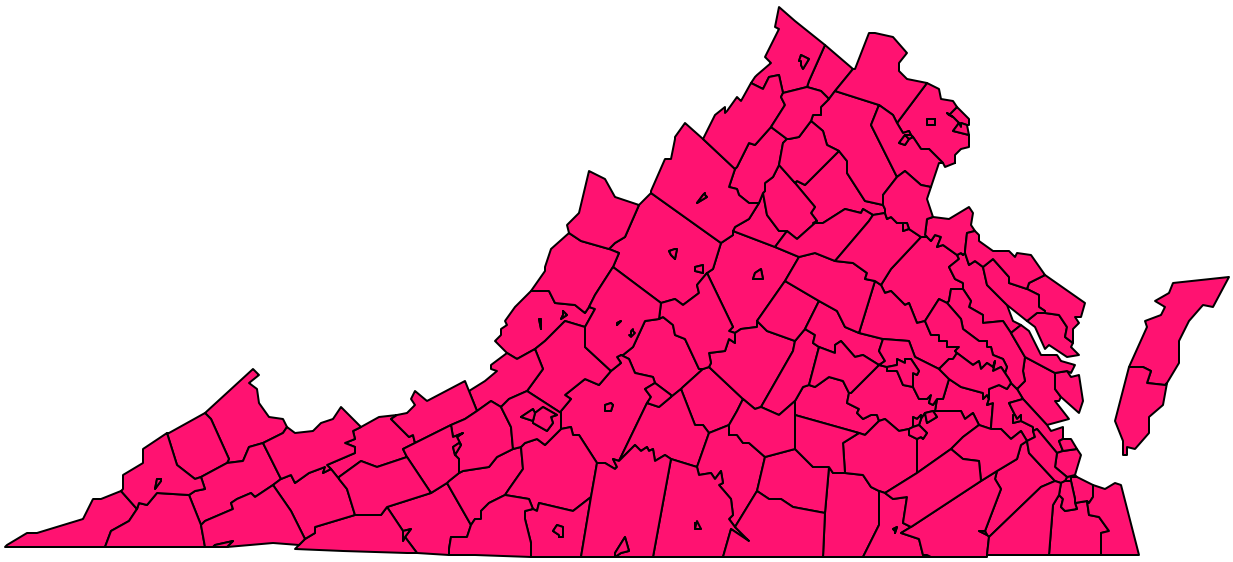
Reportable Disease Surveillance in Virginia, 2002



VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

Office of Epidemiology

Reportable Disease Surveillance in Virginia, 2002

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We appreciate the commitment to public health of all epidemiology staff in local and district health departments and the Central Office, as well as the conscientious work of nurses, environmental health specialists, infection control practitioners, physicians, laboratory staff, and administrators. These persons report or manage disease surveillance data on an ongoing basis and diligently strive to control morbidity in Virginia. This report would not be possible without the efforts of all those who collect and follow up on morbidity reports.

We also thank the Central Office staff who contributed to this report.

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its fifteenth 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 2002.

The Office of Epidemiology, in conjunction with health departments in districts throughout Virginia, is responsible for the ongoing statewide surveillance of diseases reported 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, therefore, are key to the surveillance process. Those who report can also benefit because they will be notified when the health department detects unusual disease patterns occurring in the community, thus raising the index of suspicion when individuals present with compatible symptoms and facilitating more rapid diagnosis and treatment.

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 2002 morbidity are included in this introductory section. These tables include the list of reportable diseases; ten year trend of disease reports; 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 2002 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 2002 based on their year 2000 totals. Some additional notes on coding are listed below.

Race is usually presented as black, white, or other. The "other" race category refers to 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 2002 experienced onset prior to the year of report. Statistics on some diseases are only available by 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, rather than date of onset of symptoms. 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 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: In this section of the report are tables containing 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 listed 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 criteria:

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, P.O. Box 2448, 109 Governor St., 5th Floor, Richmond, Virginia 23218.

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. Table 2 presents the number of cases of selected diseases reported annually during the past ten years. Table 3 shows number of cases and rate per 100,000 population by region. Table 4 delineates the same data by age group, Table 5 by race group, and Table 6 by sex. 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 – Compared to 2001, notable increases (>5%) were observed for the following diseases in 2002: campylobacteriosis, chickenpox, *E. coli* 0157:H7 infection, invasive *Haemophilus influenzae* infection, acute hepatitis C, influenza, Lyme disease, rabies in animals, RMSF, shigellosis, and toxic substance related illness. The increases in hepatitis C and shigellosis are particularly striking; more than four times as many cases of hepatitis C were reported in 2002 than in the previous year, and there was an increase of 277 cases of shigellosis, bringing this disease to its highest incidence since 1980. Decreases were observed in the reported number of AIDS, amebiasis, giardiasis, gonorrhea, Kawasaki syndrome, legionellosis, listeriosis, malaria, mumps, pertussis, salmonellosis, early syphilis and typhoid fever cases.

REGION – The northwest health planning region had the highest incidence rates of campylobacteriosis, giardiasis, influenza, Kawasaki syndrome, malaria, and pertussis, compared to the other regions of the state. That region had the lowest rates of hepatitis A, early syphilis, and tuberculosis in the state. No cases of acute hepatitis C were reported in this region.

The northern health planning region experienced the highest incidence rates of AIDS, amebiasis, Lyme disease, tuberculosis, and typhoid fever. The lowest incidence rates of chlamydia, gonorrhea, invasive *Haemophilus influenzae* infection, hepatitis B, influenza, pertussis, and Rocky Mountain spotted fever were reported from the northern region. No cases of acute hepatitis C were reported in this region.

The southwest health planning region had the highest incidence rate of *E. coli* O157:H7 infection, legionellosis, listeriosis, and meningococcal infection. It had the lowest rates for AIDS, HIV infection, Kawasaki syndrome (0 cases), Lyme disease, malaria, mumps (0 cases), shigellosis, and typhoid fever (0 cases) in the state.

The central health planning region experienced the highest rates of hepatitis A, hepatitis B, hepatitis C, HIV infection, mumps, Rocky Mountain spotted fever, and salmonellosis. The lowest rates of chickenpox was calculated for the central region. No cases of amebiasis or listeriosis were reported from this region.

The eastern health planning region had the highest incidence rates of chickenpox, *C. trachomatis* infection, gonorrhea, shigellosis, and early syphilis. That region also experienced the lowest rates of campylobacteriosis, *E. coli* O157:H7 infection, giardiasis, and salmonellosis. No cases of amebiasis were reported from the eastern region.

AGE – Infants (age <1 year) had the greatest incidence rate for campylobacteriosis, *E. coli* O157:H7, invasive *Haemophilus influenzae* infection, Kawasaki syndrome, Lyme disease, malaria, meningococcal infection, pertussis, Rocky Mountain spotted fever, and salmonellosis, though for some of these diseases infants had a very small number of cases compared to the other age groups. No cases of amebiasis, gonorrhea, acute hepatitis B or hepatitis C, HIV infection, legionellosis, listeriosis, measles, mumps, early syphilis, or typhoid fever were reported among infants.

Children age 1-9 years had the highest incidence rates for amebiasis, giardiasis, mumps, shigellosis, and typhoid fever. No cases of acute hepatitis B or acute hepatitis C, listeriosis, measles, or early syphilis were reported among children age 1-9 years. Persons aged 10-19 years did not have the highest rates for any diseases. They had the lowest rate for campylobacteriosis. There were no cases of invasive *Haemophilus influenzae* infection, hepatitis C, legionellosis, listeriosis, measles or mumps in this age group.

Persons in their twenties were reported with higher rates of *Chlamydia trachomatis* infection, gonorrhea, acute hepatitis B and acute hepatitis C, and early syphilis than persons in other age groups. Persons in their thirties had the highest incidence rates for AIDS, hepatitis A, and HIV infection. The fifty years and older age group had the highest rate of legionellosis and tuberculosis.

RACE – The black population had the highest incidence rates for AIDS, *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, hepatitis A and B, HIV infection, legionellosis, malaria, meningococcal infection, shigellosis, and early syphilis. The white population had the highest incidence rates for campylobacteriosis, *E. coli* O157:H7 infection, acute hepatitis C, listeriosis, Lyme disease, pertussis, and Rocky Mountain spotted fever. The other race category had the highest incidence rates for amebiasis, giardiasis, tuberculosis, and typhoid fever. No cases of invasive *Haemophilus influenzae* infection, acute hepatitis C, Kawasaki syndrome, listeriosis, measles, meningococcal infection, mumps, or Rocky Mountain spotted fever were reported among the other race group.

SEX – Females were reported to have the following diseases more often than males: C*hlamydia trachomatis* infection, gonorrhea, Lyme, mumps, and shigellosis. The incidence rate was higher for males for AIDS, amebiasis, campylobacteriosis, giardiasis, hepatitis A, acute hepatitis B, HIV, legionellosis, Rocky Mountain spotted fever, early syphilis, and tuberculosis. The incidence rates were very similar, or the same, for males and females for *E. coli* O157:H7 infection, invasive *Haemophilus influenzae* infection, acute hepatitis C, Kawasaki syndrome, listeriosis, malaria, meningococcal infection, pertussis, salmonellosis, and typhoid fever.

ONSET – A few diseases showed distinct seasonal incidence. Eighty-four percent of Lyme disease cases, 81% of Rocky Mountain spotted fever cases, and 75% of *E. coli* O157:H7 occurred during the second and third quarter. A large percent of listeriosis (70%), legionellosis (65%), and giardiasis (60%) cases occurred during the third and fourth quarters. Fifty percent of typhoid fever cases were reported during the third quarter (out of eight cases), and 93% of influenza cases occurred during the first quarter.

Table 1. Reportable Diseases in Virginia, 2002

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 (IgM+)
Hepatitis B:
- Acute disease (IgM+)
- HBsAg positive pregnant woman

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
Mumps
Ophthalmia neonatorum
Outbreaks, All (including foodborne, nosocomial, occupational, toxic substance-related, waterborne, 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
Shigellosis
Smallpox
Streptococcal disease, Group A, invasive
Streptococcus pneumoniae, invasive if <5 years of age
Syphilis
Tetanus
Toxic shock syndrome
Toxic substance related illnesses
Trichinosis
Tuberculosis disease (mycobacteria)
Tuberculosis infection in children age <4 years
Tularemia
Typhoid fever
Typhus
Unusual occurrence of disease of public health concern
Vancomycin-resistant *Staphylococcus aureus*
Vibrio infection
Viral hemorrhagic fever
Yellow fever