Campylobacteriosis

Investigative Guidelines

December 2015

1. DISEASE REPORTING

1.1 Purpose of Reporting and Surveillance

1. To identify whether the source of infection may be of major public health concern, for example 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 (for example, a puppy with diarrhea or a private water supply), to inform those individuals how they can reduce their risk of exposure.
3. To identify outbreaks and other undiagnosed cases.

1.2 Laboratory and Physician Reporting Requirements

Laboratories and physicians are required to report within one working day of identification/diagnosis.

1.3 Local Health Department Reporting and Follow-Up Responsibilities

1. Report all confirmed and presumptive (but not suspect) cases to the Oregon Public Health Division (PHD) (see definitions below) by the end of the calendar week. Use the standard case report form at: http://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/REPORTINGCOMMUNICABLEDISEASE/REPORTINGFORMS/Documents/campy.pdf
2. The CDC would like data from all confirmed and presumptive *Campylobacter* cases, but Oregon local health departments (LHDs) may opt to have the state investigate on their behalf, unless circumstances suggest that an outbreak may be occurring, or when the number of cases in any reporting interval exceeds the epidemic threshold. OHA's Acute and Communicable Disease Prevention (ACDP) section can help you establish this baseline from historical data. Under those circumstances, begin follow-up investigation within one working day. Use the Campylobacteriosis case investigation form. Send a copy of the completed form to ACDP within seven days of initial report.
3. LHDs that opt to investigate cases themselves are required to phone confirmed cases for which an isolate has been received at the Oregon State Public Health Laboratory (OSPHL). Each LHD must inform the state of its chosen protocol for the investigation of *Campylobacte*r cases (e.g., call all

cases, call and mail a letter, etc.) and when case investigations are complete. The easiest way to inform ACDP that a case investigation is complete is to enter a date into the “LHD Completion Date” box in Orpheus.

4. As indicated, complete CDC summary forms (available from ACDP) for waterborne or foodborne disease outbreaks when investigation is completed.

2. THE DISEASE AND ITS EPIDEMIOLOGY

2.1 Etiologic Agent

Campylobacter species, Gram-negative bacteria. There are several species, of which *jejuni* and *coli* are the most common.

2.2 Description of Illness

Infection can cause a spectrum of disease ranging from uncomplicated gastroenteritis to fulminant disease similar to severe ulcerative colitis. Typical symptoms include diarrhea (often bloody), abdominal pain, nausea, and vomiting. Many patients report prodromal symptoms of fever, malaise, headache, myalgias or arthalgias. Symptoms usually persist for less than one week. Invasive disease is uncommon, even in neonates.

2.3 Reservoirs

Animals: notably cattle, poultry and dogs.

2.4 Modes of Transmission

Fecal-oral. Most transmission is probably foodborne, reflecting inadequate cooking or mishandling of contaminated foodstuffs. Commonly recognized vehicles or mechanisms of transmission include:

1. Unpasteurized (raw) milk;
2. Handling or eating undercooked/raw poultry or meat;
3. Contaminated and inadequately treated drinking water;
4. Contact with animals, especially puppies with diarrhea;
5. Contact with poultry.

Person-to-person transmission is rare, probably reflecting a high infectious dose.

2.5 Incubation Period

1-10 days; usually 2-5 days.

2.6 Period of Communicability

The organism is shed in the feces for a few days to several weeks, but direct person-to-person transmission is surprisingly uncommon (with the possible exception of contact with infected infants). A chronic carrier state is unlikely. Most patients treated with erythromycin stop shedding after 72 hours of treatment. Antimicrobials do no prolong the period of shedding (cf. salmonellosis).

2.7 Treatment

Fluid and electrolyte replacement may be indicated. Children with dysentery due to *C. jejuni* benefit from early treatment within 3 days of onset with erythromycin. Treatment with erythromycin or ciprofloxacin may benefit persons experiencing high fever, bloody diarrhea or more than eight stools per day.

3. CASE DEFINITIONS, DIAGNOSIS AND LABORATORY SERVICES

3.1 Confirmed Case Definition

Persons from whom *Campylobacter* is cultured (generally from stool).

Note: A specimen identified as an anaerobic *Campylobacter* species, often associated with a wound culture, is NOT considered a confirmed case unless it has a full species identification.

3.2 Presumptive Case Definition

A person with compatible illness who is epidemiologically linked to a confirmed case, or in whose bloody fecal smears are demonstrated the presence of Gram-negative “gull-winged” shaped rods;

OR

A person from whom a culture-independent diagnostic test (CIDT) (e.g., EIA, PCR) detects *Campylobacter* but who has no culture result. This is because of false positive results related to CIDTs alone.

3.3 Suspect Case (*not* reportable to Oregon PHD)

Anyone with an undiagnosed compatible illness or who has a positive CIDT and a negative culture for *Campylobacter*.

3.4 Services Available at the Oregon State Public Health Laboratory

The Oregon State Public Health Laboratory (OSPHL) provides stool culture and isolate identification for *Campylobacter* species, as well as Real-Time PCR for confirmation. For isolate identification, submitting a pure culture of the organism on media that will support growth is preferred. A slant is acceptable, but not preferred. Fresh stool in Cary-Blair transport medium is required for stool culture. The OSPHL does not have procedures to perform *Campylobacter* detection from sources other than human stool. Bacterial isolates can be subtyped by a number of serological and molecular techniques at research labs (e.g. CDC). Subtyping may be considered under special circumstances.

To order the test, use the General Microbiology form (#60). For complete instructions visit: (www.healthoregon.org/labtests).

4. ROUTINE CASE INVESTIGATION

Individual case investigations are indicated only if the number of reported cases exceeds “normal,” or if other circumstances suggest an outbreak (see §6). Under

such circumstances, interview the case and others who may be able to provide pertinent information.

4.1 Identify Source of Infection

Ask about possible exposures 2-5 days before onset, including:

1. Name, diagnosis and phone number or address of any acquaintance or household member with a diarrheal illness. Anyone meeting the presumptive case definition should be reported and investigated in the same manner as a stool-confirmed case. It is not always necessary to get stool cultures on such individuals, however, unless the index case's source of infection appears to be a commercial raw milk dairy or public water supply (see §6).
2. Source(s) of drinking water, including at home and work, as well as water from streams or lakes (either consumed purposefully or accidentally during work or sports activity) and incidental sources (for example, communities visited during a vacation). Water used only after boiling need not be included. If a public water supply is implicated, see §6.
3. Consumption of unpasteurized milk. If so, identify the brand and/or source. If a commercial raw milk dairy is implicated, see §6. (How long has the case been a raw milk drinker?)
4. Handling or eating raw/undercooked meat or poultry;
5. Name, date and location of any restaurant meals;
6. Date, location and sponsor of any public gathering where food was consumed;
7. Contact with pets, poultry or other animals (Have any of them recently experience diarrhea?);
8. Travel outside the United States (Determine dates and group travelled with);
9. Contact with diapered children with diarrhea.

4.2 Identify Potentially Exposed Persons

1. Contacts – Not important except for persons who have changed diapers of infected children.
2. Other ill persons – Cultures to confirm the diagnosis in epi-linked contacts is not warranted unless a commercial raw milk dairy or public water supply is a likely source of infection (see §6).

4.3 Environmental Evaluation

None, unless a commercial raw milk dairy or public water supply is implicated (see §6).

5. CONTROLLING FURTHER SPREAD

5.1 Education

If a suspected source of infection is identified and it has the potential for transmitting infection to a defined population, advise those individuals on measures to avoid exposure. For example:

1. Wash hands after handling pets, fowl, other animals, raw meat and poultry and ALWAYS before food preparation;
2. Avoid drinking or swallowing untreated surface water. Water should be brought to a boil or treated with disinfectants;
3. Eschew unpasteurized milk;
4. Avoid eating raw or undercooked poultry and meat;
5. Avoid cross-contamination of utensils or food that will be served without further cooking;
6. Wash hands after defecating or changing diapers.

5.2 Isolation and Work or Day Care Restrictions

Standard precautions are sufficient to protect employees and other patients. Cases should not work as food handlers, day care workers, or health care workers or attend school as long as they have diarrhea. It is not necessary to obtain negative stool cultures before returning to work as long as diarrhea has resolved and the person is otherwise well.

5.3 Case Follow-up

Routine follow-up of cultures are not indicated.

5.4 Protection of Contacts

None needed, except hand washing after changing diapers of infected children.

5.5 Environmental Measures

If indicated, give advice on improving drinking water supply and/or proper cooking and food handling practices to prevent infection.

6. MANAGING SPECIAL SITUATIONS

6.1 Possible Foodborne Outbreaks

C. jejuni is a frequent cause of foodborne disease. Consult with the ACDP section if you suspect a common-source outbreak.

6.2 Commercial Dairy or Community Water Source Implicated

Consult with the ACDP section if a case reports drinking raw milk from a commercial dairy and has no other identifiable source of infection, or when investigation suggests that community drinking water system is a possible source of infection.

UPDATE LOG

December 2015 – Services available at the OSPHL updated. (Kathleen Rees)

November 2015 – Transferred Investigative Guideline into new template. (Leslie Byster)

August 2015 – LHD responsibilities and case definitions updated. (Kathleen Rees)

July 2012 – Case definition for suspect case updated. (Beleshatchew Shiferaw)