

Key Findings from an Outbreak of Pertussis in a Unified School District — Labette County, April 2017



Background

On April 24, 2017, the Kansas Department of Health and Environment's Infectious Disease Epidemiology and Response section (KDHE) notified Public Health of Labette County (PHLC) of an increase in pertussis associated with a Unified School District in Labette County.

Investigation revealed that infected persons were associated with a school activity in Altamont, Kansas. PHLC, with support from KDHE, began an outbreak investigation to identify additional cases, identify exposed individuals, and to implement prevention and control measures. Further investigation revealed additional epidemiologically-linked cases within the Unified School District. The end of the outbreak was declared on June 14, 2017.

Key Investigation Findings

- A confirmed pertussis case was defined as:
 - a cough illness lasting ≥ 2 weeks with paroxysms of coughing and/or post-tussive vomiting, and/or inspiratory whoop, and
 - laboratory confirmation via polymerase chain reaction (PCR) testing, or
 - an epidemiological link to a lab-confirmed case.
- A probable pertussis case was defined as:
 - a cough illness lasting ≥ 2 weeks with paroxysms of coughing and/or post-tussive vomiting, and/or inspiratory whoop, and
 - absence of laboratory confirmation, and
 - no epidemiological link to a lab-confirmed case.
- A suspect pertussis case was defined as:
 - Cough illness lasting ≥ 2 weeks with no other apparent cause.
- A total of 11 cases (7 confirmed, 2 probable, and 2 suspect) were identified.
- The median age of ill persons was 15 years with a range from 12 to 76 years old.
- The most frequently reported symptoms were cough (100%), paroxysmal cough (81.8%), and apnea (63.6%) (Table 1).
- The median duration of cough illness was 28 days with a range from 18 to 37 days.
- The majority (91%) reported prior receipt of a pertussis containing vaccine. 73% reported six doses of pertussis containing vaccine and 18% reported five doses (Table 2). Vaccination status was unavailable for one individual.
- Cough onset dates ranged from March 13, 2017 to April 23, 2017 (Figure 1).

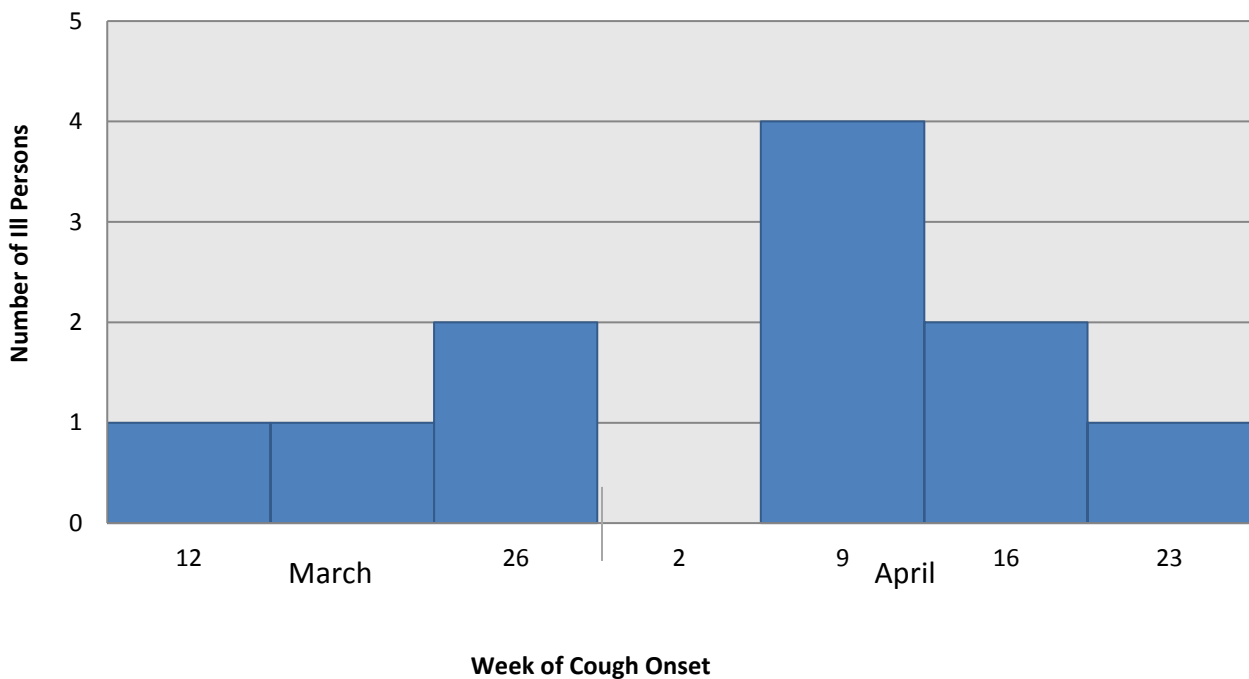
Table 1: Clinical Symptoms Reported Among Ill Persons (N=11)

Symptoms	# of Ill Persons/Total	% of Ill Persons
Cough	11/11	100.0%
Paroxysmal cough	9/11	81.8%
Apnea	7/11	63.6%
Post-tussive vomiting	5/11	45.5%
Cyanosis	4/11	36.4%
Whoop	3/11	27.3%

Table 2: History of Pertussis-containing Vaccine Among Ill Persons (N=11)

Doses Received	Number Reported/Total	% of Ill Persons
Six doses	8/11	72.7%
Five doses	2/11	18.2%
Unknown	1/11	9.1%

Figure 1: Number of Ill Persons by Week of Cough Onset (N=11)



Conclusion

Eleven pertussis cases were identified during the outbreak period. All cases were associated with a local Unified School District in Labette County. A challenge in managing the outbreak was the lack of clinician reporting to PHLC or KDHE. Under Kansas Administration Regulation (KAR) 28-1-2, pertussis cases (including suspect cases) are required to be reported to KDHE or the local health department within four hours of suspicion of pertussis. During this outbreak, public health was only notified when the local laboratory from a medical center called to get approval for testing a specimen at Kansas Health and Environmental Laboratories. Clinicians generally waited until laboratory confirmation of pertussis infection before prescribing antimicrobial treatment to ill individuals. Additionally, clinicians were hesitant to prescribe the recommended prophylactic treatment to household and high-risk individuals, per the Centers for Disease Control and Prevention guidelines.

Public Health of Labette County conducted outreach to local clinicians to provide education and guidance on the recommended post-exposure prophylaxis treatment of household and high-risk contacts. After the outbreak, KDHE epidemiologists spoke to local clinicians regarding disease reporting and the role of public health in limiting the spread of communicable disease.

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