

Campylobacteriosis

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To determine if there is a source of infection of public health concern (e.g., a commercial raw milk dairy or public water supply) and to stop transmission from such a source.
2. When the source of infection appears to pose a risk to only a few individuals (e.g., a puppy with diarrhea or a private water supply), to inform those individuals how to reduce their risk of exposure.

B. Legal Reporting Requirements

1. Health care providers: notifiable to local health jurisdiction within 3 business days.
2. Health care facilities: notifiable to local health jurisdiction within 3 business days.
3. Laboratories: *Campylobacter* species notifiable to local health jurisdiction within 2 business days; specimen submission is on request only.
4. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) Communicable Disease Epidemiology Section (CDES) within 7 days of case investigation completion or summary information required within 21 days.

C. Local Health Jurisdiction Investigation Responsibilities

1. Administer appropriate infection control recommendations (see Section 6A).
2. Report all confirmed and probable cases to CDES (see case definitions in Section 3). Complete the campylobacteriosis case report form which can be found on the DOH website at: <http://www.doh.wa.gov/Notify/forms/campy.pdf> enter the data into the Public Health Issues Management System (PHIMS).

2. THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Campylobacter are gram-negative bacteria. Although several species of *Campylobacter* can cause human illness, *C. jejuni* is the most common cause of gastroenteritis. Rarely, infections are reported due to *C. coli*, *C. lariii*, *C. fetus*, and *C. upsaliensis*.

B. Description of Illness

C. jejuni can cause a spectrum of disease ranging from uncomplicated gastroenteritis to fulminant disease similar to severe ulcerative colitis. Typical symptoms include diarrhea (often bloody), fever and abdominal pain. Many patients report prodromal symptoms of fever, malaise, headache, or myalgias. Less commonly a typhoid-like syndrome, febrile seizures or meningeal symptoms may occur. Post-infectious complications may include reactive arthritis and Guillain-Barré syndrome. Symptoms usually persist less than one week. Invasive disease is uncommon, even in neonates. Immunocompromised persons have a higher risk of infection, recurrence, prolonged shedding and severe disease.

C. Campylobacteriosis in Washington State

Communicable Disease Epidemiology Section receives approximately 900 to 1100 reports of campylobacteriosis per year. Potential sources of infection reported by Washington residents include poultry, animals, and contaminated food or water.

D. Reservoirs

Campylobacter organisms are found in the gastrointestinal tract of domestic and wild animals and birds, notably cattle, poultry, and dogs.

E. Sources and Modes of Transmission

Transmission is fecal-oral, most commonly through ingestion of food, reflecting inadequate cooking or mishandling of contaminated foodstuffs, or through direct contact with animals. Commonly recognized vehicles or mechanisms include:

1. handling or eating undercooked/raw poultry or meat;
2. unpasteurized (raw) milk or dairy products;
3. contaminated and inadequately treated drinking water;
4. contact with animals, especially young animals with diarrhea;
5. contact with poultry.

Although the infective dose is often low, person-to-person transmission is uncommon, (with the possible exception of contact with infected infants and incontinent adults).

F. Incubation Period

1–10 days; usually 2–5 days

G. Period of Communicability

The organism is shed in the feces for a few days to a few weeks. A chronic carrier state is unlikely. Most patients treated with antibiotics stop shedding after 72 hours of treatment.

H. Treatment

Fluid and electrolyte replacement (oral or IV) is the mainstay of treatment for persons with campylobacteriosis. Erythromycin or azithromycin can shorten the duration of illness when given early in the infection. Treatment is primarily indicated for persons experiencing high fever, bloody diarrhea, or for those whose symptoms are prolonged or worsening at the time of diagnosis. Antimicrobials do not prolong the period of shedding as with salmonellosis.

3. CASE DEFINITIONS

A. Clinical Criteria for Diagnosis

An infection that may result in diarrheal illness of variable severity.

B. Laboratory Criteria for Diagnosis

Isolation of *Campylobacter* from any clinical specimen.

C. Case Definition

1. *Probable*:

- a clinically compatible case that is epidemiologically linked to a confirmed case, or
- a clinically compatible case and demonstration of *Campylobacter* antigen in stool by a specific immunodiagnostic test e.g., enzyme-linked immunosorbent assay (EIA).

2. *Confirmed*: Isolation of *Campylobacter* from a clinical specimen.

4. DIAGNOSIS AND LABORATORY SERVICES

A. Diagnosis

The diagnosis of campylobacteriosis is most commonly made by isolation of *Campylobacter* from stool. Isolating the organism from stool requires special techniques that may not be routinely performed in some laboratories, such as culturing on selective media at reduced oxygen tension and incubation at 43 °C. More recently some laboratories have begun using immunodiagnostic assays (EIA).

B. Services Available at the Washington State Public Health Laboratories (PHL)

In an outbreak or other special situation, PHL can perform stool culturing for *Campylobacter* species, isolate identification and speciation, and pulsed field gel electrophoresis (PFGE) analysis. Contact Communicable Disease Epidemiology Section for approval prior to submitting specimens.

C. Specimen Collection

For stool culture, use a sterile applicator swab to collect stool, insert the swab into Cary-Blair transport medium, push the cap on tightly, label the tube, and mail immediately.

Please enclose a completed PHL Enteric Bacteriology form (available at: <http://www.doh.wa.gov/EHSPHL/PHL/Forms/Microbiology.pdf>) with all isolates and stool specimens.

5. ROUTINE CASE INVESTIGATION

A. Identify Potential Sources of Infection

Ask about possible exposures 1–10 days before onset, including:

1. Any contacts or household members with a similar illness. Obtain the name, phone number or address, and clinical information of the ill person. Anyone meeting the probable case definition should be reported and investigated in the same manner as a confirmed case. It is not necessary to get stool cultures on such individuals unless a dairy, public water supply or commercial product/establishment is a likely source of infection.
2. Source(s) of drinking water as well as water from streams or lakes (either consumed purposefully or accidentally during work or sports activity). Water used only after boiling need not be included.
3. Consumption of unpasteurized milk and unpasteurized dairy products. Identify the brand and/or sources. If a commercial raw milk dairy is suspected, notify Communicable Disease Epidemiology Section.

4. Handling or eating raw/undercooked poultry or meat.
5. Restaurant or other food service meals. Obtain the name of the facility, and date and location of the meal.
6. Public gathering where food was consumed. Obtain the date, location, and sponsor of the event.
7. Contact with pets, poultry, or other animals. Ask whether the animal has recently experienced diarrhea.
8. Travel outside Washington or the United States. Determine dates of travel.
9. Contact with diapered children or incontinent adults with diarrhea.

B. Environmental Evaluation

A sanitary inspection is indicated if a commercial food service facility, commercial dairy or public water supply is suspected as the source of the infection.

6. CONTROLLING FURTHER SPREAD

A. Infection Control Recommendations

1. Hospitalized patients should be treated using standard precautions. Contact precautions should be used for diapered or incontinent persons for the duration of the illness or to control institutional outbreaks.
2. Although *Campylobacter* are not easily spread from person to person, the case should be educated regarding effective hand washing, particularly after using the toilet, changing diapers, and before preparing or eating food.
3. School Restrictions: Children should not attend school as long as they have diarrhea.
4. Work or Child Care Restrictions: Persons should not work as food handlers, child care or health care workers, or attend child care as long as they have diarrhea. It is not necessary to obtain negative stool cultures before returning to work or child care as long as diarrhea has resolved and the individual is otherwise well.
5. If a suspected source of infection is identified and has the potential for transmitting infection to a defined population, advise those individuals on measures to avoid exposure (e.g., boil water or drink bottled water until private well is decontaminated).

B. Case Management

Stool cultures to document that fecal shedding of the organism has stopped are not routinely indicated.

C. Contact Management

Contacts with diarrhea should not work as food handlers, child care workers, or health care workers or attend school or child care. Cultures to confirm the diagnosis in epi-linked contacts is not warranted unless a dairy, public water supply or commercial product/establishment is a likely source of infection.

D. Environmental Measures

If indicated, give advice on decontaminating a private drinking water supply and/or proper cooking and food handling practices to prevent infection. (CDC provides information on disinfecting wells at:

<http://www.cdc.gov/healthywater/drinking/private/wells/treatment.html>

7. MANAGING SPECIAL SITUATIONS

A. Possible Foodborne or Waterborne Outbreaks

C. jejuni is a frequent cause of foodborne disease, typically with home preparation errors. Call Communicable Disease Epidemiology Section immediately if you suspect a common-source outbreak.

B. Cases Linked to Raw Milk Products

Environmental evaluation of the dairy will be a necessary part of any further investigation. Dairy investigations will be conducted by the Washington State Department of Agriculture.

C. Case Resides at a Health Care or Residential Care Facility

Determine if there has been any unusual incidence of diarrheal illness within the past month. If so, investigate these reports to identify possible common-source outbreaks or any continuing sources of exposure. If indicated, conduct a sanitary inspection of the facility. The extent of further investigation depends on circumstances.

8. ROUTINE PREVENTION

A. Vaccine Recommendations: None

B. Prevention Recommendations:

Advise individuals on measures to avoid further or future exposures including:

1. Wash hands after handling pets, fowl, other animals, raw meat and poultry, and always before food preparation.
2. Exercise care when handling or cleaning up after pets with diarrhea.
3. Avoid drinking or swallowing untreated surface water. Untreated water should be boiled or otherwise disinfected before consumption.
4. Avoid unpasteurized milk.
5. Avoid eating raw or undercooked poultry and meat. Chicken breasts and whole poultry prepared at home should be cooked to an internal temperature of 165°F. While it is best to use a thermometer, cook at least until there is no pink remaining and meat or poultry juices have no color.
6. Avoid cross-contamination of utensils or foods that will be served without further cooking; wash cutting boards and utensils with soap and water after contact with raw poultry.
7. Wash hands after caring for diapered children or incontinent persons, after using the toilet and after handling soiled clothing or linens.

ACKNOWLEDGEMENTS

This document is a revision of the Washington State Guidelines for Notifiable Condition Reporting and Surveillance published in 2002 which were originally based on the Control of Communicable Diseases Manual (CCDM), 17th Edition; James Chin, Ed. APHA 2000. We would like to acknowledge the Oregon Department of Human Services for developing the format and select content of this document.

UPDATES

October, 2010 revisions:

Section 2B: Less commonly, a typhoid-like syndrome, febrile seizures or meningeal symptoms may occur. Post-infectious complications may include reactive arthritis and Guillain-Barré syndrome. Immunocompromised persons have a higher risk of infection, recurrence, prolonged shedding and severe disease.

Section 2E: Infective dose is low

Section 3C: Addition of probable case definition based on diagnosis by immunoassay

Section 4A: Details about laboratory diagnostic methods

January 2011:

The Legal Reporting Requirements section has been revised to reflect the 2011 Notifiable Conditions Rule revision.