



To: CAHAN San Diego Participants
Date: June 29, 2019
From: Epidemiology Program, Public Health Services

CAHAN San Diego Health Alert:

Shiga toxin-producing Enteric Illnesses Associated with Attendance at County Fair

Key Messages

- Four cases of enteric illness with Shiga toxin-producing bacteria have been identified in children who had recently attended the San Diego County Fair at the Del Mar Fairgrounds. Two cases have been confirmed as *Escherichia coli* O157; the other cases are pending final identification.
- The only commonality between the activities of the reported cases is exposure to animals and/or their enclosures at the fair. Although no specific animal activity has been implicated at this time, in an abundance of caution, the petting zoo has been closed and public exposure to animals has been restricted until the fair closes.
- As part of routine history taking, providers who evaluate patients with enteric illnesses should ask about recent attendance at the fair. Consider testing for enteric pathogens when there has been attendance at the fair, regardless of known animal exposures.

Situation

As of June 28, 2019, four children with confirmed or probable Shiga toxin-producing *Escherichia coli* (STEC) infection have been reported to the County Epidemiology Program; all four had attended San Diego County Fair at the Del Mar Fairgrounds shortly before the onset of illness. The children range in age from 2 to 13 years old and attended the fair an average of 3 days before the onset of symptoms (range 2-4 days). Illness onset dates range from June 10 through 19. All patients are positive for Shiga toxin; two patients have confirmed STEC O157, while the other two patients are pending organism identification. One of the four patients was hospitalized with hemolytic uremic syndrome (HUS) and has subsequently died.

The case-patients are from different families and have no commonalities between them except for fair attendance. There were no common foods consumed among the patients while at the fair, but all reported animal contacts and/or contact with animal enclosures, either at the petting zoo or other activity at the Chevrolet Livestock Barn Show. In an abundance of caution and in coordination with the County Public Health Officer, fair officials have closed the petting zoo and restricted the public from animal contacts until the fair closes on July 4. STEC may be shed in the feces of ruminants; outbreaks of STEC O157 at petting zoos and fairs have occurred in the past in the United States and in California.

Background

Gastroenteritis due to STEC O157 typically begins as watery diarrhea with prominent abdominal cramping; diarrhea frequently turns bloody after 1-2 days. Fever is usually absent or low-grade. The typical incubation period for STEC O157 is 3-4 days (range, 1-10 days). While most people recover from STEC without complications, approximately 5-10% of people develop HUS. However, the risk is highest in children, occurring in approximately 15% of those younger than 5 years with STEC O157 infection.

The appropriate management for STEC is supportive care, including hydration, and close monitoring for the development of HUS. Antibiotics are generally not beneficial in patients with STEC O157, and taking antibiotics may increase the risk of HUS. Antimotility agents may also increase the risk of systemic symptoms.

Recommendations for Providers

- Consider STEC infection in patients presenting with bloody diarrhea, including in adults.
- In addition to routine history taking, ask patients with enteric illness about attendance at the San Diego County Fair within 10 days of the onset of symptoms. Consider testing for enteric pathogens when there has been fair attendance.
- Do not treat STEC (including STEC O157) gastroenteritis with antibiotics or antimotility agents, but do ensure adequate hydration and monitor for the development of HUS, especially in young children.
- All infections with Shiga toxin-producing organisms are reportable to local public health and patients with STEC (including STEC O157) infection may be subject to exclusion if they attend/work in food service, child care, or healthcare. Please contact the [County Epidemiology Program](#) to report these cases during business hours Monday through Friday by calling 619-692-8499, or on evenings, weekends, and County-observed holidays, by calling 858-565-5255 (ask for the Epidemiology Duty Officer).

Resources

Centers for Disease Control and Prevention [E. coli webpage](#)

[Resources for Clinicians and Laboratories](#)

California Department of Public Health [Shiga toxin-producing E. coli \(STEC\) webpage](#)
[STEC fact sheet](#) (March 2015)

Smith et al. 2012. [Antibiotic treatment of *Escherichia coli* O157 infection and the risk of hemolytic uremic syndrome, Minnesota](#). *Pediatr Infect Dis J.* 31(1):37-41.

Freedman et al. 2016. [Shiga Toxin-Producing *Escherichia coli* Infection, Antibiotics, and Risk of Developing Hemolytic Uremic Syndrome: A Meta-analysis](#). *Clin Infect Dis.* 62(10): 1251-1258.

Hickey et al. 2011. [Early volume expansion during diarrhea and relative nephroprotection during subsequent hemolytic uremic syndrome](#). *Arch Pediatr Adolesc Med.* 165(10):884-9.

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