

Campylobacteriosis

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To identify sources of transmission (e.g., a commercial raw milk dairy or public water supply) and to stop transmission from such sources.
2. When disease is due to identified risks (e.g. poultry handling or a private water supply), to inform individuals how to reduce risks 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 only on request.
4. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) Communicable Disease Epidemiology (CDE) within 7 days of case investigation completion or summary information required within 21 days of initial notification.

C. Local Health Jurisdiction Investigation Responsibilities

1. Administer appropriate infection control recommendations (see Section 6A).
2. Report all confirmed, probable and suspect cases through the Public Health Issues Management System (PHIMS). Using the DOH campylobacteriosis case report form (<http://www.doh.wa.gov/notify/forms/campy.pdf>)

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. Immunocompromised persons have a higher risk of infection, recurrence, prolonged shedding and severe disease.

C. Campylobacteriosis in Washington State

Up to 1300 reports of campylobacteriosis have been received per year. Commonly reported potential sources of infection include poultry, and contact with animals.

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, through ingestion of contaminated food that was inadequately cooked or mishandled, or through direct contact with animals. Person-to-person transmission is uncommon. 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.

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. Antibiotic treatment will most likely reduce the period of shedding.

H. Treatment

Fluid and electrolyte replacement (oral or IV) is the mainstay of treatment for persons with campylobacteriosis. Erythromycin or azithromycin may 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 time of diagnosis.

3. CASE DEFINITIONS

A. Clinical Criteria for Diagnosis

A diarrheal illness of variable severity.

B. Laboratory Criteria for Diagnosis

Suspect: Detection of *Campylobacter* spp. in a clinical specimen using non-culture based laboratory methods.

Confirmed: Isolation of *Campylobacter* from any clinical specimen.

C. Case Definition

1. Suspect: A case that meets the suspect laboratory criteria for diagnosis.

2. Probable: A clinically compatible case that is epidemiologically linked to a confirmed case.
3. 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 techniques that may not be routine at some laboratories, including culture on selective media at reduced oxygen tension and incubation at 43 ° C. Some laboratories now use immunodiagnostic assays (EIA).

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

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

C. Specimen Collection

For stool culturing, use a sterile applicator swab to collect stool, insert the swab into Cary-Blair transport medium, break off the stick at the score line below the lid of the bottle, push the cap on tightly, seal with pressure-sensitive labeling tape and mail immediately.

Enclose a completed PHL Enteric Bacteriology form (<http://www.doh.wa.gov/EHSPHL/PHL/Forms/Microbiology.pdf>) with each isolate and stool specimen.

5. ROUTINE CASE INVESTIGATION

Interview the case and others who may be able to provide pertinent information.

A. Identify Potential Source of Infection

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

1. Contacts or household members with a similar illness. Obtain the person's name, diagnosis and phone number or address. Anyone meeting the probable case definition should be reported and investigated in the same manner as a confirmed case.
2. Source(s) of drinking water and source of any water consumed either purposefully or accidentally during work or sports activity, such as lake or stream.
3. Consumption of unpasteurized (raw) milk or dairy products. Identify brand and/or sources, and dates(s) of purchase and consumption. If a commercial milk dairy is suspected as a source, notify Communicable Disease Epidemiology.
4. Handling or consumption of raw or undercooked poultry or meat.
5. Meals from restaurants or other food services. Obtain name and location of the facility, and date of the meal.

6. Contact with animals or poultry. Ask whether animal has recently experienced diarrhea.

B. Environmental Evaluation

A sanitary inspection is indicated if a commercial food service facility or public water supply is suspected as the source of the infection. Commercial dairy product exposures are investigated in cooperation with the Washington State Department of Agriculture.

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.
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 necessary unless a dairy, public water supply or commercial product/establishment is a likely source of infection.

D. Environmental Measures

If indicated, provide guidance on decontaminating 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 if a common-source outbreak suspected.

B. Cases Linked to Raw Milk Products

Environmental evaluation of dairy facilities is conducted by the Washington State Department of Agriculture.

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

Determine if there has been increased incidence of diarrheal illness at facility within the past month. If so, investigate these reports to identify possible common-source outbreaks or continuing sources of exposure. A facility may have requirements for reporting to their licensing agency. If indicated, conduct a sanitary inspection of facility.

8. ROUTINE PREVENTION**A. Vaccine Recommendations:** None**B. Prevention Recommendations:**

1. Wash hands after handling any animals, raw meat or poultry, and 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 (raw) milk or dairy products.
5. Avoid consumption of raw or undercooked poultry and meat. Poultry prepared at home should be cooked to an internal temperature of 165°F. If thermometer unavailable, cook at least until there is no pink and juices have no color.
6. Wash cutting boards and utensils with soap and water after contact with raw poultry, and avoid cross-contamination of utensils or foods that will be served without further cooking.
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.

January 2012:

Section 3: Cases definitions changed in accordance with national standard. Suspect classification added for case detection using non-culture based methods. Previous probable case definition removed. Cases meeting suspect case definition will be included in annual case counts.