

## Stories from the Field: Knox County Health Department

## Situation

In late May through early June of 2018, the Knox County Health Department (KCHD) was notified of 15 cases of Shiga Toxin-Producing *E. Coli* (STEC) among children younger than five years of age. Nine cases were hospitalized for their illness and seven cases developed Hemolytic Uremic Syndrome (HUS), a life-threatening complication of STEC infection.

Two common exposures were quickly identified: 10 cases reported consuming raw milk, and five cases reported attending the same child care facility where goats were housed near the property. While extremely rare, two separate STEC outbreaks were occurring simultaneously. PHEP staff played key roles in the response ranging from providing epidemiological support to backing incident command and logistical operations.

## Intervention

The Knox County Epidemiology, Emergency Preparedness and Environmental Health Departments sent staff to the farm that dispensed raw milk and the child care facility to identify any immediate areas of concern, collect samples and retrieve a list of persons potentially exposed. A health directive was delivered to the farm requesting that all raw milk dispensing cease. The Department of Health and Human Services closed the child care center, also using a directive.

KCHD activated the Extended Public Health Investigation Team (xPHIT) for situational awareness, and to expedite interviews of exposed contacts. A phone bank was opened to receive calls from the public regarding the outbreaks.

The assistance of the Tennessee Department of Health (TDH) was requested to develop a REDCap survey to be sent to all cow share program participants to find additional cases and conduct an epidemiologic study. The survey was sent out via TNHAN text message to ask cow share participants to discard of any raw milk product they may still have and to ask that they complete the survey. The survey was also sent out via e-mail to cow share members who did not have a phone number listed.

All environmental samples from the farm and child care center (41) were sent to the TDH Laboratory in Nashville. Cow manure samples from the farm where the raw milk was dispensed were shown to be a PFGE match to clinical samples from children who were exposed to raw milk. Goat manure samples were shown to be a PFGE match to clinical samples of cases that attended the child care facility.

## Impact

The role of PHEP in outbreak response and incident command fundamentals for KCHD staff was vital to ensuring a timely and efficient response from the entire outbreak team.

The quick response of KCHD prevented further infections from exposure to STEC through the consumption of raw milk or direct/indirect contact to goat manure.

Collaboration with TDH aided in quick case finding and mitigation of further risk. KCHD worked with the child care facility on infection control practices and created a childcare exclusion guide to assist decision making when requesting that children stay at home when ill. Infection control was evaluated at the child care facility and several recommendations were made to improve practices.

