

Outbreak of Rhinovirus in a Long-Term Care Facility — Johnson County, August 2014



Background

On August 19, 2014 at 3:30 PM, the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section (KDHE) received a report from the Johnson County Health Department (JCHD) of a respiratory illness affecting three staff and 28 residents at a long-term care facility (LTCF). Prevention measures including limiting visitors and cancelling group activities were in place prior to the report to public health. An outbreak investigation began immediately to determine the cause and scope of illness.

Methods

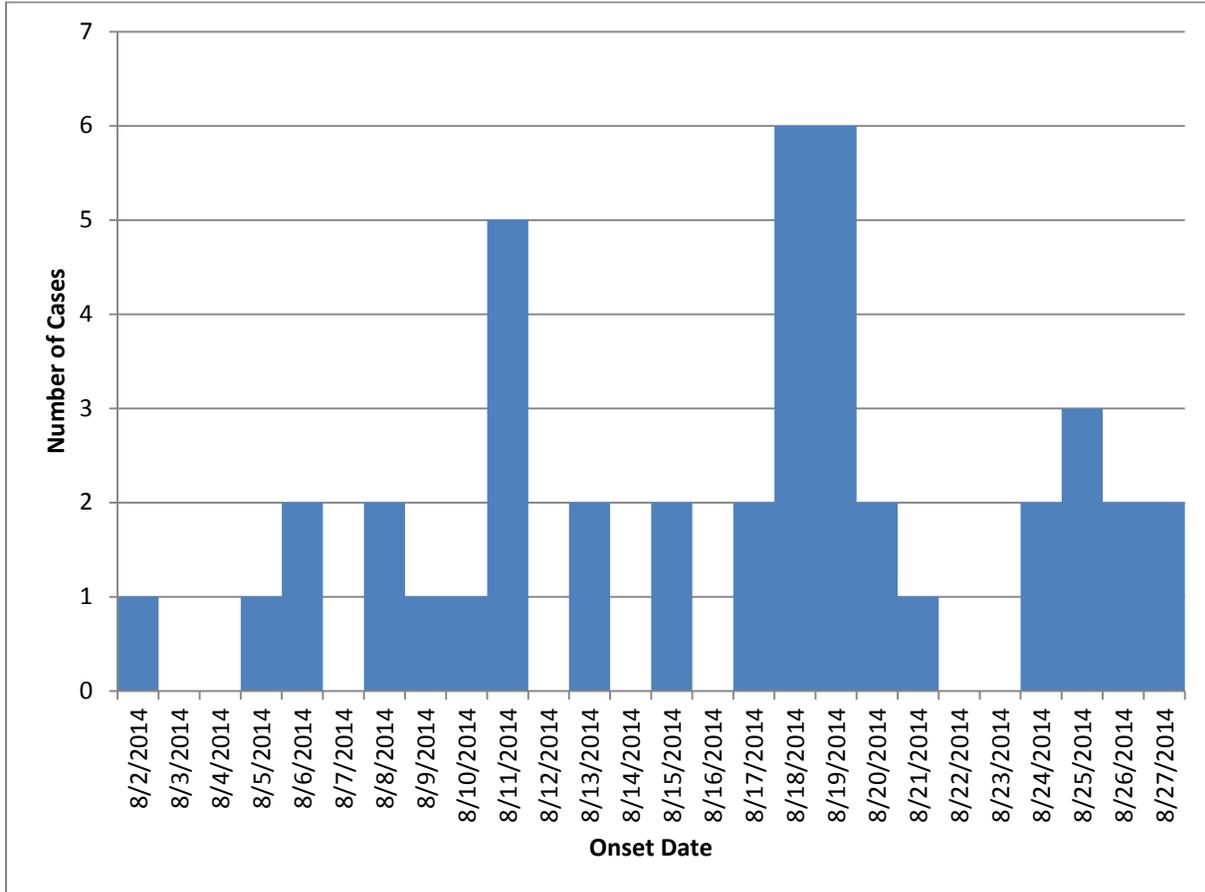
JCHD contacted the Director of Nursing to obtain a line list of ill individuals. Information collected included symptoms, illness onset date, laboratory test results, room number, and illness recovery date. A case was defined as a respiratory illness with a cough in a LTCF resident or staff member between August 2, 2014 and August 27, 2014.

The LTCF collected eight nasopharyngeal swabs and sent them to the Kansas Health and Environmental Laboratories (KHEL), where molecular testing was performed using a respiratory viral panel (RVP) capable of detecting the nucleic acids of twelve respiratory viruses. Positive specimens were forwarded to the Centers for Disease Control and Prevention (CDC) for typing.

Results

The first case became ill on August 2, 2014. The last case became ill on August 27, 2014. The outbreak was declared over on September 4, 2014. By the end of the outbreak, 59 ill individuals were identified. Forty-four residents and zero staff members met the case definition.

Figure 1: Number of cases of respiratory illness by onset date (n=44)



All 44 cases reported a cough. Hospitalization occurred in five cases and five deaths were reported among cases. However, only one case death was attributed to respiratory illness and four deaths were attributed to other causes.

Eight nasopharyngeal swabs were collected and tested at KHEL using a respiratory viral panel. Rhinovirus/enterovirus was detected in six specimens. Those six specimens were forwarded to CDC for further testing and were all determined to be human rhinovirus 94.

Conclusions

This respiratory illness outbreak was attributed to human rhinovirus 94. Five of the 44 cases were hospitalized, and one death was attributed to respiratory illness and four deaths were due to other causes. Rhinoviruses and coronaviruses are the most frequently identified causes of the “common cold” syndrome. Rhinoviruses are members of the Picornaviridae family. A self-limited upper respiratory tract illness, or “the common cold” syndrome, is the usual clinical manifestation of infection with these viruses. However, over the past three decades, several

studies have found these viruses to be associated with clinical syndromes that require hospital care.¹ Rhinovirus may be ubiquitous in the health care worker and visitor populations who have contact with these patients but can cause serious illness and death in the elderly or immunocompromised populations.

¹El-Sahly, H. M., R. L. Atmar, W. P. Glezen, and S. B. Greenberg. "Spectrum of Clinical Illness in Hospitalized Patients with "Common Cold" Virus Infections." *Clinical Infectious Diseases* (2000): 96-100. Web.

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On: October 20, 2014

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