Shiga-toxigenic *Escherichia coli* (O157 & non-O157) Investigative Guidelines

Dec 2024

*REPORT WITHIN **1** WORKING DAY*

1. DISEASE REPORTING

1.1 Purpose of Reporting and Surveillance

1. To identify outbreaks and potential sources or sites (e.g., a food source) of ongoing transmission
2. To assess the risk of transmission to additional persons, and to prevent such transmission
3. To educate people about how to reduce their risk of infection
4. To identify additional cases
5. To better characterize the epidemiology of this infection including social, environmental, and behavioral contexts for transmission. To identify communities and populations at elevated risk for disease or severe illness and inform equity-centered outreach.

1.2 Laboratory and Clinician Reporting Requirements

1. Laboratories, clinicians, and other persons providing health care are required to report positive lab results and confirmed or suspect cases to the Local Public Health Authority (LPHA) within one working day following identification or diagnosis. See *§3* for case definitions.
2. The following must be sent to Oregon State Public Health Laboratory (OSPHL):
    a. *E. coli* O157 isolates
    b. Specimens that test positive for STEC or Shiga toxin genes by a culture-independent diagnostic test (CIDT, e.g., antigen detection or nucleic acid testing) and from which *E. coli* O157 has not been

isolated

3. Hemolytic uremic syndrome (HUS) is a related and reportable clinical diagnosis; clinicians must report HUS cases regardless of identification of a specific etiologic agent (refer to HUS Investigative Guidelines).

1.3 Local Health Department Reporting and Follow-Up Responsibilities

1. Report all confirmed, presumptive, and suspect STEC cases—with or without the presence of HUS—to the Oregon Public Health Division (PHD) Acute and Communicable Disease Prevention (ACDP) Section as soon as possible and no later than end of the calendar week of the initial clinician or lab report. Enter information into Orpheus as investigation progresses. See §3 for STEC case definitions.
2. Begin investigation within one working day following case identification. Enter all data into Orpheus as soon as possible (no later than seven days after initial report).
3. Ensure that labs forward all patient isolates or specimens to OSPHL for further characterization as required by law. If a suspected O157 isolate is not recovered, the Shiga toxin-positive broth, or specimen, should be forwarded to OSPHL for additional testing.
4. Follow up with pediatric STEC cases (<18 years old) 3 weeks after onset of acute or bloody diarrhea to ascertain whether case developed HUS. If yes, update clinical question for HUS and create an associated HUS case (refer to HUS Investigative Guidelines).

A Note about HUS Reporting

The requirement to report HUS (a separate case report form) is an indirect way of finding otherwise unreported STEC infections, and secondarily a way to learn about other potential causes of HUS. These cases are identified clinically by the attending physician, typically a nephrologist or gastroenterologist. Please refer to HUS Investigative Guidelines.

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2. THE DISEASE AND ITS EPIDEMIOLOGY

2.1 Etiologic Agent

Hundreds of different *E. coli* serogroups are (collectively) ubiquitous in the intestines of warm-blooded vertebrates. These Gram-negative bacteria are classified with the letter's "O" (cell surface) and "H" (flagellar) antigens.

Most *E. coli* serogroups are non-pathogenic. Those that cause human disease are sometimes grouped by pathogenic mechanisms:

enterohemorrhagic, enteroinvasive, enteropathogenic, enterotoxigenic, and enteroadherent, although those terms can be misleading.

Enterohemorrhagic *E. coli* (EHEC) is now more commonly referred to as Shiga-toxigenic *E. coli* (STEC) or occasionally Vero-toxigenic *E. coli* (VTEC). Historically, the most reported STEC has been *E. coli* O157:H7.

Reports of illness caused by non-O157 STEC (e.g., O26, O104, O103, O21) have been increasing steadily since 1995 when laboratory tests for detecting these organisms became available. Since 2013, more non-O157 than O157 infections have been reported in Oregon each year. Oregon's rate of infection is consistently higher than the national rate. Non-O157 STEC can also cause severe illness, but virulence varies by serogroup. Virulence is partially determined by the toxins the organism produces—Shiga toxin 1, Shiga toxin 2, or both. Shiga toxin 2 is more often associated with severe manifestations such as HUS. In Oregon during 2000–2021, 9% of reported O157 cases and 1% of non-O157 cases developed HUS. Children <5 years of age are at the greatest risk of developing HUS.[1]

2.2 Description of Illness

Mild, non-bloody diarrheal illness and even asymptomatic STEC infection are common, though rarely diagnosed outside outbreak settings. A shrinking proportion of diagnosed STEC cases report bloody stool (6% of Oregon cases during 2000–2021), which typically occurs 6–48 hours after the onset of non-bloody diarrhea. This decreasing proportion of cases with bloody stool could be due to increased reporting of non-O157 STEC infections; that is, bloody stool may not have decreased in incidence, but we are ascertaining more, and less-severe cases. Diarrhea may be accompanied by abdominal cramps, often quite severe (sometimes the chief concern). Nausea and vomiting are also common. Fever is generally absent or low-grade, differing from the presentations of salmonellosis, shigellosis, or campylobacteriosis. Twenty-five percent of reported STEC cases in Oregon during 2000–2021 resulted in hospitalizations.

2.3 Complications of STEC: Hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP)

Hemolytic uremic syndrome (HUS) entails microangiopathic hemolytic anemia, thrombocytopenia, and elevated creatinine. Early clinical signs of HUS may include decreased urine output, pallor, and lethargy. Persons with HUS have variable degrees of renal insufficiency; some may eventually need dialysis (short- or long-term) or even transplant. There is also a greatly increased risk of stroke and other complications. STEC infection is the principal cause of reported cases of HUS, particularly for children.

Roughly 75% of HUS cases in the U.S. can be linked to laboratory-verified STEC, usually O157.[1] After 3–10 days of illness, about 15% of children

diagnosed with O157 STEC—usually patients <5 years of age—develop hemolytic uremic syndrome (HUS).[1] Children with bloody diarrhea should be closely monitored for the development of HUS. If a complete blood cell count with smear, blood urea nitrogen, and creatinine are normal 3 days after the resolution of diarrhea, it is unlikely that HUS will develop. Adults with O157 STEC can also develop HUS, but it is far less common in them; however, older adults with HUS have the highest risk of death.[1]

Although the O157:H7 serotype is most often associated with hospitalization and HUS, non-O157 STEC infections can also result in these outcomes.[2] Up to 22% of adults diagnosed with particularly virulent strains of non-O157 STEC progress to HUS.[1] Consequently, non-O157 STEC infections should be treated as aggressively as O157:H7 infections.

Thrombotic thrombocytopenic purpura (TTP) is like HUS, but with the addition of prominent neurologic signs (seizures, confusion, etc.). TTP primarily affects adults and should be reported so that patients can be evaluated as potential STEC cases.[1] Although it is uncommon, HUS or TTP caused by STEC can occur without antecedent diarrheal illness. Refer to HUS Investigative Guidelines for HUS case definitions.

2.4 Reservoirs

Cattle are the best-characterized reservoir species for STEC. Some 50%–80% of cattle herds (beef and dairy) may be colonized by O157, although few animals may test positive on herd screening, because colonization of individual animals (and fecal shedding) is transient. Thus, negative results from herd screening are difficult to interpret. O157 does not cause illness in bovines, and there is no known way to eradicate it from herds. Wild cervids (deer and elk) are also reservoirs and can be long-term hosts. Sheep, goats, llamas and monogastric animals (e.g., horses and pigs) are also potential sources of STEC infection.

While much less common, domestic poultry such as chicken, ducks, and turkeys can harbor and shed STEC. There have also been a handful of isolations reported from animals such as dogs, flies, and seagulls.[3]

Environmental reservoirs such as feed and water troughs may be important in maintaining STEC in domesticated animal herds, particularly cattle herds. Additionally, cattle waste runoff from barnyards and feedlots has also caused STEC contamination of water being used for aquaculture.[3]

2.5 Sources and Routes of Transmission

STEC is excreted in the feces of colonized humans and other animals and ingested by other susceptible hosts. The infectious dose for O157 is very low, probably <100 organisms. A review of U.S.-based outbreaks during 2010–2017 indicated that 43% were foodborne, 19% were from person-to-person

transmission,11% were from animal contact, 4% were waterborne, and 1% were from environmental contamination. Twenty-three percent of outbreaks were from unknown sources.[4]

2.5.1 Foodborne transmission

Most human infections are foodborne with underlying fecal contamination from ruminants (e.g., cattle, deer) or other animals. Approximately two thirds of foodborne outbreaks are traceable to a specific food source. Among foodborne outbreaks, row crop vegetables made up 16% of outbreaks, reflecting contamination by wild animal feces and contaminated or agricultural runoff. Beef (13%) and dairy (10%) products also make up a significant portion of foodborne outbreaks, reflecting human consumption of food products contaminated with cattle feces. Other foods implicated in outbreaks include fruit, venison, grains and beans, sprouts, nut seeds, herbs, fish, and crustaceans.[4]

Undercooked beef (especially ground beef or hamburger) and raw milk are among the most identified sources of infection in common-source outbreaks, reflecting the fact that cattle are reservoirs of O157. Runoff from fields where cattle are grazing and water contaminated by cattle waste and subsequently used to water crops are thought to be major contributors to vegetable-linked foodborne transmission. Similarly, crops in fields visited by deer can also be contaminated. Sixteen percent of outbreaks in the U.S. during 2010–2017 were attributed to contaminated uncooked fruits and vegetable row crops—often leafy greens (lettuce, spinach).[4] More recently, raw flour has been implicated as a vehicle of infection.

2.5.2 Zoonotic transmission

Humans can also be infected through direct contact with animal feces. Eleven percent of outbreaks in the U.S. were attributable to direct human-animal contact, usually cattle, goats, and sheep.[4] Festivals, fairs, and petting zoos account for over half of animal-contact associated outbreaks;[4] young children and other individuals who frequent these venues are at increased risk of exposure, particularly if they have extended contact with animals. There is some-—likely very small—risk of transmission via dried, aerosolized manure; notably, this was suggested to have contributed to the 2002 outbreak—Oregon’s largest to date—traced to the Lane County Fair.

2.5.3 Waterborne transmission

Four percent of U.S. outbreaks were traced to water as the primary source; of those, half were associated with recreational water, including some undertreated recreational water sources.[4] Untreated recreational water contaminated with STEC is more likely to be contaminated with non-O157 serotypes, suggesting fecal contamination by wild animals rather than cattle-based pathways.

2.5.4 Person-to-person transmission

Twenty percent of outbreaks in the U.S. result from person-to-person transmission, with 76% of those occurring in a childcare setting.[4]

2.6 Risk Dynamics

Any person can be infected with *E. coli.* However, people at certain life stages, with preexisting conditions, or who engage in certain behaviors at heightened risk of STEC infection or developing severe illness from STEC infections, including development of HUS.[1,5–8]

Age may be the primary risk factor for severe STEC infection. Children <5 years of age are more likely to be diagnosed with a STEC infection, to be hospitalized, and to progress to HUS.[1] Adults >60 years of age are also more likely to be hospitalized and are at the greatest risk of death after acquiring STEC.[1] People with weakened immune systems, including those who are pregnant, are also at increased risk for developing severe illness.

Social determinants of health (SDOH) that place people at higher risk of STEC infection. Some recent studies have suggested higher incidence in higher socioeconomic households and neighborhoods.[7,8] It is less clear how much of this disparity may be linked to income and testing.

Other SDOH include occupational, cultural, and dietary behavior risk factors. Unpasteurized milk and undercooked beef are a primary foodborne pathway for STEC.[1,4] Cultural and dietary risk factors associated with STEC infection also include consuming raw milk or undercooked beef.

People who work, live, or recreate in agricultural settings, particularly where cattle are present, are at increased risk of exposure

2.7 Incubation Period

The incubation period for STEC varies. For the O157 serotype, almost all cases occur within 1–10 days of exposure, most commonly within 3–4 days.

2.8 Period of Communicability

The organism is shed in human stool for at least the initial period of diarrhea, and variably thereafter. In adults, the organism is typically shed for 1 week or less.[1] Children, however, typically shed O157 for 2–4 weeks after onset, but excretion of the organism for up to 4 months has been reported. Long-term carriage has been reported in both cattle and humans but is unusual. Antibiotic treatment is not known to affect duration of excretion and may increase risk of developing HUS. Shedding of non-O157 strains is not well characterized but can be prolonged. An Oregon day care study found shedding of O26 for a median of 29 days, with a range of 15–46 days.[12]

2.9 Treatment

No specific therapy for STEC has been identified to mitigate or shorten illness. Rehydration is the mainstay of treatment and may be the best way to reduce the risk of progression to HUS.[12,13]

Antibiotic therapy is not recommended for persons with suspected STEC infection, as it may increase the risk of developing HUS. [14,15] Anti-motility drugs, e.g., diphenoxylate/atropine (Lomotil®), may also increase the risk of complications.[16]

Clinicians should monitor for development of HUS. Children <5 years of age are at increased risk of HUS, although people >60 years of age have the highest rate of associated death, regardless of whether HUS develops.[1]

3. CASE DEFINITIONS, DIAGNOSIS, AND LABORATORY SERVICES

3.1 Confirmed Case

Confirmed cases of STEC can be either O157 or non-O157; cases of either type may be complicated by HUS, which is a separately reportable condition (refer to HUS Investigative Guidelines). Stool specimens collected in enteric transport medium (e.g., Cary Blair) are generally required to confirm a case; *E. coli* isolated from a urine sample is not an STEC case unless it is a Shiga toxin-producing *E. coli*.

A confirmed case of STEC is defined as a person who meets one of the following laboratory criteria:

- Isolation of *E. coli* O157:H7 from a clinical specimen,

OR

- Isolation of *E. coli* from a clinical specimen with Shiga toxin or Shiga toxin genes detected by assay or PCR.

Cases need to be classified as either O157 or non-O157. The *E. coli* serogroup for non-O157 cases should be characterized at OSPHL or CDC.

Confirmed STEC cases must be classified as either with or without hemolytic uremic syndrome (HUS). Refer to HUS Investigative Guidelines for HUS case definitions.

3.2 Presumptive Case Definition

A presumptive case of STEC is defined as a person who meets one of the following criteria:

a) Isolation of *E. coli* O157 from a clinical specimen without confirmation of H antigen, detection of Shiga toxin, or detection of

Shiga toxin genes

OR

b) Diarrhea (often bloody) or abdominal cramps in a person who has ***at least one of the following:***
   - detection of Shiga toxin or Shiga toxin genes in a clinical specimen using a culture-independent diagnostic test (CIDT) and no known isolation of *Shigella* from a clinical specimen,
   - detection of *E. coli* O157 or STEC from a clinical specimen using a CIDT,
   - elevated antibody titer against a known Shiga- toxin-producing serogroup of *E. coli*, or
   - an epidemiological link to a confirmed or probable case or is a member of a risk group as defined by public health authorities during an outbreak.

Presumptive STEC cases must be classified as either with or without hemolytic uremic syndrome (HUS). Refer to HUS Investigative Guidelines for HUS case definitions.

3.3 Suspect Case

A case is defined as a person who has bloody diarrhea and abdominal pain, without fever or elevated temperature <100.4°F (<38°C), and no other identifiable cause.

Suspect STEC cases must be classified as either with or without hemolytic uremic syndrome (HUS). Refer to HUS Investigative Guidelines for HUS case definitions.

3.4 Diagnosis

In recent years, reported STEC infections in Oregon have outnumbered *Shigella* infections two to one, and they are probably the most common bacterial cause of bloody diarrhea. Their diagnosis may be missed if appropriate selective stool culture media and Shiga-toxin assay are not ordered and performed correctly. Accurate and prompt diagnosis is necessary for implementation of appropriate treatment and control measures.

Some Oregon labs only perform one method—either culture onO157-selective media or the Shiga-toxin assay alone. Doing so may miss STEC cases. If you are concerned, ask the lab what methods they use and whether they can employ another method. Some healthcare providers may not be aware that they can order both methods. ACDP encourages labs to perform a culture and, if positive, to send the isolate to OSPHL.

3.5 Services Available at the Oregon State Public Health Laboratory (OSPHL)

Many hospital and clinical laboratories no longer perform routine stool cultures, relying on molecular methods to detect STEC. If only the Shiga-toxin assay is positive, the clinical lab sends a selective broth or an aliquot of stool specimen collected in enteric transport media (e.g., Cary Blair) to OSPHL for culture and subsequent typing. A few labs perform the Shiga-toxin assay directly on stool, which may delay recovery of the organism. It's preferable to submit stool inoculated in Gram Negative (GN) broth or a stool aliquot in enteric transport media to OSPHL as soon as possible to facilitate recovery of organism.

For suspected or confirmed STEC outbreaks, OSPHL performs STEC culture when the suspected etiology is clear. If the etiology or epidemiology is unclear, OSPHL can perform a BioFire gastrointestinal panel to test for 22 pathogens to help identify the pathogen(s) of interest. This test is reserved for atypical outbreaks and requires ACDP approval.

Following initial PCR and culture detection, OSPHL performs whole-genome sequencing (WGS) on all STEC isolates.

Complete specimen collection, handling, and transport instructions can be found on the OSPHL Lab Test Menu at www.healthoregon.org/labtests.

Currently, OSPHL can detect the most common serogroups: O157, O26, O45, O103, O111, O121, and O145. If an isolate is not from any of these serogroups, it is forwarded to CDC for identification.

Culturing stool usually takes at least 3 days. Often you will receive Shiga toxin results from an assay or PCR before cultures are finalized at the originating lab, and positive specimens should be forwarded to OSPHL for further testing. Therefore, it can take a week or more to receive all the test results you'll use to determine whether the case definition is met. We recommend you process all Shiga toxin-positive electronic lab reports (ELRs) and begin your case investigation as soon as possible, given the severity of disease that STEC can cause.

Almost all persons with HUS develop antibodies to the O antigen of the bacterium. For culture-negative persons with HUS, arrange for a leftover serum sample to be tested for STEC antibodies at CDC. Two to six weeks after onset is the best time to draw; consult with ACDP epidemiologists.

4. ROUTINE CASE INVESTIGATION

4.1 Identify Source of Infection

Interview the case (or primary caregivers) and any additional persons who may be able to provide pertinent information. Interviews should occur as promptly as possible, even if current test results are limited to a Shiga toxin-positive ELR. If you suspect an outbreak might be occurring, see *§5*.

Ask about possible exposures in the 1–7 days before onset, and be sure to obtain:

1. Name, diagnosis, and phone number of any acquaintances or household members with a similar illness. (N.b.: any person meeting the presumptive case definition should be reported and investigated in the same manner as a confirmed case)
2. Information about potential foodborne sources:
    a) Handling or eating ground beef or hamburger. Ask about consumption of undercooked (pink or red) ground beef, including in culturally specific dishes with raw meat (e.g., *kitfo*, steak tartare). Because of the possibility of cross-contamination, any ground beef consumption is potentially suspect. Get details about any ground beef consumed: dates and locations of purchase; type of meat (e.g., lean or extra-lean ground beef); and methods of storage, preparation, and cooking. Any raw beef is a potential source of kitchen contamination, but intact cuts of meat sold at retail stores are unlikely to cause multi-household outbreaks.
    b) Consumption of unpasteurized milk or milk products including cheese made with unpasteurized milk (e.g., *queso fresco*, homemade cheese, or other specialty cheese). Identify the brands and sources and find out when this consumption began. If a commercial raw milk source is named, notify ACDP immediately. (See §6.3 for details on how to manage investigations involving raw milk.)
    c) Dried meats (particularly home prepared), and anything related to deer or elk hunting (whether consuming, slaughtering, or being around live or slaughtered animals).
    d) Any fresh (not frozen) raw spinach, lettuce, or other leafy greens.
    e) Any kind of sprouts, even if eaten as part of a cooked meal.
    f) Unpasteurized juice or cider.
    g) Date, location, and items consumed for any restaurant meals. (See §6.2 for details on how to manage investigations involving restaurants.)
    h) Date, location, and sponsor of any public gathering where

the case ate a meal. (See §6.2 for details on how to manage investigations involving public gatherings.)

3. Information about potential occupational exposures: evaluate the potential for exposure to human (caregiver with toileting duties) or animal excreta (works with livestock or animal products).
4. Contact with diapered individuals with diarrhea or children attending day-care facilities. (See §6.4 for details on how to manage investigations in day-care setting.)
5. Recreational water exposures: swimming, playing, or other exposure to lakes, streams, or pools where water may have been swallowed. This includes wading or swimming pools, fountains, and splash pads, both in public and one's backyard. (See §6.3 for details on how to manage investigations involving public water sources).
6. Contact with livestock, especially cattle, goats, and sheep. Ask about attendance and exposures at petting zoos and fairs.
7. Travel outside the local area. If part of a group, find out who was in the group, the coordinator, etc.

4.2 Identify Potentially Exposed Persons

Contact every person who may have had contact with fecal material from a case through activities such as:

- Assisting the case with toileting or diapering,
- Sexual activity, or
- Sharing food with the case or eating food prepared or served by them.

Household and other close contacts of confirmed or presumptive cases who develop illness should be evaluated; symptomatic contacts should be cultured. Close contacts with more-or-less concurrent disease are presumptive cases and should be reported and investigated as such.

When attempting to identify potentially exposed persons, it is important to remember that Oregonians have a wide array of experiences with and opinions of government agencies. People may be fearful of providing information or having conversations with investigators, particularly if they are members of a community(ies) that has been mistreated by governments in the US or overseas (e.g., immigrant/refugee communities, religious minorities, racialized groups, LGBTQI+ people, Indigenous communities). When there is potential outbreak within a specific racial, ethnic, or cultural community, it is important to consult with leaders and experts in this community about how to proceed in a manner that will be perceived as respectful, non-threatening, and supportive of the well-being of this community.

4.3 Environmental Evaluation

Environmental evaluation is recommended if a commercial food service (e.g., deli, restaurant) or food-processing facility, day-care facility, or public water source (including recreational water) appears to be implicated as the source of infection. See §6.

4.4 Follow-up for HUS

Follow up with pediatric (<18 years old) STEC cases 3 weeks after onset of acute or bloody diarrhea to determine whether case developed hemolytic uremic syndrome (HUS). If yes, update clinical question for HUS and create an associated HUS case. Refer to HUS Investigative Guidelines.

5. CONTROLLING FURTHER SPREAD

5.1 Education

Advise individuals on measures to avoid further or future exposures:[18]

1. Wash all raw fruits and vegetables prior to consumption, paying particular attention to leafy greens.
2. Avoid eating raw or undercooked meat or poultry, especially ground beef (hamburger). Ground beef should be cooked to an internal temperature of at least 160°F (70°C). Ground beef should be cooked until there are no red or pink remaining and meat juices are no longer red-tinged; it is preferable to confirm internal temperature with a thermometer.
3. Avoid cross-contamination by surfaces or implements that have meet meat or other potentially contaminated foods.
4. Always wash hands before food preparation and after handling raw meat or poultry.
5. Wash hands after using the toilet or assisting others with toileting or diapering.
6. Wash hands after handling pets, fowl, and other animals, including livestock at fairs and petting zoos.
7. Avoid unpasteurized juices
8. Avoid unpasteurized milk and related dairy products. If the individual processes milk at home, review the Oregon State University Extension Service bulletin on home pasteurization of small quantities of milk with them.
9. Avoid drinking or swallowing untreated surface water. Untreated water should be boiled or otherwise disinfected before consumption.

Cases should be strongly discouraged from soaking or swimming in shared water (e.g., pools, fountains, hot tubs, ponds, lakes, etc.) until at least 2 weeks after resolution of diarrhea.

- Tailor communications to the specific cultures of the intended audiences, for example using locally preferred names for places, body parts etc.
- When relevant and possible, consult with relevant community leaders and organizations about how to conduct investigations in the most appropriate (culturally and scientifically) manner.

Isolation and Work or Childcare Restrictions

STEC infection is a restrictable condition for work in food handling and health care, and for work or attendance in school or day care (OAR 333-019-0010). In general, these restrictions are not lifted until no STEC is identified by a licensed laboratory in two consecutive fecal specimens collected not less than 24 hours apart and when the case is off antibiotics. The restrictions may be waived or modified at the discretion of the local public health administrator (OAR 333-019-0014). Individuals (particularly children) may continue to be infectious for several weeks, however, and should be cautioned accordingly.

See §6.3 for details on how to manage investigations in childcare settings. Work and School restrictions can be waived or modified at the discretion of the local health officer. Also, the LPHA may consider additional restrictions as dictated by the situation (e.g., if a case is known to have challenges with hand hygiene due to disability or young age). Finally, because Shiga toxin 1 is rarely associated with HUS, some states do not require restrictions for individuals infected with an organism that produces only Shiga toxin 1Case Follow-up

Except for the purpose of lifting work, school, or day-care facility restrictions, stool cultures to document that fecal shedding of the organism has ceased are not routinely indicated. If testing is done at OSPHL, please be sure to indicate when specimens are being used for test of cure. Culture-independent tests (e.g., PCR) can be used to test for cure, but keep in mind that the CIDT might be positive when a culture is negative. If the PCR is negative the person can return to work or school. The importance of proper hygiene must be stressed, however, as periodic excretion of the organism may persist for weeks in many cases and months in rare cases.

5.2 Protection of Contacts

There is no prophylaxis for contacts of STEC cases. The importance of good hand washing should be stressed. There are no formal restrictions or requirements for contacts of cases. People at increased risk of severe illness, such as children <5 years of age, adults >60 years of age, and people who are immunocompromised should seek prompt medical care if they develop symptoms.

Contacts may be more likely to become ill if their contact with the case occurs in environments where there is crowding or hygiene challenges

such as limited access to toilets, running water, and bathing facilities. Sensitive consideration should be given to these issues when working with contacts. Reiterate that STEC is a highly infectious pathogen and that following public health recommendations can help prevent others from also becoming ill.

5.3 Environmental Measures

Advice on improving food handling practices and cleaning of day care environments may be indicated.

6. MANAGING SPECIAL SITUATIONS

Many outbreaks have been described since O157 was first identified as a pathogen in 1982, and they are sometimes quite serious. Non-O157 has also been implicated as the cause of numerous outbreaks since 1995 when testingbecame available. At even a hint of a common-source outbreak, consult with ACDP immediately. Active case finding will be an important part of any investigation

6.1 Outbreaks Linked to Restaurants or Public Gatherings

Likely sources include undercooked meat, cross-contaminated food, or possiblyfood contaminated by an infected food handler. Any investigation should focus on implicating specific food items and evaluating their method of preparation. Ask about recent illness among food handlers.

Some outbreaks may be linked to culturally based practices or events (e.g., a potluck at a church or consumption of culturally specific dishes with raw beef). During public health investigations, it is important to be conscious of the role culture plays and to practice cultural humility when engaging with communities.

6.2 Cases Linked to Raw Milk Consumption or a Public Water Source

Environmental evaluation of the dairy or water source will be a necessary part of any further investigation. Dairy investigations of unpasteurized milk and cheese, for example, will be conducted in cooperation with the Food Safety Division, Oregon Department of Agriculture. In addition to ACDP, water source investigations may involve OPHD’s Drinking Water Program or recreational water experts.

6.3 Case Attends or Works at a Childcare Facility

1. Interview the operator and inspect attendance records to identify other possible cases among staff or attendees in the past two weeks.
2. Instruct the facility operator and staff about proper food handling and hand washing after diaper changing, and the importance of keeping diaper-changing areas away from food-preparation areas.
3. Review food handling and handwashing techniques with the operator and staff.

4. Collect stool specimens from any other attendees or staff with a history of diarrheal illness within the past two weeks.
5. If more than one case or suspected case is identified among attendees or workers at a day-care facility, a thorough inspection of the facility is indicated. Contact ACDP to discuss screening of asymptomatic children.
6. The facility operator should be instructed to call the LPHA immediately if new cases of diarrhea occur.
7. The childcare facility should be called or visited once each week for two weeks after onset of the last case to verify that surveillance and appropriate hygiene measures are being carried out.

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UPDATE LOG

July-Dec 2024 – Updated for additional information about transmission patterns. Added equity, REAL-D, and SOGI language. Corrected citations. Edited for clarity and person-centered language (June Bancroft, Nicole Iroz-Elardo/Moriah McSharry McGrath).