Norovirus Gastroenteritis Associated with a Restaurant

September Chisago County

On September 23, 2011, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness in four of four individuals from separate households who had eaten supper at a restaurant in Chisago City on September 19. The individuals all had different main menu items, but all had eaten a salad from the salad bar. An investigation was initiated.

On September 26, the foodborne illness hotline received a second complaint about the restaurant; six of nine individuals from three households became ill after eating there on September 18.

MDH staff conducted telephone interviews with callers to the foodborne illness complaint hotline and their meal companions regarding illness history and food items eaten at the restaurant. Credit card

receipts were not available from the restaurant for September 18-19. An additional patron group was asked by one of the initial complainants to call MDH.

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

MDH environmental health specialists visited the restaurant on September 26 to perform an environmental assessment and interview employees regarding recent gastrointestinal illness history and work duties at the restaurant.

Interviews were conducted with 14 patrons from three groups representing eight households. Nine cases were identified; all had eaten at the restaurant on September 18 (n=5) or September 19 (n=4). An additional patron reported mild symptoms that did not meet the case definition and was excluded from further analyses. Of the nine cases, all had diarrhea, eight (89%) had cramping, six (67%) had vomiting, three of six (50%) had fever, and none had bloody stools. The median incubation period was 36 hours (range, 9.5 to 55.5 hours). For the three cases who had recovered at the time of interview, the median duration of illness was 53 hours (range, 51 to 116 hours). One of the cases visited an emergency department and another saw a healthcare provider; none were hospitalized.

Eating a salad from the salad bar was significantly associated with illness (9 of 9 cases vs. 0 of 4 controls; odds ratio, undefined; $p = 0.001$). No other menu items were significantly associated with illness.

All 11 restaurant employees were interviewed. None of the employees reported being ill in the time preceding the complainant meal dates. However, a chef had diarrhea on September 16 and September 20 according to another employee and the staff illness log. The employee was seen by a healthcare provider and diagnosed with diverticulitis. Additionally, two employees reported caring for an ill child who had vomiting onset on September 20. Another chef cared for a family member who became ill with diarrhea, vomiting, and cramping on September 14.

Stool samples were obtained from six patrons from six households; five stool samples tested positive for norovirus GII.4 New Orleans. Four of the positive specimens (representing both meal dates) had identical viral nucleic acid sequences; the fifth positive specimen had a sequence that differed from the others by one base pair. Stool samples collected from the restaurant's three chefs on September 28 were negative for norovirus, *Salmonella*, *Shigella*, *Campylobacter*, and Shiga toxin-producing *E. coli*.

The environmental assessment at the restaurant noted that salad bar items are prepared in the evening and morning, primarily by the restaurant's chefs. Other employees help prepare salad bar items throughout the day as needed. The produce for the salad bar is washed, but the employees do not generally wear gloves during the preparation process.

EH specialists discussed with restaurant management cleaning of non-food contact surfaces, practicing good hand hygiene, and limiting bare-hand contact with ready-to-eat foods. An employee illness screening form was used for the weekend starting on September 23.

This was an outbreak of norovirus gastroenteritis associated with a Chisago City restaurant. Salad from the restaurant’s salad bar was identified as the vehicle. Bare-hand contact with salad bar items by ill employees or employees with illness in their households was the likely source of contamination.