



# Infectious Disease Epidemiology Report

## Cryptosporidiosis and Giardiasis Surveillance Report 2011 - Maine



### Introduction

Cryptosporidiosis and giardiasis are diarrheal diseases caused by parasites. *Cryptosporidium* causes cryptosporidiosis (commonly referred to as 'crypto') and *Giardia intestinalis* (also known as *Giardia lamblia* or *Giardia duodenalis*) causes giardiasis.

The parasites live in the intestines of infected humans or animals. Both parasites are found in soil, food, water or surfaces that are contaminated with infected animal or human feces. Infection results from the consumption of contaminated food or water, from person-to-person contact, or from animal-to-person contact.

The infectious dose for both parasites is low and healthy individuals are known to get sick from ingesting as few as 10 organisms. Infected individuals can shed the parasites for weeks after symptom resolve.

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*.

Individuals at greatest risk of infection with *Giardia* include travelers to endemic countries, persons swallowing contaminated drinking water, such as backpackers or campers, persons with close contact with infected individuals and men who have sex with men.

### Methods

Cryptosporidiosis and giardiasis are reportable diseases in Maine. Maine Center for Disease Control and Prevention (Maine CDC) investigates cases of cryptosporidiosis to learn more about the risk factors associated with transmission. Reports of giardiasis are not investigated, though laboratory information is collected. Cases confirmed by laboratory testing and probable epidemiologically-linked symptomatic cases are included in this surveillance report. The definition for a confirmed case of cryptosporidiosis changed during the past few years (2009 and 2010) to reflect shifts in diagnostic practices.

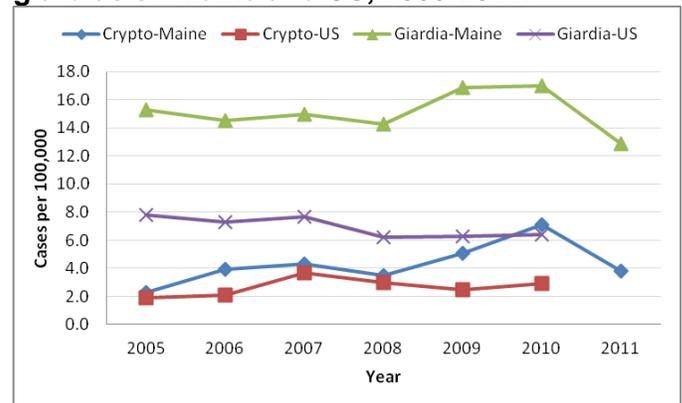
Maine's Health and Environmental Testing Laboratory (HETL) validated a *Cryptosporidium* PCR test that is currently available.

*Cryptosporidium* specimens are sent to federal CDC for speciation and genotyping to learn more about outbreaks and sporadic cases of disease.

### Results

A total of 51 cryptosporidiosis cases and 171 giardiasis cases were reported to Maine CDC in 2011.

**Figure 1. Rates of cryptosporidiosis and giardiasis - Maine and US, 2005-2011.**



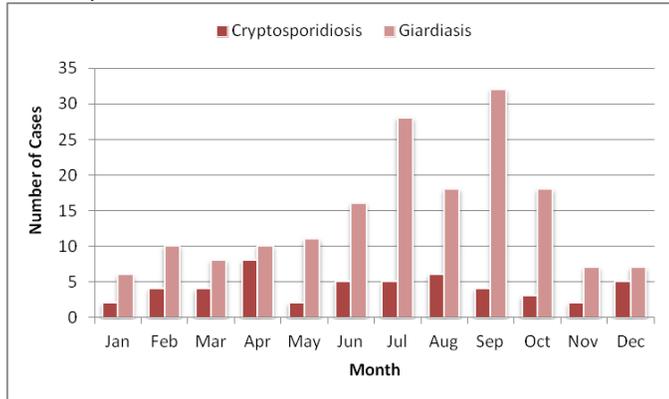
**Table 1. Descriptive epidemiology of cryptosporidiosis and giardiasis - Maine, 2011.**

|                        | Cryptosporidiosis | Giardiasis |
|------------------------|-------------------|------------|
| Case count             | 51                | 134        |
| Five year median       | 56                | 138        |
| Maine rate, 2011       | 3.8               | 10.1       |
| US rate, 2010          | 2.9               | 6.4        |
| Male                   | 43%               | 55%        |
| Female                 | 57%               | 45%        |
| Median age             | 39 years          | 47 years   |
| Age range              | 3-87 years        | 1-88 years |
| Travel history         | 24%               | N/A        |
| Animal contact         | 76%               | N/A        |
| Private well           | 51%               | N/A        |
| Recreational water use | 20%               | N/A        |

The majority of cryptosporidiosis and giardiasis cases occur in the summer and early fall.

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**Figure 2. Reported cases of cryptosporidiosis and giardiasis by month of symptom onset - Maine, 2011.**



Four counties (Cumberland, Lincoln, Sagadahoc and Somerset) had rates of giardiasis more than three times the national rate.

**Table 2. Incidence of cryptosporidiosis and giardiasis by county – Maine, 2011**

| County       | Cryptosporidiosis |            | Giardiasis |             |
|--------------|-------------------|------------|------------|-------------|
|              | Count             | Rate*      | Count      | Rate*       |
| Androscoggin | 0                 | 0.0        | 15         | 14.0        |
| Aroostook    | 4                 | 5.6        | 2          | 2.8         |
| Cumberland   | 4                 | 1.4        | 60         | 21.2        |
| Franklin     | 0                 | 0.0        | 3          | 9.8         |
| Hancock      | 2                 | 3.7        | 4          | 7.3         |
| Kennebec     | 4                 | 3.3        | 14         | 11.5        |
| Knox         | 2                 | 5.0        | 6          | 15.1        |
| Lincoln      | 4                 | 11.7       | 7          | 20.5        |
| Oxford       | 0                 | 0.0        | 8          | 13.9        |
| Penobscot    | 13                | 8.5        | 11         | 7.2         |
| Piscataquis  | 1                 | 5.7        | 1          | 5.7         |
| Sagadahoc    | 3                 | 8.5        | 9          | 25.6        |
| Somerset     | 4                 | 7.7        | 15         | 28.8        |
| Waldo        | 6                 | 15.5       | 5          | 12.9        |
| Washington   | 0                 | 0.0        | 0          | 0.0         |
| York         | 4                 | 2.0        | 11         | 5.5         |
| <b>Total</b> | <b>51</b>         | <b>3.8</b> | <b>171</b> | <b>12.9</b> |

\*Rate per 100,000 population

## Discussion and Recommendations

Reports of giardiasis decreased in 2011 compared to previous years. However, the rate of giardiasis in Maine is twice the US rate.

The best way to prevent cryptosporidiosis and giardiasis is to practice good personal hygiene, avoid swimming with diarrhea, and disinfect 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 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 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 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.
- 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 and giardiasis in Maine must be reported by calling 1-800-821-5821, or by faxing reports to 207-287-6865.

For more information:

- Maine CDC website: [www.mainepublichealth.gov](http://www.mainepublichealth.gov)
- Federal CDC websites:
  - <http://www.cdc.gov/crypto/>
  - [www.cdc.gov/giardia](http://www.cdc.gov/giardia)
  - [www.cdc.gov/healthyswimming](http://www.cdc.gov/healthyswimming)