

Legionellosis

Agent: *Legionella* species (bacteria); most infections in the United States are caused by *Legionella pneumophila*

Mode of Transmission: Inhalation of contaminated aerosolized water (e.g., sprays, mists).

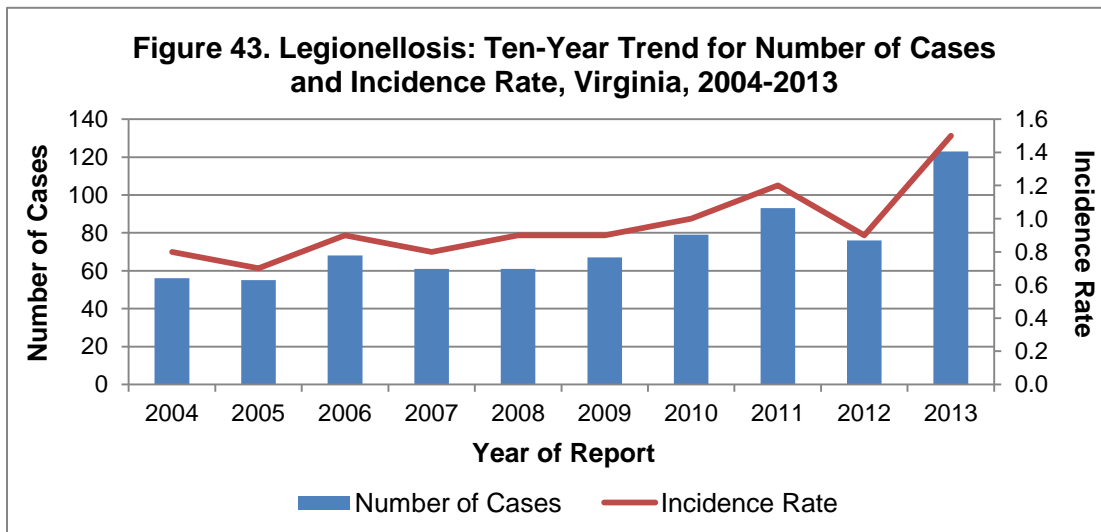
Signs/Symptoms: Infection with *L. pneumophila* causes two distinct illnesses: Legionnaires' disease, characterized by fever, muscle aches, headaches, malaise, cough, and pneumonia with progressive respiratory distress; and Pontiac fever, a milder influenza-like illness without pneumonia characterized by quick onset. Pontiac fever and Legionnaires' disease are referred to as "legionellosis", separately or together.

Prevention: For outbreaks, control measures include disinfection of contaminated water sources by chlorination or superheating of water from 160° to 170°F, and appropriate mechanical cleaning.

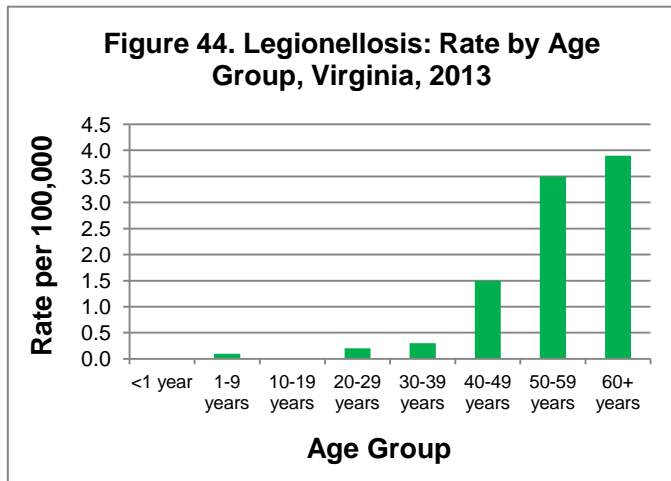
Other Important Information: Legionellosis is more common among people who are elderly, are immunocompromised, or have underlying lung disease. Virginia has experienced a pattern seen nationally, in which there was an increase in legionellosis cases in 2003, followed by a higher incidence in the post-2003 period than in the pre-2003 period. The cause of this increase is not clearly understood. Factors that may contribute to the higher number of cases in 2003 and later include an increasing population of older persons and persons at high risk for infection, as well as improved diagnosis and reporting of the condition. Additional factors may include CDC's call for more active and timely surveillance of travel-associated legionellosis and changing weather patterns.

Legionellosis: 2013 Data Summary	
Number of Cases:	123
5-Year Average Number of Cases:	76.2
% Change from 5-Year Average:	+61%
Incidence Rate per 100,000:	1.5

During 2013, 123 cases of legionellosis were reported, the highest number ever reported for a single year in Virginia. This represents a 61% increase from the 76 cases reported in 2012, as well as a 61% increase from the five-year average of 76.2 cases per year (Figure 43). Preliminary CDC data indicate that several other states in the US saw a similar increase in legionellosis cases in 2013, especially in the mid-Atlantic region. One reason for this rise in incidence could be the unusually warm and humid weather experienced during the summer by many states throughout the country, as there is some evidence that legionellosis incidence may be influenced by certain weather conditions.



Legionellosis incidence is closely associated with age. In 2013, the highest incidence occurred in the 60 year and older age group (3.9 per 100,000), followed closely by the 50-59 year age groups (3.5 per 100,000). One case occurred in a child in the 1-9 year age group, which is the first time a legionellosis case was reported in this age group in Virginia since 2007 (Figure 44). Although information on race was missing for 30% of cases, the available information suggests that incidence was higher in the black population than the white population (1.5 and 1.0 per 100,000, respectively). Additionally, incidence was higher among males than females (1.8 and 1.2 per 100,000, respectively).



The highest incidence rate occurred in the central region (2.2 per 100,000), followed by the eastern region (2.0 per 100,000), and the northwest and southwest regions (1.4 per 100,000 each). The lowest rate was seen in the northern region (0.9 per 100,000). Geographically, cases were dispersed among localities throughout the state, although there were several localities with high incidence rates in the southwest region (refer to map below). While cases occurred throughout the year, a marked seasonality existed with 72% of cases occurring in the second and third quarters of the year (37% and 35%, respectively).

One possible outbreak reported in 2013 was attributed to *Legionella pneumophila*. This cluster of eight confirmed cases and one suspect case occurred over a short period of time within two districts in the eastern region. Four of these cases were a family group that reported recent travel to the same out-of-state hotel, and an additional three cases reported recent travel to different states. After extensive interviews, no exposures or locations were found in common for all nine cases, although the four in the family group shared potential exposures. It is possible that some of these cases may have acquired their infections from

another state. Additionally, local weather conditions may have led to an increase in *Legionella* bacteria in the environment, leading to an increase in disease occurrence not attributable to a single source.

The four deaths (3%) attributed to legionellosis in 2013 occurred in two males and two females, all in the 60 year and older age group.

Legionellosis Incidence Rate by Locality Virginia, 2013

