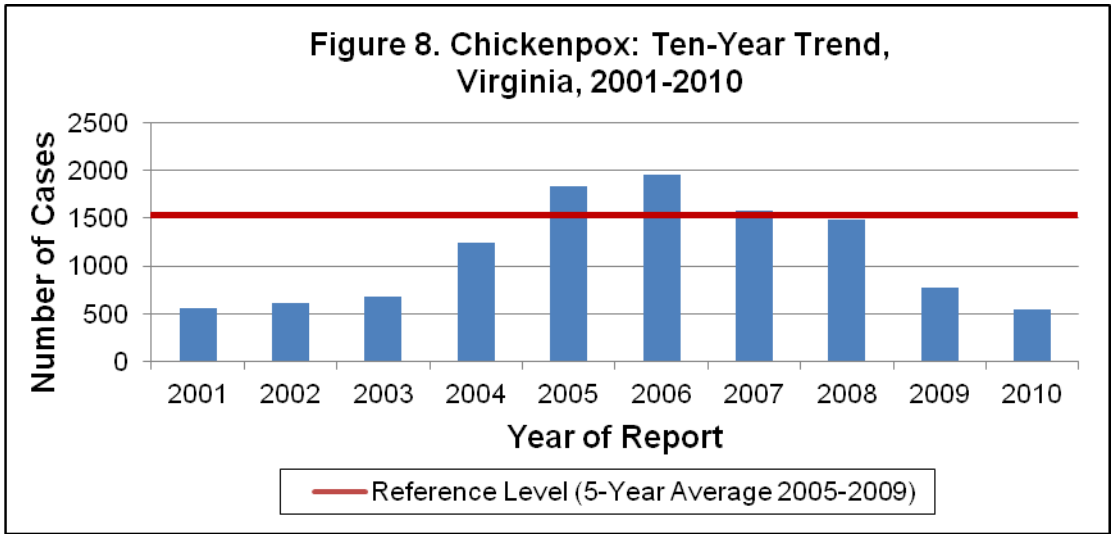
Chickenpox (Varicella)

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 generalized, pruritic, vesicular rash typically consisting of 250 – 500 lesions. 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: Administration of vaccine should occur for children starting at age 12 months and be 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 548 cases of chickenpox reported in Virginia during 2010 represents a 29% decrease from the 773 cases in 2009, and is 64% lower than the five-year average of 1,527.4 cases per year (Figure 8). The drop in the number of cases in 2010 mirrors nationwide trends and 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, outbreaks of chickenpox continued to occur 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 occurring in 2010 (55%) were reported in children less than 10 years of age. The <1 year age group had the highest incidence rate (33.8 per 100,000). This was followed by the 1-9 year age group (28.2 per 100,000) and the 10-19 year age group (15.1 per 100,000). The other age groups had much lower incidence rates, ranging

from 0.1 to 3.0 cases per 100,000, 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 (5.5 per 100,000), followed by rates in the "other" and black populations (4.2 and 3.4 per 100,000, respectively). The rate in males was slightly higher than the rate in females (7.3 and 6.5 per 100,000, respectively).

Cases occurred throughout the year, with the highest proportion of cases (58%) 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 between March and May.

Seven outbreaks were reported in 2010, with an average of 8.1 cases per outbreak. All outbreaks involved school-aged children, and six of the outbreaks occurred in an elementary school setting. The seven outbreaks reported in 2010 is fewer than the 15 outbreaks reported in 2009 and the 24 outbreaks reported in 2008, further 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).

By region, the highest incidence occurred in the northwest region (9.7 cases per 100,000), followed by the northern region (8.1 cases per 100,000). This is consistent with outbreak data as three chickenpox outbreaks were reported in the northwest region and three in the northern region.