Reportable Disease Surveillance in Virginia, 2001

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Office of Epidemiology

Reportable Disease Surveillance in Virginia, 2001

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Introduction

The Virginia Department of Health, Office of Epidemiology is pleased to present its fourteenth 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 2001.

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 2001 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, population estimates for 2001 prepared by the United States Census Bureau, for the state's cities and counties and age, race, gender and ethnicity for Virginia 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 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 2001 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, 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 Leslie M. 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 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. In Table 7, number and percent of cases by quarter of the year in which onset occurred are provided. A brief summary of the major findings presented in these tables follows.

TREND – Compared to 2000, notable increases were observed for the following diseases in 2001: *Chlamydia trachomatis* infection, gonorrhea, hepatitis B, HIV infection, listeriosis, pertussis, Rocky Mountain spotted fever, salmonellosis, and shigellosis. The increase in pertussis is particularly striking; more than twice as many cases were reported in 2001 than in the previous year. Decreases were observed in the reported occurrence of *E. coli* O157:H7 infection, invasive *H. influenzae* infection, animal rabies, and typhoid fever.

REGION – The northwest health planning region had the highest incidence rates of campylobacteriosis, *E. coli* O157:H7 infection, influenza, pertussis, and rabies compared to the other regions of the state. Eighty-six percent of the pertussis cases for the year were reported from the northwest region. That region had the lowest rates of hepatitis A, shigellosis, early syphilis, and tuberculosis in the state. No cases of typhoid fever were reported from the northwest region.

The northern health planning region experienced the highest incidence rates of amebiasis, hepatitis A, Lyme disease, malaria, rabies, tuberculosis, and typhoid fever. The lowest incidence rates of *Chlamydia trachomatis* infection, gonorrhea, influenza, meningococcal infection, and Rocky Mountain spotted fever were reported from the northern region. The single case of measles reported in 2001 was from the northern health planning region.

The southwest health planning region had the highest incidence rate of legionellosis and the lowest rates for AIDS, HIV infection, Lyme disease, and malaria in the state.

The central health planning region experienced the highest rates of invasive *H. influenzae* infection, hepatitis B, meningococcal infection, Rocky Mountain spotted fever, and salmonellosis. The lowest rates of campylobacteriosis, legionellosis, and pertussis were calculated for the central region. No cases of listeriosis, mumps, or typhoid fever were reported from the central region.

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

AGE – Infants were at the greatest risk for campylobacteriosis, Kawasaki syndrome, listeriosis, meningococcal infection, pertussis, and salmonellosis. No cases of amebiasis, hepatitis B, Lyme disease, or malaria were reported among infants.

Children age 1-9 years had the highest incidence rates for *E. coli* O157:H7 infection, giardiasis, Lyme disease, mumps, and shigellosis. No cases of AIDS, hepatitis B, or HIV infection were reported among children age 1-9 years. Persons aged 10-19 years had the highest rates for amebiasis, Rocky Mountain spotted fever, and typhoid fever.

Persons in their twenties were reported with *Chlamydia trachomatis* infection, gonorrhea, malaria, and tuberculosis more often than were persons in other age groups. Persons in their thirties had the highest incidence rates for AIDS, hepatitis B, hepatitis C, and HIV infection. Those in their forties were the most likely to be reported with early syphilis. The fifty years and older age group was reported to have hepatitis A and legionellosis more often than persons in other age groups. Infants and older adults had similarly high rates of invasive *H. influenzae* infection.

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

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

ONSET – During the first quarter of the year, the largest percentage of cases of influenza, meningococcal infection, and early syphilis occurred. In fact, 95% of the reported cases of influenza experienced onset during the first quarter. The second quarter of the year was the time the largest percentage of Lyme disease, malaria, and salmonellosis occurred. The third quarter was the time of onset for the most cases of campylobacteriosis, *Chlamydia trachomatis* infection, *E. coli* O157:H7 infection, giardiasis, gonorrhea, hepatitis A, hepatitis B, listeriosis, Rocky Mountain spotted fever, and typhoid fever. The fourth quarter of the year was when the greatest percentage of cases of invasive *H. influenzae* infection, legionellosis, pertussis, rabies, and early syphilis experienced onset. Sixty percent of the pertussis cases reported in 2001 had onset during the fourth quarter of the year.

Onset of reported cases of amebiasis occurred evenly across the four quarters of the year. Kawasaki syndrome occurred most in the first and second quarters. Most cases of mumps occurred during the second and third quarters. The measles case had onset during the second quarter of 2001.