

Enteric Illness

Cyclosporiasis

Date Reviewed: April 1, 2024

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Notification Timeline:

From Lab/Practitioner to Public Health: Within 48 hours.

From Public Health to Ministry of Health: Within 2 weeks.

Public Health Follow-up Timeline: Initiate within 24-48 hours.

Information

Table 1. Surveillance Case Definition¹ (Public Health Agency of Canada, December 2023)

Confirmed Case²	Laboratory confirmation of infection in a person with or without clinical illness from an appropriate clinical specimen (e.g., stool, intestinal fluid, small bowel biopsy), with demonstration of: • <i>Cyclospora</i> spp. oocysts OR • <i>Cyclospora</i> spp. nucleic acid (e.g., by polymerase chain reaction (PCR) or other nucleic acid test (NAT)).
Probable Case	Clinical illness* in a person who is epidemiologically linked to a confirmed case.
[§]<i>Cyclospora cayetanensis</i> has been proposed to be divided into three species: <i>C. cayetanensis</i>, <i>C. ashfordi</i>, and <i>C. henanensis</i>. *Clinical illness may be characterized by watery diarrhea (most common symptom), loss of appetite, weight loss, abdominal pain, bloating and gas, nausea, fatigue (tiredness) and/or mild fever. Vomiting may also be noted. The severity of illness may vary. Relapses and asymptomatic infections may occur. Some evidence suggests that symptoms may be more severe and long-lasting in immunocompromised individuals.	

Causative Agent

Cyclospora cayetanensis is a sporulating coccidian protozoan infecting the upper small intestine (Heymann, 2008). *Cyclospora* is resistant to chlorination.

Symptoms (American Academy of Pediatrics, 2009)

¹ Surveillance case definitions ensure uniform reporting to allow comparability of surveillance data. The definition is not intended to be used for clinical or laboratory diagnosis or management of cases.



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- Watery diarrhea is the most common symptom.
- Nausea, anorexia, abdominal cramps or bloating, prolonged fatigue and substantial weight loss can also occur. Approximately 50% of individuals will have low grade fever.
- Diarrhea can alternate with constipation.
- Infection is usually self-limited, but diarrhea and systemic symptoms can vary in intensity for weeks to months.
- Relapse and persistence of symptoms is common in untreated people, even in immunocompetent persons.
- In the immunocompromised, diarrhea can last for months in some patients.
- Some infected persons are asymptomatic.

Incubation Period

Range of 2-14 days, usually 1 week (American Academy of Pediatrics, 2009).

Reservoir/Source

- Humans are the only known hosts (American Academy of Pediatrics, 2009).
- Infected persons excrete the oocyst stage of *Cyclospora* in their feces.
- Outbreaks have occurred from ingestion of contaminated imported raspberries, basil and lettuce.
- Cyclosporiasis is most common in tropical and subtropical countries and is endemic in many developing countries (Heymann, 2008).

Mode of Transmission

- Transmission usually occurs through the ingestion of contaminated food (usually fresh produce like fruits and vegetables) or water, or swimming in contaminated water.
- Person-to-person and animal-to-person transmissions have not been documented.
- *Cyclospora* oocysts in freshly excreted stool are not infectious. They require days to weeks outside the host to sporulate and become infectious. Indirect transmission can occur if an infected person contaminated the environment and



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oocysts have sufficient time, under appropriate conditions, to become infectious (American Academy of Pediatrics, 2009).

Period of Communicability

The disappearance of symptoms and oocysts usually occurs simultaneously. The mean duration of organism shedding is 23 days (Alberta Health and Wellness, 2008).

Specimen Collection and Transport

Cyclospora oocysts may be shed intermittently and at low levels, even by persons with profuse diarrhea. A single negative stool specimen does not exclude the diagnosis; several specimens that are processed and examined with sensitive methods may be required.

Submit stool in container with SAF preservative. Fill specimen to the line of the container, do not over or under fill. Mix stool well with preservative using spoon provided before sending.

Refer to the Saskatchewan Disease Control Laboratory Compendium of Tests for details at <http://sdcl-testviewer.ehealthsask.ca>.

Methods of Control/Role of Investigator

Prevention and Education

Refer to the [Enteric Introduction and General Considerations](#) section of the manual that highlights topics for client education that should be considered as well as provides information on high-risk groups and activities.

- Educate about personal hygiene, especially the sanitary disposal of feces and careful hand washing after defecation.
 - Educate food handlers about proper food handling, preparation, and hygiene.
 - Avoid food or water that may be contaminated with sewage.
 - Encourage thorough washing of fresh produce prior to consumption, although this is not always effective.
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- Travellers should be advised regarding water treatment techniques – refer to Saskatchewan International Travel Manual.

Management

I. Case

History

- Obtain food history, especially recent consumption of fresh produce – e.g., raspberries, basil or lettuce (Heymann, 2008).
- Determine history of recent travel in areas with poor sanitation including improper water treatment and sewage disposal.
- Determine history of recent immigration.

Immunization

None.

Treatment/Supportive Therapy

Treatment choices are governed by the most recent guidelines. The public health practitioner should direct any questions regarding the current treatment protocols to the physician or Medical Health Officer (MHO). See [Appendix H - Sources for Clinical Treatment Guidelines](#).

Supportive measures include management of fluid and electrolyte balance, and rest. In patients who are not treated, illness can be protracted, with remitting and relapsing symptoms (Heymann, 2008).

Exclusion (work, school, daycare, and other public environments)

Symptomatic and asymptomatic individuals are generally not excluded from work or daycare.

Referrals

None.



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II. Contacts/Contact Investigation

Contact Definition

Contacts include:

- individuals exposed to the same source (if it is identified).

Testing

None.

Prophylaxis/Immunization

None.

Exclusion

None.

III. Environment

Child Care Centre Control Measures

Strict enforcement of infection control measures. Refer to Saskatchewan Ministry of Health Infection Control Manual for Child Care Facilities available at

<http://www.saskatchewan.ca/live/births-deaths-marriages-and-divorces/starting-a-family/early-learning-and-child-care/child-care>.

Health Facilities Control Measures

Refer to your Health Authority Infection Control Manual. In addition to standard precautions, contact precautions are recommended for diapered or incontinent children.

Revisions

Date	Change
April 2024	• Surveillance Case Definition table- updated to align with PHAC December 2023 updates.



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- Public Health Agency of Canada. (December 2023). National case definition: Cyclosporiasis. Retrieved February 2024 from <https://www.canada.ca/en/public-health/services/diseases/cyclosporiasis-cyclospora/health-professionals-cyclosporiasis-cyclospora/national-case-definition.html>.
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Cyclosporiasis Data Collection Worksheet

Panorama QA complete: ☐ Yes ☐ No
Initials: _____

Please complete all sections.

Panorama Client ID: _____
Panorama Investigation ID: _____

A) CLIENT INFORMATION

LHN -> SUBJECT -> CLIENT DETAILS -> PERSONAL INFORMATION

Last Name:	First Name: and Middle Name:	Alternate Name (Goes by):
DOB: YYYY / MM / DD Age: _____	Health Card Province: _____ Health Card Number (PHN): _____	Preferred Communication Method: (specify - i.e. home phone, text): Email Address: ☐ Work ☐ Personal
Phone #: ☐ Primary Home: ☐ Mobile contact: ☐ Workplace:		
Place of Employment/School:	Gender: ☐ Male ☐ Female ☐ Other ☐ Unknown	
Alternate Contact: _____ Relationship: _____ Alt. Contact phone: _____	Address Type: ☐ No fixed ☐ Postal Address ☐ Primary Home ☐ Temporary ☐ Legal Land Description Mailing (Postal address): Street Address or FN Community (Primary Home): Address at time of infection if not the same:	

B) INVESTIGATION INFORMATION

LHN-> SUBJECT SUMMARY-> ENTERIC ENCOUNTER GROUP ->CREATE INVESTIGATION

Disease Summary Classification:	Date	Classification:	Date	LAB TEST INFORMATION:
CASE		CONTACT		Date specimen collected:
☐ Confirmed	YYYY / MM / DD	☐ Contact	YYYY / MM / DD	YYYY / MM / DD
☐ Does Not Meet Case Definition	YYYY / MM / DD	☐ Not a Contact	YYYY / MM / DD	Specimen type:
☐ Person Under Investigation	YYYY / MM / DD	☐ Person Under Investigation	YYYY / MM / DD	☐ Biopsy
☐ Probable	YYYY / MM / DD			☐ Intestinal Fluid
				☐ Stool
Disposition: FOLLOW UP: ☐ In progress YYYY / MM / DD ☐ Complete YYYY / MM / DD ☐ Incomplete - Declined YYYY / MM / DD ☐ Not required YYYY / MM / DD ☐ Incomplete – Lost contact YYYY / MM / DD ☐ Referred – Out of province YYYY / MM / DD ☐ Incomplete – Unable to locate YYYY / MM / DD (specify where)				
REPORTING NOTIFICATION Name of Attending Physician or Nurse:		Location:		
Physician/Nurse Phone number:		Date Received (Public Health): YYYY / MM / DD		
Type of Reporting Source: ☐ Health Care Facility ☐ Lab Report ☐ Nurse Practitioner ☐ Physician ☐ Other _____				

Cyclosporiasis Data Collection Worksheet

Please complete **all** sections

Panorama Client ID: _____
Panorama Investigation ID: _____

C) SIGNS & SYMPTOMS

LHN-> INVESTIGATION->SIGNS & SYMPTOMS

Description	Yes Date of onset	Date of recovery	Description	Yes Date of onset	Date of recovery
Abdominal - bloating or distension		YYYY / MMM / DD	Fever - low grade		YYYY / MMM / DD
Cardiac - endocarditis		YYYY / MMM / DD	Flatulence		YYYY / MMM / DD
Asymptomatic		YYYY / MMM / DD	Loss of appetite (anorexia)		YYYY / MMM / DD
Constipation		YYYY / MMM / DD	Nausea		YYYY / MMM / DD
Diarrhea		YYYY / MMM / DD	Pain - abdominal		YYYY / MMM / DD
Diarrhea - watery		YYYY / MMM / DD	Vomiting		YYYY / MMM / DD
Lethargy (fatigue, drowsiness, weakness, etc)		YYYY / MMM / DD	Weight loss		YYYY / MMM / DD
Fever		YYYY / MMM / DD			YYYY / MMM / DD
Other Signs & Symptoms if applicable					

D) INCUBATION AND COMMUNICABILITY

LHN-> INVESTIGATION->INCUBATION & COMMUNICABILITY

Incubation for Case(period for acquisition):	
Earliest Possible Exposure Date: YYYY / MM / DD	Latest Possible Exposure Date: YYYY / MM / DD
<i>Exposure Calculation details:</i>	

E) RISK FACTORS N—No, NA—Not asked, U—Unknown

LHN-> SUBJECT->RISK FACTORS

DESCRIPTION	Yes Start date	N, NA, U	Add'l Info
Contact - At risk population (international travellers or immigrants)	YYYY / MM/DD		
Contact - Persons with diarrhea/vomiting	YYYY / MM/DD		
Contact to a known case (add'l info)			
Immunocompromised - Related to underlying disease or treatment			
Special Population - From or residence in an endemic country (add'l info)			
Travel - Outside of within Canada (Add'l Info)	YYYY / MM/DD AE		
Travel - Outside of Saskatchewan, but within Canada (add'l info)	YYYY / MM/DD AE		
Water – Bottled water (specify)			
Water - Private well or system (Add'l Info)			
Water - Public water system (Add'l Info)			
Water - Untreated water (Add'l Info)			
Water (Recreational) - Pond, stream, lake, river, ocean (Add'l Info)	YYYY / MM/DD		
Water (Recreational) - Private (swimming pool/whirl pool) (Add'l Info)	YYYY / MM/DD		
Water (Recreational) - Public (swimming pool/paddling pool/whirl pool) (Add'l Info)	YYYY / MM/DD		

F) TREATMENT

LHN-> INVESTIGATION-> MEDICATIONS->MEDICATIONS SUMMARY

Medication (<i>Panorama = Other Meds</i>) : _____	
Prescribed by: _____	Started on: YYYY / MMM / DD

Cyclosporiasis Data Collection Worksheet

Please complete **all** sections

Panorama Client ID: _____
Panorama Investigation ID: _____

G) INTERVENTION

LHN-> INVESTIGATION->TREATMENT & INTERVENTIONS->INTERVENTION SUMMARY

Intervention Type and Sub Type:				
Assessment: Investigator name ☐ Assessed for contacts YYYY / MM / DD		Immunization: Investigator name ☐ Eligible immunizations recommended YYYY / MM / DD		
Communication: ☐ Other communication (See Investigator Notes) YYYY / MM / DD Investigator name ☐ Letter (See Document Management) YYYY / MM / DD Investigator name		Public Health Order: ☐ Order (specify) _____ YYYY / MM / DD Investigator name		
General: Investigator name ☐ Disease-Info/Prev-Control YYYY / MM / DD ☐ Disease-Info/Prev-Cont/Assess'd for Contacts YYYY / MM / DD		Referral: ☐ Canadian food inspection agency YYYY / MM / DD Investigator name ☐ Primary care provider YYYY / MM / DD Investigator name ☐ Consultation with MHO YYYY / MM / DD Investigator name		
Education/counselling: ☐ Prevention/Control measures YYYY / MM / DD ☐ Disease information provided YYYY / MM / DD Investigator name		Testing: Investigator name ☐ Stool testing recommended (e.g. contacts) YYYY / MM / DD ☐ Laboratory testing recommended (contacts) YYYY / MM / DD		
Exclusion: Investigator name ☐ Daycare YYYY / MM / DD ☐ Preschool YYYY / MM / DD ☐ School YYYY / MM / DD ☐ Work YYYY / MM / DD		Other Investigation Findings: ☐ Investigator Notes ☐ Document Management Notes		
Date	Intervention subtype	Comments	Next follow-up Date	Initials
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	
YYYY / MM / DD			YYYY / MM / DD	

H) OUTCOMES

LHN-> INVESTIGATION-> OUTCOMES

☐ Not yet recovered/recovering YYYY / MM / DD ☐ Recovered YYYY / MM / DD ☐ Fatal YYYY / MM / DD	☐ ICU/intensive medical care YYYY / MM / DD ☐ Intubation /ventilation YYYY / MM / DD ☐ Unknown _____	☐ Hospitalization YYYY / MM / DD ☐ Other YYYY / MM / DD
Cause of Death: (if Fatal was selected) _____		

I) EXPOSURES

LHN-> INVESTIGATION-> EXPOSURE SUMMARY-> ACQUISITION QUICK ENTRY

Acquisition Event Acquisition Event ID: _____		
Exposure Name: _____		
Acquisition Start YYYY / MM / DD to Acquisition End: YYYY / MM / DD		
Location Name: _____		
Setting Type ☐ Travel ☐ Exposure or consumption of potentially contaminated food or water ☐ Most likely source		

Initial Report completed by:		Date initial report completed: YYYY / MMM / DD
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