Reportable Disease Surveillance in Virginia, 1996

VDH VIRGINIA DEPARTMENT OF HEALTH

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TABLE OF CONTENTS

NUMBER OF REPORTED CASES AND RATE PER 100,000 POPULATION FOR SELECTED DISEASES BY LOCALITY, DISTRICT, AND REGION

MAPS OF INCIDENCE RATES BY LOCALITY

LIST OF FIGURES

LIST OF TABLES

Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its eighth 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 1996.

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 1996 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, 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 on 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 are also 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, the locality-level population estimates from the United States Census Bureau, July 1, 1994 were used. Some additional notes on coding are listed below.

Race is usually coded as black, white or other. The "other" race category refers to Hispanics, 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 1996 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 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, 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 1995, in 1996 notable increases were observed for the following diseases: amebiasis, campylobacteriosis, giardiasis, hepatitis B, legionellosis, pertussis, animal rabies, Rocky Mountain spotted fever, and shigellosis. The percent increase between 1995 and 1996 for these diseases ranged from 22% for campylobacteriosis to 248% for pertussis. Three cases of measles were reported in 1996, compared to zero in the previous year. Of the diseases that increased, the number of cases reported in 1996 exceeded the ten-year mean annual number for all but amebiasis and hepatitis B.

Notable decreases were observed for aseptic and bacterial meningitis, chickenpox, primary encephalitis, *Haemophilus influenzae* infection, histoplasmosis, HIV infection, influenza, Kawasaki syndrome, mumps, and early syphilis. The percent decrease between 1995 and 1996 for these diseases ranged from 22% for HIV infection to 75% for histoplasmosis.

REGION - The northwest health planning region experienced the highest rates of campylobacteriosis, *H. influenzae* infection, pertussis, and shigellosis, and had the most rabid animals compared to the other regions. The incidence rates for giardiasis were the highest and similar in the northwest and northern regions. The rates for meningococcal infection were the highest and similar in the northwest and central regions. The northwest region had the lowest rate of hepatitis B, hepatitis non-A non-B, HIV infection, mumps (0 cases), and early syphilis.

The northern health planning region had the highest rates of amebiasis, hepatitis A, hepatitis non-A non-B, Lyme disease, malaria, tuberculosis, and typhoid fever. The lowest rates of *Chlamydia trachomatis* infection, gonorrhea, and influenza were reported from that region. The northern and eastern regions had similarly low rates of reported campylobacteriosis.

The southwest region had the highest rate of reported influenza. The rate of legionellosis was also the highest in the state, due to an outbreak that occurred in the New River Health District. The one case of histoplasmosis reported in 1996 resided in the southwest region. The lowest rates of AIDS, hepatitis A, malaria, pertussis, and tuberculosis were calculated for the southwest. The fewest rabid animals were reported from the southwest (106 cases) and central (107 cases) regions.

The central health planning region experienced the highest rate of *C. trachomatis* infection, Rocky Mountain spotted fever, and salmonellosis and the lowest rate of aseptic meningitis, bacterial meningitis (excluding meningococcal), chickenpox, primary encephalitis, influenza, Kawasaki syndrome (0 cases), legionellosis, and shigellosis. No cases of *H. influenzae* infection were reported from the central and eastern regions of Virginia in 1996.

The eastern region of the state was responsible for the highest rates for the following diseases: AIDS, aseptic meningitis, bacterial meningitis (excluding meningococcal), chickenpox, gonorrhea, hepatitis B, HIV infection, Kawasaki syndrome, and early syphilis. The incidence rate for mumps was similarly high for the eastern and northern regions, and incidence of primary encephalitis was comparably high in the eastern and northwest regions. The rates were lowest in the eastern region for amebiasis, giardiasis, Lyme disease, meningococcal infection, and Rocky Mountain spotted fever. The rate of salmonellosis was lowest in the eastern and southwest regions.

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

Persons in their twenties were the age group most often reported with amebiasis, gonorrhea, hepatitis A, and hepatitis B. The rate of HIV infection was highest and nearly the same for 20-29 and 30-39 year olds. Persons in their thirties had the highest rates for AIDS and hepatitis non-A non-B. Persons in their forties were reported with the highest rates of early syphilis. Persons aged fifty years and older were reported most often with primary encephalitis, legionellosis, and tuberculosis.

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

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

ONSET - The first quarter of the year was when the most cases of bacterial meningitis (excluding meningococcal), Kawasaki syndrome, early syphilis, and typhoid fever and the fewest reports of amebiasis, primary encephalitis, giardiasis, Lyme disease, malaria, pertussis, animal rabies, and salmonellosis experienced onset of disease. The second quarter of the year was the time of the most activity for Lyme disease, mumps, and Rocky Mountain spotted fever and the least activity for aseptic meningitis, legionellosis, and shigellosis. The third quarter of the year was the time of onset for the most cases of aseptic meningitis, campylobacteriosis, primary encephalitis, giardiasis, malaria, pertussis, salmonellosis, and shigellosis and the second most common quarter for the onset of Lyme disease and Rocky

Mountain spotted fever. It was also the lowest period of activity for influenza. The fourth quarter was when the most cases of amebiasis and legionellosis occurred, the latter due to an outbreak. The fourth quarter was the time for the fewest cases of bacterial meningitis (excluding meningococcal), campylobacteriosis, hepatitis non-A non-B, Kawasaki syndrome, and early syphilis to be reported.

Other interesting patterns in quarter of onset were noted: hepatitis A occurred more in the latter half of the year than the first half; animal rabies occurred at the same level during quarters 2-4 of the year, with fewer cases in the first quarter; and, as expected, influenza occurred during the first and last quarters of the year and was infrequently reported between April and September. Little difference was observed by quarter of onset for *C. trachomatis* infection, gonorrhea, hepatitis B, and meningococcal infection.

Table 1. Reportable Diseases in Virginia

Acquired immunodeficiency syndrome (AIDS)
Amebiasis
Anthrax
Arboviral infection
Aseptic meningitis
Bacterial meningitis
Botulism
Brucellosis
Campylobacter infection
Chancroid
Chickenpox
Chlamydia trachomatis infection
Congenital rubella syndrome
Diphtheria
Encephalitis - primary and post-infectious
Foodborne outbreak
Giardiasis
Gonorrhea
Granuloma inguinale
Haemophilus influenzae infection, invasive
Hepatitis A
    B
    Non-A, Non-B
    Unspecified
Histoplasmosis
Human immunodeficiency virus (HIV) infection
Influenza
Kawasaki syndrome
Lead - elevated levels in children
Legionellosis
Leprosy (Hansen disease)
Leptospirosis
Listeriosis
Lyme disease
Lymphogranuloma venereum
Malaria
Measles (Rubeola)
Meningococcal infection
Mumps
Nosocomial outbreak
Occupational illness
Ophthalmia neonatorum
Pertussis (Whooping cough)
Phenylketonuria (PKU)
Plague
Poliomyelitis
Psittacosis
Q fever
Rabies in animals
Rabies in man
Rabies treatment, post exposure
Reye syndrome
Rocky Mountain spotted fever
Rubella (German measles)
Salmonellosis
Shigellosis
Smallpox
Syphilis
Tetanus
Toxic shock syndrome
Toxic substance related illness
Trichinosis
Tuberculosis
Tularemia
Typhoid fever
Typhus, flea-borne
Vibrio infection, including cholera
Waterborne outbreak
Yellow fever