

ESCHERICHIA COLI O157:H7
and other Shiga toxin-producing *E. Coli* (STEC)
Last revised August 25, 2011

Please note that STECs are sometimes referred to as Enterohemorrhagic E. coli (EHEC) and Verotoxin-producing E. coli (VTEC).

I. IDENTIFICATION

- A. **CLINICAL DESCRIPTION:** An infection of variable severity characterized by diarrhea (often bloody), abdominal cramps and fatigue. Illness may be complicated by hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP); asymptomatic infections may also occur.
- B. **REPORTING CRITERIA:** Laboratory confirmation.
- C. **LABORATORY CRITERIA FOR CONFIRMATION:**
- Isolation of Shiga toxin-producing *Escherichia coli* from a clinical specimen.
 - *E. coli* O157:H7 isolates may be assumed to be Shiga toxin-producing.
 - For all other *E. coli* isolates, Shiga toxin production or the presence of Shiga toxin genes must be confirmed to be considered STEC. Examples of assays used to detect Shiga toxin production include Shiga toxin EIA or PCR.
- D. **WISCONSIN CASE DEFINITION:**
- *Confirmed:* A case that meets the laboratory criteria for confirmation. When available, O and H antigen serotype characterization should be reported.
 - *Probable:* A case with isolation of *E. coli* O157 from a clinical specimen, without confirmation of H antigen or Shiga toxin production, OR a clinically compatible case that is epidemiologically linked to a confirmed or probable case, OR identification of an elevated antibody titer to a known Shiga toxin-producing *E. coli* serotype from a clinically compatible case.
 - *Suspected:* Identification of Shiga toxin in a specimen from a clinically compatible case without the isolation of the Shiga toxin-producing *E. coli*.

II. ACTIONS REQUIRED / PREVENTION MEASURES

- A. **WISCONSIN DISEASE SURVEILLANCE CATEGORY II:**
Report to the patient's local health department either electronically through the Wisconsin Electronic Disease Surveillance System (WEDSS), by mail or fax using an Acute and Communicable Disease Case Report ([F-44151](#)), or by other means within 72 hours upon recognition of a case or suspected case.
- B. **EPIDEMIOLOGY REPORTS REQUIRED:**
- *Electronically* - Report through WEDSS, including appropriate disease-specific sections
OR
 - *Paper Copy* - Acute and Communicable Diseases Case Report ([F-44151](#)) AND Routine Enteric Follow-up Worksheet
- C. **PUBLIC HEALTH INTERVENTIONS:**

Wisconsin Division of Public Health Communicable Disease Surveillance Guideline

In accordance with Wisconsin Administrative rule DHS 145.05, local public health should follow the methods of control recommended in the current edition of *Control of Communicable Diseases Manual*, edited by David L. Heymann, published by the American Public Health Association.

- Assess case for high-risk activities or exposures (e.g., day care, food handling, or health care provider).
- Exclude infected individuals from high-risk settings until they are asymptomatic **AND** two consecutive negative fecal samples (collected at least 24-hours apart and obtained at least 48 hours after discontinuance of antimicrobial therapy) are obtained.
- Educate public about proper hand washing after using the toilet or handling contaminated clothing or linens, before cooking, or associating with high-risk individuals.
- Source investigation by LHD.
- Consider conducting a case-control investigation if two or more cases occur in close geographic or temporal setting or if cases share a common potential exposure (e.g., restaurants, recreational water, community event, farm or animal-related exposure).
- Determine if case is outbreak-related and notify DPH Regional Office or CDES.
- Ensure the patient specimen or isolate is forwarded to the Wisconsin State Laboratory of Hygiene for confirmation and pulsed-field gel electrophoresis analysis.

III. CONTACTS FOR CONSULTATION

A. LOCAL HEALTH DEPARTMENT – REGIONAL OFFICES – TRIBAL AGENCIES:

<http://www.dhs.wisconsin.gov/localhealth/index.htm>

B. BCDER / COMMUNICABLE DISEASE EPIDEMIOLOGY SECTION: (608) 267-9003

C. WISCONSIN STATE LABORATORY OF HYGIENE / BACTERIOLOGY: (608) 263-3421

IV. RELATED REFERENCES

- Heymann DL, ed. Diarrhea caused by *E. coli* – Diarrhea cause by enterohemorrhagic strains. In: *Control of Communicable Diseases Manual*. 19th ed. Washington, DC: American Public Health Association, 2008: 181 – 186
- Pickering LK, ed. *Escherichia coli* Diarrhea (Including Hemolytic Uremic Syndrome). In: *Red Book: 2009 Report of the Committee on Infectious Diseases*. 28th ed. Elk Grove Village, IL: American Academy of Pediatrics, 2009: 294-298