

*Reportable Disease
Surveillance in Virginia,
1998*



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Reportable Disease Surveillance in Virginia, 1998

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INTRODUCTION

AND DATA SUMMARY

Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its eleventh 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 1998.

The Office of Epidemiology 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. This process is a very important aspect of public health because the purpose of surveillance is 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, laboratorians, 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. The report is divided into four sections as described below.

Introduction and Data Summary: Tables summarizing 1998 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 risk and allow for comparisons to be made. In calculating rates, two sources of data were used: population projections for the state and its cities and counties prepared by the State Data Center of the Virginia Employment Commission for 1998, and the United States Census Bureau estimates of age, race, gender and ethnicity for Virginia, July, 1997. Some additional notes on coding are listed below.

Race is usually coded 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 defined as either month or quarter of the year in which symptoms first occurred. Some cases reported in 1998 experienced onset prior to the year of report. Statistics on some diseases are only available by date of report, meaning date the information was furnished to the CDC or first received in the Office of Epidemiology, rather than date of onset of symptoms. At times, the date of specimen collection or date of hospital admission is used to indicate 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 locality, district, and/or health planning region level data are based on the location of the reporting source, i.e., the physician, hospital, or laboratory.

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. 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 Leslie Branch, Virginia Department of Health, Office of Epidemiology, P.O. Box 2448, Room 113, 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 presents number of cases and rate per 100,000 population by region. Table 4 presents the same data by age group; Table 5 by race; and Table 6 by sex. In Table 7, number and percent of cases by quarter of the year in which onset occurred are provided. A brief description of the major findings presented in these tables follows.

TREND - Compared to 1997, notable increases were observed for the following diseases in 1998: *Chlamydia trachomatis* infection, invasive *Haemophilus influenzae* disease, influenza, and Kawasaki syndrome. The percent increase between 1997 and 1998 for these diseases ranged from 15% for *C. trachomatis* infection to 124% for influenza. Of the diseases for which notable increases were observed between 1997 and 1998, the number of cases reported in 1998 also exceeded the ten-year mean annual number for *C. trachomatis* infection and Kawasaki syndrome.

Decreases of at least 15% were observed for AIDS, bacterial meningitis (excluding meningococcal), chickenpox, primary encephalitis, hepatitis B, hepatitis non-A non-B, HIV infection, legionellosis, malaria, meningococcal infection, mumps, animal rabies, Rocky Mountain spotted fever, shigellosis, and early syphilis. The percent decrease between 1997 and 1998 for these diseases ranged from 16% for malaria to 52% for hepatitis non-A non-B and shigellosis.

REGION - The northwest health planning region experienced the highest incidence rates of bacterial meningitis (excluding meningococcal), campylobacteriosis, hepatitis non-A non-B, Lyme disease, meningococcal infection, and pertussis, and had the most rabid animals compared to the other regions. The northwest region had the lowest rates of primary encephalitis, hepatitis B, early syphilis, and tuberculosis. No cases of amebiasis, histoplasmosis, Kawasaki syndrome, measles, and typhoid fever were reported from the northwest region.

The northern health planning region had the highest incidence rates of amebiasis, giardiasis, hepatitis A, Kawasaki syndrome, malaria, Rocky Mountain spotted fever, shigellosis, tuberculosis, and typhoid fever. The northern region also had the highest rate for aseptic meningitis, but it was similar to the rate in the eastern region. The two cases of measles reported in 1998 resided in the northern region. The lowest incidence rates of *Chlamydia trachomatis* infection, gonorrhea, and influenza were reported from the northern region. The incidence rate for hepatitis non-A non-B was lowest in the northern region, but it was similar to the rate in the central region.

The southwest health planning region had the highest incidence rates of influenza and legionellosis and the lowest rates for AIDS, giardiasis, invasive *H. influenzae* disease, hepatitis A, HIV infection, Lyme disease, malaria, pertussis, Rocky Mountain spotted fever and shigellosis. The southwest region had the lowest incidence rate for mumps but similar to the rates in the northwest and central regions. No cases of measles and typhoid fever were reported from the southwest region.

The central health planning region experienced the highest incidence rates of *C. trachomatis* infection, HIV infection, and salmonellosis. The central region also had the highest incidence rate for AIDS, but it was similar to the rate in the eastern region, and the highest rate for *H. influenzae*, but it was similar to the rate in the northwest region. The lowest incidence rates of aseptic meningitis and bacterial meningitis (excluding meningococcal), chickenpox, and meningococcal infection were reported from the central region. No cases of primary encephalitis, legionellosis, measles, and Rocky Mountain spotted fever were reported from the central region.

The eastern health planning region experienced the highest incidence rates for the following diseases: chickenpox, primary encephalitis, gonorrhea, hepatitis B, mumps, and early syphilis. The lowest incidence rates of campylobacteriosis and salmonellosis were reported from the eastern region.

AGE - Infants were the age group at greatest risk for aseptic and bacterial meningitis (excluding meningococcal), campylobacteriosis, invasive *H. influenzae* infection, Kawasaki syndrome, measles, meningococcal infection, pertussis, salmonellosis, and typhoid fever. Rates of primary encephalitis, giardiasis, Lyme disease, Rocky Mountain spotted fever and shigellosis were highest in children aged 1-9 years. Persons aged 10-19 years had the highest rates for *C. trachomatis* infection. The rates of mumps were highest and similar for children aged 1-9 years and adults aged 30-39 years.

Persons in their twenties were reported with amebiasis and gonorrhea more often than were other age groups. Persons in their thirties had the highest rates for AIDS, hepatitis A, and HIV infection. The rates of malaria were highest and similar for persons aged 30-39 years and 10-19 years and the rates of hepatitis non-A non-B were highest for persons 30-39 years and 40-49 years. Adults in their forties were reported with the highest rates of hepatitis B, histoplasmosis, and early syphilis. Persons aged fifty years and older were reported with legionellosis and tuberculosis more often than were other age groups.

RACE - The black population had the highest rates for AIDS, bacterial meningitis (excluding meningococcal), *C. trachomatis* infection, gonorrhea, invasive *H. influenzae* infection, hepatitis B, histoplasmosis, HIV infection, malaria, salmonellosis, and early syphilis. Blacks and whites had the highest and similar rates for primary encephalitis, hepatitis non-A non-B, and meningococcal infection. The white population was the race group with the highest rates of campylobacteriosis, hepatitis A, legionellosis, Lyme disease, measles, and Rocky Mountain spotted fever. The rates of pertussis were highest and similar for whites and the "other" race category. Although based on relatively few numbers of cases, the other race category had the highest rates for amebiasis, aseptic meningitis, giardiasis, Kawasaki syndrome, shigellosis, tuberculosis, and typhoid fever. The rates of mumps were highest and similar for the "other" race category and blacks.

SEX - Females were reported proportionately more often than males with the following diseases: aseptic meningitis, bacterial meningitis (excluding meningococcal), *C. trachomatis* infection, and salmonellosis. Males were reported more often with AIDS, amebiasis, campylobacteriosis, primary encephalitis, giardiasis, gonorrhea, hepatitis A, histoplasmosis, HIV infection, Kawasaki syndrome, legionellosis, malaria, measles, mumps, Rocky Mountain spotted fever, early syphilis, and tuberculosis. The incidence rates were very similar for females and males for invasive *H. influenzae*

infection, hepatitis B, hepatitis non-A non-B, Lyme disease, meningococcal infection, pertussis, shigellosis, and typhoid fever.

ONSET - The first quarter of the year was when the most cases of bacterial meningitis (excluding meningococcal), invasive *H. influenzae* infection, hepatitis A, hepatitis B, influenza, measles, meningococcal infection, and early syphilis, and the fewest cases of amebiasis, campylobacteriosis, legionellosis, Lyme disease, and shigellosis experienced onset. The second quarter of the year was when the most cases of hepatitis non-A non-B, legionellosis, Lyme disease, and Rocky Mountain spotted fever occurred, and the most rabid animals were reported. The frequencies of onsets for Kawasaki syndrome and typhoid fever were highest and comparable for the first and second quarters. The third quarter of the year was the time of onset for the most cases of aseptic meningitis, campylobacteriosis, *C. trachomatis* infection, giardiasis, gonorrhea, histoplasmosis, malaria, pertussis, salmonellosis and shigellosis and the lowest period of activity for influenza. The onset by quarter for primary encephalitis was highest and comparable for the second and third quarters. The fourth quarter was when the most cases of amebiasis and mumps occurred and the fewest cases of primary encephalitis, hepatitis B, Kawasaki syndrome, malaria, and early syphilis. Reported cases of pertussis tended to occur in the first half of the year.

Table 1. Reportable Diseases in Virginia (as of 1/6/99)

Acquired immunodeficiency syndrome (AIDS)	Lyme disease
Amebiasis	Lymphogranuloma venereum
Anthrax	Malaria
Arboviral infection	Measles (Rubeola)
Botulism	Meningococcal infection
Brucellosis	Mumps
<i>Campylobacter</i> infection	Ophthalmia neonatorum
Chancroid	Outbreaks, All (including foodborne, nosocomial, occupational, toxic-substance related, water borne, and other outbreaks)
Chickenpox	Pertussis (Whooping cough)
<i>Chlamydia trachomatis</i> infection	Plague
Cholera	Polioomyelitis
Cryptosporidiosis	Psittacosis
Cyclosporiasis	Rabies, Human and Animal
Diphtheria	Rabies Treatment, post-exposure
Ehrlichiosis	Rocky Mountain spotted fever
<i>Escherichia coli</i> O157:H7 and other enterohemorrhagic <i>E. coli</i> infections	Rubella (German measles), including congenital rubella syndrome
Giardiasis	Salmonellosis
Gonorrhea	Shigellosis
Granuloma inguinale	Streptococcal disease, Group A, invasive
<i>Haemophilus influenzae</i> infection, invasive	Syphilis
Hantavirus pulmonary syndrome	Tetanus
Hemolytic uremic syndrome (HUS)	Toxic shock syndrome
Hepatitis, Acute Viral	Toxic substance-related illness
Hepatitis A	Trichinosis (Trichinellosis)
Hepatitis B	Tuberculosis Disease
Hepatitis C	Tuberculosis infection in children age <4 years
Other Acute Viral Hepatitis	Typhoid fever
Human immunodeficiency virus (HIV) infection	Typhus
Influenza	Vancomycin-resistant <i>Staphylococcus aureus</i>
Kawasaki syndrome	<i>Vibrio</i> infection
Lead - elevated blood levels	Yellow fever
Legionellosis	
Leprosy (Hansen disease)	
Listeriosis	