Norovirus Gastroenteritis Associated with a Restaurant

November Goodhue County

On November 18, 2011, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness among a group of three patrons from two different households

who ate at a restaurant in Dennison on November 12. All three became ill with vomiting and/or diarrhea 31 to 32 hours after eating at the restaurant. Persons from the two households had no other recent meals in common. An investigation was initiated.

MDH Environmental Health (EH) specialists visited the restaurant on November 18 to evaluate food preparation and handling procedures and to inquire about employee illness, including the employee illness log. Lists of employees and their work schedules were obtained.

MDH epidemiology staff interviewed restaurant employees about recent history of gastrointestinal illness and foods consumed at the restaurant.

The restaurant owners were asked to screen employees for gastrointestinal illness when they presented to work during the investigation. Additional interventions to prevent further transmission were also implemented.

MDH EH specialists and MDH epidemiologists made several requests to the restaurant for credit card receipts for patrons who ate at the restaurant on November 12. A letter including pertinent statutes that compelled release of this information was sent by an MDH epidemiologist to the restaurant owner on November 23. MDH staff began interviewing restaurant patrons about food consumption and illness history on November 29, when the credit card receipts were provided by the restaurant.

A case was defined as a person who ate at the restaurant and subsequently developed vomiting and/or diarrhea (≥3 loose stools in a 24-hour period). Stool samples collected from consenting restaurant patrons were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

Twenty-four restaurant patrons were interviewed: three from the initial complaint and 21 from credit card receipts. Seven (29%) patrons met the case definition. All seven cases reported diarrhea, five (71%) reported abdominal cramps, four (57%) reported vomiting, one (14%) reported fever, and none reported bloody stools. Two (29%) cases visited a medical provider. The median incubation period was 32 hours (range, 10 to 37 hours). The median duration of illness was 71 hours (range, 50 to 78 hours).

MDH collected stool specimens from two cases (both from one household of the original complaint) who ate at the restaurant on November 12. One of the two stool specimens tested positive for norovirus GII.

By univariate analysis, eating chicken wings (3 of 7 cases vs. 0 of 17 controls; odds ratio [OR], undefined; 95% confidence interval [CI] lower limit, 1.7; $p = 0.02$); the mahi mahi dinner entrée (3 of 7 cases vs. 0 of 17 controls; OR, undefined; 95% CI lower limit, 1.7; $p = 0.02$); mashed potatoes (4 of 7 cases vs. 1 of 17 controls; OR, 21.3; 95% CI, 1.7 to 554; $p = 0.01$); any entrée from the Dinner menu (4 of 7 cases vs. 2 of 17 controls; OR, 10.0; 95% CI, 1.1 to 96.9; $p = 0.04$); and, a combined variable that included either an entrée from the Dinner menu or from the Saturday Specials menu (7 of 7 cases vs. 4 of 17 controls; OR, undefined; 95% CI lower limit, 3.9; $p = 0.001$) were significantly associated with illness. Eating an appetizer (6 of 7 cases vs. 6 of 17 controls; OR, 11.0; 95% CI, 1.1 to 275; $p = 0.07$) approached significance. In an analysis stratified by whether or not a subject ate an item from the Dinner or Saturday Specials menu, eating appetizers, chicken wings, mashed potatoes, or the mahi mahi dinner entrée were no longer associated with illness. A meaningful multivariate analysis was not possible.

All entrees in the Dinner and Saturday Specials menus were served with French fries or small baked potatoes, a dinner roll, and a choice of soup, salad, or coleslaw.

During the environmental health assessment, employee handwashing techniques were observed and deemed to be appropriate; the handwashing station was accessible and properly supplied. Although gloves were available, they were not required or consistently used to minimize bare-hand contact with ready-to-eat foods. There was an employee illness log available, but it was not being maintained. Illness histories and job duty information were obtained from all 11 employees. No employees reported having had gastrointestinal illness previous to or on the implicated meal date.

MDH sanitarians stressed the importance of proper handling of food and beverages, use of gloves or utensils when handling ready-to-eat foods, good handwashing, and exclusion of ill food handlers to the employees of the restaurant.

This was an outbreak of norovirus gastroenteritis associated with a restaurant in Dennison, Minnesota. A specific food vehicle was not identified, but eating an entrée from the Dinner or Saturday Specials menus was statistically associated with illness. Since none of the restaurant employees reported being ill, the initial source of the outbreak was not identified. However, bare-hand contact with ready-to-eat foods could have played a role in contamination of food.