

# Outbreak of Varicella in a Private School— Douglas County, May 2018

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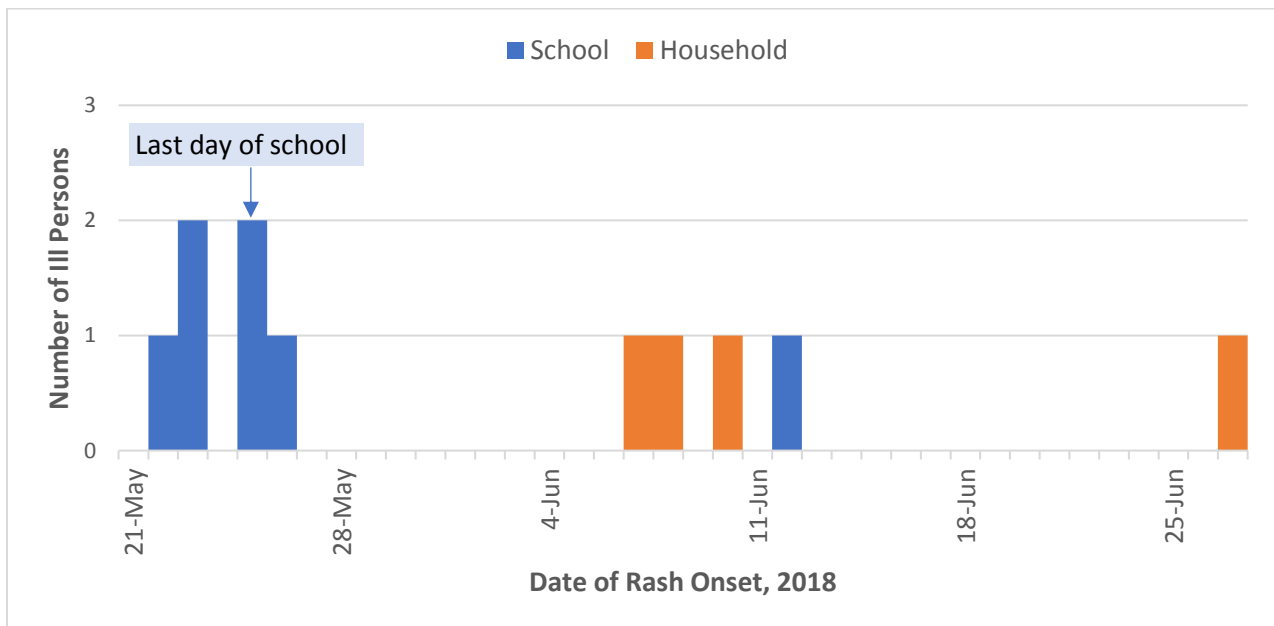
## Background

On May 25, 2018 at 3:15 PM, the Lawrence-Douglas County Health Department (LDCHD) notified the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section (KDHE) of a potential varicella outbreak among students at a private school in Douglas County, Kansas. An outbreak investigation was initiated immediately by LDCHD to determine the scope of illness and to implement prevention and control measures.

## Key Investigation Findings

- A varicella case was defined as an acute, generalized maculopapulovesicular rash illness in a school attendee or a close contact of an attendee that occurred between May 22 and June 27, 2018.
- Eleven individuals met the case definition. Seven persons were likely exposed at school and four were exposed in household settings.
- The median age of ill persons was five years (range: 1-9 years).
- Rash onset dates ranged from May 22 to June 25, 2017 (Figure 1).

**Figure 1: Ill Persons by Date of Rash Onset, as Defined by Transmission Setting (n=11)**



- Ten (90.9%) of the ill children had not received a varicella vaccine prior to illness onset.
- The reported reasons the ten children had not received varicella vaccine were: parental refusal to vaccinate (n=7, 70%), medical contraindications (n=2, 20%), and history of illness thought to be chickenpox that was not diagnosed by a medical provider (n=1, 10%).

- The one vaccinated child who was ill had no fever and a mild maculopapular rash with less than 50 lesions generalized to two areas of the body. The non-vaccinated children exhibited more severe illness with seven out of ten (70%) exhibiting mostly vesicular lesions greater than 50 in number that were generalized to more than three areas of the body (Table 1).

**Table 1: Clinical Symptoms Reported Among Non-vaccinated, Ill Persons (n=10)**

<i>Symptoms</i>	<i># of Ill Persons/Total</i>	<i>% of Ill Persons</i>
Lesions generalized to more than 3 areas of body	10/10	100%
• 50-249 Lesions	6/10	60%
• 250-500 Lesions	3/10	30%
• <50 Lesions	1/10	10%
Mostly vesicular lesions	7/10	70%
Hemorrhagic lesions	1/10	10%
Fever present	4/9	44%

- Medical care was sought by three ill children (27%) with all physicians notifying public health authorities on the same day the ill children were seen in the office.
- No laboratory testing was performed. No hospitalizations or deaths occurred.
- The outbreak investigation started on the last day of school. Three ill children with rashes were excluded from school on the day of rash onset, but no additional exclusions were required as the school year had ended.

## Conclusions

During the outbreak, 11 varicella cases were identified among school students and family members; the majority (91%) of whom were not vaccinated. The primary source of infection for the initial six children is unknown but all routinely shared classroom or common space within the school. The final transmission within the school setting most likely occurred at an end of the year party on the last day of school. Additional transmission was documented among four unvaccinated household members. If the first ill child had been reported to LDCHD on the day of rash onset, four susceptible contacts, who later developed a rash, could have been excluded from the remaining three days of school.

Transmission appears to have waned with the completion of the school year, but additional cases could have been lost to follow-up. Medical care is not always sought for infected children. Therefore, the numbers reported may not reflect the full extent of this outbreak.

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**Publication Date:**

September 11, 2018

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