Appendix 1: Case Definitions and Disease-Specific Information

Disease: *Campylobacter* enteritis

Effective: May 2022
Campylobacter enteritis

☒ Communicable
☐ Virulent

*Health Protection and Promotion Act* (HPPA)
*Ontario Regulation (O. Reg.) 135/18* (Designation of Diseases)

**Provincial Reporting Requirements**

☒ Confirmed case
☒ Probable case

As per Requirement #3 of the “Reporting of Infectious Diseases” section of the *Infectious Diseases Protocol, 2018* (or as current), the minimum data elements to be reported for each case are specified in the following:

- O. Reg. 569 (Reports) under the HPPA;
- The iPHIS User Guides published by Public Health Ontario (PHO); and
- Bulletins and directives issued by PHO.

**Type of Surveillance**

Case-by-case

**Case Definition**

**Confirmed Case**

Laboratory confirmation of *Campylobacter* spp. with or without clinically compatible signs and symptoms:

- Isolation of *Campylobacter* spp. by culture from an appropriate clinical specimen (e.g. stool, urine, body fluids)
Probable Case

- Clinically compatible signs and symptoms in a person with an epidemiologic link to a laboratory-confirmed case

OR

- Positive/detection of *Campylobacter* spp. by a nucleic acid amplification test (NAAT) Laboratory Evidence

Outbreak Case Definition

The outbreak case definition varies with the outbreak under investigation. Please refer to the *Infectious Diseases Protocol, 2018* (or as current) for guidance in developing an outbreak case definition as needed.

The outbreak case definitions are established to reflect the disease and circumstances of the outbreak under investigation. The outbreak case definitions should be developed for each individual outbreak based on its characteristics, reviewed during the course of the outbreak, and modified if necessary, to ensure that the majority of cases are captured by the definition. The case definitions should be created in consideration of the outbreak definitions.

Outbreak cases may be classified by levels of probability (i.e. confirmed and/or probable).

Clinical Information

Clinical Evidence

Clinically compatible signs and symptoms are characterized by diarrhea, abdominal pain, malaise, fever, nausea, and/or vomiting.

Clinical Presentation

Symptoms usually occur 2-5 days after exposure and may persist for one to two weeks. Illness is characterized by diarrhea (with or without blood), abdominal pain, malaise, fever, nausea, sometimes with vomiting. The symptoms can vary from mild
to severe, can mimic appendicitis and cases can also be asymptomatic.\textsuperscript{1,2} Relapses can occur.\textsuperscript{2}

Blood and mucus may be present in liquid stools. Extraintestinal infection is rare, usually occurring in immunocompromised patients.\textsuperscript{1} Post-infectious complications include reactive arthritis, Guillain-Barré syndrome, irritable bowel syndrome, myocarditis and pericarditis.\textsuperscript{1,2}

**Laboratory Evidence**

**Laboratory Confirmation**

The following will constitute a confirmed case of Campylobacteriosis:

- Positive culture for *Campylobacter* spp.

**Approved/Validated Tests**

- Standard culture for *Campylobacter* spp.
- Nucleic acid amplification test (NAAT) (which includes polymerase chain reaction (PCR) and multiplex molecular tests) for *Campylobacter* spp.

**Indications and Limitations**

- Further strain characterization is indicated for epidemiological, public health and control purposes

For further information about human diagnostic testing, contact the [Public Health Ontario Laboratories](https://www.publichealthontario.ca/).

**Case Management**

In addition to the requirements set out in the Requirement #2 of the "Management of Infectious Diseases – Sporadic Cases" and "Investigation and Management of Infectious Diseases Outbreaks" sections of the *Infectious Diseases Protocol, 2018* (or as current), the board of health shall investigate cases of campylobacteriosis to determine the source of infection. Refer to Provincial Reporting Requirements above.
for relevant data to be collected during case investigation.

Provide education on illness and how to prevent re-infection and secondary spread (see Personal Preventive Measures).

Exclusion Criteria:

- Exclude symptomatic food handlers and healthcare providers, and day care staff and attendees until symptom free for 24 hours, or 48 hours after completion of antibiotic or anti-diarrheal medications.

**Note:** Treatment recommendations are under the direction of the attending health care provider.

**Contact Management**

Assess household and other contacts for symptoms and if symptomatic advise to seek medical care. Management of symptomatic contacts is the same as for cases. Asymptomatic contacts should be tested only to assist in the identification of the source of an outbreak.

**Outbreak Management**

Please see the *Infectious Diseases Protocol, 2018* (or as current) for the public health management of outbreaks or clusters in order to identify the source of illness, manage the outbreak and limit secondary spread.

Two or more cases linked by time, common exposure, and/or place is suggestive of an outbreak.

For more information regarding specimen collection and testing, please see the Public Health Inspector’s Guide to the Principles and Practices of Environmental Microbiology.6

Refer to Ontario’s Foodborne Illness Outbreak Response Protocol (ON-FIORP) 2020 (or as current) for multi-jurisdictional foodborne outbreaks which require the response of more than two Partners (as defined in ON-FIORP) to carry out an investigation.
Prevention and Control Measures

Personal Prevention Measures

Preventive measures:

- Minimize cross-contamination by washing (wash, rinse, and sanitize) cutting boards and utensils with warm soapy water after contact with raw poultry, and avoiding contact between fruits, vegetables and ready-to-eat foods with the juices of raw poultry.

- Use proper hand hygiene after using sanitary facilities and diapering, contacting pet’s feces; and before and after handling food.

- Ensure thorough cooking and safe handling of meats. For proper cooking temperatures, see the ministry’s publication “Food Safety: Cook”.

- Consume treated water or boil private or non-municipal drinking water when intended for consumption.

- Consume only pasteurized milk and milk products.

- Provide food safety education to food handlers about safe food and equipment handling, and personal and hand hygiene.

For more food safety prevention measures, please see the ministry’s food safety frequently asked questions.

Infection Prevention and Control Strategies

Routine practices and contact precautions are indicated.

Refer to PHO’s website to search for the most up-to-date information on Infection Prevention and Control.

Disease Characteristics

Aetiologic Agent - The bacterium Campylobacter jejuni (C. jejuni) and less commonly Campylobacter coli (C. coli) are the usual causes of campylobacteriosis.
*Campylobacter* species are motile, comma-shaped, microaerophilic gram-negative bacilli that cause gastroenteritis.²

**Modes of Transmission** - Ingestion of the organisms in undercooked meat and poultry, contaminated food and water, unpasteurized (raw) dairy products, or from direct contact with infected pets (especially puppies and kittens) and farm animals.¹

Contamination of milk usually occurs from intestinal carrier cattle. Food can become contaminated from food handlers who do not properly wash their hands after touching raw/undercooked poultry; or raw/undercooked poultry can contaminate other foods or surfaces, like cutting boards and knives. The infective dose is often low. Person-to-person transmission appears uncommon.¹

**Incubation Period** – Usually 2-5 days, with a range of 1-10 days, depending on dose ingested.¹

**Period of Communicability** - Several days to several weeks, individuals without antibiotic treatment may shed *Campylobacter* bacteria in the feces for 2-7 weeks.¹

The temporary carrier state is probably of little epidemiological importance, except for infants and others who are incontinent of stool.¹²

**Reservoir** - Animals, most frequently poultry and cattle. Puppies, kittens, other pets, swine, sheep, rodents and birds may also be sources of human infection. In many countries, raw poultry meat is commonly contaminated with *C. jejuni*.¹

**Host Susceptibility and Resistance** - Persons with immunocompromised conditions have increased risk of infection, severe or invasive disease, and relapse or recurrence. Decreased stomach acidity is a risk for infection. Immune mechanisms are not well understood, but lasting immunity to serologically related strains follows infection. In developing countries, most people develop immunity in the first two years of life.¹

Please refer to [PHO’s Reportable Disease Trends in Ontario reporting tool](http://example.com) for the most up-to-date information on infectious disease trends in Ontario.

For additional national and international epidemiological information, please refer to the Public Health Agency of Canada and the World Health Organization.
References


Case Definition Sources


## Document History

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<tr>
<td>April 2022</td>
<td>Entire Document</td>
<td>New template. Appendix A and B merged. No material content changes.</td>
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<td>April 2022</td>
<td>Epidemiology: Occurrence section</td>
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