

## Health Advisory:

### Shiga Toxin-Producing *Escherichia coli* (STEC) Cases in Central Missouri

April 5, 2012

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.health.mo.gov>

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

**Health Alerts** convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

**Health Advisories** provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

**Health Guidances** contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

**Health Updates** provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

Health Advisory  
April 5, 2012

**FROM: MARGARET T. DONNELLY  
DIRECTOR**

**SUBJECT: Shiga Toxin-Producing *Escherichia coli* (STEC)  
Cases in Central Missouri**

The Missouri Department of Health and Senior Services (DHSS) is investigating an increase in cases of Shiga toxin-producing *Escherichia coli* (STEC) in Central Missouri during late March and early April, 2012. Five cases of *E. coli* O157:H7 have been identified during this time period. Two of the cases, a two-year old child and a seventeen-month old child, reportedly have developed hemolytic uremic syndrome (HUS), a severe, life-threatening condition that may result in permanent kidney damage in some of those who survive.

The investigation is ongoing and the source of the infections has not been identified.

DHSS recommends that any person who has signs or symptoms of STEC infection should seek medical care. Health care providers should determine if testing for STEC infection is warranted.

Symptoms of STEC infection include severe stomach cramps, diarrhea (which is often bloody), and vomiting. If there is fever, it usually is not very high. Most patients' symptoms improve within 5–7 days, but some patients go on to develop HUS, usually about a week after the diarrhea starts. The classic triad of findings in HUS is acute renal damage, microangiopathic hemolytic anemia, and thrombocytopenia.

Use of antibiotics in patients with suspected STEC infections is not recommended until complete diagnostic testing can be performed and STEC infection is ruled out. Some studies have shown that administering antibiotics in patients with STEC infections might increase their risk of developing HUS. However, clinical decision making must be tailored to each individual patient. There may be indications for antibiotics in patients with severe intestinal inflammation if perforation is of concern.

Guidelines to optimize detection and characterization of STEC infections include the following:

- All stools submitted for testing from patients with acute community-acquired diarrhea should be cultured for STEC O157:H7. These stools should be simultaneously assayed for non-O157 STEC with a test that detects the Shiga toxins or the genes encoding these toxins.
- Clinical laboratories should report and send *E. coli* O157:H7 isolates and Shiga toxin-positive samples to the Missouri State Public Health Laboratory (MSPHL) as soon as possible for additional characterization.

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- Specimens or enrichment broths in which Shiga toxin or STEC are detected, but from which O157:H7 STEC isolates are not recovered should be forwarded as soon as possible to MSPHL so that non-O157:H7 STEC can be isolated.
- It is often difficult to isolate STEC in stool by the time a patient presents with HUS. Immunomagnetic separation (IMS) has been shown to increase recovery of STEC from HUS patients. For any patient with HUS without a culture-confirmed STEC infection, stool can be sent to the Centers for Disease Control and Prevention (CDC) through MSPHL. In addition, serum can be sent to CDC through MSPHL for serologic testing of common STEC serogroups.

The benefits of adhering to the recommended testing strategy include early diagnosis, improved patient outcome, and detection of all STEC serotypes.

Medical providers are required to report, within one day, suspected or diagnosed cases of the following: Shiga toxin-producing *E. coli* (STEC), other Shiga toxin-positive organisms that have not been characterized, and all cases of post-diarrheal HUS. Reports can be made to the local public health agency, or to DHSS at 800/392-0272 (24/7). In addition, laboratories are required to submit isolates or specimens positive for *E. coli* O157:H7, or for other Shiga toxin-positive organisms, to MSPHL for epidemiological or confirmation purposes.

Laboratory consultation is available from MSPHL by calling 573/751-3334, or 800/392-0272 (24/7). Other questions should be directed to DHSS' Bureau of Communicable Disease Control and Prevention at 573/751-6268, or 800/392-0272 (24/7).