



Infectious Disease Epidemiology Report

Cryptosporidiosis Surveillance Report 2010 -- Maine



Introduction

Cryptosporidiosis is a diarrheal disease caused by the parasite *Cryptosporidium* and is commonly referred to as ‘crypto’. It is recognized as the leading cause of waterborne disease in the United States.

Cryptosporidium lives in the intestine of infected humans or animals. Oocysts are found in soil, food, water or surfaces that have been contaminated with infected animal or human feces. Infection results from the consumption of contaminated food or water, through person-to-person, or animal-to-person transmission. The infectious dose is low and healthy individuals are known to get sick from ingesting as few as 10-30 oocysts. Individuals diagnosed with cryptosporidiosis can shed the parasite for weeks after symptoms resolved.

Outbreaks of cryptosporidiosis in the United States are most often due to a contaminated recreational water source, such as waterparks. Chlorine does not effectively kill cryptosporidium.

Methods

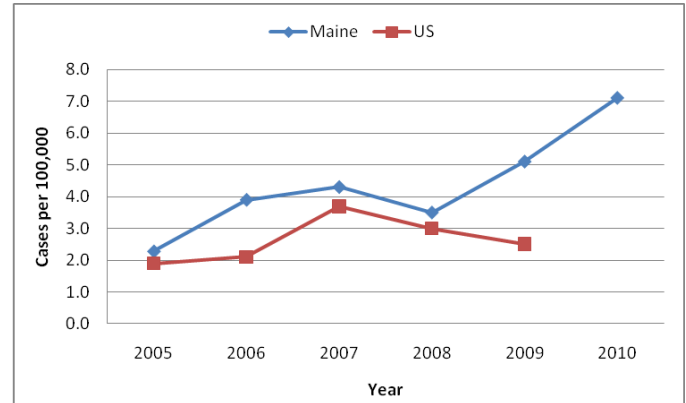
Cryptosporidiosis is a reportable disease in Maine. The Maine CDC collects surveillance data on all reports of *Cryptosporidium* infections. Cases confirmed by laboratory testing and probable epidemiologically-linked symptomatic cases are included in this surveillance report. Confirmed cases in 2010 include those that were positive by antigen screens.

Maine’s Health and Environmental Testing Laboratory (HETL) validated a *cryptosporidium* PCR test that is currently available. Specimens will be sent to federal CDC for speciation and genotyping. Federal CDC is building a database of *cryptosporidium* DNA patterns called CryptoNet.

Results

A total of 93 cryptosporidiosis cases were reported to Maine CDC in 2010. This represents an overall rate of 7.1 cases per 100,000 people. The incidence has increased for the past two years (Figure 1).

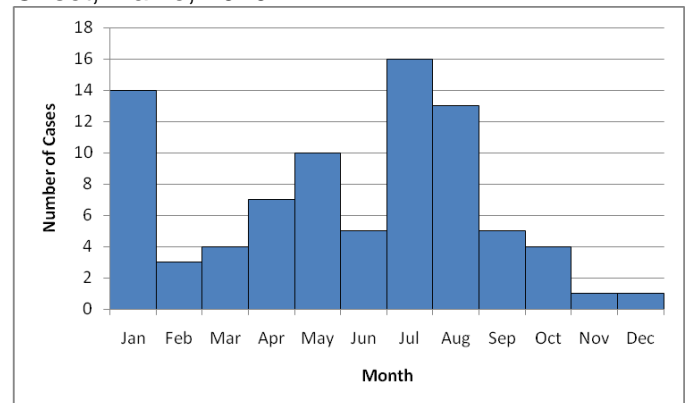
Figure 1. Cryptosporidiosis in Maine and US, 2005-2010.



Fifty-seven percent of the reported cases were female and forty-three percent were male. The median age was 30 years, with a range of 7 months to 93 years. There were 10 hospitalizations and no known deaths due to *Cryptosporidium* infections.

The majority of cryptosporidiosis cases occur in the summer months – July and August. In January 2010 there was a family cluster of cryptosporidiosis reported (Figure 2).

Figure 2. Cryptosporidiosis cases by Month of Onset, Maine, 2010.



Twenty-two percent of cases reported traveling during their exposure period. Sixty-two percent of cases had contact with animals; 34% of which had direct contact with cows or calves. Well water was used in the homes of 58% of cryptosporidiosis cases. Recreational water exposure was reported in only a quarter (25%) of cryptosporidiosis cases.

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In 2010, 40% of cases were reported in three counties - Penobscot, Kennebec and Somerset (Table 1).

Table 1. Cryptosporidiosis cases by county-- Maine, 2010

County	Case Count	Rate*	Percent
Androscoggin	3	2.8	3.2
Aroostook	7	9.9	7.5
Cumberland	5	1.8	5.4
Franklin	1	3.4	1.1
Hancock	6	11.3	6.5
Kennebec	13	10.7	14.0
Knox	1	2.5	1.1
Lincoln	6	17.5	6.5
Oxford	0	0.0	0.0
Penobscot	19	12.8	20.4
Piscataquis	6	35.6	6.4
Sagadahoc	5	13.6	5.4
Somerset	8	15.7	8.6
Waldo	6	15.6	6.5
Washington	0	0.0	0.0
York	7	3.5	7.5
Total	93	7.1	100

*Rate per 100,000 population

Discussion and Recommendations

Cryptosporidiosis cases are increasing in Maine. To determine the cause of the increase Maine CDC conducts detailed interviews to obtain more information about case-patients' possible exposures, including: drinking water sources, animal contact, and recreational water use.

Possible reasons for an increase in cases include more laboratory tests available; testing by health care providers; and elevated transmission due to contaminated sources, such as water or animals. Nationwide, outbreaks of cryptosporidiosis occur primarily due to exposure to contaminated water parks or other recreational water sources.

The best way to prevent cryptosporidiosis is to practice good hygiene and to avoid water that may contain the parasites. The following steps can be taken to prevent infection:

- 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
- After gardening, even if wearing gloves
- Do not swim if you have diarrhea. Children in diapers should not be in the water if they have diarrhea. Wait two weeks after diarrhea ends to swim
- Do not depend on chlorine or iodine to make water safe from *Cryptosporidium*
- Do not swallow water when swimming or boating
- Do not drink untreated water from lakes, streams, ponds or springs
- Avoid unpasteurized juices and raw milk products
- Rinse all fresh fruits and vegetables under clean running water
- When traveling, do not use ice or drinking water and avoid eating uncooked foods in countries where the water may not be safe and sanitation is poor
- Children with diarrhea should be excluded from child care settings until diarrhea has stopped

If the safety of drinking water is questionable, disinfect water by heating to a rolling boil for 1 minute; or use an appropriate filter (National Safety Foundation (NSF) Standard 53 or 58) and use additional treatment to kill/inactivate bacteria or viruses; or use bottled water.

All cases of cryptosporidiosis in Maine must be reported by calling 1-800-821-5821, or by faxing reports to 207-287-6865.

For more information on Cryptosporidiosis:

- Maine CDC website:
<http://www.maine.gov/dhhs/boh/ddc/epi/disease/cryptosporidiosis.shtml>
- Federal CDC website:
<http://www.cdc.gov/crypto/>