

Campylobacteriosis

Signs and Symptoms	<ul style="list-style-type: none"> • Diarrhea (often bloody), fever and abdominal pain. Many patients report prodromal symptoms of fever, malaise, headache, or myalgias. • Post-infectious complications may include reactive arthritis, irritable bowel syndrome and Guillain-Barré syndrome. • Invasive disease is uncommon. Immunocompromised persons have a higher risk of infection, recurrence, prolonged shedding and severe disease. 	
Incubation	1–10 days; usually 2–5 days	
Case classification	Clinical criteria: Variable severity diarrheal illness	
	<table border="1"> <tr> <td>Confirmed: culture confirmed</td> <td>Probable: positive culture-independent diagnostic testing OR clinically compatible case with epidemiologic link to a confirmed or probable case</td> </tr> </table>	Confirmed: culture confirmed
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Differential diagnosis	Salmonellosis, parasitic diarrhea, shigellosis, STEC infection, vibriosis, viral gastroenteritis, yersiniosis	
Treatment	Supportive; antibiotics only if severe disease or those at high risk for severe disease	
Duration	Symptoms usually persist 2-10 days	
Exposure	Typically inadequately cooked or raw poultry, or food cross-contaminated with raw or undercooked poultry; raw (unpasteurized) dairy products, contact with the feces of pets or other infected animals; untreated water. Uncommon person-to-person spread.	
Laboratory testing	<p>Local health jurisdiction (LHJ) and Communicable Disease Epidemiology (CDE) can arrange testing if an outbreak is suspected</p> <ul style="list-style-type: none"> • Washington State Public Health Laboratories can culture and genetically sequence (WGS) for cluster and outbreak investigations • Best specimens: stool or swab in transport medium; for an outbreak isolates (isolates are not routinely submitted to DOH) • Unless transported by 24 h keep all specimens cold, ship cold according to PHL requirements https://doh.wa.gov/public-health-provider-resources/public-health-laboratories/lab-test-menu • Specimen Collection and Submission Instructions (stool or isolate) https://www.doh.wa.gov/Portals/1/Documents/5240/SCSI-Ent-PathScr-V1.pdf https://www.doh.wa.gov/Portals/1/Documents/5240/SCSI-Ref-Campy-ID-V1.pdf 	
Public health actions	<p>LHJ can consult with CDE 206-418-5500 or 877-539-4344 for testing in potential outbreak investigations. For individual confirmed cases or probable cases in risk settings:</p> <ul style="list-style-type: none"> • Identify potential exposures • Identify potential outbreaks from common sources • Although not easily spread person to person, educate about effective hand washing • Exclude from sensitive occupation or setting such as daycare attendance or work, food handling, or health care until diarrhea ends • Persons with diarrhea should avoid close contact with immunocompromised persons • Infection Control: standard precautions with added contact precaution for diapered or incontinent persons 	

Campylobacteriosis

1. DISEASE REPORTING

A. Purpose of Reporting and Surveillance

1. To identify outbreaks and potential sources of ongoing transmission (e.g., a commercial raw milk dairy or public water supply).
2. To prevent further transmission from such sources.

B. Legal Reporting Requirements

1. Health care providers and Health care facilities: notifiable to **local health jurisdiction** within 3 business days.
2. Laboratories: *Campylobacter* species notifiable to **local health jurisdiction** within 2 business days; submission on request – isolate or if no isolate specimen associated with positive result, within 2 business days
3. Local health jurisdictions: notifiable to the Washington State Department of Health (DOH) Office of Communicable Disease Epidemiology (OCDE) within 7 days of case investigation completion or summary information required within 21 days of initial notification.

C. Local Health Jurisdiction Investigation Responsibilities

1. Collect basic information from all cases, including demographic data and hospitalization/death status.
2. Monitor case reports for outbreaks and investigate outbreaks.
3. Report all *confirmed*, *probable* and *suspect* cases through the Washington Disease Reporting System (WDRS) using the DOH campylobacteriosis case report form <http://www.doh.wa.gov/Portals/1/Documents/5100/210-020-ReportForm-Campy.pdf>

Note: Due to limited public health resources, investigating and educating individual cases are considered optional activities.

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 2,200 reports of campylobacteriosis have been received per year. Commonly reported potential sources of infection include poultry and contact with animals. There are periodic foodborne outbreaks and rare waterborne outbreaks.

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. Antibiotics 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

An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea and sometimes vomiting. The organism may also rarely cause extra-intestinal infections such as bacteremia, meningitis or other focal infections.

B. Laboratory Criteria for Diagnosis

Probable: Detection of *Campylobacter* spp. in a clinical specimen using a culture independent diagnostic test (CIDT).

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

C. Epidemiologic Linkage

Probable: A clinically compatible case that is epidemiologically linked to a case that meets the probable or confirmed laboratory criteria for diagnosis.

D. Case Definition (2015)

1. Probable: A case that meets the probable laboratory criteria for diagnosis or a clinically compatible case that is epidemiologically linked to a probable or confirmed case of campylobacteriosis.
2. Confirmed: A case that meets the confirmed laboratory criteria for diagnosis.

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 Whole Genome Sequencing (WGS) analysis. Contact the Office of Communicable Disease Epidemiology (206 418-5500) 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.

Submit specimens according to PHL requirements <https://doh.wa.gov/public-health-provider-resources/public-health-laboratories/lab-test-menu>

5. ROUTINE CASE INVESTIGATION

*The following section describes the routine case investigation for a person with campylobacteriosis. Due to limited public health resources, investigating and educating individual cases are considered **optional** activities.*

A. Manage the Case

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.

B. 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 type of raw milk (cow, goat or “other”), brand and/or sources, and dates(s) of purchase and consumption. If a commercial milk dairy is suspected as a source, notify the Office 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.

C. Identify and Manage Contacts and Other Potentially Exposed Persons

1. **Contacts:** 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.
2. **Others at risk for exposure:** 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).

D. Environmental Evaluation and Measures

1. 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.
2. 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>

6. MANAGING SPECIAL SITUATIONS

A. Possible Foodborne or Waterborne Outbreaks

C. jejuni is a frequent cause of foodborne disease, typically with home preparation errors. Call the Office of Communicable Disease Epidemiology (206 418-5500) 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.

7. 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. Wash hands afterwards.
3. Avoid drinking or swallowing untreated surface water. Untreated water should be boiled or otherwise disinfected before consumption.
4. Avoid consumption of 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: 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.

December 2012: Section 1C: Due to limited public health resources, individual case investigations are an optional activity for local health jurisdictions. Section 5 and 6: The content in these sections was reorganized.

January 2015: Section 3: In accordance with national standards, the “suspect” case classification (used for cases detected using non-culture based methods) was removed. Cases identified using non-culture based methods will now be classified as “probable” and will be included in annual case counts. The variable “Unpasteurized (Raw) Milk” was changed to “Raw Milk” and “Type” (“Cow”, “Goat”, “Other”) was added.

October 2019: Cover sheet added. Section 4B: Changed PFGE laboratory method to WGS

February 2022: Routine review

December 2022: For 2023 WAC revision combined provider and facility reporting requirement, updated laboratory submission (Section 1B)

December 2023: For 2024 WAC revision updated laboratory submission

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