Norovirus Gastroenteritis Associated with a Restaurant

January

Washington County

On January 11, 2012, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness among four people in a party of nine who had eaten at a restaurant in Woodbury on January 6. The complainants had nothing else in common besides their meal at the restaurant. By January 12, MDH staff were able to interview two of the ill complainants. Both had symptoms consistent with viral gastroenteritis. Washington County Public Health and Environment (WCPHE) staff were notified, and an investigation was initiated.

WCPHE environmental health specialists visited the restaurant on January 12 to conduct a kitchen inspection, inquire about ill employees, determine if the restaurant had received other complaints, and obtain patron credit card receipts. MDH staff interviewed patrons regarding food consumption and illness history.

WCPHE and MDH staff maintained a daily presence at the restaurant from January 12 through January 18 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.

Management staff were instructed to monitor for employee illness using employee health screening logs in order to prevent ongoing issues at the restaurant. WCPHE staff gave written orders to the restaurant on January 20 and conducted a follow-up inspection on January 30.

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 two patrons were submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral testing.

A total of 75 restaurant patrons were interviewed, including 7 from the original complainant group. Ten patrons met the case definition. Six patrons reported mild illness that did not meet the case definition and were excluded from further analyses. Of the 10 cases, 8 (80%) reported diarrhea, 7 (70%) reported cramps, 6 (60%) reported vomiting, and 3 (30%) reported fever. No cases reported bloody stools and none sought medical care. The median incubation period was 24.5 hours (range, 20.5 to 48 hours). The median duration of illness was 39 hours (range, 6 to 95 hours).

Two case stool specimens, both from the original complainant group, tested positive for norovirus GII.4 Sydney with identical region D nucleic acid sequences.

By univariate analysis, eating buffalo chicken pizza was statistically associated with illness (2 of 8 cases vs. 0 of 55 controls; odds ratio [OR], undefined; $p = 0.01$), though only a small number of cases could be explained by this exposure. Consumption of an entrée that contained fresh lettuce (5 of 10 cases vs. 10 of 52 controls; OR, 4.2; 95% confidence interval [CI], 1.02 to 17.4; $p = 0.05$) was also statistically associated with illness. Consuming the Works Burger (3 of 10 cases vs. 4 of 55 controls; OR, 5.5; 95% CI, 1.01 to 29.7; $p = 0.06$) approached significance. The Works Burger could be ordered with lettuce, and this was captured in the interviews. All three cases who had a Works Burger ordered it with lettuce. No other exposures were significantly associated with illness.

WCPHE staff began an on-site investigation at the restaurant on January 12, starting with review of employee illness logs at the restaurant. Ten employees had been ill between January 2 and 10; at least two of these reported symptoms of diarrhea and vomiting. Management staff at the restaurant indicated that employees were sent home after experiencing symptoms in the restaurant. Employee contact lists were not immediately available, and management staff started putting together lists of employees. All employees were to be screened for gastrointestinal illness by management upon arrival to work. Employees experiencing diarrhea and/or vomiting were to be excluded until 72 hours after their recovery.

A "no bare-hand contact" policy was in place at the restaurant according to management; however, bare-hand contact and improper glove use by employees was noted. Employees were observed not washing hands when changing gloves, and overall handwashing was limited. One handwashing sink was blocked by a large garbage can and kitchen equipment. There were not adequate handwashing stations for the number of employees. A strict no bare-hand contact requirement for all ready to eat (RTE) foods was immediately put into place.

WCPHE staff continued follow-up on January 13. Restaurant management was reluctant to have employee interviews conducted on-site because it would disrupt business operations. WCPHE staff informed management that interviews of all employees were required. Management staff had not been screening employees for illness as instructed on the previous day, and management staff had not been informed by the previous day's manager about requirements. Bare-hand contact with RTE foods was observed. The "no bare-hand contact" requirement was again discussed at length with management.

WCPHE interviewed employees on-site and by phone as contact information became available. Minnesota Department of Health staff discussed obtaining patron credit card receipts with the restaurant and arranged for pick up of the receipts. MDH staff emphasized the importance of timely availability of the receipts to continue the outbreak investigation and identify food items of concern, so that food preparatory changes could result in control of the outbreak. Management staff said they could have patron receipts ready the following day.

On Saturday, January 14, MDH staff arrived at the restaurant to collect credit card receipts. Receipts were not available. Numerous issues were identified by MDH staff, including an ill employee at work who was immediately sent home, bare-hand contact with RTE foods, a blocked handwashing sink in the kitchen, and lack of management knowledge regarding the outbreak investigation and person-in-charge requirements (including employee screening). One kitchen worker put on gloves when MDH staff were watching, but once the staff person left discarded the gloves and was not wearing them when she returned minutes later. This employee was handling RTE foods. Employees were also rolling silverware into napkins with bare hands. After lengthy discussion with the restaurant employees and managers about the importance of handwashing, another handwashing sink was found blocked in the kitchen. Extensive discussion about viral gastroenteritis, handwashing, and the current outbreak took place with management staff and employees prior to MDH staff leaving the restaurant.

On Sunday, January 15, WCPHE staff were at the facility to continue follow-up. Improper glove use and cross-contamination issues with raw chicken and raw eggs were observed, but other issues had been addressed. Employee screening was taking place, and management was informing employees about the need to stay home if they have been ill. Handwashing was more frequent, and addition of another handwashing sink in the server area was discussed with management.

On January 16, MDH staff picked up credit card receipts and noted no-bare hand contact among employees. Handwashing was also more frequent. WCPHE staff were at the restaurant on January 17 and 18 to continue the investigation and finish employee interviews. Restaurant management was directed to continue employee screening through January 24 unless additional employee illnesses were identified (in which case screening would be extended).

On January 20, a letter from WCPHE management with written orders was provided to the restaurant. The letter included "no bare-hand contact" requirements, information on maintaining access and supplies for hand sinks, employee training materials, person-in-charge requirements, employee screening requirements, and addition of another handwashing sink. A walk-through of the establishment was conducted, and orders in the letter were discussed on-site.

On January 30, WCPHE staff conducted a follow-up inspection at the restaurant. Bare-hand contact was again discussed in detail. Employee screening forms had been discontinued, and there had been no additional illnesses. Use of the employee illness log and tracking and posting employee illness policies were discussed with management.

A total of 102 active employees were identified at the restaurant. Interviews were conducted with 100 of those employees. Of those, 15 had been ill since December 26 with symptoms of vomiting and diarrhea. Four additional employees had been mildly ill with symptoms of nausea and cramps.

This was an outbreak of norovirus gastroenteritis associated with a restaurant in Woodbury. Eating lettuce and eating the buffalo chicken pizza at the restaurant were significantly associated with illness. Substantial numbers of ill employees were reported. Improper use of gloves, improper handwashing, and poor management practices contributed to the outbreak.