

***E. coli* O157:H7 Infections Associated with a Bridal Shower Potluck**

July

Carver County

On August 3, 2011, the Minnesota Department of Health (MDH) Public Health Laboratory (PHL) identified a cluster of two *E. coli* O157:H7 isolates with indistinguishable two enzyme pulsed-field gel electrophoresis (PFGE) patterns. The pattern designation, MN974ECB47, was new to the Minnesota database.

During her interview on August 3, one of the cases (illness onset on July 27) reported attending a bridal shower potluck held at a church in Waconia, Minnesota on July 24 and knowing of other attendees who were ill, including another person who tested positive for *E. coli* O157:H7. An investigation was initiated promptly.

The other case (age, 3 years) had illness onset on July 26; this case did not attend the bridal shower but did attend an in-home daycare in Waconia. The case's sister (age, 11 years), who also tested positive for *E. coli* O157:H7 and had illness onset on July 21, was also a daycare attendee. On follow-up with the daycare provider, she reported that she and other children at the daycare had also been ill with diarrhea. An investigation was initiated at the daycare.

The 11 year-old sibling had visited a goat farm in Watertown, Minnesota on July 17 for a picnic potluck. The farm owner reported that no other picnic attendees had become ill, but was unwilling to provide a contact list for guests. An environmental investigation was initiated at the goat farm.

A contact list was obtained from the bridal shower potluck organizer, and attendees were called by MDH staff and interviewed with a standard questionnaire. Lists of food served and their preparers were obtained from the organizer and attendees.

A case was defined as a bridal shower attendee who subsequently developed diarrhea (≥ 3 stools in a 24-hour period) of ≥ 3 days duration or who had a stool sample test positive for *E. coli* O157:H7.

Thirty-three bridal shower attendees were interviewed; six (18%) met the case definition. One attendee reported illness that did not meet the case definition (vomiting and two loose stools in a 24-hour period) and was excluded from further analyses. Twenty-six controls were used in analyses.

The median incubation period for cases was 4.7 days (range, 2.2 days to 7.1 days). The median duration of illness was 7.8 days (range, 4.7 days to 10.8 days).

Three of the cases tested positive for *E. coli* O157:H7 at a clinical laboratory and were identified through routine disease surveillance. Isolates from these cases were indistinguishable by PFGE, with Minnesota pattern designation MN242ECB341 (the pattern name had been changed since the initial PHL report). All six cases had diarrhea and abdominal cramps, four (67%) had bloody stools, one (17%) had vomiting, and one (17%) had fever. One case was hospitalized for 6 days, and none developed hemolytic uremic syndrome.

Foods for the bridal shower were prepared and brought by guests and included ham and chicken salad sandwiches, buns, chicken pasta salad, fresh fruit, fresh veggies and dip, pickles and olives, potato chips and dip, and dessert bars.

In a univariate analysis, consuming chicken pasta salad (5 of 6 cases vs. 7 of 26 controls; odds ratio [OR], 13.6; 95% confidence interval [CI], 1.3 to 137.5; $p = 0.02$), carrots (5 of 6 cases vs. 6 of 24 controls; OR, 15.0; 95% CI, 1.4 to 155.3; $p = 0.02$), “crazy bars” (4 of 6 cases vs. 4 of 24 controls; OR, 10.0; 95% CI, 1.3 to 74.5; $p = 0.03$), watermelon (6 of 6 cases vs. 10 of 24 controls; OR, undefined; $p = 0.02$), and strawberries (6 of 6 cases vs. 11 of 24 controls; OR, undefined; $p = 0.02$) were all significantly associated with illness. A composite variable of any fresh fruit consumption was not statistically significant.

In a multivariate analysis including all of these variables, none were independently associated with illness.

The strawberries and watermelon (along with other fresh fruit) were purchased from a local grocery store and prepared (washed in cold water and cut) by a shower attendee who lived in the same household as family members who had attended the picnic at the goat farm in Watertown. The family members did not report illness in the week following the goat farm picnic, but a pattern closely related to the shower outbreak strain (MDH pattern designation MN242ECB47; indistinguishable from the main outbreak pattern by first enzyme, and one band different by second enzyme) was isolated from a goat and an environmental sample collected from the goat farm on September 1.

The source of the person-to-person outbreak at the in-home daycare in Waconia that ultimately involved three cases with pattern MN242ECB47 and one case with an unrelated pattern (MN1229ECB347) was also likely related to the goat farm – the sibling case who had attended the goat farm picnic was the first person ill in that outbreak.

This was a foodborne outbreak of *E. coli* O157:H7 infections associated with a bridal shower potluck. Based on the epidemiologic and environmental health investigation evidence, the most plausible vehicle was fruit prepared by an attendee. The ultimate source of the outbreak likely was a local goat farm where a very closely related strain of *E. coli* O157:H7 was found and where household members of the fruit-preparer had attended a potluck 8 days prior to the bridal shower. Contamination of the household

environment or direct contact from a household member with an unidentified infection were possible mechanisms of contamination of the fruit.

The goat farm was also the likely source of a local person-to-person outbreak at a Waconia daycare that occurred during this same time period and that was caused by a PFGE subtype of *E. coli* O157:H7 that matched *E. coli* O157:H7 isolates found on the goat farm.