

Norovirus Gastroenteritis Associated with a Restaurant

January

Hennepin County

On January 5, 2012, managers at a restaurant in Edina, Minnesota contacted their local health department (City of Edina) to report two independent complaints of gastrointestinal illness among individuals who ate at the restaurant on January 1. The City of Edina Health Department interviewed the original complainants and notified the Minnesota Department of Health (MDH); an investigation was initiated immediately.

City of Edina sanitarians visited the restaurant on January 6 to evaluate food preparation and handling procedures. They obtained a reservation list from the establishment to obtain contact information for additional patrons. A case was defined as a person who ate at the restaurant on January 1 and subsequently developed vomiting and/or diarrhea (≥ 3 loose stools in a 24-hour period).

During the site visit, a restaurant manager reported that he had a birthday party for his son at the establishment on January 1. The manager provided contact information for the guests who had attended the birthday party.

On January 9, MDH staff began interviewing guests who had attended the birthday party and patrons identified from the reservation list.

Sixty-seven patrons were interviewed; 21 (31%) met the case definition. Thirteen of 24 birthday party guests and 8 of 43 additional patrons (representing 5 separate parties) met the case definition. One of the cases (a toddler) had a diarrheal incident before the birthday party; the mother attributed this incident to teething and reported that the child's diarrhea became much more severe on January 2. Four additional patrons (three from the birthday party and one from the reservation list) reported illness that did not meet the case definition and were excluded from analysis.

The median incubation period for the cases was 33.5 hours (range, 29 to 66 hours). The median duration of illness was 54 hours (range, 17 to 132 hours). Eighteen (86%) cases reported vomiting, 12 (57%) reported diarrhea, 11 (52%) reported cramps, 8 (38%) reported fever, and none reported bloody stools. Three cases visited a medical provider but none were hospitalized.

Two stool specimens (from one birthday guest and one patron) were submitted to MDH; both tested positive for norovirus GII with identical nucleic acid sequences. The two stool specimens were negative for *Campylobacter*, *Salmonella*, Shiga toxin-producing *E. coli*, *Shigella*, and *Yersinia*.

Food items served to the birthday party guests included salad, a variety of pizzas (cheese, margherita, autumnno, morocain, fig and prosciutto, and pepperoni), ice cream served in cones with angel food cake, soda, water, coffee, apple juice, and alcoholic beverages. Most of the food items served to the birthday party guests were prepared by the restaurant. Exceptions included the ice cream and cones which were purchased from a grocery store and supplied by the parent party organizers, and the angel food cake which was prepared by the parent party organizers.

The eight patron cases who were identified from the reservation list reported eating a variety of different menu items, but all reported eating some type of ready-to-eat food item (e.g., mozzarella caprese, salami or mozzarella plates, salads).

A univariate analysis was conducted including all 67 interviewed patrons. No foods were significantly associated with illness in this analysis. However, consuming cheese pizza yielded an elevated odds ratio [OR] of 3.1 (9 of 15 cases vs. 11 of 34 controls; 95% confidence interval [CI], 0.86 to 11.5; $p = 0.14$).

A second analysis was conducted separating the birthday party guests from the reservation list patrons. No foods were significantly associated with illness in either group. In the reservation list patrons consuming fig and prosciutto pizza (6 of 15 cases vs. 6 of 34 controls; OR, 3.1; 95% CI, 0.75 to 12.5; $p = 0.15$) and soda (9 of 18 cases vs. 10 of 41 controls; OR, 3.1; CI, 0.93 to 10.2; $p = 0.10$) yielded elevated odds ratios. In the birthday party group consuming ice cream served in a cone containing angel food cake resulted in an increased odds ratio (10 of 13 cases vs. 3 of 8 controls; OR, 5.6; CI, 0.74 to 42.2; $p = 0.16$).

Illness histories and job duty information were obtained from 41 restaurant employees. No employees reported having had gastrointestinal illness previous to or on the implicated meal date. Two employees reported gastrointestinal illness after the implicated meal date, with onsets of January 2 and January 3.

When conducting an inspection of the restaurant, the City of Edina sanitarian viewed bare-hand contact with ready-to-eat foods. Education was provided to eliminate this process and to stress the importance of proper handling of food and beverages, the use of gloves or utensils when handling ready-to-eat foods, proper handwashing practices, and exclusion of ill food handlers.

This was a foodborne outbreak of norovirus gastroenteritis associated with a restaurant in Edina. No food item was statistically associated with illness. The source of contamination was not identified.