

## PERTUSSIS (WHOOING COUGH)

CRUDE DATA	
Number of Cases	77
Annual Incidence <sup>a</sup>	
LA County	0.9
California	3.0
United States	2.8
Age at Onset	
Mean	5 yrs
Median	3 mos
Range	<1 mo-57 yrs
Case Fatality	
LA County	0.0%
United States	N/A

<sup>a</sup>Cases per 100,000 population.

### ETIOLOGY

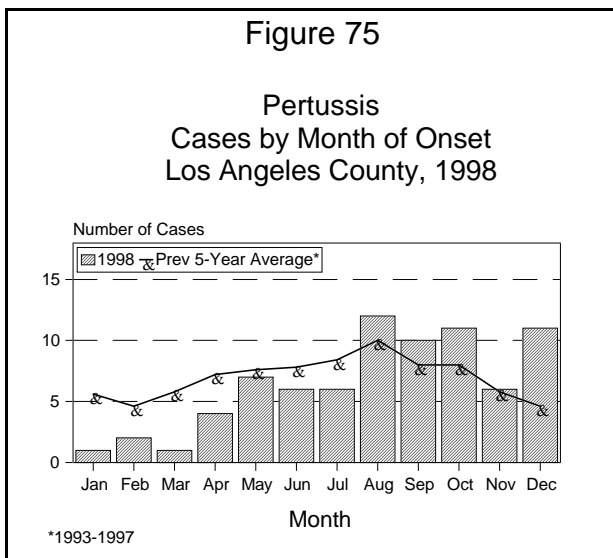
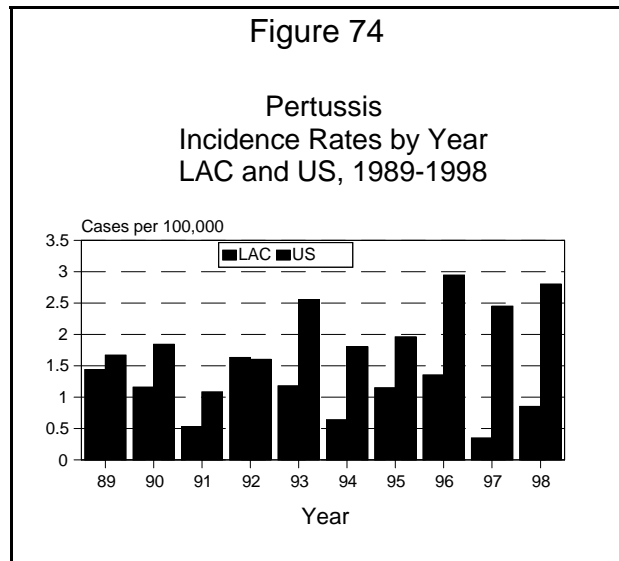
*Bordetella pertussis*, a fastidious, gram-negative, pleomorphic bacilli.

### DISEASE ABSTRACT

The 1998 incidence rate of pertussis in LAC increased from a record low rate the previous year. The pertussis rate was highest among infants. Age-adjusted rates were highest among Blacks. The complication of pneumonia was reported this year; there were no deaths. Forty-seven percent (n=36) of the cases were confirmed with a nasopharyngeal swab culture positive for *Bordetella pertussis*. The other 53% (n=41) met the clinical criteria for pertussis: a cough lasting at least two weeks with either paroxysms of coughing or inspiratory “whoop,” or post-tussive vomiting, without other apparent causes.

### STRATIFIED DATA

**Trends:** The incidence of pertussis in 1998 was 0.9 cases per 100,000 population (Figure 74). This is an increase from the previous year’s all-time low rate of 0.4 cases per 100,000 population. An increase in the rate was expected as pertussis incidence runs in 3- to 4- year cycles.



**Seasonality:** Cases were spread throughout the year with increased activity in August through the fall. The mean five-year trend (1993-1997) also shows a high in August (Figure 75).

**Age:** The age-specific incidence rate among children less than one year of age was 37.6 cases per 100,000 population compared to 1.0 case per 100,000 population among children aged 1-4 years old (Figure 76). The lowest incidence was in the 15-34 years and 35+ years age groups (both 0.1 cases per 100,000 population). Sixty-eight percent of the cases occurred in infants less than 6 months old. The incidence for infants under one year of age followed the traditional pattern of the highest incidence exhibited in infants less than one month of age with a steady decrease in incidence until six months of age (Figure 77).

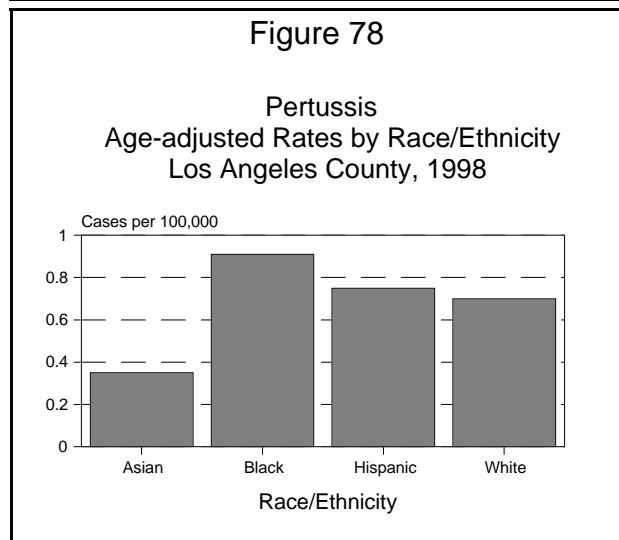
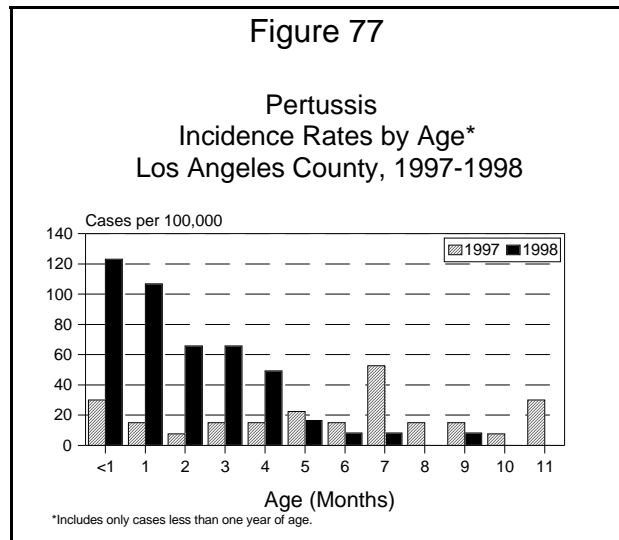
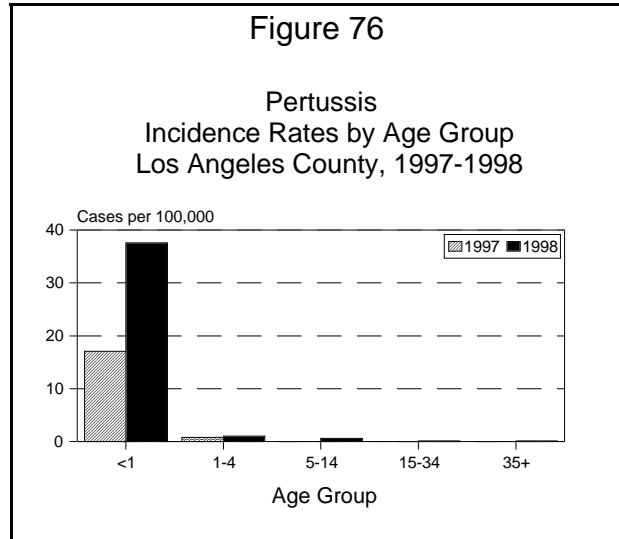
**Sex:** The male-to-female rate ratio was 1:1.3. Morbidity for this disease is usually slightly higher in females than males.

**Race/Ethnicity:** The age-adjusted incidence rate for pertussis was highest for Blacks (0.9 per 100,000 population) followed by Hispanics (0.8 per 100,000) (Figure 78). The greatest number of cases was reported among Hispanics (n=45), followed by Whites (n=17), Blacks (n=11) and Asians (n=4).

**Location:** The highest rates were in the San Fernando and Harbor Health Districts (both 2.0 cases per 100,000 population). The lowest rate was in the Pomona Health District (0.4 cases per 100,000 population).

**COMMENTS**

**Complications/Hospitalization:** Infants are at the highest risk for complications from pertussis. Pneumonia developed in two cases (3%) in 1998; both cases were less than six months old. Of the 51 hospitalized cases, 88% (n=45) were less than one year old. The average hospital stay was 8 days (range 1-30 days). There were no deaths reported.



**Vaccination Status:** Pertussis-containing vaccine should be given at 2 months, 4 months, 6 months, 15-18 months, and 4-6 years of age. Immunity conferred by the pertussis component of the DTP/DTaP vaccine decreases over time with little or no protection 5 to 10 years following the last dose. Twenty-eight of the cases (36%) were less than two months of age and too young for the first vaccine dose. An additional 8 cases (10%) were 15 years old or older; their immunity would have waned even if they had been immunized. Thus, 46% of the cases could not have been prevented by the vaccine. Twenty-five cases were in the 2-month to 6-month age group; of these, 80% were up to date for their age but would have had incomplete immunity. Of the children who could have had full immunity conferred by the vaccine (7 months to 15 years old), eight (50%) were fully up to date, four (25%) were underimmunized, and 4 (25%) were unimmunized. One child in this category had unknown immunization status.

**Adolescent/Adult Cases:** Because immunity conferred by the vaccine wanes, adolescents and adults can serve as a reservoir for the disease. Adults and adolescents with pertussis often go undiagnosed because they are more likely to have mild or atypical disease and physicians may not consider the diagnosis in non-pediatric patients. Unimmunized and underimmunized infants are often infected by undiagnosed adult cases.

# MAP 10. Pertussis

## Rates by Health District, Los Angeles County, 1998\*

