

Pertussis

Agent: *Bordetella pertussis* (bacteria)

Mode of Transmission: Person-to-person transmission by contact with respiratory droplets from infected patients.

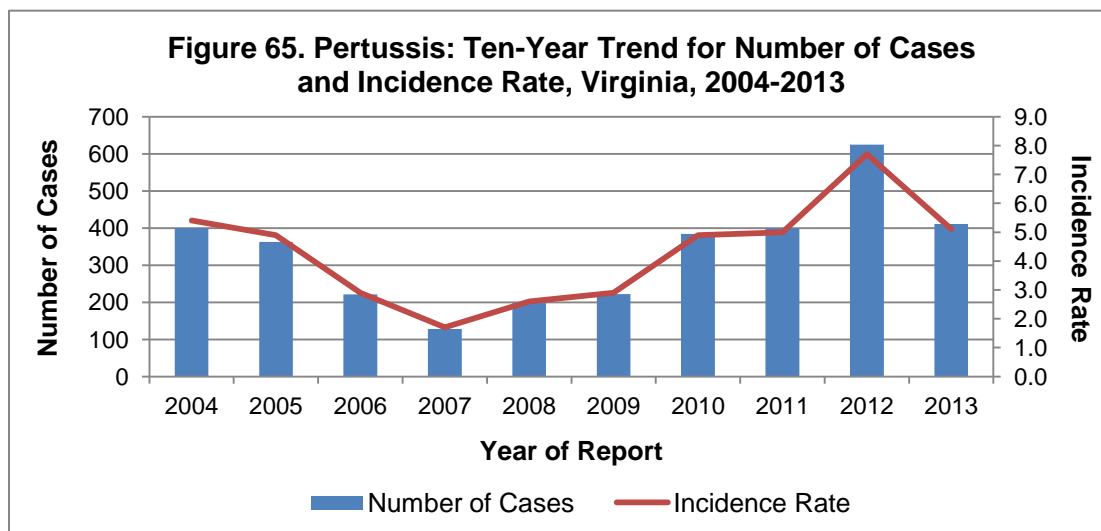
Signs/Symptoms: Insidious cough that progresses to paroxysmal coughing (i.e., severe, sequential coughs with difficulty inhaling) and may be accompanied by post-cough vomiting.

Prevention: Appropriate vaccine should be administered beginning at 2 months of age.

Other Important Information: Pertussis is also known as whooping cough. Coughing fits can last up to 10 weeks or more. In vaccinated populations, the case-fatality rate is low. When deaths occur, they are generally in children less than six months old who are too young to have been vaccinated.

Pertussis: 2013 Data Summary	
Number of Cases:	418
5-Year Average Number of Cases:	365.6
% Change from 5-Year Average:	+14%
Incidence Rate per 100,000:	5.1

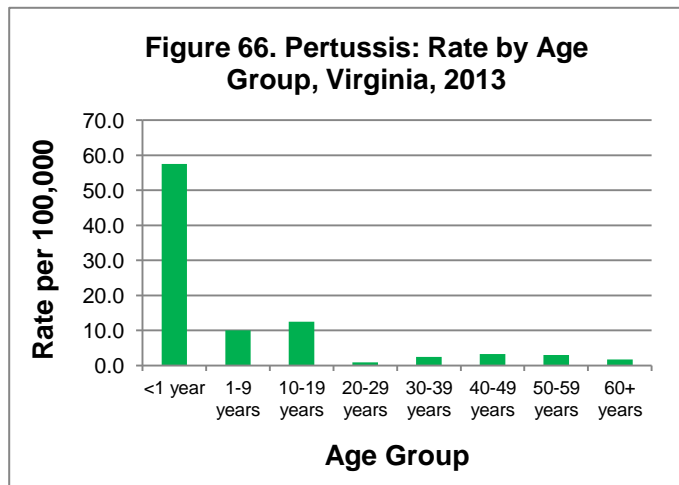
In 2013, 418 cases of pertussis were reported in Virginia. This is a 33% decrease from the 625 cases reported in 2012 but still a 14% increase from the five-year average of 365.6 cases per year (Figure 65). Cases of pertussis typically occur in waves, with peak numbers appearing every 3-5 years. For the past 20-30 years, the peaks have been getting higher and overall case counts have been rising. The number of pertussis cases in 2012 was the highest reported in Virginia since 1959 when 1,114 cases were reported. In addition, the 48,277 cases reported nationally in 2012 was the highest number reported since 1955. In 2013, although the number of cases declined both nationally and in Virginia, they were still higher than numbers seen in previous waves.



Several factors may help explain this sustained recent increase. These include increased awareness of the disease, improved diagnostic tests and their wider availability, better reporting, increased circulation of the bacteria and waning immunity in all age groups. It is also becoming apparent that the acellular pertussis vaccine currently used in the United States may not protect for as long as the

whole cell vaccine that was used earlier. As discussed below, the highest incidence rates, nationally and in Virginia, are in children (i.e., born after 1996) who received only acellular vaccine.

In Virginia, pertussis cases were reported from every age group. However, the less than one year age group had a substantially higher incidence rate than any of the others, with 57.5 cases per 100,000 population (Figure 66). The next highest incidence rates were observed in the 1-9 and 10-19 year age groups, with 10.0 and 12.5 cases per 100,000, respectively. Forty-four percent of cases were missing information on race. Among cases with race reported, incidence in the white population was 2.5 times the rate in the black population (3.5 and 1.4 per 100,000, respectively), and seven times the rate in the “other” race population (0.5 per 100,000). Females had a higher incidence rate than males (5.9 and 4.2 per 100,000, respectively).



Among regions, the southwest region had the highest number of cases and incidence (112 cases, 8.3 per 100,000). Rates in other regions ranged from 8.1 per 100,000 in the northwest region to 3.0 per 100,000 in the central region. (See the map below for more detailed information.) While cases occurred throughout the year, the largest proportion (28%) had onset in the fourth quarter of the year. Ten pertussis outbreaks were reported in 2013. Nearly all of the outbreaks (90%) were linked to school settings. The largest outbreak involved 13 cases from the southwest region. No deaths due to pertussis were reported in 2013.

Pertussis Incidence Rate by Locality Virginia, 2013

