

Outbreak of Varicella Associated with Seaman Unified School District 345 — Shawnee County, December 2012



Background

On December 11, 2012 at 10:20 a.m., the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section (KDHE) was notified by the Shawnee County Health Agency (SCHA) about a potential varicella outbreak consisting of five cases occurring in Seaman Middle School in Unified School District (USD) 345.

On January 2, 2013 at 10:40 a.m., KDHE was notified of three varicella cases in Seaman High School which were epidemiologically linked to cases at Seaman Middle School. An additional three varicella cases were later identified in the Seaman Elementary School.

Immediately after each case was reported, SCHA, Seaman USD 345, and KDHE worked to determine the source of illness, identify susceptible contacts, and implement prevention and control measures.

Methods

A case was defined as any individual with a diffuse maculo-papulovesicular rash onset from November 20, 2012 to March 7, 2013 who was diagnosed with varicella by a physician or nurse. A susceptible contact was defined as an individual who was exposed to a case of varicella and could not demonstrate immunity toward the disease either by vaccination or previous history of disease as documented by a licensed healthcare provider. SCHA and the school district

collaborated to identify susceptible contacts by reviewing immunity information for students and staff in each affected classroom.

In accordance with Kansas Administrative Regulation (KAR) 28-1-6, each varicella case was excluded from school for six days after rash onset or until the rash lesions were crusted. Susceptible contacts were either vaccinated within 24 hours after the case was reported to KDHE or excluded from school for 21 days after the onset of the last reported illness in the school.

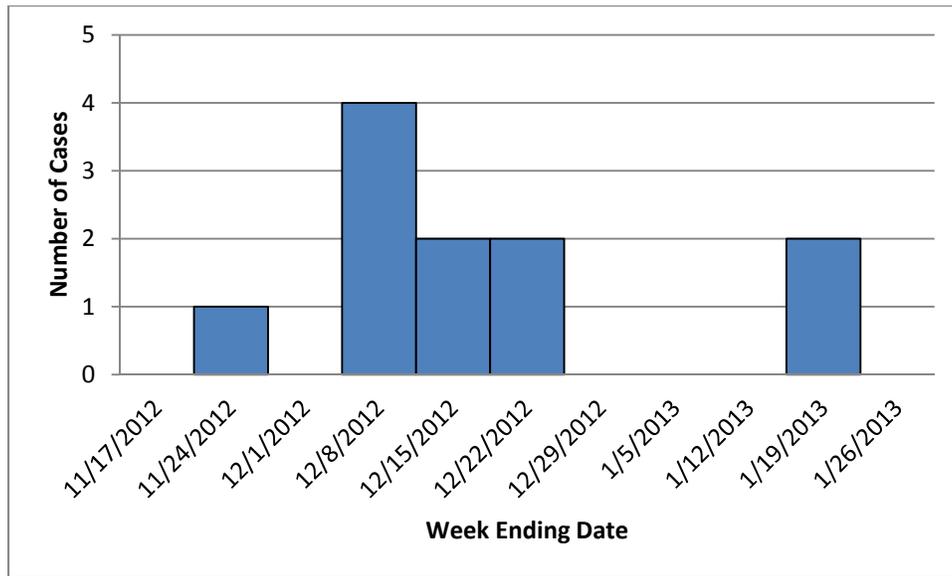
SCHA and USD 345 confirmed each ill case was isolated according to KAR 28-1-6. They also provided recommendations to the household members of the ill children and to close contacts of those individuals. Each school nurse in the elementary, middle, and high schools reviewed the immunization records of all classmates, staff, and contacts involved in extra-curricular activities of case, and verified that at least one dose of the varicella vaccination had previously been received or the contact had history of disease documented by a licensed health care provider. Letters were sent home with students to notify parents that varicella cases had been identified at the school, directing them to contact their primary care provider or SCHA if their child developed varicella symptoms.

Results

Eleven students met the varicella case definition. Rash onset dates ranged from November 20, 2012 to January 25, 2013 (Figure 1).

Ages ranged from 9 to 17 years of age, with a median age of 13 years. Eight cases were male (73%). The Elementary school had a total of three cases (27%), while the middle school had five cases (45%) and the high school reported three cases (27%). No cases were identified among staff members.

Figure 1: Week of rash onset among varicella cases (n=11)



A total of eight susceptible contacts were identified throughout this outbreak. Seven contacts (88%) were located in the elementary school and one (12%) was in the middle school. All susceptible contacts were verified as unvaccinated due to religious exemptions and were immediately excluded from school. (A religious exemption in Kansas is defined as a written document stating that the parent’s objection to immunization for religious reasons exempts the parent and child from state vaccination requirements.)

Five of the susceptible contacts (63%) received the varicella vaccination within the allowed time period of 24 hours and returned to school. Three (37%) did not receive the vaccine and remained excluded from school for a 21-day period.

Conclusion

Eleven cases of varicella were identified among three schools in the same school district. After extensive investigation, eight susceptible contacts were identified; five received varicella vaccine after exposure and returned to school, while three did not receive vaccine and were excluded from school for 21 days.

Varicella is highly contagious and spreads easily to individuals that have neither been vaccinated against varicella nor had the disease. It can be transmitted through coughing, sneezing, and/or having direct contact with or breathing in particles from the lesions.¹

The Advisory Committee for Immunization Practices recommends initial vaccination against varicella for children aged 12-18 months and a second dose at 4-6 years of age. According to K.A.R. 28-1-20, all individuals that attend a school or childcare operated by a school in Kansas are required to be vaccinated against specific diseases. For varicella, two doses of vaccine are required for children in kindergarten through grade 4 and grades 7 through 9. One dose of varicella vaccine is required for children in grades 5 and 6 and 10 through 12. Children with documentation of disease history by a licensed health care provider are not required to be vaccinated. All susceptible contacts excluded during this outbreak were unvaccinated due to having a religious exemption from vaccination.

Strength of the investigation included the collaboration between SCHA and the school district. Cases were identified, reported, and investigated in a timely manner. Vaccination statuses of susceptible contacts were reviewed and proper exclusion policies were put into place if needed, limiting the spread of disease.

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¹ Centers for Disease Control and Prevention. "Chickenpox (Varicella)", Accessed on May 22, 2013 at: <http://www.cdc.gov/chickenpox/about/overview.html>.

<http://www.shawneehealth.org>

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