

Norovirus Gastroenteritis Associated with a Restaurant

June

Washington County

On June 27, 2017, a Washington County Public Health & Environment (WCPHE) sanitarian received a call from a restaurant reporting a large number of ill employees and a customer complaint of illness. The customer also contacted the Minnesota Department of Health (MDH) foodborne illness hotline to report that four individuals of a group of eight became ill after attending an event at the restaurant in Hugo on June 24. They reported no other recent common meals. Three of the four were interviewed and reported diarrhea and vomiting starting 41 hours, 52 hours, and 21 hours after having drinks at the event. An investigation was initiated by WCPHE and MDH on June 27.

WCPHE sanitarians visited the restaurant on June 27 and subsequent days to evaluate food preparation and handling procedures, gather additional patron contact information, and interview food workers. MDH interviewed patrons to obtain information on food/beverage consumption and illness history. A case was defined as a restaurant patron who developed vomiting and/or diarrhea (≥ 3 loose stools in a 24-hour period) after visiting the restaurant. Stool samples collected from consenting individuals were submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral testing.

Sixty-one patrons were interviewed; 13 (21%) reported recent illness, 11 (18%) met the case definition, and 48 (79%) were identified as controls. Two cases (3%) reported some illness, but did not meet the case definition and were excluded from further analysis. Nine (82%) cases were female and two (18%) were male. The median age was 30 years (range, 5 to 60 years). All 11 cases reported diarrhea, 10 (90%) reported abdominal cramps, 9 (82%) reported vomiting, and 4 (36%) reported fever. The median incubation period for cases was 41 hours (range, 21 to 53.5 hours). The median duration for cases who had recovered at the time of interview ($n=10$) was 15.75 hours (range, 3.5 to 80 hours). Onset dates ranged from June 25 through June 27; all cases had visited the restaurant on June 24. Three stool kits from patrons were submitted to the MDH PHL for testing, one from the original complainant and two from unrelated patrons identified by credit card receipts. All three tested positive for norovirus GI.2 with identical Region C nucleic acid sequences; two could be typed at Region B and were norovirus GI.P2-GI.2 with identical Region B sequences.

In a univariate analysis, using the portable toilet (6 of 11 cases vs. 4 of 48 controls; odds ratio [OR], 13.2; 95% confidence interval [95% CI], 2.8 to 63.3; $p<0.001$) and consuming lime garnish from a tent

bar (4 of 11 cases vs. 6 of 48 controls; OR, 6.3; 95% CI, 1.3 to 31.0; $p = 0.024$) were significantly associated with illness. Consuming a drink inside the restaurant (seven of 11 cases vs. 41 of 45 controls; OR, 0.17; 95% CI, 0.03 to 1.0; $p = 0.04$) and consuming any appetizer (0 of 9 cases vs. 16 of 48 controls; 95% CI, undefined to 0.90; $p = 0.0495$) were significantly inversely associated with illness. In a multivariate model including a lime garnish from a tent bar and portable toilet use, only portable toilet use was significantly associated with illness (adjusted OR, 7.3; $p = 0.02$). The case-control study included a relatively small sample size, as the event was estimated by restaurant management at 4,000 attendees for each day, Friday and Saturday.

Sixty-five of 68 (96%) employees were interviewed. Nineteen (29%) reported recent gastrointestinal illness. Of the 19; 16 (84%) reported diarrhea, 14 (74%) reported nausea, 12 (63%) reported cramps, 11 (58%) reported vomiting, and 6 (32%) reported fever. Illness onsets ranged from June 11 to June 28. One line cook reported vomiting and diarrhea on June 11. A server reported diarrhea and vomiting on June 12. A second line cook reported diarrhea and vomiting on June 14. No employees reported working while ill on or before June 24. One employee did report becoming ill at work on June 28 and was reported to have left immediately. Additional ill employees reported onset dates of June 25, June 26, and June 28. Stool kits were provided to multiple employees, but none were returned for testing.

The outdoor event and associated portable bars took place without prior knowledge by WCPHE. Future event pre-approval was discussed with management. The tent, tent bars (six stations), and cooking area (burger station) had been disassembled and removed prior to the assessment. It was reported by restaurant management and staff that handwashing was not available at any of the portable tent bars or the cooking station during the event. Due to inconsistent reports from restaurant management and staff, sanitarians were not able to determine when and where bar garnishes were prepared. Two vomiting events by customers were reported by management and staff occurring early Saturday morning, one in the parking lot and one on the customer side of the restaurant's indoor bar. Sanitarians discussed the importance of handwashing for the prevention of norovirus transmission, implemented a no bare-hand contact policy, conducted inspections of kitchen and bar areas, ordered the restaurant to sanitize all food contact surfaces, instructed management to screen employees for vomiting and diarrhea at the beginning of each shift, and excluded all employees with vomiting and/or diarrhea from work until 72 hours after the resolution of symptoms. Numerous follow-up assessments were conducted at the establishment to verify that the public health interventions were put into place and that issued orders were corrected.

This was an outbreak of norovirus gastroenteritis associated with a restaurant, and particularly an outdoor tent event that included portable bars and portable toilets. Portable toilet use was significantly associated with illness. However, large numbers of employees reported illness, and it is likely that both foodborne and environmental transmission both played a role in this outbreak.