

Norovirus Gastroenteritis Associated with a High School Football Game

September

Anoka County

On September 5, 2011, the Minnesota Department of Health (MDH) on-call epidemiologist received a call from a physician reporting vomiting and diarrhea among several members of High School A football team. The physician also reported that several members of the team they had played on September 1, High School B, were also ill with similar symptoms. Epidemiologists from the Foodborne, Vectorborne, and Zoonotic Diseases Unit were notified, and an investigation was initiated.

A list of all players was obtained from High School A, and a list of players who had reported being ill was obtained from High School B.

Staff from MDH interviewed players to obtain information on food/beverage consumption and illness history. A case was defined as a football player who developed vomiting and/or diarrhea (≥ 3 loose stools in a 24-hour period) after playing in or attending the September 1 football game. Stool samples collected from consenting players were submitted to the MDH Public Health Laboratory for bacterial and viral testing.

MDH staff interviewed 60 players, including 48 from High School A and 12 from High School B. Twenty-nine (48%) players met the case definition, including 17 from High School A and 12 from High School B. Three additional players that reported mild illness and one secondary case with a reported incubation period of 5 days were excluded from further analysis.

Twenty-five (86%) cases reported diarrhea, 21 (72%) reported vomiting, 13 (46%) of 28 reported fever, and 11 (38%) reported cramps. The median incubation period was 31 hours (range, 7 to 54 hours). The median duration of illness was 53.5 hours (range, 21 to 91 hours) for the 24 cases with known recovery date times. Three player stool samples were received; two samples were from High School B players and one sample was from a High School A player. All three samples tested positive for norovirus GII. Nucleic acid sequencing was conducted on the samples; however, two of the samples could not be sequenced due to the fact that they were weak positives.

Having ice in an individual team water bottle was significantly associated with illness (18 of 19 cases vs. 4 of 12 controls; odds ratio, 36.0; 95% confidence interval, 2.8 to 1059; $p < 0.001$). Ice was provided by High School A for both teams. The school's ice machine was broken, so ice was purchased in 20 pound bags from a nearby gas station and initially stored in the broken ice machine. It is unknown exactly how the individual water bottles were filled; however, it was confirmed that individuals getting the ice out of the ice machine used their bare hands.

This was a foodborne outbreak of norovirus gastroenteritis associated with a high school football game. Ice provided to both teams was implicated as the vehicle of transmission. The source of contamination was not identified but most likely was one or more unidentified ill individuals who handled the ice.