

IDRS Infectious Disease Reporting System

Disease Reporting 24 Hours a Day

Columbus Public Health and Franklin County Public Health

QUICK FACTS FOR PROVIDERS

E. coli O157 and other Shiga-toxin producing E. coli

REPORTING INFORMATION

- **Class B1:** Report by the close of the next business day after the case or suspected case presents and/or a positive laboratory result to the local public health department where the patient resides. If patient residence is unknown, report to the local public health department in which the reporting health care provider or laboratory is located.

Cases of culture positive E. coli O157, positive shiga-toxin tests, and cases of Hemolytic Uremic Syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP) are all reportable. In children, pathogenic E. coli infection is the leading cause of HUS; therefore, a high index of suspicion is warranted for an HUS patient.

Agent

E. coli is normally considered non-pathogenic, normal flora of the human gut. Shiga-toxin producing strains (STEC), however, are pathogenic strains of E. coli. E. coli O157 is the most common example. Most labs do not have the capability to test for non-O157 strains, so shiga-toxin testing is used to detect the presence of other pathogenic strains of E. coli.

Source

Humans and cattle are the primary reservoirs of STEC (E. coli O157:H7). Bodies of water or food contaminated by animal or human waste can serve as a source of infection.

Occurrence

STEC (E. coli O157:H7) occurs worldwide. In Ohio, more cases occur in the summer than in any other season. More cases are recognized in children, but all ages are at risk.

Clinical Description

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP). Asymptomatic infections also may occur and the organism may cause extraintestinal infections.

Mode of Transmission

Direct person-to-person transmission via the fecal-oral route occurs, as well as direct animal-to-person transmission. Infection can also be acquired from contaminated beef (especially ground beef) which is undercooked, or when raw meat juices contaminate cooked food or food to be eaten raw (e.g. fruits, vegetables). Swimming in contaminated recreational water is another means by which transmission has occurred.



c/o Franklin County Public Health, 280 East Broad Street, Columbus, Ohio 43215-4562

Call: (614) 525-8888 • After Hours: (614) 525-3965 • Fax: (614) 525-8890

Email: idrs@franklincountyohio.gov • Web: www.idrsinfo.org



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Period of Communicability

STEC (E. coli O157:H7) is present in the stool during the acute illness and possibly for a couple of weeks afterward. The carrier state in humans does not generally develop. Asymptomatic infections may also occur.

Incubation Period

The incubation period is 10 hours to 8 days, usually 3-4 days.

Treatment

No effective antibiotic therapy is recognized for STEC (E. coli O157:H7). Some studies suggest that treatment with trimethoprim-sulfamethoxazole can lead to HUS. Avoid anti-diarrheal medications.

Isolation and Follow-up Specimens

Ohio Administrative Code (OAC) 3701-3-13 (J) states:

"Escherichia coli (E. coli) O157:H7, other enterohemorrhagic (Shiga toxin-producing) E. coli or hemolytic uremic syndrome (HUS): a person with Escherichia coli (E. coli) O157:H7, other enterohemorrhagic (Shiga toxin-producing) E. coli or hemolytic uremic syndrome (HUS) who attends a child care center or works in a sensitive occupation shall be excluded from the child care center or work in the sensitive occupation and may return after his or her diarrhea has ceased and after two consecutive follow-up stool specimens are negative for E. coli O157:H7 or other enterohemorrhagic (Shiga toxin-producing) E. coli."

Obtain the first specimen at least 48 hours after cessation of diarrhea or, if being treated, at least 48 hours after completion of antibiotic therapy. Obtain the remaining specimen(s) at least 24 hours apart.

Prevention and Control

Ground beef and hamburger should be well-cooked to an internal temperature of 160° F. Color is not a reliable indicator of safety. Avoid cross-contamination of other foods, especially raw produce, with raw meat juices. Wash fruits and vegetables thoroughly. Children under 5 years of age, immunocompromised persons and the elderly should avoid eating fresh sprouts. Drink only pasteurized milk, juice or cider. Drink only treated, potable water. Avoid swallowing lake or pool water while swimming. Wash hands thoroughly after bowel movements and after changing diapers. This is especially important for persons with diarrhea. Anyone with diarrhea should avoid swimming in public pools or lakes and preparing food for others.

Special Settings



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When a case of E. coli O157 or HUS occurs in a person who works in or attends a child care center, that person is excluded until diarrhea has ceased and two consecutive stools are negative. The local health department may screen classroom contacts for unidentified cases.



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