

Norovirus Gastroenteritis Associated with a Restaurant

March

Washington County

On March 12, 2012, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness in one of two individuals who had eaten at a restaurant in Woodbury on March 10.

On March 13, Washington County Public Health and Environment (WCPHE) received and notified MDH of a second independent complaint of illness among three of five individuals from two households who had also eaten at the restaurant on March 10. All four ill individuals had onset of diarrhea and vomiting 26 to 34 hours after eating at the restaurant. The same restaurant was the cause of a norovirus outbreak in January 2012 that resulted in extensive employee and staff education. An investigation was initiated.

WCPHE environmental health specialists visited the restaurant on March 13 to conduct a kitchen inspection, and inquire about ill employees and complaints. At that time, restaurant management reported that they had not received any patron complaints, and environmental health staff provided the restaurant with a complaint log. Patron credit card receipts from March 10 were obtained from the restaurant. MDH staff interviewed patrons regarding food/beverage consumption and illness history.

Environmental health staff from WCPHE maintained a daily presence at the restaurant during weekdays from March 13 through March 20 to provide management and staff education, conduct employee interviews, and monitor food handling and preparation practices. Employees were interviewed regarding recent illness history and work duties at the restaurant. WCPHE staff provided written norovirus fact sheets and hand hygiene information to employees interviewed at the restaurant. Restaurant management staff were instructed to prospectively monitor employee illness using employee health screening logs.

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

On March 14, two additional complaints were identified by on-site WCPHE environmental health staff who called the restaurant on March 12 and March 13 but had not been reported to WCPHE or MDH previously. The complaints were retroactively added to the complaint log given to the restaurant on March 13. The March 12 complaint was of gastrointestinal illness in three individuals who had eaten at the restaurant on March 9. The recorded telephone number for the March 13 complainant was incorrect, and no further follow-up was possible. The complainant had reported eating chicken nachos at the restaurant and developing "flu symptoms."

A total of 32 restaurant patrons were interviewed: 8 from the 3 complaint calls and 24 from credit card receipts. Nine patrons met the case definition, including three cases from separate households identified using the March 10 credit card receipts. Four patrons reported mild illness that did not meet the case definition and were excluded from further analyses. Of the nine cases, all reported diarrhea, seven (78%) reported vomiting, seven (78%) reported abdominal cramps, three (75%) of four reported fever (75%), and none reported bloody stools. The median incubation period was 28.5 hours (range, 20 to 50 hours). The median duration of illness for the three cases who had recovered at the time of interview was 44 hours (range, 11 to 58 hours). No cases sought medical care.

Four case stool specimens tested positive for norovirus at the MDH PHL. Three stool samples (two from one complainant household who ate at the restaurant on March 9, and one identified using the March 10 credit card receipts) tested positive for norovirus GII.1 with identical region D nucleic acid sequences. The fourth specimen, from an individual from a separate household identified using the March 10 credit card receipts, tested positive for norovirus GII.4 New Orleans. The region D sequence for this norovirus was five base pairs different from the GII.4 Sydney norovirus that was found in specimens during the January outbreak at this restaurant.

By univariate analysis, eating an entrée that contained fresh lettuce (7 of 9 cases vs. 4 of 19 controls; odds ratio, 13.1; 95% confidence interval, 1.9 to 89.5; $p = 0.01$) was significantly associated with illness. Menu items eaten by cases that contained fresh lettuce included: chicken quesadilla, beef nachos, southwest pizza, salad, burger, chicken wrap, and southwest taco salad. No other exposures were significantly associated with illness.

All employees were interviewed; none reported recent gastrointestinal illness or illness in their households. An incomplete and inaccurate employee contact list hindered the employee interview process. No ill employees were identified during prospective employee health screening. The restaurant's employee illness log showed no illness since February 10.

During the March 13 inspection, bare-hand contact was not observed; employees were observed wearing gloves and washing their hands. However, employees were observed wearing gloves during non-food activities (e.g., sweeping and mopping), indicating lack of understanding of appropriate glove use. The restaurant used three kinds of lettuce: iceberg lettuce that was shredded on-site with a slicer, chopped head lettuce, and pre-washed, pre-cut, bagged romaine lettuce (this lettuce was used for chicken Caesar salad and Caesar wraps only). The lettuce station also had several other items (e.g., green onions, jalapeños, tomatoes, and shredded cheese) and was usually staffed by one person. The person at the station on March 10 reported no illness. Lettuce for burger orders was typically prepared by the grill or expo employee. A three-compartment sink at the restaurant used to wash produce and cool various items was dirty. The sink and the entire salad station were washed and sanitized.

This was an outbreak of norovirus gastroenteritis associated with a restaurant. Eating lettuce at the restaurant was significantly associated with illness. No illness in employees or employee family members was reported. Improper use of gloves by employees may have contributed to the outbreak.