Reportable Disease Surveillance in Virginia, 2000

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its thirteenth 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 2000.

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, 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. The report is divided into four sections as described below.

Introduction and Data Summary: Tables summarizing 2000 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 age prepared by the State Data Center of the Virginia Employment Commission for 1999 and the United States Census Bureau 2000 Census for the state's cities, counties, race, gender and ethnicity for Virginia. 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 2000 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 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, 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 Mary Jean Linn, 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 1999, notable increases were observed for the following diseases in 2000: *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, hepatitis B, Lyme disease, pertussis, shigellosis, and typhoid fever. The percent increase between 1999 and 2000 for these diseases ranged from 9% for gonorrhea to 238% for shigellosis. Decreases of at least 15% were observed for amebiasis, chickenpox, listeriosis, malaria, measles, meningococcal infection, Rocky Mountain spotted fever, salmonellosis, and early syphilis.

REGION- The northwest health planning region experienced the highest incidence rates of campylobacteriosis, *E. coli* O157:H7, pertussis, salmonellosis and the most rabid animals compared to the other regions. The northwest region had the lowest incidence rates of AIDS, hepatitis B, HIV infection, Kawasaki syndrome and early syphilis. No confirmed cases of hepatitis C or measles were reported from the northwest region.

The northern health planning region had the highest incidence rates of amebiasis, giardiasis, hepatitis A, Lyme disease, malaria, measles, tuberculosis, and typhoid fever. The lowest incidence rates of *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, and meningococcal infection were reported from the northern region.

The southwest health planning region had the highest incidence rates of influenza, legionellosis, meningococcal infection, Rocky Mountain spotted fever, shigellosis, and early syphilis. The southwest region had the lowest incidence rate for tuberculosis and the least rabid animals compared to the other regions. No cases of measles were reported from this region.

The central health planning region experienced the highest incidence rates of *Chlamydia trachomatis* infection, invasive *Haemophilus influenzae* infection, and hepatitis B. The lowest incidence rates of campylobacteriosis, chickenpox, influenza, legionellosis, Lyme disease, and malaria were reported from the central region. No cases of hepatitis C, listeriosis, or measles were reported from the central region.

The eastern health planning region experienced the highest incidence rates for the following diseases: AIDS, chickenpox, gonorrhea, HIV infection, and Kawasaki syndrome. The lowest incidence rates of *E. coli* O157:H7, giardiasis, hepatitis A, and shigellosis were reported from the eastern region. No cases of amebiasis, measles or Rocky Mountain spotted fever were reported from this region.

AGE- Infants were the age group at greatest risk for campylobacteriosis, invasive *Haemophilus influenzae* infection, Kawasaki syndrome, listeriosis, meningococcal infection, pertussis, and salmonellosis. Children ages 1-9 years had the highest incidence rates for *E. coli* O157:H7, giardiasis, Lyme disease, measles, mumps, shigellosis, and typhoid fever. Persons aged 10-19 years had the highest rates for amebiasis.

Persons in their twenties were reported with *Chlamydia trachomatis* infection, gonorrhea, hepatitis B, and malaria more often than were other age groups. Persons in their thirties had the highest rates for AIDS, hepatitis A, and HIV infection. Adults in their forties were reported with the highest rates of hepatitis C and early syphilis. Persons aged fifty years and older were reported with legionellosis and Rocky Mountain spotted fever more often than were other age groups.

RACE – The black population had the highest incidence rates for AIDS, amebiasis, *Chlamydia trachomatis* infection, gonorrhea, invasive *Haemophilus influenzae* infection, hepatitis B, HIV infection, Kawasaki syndrome, malaria, meningococcal infection, mumps, salmonellosis, shigellosis, and early syphilis. The white population was the race group with the highest rates of campylobacteriosis, *E. coli* O157:H7, hepatitis C, listeriosis, Lyme disease, and pertussis. Although based on relatively few numbers of cases, the other race category had the highest rates for hepatitis A, measles, tuberculosis and typhoid fever. The black and white race categories had similar rates for giardiasis, legionellosis, and Rocky Mountain spotted fever.

SEX - Females were reported proportionately more often than males with the following diseases: *Chlamydia trachomatis* infection, invasive *Haemophilus influenzae* infection, measles, and shigellosis. Males were reported more often with AIDS, amebiasis, campylobacteriosis, *E. coli* O157:H7, giardiasis, gonorrhea, all types of hepatitis, HIV infection, Kawasaki syndrome, legionellosis, listeriosis, Lyme disease, malaria, meningococcal infection, Rocky Mountain spotted fever, early syphilis, and tuberculosis. The incidence rates were very similar for females and males for mumps, pertussis, salmonellosis, and typhoid fever.

ONSET – The first quarter of the year was when the most persons reported with invasive *Haemophilus influenzae* infection, influenza, Kawasaki syndrome, meningococcal infection and early syphilis and the fewest cases of *E. coli* O157:H7, legionellosis, Lyme disease, pertussis, rabies in animals, salmonellosis, and shigellosis experienced onset. The second quarter of the year was when onset most often occurred for persons with amebiasis, hepatitis C, Lyme disease, malaria, measles, mumps, shigellosis, and typhoid fever. The third quarter of the year was the time of onset for the most cases of *E. coli* O157:H7, giardiasis, hepatitis B, legionellosis, listeriosis, pertussis, Rocky Mountain spotted fever, and salmonellosis. The fourth quarter was when onset occurred for the fewest cases of amebiasis, campylobacteriosis, hepatitis A and B, Kawasaki syndrome, malaria, mumps, early syphilis and typhoid fever. Gonorrhea and *Chlamydia trachomatis* infection onset occurred year round at similar rates. Campylobacteriosis, rabies in animals, and Rocky Mountain spotted fever were more common during the second and third quarters and onset of hepatitis A was highest in the first and third quarters.

Table 1. Reportable Diseases in Virginia, 2000

Acquired immunodeficiency syndrome (AIDS)
Amebiasis
Anthrax
Arboviral infection
Botulism
Brucellosis
Campylobacter infection
Chancroid
Chickenpox
Chlamydia trachomatis infection
Cholera
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, Acute Viral
- Hepatitis A
- Hepatitis B
- Hepatitis C
- Other Acute Viral Hepatitis

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
Rabies, Human and Animal
Rabies Treatment, post-exposure
Rocky Mountain spotted fever
Rubella (German measles), including congenital rubella syndrome
Salmonellosis
Shigellosis
Streptococcal disease, Group A, invasive
Syphilis
Tetanus
Toxic shock syndrome
Toxic substance-related illness
Trichinosis (Trichinellosis)
Tuberculosis Disease
Tuberculosis infection in children age <4 years
Typhoid fever
Typhus
Vancomycin-resistant *Staphylococcus aureus*
Vibrio infection
Yellow fever