

Norovirus Gastroenteritis Associated with a Wedding Reception

December

Mower County

On December 4, 2012, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness among attendees of a wedding reception held on December 1 at a restaurant in Le Roy, Minnesota. Approximately 400 attendees were at the reception. The complainant also reported attending a catered rehearsal dinner held on November 30 at a community center. Approximately 30 attendees were at this event. Additionally, a family holiday party was held at a private home on November 25, and family illness was reported in the week before the wedding. MDH Environmental Health and the Minnesota Department of Agriculture (MDA) were notified on December 5 and an investigation was initiated.

MDA inspectors contacted the caterer on December 5 to gather more information about what was served at the November 30 event, assess food preparation and handling practices, and to determine if any food workers had been ill before, during, or after the event.

MDH Environmental Health sanitarians contacted the restaurant on December 5 to determine if the restaurant had received any additional complaints of illness among patrons. An employee illness screening log was implemented at that time. A sanitarian visited the facility on December 6 to evaluate food preparation and handling procedures. Food workers were interviewed and asked to submit stool specimens if ill.

The original complainant provided a contact list for attendees of the wedding. MDH interviewed attendees to obtain information on food and beverage consumption and illness history. A case was defined as an individual who developed vomiting and/or diarrhea (≥ 3 stools in a 24-hour period) after attending a wedding-related event. Stool samples from consenting attendees were submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral testing.

A total of 85 attendees were interviewed; 38 (45%) met the case definition. Nine attendees reported illness that did not meet the case definition and were excluded from further analyses. Of the nine excluded attendees, three (4%) had illness onset before December 1, and two (2%) had illness onset on December 6 and were considered secondary cases. All attendees were asked about attendance at the holiday party on November 25 and the rehearsal dinner on November 30. Neither of these events were significantly associated with illness; only 12 (32%) cases with available information attended the holiday party, and only six (17%) cases attended the rehearsal dinner. The only event that all cases reporting attending was the wedding reception on December 1.

Thirty-seven (97%) cases reported diarrhea, 29 (76%) reported vomiting, 26 (72%) reported abdominal cramps, 6 (18%) reported fever, and 1 (3%) reported bloody stools. The median incubation was 37.5 hours (range, 16.5 to 57 hours). The median duration of illness was 35 hours (range, 7 to 74.5 hours). No cases were hospitalized or sought medical attention. Three attendee stool specimens were submitted to the MDH PHL; two tested positive for norovirus GII, including a specimen from an attendee who had an illness onset on November 30. The remaining specimen was negative for norovirus. All three attendee stool specimens were negative for *Campylobacter*, *Salmonella*, Shiga toxin-producing *E. coli*, and *Shigella*.

An MDA inspector interviewed all employees involved in the preparation and serving of the rehearsal dinner on November 30. No illness was reported before, during, or after the event. No improper food preparation or handling practices were observed. The meal served included shredded beef, au gratin potatoes, baked beans, coleslaw, macaroni salad, and a cake-type dessert that was brought by family members.

The food for the wedding reception was prepared by the restaurant. The dinner was served buffet-style at two separate locations in the facility; one upstairs and one downstairs. The upstairs buffet consisted of ham, chicken, green salad, macaroni salad, baked beans, rice, au gratin potatoes, rolls, and butter. The downstairs buffet consisted of ham, chicken, macaroni salad, baked beans, rice, au gratin potatoes, sweet corn, Waldorf salad, rolls, and butter. A variety of beverages were available including ice water, coffee, punch, and other drinks from the bar. Cake from a grocery store in Austin, Minnesota was served, and ham sandwiches were available later in the evening. Snacks on the tables included peanuts, M&Ms, mints, and puppy chow. These snacks were prepared by the complainant who reported that an individual who was staying at her home had onset of vomiting and diarrhea on November 30 while she prepared the snacks. The ill individual attended both the rehearsal dinner and the wedding reception.

Most guests consumed food from only one of the two buffets; however, neither buffet was significantly associated with illness. In the univariate analysis, consuming au gratin potatoes from the downstairs buffet (24 of 25 cases vs. 18 of 24 controls; odds ratio [OR], 8.0; 95% confidence interval [CI], 0.9 to 72.4; $p = 0.05$), ice (17 of 32 cases vs. 8 of 34 controls; OR, 3.7; 95% CI, 1.3 to 10.6; $p = 0.02$), and drinks from the bar (31 of 35 cases vs. 23 of 34 controls; OR, 3.7; 95% CI, 1.0 to 13.1; $p = 0.04$) were associated with illness. By multivariate logistic regression, no food item was independently associated with illness. Consumption of the snacks on the tables was not associated with illness.

MDH sanitarians interviewed all restaurant employees; four (44%) of nine food workers reported recent gastrointestinal illness, including one food worker who reported onset of diarrhea on November 28 and recovery on November 29. This employee's work duties on December 1 included set-up for the event and assembling salads, au gratin potatoes, and baked chicken. The remaining three ill food workers had onset of symptoms on December 3. All four food workers consumed leftovers from the wedding buffet on December 1.

Two food workers submitted stool specimens to MDH; one was positive for norovirus GII. Nucleic acid sequencing was conducted on norovirus positive samples from attendees and the food worker; the nucleic acid sequences were identical. The food worker reporting onset of illness before the event did not test positive for norovirus.

MDH sanitarians did not find any violations in food preparation or handling during the inspection of the facility. Foods were kept at appropriate temperatures and proper handwashing and glove use were observed. However, since employee illness after the event was reported, an employee illness screening form was implemented to prevent ill employees from becoming sources of further transmission, and the restaurant was instructed to exclude ill food workers for 72 hours following the resolution of symptoms.

This was a foodborne outbreak of norovirus gastroenteritis associated with a wedding reception held at a restaurant in Le Roy, Minnesota on December 1, 2012. Consumption of au gratin potatoes from the downstairs buffet, ice, and drinks from the bar were significantly associated with illness. Gastrointestinal illness was confirmed both in family members and a food worker prior to the event. Based on the statistical analyses of food items consumed, an infected food worker was the primary source of contamination. However, some of the cases could have occurred due to person-to-person transmission from ill attendees, or from consumption of foods contaminated by ill or recently ill wedding attendees.