



Infectious Disease Epidemiology Report

Bacterial Enteric Disease Surveillance Report – Maine, 2012



Introduction

Bacterial enteric diseases have a substantial impact on the community. 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 questioning them 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*, *Campylobacter* and *Listeria*). Pulsed Field Gel Electrophoresis (PFGE) testing, allows for identification of specific DNA patterns. The patterns are compared with those isolated from other patients in the state and across the country to identify potential clusters of illness.

Results

A total of 392 cases of bacterial enteric disease were reported in 2012. The majority of these cases were caused by *Campylobacter* or *Salmonella* species (Table 1).

A little over half of the reported cases were female (54%) vs. males (46%). This distribution was similar for enteric diseases reported. Most enteric diseases reported were in adults, however, 15% of STEC cases were in children under the age of five years.

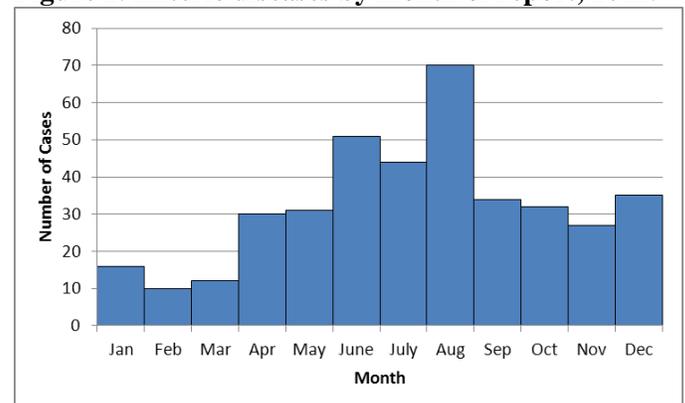
Table 1. Enteric disease case counts, rates, and median age, Maine 2012.

	Case Count	5 year Median	Case Rate*	Median Age
<i>Campylobacter</i>	189	151	14.2	50
<i>Salmonella</i>	161	134	12.1	36
STEC	20	35	1.9	35
<i>Shigella</i>	7	14	0.5	44
<i>Vibrio</i>	10	4	0.8	59
<i>Listeria</i>	5	4	0.4	81

*case rate per 100,000 persons.

Eighty-six percent of shigellosis cases reported international travel. Approximately half (51%) of bacterial enteric diseases were reported during the summer months from June through September (Figure 1).

Figure 1. Enteric diseases by month of report, 2012.



Enteric diseases were reported in all counties in the state (Table 2). Campylobacteriosis and salmonellosis are widespread, other diseases were reported in only a few counties. Cases of listeriosis were reported in Androscoggin, Kennebec, Oxford and York counties. Vibriosis cases were reported in Cumberland, Sagadahoc and York counties. The shigellosis cases occurred in Androscoggin, Cumberland and York counties.

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Table 2. Campylobacter, Salmonella and STEC cases by County, Maine 2012

County	<i>Campylobacter</i>	<i>Salmonella</i>	STEC
Androscoggin	16	8	0
Aroostook	7	4	0
Cumberland	43	34	7
Franklin	1	9	0
Hancock	5	8	1
Kennebec	19	25	4
Knox	1	3	0
Lincoln	8	2	0
Oxford	9	5	0
Penobscot	27	12	2
Piscataquis	4	0	0
Sagadahoc	5	2	0
Somerset	8	7	0
Waldo	4	2	0
Washington	5	6	1
York	27	34	5
Total	189	161	20

The most commonly submitted serotypes of *Salmonella* were Enteritidis, Newport and Typhimurium. Forty-two percent of STEC cases were *E. coli* O157:H7. Both *Shigella sonnei* were isolated as well as three types of *Vibrio* (*alginolyticus*, *parahaemolyticus*, and *fluvialis*).

In the summer of 2012, an increase in gastrointestinal vibriosis cases with seafood exposure in Maine was observed. A collaborative investigation with other Maine agencies was conducted and no common exposure was determined. Four cases of *Salmonella* Newport were part of a national outbreak investigation related to baby poultry exposure.

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
- 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 <http://www.cdc.gov>
- HETL website <http://www.mainepublichealth.gov/lab>
- FDA website <http://www.fda.gov/Food/FoodSafety>
- USDA website: http://www.fsis.usda.gov/food_safety_education/index.asp