Outbreak of Gastrointestinal Illness Associated with Unpasteurized Apple Cider at a Large Fall Festival- Illinois, 2015

Justin Albertson *, CDC/CSTE Applied Epidemiology Fellowship Program, Atlanta, GA*
Elisa Hill , Illinois Department of Public Health, Springfield, IL
Shay Drummond , Adams County Health Department, Quincy, IL
Nancy Halpin , Pike County Health Department, Pittsfield, IL
Fredrick Echols , Illinois Department of Public Health, Springfield, IL
Connie Austin , Illinois Department of Public Health, Springfield, IL
Audio File Recorded Presentation

BACKGROUND:

On November 2, 2015 the Illinois Department of Public Health (IDPH) was notified of an outbreak of gastrointestinal illness associated with a large fall festival in Illinois. IDPH and local health departments conducted an investigation to identify the pathogen, determine the mode of transmission, and implement control measures to prevent further illnesses.

METHODS:

A case control study was conducted to identify the source of infection. Cases were defined as persons with diarrhea or vomiting between October 18 and November 14 who attended the festival or who consumed food products brought home from the festival. Controls were defined as persons who attended the festival and did not become ill. Health alerts were issued to encourage the reporting of cases. Cases and controls were interviewed and a self-administered questionnaire was posted online to collect epidemiologic data. Clinical specimens and samples of apple cider sold at the festival were tested at CDC for *Cryptosporidium* and Shiga toxin-producing *Escherichia coli* (STEC). Investigators visited the production site to pinpoint environmental contamination sources and recommend additional control measures.

RESULTS:

An estimated 30,000 people attended the festival. One hundred four cases and 29 controls were identified. Consumption of apple cider was a significant risk factor for diarrheal illness (OR 55.6, 95% CI 14.1-219.3). Six (6%) patients were hospitalized. Ten samples of cider produced by Cider Maker A were tested for *Cryptosporidium* and *E. coli*. Subtype *C. parvum* IIaA17G2R2 was

identified in one (10%) cider sample and all five stool specimens submitted for *Cryptosporidium* subtyping. Serotype *E. coli* 0130:H11 was identified in six (60%) cider samples. Two (25%) of eight stool specimens tested for STEC were positive; serotypes were identified as *E. coli* O103 and O111. Cider production took place outdoors on a farm within 200 feet of a calf pen. Individuals involved in cider production handled cattle and did not change or disinfect clothes and boots between cattle operations and cider processing. Cider was unpasteurized and containers were unlabeled.

CONCLUSIONS:

Consumption of unpasteurized apple cider was significantly associated with gastrointestinal illness. Illnesses were likely caused by multiple pathogens. Unpasteurized apple cider should be labeled and include a warning about the hazards of consumption. The cider maker was prohibited from production and sale of cider until compliant with state regulations. Recommendations included separating cider presses from areas where animals are kept, changing clothing and footwear between the animal care area and production areas, and updating production equipment.

SOURCE: https://cste.confex.com/cste/2016/webprogram/Paper6719.html