i.e. food or water) typically causing the primary case(s) and secondary and tertiary

cases resulting from person-to-person transmission. For 348 outbreaks of NLV gastroenteritis reported to CDC during January 1996-November 2000, 39% occurred in restaurants, 29% occurred in nursing homes and hospitals, 12% in schools and child care centers, 10% in vacation settings including cruise ships, and 9% in other settings.

Data from recent research suggests that viral shedding in the stool can be present in both symptomatic and asymptomatic persons and may continue for as long as two weeks. This increases the risk for secondary spread and is of concern in foodhandler-related transmission. Other characteristics of NLVs facilitate their spread during epidemics. The low infectious dose (less than 100 viral particles) readily allows spread by droplets and environmental contamination. The ability of the virus to survive relatively high levels of chlorine and a wide range of temperatures (from freezing to 60° C), facilitates spread through recreational and drinking water and food items including steamed oysters. Because of the diversity of NLV strains there is lack of complete cross-protection and long-term immunity, and repeated infections can occur throughout life.

Although any food can potentially be contaminated with NLVs, certain foods are implicated more often than others in outbreaks of NLV gastroenteritis. Shellfish (e.g. oysters or clams) tend to

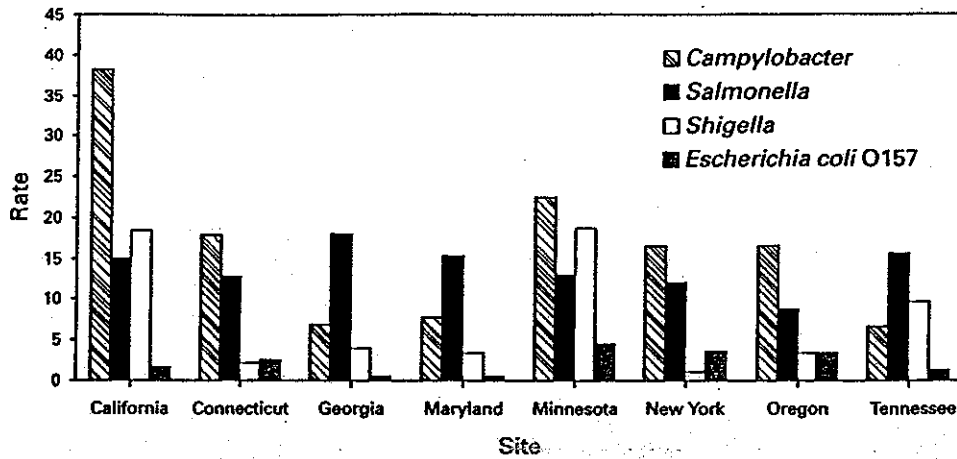
concentrate in their tissues NLVs that contaminate the waters from which they were harvested, and cooking (e.g. steaming) may not completely inactivate the virus. Ready-to-eat foods that require handling but no subsequent cooking (such as salads and deli sandwiches) can be contaminated by infectious foodhandlers. The risk for a foodborne outbreak increases when a semiliquid food (e.g. cake frosting or salad dressing) is contaminated so that a small innoculum is mixed and spread to multiple persons.

#### ANSWERS TO THE SCENARIO

- A) Norwalk-like virus (Surprise!)
- B) Obtain stool (or vomitus) specimen (best collected during acute phase of illness when stools are still liquid or semi-solid and viral excretion is highest) Oregon State Public Health Laboratory (OSPHL) can provide viral testing services in outbreak situations
- C) YES! YES! YES! Any cluster of illnesses is reportable according to Oregon State law (especially those with public health significance such as foodborne outbreaks) Your local health department can provide information on collection of specimens and assist with arranging shipment to OSPHL. Call 588-5621.

## FoodNet Data — Continued

**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.

An excellent reference on foodborne illness has recently been published. Developed collaboratively by CDC, the AMA, the FDA's Center for Food Safety, and the U.S. Dept of Agriculture's Food Safety and Inspection Service, it is entitled, *Diagnosis and Management of Foodborne Illnesses: A Primer for Physicians*.

For a copy, contact LJ Tan, PhD at the AMA, 515 North State Street Chicago, IL 60610 (312) 464-4147.

Or visit the following websites:

AMA <http://www.ama-assn.org/foodborne>

CDC <http://www.cdc.gov>

FDA <http://www.fda.gov/cfsan>

USDA <http://www.usda.gov/fsis>