Reportable Disease Surveillance in Virginia, 1997

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Office of Epidemiology

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William R. Nelson, M.D., M.P.H.
Acting State Health Commissioner

Robert B. Stroube, M.D., M.P.H.
State Epidemiologist

Report Production Team: Leslie M. Branch, Mary Jean Linn, B.S.N., C. Diane Woolard, Ph.D., M.P.H., Elizabeth Barrett, D.M.D., M.S.P.H., and Vickie O'Dell

Virginia Department of Health
P.O. Box 2448
Richmond, Virginia 23218

Units in the Virginia Department of Health, Office of Epidemiology

Surveillance and Investigation
Telephone: (804) 786-6261

Zoonotic Disease Control
Telephone: (804) 786-6261

STD/AIDS
Telephone: (804) 786-6267

Immunization
Telephone: (804) 786-6246

Tuberculosis Control
Telephone: (804) 786-6251

Toxic Substances Information
Telephone: (804) 786-1763

Radiological Health
Telephone: (804) 786-5932

Waterborne Hazards Control
Telephone: (804) 786-9008

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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 tenth 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 1997.

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 1997 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 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 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, 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 1997, and the United States Census Bureau estimates of age, race, gender and ethnicity for Virginia, July 1996. 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 1997 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 1996, notable increases were observed for the following diseases in 1997: bacterial meningitis (excluding meningococcal), giardiasis, invasive *Haemophilus influenzae*, hepatitis A, hepatitis non-A non-B, Kawasaki syndrome, malaria, and animal rabies. The percent increase between 1996 and 1997 for these diseases ranged from 13% for malaria to 59% for hepatitis non-A non-B. Of the diseases where notable increases were observed, the number of cases reported in 1997 exceeded the ten-year mean annual number for giardiasis, hepatitis A, Kawasaki syndrome, malaria, and animal rabies.

Notable decreases were observed for campylobacteriosis, hepatitis B, influenza, legionellosis, pertussis, Rocky Mountain spotted fever, shigellosis, early syphilis, and typhoid fever. The percent decrease between 1996 and 1997 for these diseases ranged from 16% for early syphilis to 57% for Rocky Mountain spotted fever.

REGION - The northwest health planning region experienced the highest incidence rates of bacterial meningitis (excluding meningococcal), campylobacteriosis, legionellosis, meningococcal disease, pertussis, and Rocky Mountain spotted fever compared to the other regions. The rates for salmonellosis were the highest and similar in the northwest and central regions. The northwest region had the lowest rates of AIDS, amebiasis, hepatitis B, HIV infection, early syphilis, and tuberculosis. The incidence rate for reported cases of amebiasis in the northwest region was the lowest but similar to the rates in the southwest, central, and eastern regions. No cases of histoplasmosis, measles or typhoid fever were reported from the northwest region.

The northern health planning region had the highest rates of amebiasis, giardiasis, hepatitis A, histoplasmosis, Kawasaki syndrome, malaria, tuberculosis, and typhoid fever, and had the most rabid animals compared to the other regions. The one case of measles reported in 1997 resided in the northern region. The northern and eastern regions had the highest and similar rates of reported hepatitis B. The lowest rates of *Chlamydia trachomatis* infection and legionellosis were reported from the northern region. The northern and southwest regions had similarly low rates of reported salmonellosis.

The southwest region had the highest rate of reported primary encephalitis and shigellosis. The lowest rates of hepatitis non-A non-B, malaria, and pertussis were observed in the southwest region. The southwest and eastern regions had the lowest and similar rates of giardiasis and Lyme disease.

The central health planning region experienced the highest rate of *C. trachomatis* infection, invasive *H. influenzae* infection, hepatitis non-A non-B and mumps and the lowest rates of aseptic and

bacterial meningitis (excluding meningococcal), chickenpox, primary encephalitis, influenza, meningococcal infection, and Rocky Mountain spotted fever. The central and eastern health planning regions had the lowest and similar rates of shigellosis. No cases of histoplasmosis or Kawasaki syndrome were reported from the central region.

The eastern region of the state was responsible for the highest rates for the following diseases: AIDS, aseptic meningitis, chickenpox, gonorrhea, and HIV infection. The rates for early syphilis were highest and similar for the eastern and central regions. The lowest rates of campylobacteriosis, invasive *H. influenzae* infection, hepatitis A, and mumps were reported from the eastern region. The eastern region also had the fewest rabid animals reported.

AGE - Infants were the age group at greatest risk for aseptic and bacterial meningitis (excluding meningococcal), campylobacteriosis, primary encephalitis, invasive *H. influenzae* infection, meningococcal infection, pertussis, and salmonellosis. Rates of giardiasis, Kawasaki syndrome, Lyme disease, measles, mumps, and shigellosis were highest in children age 1-9 years. Persons age 10-19 years had the highest rates for *C. trachomatis* infection and malaria. The rate of typhoid fever was similar for persons age 10-19 years and persons age 20-29 years. No one 30 years or older was reported with typhoid fever.

Persons in their twenties were the age group most often reported with amebiasis, gonorrhea, and hepatitis B. The rate of hepatitis A was highest and nearly the same for adults 20-29 and children age 1-9 years. Persons in their thirties had the highest rates for AIDS, histoplasmosis, and HIV infection. Persons in their forties were reported with the highest rates of hepatitis non-A non-B and early syphilis. Persons aged fifty years and older were reported most often with legionellosis, Rocky Mountain spotted fever and tuberculosis.

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

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

ONSET - The first quarter of the year was when the most cases of influenza, meningococcal infection, shigellosis, early syphilis, and typhoid fever and the fewest cases of campylobacteriosis experienced onset. The second quarter of the year was when the only case of measles occurred and the time for

the least activity for gonorrhea, and typhoid fever. The third quarter of the year was the time of onset for the most cases of amebiasis, aseptic meningitis, campylobacteriosis, primary encephalitis, giardiasis, invasive *H. influenzae* infection, hepatitis A, legionellosis, Lyme disease, malaria, mumps, animal rabies, and salmonellosis and the lowest period of activity for influenza and Kawasaki syndrome. The onset by quarter for Rocky Mountain spotted fever was comparable for the third and second quarters. The fourth quarter was when the most cases of gonorrhea and Kawasaki syndrome occurred, and the fewest cases of primary encephalitis. Reported cases of pertussis tended to occur in the first half of the year.

The following diseases were not found to demonstrate a clear seasonal trend: bacterial meningitis (excluding meningococcal), *C. trachomatis*, hepatitis B and histoplasmosis.

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