

## **Chickenpox (Varicella)**

Agent: Varicella-zoster virus

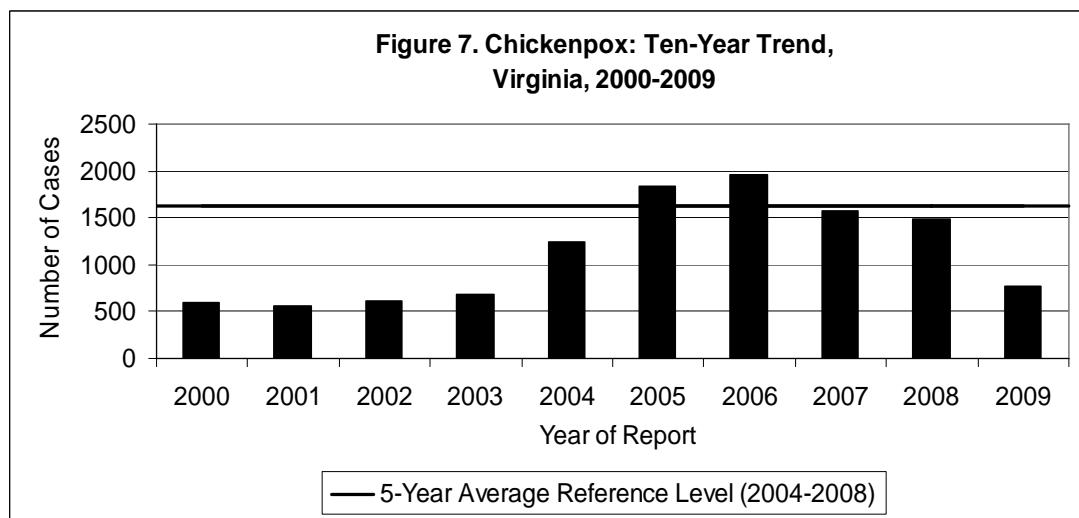
Mode of Transmission: Person-to-person transmission by direct contact or through droplet or airborne spread of vesicle fluid or respiratory secretions from an infected person.

Signs/Symptoms: Acute onset of mild fever and vesicular rash. Successive crops of lesions appear first on the head and progress to the trunk and extremities. The skin lesions can appear on the scalp, armpit, and mucous membranes of the mouth and respiratory tract.

Prevention: Vaccination of children starting at age 12 months followed by a second dose at age 4-6 years.

Other Important Information: The disease is highly transmissible; susceptible household contacts have an 80%-90% risk of becoming infected. Acute varicella is generally mild and self-limited, but severe complications may occur.

The 773 cases of chickenpox reported in Virginia during 2009 represented a 48% decrease from the 1,489 cases in 2008, and was 52% lower than the five-year average of 1,620.8 cases (Figure 7). The drop in the number of cases in 2009 may be attributed to implementation of the recommendation for a second dose of vaccine.



Varicella vaccine was licensed in 1995, and in 1999 vaccination became a requirement for entry into school and daycare in Virginia for all children born on or after January 1, 1997. However, continued outbreaks of chickenpox occurred despite high vaccination coverage, as a single dose of vaccine was found to be only 70-90% effective in preventing infection. As a result, recommendations for a second dose of varicella vaccine, to be administered before kindergarten entry, were published in June, 2007.

The majority of cases (87%) were reported in those less than 20 years of age. The 1-9 year age group had the highest incidence rate (39.1 per 100,000). This was followed by the 10-19 year age group (28.6 per 100,000) and the less than 1 year age group (23.0 per

100,000). The other age groups had much lower incidence rates, ranging from 0.4 to 3.2 cases per 100,000 and confirming that this disease primarily occurs in children and adolescents. Race data were not provided for 28% of the reported cases. Among cases where race was known, incidence in the white population was highest (8.1 per 100,000), followed by rates in the “other” and black populations (4.9 and 4.8 per 100,000, respectively). The rate in males was slightly higher than the rate in females (11.0 and 8.7 per 100,000, respectively).

By region, the highest incidence (17.5 cases per 100,000) occurred in the northwest and was almost twice the rate found in other regions, which ranged between 7.7 and 9.9 cases per 100,000. This higher rate in the northwest region may be attributed to three large school-based outbreaks affecting one county in the region.

Cases occurred throughout the year, with the highest proportion of cases (59%) occurring during the first and second quarters of the year. This is consistent with the traditional seasonal fluctuation seen in chickenpox, with the highest incidence occurring in winter and early spring.

Eighteen outbreaks were reported in 2009, with an average of 11.3 cases per outbreak. All of the outbreaks involved school-aged children. This is fewer than the 24 outbreaks reported in 2008, indicating that the two-dose vaccination schedule is helping reduce the occurrence of illness in young children. While breakthrough infections have continued to occur in vaccinated individuals, on average, the illness in vaccinated individuals is much milder (i.e., less than 50 skin lesions, low or no fever, and a shorter duration of illness).