

## **Meningococcal Disease**

Agent: *Neisseria meningitidis* (bacteria)

Mode of Transmission: Transmission occurs through contact with respiratory droplets from the nose or throat of an infected person (e.g., through coughing or kissing).

Signs/Symptoms: Meningitis is the most common presentation of invasive disease and includes sudden onset of fever, headache, and stiff neck, and often nausea, vomiting, sensitivity to light, and confusion. A rash may be present. A bloodstream infection may also occur (without meningitis), leading to abrupt onset of fever and a rash; it is often associated with shock and multi-organ failure. Less commonly, meningococcal disease can lead to pneumonia, arthritis, middle ear infections, or inflammation of the epiglottis.

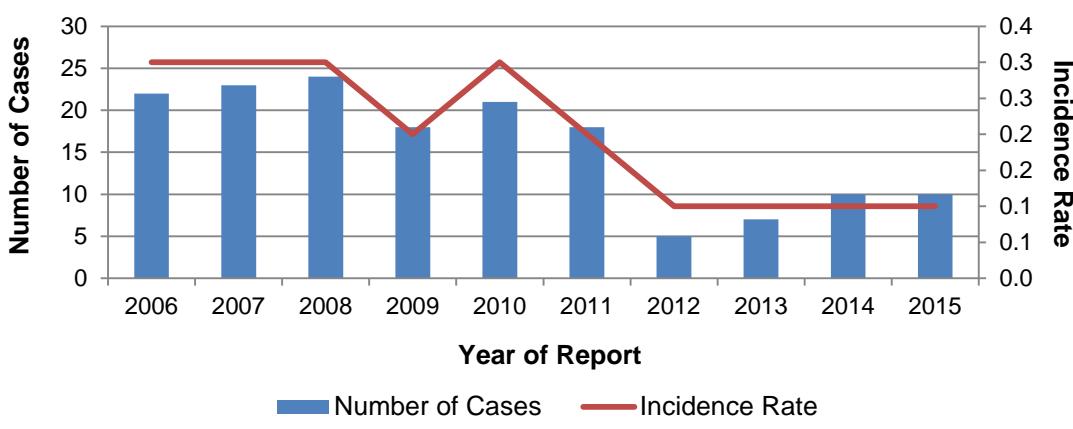
Prevention: Almost all invasive disease is caused by one of five serogroups (A, B, C, W, and Y), with serogroups B, C and Y causing the majority of meningococcal disease cases in the United States. The Advisory Committee on Immunization Practices (ACIP) recommends routine vaccination with a quadrivalent (protects against serogroups A, C, W, and Y) meningococcal conjugate vaccine for adolescents 11-12 years of age, with a booster dose at 16 years. Vaccination is also recommended for certain other groups at increased risk for meningococcal disease. In October 2014, the FDA approved the first serogroup B vaccine as a three-dose series. ACIP recommends use of a serogroup B meningococcal vaccine in certain persons aged 10 years or older who are at increased risk for meningococcal disease. Vaccination is also recommended to control outbreaks.

Other Important Information: Crowding, exposure to tobacco smoke, and concurrent upper respiratory tract infections increase the risk of disease. Individuals with certain medical conditions, such as complement component deficiency (immunodeficiency disorders) and asplenia (no spleen), are also at increased risk for disease. Meningococcal disease is more commonly diagnosed among infants, adolescents, and young adults than other age groups. Five to ten percent of people carry *N. meningitidis* in their nose without having any symptoms of disease; those who develop the disease are usually infected by a carrier who does not have symptoms. The case-fatality for meningococcal disease is eight to fifteen percent, even with appropriate antibiotic therapy.

Meningococcal Disease: 2015 Data Summary	
Number of Cases:	10
5-Year Average Number of Cases:	12.2
% Change from 5-Year Average:	-18%
Incidence Rate per 100,000:	0.1

During 2015, ten cases of meningococcal disease were reported in Virginia, with a statewide incidence rate of 0.1 per 100,000 population (Figure 50). The number of cases reported in 2015 remained unchanged from 2014, and represents an 18% decrease from the five-year average of 12.2 cases per year. Rates of meningococcal disease have been declining in the U.S. and Virginia over the last two decades.

**Figure 50. Meningococcal Disease: Ten-Year Trend for Number of Cases and Incidence Rate, Virginia, 2006-2015**

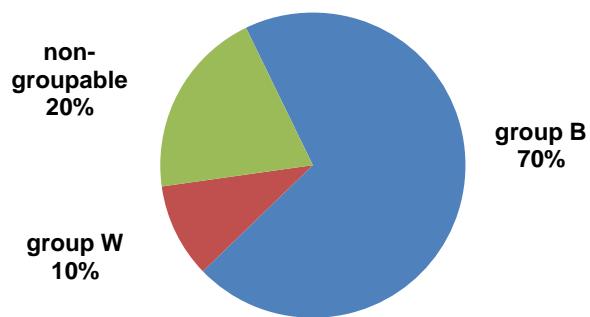


In Virginia, the 10-19 year age group accounted for three cases and an incidence rate of 0.3 cases per 100,000 persons. The 30-39 and 60 year and older age groups each accounted for two cases and incidence rates of 0.2 and 0.1 per 100,000, respectively. The remaining three cases occurred in the less than 1 year, 1-9 and 50-59 year age groups. Race information was provided for 90% of the reported cases. Eight cases occurred in the white population, resulting in an incidence rate of 0.1 per 100,000. One case was reported in the black population, and one case was reported with unknown race. The incidence rate among males and females was similar (0.1 per 100,000, respectively).

Five cases were reported from the central region (0.4 per 100,000), three cases from the eastern region (0.2 per 100,000) and two cases from the northern region (0.1 per 100,000). No cases were reported from the northwest or southwest regions. See the map below for incidence rates by locality; the ten cases were all reported from different localities. While cases occurred throughout the year, 40% were reported during the third quarter.

Serogroup was reported for eight of the ten (80%) cases. Group B was the most common serogroup identified (seven cases, 70%). One case (10%) was serogroup W, and two (20%) cases were non-groupable (Figure 51). Vaccination with a quadrivalent meningococcal vaccine was reported for one individual, and the case was linked to disease caused by serogroup B. Of the remaining nine cases, vaccination status was reported as unknown except for one which was reported as receiving no vaccine. Three deaths were attributed to meningococcal disease in 2015, including one death each in the following age groups: 1-9 years, 10-19 years, and 50-59 years. No outbreaks attributed to meningococcal disease were reported in 2015 in Virginia.

**Figure 51. Meningococcal Disease: Meningococcal Serogroups, Virginia, 2015**



## Meningococcal Disease Incidence Rate by Locality Virginia, 2015

