

Norovirus Gastroenteritis Associated with Oysters

February

Hennepin County

On March 3, 2017, the Minnesota Department of Health (MDH) received notification from the Minneapolis Health Department (MHD) regarding two independent complaints of patron illness forwarded to their office by restaurant management. Two of two people were ill from a group who ate oysters and beef tartare on February 21, and four of seven were ill from a group who ate oysters and several other entrée items on February 24. Hennepin County Public Health Epidemiology (HCPH-Epi) was contacted, and an investigation was initiated.

A MHD environmentalist visited the restaurant on March 3 to interview employees, check the employee illness log, review food preparation procedures, and gather additional patron contact information from February 21 to February 25. Information about oysters was gathered, including supplier(s), source(s), and shellstock tags.

The Minnesota Department of Agriculture (MDA) contacted the restaurant's seafood distributor regarding shellstock tags for oysters delivered during the period of interest.

MDH epidemiologists interviewed patrons from the original complaints, and MDH and HCPH epidemiologists interviewed patrons from Open Table reservations from February 19 to February 25. Patron receipts were also requested specifically for parties that ordered oysters. A case was defined as a restaurant patron who subsequently developed vomiting and/or diarrhea (≥ 3 stools in a 24-hour period) after eating at the restaurant. Stool samples from consenting patrons were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

Four patrons from the original complaints and 55 patrons identified through reservation lists were interviewed. Nine individuals met the case definition. An additional three patrons reported illness with incubation >60 hours from the restaurant meal ($n=2$) or mild symptoms ($n=1$) and were excluded from further analysis. Eight (89%) cases reported abdominal cramps, seven (78%) diarrhea, six (67%) vomiting, and five (55%) fever. No cases were hospitalized or died. Meal dates ranged from February 21 through February 24. The median incubation time from the restaurant meal was 39.5 hours (range, 25 to 45 hours). The median duration of illness was 38 hours (range, 16 to 118 hours) for the eight cases who had recovered by the time of interview. Two ill patrons submitted stool specimens to the MDH PHL; both were positive for norovirus GII.4 untypeable with identical Region C nucleic acid sequences.

In a univariate analysis, consumption of raw oysters was significantly associated with illness (9 of 9 cases vs. 12 of 50 controls; $p<0.001$). No other food items were significantly associated with illness.

All 72 restaurant employees were interviewed, and 3 (4%) reported recent gastrointestinal illness. One employee was ill with diarrhea on February 25. Another had diarrhea on March 4. One employee reported one episode of diarrhea on March 3 after taking antibiotics for a respiratory infection. None of the employees reported working while ill. The facility was maintaining an illness log, which contained an entry for one of the ill employees, and an employee with stomach pain (no diarrhea or vomiting) on February 21.

During the environmental assessment, the environmentalist did not note any problems with bare-hand contact with ready-to-eat foods, or issues with handwashing. It was recommended that the facility clean and sanitize with a product effective against norovirus, keep hand sinks operational and fully-stocked, and continue to maintain employee illness logs with symptom information. Employees were screened prospectively as they arrived for work during the outbreak from March 3 through March 9.

Shellstock tags for oysters that may have been served during the case meal dates were provided by the restaurant and seafood supplier. Oysters were sourced from Massachusetts (Barnstable, Duxbury, and Kingston) with harvest dates on February 14 and February 20, Canada (New Brunswick) with harvest date on February 17, and Washington State (Hood Canal/Calm Cove) with harvest dates from January 15 through February 12. The restaurant was unable to determine which oysters were served in the restaurant on the meal dates of interest. One case reported that a server told them the oysters were “West Coast” oysters; however, the restaurant’s chef thought it more likely that the Massachusetts or New Brunswick oysters had been used during that time period. MDH and MDA contacted the United States Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC), and several coastal states near these harvest areas; no connection between the Minnesota outbreak and national outbreaks or harvest area closures was identified.

This was a foodborne outbreak of norovirus gastroenteritis associated with a restaurant in Minneapolis. Raw oysters served at the restaurant that were sourced from a growing area in either Washington, Massachusetts, or New Brunswick were implicated as the vehicle of transmission.