

## Norovirus Outbreak Associated with Stanton County Hospital Long Term Care Unit — Stanton County, March 2014



### **Background**

On March 17, 2014 the infection control nurse (ICN) at the Stanton County Hospital Long Term Care Unit (LTCU) within the Stanton County Hospital (404 North Chestnut Street, Johnson City, KS 67855) notified the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section in the Bureau of Epidemiology and Public Health Informatics (KDHE) of a possible outbreak of gastrointestinal illness. An outbreak investigation was initiated on March 17, 2014 to determine the cause and scope of illness among the residents and staff and to recommend prevention and control measures at the facility to prevent the spread to other residents and staff.

### **Methods**

#### *Epidemiologic Investigation*

The ICN created a line list which contained demographic and clinical information for all residents and staff experiencing gastrointestinal illness. A case was defined as diarrhea (three or more loose stools in a 24-hour period) and/or vomiting between March 12 and March 16, 2014 in a resident or staff member of the Stanton County Hospital LTCU.

#### *Laboratory Analysis*

Stool specimens were collected from two individuals and submitted to the Kansas Health and Environmental Laboratories (KHEL) for testing.

## **Results**

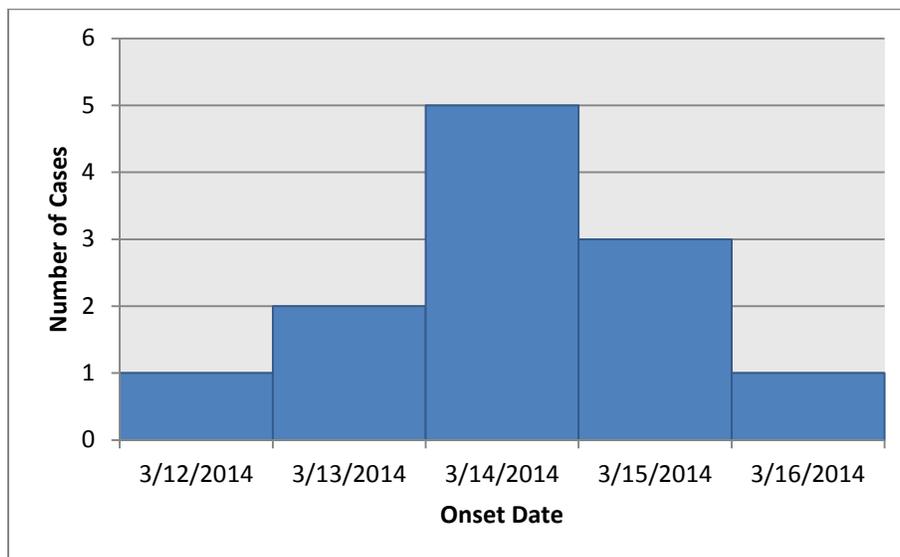
Twelve of 24 residents and 3 of 26 staff members reported illness. Of the 15 persons reporting illness, 12 (80%) met the case definition. Of the 12 cases, 3 were staff members and 9 were residents. The most common symptoms were diarrhea (100%) and vomiting (42%), Table 1. There were no hospitalizations and two deaths.

**Table 1: Symptoms reported among cases (n=12)**

Symptom	# of Cases with Symptom	% of Cases
Diarrhea	12	100%
Vomiting	5	42%
Nausea	2	17%
Fever (100°F or more)	2	17%

Onset of illness ranged from March 12 to March 16, Figure 1. Duration of illness ranged from 0.5 to 3 days (median: 1 day). At the time of investigation, 7 (58.3%) cases had reporting recovering.

**Figure 1: Onset Date of Illness by Number of Cases, Stanton County Hospital Long Term Care Unit – Stanton County, March 2014 (n=12)**



### *Laboratory Analysis*

Two stool specimens tested positive for norovirus genogroup II.

## **Discussion**

This was an outbreak of norovirus which affected 12 individuals either residing in or working for the Stanton County Hospital Long Term Care Unit. This outbreak may have been propagated by exposure to viral particles through aerosolized vomitus, contact with contaminated environmental surfaces, and from person-to-person transmission among residents and staff.

In order to prevent the spread of norovirus, the LTCU staff implemented control measures which limited the contact residents had with each other and visitors, which included the cancellation of events and gatherings to be held at the LTCU. All residents were served meals in their rooms for 24 hours on 3/16. Individuals experiencing illness continued to eat meals in their rooms until their symptoms resolved. Highly-trafficked areas of the facility, such as bathrooms, the kitchen, and the dining room were cleaned and disinfected three times a day. Residents and staff were educated on the importance of hand washing.

Norovirus is a highly contagious pathogen with a very low infectious dose, estimated to be between 10-100 viral particles<sup>i</sup>. Transmitted primarily through fecal-oral route, norovirus particles may be spread through direct contact or through consuming fecally-contaminated food or water. Spread via aerosolized vomitus is also possible. Once an individual is infected, norovirus shedding can begin prior to the onset of symptoms and can persist for weeks after clinical symptoms have ceased. Norovirus has been detected in fecal specimens 3 to 14 hours before the onset of clinical symptoms and can be detected for 13 to 56 days after exposure to the virus<sup>ii</sup>. Approximately 20% of norovirus infected individuals do not have clinical symptoms<sup>iii</sup>. More vulnerable populations, such as those living in long-term care facilities, greatly benefit from early recognition of outbreaks. Actions taken early on can curb transmission and prevent the further spread of disease. These actions include thorough and frequent cleaning of community spaces and identifying and isolating symptomatic individuals early.

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*On: 9/5/2014*

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<sup>i</sup> P. Teunis, C. Moe, P. Liu, S. Miller, L. Lindersmith, R. Baric, J. Le Pendu and R. Calderon, "Norwalk virus: how infectious is it?," *J Med Virol*, vol. 80, no. 8, pp. 1468-76, Aug 2008.

<sup>ii</sup> R. L. Atmar, A. R. Opekun, M. A. Gilger, M. K. Estes, S. E. Crawford, F. H. Neill and D. Y. Graham, "Norwalk Virus Shedding after Experimental Human Infection," *Emerging Infectious Diseases*, vol. 14, no. 10, Oct 2008.

<sup>iii</sup> C. Moe, "Preventing norovirus transmission: how should we handle food handlers?," *Clinical Infectious Diseases*, vol. 48, no. 1, pp. 38-40, 1 Jan 2009.