Norovirus Gastroenteritis Associated with a Deli

September Multiple counties

On September 19, 2017, the Minnesota Department of Health (MDH) foodborne illness hotline received an email from a person reporting that 8 of 10 attendees of an event on September 14 with box lunches prepared by a deli had become ill with vomiting and/or diarrhea. The complainant reported that the lunches were purchased from the St. Paul location. Later that day, another email

complaint was received from another group that had also purchased box lunches on September 14, but from the Spring Lake Park location. The MDH Environmental Health Division (EH) and Anoka County Community Health & Environmental Services (ACCHES) were notified, and an investigation was initiated.

Sanitarians from MDH EH visited the St. Paul location, and sanitarians from ACCHES visited the Spring Lake Park location to conduct an environmental health assessment, check the employee illness log, interview food workers, ask about additional patron complaints, and gather delivery orders and credit card receipts.

MDH epidemiologists interviewed patrons of both locations about food/beverage consumption and illness history. A case was defined as a restaurant patron who subsequently developed vomiting and/or diarrhea (≥3 stools in a 24-hour period). Stool samples from consenting patrons and employees were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

Thirty patrons of the St. Paul location were interviewed; four cases met the case definition. An additional three patrons who reported mild illness, and one patron who was possibly a secondary case, were excluded from further analyses. Thirty patrons of the Spring Lake Park location were also interviewed; 17 met the case definition, and an addition two patrons reported mild illness and were excluded from further analyses. A total of 21 cases were identified. Nineteen (90%) cases reported diarrhea, 18 (90%) of 20 abdominal cramps, 16 (76%) vomiting, and 8 (40%) of 20 fever. The median incubation period for cases was 32.5 hours (range, 10 to 50 hours). The median duration of illness was 48 hours (range, 16 to 111 hours) for the 13 cases who had recovered by the time of interview. Four cases sought medical attention; three visited an emergency room. No cases were hospitalized.

Three stool specimens collected from patrons that were part of two box lunch groups ordered from the Spring Lake Park location were positive for norovirus GII. Two of the specimens from the same group were positive for norovirus GII.P16-GII.4 Sydney and had identical nucleic acid sequences. The remaining isolate was not able to be sequenced.

During the investigation it was discovered that the first complainant group that had initially reported ordering box lunches actually ordered them from the Spring Lake Park location. However, four cases identified through receipts and delivery orders were associated with the St. Paul location; two were part of catering groups, and two were restaurant patrons. Meal dates for the St. Paul cases were September 13 (n=2) and September 14 (n=2). In a univariate analysis including cases and controls from the St. Paul location with meal dates of September 13 or 14, no food item was significantly associated with illness. All four cases ate a cookie or dessert bar. Consumption of a cookie had an elevated odds ratio (2 of 3 cases vs. 3 of 9 controls; odds ratio [OR], 4.0; 95% confidence interval [CI], 0.3 to 64.0; p = 0.52.

The Spring Lake Park location has multiple options for box lunches. Both complainant groups ordered Plan B lunches which include a sandwich, deli salad (potato, coleslaw, or pasta), fruit, and a brownie. Plan B is the only plan that includes pasta salad. Epidemiologists interviewed members of two other groups that had ordered Plan A lunches (sandwich, chips, cookie) from the Spring Lake Park location, and found no illness. In the univariate analysis including patrons from the Spring Lake Park location, consumption of fruit (13 of 16 cases vs. 0 of 4 controls; OR, undefined; p = 0.007) was associated with illness. Consumption of pasta salad (13 of 17 cases vs. 1 of 4 controls; OR, 9.8; 95% CI, 0.8 to 121.8; p =

0.09), or a brownie (9 of 16 cases vs. 0 of 4 controls; OR, undefined; p = 0.09) had elevated odds ratios. Only the Plan B box lunches had fruit, pasta salad, and a dessert bar. The controls did not order Plan B lunches. In a multivariate model, no food was independently associated with illness.

All 24 employees of the St. Paul location were interviewed; five reported recent gastrointestinal illness. One employee vomited at the facility on September 12, one employee had "soft stools" throughout September, one employee reported vomiting and diarrhea from September 8 to 15, one employee reported diarrhea on September 6 and 7 due to a medical procedure, and one employee reported nausea related to allergies during September 10 to 16. The employee who vomited at the facility went home afterwards. The employee who recovered on September 15 did return to work that day. No other employees reporting working while ill. No stool kits were received at the MDH PHL from employees.

Sanitarians discussed exclusion, hand washing, sanitizer use, and eliminating bare-hand contact with ready-to-eat foods. Multiple food contact surfaces were in contact with potentially hazardous foods and were not cleaned with the required frequency. The facility was cleaned and disinfected on September 19.

Ten of 11 employees of the Spring Lake Park location were interviewed. One employee was on leave and not able to be interviewed. One employee reported chronic diarrhea due to irritable bowel syndrome. During the environmental health assessment it was noted that there was no sanitizer in the sanitizer bucket. Management was instructed to clean and sanitize, and eliminate bare-hand contact with ready-to-eat foods.

No employees are shared between the two locations. The only food that is shared is the pasta salad. Two to three different pasta salads are made daily at the St. Paul location. An employee of the Spring Lake Park location picked up pasta salad as needed from the St. Paul location. This happened about twice per month. Pasta salad would be portioned out first thing in the morning into 5.5 oz cups using a stainless steel spoon. The cups would then be placed in a reach-in cooler, the walk-in cooler or the display cooler depending on demand for that day. Pasta salad was picked up from the St. Paul location on September 11 or 12 to serve at the Spring Lake Park location.

As a result of this outbreak, the Spring Lake Park location will no longer be receiving any pasta salad from the St. Paul location.

This was a foodborne outbreak of norovirus gastroenteritis associated with two locations of a deli. The vehicle of transmission was not confirmed at either location. However, the most likely explanation for the outbreak was one or more ill food workers at the St. Paul location contaminated pasta salad that was served at the Spring Lake Park location, and that ill food workers contaminated ready-to-eat foods that were served at the St. Paul location as well.