

# **Cyclospora Investigation Guideline**

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# Cyclospora

## Disease Management and Investigative Guidelines

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### CASE DEFINITION (CDC 1998)

#### A. Clinical Description for Public Health Surveillance:

- An illness of variable severity caused by the protozoan *Cyclospora cayentanensis* and commonly characterized by watery diarrhea, loss of appetite, weight loss, abdominal bloating and cramping, increased flatus, nausea, fatigue, and low-grade fever. Vomiting also may be noted. Relapses and asymptomatic infections can occur.

#### B. Laboratory Criteria for Case Classification:

- Laboratory-confirmed cyclosporiasis shall be defined as the detection in symptomatic or asymptomatic persons of *Cyclospora* oocysts:
  - In stool by microscopic examination, or
  - In intestinal fluid or small bowel biopsy specimens, or
  - Demonstration of sporulation, or
  - DNA (by polymerase chain reaction) in stool, duodenal/jejunal aspirates or small bowel biopsy specimens.

#### C. Case Classification:

- Confirmed:
  - Confirmed, symptomatic: A laboratory-confirmed case associated with one of the symptoms described above
  - Confirmed, asymptomatic: A laboratory-confirmed case associated with none of the above symptoms.

#### D. Laboratory Testing:

- Collection and Specimen: The Kansas Health and Environment Laboratory (KHEL) provides Parasite (O & P) Feces Mailers for parasite testing. If only cyclosporiasis testing is needed, concentration and molecular techniques are used. The specimen (feces) should be split into portions which are treated as follows:
  - Fixed in 10% formalin (for direct microscopy, concentration procedures, and preparation of stained smears); and
  - Frozen without fixation (for molecular diagnosis); or
  - Fresh specimens should be refrigerated and sent to the diagnostic laboratory as rapidly as possible. Do not refrigerate the preserved samples.

Note: Specimens fixed in sodium acetate-acetic acid formalin can be handled in the same manner as specimens fixed in formalin. Specimens fixed in polyvinyl alcohol (PVA) are of limited value because they are not usable for concentration procedures, but they may be important for identifying parasites other than cyclospora.

- Timing of specimens:
  - Because parasites may be passed intermittently, the collection of three specimens within a 10-day period is recommended.
  - Specimens should be collected at least 48 hours apart.

- KHEL is equipped to perform ova and parasite (O & P) examinations. If needed, please, write “test for Cyclospora” in submitter comments. Molecular testing is done at the CDC.
- For additional information and/or questions concerning isolate submission, and laboratory kits call (785) 296-1620 or refer to online guidance at [http://www.kdheks.gov/labs/lab\\_ref\\_guide.htm](http://www.kdheks.gov/labs/lab_ref_guide.htm).

**E. Bioterrorism Potential:** None.

**F. Outbreak Definition:**

- Two or more cases clustered in time and space with a common or suspected common source.

## INVESTIGATOR RESPONSIBILITIES

**A. Investigation Related Tasks and Activities:**

- 1) Confirm diagnosis with appropriate medical provider.
  - Before contacting the patient, discuss what they have been told about his/her evaluation for disease.
  - Obtain information that supports clinical findings in the case definition and information on the onset date of the symptoms.
  - Obtain information on any laboratory tests performed and results.
  - For hospitalization, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
- 2) Conduct case investigation to identify potential source of infection.
- 3) Conduct contact investigation to locate additional cases.
- 4) Identify sources of significant public health concern (e.g., fresh fruit distribution, public water supply) and prevent further transmission.
- 5) Initiate control and prevention measures to prevent spread of disease.
- 6) Report all confirmed and probable cases to the KDHE Office of Surveillance and Epidemiology, using established methods.

**B. Notifications:**

- 1) There are no special notifications or additional reporting requirements.
- 2) As appropriate, use the notification letter(s) and the disease fact sheet to notify the case, contacts and other individuals or groups.

## EPIDEMIOLOGY

Cyclospora is acquired by ingesting infectious oocysts found in contaminated drinking water and/or on fresh fruits or vegetables. After infection and reproduction in the small bowel within a human host, oocysts are produced and excreted in the stool. Excreted oocysts are not immediately infectious as they must sporulate outside the host. This may take weeks to months; therefore, direct human-to-human infection does not occur. Cyclosporiasis is common in many developing countries with an increase incidence noted during the spring and summer months. Outbreaks have been reported in the United States and have been associated with the ingestion of imported produce, including: raspberries, basil, and lettuce.

## DISEASE OVERVIEW

### A. Agent:

Cyclospora infection is caused by the protozoan parasite *Cyclospora cayetanensis*.

### B. Clinical Description:

Symptoms typically include: diarrhea, abdominal cramps, nausea, fatigue, and anorexia. Vomiting and fever are uncommon. Without treatment, symptoms may last several days to weeks and typically last longer in immunocompromised individuals. Significant weight loss may occur.

### C. Reservoirs:

Humans are the only known reservoir; however, animal reservoirs are suspected.

### D. Mode(s) of Transmission:

Direct person-to-person transmission does not occur. Noninfectious unsporulated oocysts are passed in stools; these oocysts take days to weeks, under favorable environmental conditions, to sporulate and become infectious. (The time required for sporulation to occur, under laboratory conditions, is 14 days). Humans become infected by consuming food or water that has been contaminated with human feces containing *C. cayetanensis* that has then had time to sporulate in the environment into an infectious form.

### E. Incubation Period:

Range 1-14 days; average 7 days.

### F. Period of Communicability:

Case person(s) shed unsporulated oocysts while actively ill. It is not known how long oocysts may be shed after symptoms have stopped.

### G. Susceptibility and Resistance:

Susceptibility is universal and reinfection may occur.

### H. Treatment:

Trimethoprim-sulfamethoxazole is the pharmacologic therapy of choice.

## STANDARD CASE INVESTIGATION AND CONTROL METHODS

Standard investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
- 3) Collection of clinical data.
- 4) Determination of risk factors and transmission settings (i.e. travel outside of country; enteric food history for fresh fruit and vegetables)
- 5) Investigation of epi-links among cases (cluster, household, co-workers, etc).

Standard investigation **includes** completion of the General Investigation Form and Enteric Supplemental Form. Further investigative activity should include:

**A. Case Investigation - Identify Potential Source of Infection:**

To help identify the source of the infection, the investigator should focus their investigation within the incubation period of Cyclospora (i.e., 1 - 14 days) and focus their investigation on the following potential source(s) of infection.

- Travel history, with dates of exit from and re-entry into Kansas.
- Consumption of untreated water from streams and/or lakes. List date(s) of consumption and location
- Consumption of fresh fruits, vegetables or herbs. (type, source)

**B. Contact Investigation – Identify Exposed Individuals / Populations:**

- Contacts are defined as those with possible exposure to the source of infection. Contacts are not just persons in close proximity to a case.
- Identify persons who participated with the case in any of the activities listed above and contact them, as well as any acquaintance or household member with similar illness.
- If any are ill, inform them of possible exposure, in order to facilitate proper diagnosis and therapy.

**C. Isolation, Work and Daycare Restrictions**

- Cyclospora infection is not a disease considered for quarantine or isolation under Kansas Administrative Code; however, anyone with diarrhea should be excluded until after the cessation of their symptoms from:
  - School and daycare settings
  - Food handling (until diarrhea has resolved for 24 hours)
  - Direct patient care (subject to food handling restrictions; especially if involved in handling or dispensing meds or in feeding patients)

**D. Case Management, Including Follow-up of cases:**

- None.

**E. Contact Management, Including Protection of Contacts:**

- None.

**F. Environmental Measures:**

- None unless a public food or water source is identified.

**G. Education:**

- Avoiding water or food that may be contaminated with feces.
- Uncooked fruits and vegetables should be washed thoroughly before eaten.
- Always thoroughly wash hands with soap and water before handling food, after using the toilet or changing diapers, after handling animal stools (feces), and after gardening or other direct contact with soil.
- Do not drink water directly from streams, lakes, springs or swimming pools.
- Boil water for 1 minute at a rolling boil whenever you are unsure of the safety of the water.

## MANAGING SPECIAL SITUATIONS

### A. Outbreak Investigation:

- Notify KDHE immediately, 1-877-427-7317.
- Active case finding will be an important part of any investigation.

### B. Reported Incidence Significantly Higher than Usual

- If you suspect an outbreak, investigate to determine the potential source of infection and mode of transmission. Refer to the foodborne investigation manual and consult with the KDHE epidemiologist on-call at 877-427-7317 as they can help determine a course of action to help prevent additional cases; in addition, they can perform surveillance for additional cases across jurisdictional boundaries that would be difficult to detect at a local level.

## DATA MANAGEMENT AND REPORTING TO THE KDHE

### A. Organize, collect and report data with the “General Investigation Form(s)” and “Enteric Supplemental Form”.

### B. Report data electronically via KS-EDSS or by fax, include:

- At a minimum, data collected during the investigation that helps to confirm or classify a case.
- All information collected on the General Investigation and supplemental form(s).

## ADDITIONAL INFORMATION / REFERENCES

**A. Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.

**B. Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.

**C. Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: [http://www.cdc.gov/ncphi/diss/nndss/casedef/case\\_definitions.htm](http://www.cdc.gov/ncphi/diss/nndss/casedef/case_definitions.htm)

**D. Kansas Regulations/Statutes Related to Infectious Disease:** <http://www.kdheks.gov/epi/regulations.htm>

**E. KDHE Foodborne Illness and Outbreak Investigation Manual:** Available at: [http://www.kdheks.gov/epi/download/kansas\\_foodborne\\_illness\\_manual.pdf](http://www.kdheks.gov/epi/download/kansas_foodborne_illness_manual.pdf)

**F. KDHE Foodborne Illness Resources:** <http://www.kdheks.gov/epi/foodborne.htm>

**G. Additional Information (CDC):** <http://www.cdc.gov/health/default.htm>

# Kansas Disease Investigation Guidelines

## General Investigation Form

Investigation Information		
<b>Case Type:</b> <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	<b>Disease Name:</b> _____	
<b>Classification:</b> <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	<b>KS-EDSS Investigation ID:</b> _____	
<b>Outbreak:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Outbreak Name:</b> _____	<b>Outbreak #:</b> _____
<b>Onset Date:</b> _____	<b>Diagnosis Date:</b> _____	<b>Report Date:</b> _____
<b>Assigned to (Investigator):</b> _____	<b>Patient Died:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
<b>Name Type:</b> <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
<b>Sex:</b> <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
<b>Race:</b> <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
<b>Hispanic / Latino Ethnicity:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Date of Birth:</b> _____	<b>Age:</b> _____	<b>Age Unit:</b> <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
<b>Last:</b> _____	<b>First:</b> _____	<b>Middle:</b> _____
<b>Street:</b> _____	<b>City/State:</b> _____	<b>Zip:</b> _____
<b>Evening Phone #:</b> _____	<b>Daytime Phone #:</b> _____	
Work / Occupation or School / Grade		
<b>Worksites / School:</b> _____		
<b>Occupations / Grade:</b> _____		
Travel History		
<b>1<sup>st</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>2<sup>nd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>3<sup>rd</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____
<b>4<sup>th</sup></b>	<b>Destination:</b> _____	<b>Depart Date:</b> _____ <b>Return Date:</b> _____



# Supplemental Laboratory Report Form

**Lab Reports**

Laboratory Name: \_\_\_\_\_

Lab Report Date: \_\_\_\_\_

Ordering Provider Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Facility: \_\_\_\_\_

Specimen Accession Number: \_\_\_\_\_

Specimen Collection Date: \_\_\_\_\_

Organism Name: \_\_\_\_\_

Organism Species: \_\_\_\_\_

Organism Serogroup: \_\_\_\_\_

Organism Serotype: \_\_\_\_\_

**PFGE Results**

Pattern 1      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 2      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

Pattern 3      KS: \_\_\_\_\_

Other State: \_\_\_\_\_

CDC: \_\_\_\_\_

**Additional Results Information**

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

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\_\_\_\_\_

# Supplemental Contact Form

**Contacts**

**Last:** \_\_\_\_\_ **First:** \_\_\_\_\_ **Middle:** \_\_\_\_\_

**Street:** \_\_\_\_\_ **City/State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Evening Phone #:** \_\_\_\_\_ **Daytime Phone #:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Sex:**  Failure to Report  Female  Male  Other  Transexual  Unknown

**Race:**  American Indian or Alaska Native  Asian  Black or African American  Native Hawaiian or Other Pacific Islander  White  Unknown

**Hispanic / Latino Ethnicity:**  Yes  No

**Date of Birth:** \_\_\_\_\_ **Age:** \_\_\_\_\_ **Age Unit:**  Days  Weeks  Months  Years

**Worksites / School:** \_\_\_\_\_

**Occupations / Grade:** \_\_\_\_\_

**Exposure Information**

**Contact Type:**  Household  Sexual  Other: \_\_\_\_\_ **Partner / Cluster Code:** \_\_\_\_\_

**Date of First Exposure:** \_\_\_\_\_ **Date of Last Exposure:** \_\_\_\_\_ **Frequency:** \_\_\_\_\_

**Nature of Exposure:** \_\_\_\_\_ **Comments:** \_\_\_\_\_

**Testing and Treatment Information**

**Clinic Code:** \_\_\_\_\_ **Examination Date:** \_\_\_\_\_

**Examination Test:** \_\_\_\_\_ **Examination Result:** \_\_\_\_\_

**Prophylaxis/empiric treatment date:** \_\_\_\_\_ **Drug / Dosage:** \_\_\_\_\_

**Provider (Name / Facility):** \_\_\_\_\_

**Disposition and Diagnosis Information**

**Initiation Date:** \_\_\_\_\_ **Disposition Date:** \_\_\_\_\_ **Disposition:** \_\_\_\_\_

**Diagnosis:** \_\_\_\_\_ **Referral Type:**  Patient  Provider **Post-test Counseled :**  Yes  No

**Currently Assigned To:** \_\_\_\_\_ **Follow-up Date:** \_\_\_\_\_

**Risk Factors**

**Pregnant:**  Yes  No **If Yes, # of Weeks:** \_\_\_\_\_

**Risk factors for complications in contact:**  None  Pregnant Woman  HIV Seropositive  Unimmunized  Index case is a super-spreader

Child younger than 5  Age > 65  Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

# Enteric Disease Supplemental Form

Kansas Department of Health and Environment

## Epidemiologic Case History

Condition	
<i>Calicivirus/Norwalk-like virus (norovirus)</i>	<i>Campylobacter Infection (Campylobacter spp.)</i>
<i>Cryptosporidiosis (Cryptosporidium parvum)</i>	<i>Enterohemorrhagic Escherichia coli (EHEC)</i>
<i>Enterohemorrhagic Escherichia coli O157:H7</i>	<i>Enterohemorrhagic Escherichia coli shiga toxin positive (not serogrouped)</i>
<i>Enterohemorrhagic Escherichia coli shiga toxin positive (serogroup non-O157)</i>	<i>Giardiasis (Giardia lamblia)</i>
<i>Salmonellosis (Salmonella spp.)</i>	<i>Shigellosis (Shigella spp.)</i>
<i>Cyclosporiasis (Cyclospora cayetanensis)</i>	<i>Hepatitis A</i>
<i>Listeriosis (Listeria monocytogenes)</i>	

\* indicates required fields

Case Type*		Classification*					
<i>Human Case</i>	<i>Non Human Case</i>	<i>Confirmed</i>	<i>Not a Case</i>	<i>Probable</i>	<i>Suspect</i>	<i>Deleted</i>	<i>Unknown</i>

Supplemental Form Status				
<i>Not Done</i>	<i>Form Complete</i>	<i>Form in Progress</i>	<i>Form Approved</i>	<i>Form Sent to CDC</i>

Report Date\*  
mm/dd/yyyy

Date Investigation Started  
mm/dd/yyyy

# Patient Demographic Information

\* indicates required fields

<b>Last Name*</b>	<b>First Name*</b>	<b>Middle Name</b>	<b>Name Type*</b>	<b>Age</b>
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<b>Age Unit</b> <i>Days    Weeks    Unknown    Months    Years</i>	<b>Date of Birth</b> <small>mm/dd/yyyy</small>
---	---

**Race\***  
(Check all that apply)

*American Indian or Alaska Native      Asian      Black or African American*  
*Native Hawaiian or Other Pacific Islander      White      Unknown*

**Ethnicity\***  
*Hispanic or Latino    Not Hispanic or Latino    Unknown*

**Sex\***  
*Failure to Report    Female    Male    Other    Transexual    Unknown*

**Street Address**

<b>City</b>	<b>County</b>	<b>State</b>	<b>Zip</b>
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<b>Evening Phone</b> <small>###-###-####</small>	<b>Daytime Phone</b> <small>###-###-####</small>
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**Occupation**

**High Risk Potential:**  
(Check all that apply)

<i>Contact to a confirmed case</i> _____	<i>Contact to a suspected case</i> _____
<i>Daycare attendee</i> _____	<i>Food handler</i> _____
<i>Direct patient care worker</i> _____	<i>Institutional resident or staff</i> _____
<i>Daycare worker</i> _____	<i>Animal handler</i> _____
<i>Other</i> _____	

If enrolled in day care, please complete the information below.

<b>Name of Facility</b>	<b>Evening Phone</b> <small>###-###-####</small>
-------------------------	---

<b>Street Address</b>		<b>City</b>
<b>County</b>	<b>State</b>	<b>Zip</b>

## Person Providing Report

**Name of Reporting Facility\***

## Clinical and Laboratory Data

<b>Individual diagnosed with</b> <i>Hemolytic Uremic Syndrome (HUS)    Thrombotic Thrombocytopenic Purpura (TTP)</i>	<b>Was a stool specimen collected?</b> <i>Yes    No</i>
---	--

<b>Diarrhea?</b> <i>Yes    No    Unknown</i>	<b>Number of Stools</b> <i>0 - 2    3 - 10    11 and above</i>	<b>Blood in Stool?</b> <i>Yes    No    Unknown</i>	<b>Vomiting?</b> <i>Yes    No    Unknown</i>
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<b>Nausea?</b> <i>Yes    No    Unknown</i>	<b>Abdominal Cramps?</b> <i>Yes    No    Unknown</i>	<b>Muscle Ache?</b> <i>Yes    No    Unknown</i>	<b>Other Symptoms?</b> <i>other</i> _____
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<b>What was the first Symptom</b>	<b>Date of Onset</b> <small>mm/dd/yyyy</small>	<b>Time of Onset</b>
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## Clinical and Laboratory Data cont.

<b>Fever?</b> <i>Yes No Unknown</i>	<b>If Yes, specify highest temperature:</b>
--	---

<b>Physician Information</b>	
<b>Was a physician consulted for this illness?</b> <i>Yes (please complete the information below) No</i>	<b>Name of physician:</b>

<b>Evening Phone</b> ###-###-####	<b>Street Address</b>		
<b>City</b>	<b>County</b>	<b>State</b>	<b>Zip</b>

<b>Antibiotic Information</b>			
<b>Was case treated with antibiotics anytime in the 14 days prior to illness?</b> <i>Yes No Unknown</i>	<b>Type of treatment/antibiotic</b>	<b>Reason for taking</b>	<b>Date started</b> mm/dd/yyyy

<b>Date completed</b> mm/dd/yyyy	<b>Was case treated with antibiotics for this illness?</b> <i>Yes No Unknown</i>	<b>Type of treatment:</b>	<b>Date Started:</b> mm/dd/yyyy
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<b>Date completed:</b> mm/dd/yyyy	<b>Was organism resistant to antibiotics?</b> <i>Yes No Unknown</i>	<b>If yes, specify resistance pattern:</b>
--------------------------------------	--	--

<b>Is the patient on any medication or receiving any treatment which may suppress their immune system (i.e. Corticosteroids or Cancer Chemotherapy)?</b> <i>Yes No Unknown</i>	<b>If yes please specify medication or treatment:</b>
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<b>Did patient recover?</b> <i>Yes No Unknown</i>	<b>Recover Date</b> mm/dd/yyyy	<b>Recover Time</b>
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### Exposure/Transmission

<b>Did anyone else (in your family ..) recently have similar symptoms?</b> <i>Yes (please complete below) No Unknown</i>
---

Name	Age	Sex	Relationship to Case	Occupation	Symptoms	Date of Onset
						mm/dd/yyyy

<b>Any restaurant, commercial food establishments, or group gatherings visited within the 7 days prior to onset of illness?</b> <i>Yes (please complete below) No Unknown</i>
--

Name of Establishment	City, County, State	Foods eaten	Date of Exposure
			mm/dd/yyyy

# Travel History

**Did the patient Travel prior to the onset of illness?**

*Yes No Unknown*

If yes, please complete below:

<b>Where:</b>	<b>Departure Date:</b> <small>mm/dd/yyyy</small>	<b>Return Date:</b> <small>mm/dd/yyyy</small>
<b>Where:</b>	<b>Departure Date:</b> <small>mm/dd/yyyy</small>	<b>Return Date:</b> <small>mm/dd/yyyy</small>

## Water Exposure

**Possible water sources:**

(Check all that apply)

*Municipal Water System* \_\_\_\_\_ *Bottled Water* \_\_\_\_\_ *Private Well* \_\_\_\_\_  
*Rural Water System* \_\_\_\_\_ *Other (specify):* \_\_\_\_\_

**Did patient drink water from other than a treated municipal system (i.e., stream, well)?**

*Yes No Unknown*

## Other Possible Exposure Information

**Was there contact with pets or animals within 7 days prior to onset?**

*Yes No Unknown*

**If yes, please indicate below:**

(Check all that apply)

*Caged Birds*   *Cats*   *Cattle*   *Chickens*   *Dogs*   *Ducks*  
*Frogs*   *Goats*   *Guinea Pigs*   *Hamsters*   *Horses*   *Lizards*  
*Mice*   *Parakeets*   *Pigeons*   *Pigs*   *Poultry*   *Rabbits*  
*Rats*   *Sheep*   *Snakes*   *Turkeys*   *Turtles*   *Other* \_\_\_\_\_

**Other Exposure Information**

<b>Other Birds?</b>	<b>If yes, please specify</b>	<b>Other Reptiles?</b>	<b>If yes, please specify</b>
<i>Yes No Unknown</i>		<i>Yes No Unknown</i>	

<b>Other Animals?</b>	<b>If yes, please specify</b>
<i>Yes No Unknown</i>	

**Were any of these animals ill near the time of onset**

*Yes No Unknown*

**If yes, please describe:**

**Where were the animals located?**

(Check all that apply)

*Home Farm School Pet Store Zoo Petting Zoo Other* \_\_\_\_\_

## Other Possible Exposure Information cont.

Within 7 days prior to onset of illness, did the patient participate in:

Activity	Participation	Date	Location
		mm/dd/yyyy	
Outdoor Activities			
Swimming			
Chlorinated Pool			
Wading Pool			
River/Lake/Pond			

### Food History

Did case eat any of the following within 7 days prior to the onset of illness?

Food Product	Consumed	City, County, State	Variety or Brand(s)	Supplier	Supplier City
1. Chicken					
2. Hamburger					
3. Sausage					
4. Hot Dogs					
5. Lunch Meat					
6. Eggs					
7. Milk raw					
8. Milk past.					
8. Fresh juice					
10. Fresh berries					
11. Fresh melon					
12. Other fresh fruit					
13. Lettuce					
14. Alfalfa Sprouts					
<b>Other fresh vegetables</b>		<b>Other Food Item 1</b>		<b>Other Food Item 2</b>	

**At what store(s) do you regularly shop for groceries?**

# Public Health Fact Sheet

## Cyclosporiasis

### What is cyclospora?

Cyclospora cayetanensis (SIGH-clo-SPORE-uh KYE-uh-tuh-NEN-sis) is a parasite composed of one cell, too small to be seen without a microscope. The parasite causes an intestinal infection called cyclosporiasis, a diarrheal type illness associated with contaminated fruits and vegetables as well as with drinking water in developing countries.

### How is cyclospora spread?

Cyclospora is spread when people eat food or water that has come into contact with infected stool (feces). Cyclospora need time (days to weeks) after being passed in the stool to become able to make a person sick. Because of this, the infection does not spread directly from person-to-person.

### Who is at risk for cyclospora infection?

People of all ages are at risk for infection. Persons living or traveling in tropical or subtropical regions may be at increased risk because cyclosporiasis is found in some developing countries. Foodborne outbreaks of cyclosporiasis in the United States and Canada have been linked to various types of imported fresh produce.

### What are the symptoms?

The time between becoming infected and becoming sick is usually about 1 week. Cyclospora infects the small intestine (bowel) and usually causes watery diarrhea, with frequent, sometimes explosive, bowel movements. Other common symptoms include loss of appetite, weight loss, stomach cramps/pain, bloating, increased gas, nausea, and fatigue. Vomiting, body aches, headache, fever, and other flu-like symptoms may be noted. Some people who are infected with cyclospora do not have any symptoms.

### How long can the symptoms last?

If not treated, the illness may last from a few days to a month or longer. Symptoms may seem to go away and then return one or more times (relapse). It's common to feel very tired.

### How is it diagnosed?

Identification of this parasite requires special kinds of laboratory techniques that are not routinely used and your doctor must specifically request special testing. More than one stool sample may be necessary and your doctor may also want to check for other infectious organisms that can cause similar symptoms.

*This fact sheet is for information only and is not intended for self-diagnosis or as a substitute for consultation. If you have any questions about the disease described above or think that you may have an infection, consult with your healthcare provider. This fact sheet is based on the Centers for Disease Control and Prevention's Health and Safety topic fact sheets.*

**How is cyclospora treated?**

Treatment with the antibiotic Trimethoprim-Sulfamethoxazole is recommended. Infected persons with diarrhea should rest and drink plenty of fluids and seek their doctor's advice before taking medicine to slow their diarrhea.

**How can you prevent cyclospora?**

Avoiding water or food that may be contaminated with stool may help prevent cyclospora infection. People who have previously been infected with cyclospora can become infected again.

**Where can you get more information?**

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section at (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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