Norovirus Gastroenteritis Associated with a Restaurant

August Hennepin County

On August 16, 2012, Hennepin County Public Health Protection – Epidemiology (PHP-Epi) received a report of illness from the Minnesota Department of Health (MDH) regarding two persons who had eaten at a restaurant in Maple Grove on August 14, 2012 and subsequently developed gastrointestinal illness.

Hennepin County Public Health Protection Environmental Health (PHP-EH) was notified and an outbreak investigation was initiated on August 16.

On August 16, a PHP-EH environmentalist spoke with a restaurant manager and requested names from the reservation list and credit card receipts for both lunch and dinner on August 14. PHP-Epi staff interviewed restaurant patrons to obtain information on food/beverage consumption and illness history. A case was defined as a person who ate at the restaurant during the week of August 12 and subsequently became ill with vomiting and/or diarrhea (≥3 loose stools in a 24-hour period). Stool specimens were obtained from three patrons and submitted to MDH for bacterial and viral testing.

During the course of the investigation two more complaints were received from parties who had eaten at the restaurant on August 12 and August 13.

PHP-EH environmentalists visited the restaurant on August 16 to evaluate food preparation and handling procedures and to interview employees regarding illness history and job duties.

Illness histories and exposure information were obtained: six brunch patrons from August 12; seven lunch patrons from August 13 and 14; and two dinner patrons from August 14. Ten (71%) cases were identified. Additionally, one attendee met the case definition but they also had had illness in their household, and one attendee reported mild gastrointestinal symptoms that did not meet the case definition; these two attendees were excluded from further analysis.

Nine cases (90%) reported diarrhea and/or vomiting, four (40%) reported abdominal cramps, and two (20%) reported fever. The median incubation period was 33.5 hours (range, 31.5 to 41 hours). The median duration of illness was 2 days (range, 2 to 4 days) for five cases who had recovered from their symptoms at the time of the interview. All three stool specimens tested positive for norovirus GII. Nucleic acid sequencing was conducted on all three of the positive norovirus specimens; the sequences were identical.

Statistical analyses were not done due to the small number of subjects in the analysis. Cases reported eating a variety of foods for lunch or dinner, including salads, appetizers, sandwiches, sides, and desserts. Items on the Sunday brunch buffet included a variety of potatoes, pastas, meats, breads and pastries, eggs, and fruit.

Illnesses histories and job duty information were obtained from 79 restaurant employees. Sixteen employees reported having had a gastrointestinal illness in the past 2 weeks. Illness onsets ranged from August 8 to August 19. Twelve front of the house staff (host/server/bus boy) and four kitchen staff reported having vomiting and/or diarrhea.

Stool specimens were obtained from two employees. The stool specimens tested positive for norovirus GII. Nucleic acid sequencing was conducted on the positive norovirus specimens; the sequences were identical to each other and to the three patron sequences.

During the establishment visit, PHP-EH environmentalists found that the establishment did not have an illness log. Some illness reports were being noted in the manager's book, however, not all ill employees were excluded from work. PHP-EH environmentalists did not observe bare-hand contact; however, bare-hand contact with ready-to-eat foods has historically been a problem in the establishment. PHP-EH environmentalists stressed the importance of handling of food and beverages, use of gloves or utensils when handling ready-to-eat foods, good handwashing, and exclusion of ill employees to the employees of the restaurant.

Based on the number of employees that had been ill or were reporting illness, the facility sanitized all surfaces with a strong bleach solution (5,000 ppm) as recommended by MDH Environmental Health. The ice was also discarded and machines and bins sanitized.

In addition, because there were so many ill employees, an illness screening form was instituted at the beginning of each shift. All employees reporting gastrointestinal illness were excluded from work for 72 hours after symptoms had resolved. The individual screening form was used for 30 days after the outbreak began. No additional ill employees were identified.

Management implemented all corrections and trained front of the house staff on "no bare-hand contact of ready-to-eat foods", including proper handwashing, glove use, tongs, and other measures to protect these items.

This was a foodborne outbreak of norovirus gastroenteritis associated with eating at a restaurant in Maple Grove. No single food item was statistically associated with illness. The source of contamination was most likely one or more infected food workers.