MINNESOTA MDH DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

Outbreak of Norovirus Gastroenteritis Associated with Jimmy John's in Apple Valley, Minnesota April 2009

Background

On April 9, 2009, the Minnesota Department of Health (MDH) foodborne illness hotline received a complaint of gastrointestinal illness among co-workers who all ate sandwiches delivered by Jimmy John's in Apple Valley on April 7. According to the complainant, about half of the 30 people who ate sandwiches later became ill with diarrhea and vomiting. Both turkey and ham sandwiches with lettuce, tomato, and mayonnaise were delivered by the restaurant. No other common food items were available during the meal. A second independent complaint of illness was received on April 9 from two patrons who had also eaten at the restaurant on April 7 and had no other recent meals in common; both ate vegetarian subs and later became ill with vomiting (one also developed diarrhea). MDH Environmental Health Services (EHS) was contacted and an outbreak investigation was initiated in April 9. On April 10, a third independent complaint of illness was received from a patron who had eaten a turkey sub from the restaurant on April 7 and later developed vomiting and diarrhea.

Methods

A list of contact information for co-workers from the first complainant group was provided to MDH. In addition, a list of customers who had sandwiches delivered on April 6 was obtained from the restaurant. Staff from MDH contacted individuals from the first complainant group as well as a random selection of delivery customers from April 6 to obtain information about food and beverage consumption and illness history. A case was defined as a patron of Jimmy John's who developed vomiting and/or diarrhea (≥3 loose stools in a 24-hour period) within 60 hours of eating food from the restaurant. Stool specimens were obtained from consenting cases and submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral testing.

A sanitarian from MDH EHS visited the restaurant to evaluate food preparation and handling procedures and to conduct employee interviews. Foodworkers who reported recent gastrointestinal symptoms were also asked to submit stool specimens to the MDH PHL for bacterial and viral testing.

Results

Illness histories and exposure information were obtained from 27 restaurant patrons and 15 (56%) met the case definition. Ten of the cases were associated with the first complainant group, three cases were associated with the second and third complainant groups, and two cases were associated with the list of delivery customers. Two people reported mild gastrointestinal symptoms that did not meet the case definition and were excluded from further analysis. Thirteen cases ate food from the restaurant on April 7, one ate food from the restaurant on April 6, and one ate food from the restaurant on both days. Among the cases, 14 (93%) reported diarrhea, 13 (87%) reported cramps, 11 (73%) reported vomiting, and 6 (67%) of 9 reported fever. The

median incubation period was 30 hours (range, 16 to 34 hours). The incubation period could not be assessed for the patron case who ate at Jimmy John's on both April 6 and April 7. Duration of illness information was only available for three cases; the duration of illness for each of those three cases was 41, 48, and 48 hours, respectively. Four stool samples were collected from cases; all were positive for norovirus Genogroup II.
Ten controls were recruited; six were from the original complainant group, and four were from the delivery list. Meaningful ingredient-specific analysis could not be performed because all the cases and controls from the first complainant group ate one of two sandwich types with the same toppings.

The restaurant inspection conducted by MDH EHS on April 9 indicated there were temperature violations on the sandwich preparation table, the restaurant was not sanitizing cutting boards every 4 hours, and an employee illness log was not being maintained.

Illness histories and job duty information were obtained from all 18 restaurant employees. Three employees reported recent symptoms of gastrointestinal illness. Employee 1 reported onset of vomiting at work in the evening on April 7. Employee 1 did not work on April 8 or April 9. Employee 2 reported onset of diarrhea and vomiting at work in the evening on April 8 (and was excluded from work until 72 hours after recovery). Employee 3 reported onset of vomiting in the morning on April 10 and was also excluded for 72 hours after recovery. Only Employee 3 reported work duties that included regularly preparing ingredients and sandwiches, although Employees 1 and 2 reported occasionally helping to prepare or wrap sandwiches. Employee 2 submitted a stool specimen which was positive for norovirus Genogroup II. Nucleic acid sequencing performed on the specimens from the four positive patrons and one positive employee indicated that the sequences were all identical.

Conclusions
This was a foodborne outbreak of norovirus gastroenteritis associated with Jimmy John's restaurant in Apple Valley. A specific sandwich ingredient was not implicated; however, transmission likely occurred through one or more of the ready-to-eat sandwich toppings. Several ill employees were identified, including one from whom the outbreak strain of norovirus was recovered. These illnesses suggest norovirus transmission among the foodworkers, who were likely the ultimate source of contamination. Although none of the ill employees reported an onset date prior to the meal date of the cases, one employee reported an onset date on April 7 (the same day that most of the identified cases ate food from the restaurant). Earlier transmission could have been due to unidentified illness in another foodworker.