



Infectious Disease Epidemiology Report



Pertussis, Maine 2015

Background

Pertussis is caused by bacteria called *Bordetella pertussis*. Pertussis is clinically defined as a cough illness lasting at least two weeks with one or more of the following:

- Paroxysms of coughing
- Inspiratory “whoop”
- Post-tussive vomiting
- Apnea (for infants less than 1 year old)

The disease symptoms mainly affect the respiratory tract. Pertussis can be very serious, especially in infants.

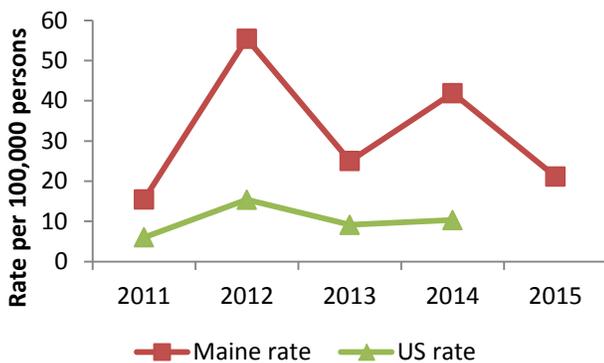
Methods

The Infectious Disease Epidemiology Program of Maine Center for Disease Control and Prevention monitors the incidence of pertussis through mandatory reporting by health care providers, clinical laboratories and other public health partners. Pertussis cases must be clinically compatible, with laboratory confirmation or epidemiological-linkage to a lab confirmed case to be counted as a case. Standardized case reports were completed for all cases and were documented in Maine CDC’s surveillance system.

Results

A total of 281 cases of pertussis were reported in 2015, a decrease from the 557 cases reported in 2014. The 2015 rate of pertussis in Maine was 21.1 cases per 100,000 persons. (Figure 1).

Figure 1: Pertussis rates, Maine and the US – 2011-2015



Of the 281 reported cases, 6 (2.1%) were hospitalized, and 241 (85.8%) reported ever receiving a pertussis vaccine. Of the 281 reported cases, 168 (59.8%) had the correct number of doses for their age (up to date)* (Table 1).

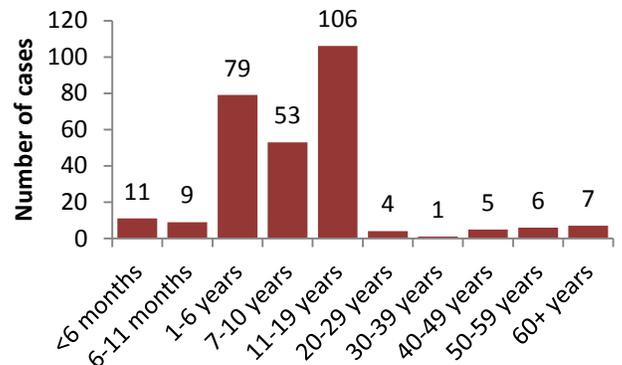
Table 1: Pertussis Vaccination status – Maine, 2015

Age	Un- or under-vaccinated	Up to date*	Unk	Total
<2 months	3	NA	0	3
2-3 months	1	3	0	4
4-5 months	3	1	0	4
6-14 months	6	7	0	13
15 months - 3 years	11	30	0	41
4-10 years	20	65	2	87
11-18 years	40	61	4	105
>18 years	10	1	13	24
Total	94	168	19	281

* Up to date indicates the proper number of doses were given, it does not determine if the doses were given at the proper intervals.

The majority of cases occurred among children and adolescents aged 7-19 years (56.6%). Twenty cases (7.1%) were identified in children less than 1 year of age, including eleven under six months old (Figure 2).

Figure 2: Pertussis by Age Group – Maine, 2015



Almost all pertussis cases reported having paroxysmal cough, and the majority had post-tussive vomiting (Table 2).

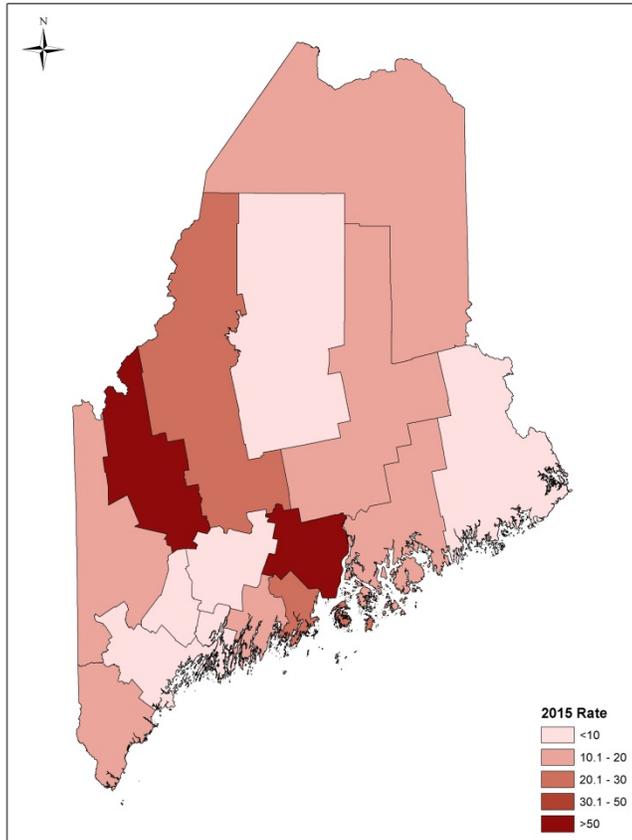
Table 2: Pertussis by Symptoms* – Maine, 2015

Symptoms	#	%
Apnea	36	12.8
Paroxysmal cough	262	93.2
Post-tussive vomiting	156	55.5
Whoop	44	15.7

* Cases may report more than one symptom

Pertussis cases were identified among residents of all sixteen Maine counties in 2015 (Figure 3). Franklin and Waldo counties had the highest incidence with 197 and 163 cases per 100,000 persons respectively compared to the state rate of 21.1 cases per 100,000 persons. Four counties had rates above the state rate (Franklin, Knox, Somerset, and Waldo).

Figure 3: Pertussis Rate by County per 100,000 persons - Maine, 2015



Discussion

Pertussis cases decreased from 2014, with the majority of cases still occurring in school aged children. The majority of cases (over 80%) reported receiving at least one vaccine, but a little more than half were up to date with the correct number of doses for their age (as reported to Maine

CDC). This may be skewed in the adult population as many adults do not have their childhood vaccination records and may have only reported booster doses. This data does not tell us if the case followed the proper vaccination schedule, it just provides an estimate of the number of cases who have the correct number of doses of vaccine.

Maine CDC encourages providers to test clinically appropriate patients and report all pertussis cases. Early treatment of pertussis is very important and may lessen symptoms. This is particularly important for infants due to the severity of illness. Maine CDC developed guidance for clinicians for infant cases modified from American Academy of Pediatrics California District which includes the recommendation to hospitalize all suspected pertussis cases in infants less than three months old.

Health care providers are encouraged to promote the use of pertussis vaccines. There are two pertussis vaccines (DTaP and Tdap). Both vaccines contain pertussis antigen in combination with tetanus and diphtheria.

- Tdap is recommended only for a single dose across all age groups except for pregnant women.
- Tdap is recommended during each pregnancy.

Pertussis cases can be reported to Maine CDC by calling 1-800-821-5821 or faxing to 1-800-293-7534. For more information contact your healthcare provider or local health center.

Additional information about pertussis disease can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vaccine/pertussis.shtml>
- Federal CDC
<http://www.cdc.gov/pertussis>
- Federal vaccine schedule
<http://www.cdc.gov/vaccines/schedules/>
- Infant guidance
<http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vaccine/documents/Pertussis-Infants-Guidance-Clinicians.docx>