**EPIDEMIOLOGIC INVESTIGATION SUMMARY**

**Norovirus: Gastrointestinal Illness Outbreak Among Residents and Staff of a Long-Term Care Facility in Washoe County, Nevada, 2015**

Department of Health and Human Services  
Division of Public and Behavioral Health  
Office of Public Health Informatics and Epidemiology

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**PURPOSE**

The purpose of this newsletter is to provide the scientific community, decision makers, healthcare providers, and the public a summary of the outbreak investigations conducted by the Division of Public and Behavioral Health.

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**BACKGROUND**

On Thursday, April 23, 2015, the Division of Public and Behavioral Health (DPBH), Office of Public Health Informatics and Epidemiology (OPHIE) was informed by the Infection Preventionist of Facility “A” of a gastrointestinal (GI) illness outbreak among residents and staff at Facility “A.” The problem was first identified by staff on Thursday, April 16, 2015. Initial reported symptomology of the ill residents included diarrhea, vomiting, and nausea. The outbreak investigation began on Thursday, April 23, 2015.

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**METHODS**

**Epidemiology**

On Thursday, April 23, 2015, DPBH provided recommendations to reduce and prevent the spread of illness in Facility “A” including the submission of outbreak case report forms to OPHIE until further notice, exclusion of symptomatic employees from the facility until 72 hours after symptoms resolved, and laboratory testing to identify the pathological agent(s).

A **confirmed case** was defined as a resident, staff member, or visitor of Facility “A” who is lab confirmed with a gastrointestinal agent who has diarrhea or vomiting (and possibly other GI symptoms as well e.g. nausea, abdominal pain) since Thursday, April 16, 2015.

A **probable case** was defined as a resident, staff member, or visitor of Facility “A” who is not lab confirmed with a gastrointestinal agent but who has diarrhea or vomiting (and possibly other GI symptoms as well e.g. nausea, abdominal pain) since Thursday, April 16, 2015.

A **suspect case** was defined as a resident, staff member, or visitor of Facility “A” who is not lab confirmed with a gastrointestinal agent but who anecdotally has diarrhea or vomiting (and possibly other GI symptoms as well e.g. nausea, abdominal pain) since Thursday, April 16, 2015.

**Laboratory**

Laboratory testing for GI illness was highly recommended for ill residents in order to identify the etiologic agent, target infection prevention measures, and control the outbreak within Facility “A.” Laboratory testing was focused on the presence of norovirus, rotavirus, and *C. difficile* (*C. diff.*)

Ten laboratory tests were conducted and the specimens collected were stool samples.

**Mitigation**

In order to prevent further spread of illness, the OPHIE Outbreak Response Team disseminated recommendations for the prevention and control of norovirus gastroenteritis, as well as *C. diff.*, outbreaks to Facility “A.”
Additionally, an infection preventionist isolated the outbreak cases and the unit affected. Terminal cleaning was completed throughout the unit and disinfection of the majority of the unit was conducted as per CDC recommendations.

**RESULTS**

**Epidemiology**

A total of 20 cases (16 probable and four confirmed) were reported. Illness onset occurred between Thursday, April 16 and Sunday, April 26, 2015. The epidemic curve is presented in Figure 1 and shows the distribution of illness onset dates.

The peak illness onset date was April 20, 2015. Among the 20 cases, the average age was 60 years old (range 22-91 years). Males comprised 45% of cases.

Symptomatic cases reported vomiting (75%), diarrhea (75%), nausea (35%), and fever (15%). The average duration of illness for cases was approximately 3 days (range 1-8 days). The resident attack rate was 7.5%, the staff attack rate was 1.7%, and the overall attack rate was 4.0%.

**Laboratory**

Two specimens tested were positive for *C. diff*. Four specimens tested were positive for norovirus of unknown genogroup.

**Mitigation**

After the cause of the outbreak was determined to be norovirus and *C. diff.*, DPBH reiterated to the facility the same information given at the start of the outbreak investigation for preventing and controlling norovirus gastroenteritis outbreaks.

**CONCLUSIONS**

A norovirus outbreak occurred among residents and staff at Facility “A,” a long-term care facility in Washoe County, Nevada from Thursday, April 16 through Sunday, April 26, 2015. Confirmatory test results indicated norovirus of unknown genogroup and *C. diff.* were the causative agents and the mode of transmission was believed to be person-to-person. Average incubation period for Norovirus is 12-48 hours and for *C. diff.* is two – three days.2, 4

In total, 20 persons were classified as cases; 15 residents and 5 staff. Symptoms included diarrhea, vomiting, nausea, and fever with illness duration lasting an average of 3 days. Residents of the facility had the highest attack rate (7.5%). The epidemiologic link between cases was believed to be the facility in which the residents lived and the staff worked.

The outbreak was declared over by Monday, April 27, 2015 because the facility went two full incubation periods without a new case.

**RECOMMENDATIONS**

To prevent norovirus outbreaks in healthcare settings, the following public health measures are recommended:

- Follow hand-hygiene guidelines and careful washing of hands with soap and water after contact with patients with norovirus infection.
- Use gowns and gloves when in contact with or caring for patients who are symptomatic with norovirus.
• Routinely clean and disinfect high touch patient surfaces and equipment with an Environmental Protection Agency-approved product with a label claim for norovirus.
• After throwing up or having diarrhea, immediately clean and disinfect contaminated surfaces using a bleach-based household cleaner as directed on the product label. If no such cleaning product is available, you can use a solution made with five tablespoons to 1.5 cups of household bleach per one gallon of water.\(^1\)
• Remove and wash contaminated clothing and linens.
• Exclude healthcare workers who have symptoms consistent with norovirus from work.\(^2\)

To prevent *C. diff.* outbreaks in healthcare settings, the following public health measures are recommended:

• Use contact precautions for the duration of patient diarrhea.
• Abide by proper use of gloves
• Follow proper hand hygiene that is in compliance with CDC/WHO guidelines
• Clean and disinfect equipment and environment; the use of a bleach solution is most effective
• Educate health care worker, housekeepers, administration staff, patients, and families on *Clostridium diff.*
• Isolate patients with symptoms until a *Clostridium difficile* confirmation is made
• Immediately notify infection control about positive *Clostridium diff.* laboratory results\(^3\)

**REFERENCES**

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For additional information regarding this publication, contact:

Office of Public Health Informatics and Epidemiology
4126 Technology Way, Ste 200
Carson City NV 89706
Email: outbreak@health.nv.gov
Tel: (775) 684-5911

Brian Sandoval
Governor
State of Nevada
Richard Whitley, MS
Director
Department of Health and Human Services

Cody L Phinney, MPH
Administrator
Division of Public and Behavioral Health

Tracey D Green, MD
Chief Medical Officer
Division of Public and Behavioral Health

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Maximilian Wegener, MPH; Brian Parrish, MPH; Kimisha Griffin, MPH; Adrian Forero, BS; Judy Dumonte; Rick Sowadsky, MSPH; Julia Peek, MHA; Ihsan Azzam, MD, MPH; Daniel P. Mackie, MPH, MA; Liliana E. Wilbert, MPH; Jeffrey Elliott, BS

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