

Norovirus Gastroenteritis Associated with a Hotel

May

Hennepin County

On May 3, 2011, the City of Bloomington Environmental Health (CBEH) received a report from management at the a hotel that a number of individuals who had stayed at the hotel, including a mission group, or attended a benefit auction held at the hotel on April 30 had developed gastrointestinal illness. The Minnesota Department of Health (MDH) was contacted and an investigation was initiated immediately.

CBEH sanitarians visited the hotel on May 3 to evaluate food preparation and handling procedures, interview food workers, and collect contact information for groups that held events at the hotel from Friday, April 29 through Monday, May 2. MDH staff interviewed hotel guests about food consumption and illness history. Hotel guests who attended a benefit auction held on Saturday, April 30 received an email from the auction organizers which included MDH contact information. A case was defined as a hotel guest who developed vomiting or diarrhea (≥ 3 loose stools in a 24-hour period) after eating food prepared at the hotel. Stool samples collected from consenting hotel guests and employees were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

MDH staff interviewed 113 hotel guests, including 100 auction attendees, 8 members of a mission group, and 5 independent complainants. Sixty-one (54%) guests met the case definition. Eighteen additional guests reported illness that did not met the case definition and were excluded from analysis. Hotel guests reported illness onsets from April 30 through May 4. The median incubation period for the ill auction attendees was 37 hours (range, 9 to 87 hours). Incubation periods could not be calculated for the mission group or the independent complainants as they reported multiple meals at the hotel. The median duration of illness was 46 hours (range, 4 to 96 hours). Forty-six (77%) cases reported diarrhea, 42 (70%) reported cramps, 39 (65%) reported vomiting, 18 (30%) reported fever, and none reported bloody stools. Stool samples submitted by five ill auction attendees tested positive for norovirus GII.

Due to a lack of non-ill controls among the mission group and other hotel guests, analysis of food exposures was restricted to auction attendees. By univariate analysis, consuming fresh fruit skewers was significantly associated with illness (40 of 48 cases vs. 18 of 34 controls; odds ratio [OR], 4.4; 95% confidence interval [CI], 1.4 to 14.1; $p = 0.003$).

CBEH sanitarians interviewed 69 hotel employees. Seven, including three restaurant staff, reported recent gastrointestinal illness. A bartender reported developing diarrhea on April 28 and did not return to work until May 1. A bartender/server reported developing diarrhea and vomiting the morning of May 1 and reported working that day as a server. A server reported developing diarrhea on May 2. One banquet staff member became ill on May 2 after bartending at the benefit auction. Additional hotel staff, including an engineer, shuttle driver, and executive assistant reported illness onsets of May 1. One employee, who prepared fresh fruit served at the breakfast buffet on May 3, reported an ill household member with an illness onset of May 2. A dishwasher who was not interviewed reported an illness onset of May 3. One stool specimen submitted by the bartender who worked at the benefit auction tested positive for norovirus GII. The hotel reported that fresh fruit is peeled the night before and then sliced right before being served. The two employees that prepared the fruit skewers for the auction did not

report illness. Of note, the hotel has an employee cafeteria with a hot and cold buffet, and all employees working a full shift receive a meal from the buffet.

Nucleic acid sequencing was conducted on the five positive norovirus samples from auction attendees and the one norovirus sample from the ill hotel employee; the nucleic acid sequences were identical.

All employees with vomiting and/or diarrhea were excluded from work until 72 hours after the resolution of symptoms. The sanitarians observed bare-hand contact with ready-to-eat foods. During the investigation, sanitarians and restaurant management established a screening protocol for employee illness. The sanitarians also stressed the importance of handwashing for the prevention of norovirus transmission and ordered surfaces to be disinfected.

This was a foodborne outbreak of norovirus gastroenteritis associated with a hotel in Bloomington. While fresh fruit skewers were identified as the vehicle among auction attendees, the original source of contamination was not identified. Since the fruit on the skewers was peeled and cut at the hotel, it is more plausible that a food worker was the source of the contamination as opposed to the fruit being contaminated prior to arriving at the hotel. Hotel employees with illness onsets from April 28 through May 3 were identified, and transmission of norovirus from ill food workers to hotel guests was more evident later in the outbreak.