

Norovirus Outbreak Associated with Tallgrass Creek Long-Term Care Facility — Johnson County, January 2015



Background

On January 13, 2015 the Johnson County Health Department 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 at Tallgrass Creek, a long-term care facility (LTCF) located within Johnson County (13800 Metcalf Avenue, Overland Park, KS, 66223). An outbreak investigation was initiated on January 13, 2015 to determine the cause and scope of illness among the residents and staff and to recommend prevention and control measures at the facility.

Methods

Epidemiologic Investigation

The Director of Nursing 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 January 10 and January 23, 2015 in a resident or staff member of Tallgrass Creek LTCF.

Laboratory Analysis

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

Results

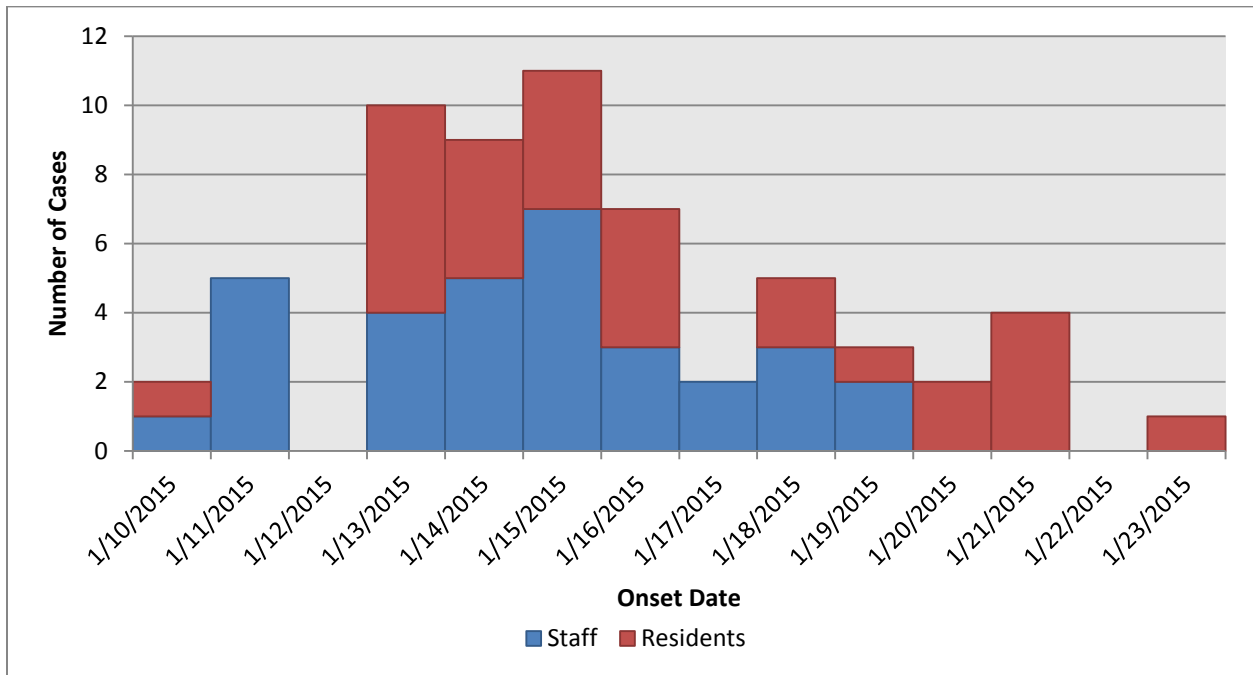
Twenty-nine residents and 32 staff members reported illness. Of the 67 persons reporting illness, 61 (91%) met the case definition. Of the 61 case-patients, 32 were staff members and 29 were residents. The most common symptoms were vomiting (84%) and diarrhea (70%), Table 1. There were two hospitalizations and no deaths.

Table 1: Symptoms reported among case-patients (n=61)

Symptom	# of case-patients with symptom	% of case-patients with symptom
Vomiting	51	84%
Diarrhea	43	70%
Nausea	37	61%
Fever	16	26%
Chills	5	8%
Headache	3	5%
Malaise	1	2%

Onset of illness ranged from January 10 to January 23, Figure 1.

Figure 1: Onset date of illness among staff and residents (n=61)



Ages of ill residents ranged from 68 to 95 years of age with a median of 85 years. Ages were not available for staff. Forty-three case-patients were female (70.5%).

Laboratory Analysis

Two stool specimens tested positive for norovirus genogroup II.

Discussion

This was an outbreak of norovirus which affected 61 individuals either residing in or working for Tallgrass Creek LTCF. 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.

The facility staff implemented standing orders for hydration therapy and probiotic usage for persons experiencing nausea, vomiting, or diarrhea. To address the spread of the outbreak, the facility stopped admission into the facility until the outbreak was declared over. Visitors were discouraged from visiting residents and all residents were encouraged to stay in their apartments. The public dining room was closed, room service was instituted, and community activities were temporarily halted to help facilitate the residents staying in their rooms. These control measures were implemented after the 4th case was identified in the facility. The distribution of case-patients in this outbreak with respect to onset date shows that the disease spread through not only the residents, but also the LTCF staff.

Norovirus is a highly contagious pathogen with a very low infectious dose, estimated to be between 10-100 viral particlesⁱ. 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 virusⁱⁱ. Approximately 20% of norovirus infected individuals do not have clinical symptomsⁱⁱⁱ. More vulnerable populations, such as those living in long-term care facilities, greatly benefit from early recognition of outbreaks. Actions taken early on can limit 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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ⁱⁱ 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.

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