

## **Norovirus Gastroenteritis Associated with a Restaurant**

January – February

Hennepin County

On February 3, 2020, the City of Bloomington Environmental Health Division (CBEH) received a complaint of gastrointestinal illness among members of a large group that ate at a restaurant on January 31. The complainant reported that 11 of 16 individuals from 5 different households became ill with vomiting and diarrhea after dining in one of the restaurant's private party rooms, and the group had no other recent common meals or exposures. Additionally, the group brought two chocolate cakes to the restaurant; one was homemade and the other was purchased at a grocery store. The complaint was sent to the Minnesota Department of Health (MDH), and an investigation was initiated on February 4.

CBEH sanitarians visited the restaurant on February 5 to conduct an environmental assessment, implement employee illness screening, interview food workers, instruct the establishment to thoroughly clean and sanitize for norovirus, and collect credit card receipts from January 31. Inspectors from the Minnesota Department of Agriculture (MDA) visited the grocery store's bakery to conduct an environmental assessment, review employee illness logs, and provide education on norovirus prevention.

MDH staff interviewed restaurant patrons to obtain information on illness history and food and beverage consumption. A case was defined as an individual who developed vomiting and/or diarrhea ( $\geq 3$  loose stools in a 24-hour period) after eating food from the restaurant. Stool samples collected from consenting individuals who met the case definition were submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral testing.

One hundred and forty-six patrons were interviewed, and 11 (7%) met the case definition; 7 (64%) of the cases were from the original complaint group. Nineteen patrons had illness symptoms but either did not meet the case definition ( $n=8$ ), had an incubation period less than 12 hours ( $n=3$ ), developed gastrointestinal symptoms over 60 hours after their meal date ( $n=5$ ), or had an illness onset date prior to their meal date ( $n=3$ ); these individuals were excluded from further analyses. The median age of cases was 24 years (range, 1 to 73 years). The median incubation period for cases was 32.5 hours (range, 12 to 50.5 hours). Nine (82%) cases reported diarrhea, six (55%) reported vomiting, six (55%) reported cramps, one (9%) reported fever, and none reported bloody stools. The median duration of illness for the eight cases who had recovered at the time of interview was 26 hours (range, 12 to 72 hours). One (9%) case reported visiting a healthcare provider for their illness. No cases were hospitalized or died. One case submitted a stool sample to the MDH PHL, where it tested positive for norovirus GII.4 Sydney[P16].

Ten (91%) cases reported eating a build-your-own pizza. In the univariate analysis, consumption of build-your-own pizza was significantly associated with illness (10 of 11 cases vs. 46 of 114 controls; odds ratio [OR], 14.8; 95% confidence interval [CI], 1.8 to 119.4;  $p = 0.002$ ). Consumption of garlic bread approached statistical significance (5 of 11 cases vs. 23 of 114 controls; OR, 3.3; 95% CI, 0.9 to 11.8;  $p = 0.07$ ). Other menu items cases reported eating were boneless chicken wings, the Five Meat pizza, and meatball hoagie on grain bread. No other menu items were significantly associated with illness.

Six (86%) cases from the original complaint group reported eating one or both of the chocolate cakes brought into the restaurant (four cases ate only the cake purchased at the grocery store, one ate only the homemade cake, and one ate both cakes). The homemade chocolate cake was baked by a case who became ill on February 2, and there was no evidence of recent illness in the case's household prior to the pizza party. The store-bought chocolate cake was purchased from the bakery on January 31. These chocolate cakes were only available to the original complaint group and no other restaurant patrons. A lack of controls among the original complaint group precluded a meaningful statistical analysis of whether consuming any chocolate cake was associated with illness.

CBEH sanitarians conducted an environmental assessment at the restaurant on February 5. Violations identified during this assessment included: absence of personal protective equipment for employees used when cleaning and sanitizing vomit and diarrheal incidents; low concentrations of quaternary ammonium compounds (quats) in sanitizer buckets and the quats dispenser needed changing; unlabeled spray bottle of sanitizer by slicer; inadequate cleaning of sinks in employee bathrooms, garbage cans, under the dishwasher, and door to employee men's bathroom. The sanitarians did not note any problems with handwashing, glove use, nor bare-hand contact with ready-to-eat foods in their assessment.

CBEH sanitarians interviewed 45 (98%) of 46 restaurant employees on February 5. Five employees reported mild illness, including 1 episode of diarrhea ( $n=2$ ), nausea ( $n=2$ ), fever ( $n=2$ ), and headache ( $n=1$ ). One delivery driver reported vomiting the morning of February 1, but reported it was from drinking alcohol the night before. Another crew member reported that a co-worker became ill with vomiting at the restaurant sometime during January 4-10, and that they helped clean up the incident. The employee who reportedly vomited at the restaurant did not report any recent illness; however, they did report that a household member had been ill with vomiting starting on February 8.

MDA inspectors visited the grocery store on February 11 to conduct an environmental assessment of the bakery. The inspector discussed norovirus prevention strategies, including hand hygiene, limiting bare-hand contact with ready-to-eat foods, and the illness policy with bakery employees. None of the three cake decorating employees reported illness in the 14 days prior to February 1, and the bakery was maintaining illness logs. The inspector observed handwashing and good glove use among cake decorators to prevent bare-hand contact with cakes. No violations were identified during the assessment.

This was an outbreak of norovirus gastroenteritis associated with a restaurant in Bloomington. Consuming the build-your-own pizza was statistically associated with illness. The most plausible source of contamination was an infected food worker, but this could not be confirmed.