

Norovirus Gastroenteritis Associated with a Caterer at an Event Center

December

Hennepin County

On December 10, 2013, the Minnesota Department of Health (MDH) foodborne illness hotline received a call from the school nurse at a high school reporting gastrointestinal illness among 17 of 275 people that attended a high school football banquet (Banquet A) on December 6 at an event center in Brooklyn Park, Minnesota. Sanitarians from Brooklyn Park Environmental Health and Anoka County Community Health and Environmental Services were notified, and an investigation was initiated.

On December 10, Brooklyn Park sanitarians visited the event center to obtain additional information on menu items, evaluate food preparation and handling procedures, and interview staff regarding recent illness and job duties. The school nurse faxed a list of banquet attendees, and a menu was obtained from the event center. MDH staff interviewed football banquet attendees about food consumption and illness history.

On December 11, MDH received an additional complaint from an individual who attended Banquet B at the event center on December 7, as well as two independent complaints from patrons who dined at Restaurant A (the restaurant at the event center) on December 6 and December 7. The food for both the event center and Restaurant A was provided by Caterer X.

On December 12, MDH received additional independent complaints from patrons who dined at Restaurant A on December 8 and December 10, and from an individual who attended a high school swim team banquet (Banquet C) at the event center on December 8; the latter report was prompted by an article in the Star Tribune about illnesses associated with the football banquet. Gastrointestinal illness was reported in half of the swimmers and one third of the parents who attended the banquet (80 attendees).

On December 13, the MDH foodborne illness hotline received an additional complaint from an individual who attended a holiday party (Banquet D) at the event center on December 6.

On December 13, the swim team booster club e-mailed a list of swim team banquet attendees. MDH staff interviewed swim team banquet attendees about food consumption and illness history. Attendee lists were also requested from the organizers of Banquet B and the holiday party, but were not obtained. Since attendee lists were not acquired, MDH e-mailed the organizers of both parties providing MDH contact information. MDH sanitarians collected contact information for other groups that held events at the event center from December 6 to December 8. The other groups were contacted to inquire about any reports of illness.

A case was defined as a banquet attendee (A, B, C, or D) or Restaurant A patron who developed vomiting or diarrhea (≥ 3 loose stools in a 24-hour period) after eating food prepared at by Caterer X. Stool samples collected from consenting banquet attendees, patrons, and employees were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

MDH staff interviewed 131 banquet attendees (52 Banquet A, 2 Banquet B, 64 Banquet C, and 1 Banquet D) and 12 Restaurant A patron complainants. Of the 131 guests interviewed, 64 (49%) met the case definition. Fifteen additional guests reported illness that did not meet the case definition and were excluded from analysis. Cases reported illness onsets from December 8 through December 11. The median incubation period was 33 hours (range, 12 to 62 hours). The median duration of illness was 49.5 hours (range, 10.5 to 140 hours). Among the cases, 55 (86%) reported diarrhea, 49 (78%) reported cramps, 47 (73%) reported vomiting, 27 (45%) reported fever, and 1 (2%) reported bloody stools. Stool samples were submitted by eight cases, (two from Banquet A, one from Banquet B, four from Banquet C, one restaurant patron) and seven tested positive for norovirus GII. Nucleic acid sequencing was conducted on five positive samples, and four were identical.

Due to a lack of non-ill controls from two of the banquets (Banquet B and Banquet D), analysis of food exposures was restricted to Banquet A (football team) and Banquet C (swim team), along with the restaurant patrons.

Both the football and swim team had a buffet-style dinner. The only item in common was a seasonal fruit bowl. Food for both was prepared in the same kitchen by the same employees. The restaurant has separate lunch and dinner menu items, as well as a Sunday breakfast brunch buffet. Consumption of the seasonal fruit bowl was statistically associated with illness for both the football and swim team banquet attendees (football: 24 of 25 cases vs. 7 of 23 controls; odds ratio [OR], 54.8; 95% confidence interval [CI], 6.1 to 489.5; $p < 0.001$) (swim: 30 of 31 cases vs.

7 of 20 controls; OR, 55.7; 95% CI, 6.2 to 499.8; $p < 0.001$). The following food items were also statistically associated with illness for the football banquet: cherry tomatoes (17 of 21 cases vs. 7 of 20 controls; OR, 7.8; 95% CI, 1.8 to 32.8; $p = 0.004$); shredded carrots (15 of 18 cases vs. 8 of 21 controls; OR, 8.1; 95% CI, 1.7 to 37.1; $p = 0.008$); sliced cucumbers (15 of 19 cases vs. 8 of 20 controls; OR, 5.6; 95% CI, 1.3 to 23.2; $p = 0.02$); the veggie medley (20 of 24 cases vs. 12 of 23 controls; OR, 4.5; 95% CI, 1.1 to 17.6; $p = 0.03$); and water (25 of 25 cases vs. 17 of 24 controls; OR, 21.8; 95% CI, 1.1 to 407.9; $p = 0.004$).

In a multivariate analysis using stepwise logistic regression of the data from the football team, only the seasonal fruit remained independently associated with illness (adjusted OR, 47.9; 95% CI, 4.7 to 486.2; $p < 0.001$). No individual food items served at the restaurant were significantly associated with illness.

At the start of the investigation, sanitarians and management established a screening protocol for employee illness. All employees with vomiting and/or diarrhea were excluded from work until 72 hours after the resolution of symptoms. Illness histories and job duty information were obtained from 60 employees. Thirteen employees reported recently having a gastrointestinal illness, with illness onset dates ranging from November 30 to December 9. One of the 13 employees reported that he had contracted a *Giardia* infection while traveling abroad. This employee was able to provide Brooklyn Park City staff a series of negative test results from his healthcare provider. Staff also confirmed that he had not experienced any of the symptoms associated with the current outbreak.

Two employees reported illness before the weekend of December 8. One employee reported vomiting and diarrhea over a span of 20 hours on December 4, returning to work on December 5, and working through December 7. Another employee reported ongoing diarrhea since November 30. This employee worked from December 3 to December 5, but not on December 6, 7 or 8. Both of these employees performed hosting duties, including seating and making reservations. One of the employees also bartended, served food, and handed out menus.

Seven employees reported episodes of diarrhea and/or vomiting within 3 to 20 hours of their shifts ending on December 7 or December 8. These employees performed a variety of job duties at the banquet and restaurant, including food preparation, serving, managing, cleaning, and administrative duties. One employee reported working on December 8 while actively having diarrhea. This employee had multiple job duties in the restaurant.

The employee that prepared the fresh seasonal fruit for both the football and swim banquet reported one episode of vomiting on December 2. The employee that prepared the veggie medley and salad accompaniments (cherry tomatoes, shredded carrots, and sliced cucumbers) for the football banquet reported on onset of diarrhea early in the morning on December 9.

Four employees tested positive for norovirus GII. Three of the employees had illness onsets after their shift (one on December 8, two on December 9). The fourth employee had an illness onset during their shift on December 8. The food worker who prepped the veggie medley and salad accompaniments was negative for norovirus. The food worker who prepped the seasonal fruit was not tested. Nucleic acid sequencing was conducted on two of the positive samples, both with illness onsets on December 8, and the resulting sequences were identical to each other and to the sequence identified in patron samples.

At the time of the initial inspection on December 10, sanitarians observed staff using gloves for ready-to-eat food items, but they were not wearing gloves when they observed them handling raw items. They also observed a blocked hand sink in the main kitchen that wasn't supplied with soap or paper towels. During the December 11 on-site investigation, all food that had been previously prepared was discarded because ill employees had been involved in the preparation. Sanitarians reviewed the importance of limiting bare-hand contact at all times and stressed the importance of handwashing for the prevention of foodborne illness. They also ordered surfaces to be disinfected.

This was a foodborne outbreak of norovirus gastroenteritis associated with an event center catered by Caterer X in Brooklyn Park. The same norovirus sequence was identified in samples submitted from banquet attendees attending separate events and from two employees. Ongoing transmission among employees was evident. The source of contamination for banquet attendees/patrons was one or more infected food workers who had contact with ready-to-eat food items. The seasonal fruit bowl was specifically identified as the vehicle of transmission for both the football and swim banquets.