

Pertussis

2010 Case Total	199	2010 Incidence Rate	5.40 per 100,000
2009 Case Total	117	2009 Incidence Rate	3.21 per 100,000

Pertussis, otherwise known as “whooping cough”, saw a large increase in the number of reported cases in Oklahoma residents during 2010. One hundred and ninety-nine cases were reported, a 70% increase from the 117 cases reported in 2009. In addition to the increase from 2009, pertussis cases were the highest they have been since 1985 when 209 cases were reported. Several local community increases were observed in different parts of the state contributing to the larger number of cases for the state. Ten cases were reported in Pittsburg county residents leading to an incidence rate (IR) approximately four times the state’s rate (IR = 22.1). Additionally, Tulsa county saw an increase in cases beginning mid fall and continuing through the end of the year giving the county a total of 88 cases with an incidence rate almost three times the state’s rate (IR = 14.6).

Pertussis is known to often have a more severe clinical presentation in children. Nearly half of all cases in 2010 were in children less than five years of age with 28% in infants less than one year of age (IR = 100.6) and followed by 20% in children one to four years of age (IR = 17.5). The median age for pertussis cases was 5.9 years with a range of 11 days to 84 years of age. Forty-seven percent of infants less than one year of age were hospitalized compared to 3.5% of all other ages. Ninety-one percent of all cases reported paroxysmal coughing, 60% reported post-tussive vomiting and nearly half reported inspiratory whoop. Of the 199 cases, 31 (16%) were hospitalized during the course of their illness. No cases died in 2010. Of the cases where the duration of the cough was known, the median cough duration was 35 days with a range of 14 to 120 days.

Polymerase chain reaction (PCR) testing has become the most prevalent type of testing conducted for pertussis. Of the 199 cases in 2010, 91 (46%) had a positive PCR test. Culture for *Bordetella pertussis* accounted for 5% of cases (n = 10). Only one case had both a positive PCR and culture for pertussis. Pertussis serology and direct fluorescent antibody (DFA) testing was also conducted on some cases, although these testing methodologies are not considered confirmatory. In 2010, there was a large increase in the number of positive PCR reports received for Oklahoma residents. Of note, 77 of the 168 positive PCR results received were for individuals whose illness did not meet the clinical case definition for pertussis that is used to classify a report as a case of pertussis. The clinical case definition consists of a cough that lasts for at least two weeks and has one of the following hallmark symptoms of pertussis: paroxysmal cough, inspiratory whoop, or post-tussive vomiting.

Pertussis vaccination is recommended for children with five doses of DTaP, one dose given at each of the following ages: 2, 4, 6, 15 to 18 months and 4 to 6 years. Additionally, a single dose of Tdap is recommended for persons 10 through 64 years of age. Tdap is recommended for children 7 to 10 years of age who are not fully vaccinated against pertussis. Adults 65 years of age and older who have not previously received Tdap and will be in close contact with an infant are also recommended to receive a single dose of Tdap.

County health department nurses conduct follow up investigations for all reported cases of pertussis. During the case investigation, close contacts to a confirmed case are recommended to receive post exposure prophylaxis to prevent the further transmission of disease and high-risk settings are identified to make sure an outbreak is not occurring and to recommend implementation of procedures to control spread of pertussis. In 2010, 726 close contacts to a case were recommended to receive post-exposure prophylaxis. Additionally, 25 cases either attended or worked in a childcare setting, 33 worked in or attended school and seven worked in a healthcare setting.

Demographic and Clinical Summary of Reported Pertussis Cases, Oklahoma, 2010 (N = 199)

	Number (%)	Incidence Rate per 100,000
Gender		
Female	115 (58%)	6.17
Male	84 (42%)	4.61
Age	Median = 5.9 years (range: 11 days - 84 years)	
Race		
American Indian/Alaskan Native	16 (8%)	4.97
African American/Black	23 (12%)	8.28
Asian	1 (0.5%)	1.54
Native Hawaiian/Pacific Islander	1 (0.5%)	22.89
White	119 (60%)	4.40
Two or more races	14 (7%)	--
Unknown	25 (13%)	--
Ethnicity		
Hispanic or Latino	27 (14%)	8.13
Not Hispanic or Latino	141 (71%)	4.12
Unknown	31 (16%)	--
Hospitalized for this disease	31 (16%)	--
Died due to this disease	0 (0%)	--
Hallmark symptoms (not exclusive)		
Paroxysmal Cough	181 (91%)	-
Inspiratory Whoop	102 (51%)	-
Post-tussive vomiting	120 (60%)	-

Incidence Rate of Reported Pertussis Cases by Age Group, Oklahoma, 2010

