

Campylobacter Infection



Case Definition

Confirmed case: Isolation of *Campylobacter jejuni* or *Campylobacter coli* from any site, regardless of symptoms.

Clinical case: Person with clinically compatible illness (see below), epidemiologically linked to a confirmed case.

Reporting Requirements

- All positive laboratory tests are reportable by laboratory.
- All clinical cases are reportable by attending health care professional.

Clinical Presentation/Natural History

Acute enteritis of variable severity, characterized by diarrhea, which is often bloody, abdominal pain, malaise, nausea, and occasionally vomiting. Disease is usually self-limiting, and symptoms generally cease within two to five days. Illness can be prolonged in adults and relapses can occur. Serious complications are uncommon. Many infections are asymptomatic.

Etiology

Campylobacter jejuni, *Campylobacter coli*. Gram-negative bacteria, with over 60 serotypes.

Epidemiology

Reservoir: The reservoir is the intestinal tract of animals, most commonly poultry and cattle, but also rodents, puppies, kittens and other domestic animals. Raw poultry meat is very often contaminated and, in Manitoba, a frequently identified source is unpasteurized milk. Strains acquired during travel to other countries may be a source of antibiotic resistance.

Transmission: Fecal-oral spread. Ingestion of contaminated food, including improperly cooked poultry or meat, unpasteurized milk and water, is

the most common mode of transmission. Person-to-person transmission has been reported among young children and in families. Neonates of infected mothers have also been infected. Contact with infected pets and farm animals is another mode of transmission. Cross-contamination may also occur, for example from cutting boards that have been exposed to contaminated meat or poultry products and not properly cleaned.

Occurrence:

General: *Campylobacter* infection is an important cause of diarrhea worldwide and in all age groups. It is a cause of travellers' diarrhea. Common-source outbreaks occur.

Manitoba: More than 200 cases are typically reported annually. Cases occur predominantly in young children and young adults. Most cases occur in July and August.

Incubation Period: Two to five days. Range one to 10, depending on infective dose.

Susceptibility and Resistance: Immunity to serologically-related strains is long-lasting. In many developing countries, most people develop immunity during the first few years of life.

Period of Communicability: Throughout the course of the infection, usually several days to weeks. Chronic carrier states are unusual in humans.

Diagnosis

Stool culture positive for *Campylobacter* species.

Key Investigations

Identify the source:

- contaminated food (e.g., poultry, unpasteurized milk) or cross-contamination;
- water;
- travel;

- occupational exposure (e.g., animals/meat handling);
- illness in pets. Pets can be treated with erythromycin to reduce spread to children.

Outbreaks:

- investigate for infected food-handlers;
- isolates from suspected outbreaks are forwarded by the Cadham Provincial Laboratory to the Canadian Science Centre for Human and Animal Health for phage and biotyping.

Control

Management of Cases:

- Contact precautions should be used for hospitalized children, and for hospitalized adults who have poor hygiene or incontinence which cannot be contained. Otherwise, routine infection control precautions are adequate.
- Exclude symptomatic persons from foodhandling, care of hospitalized patients, and from personal care homes and day-care centres until diarrhea is resolved.
- Exclusion of asymptomatic, infected persons is only indicated for those with questionable personal hygiene.
- Emphasize proper handwashing.
- Educate regarding personal and food hygiene.

Treatment:

- Specific treatment is generally not indicated except for rehydration and electrolyte replacement. A short course of antibiotic therapy may be given for persons with severe or prolonged illness.

- Patients with high fever, more than eight stools per day, symptoms not improved or worsening after a week of illness or bloody diarrhea should be treated with erythromycin for seven to 10 days, 250-500 mg qid. Alternate treatment in adults is ciprofloxacin. Antimotility agents are not recommended.

Management of Contacts:

- Symptomatic contacts should seek medical attention and should have stool cultures taken.
- Asymptomatic contacts should be cultured only to assist in identification of the source of an outbreak.
- Asymptomatic contacts do not require exclusion from work or day care.

Management of Outbreaks:

- Investigate for a common source and manage accordingly.

Preventive Measures:

- Thorough cooking of all food derived from animal sources.
- Avoid cross-contamination from raw meat or poultry to ready-to-eat foods by hands, equipment or utensils.
- Pasteurization of milk and chlorination of water.
- Handwashing.
- Recognize, prevent and treat *Campylobacter* infection in domestic animals and pets.
- Care in the handling of feral geese, ducks and fish.