



Infectious Disease Epidemiology Report

Salmonellosis Surveillance Report 2008 -- Maine



Introduction

Salmonellosis is an illness of variable severity usually manifested by diarrhea, abdominal pain, fever, and sometimes nausea and vomiting. It is one of the most frequent foodborne diseases reported in Maine and the United States. Nationwide, an estimated 1.4 million infections occur each year, resulting in approximately 15,000 hospitalizations and 400 deaths. This report summarizes surveillance data on salmonellosis from 2008.

Methods

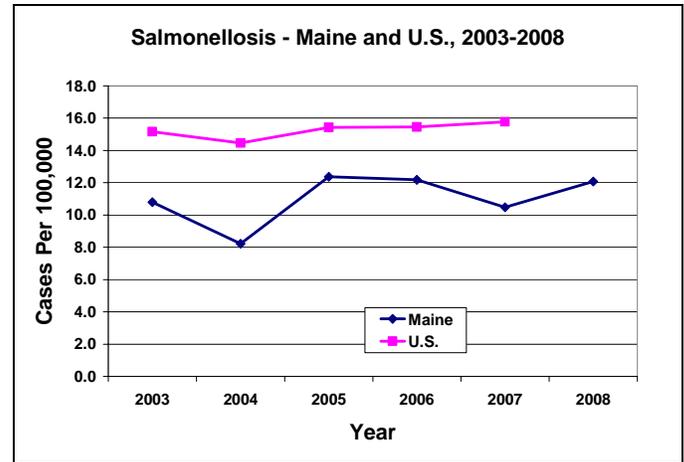
Salmonellosis is one of the most frequent enteric diseases reported in Maine. The Infectious Disease Epidemiology Program and the Maine Health and Environmental Testing Laboratory (HETL) of the Maine Center for Disease Control and Prevention monitor the incidence of salmonellosis through reporting cases of illness. Maine specific data presented here were extracted from the National Electronic Disease Surveillance System (NEDSS), a disease reporting database maintained by the infectious disease program, and an enteric spreadsheet maintained by the Health and Environmental Testing Laboratory.

Results

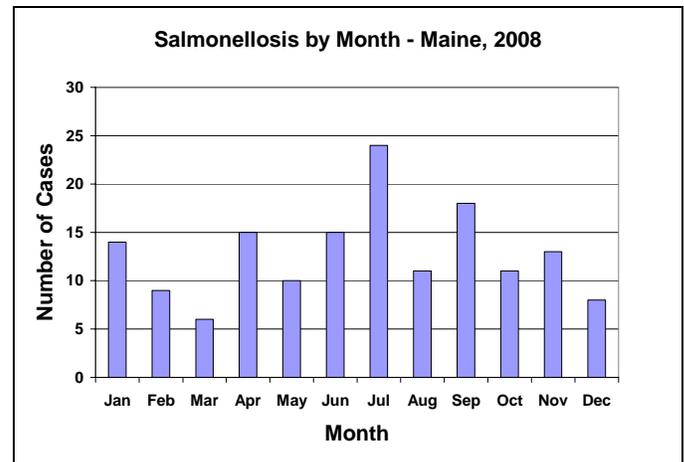
A total of 159 salmonellosis cases were reported to Maine CDC in 2008. One hundred and forty-eight cases were culture-confirmed and 11 cases were probable, defined as clinically compatible to a laboratory confirmed case and epidemiologically linked. Ninety-six (60%) of the cases reported were female and sixty-three cases (40%) were male. The median age was 41 years, with a range of 1 to 90 years. The most common serotypes found in the United States are *typhimurium*, *enteritidis*, *newport* and *heidelberg*. *Enteritidis* (29.5%), *typhimurium* (11.6%), I 4,[5],12:i:- (7.6%), and *Newport* (6.2%) were the most common serotypes found in the state. These four serotypes represented 54.8% of all serotypes found in Maine in 2008.

Five-Year Trend: The incidence of salmonellosis ranged from 10.8 to 12.4 per 100,000 between 2003 and 2007. The 5-year mean was 13.2. The case rate in 2008 was consistent with this steady trend at 12.1 per 100,000. Similarly, national levels have

remained stable and slightly higher than Maine incidence.



Distribution by Month: In 2008, the incidence of salmonellosis peaked in July. This is inconsistent with 2007 when the disease peaked in October due to an outbreak but consistent with 2006 when it also peaked in July.



Distribution By County: Cumberland County had the highest number of cases with 39, representing 24.5% of all cases reported in 2008. York County followed closely with 28 cases, representing 17.6% of cases reported in 2008. These case counts and distribution were similar to what has been reported in previous years. Oxford, Aroostook, Hancock and Knox Counties had the highest incidence rates at 20.1, 13.5, 13.5 and 12.6 respectively.

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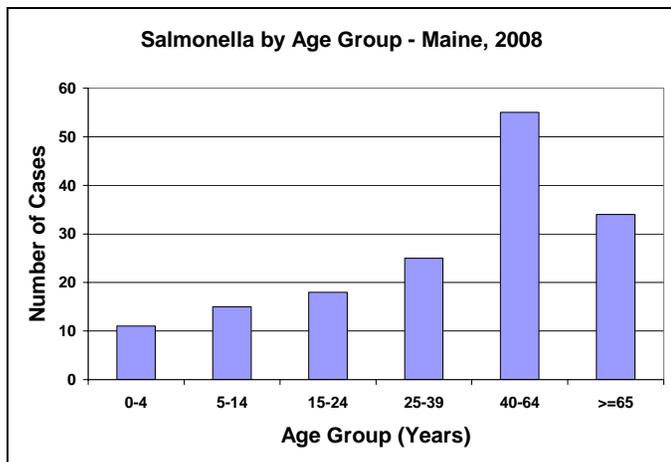
Confirmed salmonellosis cases by county— Maine, 2008

| County | Count (%) | Case Rate [‡] |
|----------------|-----------|------------------------|
| Androscoggin | 10 (6.3) | 9.4 |
| Aroostook | 7 (4.4) | 9.8 |
| Cumberland | 39 (24.5) | 14.1 |
| Franklin | 1 (0.6) | 3.3 |
| Hancock | 5 (3.1) | 9.4 |
| Kennebec | 25 (15.7) | 20.7 |
| Knox | 2 (1.3) | 4.9 |
| Lincoln | 5 (3.1) | 14.4 |
| Oxford | 4 (2.5) | 7.0 |
| Penobscot | 9 (5.6) | 6.1 |
| Piscataquis | 3 (1.9) | 17.7 |
| Sagadahoc | 6 (3.8) | 16.5 |
| Somerset | 3 (1.9) | 5.8 |
| Waldo | 8 (5.0) | 20.9 |
| Washington | 4 (2.5) | 12.3 |
| York | 28 (17.6) | 13.9 |
| State of Maine | 159 | 12.1 |

Note: Population denominators are from 2008 census data

[‡]Rate per 100,000 population

Case by Age Group: Salmonellosis affects persons of all ages.



Outbreaks and Clusters: The infectious disease epidemiology program and HETL routinely conduct investigations and Pulse-Field Gel Electrophoresis (PFGE) testing to identify clusters and outbreaks of disease. Five clusters of Salmonellosis were identified during 2008. Two of these clusters developed into actual outbreaks and were investigated accordingly.

- The first cluster was part of a national outbreak involving *Salmonella agona*. In

May, four individuals became ill after eating cold puffed cereal.

- The second cluster was also part of a national outbreak involving *Salmonella typhimurium*, one of the most common serotypes of salmonellosis found in the United States. Between November and January, five people became ill after eating peanut butter.

Salmonella Nomenclature

Salmonella is a genus of bacteria from the family *Enterobacteriaceae*. This genus is further divided into species, and then serotype. Serotype designation includes subspecies identification, which is typically determined by biochemical characterization. Serotyping consists of the immunologic classification of two surface structures, O-polysaccharide (O antigen) and flagellin protein (H antigen).

Prevention and Control

Salmonellosis is one of the most common enteric illnesses in Maine. Salmonellosis is transmitted primarily by ingesting the organism on foods such as meat, poultry, eggs and fresh produce contaminated by feces from an infected animal or person. Lizards and reptiles are also common sources of infections, especially in young children. Hand washing, avoiding consumption of undercooked foods associated with salmonellosis, handling food carefully, and handling animals associated with salmonellosis carefully remain the best measures to preventing illness.

Salmonellosis is on the Notifiable Conditions List and can be reported by calling 1-800-821-5821, or by faxing reports to 207-287-6865

For more information on Salmonellosis, see the Maine CDC website

<http://www.maine.gov/dhhs/boh/ddc/epi/index.shtml> and federal CDC website

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