

Escherichia coli Infection, Shiga Toxin-Producing

Agent: Shiga toxin-producing *Escherichia coli* (bacteria), also known as Verocytotoxin-producing *E. coli* (VTEC), enterohemorrhagic *E. coli* (EHEC) or STEC for short.

Mode of Transmission: Ingestion of food or water contaminated with human or animal feces, or direct transmission from infected persons or animals. Fomites and contaminated environments may also play a role in transmission.

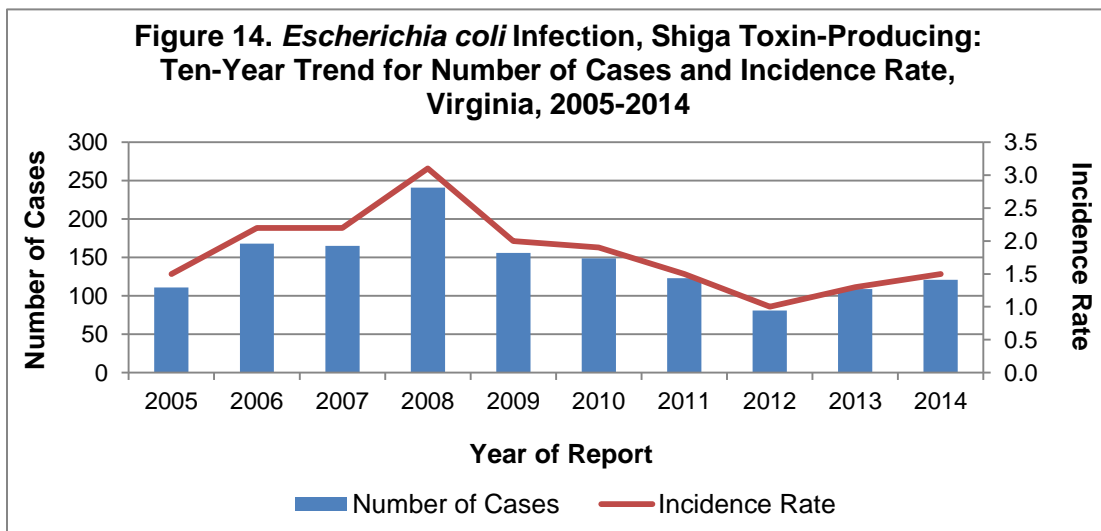
Signs/Symptoms: Diarrhea, which may be bloody or non-bloody, and severe abdominal cramps with little or no fever. In some people, including children less than five years of age and older adults, the infection can cause a complication called hemolytic uremic syndrome (HUS), in which the red blood cells are destroyed and the kidneys fail.

Prevention: Hands should be washed carefully after using the bathroom, after changing diapers or cleaning a child who has used the bathroom, after handling animals or their feces, and before preparing and eating food. All ground beef should be cooked thoroughly to an internal temperature of at least 160°. All milk, other dairy products, and juices should be pasteurized before being consumed.

Other Important Information: The most virulent STEC is *E. coli* O157:H7. In the U.S., *E. coli* O157:H7 is the serotype most commonly associated with hemolytic uremic syndrome (HUS). See the section on Hemolytic Uremic Syndrome in this report for more information. Shiga toxin-producing *E. coli* infection has been a reportable condition in Virginia since 1999.

Escherichia coli Infection, Shiga Toxin-Producing: 2014 Data Summary	
Number of Cases:	121
5-Year Average Number of Cases:	123.6
% Change from 5-Year Average:	-2%
Incidence Rate per 100,000:	1.5

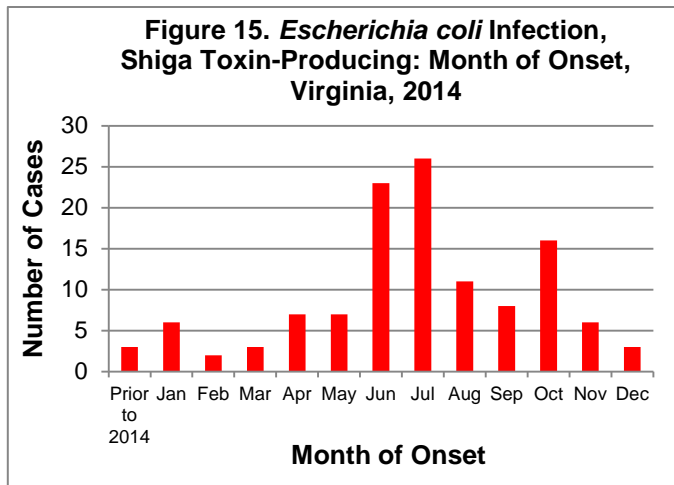
In 2014, 121 cases of Shiga toxin-producing *Escherichia coli* (STEC) infection were reported in Virginia. This represents an 11% increase from the 109 cases reported in 2013, but a slight decrease from the five-year average of 123.6 cases per year (Figure 14).



STEC infection occurs among all age groups, but the majority of cases occur in children. Children and the elderly are also more likely to develop severe illness. The incidence rate was highest in the 1-9 year age group (5.0 per 100,000), followed by the less than one year age group (3.9 per 100,000). Other age groups had rates between 0.5 and 1.7 per 100,000. Race was reported for 77% of cases. Among those with a known race, incidence was highest in the white population (1.4 per 100,000) compared to the black and “other” race populations (0.5 per 100,000, each). Incidence was slightly higher among females than males (1.6 and 1.3 per 100,000, respectively).

The northwest region experienced the highest incidence rate with 2.8 per 100,000, followed by the southwest region with 1.8 per 100,000. Incidence in the other regions was between 0.5 and 1.5 per 100,000. Incidence rates by locality can be seen in the map below.

While infections occurred throughout the year, reported cases peaked during the warmer months of June and July (Figure 15). One outbreak attributed to STEC infection was reported during 2014.



The outbreak occurred in a daycare setting in the northern region. Six cases, including five children and one adult, were reported with this outbreak. The route of transmission could not be determined.

Escherichia coli Infection, Shiga Toxin-Producing Incidence Rate by Locality, Virginia, 2014

