

Shiga toxin-producing *Escherichia coli* (STEC)

2017 Case Definition

CSTE Position Statement Number: 17-ID-10

Clinical Criteria

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by Hemolytic Uremic Syndrome (HUS)ⁱⁱ (note that some clinicians still use the term thrombotic thrombocytopenic purpura [TTP] for adults with post-diarrheal HUS). Asymptomatic infections also may occur, and the organism may rarely cause extra-intestinal infections.

Laboratory Criteria

Supportive laboratory evidence

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

OR

Identification of an elevated antibody titer (i.e. serology) against a known Shiga toxin-producing serogroup of *E. coli*,

OR

Detection of Shiga toxin (i.e. EIA) or Shiga toxin genes (i.e. PCR) in a clinical specimen using a culture-independent diagnostic testing (CIDT³) and no know isolation (i.e. culture) of *Shigella* from a clinical specimen,

OR

Detection of *E. coli* O157 or STEC/EHEC in a clinical specimen using a CIDT³.

Confirmatory laboratory evidence

Isolation (i.e. culture) of *E. coli* O157:H7 from a clinical specimen

OR

Isolation (i.e. culture) of *E. coli* from a clinical specimen with detection of Shiga toxin (i.e. EIA) or Shiga toxin genes (i.e. PCR).

Epidemiologic Linkage

A clinically compatible illness in a person that is epidemiologically linked to a confirmed or probable case with laboratory evidence

OR

A clinically compatible illness in a person that is a member of a risk group as defined by public health authorities during an outbreak.

Case Classification

Confirmed

A person who meets the confirmed laboratory criteria for diagnosis.

Probable

A person with isolation of *E. coli* O157 (i.e. culture) from a clinical specimen, without confirmation of H antigen, detection of Shiga toxin or detection of Shiga toxin genes

OR

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A clinically compatible illness in a person with CIDT³ supportive laboratory criteria for diagnosis

OR

A clinically compatible illness in a person that has an epidemiologic linkage

Suspected

A person with a diagnosis of post-diarrheal HUS/TTP (see HUS case definition),

OR

A person that meets the CIDT³ supportive laboratory criteria for diagnosis with no known clinical compatibility

Criteria to distinguish a new case of this disease or condition from reports or notifications which should not be enumerated as a new case for surveillance:

A new case should be created when a positive laboratory result is received more than 180 days after the most recent positive laboratory result associated with a previously reported case in the same individual.

OR

When two or more different serogroups/serotypes are identified in one or more specimens from the same individual, each serogroup/serotype should be reported as a separate case.

Notes:

E. coli cultured from blood or urine without detection of Shiga toxin or a Shiga toxin gene does not meet the case definition and should not be reported.

Many PCR panels (GI Pathogen Panels) also detect types of *E. coli* that are not reportable. EPEC (enteropathogenic *E. coli*), ETEC (enterotoxigenic *E. coli*) and EAEC (enteroaggregative *E. coli*) are not currently reportable. EIEC/shigella (enteroinvasive *E. coli*) should be reported and investigated as a case of shigellosis.

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1. Shiga toxin-producing *E. coli* (STEC) may also be referred to as Enterohemorrhagic *E. coli* (EHEC)
 2. If criteria for HUS are met, then also create, and complete an HUS event in NCEDSS.
 3. Culture-independent diagnostic testing includes PCR, EIA, ELISA, and other antigen detection tests. It does NOT include Antibody testing.