

Norovirus Gastroenteritis Associated with a Health System Campus

February-March

Mille Lacs County

On February 27, 2017, the Minnesota Department of Health (MDH) received a report from the infection preventionist (IP) at a health system in Onamia, Minnesota regarding gastrointestinal illness among residents and staff on their health campus. Illnesses were reported in all facilities, including the clinic, acute care, senior care, assisting living facility, and long-term care facility (LTCF). In assisted living, approximately 17 of 35 residents had been ill. At least 20 of about 400 staff on the campus had been ill, including dietary staff. Some illnesses started in early February; however, a large number of illness onsets reportedly occurred on February 16. The MDH Environmental Health Division and MDH Licensing and Certification, who each licensed one of the kitchens at the facility, were notified, and an investigation was initiated.

The facility had already implemented some interventions, including limiting self-service foods, confining ill patients to their rooms for meals, and promoting hand hygiene. MDH sanitarians visited both facility kitchens on February 27 to interview food workers about illness history and job duties, provide norovirus and hand hygiene education, dispose of ready-to-eat foods as needed, enforce a 72-hour exclusion for ill workers, and have them clean/sanitize the kitchen areas. MDH staff also recommended control measures for the rest of the facility, including cleaning with 1000 ppm bleach and ceasing communal activities.

Illness logs for staff and residents who reported gastrointestinal symptoms were provided to MDH by the IP and facility staff. A case was defined as a Mille Lacs Health System resident who was listed on the facility illness log. Stool samples from consenting individuals were submitted to the MDH Public Health Laboratory (PHL) for bacterial and viral pathogen testing.

The last illness log update was received from the facility on March 7; 43 cases were identified among residents, including 20 in assisted living, 19 in the LTCF, and 4 in senior care. Illness onset dates ranged from February 16 to March 6.

Among the 20 assisted living facility cases, all had diarrhea, 10 (50%) had vomiting, 3 (15%) had fever, and none died. The median duration for 17 cases was 75 hours (range, 27.5 to 164 hours). The median age of assisted living facility cases was 88 years (range, 68 to 96 years), and 16 (80%) were female. The attack rate among assisted living residents was approximately 59%.

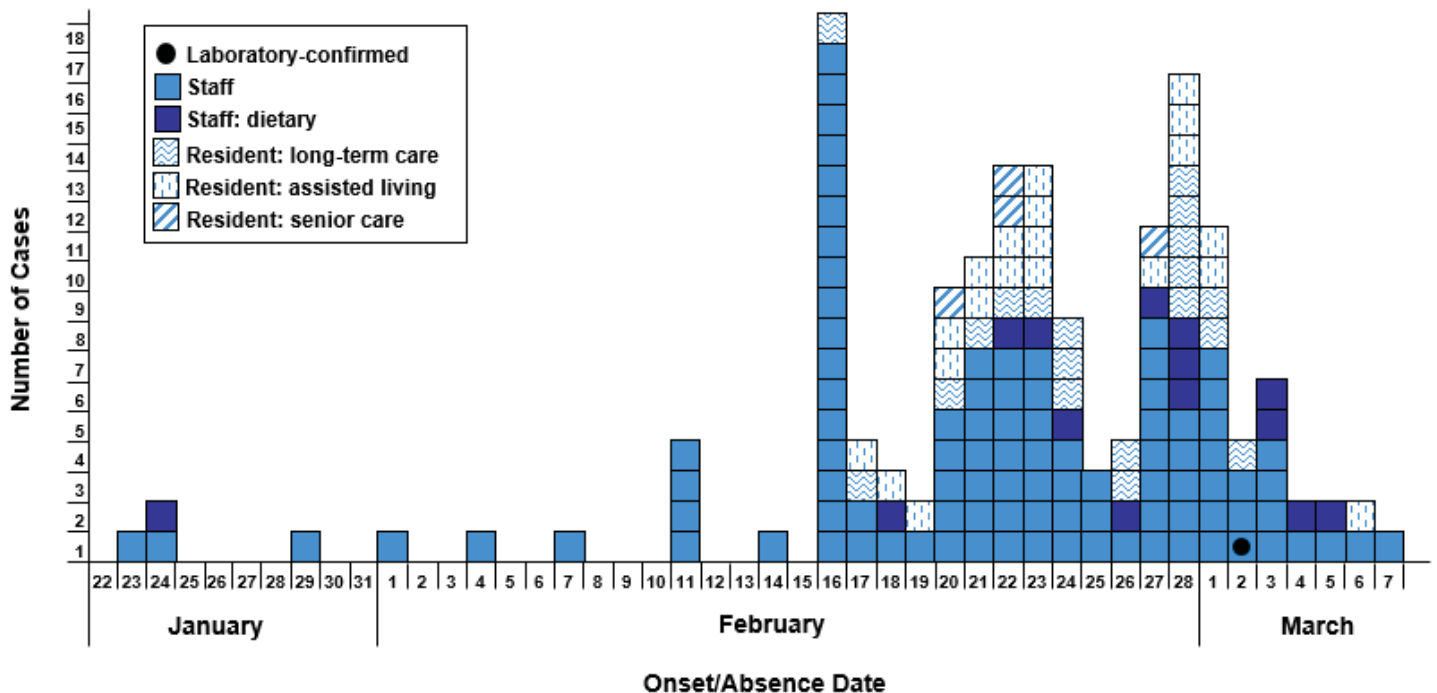
Two stool samples were submitted to the MDH PHL; one, from a LTCF resident, tested positive for norovirus GII.4 Sydney. The other tested negative for norovirus, *E. coli* O157, *Shigella*, *Campylobacter*, and *Salmonella*.

On the last illness log received from the facility on March 7, 115 staff illnesses were reported. This included staff who worked in all areas of the facility, including the kitchens/dietary, assisted living, senior care, LTCF, acute care, clinics, housekeeping, office staff, etc. The campus employs approximately 400 staff. Illness onset dates (which were recorded as “date of absence” on the illness logs) for staff ranged from January 2 through March 7. A peak of staff illnesses occurred on February 16 (n=17), and most staff illnesses occurred during February 16-March 3. Five staff reported two distinct illness onsets during the outbreak. The IP recorded 14 dietary staff illnesses on the logs, with absence/onset from January 24 through March 5.

All 27 nutrition services food workers at the hospital kitchen and 16 food workers at the assisted living facility kitchen were interviewed by MDH sanitarians; 22 (51%) reported gastrointestinal illness since February 1. One food handler reported vomiting while at work on February 23. Two food workers visited an emergency room, and a third visited a health care provider.

During the February 27 environmental assessment, two food workers were sent home from work due to recent illness, and food items prepared by these employees were discarded. Prospective employee illness screening was initiated at both the assisted living facility kitchen and the main hospital kitchen, and both kitchens cleaned with 1000 ppm bleach. The facility also has additional serving kitchens and a “mini kitchen” area where food (e.g., sandwiches) is prepared by nurses when the main kitchen is closed. The nurses reported not wearing gloves when they made sandwiches for patients during times when the kitchen was closed; the sanitarian instructed them to start wearing gloves when touching ready-to-eat foods.

Norovirus Gastroenteritis Cases among Residents and Staff of a Health Care Facility Campus, by Illness Onset Date or Absence Date*



*Four staff with onset of illness January 2-18 not shown on epidemic curve

On March 8, additional outbreak control measures were discussed with the IP because of ongoing staff illnesses. These measures included a 72-hour exclusion for all ill staff (including non-food workers) when possible, enhanced cleaning/sanitizing for staff areas (e.g., vending machines, self-serve coffee, etc.) and one-on-one education with ill staff regarding transmission and hand hygiene.

This was a foodborne outbreak of norovirus gastroenteritis associated with a health system's campus facilities. A single vehicle of transmission was not identified. Multiple staff illnesses were reported prior to resident illness, and a peak in staff illnesses likely served as an amplifying event for transmission to residents. The pattern of illness onsets among residents and the illnesses among dietary staff indicate foodborne transmission likely played a role in the outbreak, in addition to person-to-person transmission.