



Infectious Disease Epidemiology Report

Bacterial Enteric Disease Surveillance Report – Maine, 2014



Introduction

Bacterial enteric diseases have a substantial impact on communities. Every year millions of cases of foodborne illness occur in the United States of which many require hospitalizations and some cases are fatal.

The most common sources of transmission for all bacterial enteric diseases include food, water (drinking and recreational), and animal contact. Safe food handling practices and good hand hygiene, especially after using the toilet and handling animals, help to prevent illness.

Bacterial enteric diseases reported in Maine include: campylobacteriosis, salmonellosis, shiga toxin-producing *E. coli* (STEC) infections, shigellosis, vibriosis, and listeriosis.

Methods

The Infectious Disease Epidemiology Program and the Maine Health and Environmental Testing Laboratory (HETL) of the Maine Center for Disease Control and Prevention monitor the incidence of bacterial enteric diseases through disease reports from health care providers and laboratories. All disease reports are investigated by contacting the individual and asking about possible sources of illness. Information on risk factors is gathered including specific questions about food and water consumption, recreational water contact, animal contact, and travel history.

HETL routinely conducts confirmatory and molecular testing on bacterial enteric pathogens (*Salmonella*, STEC, *Shigella*, *Vibrio*, and *Listeria*). Pulsed Field Gel Electrophoresis (PFGE) testing allows for identification of specific DNA patterns. The patterns are compared with those isolated from others in the state and across the country to identify potential clusters of illness.

Results

A total of 430 cases of bacterial enteric diseases were reported in 2014. The majority of these cases were caused by *Campylobacter* or *Salmonella* species (Table 1). All cases of listeriosis were hospitalized.

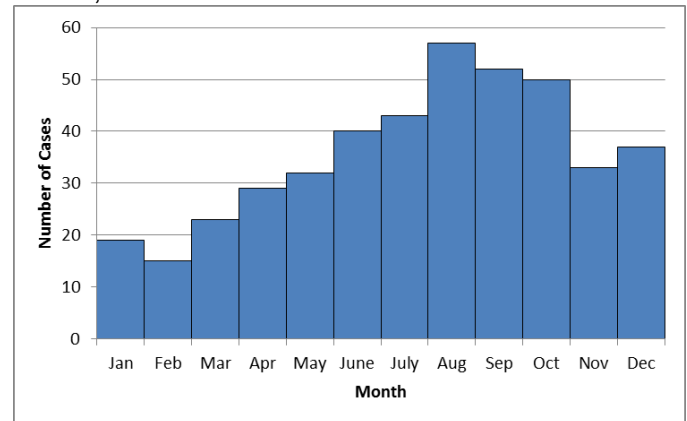
Table 1. Enteric disease case counts, rates, and median age, Maine, 2014.

	Case Count	5 year Median	Case Rate*	Median Age
<i>Campylobacter</i>	224	189	16.8	49
<i>Salmonella</i>	127	133	9.5	51
STEC	33	21	2.5	31
<i>Shigella</i>	29	7	2.2	27
<i>Vibrio</i>	9	5	0.7	61
<i>Listeria</i>	8	4	0.6	73

*case rate per 100,000 persons.

Less than a third (28%) of shigellosis cases reported international travel. Almost half (45%) were reported during the summer months from June through September (Figure 1).

Figure 1. Enteric diseases by month of report, Maine, 2014.



The most commonly submitted serotypes of *Salmonella* were Enteritidis, Typhimurium, and Newport. Forty-five percent of lab confirmed STEC cases were *E. coli* O157:H7. *Shigella sonnei*, *flexneri* and *boydii* were isolated as well as five types of *Vibrio* (*alginolyticus*, *parahaemolyticus*, *fluvialis*, *harveji*, and *Grimontia hollisae*).

Enteric diseases were reported in all counties in the state (Table 2). Campylobacteriosis and salmonellosis were widespread; other diseases were reported in only a few counties. Cases of listeriosis were reported in Cumberland, Franklin, Lincoln, and York counties. Vibriosis cases were reported in Cumberland, Franklin, Lincoln, and York counties. The shigellosis cases resided in seven counties; majority (45%) in Androscoggin county.

Bacterial Enteric Disease Surveillance Report – Maine, 2014

Table 2. *Campylobacter*, *Salmonella* and STEC cases by County, Maine, 2014

County	<i>Campylobacter</i>	<i>Salmonella</i>	STEC
Androscoggin	16	10	3
Aroostook	10	13	2
Cumberland	42	21	6
Franklin	6	9	1
Hancock	4	1	1
Kennebec	30	13	4
Knox	4	1	1
Lincoln	15	6	1
Oxford	14	7	0
Penobscot	27	8	5
Piscataquis	1	5	0
Sagadahoc	5	5	1
Somerset	12	6	0
Waldo	2	2	1
Washington	5	2	0
York	31	18	7
Total	224	127	33

In the spring of 2014 nine cases of *Salmonella* were associated with a national outbreak of exposure to baby poultry. During the summer a cluster of five matching cases of STEC O157:H7 were investigated. No source of the illness was identified. Multiple other cases in the country matched this cluster, but despite a common food item of ground beef, no definitive link could be found between products consumed. A cluster of 11 cases of shigellosis in Androscoggin county over a couple of weeks during the fall were linked to the same school; no common exposure was identified.

Prevention and Control

Individuals most at risk of enteric diseases include immune compromised individuals, children under the age of five years, and the elderly.

Bacterial enteric diseases can be prevented by practicing the following:

- Wash hands with soap and water:
 - After using the toilet
 - After changing diapers, or assisting an individual using the toilet
 - Before and after preparing or eating food
 - After handling animals, animal living spaces, and animal waste
- Rinse all fresh fruits and vegetables under clean running water

- Wash counters and cooking utensils with hot soapy water before and after preparing food
- Separate raw meat, poultry, seafood, and eggs from other foods in the grocery cart and in the refrigerator at home
- Use separate cutting boards for fresh fruits and vegetables and for raw meat, poultry, and fish
- Do not reuse plates or packaging materials that held raw meat, poultry, seafood, or eggs
- Do not consume raw or cracked eggs, raw unpasteurized milk, or other dairy products made with raw unpasteurized milk
- Avoid letting infants or young children come into contact (hold, cuddle, or kiss) with:
 - reptiles, such as turtles or iguanas
 - baby chicks or young birds
- When traveling to countries where the water may not be safe and sanitation is poor, do not use ice or drinking water and avoid eating uncooked foods
- Avoid exposing open wounds to water sources, such as pools, lakes, seawater
- Avoid swallowing water when swimming
- People with enteric infections should not prepare or serve food/beverages for others until all symptoms have resolved
- Food handlers, daycare, and healthcare workers should refrain from work as specified by industry rules and guidelines

All cases of campylobacteriosis, salmonellosis, STEC, shigellosis, vibriosis, and listeriosis in Maine must be reported by calling 1-800-821-5821, or by faxing reports to 800-293-7534. All isolates (except *Campylobacter*) must be sent to HETL for confirmatory testing.

For more information on enteric diseases:

- Maine CDC website www.maine.gov/idepi
- Federal CDC website www.cdc.gov
- HETL website www.mainepublichealth.gov/lab
- FDA website www.fda.gov/Food/FoodborneIllnessContaminants/default.htm
- USDA website: www.fsis.usda.gov/food_safety_education/index.asp