

Reportable Disease Surveillance in Virginia, 2016

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its twenty-ninth annual report of disease surveillance activities. This report summarizes morbidity data reported by the Virginia Department of Health, Office of Epidemiology to the federal Centers for Disease Control and Prevention (CDC) during calendar year 2016.

The Office of Epidemiology, in conjunction with health departments in districts throughout Virginia, is responsible for the ongoing statewide surveillance of diseases according to the provisions of the Virginia Regulations for Disease Reporting and Control. Disease surveillance involves the collection of pertinent data, the tabulation and evaluation of these data, and the dissemination of information based on the analysis of the data. These data provide the foundation for public health activities to reduce morbidity.

Diseases must be diagnosed and reported to the health department before case investigations can occur and disease control activities can begin. Physicians, personnel in medical care facilities, laboratory directors, and other health care providers are therefore essential to the surveillance process. By reporting diseases, health care personnel aid the health department in identifying unusual disease patterns occurring in the community. The health department notifies physicians of these unusual disease patterns, which helps physicians provide a more rapid diagnosis and treatment of individuals who present with compatible symptoms.

This report summarizes those diseases and conditions that are listed as officially reportable in the Regulations for Disease Reporting and Control. The report is divided into four sections as described below.

Introduction and Data Summary: Tables 1 through 7 summarizing 2016 morbidity are included in this introductory section. These tables include the list of reportable diseases in Virginia; ten-year trends for both the number of reported cases and the incidence rate per 100,000 population for all reportable diseases; the five-year average for number of reported cases and incidence rate based on the five years previous to the current reporting year; the number of reported cases and incidence rate per 100,000 population for selected diseases by age group, race, sex, and health planning region; and the number and percent of reported cases by quarter of onset.

Descriptive Epidemiology of Reportable Diseases: This section consists of narratives and graphics describing the populations reported with each specific disease or condition. The section includes information about the total number of cases reported; the ten-year trend in number of reported cases and incidence rate; the demographics of cases in terms of age, race and sex; and the distribution of cases by both date of onset and health planning region within the state. Mortality, microbial species, and other attributes of diseases are also presented when applicable. Sources of information include the Virginia Electronic Disease Surveillance System (VEDSS) database, the CDC (<http://www.cdc.gov/>), Red Book: 2015 Report of the Committee on Infectious Diseases (American Academy of Pediatrics, Kimberlin, D., Brady, M., Jackson, M., Long, S., eds., 2015), and Control of Communicable Diseases Manual (Heymann, D., ed., 2015).

Population-based rates are often presented to provide a measure of disease frequency in the population and to allow for comparisons between groups. When calculating rates, population data prepared by the United States Census Bureau for the state's cities and counties were used. The data were based on Census population estimates for 2015.

Race is usually presented as black, white, or other. The "other" race category includes persons reported as Asian/Pacific Islanders, American Indians, Alaskan Natives or multi-racial persons.

In describing the occurrence of disease throughout the year, date of onset is used whenever it is available. Onset is the time when symptoms first occurred. Some cases reported in 2016 experienced onset prior to the year of report. For surveillance purposes, these cases are counted with this report due to receipt of notification or confirmatory test results in 2016. In some situations, information is only available on the date of report, or the date the report was first received by the health department, and these dates are used in place of date of onset. Date of specimen collection or date of diagnosis may also be used to estimate date of onset.

To the extent possible, rates by locality are calculated based on residence of the patient. When the address of the patient is neither reported by the health care provider nor ascertained by the health department, the location of the reporting source, such as the physician, hospital, or laboratory, is used.

Number of Cases and Rate by Locality: This section of the report presents the number of cases and incidence rate per 100,000 population for selected diseases by locality, district, and health planning region. In previous reports, cities and counties that shared one health department were combined and the data were presented as one jurisdiction. Beginning with the 2013 annual report, all independent cities and counties are listed as separate entities. Caution is urged in interpreting the data in this section, as well as in the following section because localities with small populations may have large disease rates but only a few reported cases of disease. Both numbers of cases and incidence rates should be considered when using these tables to rank morbidity by city or county. Population data have been adjusted to represent the specific population under surveillance when data are restricted to certain age groups, including childhood elevated blood lead levels (less than 16 years of age), Creutzfeldt-Jakob disease (less than 55 years of age), and invasive *Streptococcus pneumoniae* infection (less than 5 years of age) .

Maps of Incidence Rates: Disease-specific maps are presented within several of the narratives to depict incidence rates by locality. For each disease-specific map, the rates have been divided into four categories using the following process:

Category 1 – Localities reporting zero cases of the disease.

Category 2 – Localities with an incidence rate greater than zero and up to the mean for the state.

Category 3 – Localities with an incidence rate greater than the mean and up to one standard deviation above the mean for the state.

Category 4 – Localities with an incidence rate greater than one standard deviation above the mean for the state.

The Office of Epidemiology hopes that the readers of this report will find it to be a valuable resource for understanding the epidemiology of reportable diseases in Virginia. Any questions or suggestions about this report may be directed to Lala Wilson at the Virginia Department of Health, Office of Epidemiology, P.O. Box 2448, 109 Governor St., 5th Floor, Richmond, Virginia 23218, or by telephone at 804-864-8141.

Table 1. Reportable Diseases in Virginia, 2016

Acquired immunodeficiency syndrome (AIDS)	Measles (Rubeola)
Amebiasis	Meningococcal disease
Anthrax	Monkeypox (removed 10/20/2016)
Arboviral infection (e.g., CHIK, dengue, EEE, LAC, SLE, WNV, Zika)	Mumps
Botulism	Mycobacterial diseases (including AFB)
Brucellosis	
Campylobacteriosis	Ophthalmia neonatorum
Chancroid	Outbreaks, all (including foodborne, healthcare-associated, occupational, toxic substance-related, and waterborne)
Chickenpox (Varicella)	Pertussis
<i>Chlamydia trachomatis</i> infection	Plague
Cholera	Poliovirus infection, including poliomyelitis
Coronavirus infection, severe (e.g., SARS-CoV, MERS-CoV) (changed 10/20/2016 to include any severe coronavirus)	Psittacosis
Creutzfeldt-Jakob disease if <55 years of age	Q fever
Cryptosporidiosis	Rabies, human and animal
Cyclosporiasis	Rabies treatment, post-exposure
Diphtheria	Rubella, including congenital rubella syndrome
Disease caused by an agent that may have been used as a weapon	Salmonellosis
Ehrlichiosis/Anaplasmosis	Shigellosis
<i>Escherichia coli</i> infection, Shiga toxin-producing	Smallpox (variola)
Giardiasis	Spotted fever rickettsiosis, including RMSF
Gonorrhea	<i>Staphylococcus aureus</i> infection, vancomycin-intermediate or vancomycin-resistant (MRSA removed 10/20/2016)
Granuloma inguinale	Streptococcal disease, Group A, invasive or toxic shock
<i>Haemophilus influenzae</i> infection, invasive	<i>Streptococcus pneumoniae</i> infection, invasive, in children <5 years of age
Hantavirus pulmonary syndrome	Syphilis
Hemolytic uremic syndrome (HUS)	Tetanus
Hepatitis A	Toxic substance-related illness
Hepatitis B (acute and chronic)	Trichinosis (Trichinellosis)
Hepatitis C (acute and chronic)	Tuberculosis (TB), active disease
Hepatitis, other acute viral	Tuberculosis infection in children <4 years of age
Human immunodeficiency virus (HIV) infection	Tularemia
Influenza (Influenza A, novel virus, influenza-associated deaths in children < 18 years of age)	Typhoid/paratyphoid fever
Lead, elevated blood levels (reportable level changed 10/20/2016)	Unusual occurrence of disease of public health concern
Legionellosis	Vaccinia, disease or adverse event
Leprosy (Hansen disease)	<i>Vibrio</i> infection
Leptospirosis (added 10/20/2016)	Viral hemorrhagic fever
Listeriosis	Yellow fever
Lyme disease	Yersiniosis
Malaria	