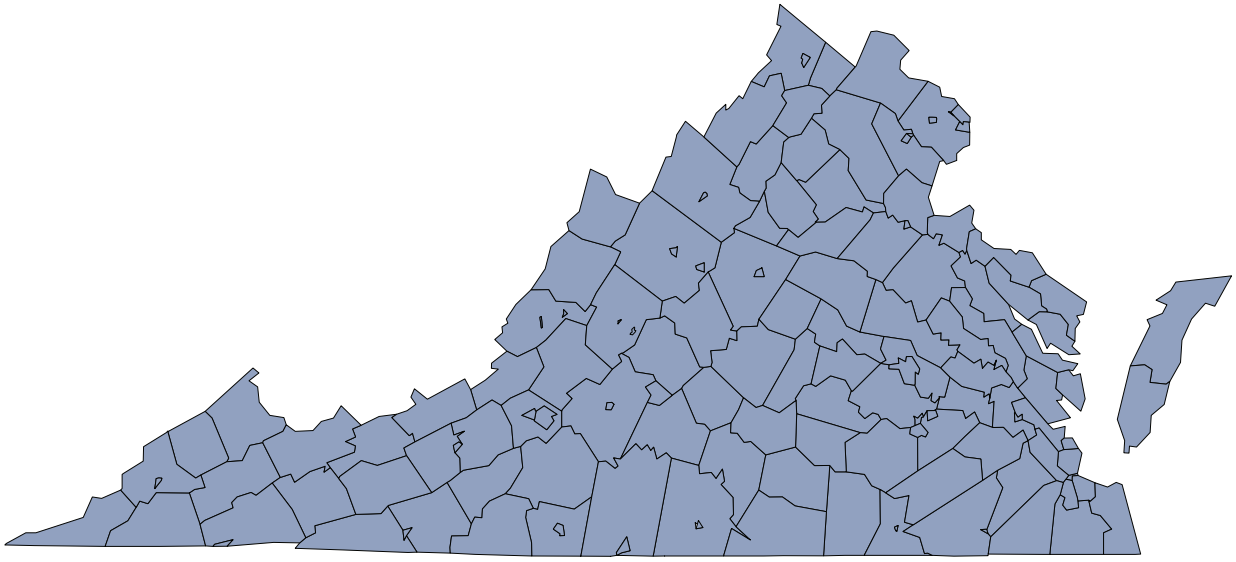
Reportable Disease Surveillance in Virginia, 2003



VDH VIRGINIA DEPARTMENT OF HEALTH
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Office of Epidemiology

Reportable Disease Surveillance in Virginia, 2003

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its sixteenth 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 2003.

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 *Regulations for Disease Reporting and Control.* Disease surveillance involves the collection of pertinent data, the tabulation and evaluation of the data, and the dissemination of the information to all who need to know. These data provide the foundation for public health activities to reduce morbidity.

Diseases must first 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, laboratories, and other health care providers are therefore key 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 either listed as officially reportable in the *Regulations for Disease Reporting and Control* or that represent other communicable diseases of public health interest that were reported to the Virginia Department of Health. The report is divided into four sections as described below.

Introduction and Data Summary: Tables summarizing 2003 morbidity are included in this introductory section. These tables include the list of reportable diseases; ten year trends; number of reports and incidence rate per 100,000 population for selected diseases by health planning region, age group, race, and sex; and number and percent of reports by quarter of onset.

Descriptive Epidemiology of Reportable Diseases: This section consists of narrative and graphics summarizing the populations reported with each disease or condition. Included is information about the total number of cases reported; the ten year trend in reported cases; the demographics of cases in terms of their age, race and sex; and the distribution of cases by date of onset and health planning region of the state. Mortality, microbial species, and other attributes of diseases also are presented when applicable.

Population-based rates are often presented to provide a measure of disease frequency in the population and to allow for comparisons to be made between different groups. In calculating rates, population estimates for 2003 prepared by the United States Census Bureau for the state's cities and counties and total population were used. Age, race, sex and ethnicity populations were extrapolated for 2003 based on their year 2000 proportions. Some additional notes on coding are listed below.

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

Date of onset is used whenever it is available. Onset is the time at which symptoms first occurred. Some cases reported in 2003 experienced onset prior to the year of report. In some situations information is only available on the date of report, the date the information was furnished to the CDC, or the date the report was first received in the Office of Epidemiology, and these dates are used in place of date of onset. Date of specimen collection or date of hospital admission may also be used to estimate date of onset.

To the extent possible, rates 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, then the location of the reporting source, i.e., 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. Cities and counties that have separate health departments are listed individually. Those that share one health department are combined. Caution is urged in interpreting the data in this section as well as in the following section. Localities with small populations may have large disease rates but only a few reported cases of disease. Both number of cases and incidence rates should be weighed when using these tables to rank morbidity by city or county.

Maps of Incidence Rates: The first map in this section illustrates the location of the various cities and counties in Virginia. This is followed by a map of the health planning regions in Virginia. Following that, disease-specific maps are presented which depict the incidence rates listed in the previous section. For each 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 Julie Plagenhoef, Virginia Department of Health, Office of Epidemiology, Post Office Box 2448, 109 Governor Street, 4th Floor, Richmond, Virginia 23218 or by calling 804-864-8141.

Data Summary

Following this section are pages containing tables of statewide summary data for selected diseases. Table 1 is a list of reportable conditions in Virginia in 2003. Table 2 presents the number of cases of selected diseases reported annually during the past ten years. Table 3 delineates the same data by age group, Table 4 by race group, and Table 5 by sex. Table 6 shows number of cases and rate per 100,000 population by region. Table 7 provides the number and percent of cases with onset by quarter of the year. A brief summary of the major findings presented in these tables follows.

TREND – Notable increases (>5%) were observed for the following diseases in 2003 compared to 2002: amebiasis, campylobacteriosis, chickenpox, *Chlamydia trachomatis* infection, cryptosporidiosis, cyclosporiasis, ehrlichiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, giardiasis, invasive *Haemophilus influenzae* infection, legionellosis, listeriosis, Lyme disease, malaria, pertussis, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, tuberculosis, tularemia, typhoid fever, and *Vibrio* infection. Notable decreases occurred for the number of cases of AIDS, *Escherichia coli* O157:H7, gonorrhea, hemolytic uremic syndrome, hepatitis A, HIV infection, elevated blood lead levels in children, meningococcal infection, mumps, rabies in animals, Rocky Mountain spotted fever (RMSF), salmonellosis, shigellosis, and early syphilis.

REGION – The northwest health planning region had the highest incidence rates of campylobacteriosis, ehrlichiosis, *Escherichia coli* O157:H7 infection, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, arboviral infection, legionellosis, pertussis, RMSF, and invasive group A streptococcal disease compared to the other regions of the state. That region had the lowest rates of chickenpox, HIV infection, shigellosis, and early syphilis. No cases of infant botulism, hemolytic uremic syndrome, acute hepatitis C, mumps, human rabies, severe acute respiratory syndrome (SARS), or *Vibrio* infection were reported in the northwest region. The only cases of brucellosis and psittacosis and the largest number of rabid animals were reported from this region.

The northern health-planning region experienced the highest incidence rates of AIDS, amebiasis, giardiasis, hepatitis A, Lyme disease, malaria, salmonellosis, tuberculosis, and typhoid fever. The lowest incidence rates of *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenza*e infection, acute hepatitis B, elevated blood lead levels in children, meningococcal infection, pertussis, RMSF, and invasive group A streptococcal disease were reported from the northern region. No cases of infant botulism, brucellosis, hemolytic uremic syndrome, mumps, psittacosis, SARS, or invasive *Streptococcus pneumoniae* in children less than 5 years old were reported in this region. The single human rabies case was reported from the northern region.

The southwest health-planning region had the highest incidence rate for cryptosporidiosis, invasive *Haemophilus influenzae*infection, acute hepatitis C, meningococcal infection, and shigellosis. It had the lowest rates for AIDS, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, giardiasis, hepatitis A, Lyme disease, malaria, salmonellosis, and tuberculosis. There were no cases of brucellosis, ehrlichiosis, Kawasaki syndrome, mumps,

psittacosis, human rabies, SARS, toxic shock syndrome, tularemia, or typhoid fever reported in the southwest. This region reported the only cases of infant botulism and hemolytic uremic syndrome.

The central health-planning region experienced the highest rates of hepatitis B, HIV infection, elevated blood levels in children, and tularemia. The lowest rates of arboviral infection, legionellosis, and listeriosis were calculated for this region. No cases of amebiasis, infant botulism, brucellosis, cyclosporiasis, hemolytic uremic syndrome, psittacosis, human rabies, SARS, or toxic shock syndrome were reported from central Virginia. The central region reported the only case of mumps for 2003.

The eastern health-planning region had the highest incidence rates of chickenpox, *Chlamydia trachomatis* infection, gonorrhea, reportable invasive *Streptococcus pneumoniae* infection, and *Vibrio* infection. That region also experienced the lowest rate of campylobacteriosis, *Escherichia coli* O157:H7 infection. No cases of infant botulism, brucellosis, cyclosporiasis, hemolytic uremic syndrome, mumps, psittacosis, human rabies, or tularemia were reported from the eastern region. This region reported the only confirmed case of SARS in Virginia.

AGE – Infants (age <1 year) had the greatest incidence rate for infant botulism, campylobacteriosis, cryptosporidiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infection, invasive *Haemophilus influenzae* infection, Kawasaki syndrome, listeriosis, meningococcal infection, pertussis, salmonellosis, and reportable invasive *Streptococcus pneumoniae*. The lowest rates of Lyme disease, HIV infection, malaria, RMSF, invasive group A streptococcal disease, typhoid fever, and *Vibrio* infection were reported in infants.

Children aged 1-9 years had the highest incidence rates for *Escherichia coli* O15:H7 infection, giardiasis, lead-elevated blood levels in children, shigellosis, and typhoid fever. No cases of AIDS, brucellosis, *Chlamydia trachomatis* infection, ehrlichiosis, acute hepatitis B, acute hepatitis C, legionellosis, listeriosis, mumps, psittacosis, human rabies, SARS, or early syphilis were reported among children in this age group. The single case of hemolytic uremic syndrome was reported in the 1-9 year old age group.

Persons aged 10-19 years did not have the highest rates for any diseases. They had the lowest rates for campylobacteriosis, invasive *Haemophilus influenzae* infection, hepatitis A, elevated blood lead levels in children, hepatitis A, and salmonellosis. There were no cases of brucellosis, cyclosporiasis, hemolytic uremic syndrome, Kawasaki syndrome, legionellosis, listeriosis, mumps, psittacosis, human rabies, SARS, toxic shock syndrome, or tularemia in this age group.

Persons in their twenties were reported with higher rates of *Chlamydia trachomatis* infection, cyclosporiasis, gonorrhea, and acute hepatitis C than persons in other age groups. The human rabies case was also reported from this age group. Persons in their thirties had the highest incidence rates for AIDS, hepatitis B, HIV infection, malaria, and early syphilis. The two cases of brucellosis were reported among the 30-39 year age group. Persons in their forties did not have the highest rate of any disease except psittacosis, the only case of which was reported from

this age group. The fifty years and older age group had the highest rate of arboviral infections, legionellosis, Lyme disease, Rocky Mountain spotted fever, invasive group A streptococcus, tuberculosis, and *Vibrio* infection. The only case of mumps and the case of SARS was also reported from this age group.

RACE – For conditions where race was known for at least 80% of cases, the black population had the highest incidence rates for AIDS, *Chlamydia trachomatis* infection, gonorrhea, HIV infection, legionellosis, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, early syphilis, toxic shock syndrome, and tuberculosis. The white population had the highest incidence rates for arboviral infections, campylobacteriosis, cryptosporidiosis, Lyme disease, pertussis, and *Vibrio* infection.

SEX – In general, the incidence rates of reportable diseases tend to be higher in males than females. The following lists some exceptions seen in the 2003 data. Females were reported to have the following diseases more often than males: *Chlamydia trachomatis* infection, *Escherichia coli* O157:H7, gonorrhea, pertussis, salmonellosis, and shigellosis. The incidence rates were very similar or the same for males and females for brucellosis, cyclosporiasis, non-O157: H7 enterohemorrhagic *Escherichia coli* infections, invasive *Haemophilus influenzae*, acute hepatitis C, listeriosis, Lyme disease, meningococcal infection, invasive group A streptococcal disease, invasive *Streptococcus pneumoniae* in children less than 5 years old, toxic shock syndrome, and typhoid fever.

ONSET – A few diseases showed distinct seasonal incidence. Fifty-six percent of typhoid fever, 31% of early syphilis, 41% of invasive *Streptococcus pneumoniae* in children less than 5 years old, 43% of invasive group A streptococcal disease and 39% of listeriosis cases occurred during the first quarter of the year. A large percentage of arboviral infections, campylobacteriosis, cryptosporidiosis, ehrlichiosis, non-O157: H7 enterohemorrhagic *Escherichia coli* infections, legionellosis, Lyme disease, malaria, Rocky Mountain spotted fever, salmonellosis, shigellosis, toxic shock syndrome, and *Vibrio* infection were reported during the second and third quarters of the year. A large portion of cyclosporiasis (67%), pertussis (57%), and tularemia cases (75%) had reported onset dates during the fourth quarter.

Table 1. Reportable Diseases in Virginia, 2003

Acquired immunodeficiency syndrome (AIDS)
Amebiasis
Anthrax
Arboviral infection (e.g., EEE, LAC, SLV, WNV)
Botulism
Brucellosis
Campylobacter infection
Chancroid
Chickenpox
Chlamydia trachomatis infection
Cholera
Creutzfieldt-Jakob disease if <55 years of age
Cryptosporidiosis
Cyclosporiasis
Diphtheria
Ehrlichiosis
Escherichia coli O157:H7 and other enterohemorrhagic *E. coli* infections
Giardiasis
Gonorrhea
Granuloma inguinale
Haemophilus influenzae infection, invasive
Hantavirus pulmonary syndrome
Hemolytic uremic syndrome (HUS)
Hepatitis A
Hepatitis B (acute and chronic)
Hepatitis C (acute and chronic)
Hepatitis, other acute viral
Human immunodeficiency virus (HIV) infection
Influenza
Kawasaki syndrome
Lead - elevated blood levels
Legionellosis
Leprosy (Hansen disease)
Listeriosis
Lyme disease
Lymphogranuloma venereum
Malaria
Measles (Rubeola)
Meningococcal infection
Monkeypox
Mumps
Ophthalmia neonatorum
Outbreaks, All (including foodborne, nosocomial, occupational, toxic substance-related, water borne, and other outbreaks)
Pertussis (Whooping cough)
Plague
Poliomyelitis
Psittacosis
Q fever
Rabies, human and animal
Rabies treatment, post exposure
Rocky Mountain spotted fever
Rubella (German measles), including congenital rubella syndrome
Salmonellosis
Severe acute respiratory syndrome (SARS)
Shigellosis
Smallpox
Streptococcal disease, Group A, invasive
Streptococcus pneumoniae, invasive if <5 years of age
Syphilis
Tetanus
Toxic shock syndrome
Toxic substance-related illness
Trichinosis
Tuberculosis disease (mycobacteria)
Tuberculosis infection in children <4 years
Tularemia
Typhoid fever
Typhus
Unusual occurrence of disease of public health concern
Vaccinia, disease or adverse event
Vancomycin-resistant *Staphylococcus aureus*
Vibrio infection
Viral hemorrhagic fever
Yellow fever