

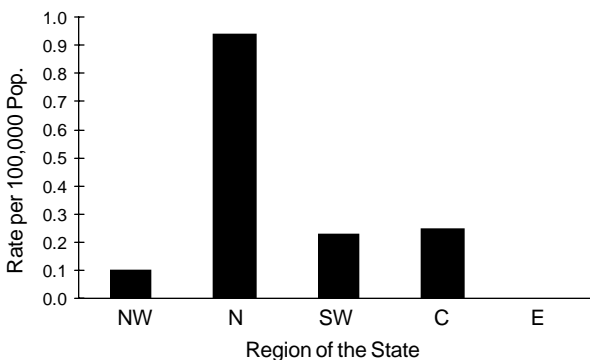
Acquired Immunodeficiency Syndrome (AIDS)

See HIV/AIDS.

Amebiasis

Twenty-four cases of amebiasis were reported in 2000 compared to 34 in 1999 and 31 in 1998. The distribution of cases by onset of illness was greater during April and August. The 10-19 year age group and the 20-29 year age group had the highest incidence rate (5 cases each, 0.5 per 100,000). Race was reported for only 9 of the 24 cases. Of these, four were white, four were black, and one was of the other race category. Males were twice as likely to be reported as females (16 cases, 0.5 per 100,000 males compared to 8 cases, 0.2 per 100,000 females). The northern health planning region had the highest number of cases and incidence rate (17 cases, 1.0 per 100,000) as shown in Figure 1.

Figure 1. Amebiasis: Rate by Region Virginia, 2000



Anthrax

The last case of anthrax in Virginia was reported in 1970.

Arboviral Infection

Human

No human cases of arboviral infection were confirmed in 2000. Arboviral infections are caused by a number of different viruses transmitted by arthropods such as mosquitoes and ticks. These infections generally occur during the warm weather months when mosquitoes and ticks are most active. The last reported human cases of arboviral infection were in 1998, and included 1 case of eastern equine encephalitis (EEE) and 3 cases of LaCrosse encephalitis. EEE is relatively rare and only three other human cases are reported to have occurred in Virginia.

Animal

In 2000, 9 horses tested positive for EEE, as well as 6 sentinel chickens, 1 sparrow and 4 mosquito pools. Seven crows tested positive for West Nile Virus (WNV) in 2000 in Virginia. All health planning regions except the southwest reported at least one bird that tested positive for WNV.

Botulism

Two cases of infant botulism were reported in 2000. They were both from the northern health planning region. Both infants were reported as white males. Using the mouse neutralization test, *Clostridium botulinum* toxin type B was demonstrated in the stool specimen from one infant. Neither of the infants died. No cases of foodborne botulism were reported in 2000.

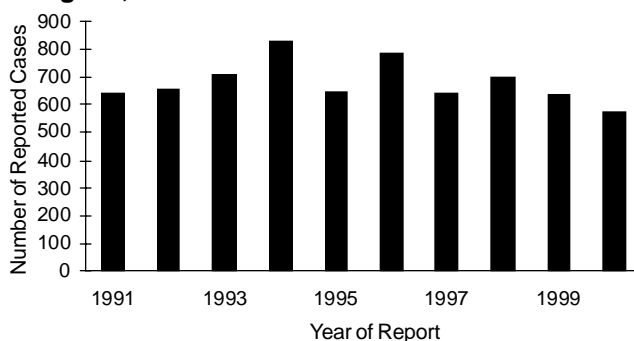
Brucellosis

One confirmed case of brucellosis was reported in 2000. This case was reported from the southwest health planning region in an adult male. The exposure was most likely due to a farm animal.

Campylobacteriosis

The number of reported enteric infections in Virginia caused by *Campylobacter* is second only to that caused by *Salmonella*. Reported cases of *Campylobacter* infection decreased by 10% in 2000 when compared to the 637 cases reported in 1999 and were 14% less than the five-year mean of 669 cases (Figure 2). The 574 cases reported in 2000 is the lowest number of cases reported since 1982.

Figure 2. Campylobacteriosis: Ten Year Trend Virginia, 1991 - 2000



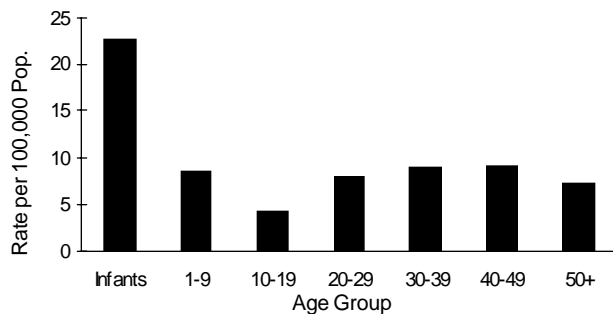
C. jejuni species was reported for 62% of the cases. Other species accounted for 1%. The species was recorded as unknown for 37% of the cases.

Over one-half of the cases occurred during May through August. Peak activity was observed in June when 95 (17%) cases occurred. The northwest region of the state experienced an outbreak of campylobacteriosis in 2000. The suspected vehicle was water served at a county fair.

The age group with the highest incidence rate was infants (22.7 cases per 100,000 population). The 40-49 year age group followed with a rate of 9.1 per

100,000. The lowest incidence rate (4.2 cases per 100,000 population) was in the 10-19 year age group (Figure 3).

Figure 3. Campylobacteriosis: Rate by Age Group, Virginia, 2000



The white race category had the highest incidence rate at 6.1 cases per 100,000 population. The incidence rate in the other race category was 2.6 per 100,000 and 2.3 per 100,000 in the black race category. Race was reported as unknown for 213 of the cases. The number of cases and incidence rate reported was greater in males (309 cases, 8.9 per 100,000) than in females (250 cases, 6.9 per 100,000).

By health planning region, the highest incidence rate was in the northwest region (13.3 cases per 100,000 population), followed by the southwest region (9.6 per 100,000). The lowest incidence rate (5.8 cases per 100,000 population) was reported from the central region.

Chancroid

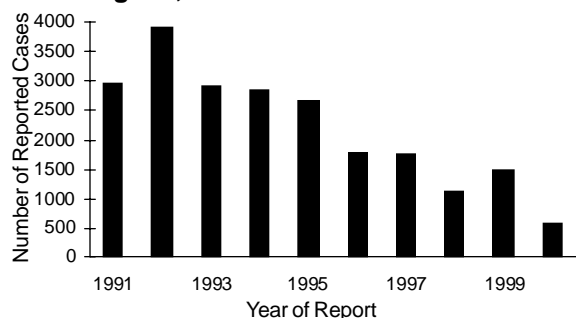
Two cases of chancroid were reported in 2000 compared to three in 1999. The two cases were reported from the eastern health planning region.

Chickenpox (Varicella)

The annual number of reported cases of chickenpox decreased to the lowest number in the

last twenty years (483 cases in 1980). The trend overall also shows a decrease (Figure 4). The 592 cases of chickenpox reported in 2000 were 898 cases less than the 1,490 cases reported in 1999.

Figure 4. Chickenpox: Ten Year Trend Virginia, 1991 - 2000



The highest number (360) of cases and the highest incidence rate (21.0 per 100,000) occurred in the eastern health planning region. Incidence rates in the other health planning regions ranged from 1.9 to 5.8 cases per 100,000 population.

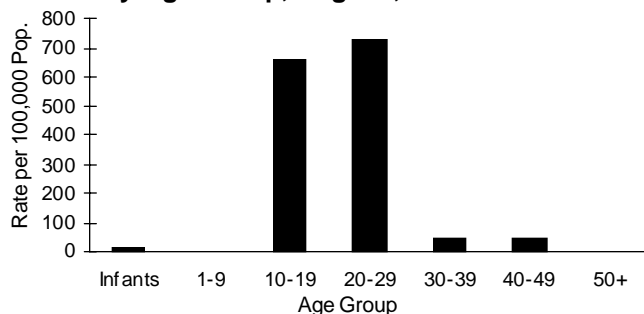
The varicella virus vaccine that has been licensed for use in all children over the age of twelve months and for adults who are susceptible to chickenpox is the most likely explanation for the recent decrease in this disease.

***Chlamydia trachomatis* Infection**

Chlamydia trachomatis infection is the most commonly reported disease in Virginia. During 2000, 15,366 cases of *C. trachomatis* infection were reported. This was a 14% increase over the 13,427 cases reported in 1999 and represents the largest number of cases since 1991.

Incidence rates were highest in the 10-19 and 20-29 year age groups (660.6 per 100,000 and 726.8 per 100,000, respectively) (Figure 5). Race was recorded as unknown for 2,100 persons. Where race was reported, the highest number (8,936) of cases occurred in blacks who also had the highest incidence rate (642.7 per 100,000). The other race cat-

Figure 5. *Chlamydia trachomatis* Infection: Rate by Age Group, Virginia, 2000



egory had the second highest incidence rate (163.5 per 100,000), followed by whites (66.4 per 100,000). The female to male ratio was 5.3 to 1. This difference is more likely due to screening practices than a reflection of true incidence of disease.

Cases were heavily distributed in the central (331.5 per 100,000) and eastern (304.0 per 100,000) health planning regions. The incidence rates in the northwest, southwest and northern health planning regions were 182.3 per 100,000, 166.1 per 100,000 and 114.3 per 100,000, respectively.

The data are expected to underestimate the incidence of *C. trachomatis* infections because (1) screening has been limited to high risk females attending certain public health clinics and the male partners of positive females, (2) as many as 75% of women and 25% of men with uncomplicated *C. trachomatis* infection are asymptomatic, and (3) persons with gonorrhea presumptively treated for *C. trachomatis* infection are not included in the case counts. The Centers for Disease Control and Prevention (CDC) estimate the morbidity due to this organism to be twice that of gonorrhea. There were 10,166 cases of gonorrhea reported in Virginia in 2000, suggesting that there were more than 20,330 *C. trachomatis* infections in 2000, using the CDC method to estimate cases.

Congenital Rubella Syndrome

No cases of this condition have been reported in Virginia since 1981.

Cryptosporidiosis

This disease became officially reportable in 1999. In 2000, 21 cases were reported compared to 30 cases in 1999. The majority (67%) of cases reported onset during July, August, and September. The northern and central health planning regions each reported six cases with each of the other regions reporting three cases. Twelve females and nine males were reported. Thirty-eight percent of the cases were in whites, 19% in blacks, and 5% in the other race category. No race was reported in 8 cases.

Cyclosporiasis

This disease became officially reportable in 1999. No cases were reported in 2000 compared to 1 case in 1999.

Diphtheria

The last case of this vaccine preventable disease in Virginia was reported in 1989.

Ehrlichiosis, Human

Ehrlichiosis is an acute disease of humans and animals caused by the bacteria *Ehrlichia*. There are two clinically similar but serologically distinct forms of ehrlichiosis: human granulocytic ehrlichiosis (HGE) caused by infection with an *Ehrlichia equi*-like agent and human monocytic ehrlichiosis (HME) caused by *Ehrlichia chaffeensis* infection. The or-

ganisms, which are transmitted by ticks, can infect two different types of white blood cells.

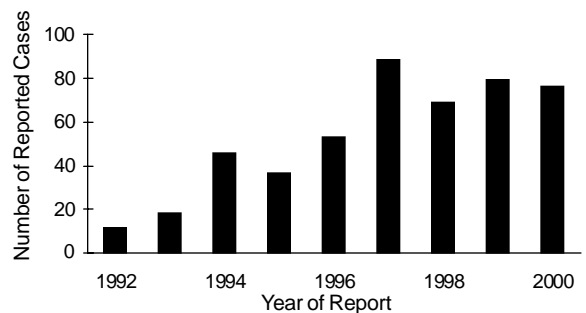
One confirmed case of human ehrlichiosis was recorded in Virginia in 2000 compared to seven cases in 1999. The type was unspecified. The onset of illness occurred in April. This adult white male was reported from the southwest health planning region. Ehrlichiosis was added to the reportable disease list effective January 1999; however, reports have been recorded since 1986.

Escherichia coli O157:H7

Escherichia coli O157:H7 infection became a notifiable condition in Virginia in January 1999; however, the Office of Epidemiology has been maintaining statistical data from voluntary reporting of this disease since 1992.

Seventy-seven cases were reported in 2000, compared to 79 in 1999 and 69 cases in 1998. In general, the annual number of reported cases of *E. coli* O157:H7 infection has increased in recent years (Figure 6).

Figure 6. *Escherichia coli* O157:H7: Trend Virginia, 1992 - 2000

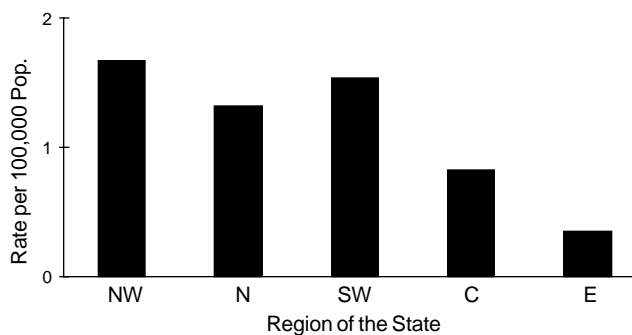


Historically, cases are reported throughout the year, but increase beginning in the warmer months. In 2000, activity peaked between the months of July and November when 53 (69%) cases occurred. Persons 1-9 years of age were at the greatest risk for *E. coli* O157:H7 infection (2.5 cases per 100,000 popu-

lation), followed by the 10-19 year age group (1.9 per 100,000). The incidence rate was 1.2 cases per 100,000 population or less for each of the other age groups. Race was reported for 73% of the cases. Of these, 49 were in whites (1.0 per 100,000) and 6 were in blacks (0.4 per 100,000). By sex, males (1.3 per 100,000) were slightly more at risk than females (0.9 per 100,000).

The northwest health planning region had the highest incidence rate (17 cases, 1.7 cases per 100,000 population), followed by the southwest region (20 cases, 1.5 per 100,000 population) and the northern region (24 cases, 1.3 per 100,000 population) (Figure 7).

Figure 7. *Escherichia coli* O157:H7: Rate by Region, Virginia, 2000



In 2000, three cases of hemolytic uremic syndrome (HUS) were reported. They ranged in age from 3 to 9 years and were reported from the northwest, northern, and eastern health planning regions. One case had laboratory confirmed *E. coli* O157:H7 infection; the other two had clinically compatible illness, but were stool culture negative.

Fifth Disease

Fifth disease is not an officially reportable disease in Virginia; however, reports are recorded when they are received. Although fifth disease usually produces a mild self-limited illness, severe complications of infection can occur. No cases were reported in 2000. The last case was reported in 1997.

Foodborne Outbreaks

Twenty foodborne outbreaks were recorded in 2000. These outbreaks are summarized in Table 8. The number of ill persons per outbreak ranged from five to 130. Two multi-state outbreaks were reported that included ill persons from Virginia. The etiologic agent was confirmed or suspected as bacterial for twelve outbreaks, viral for seven. The suspected etiologic agent was not determined for one outbreak.

A specific food item or menu was implicated in 12 of the outbreaks. The most common food handling practices which contributed to these outbreaks included poor hygienic practices, inadequate cooking, and improper storage or holding temperatures.

Fungal Diseases

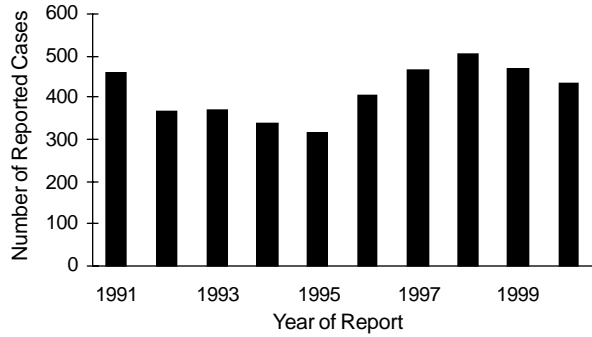
Fungal diseases are not officially reportable in Virginia; however, selected fungal diseases are recorded when they are received. In 2000, the only reported fungal diseases were 20 cases of aspergillosis. Eighty-five percent (17 cases) occurred in the age group of 60 years and above. No deaths were reported.

Giardiasis

The number of reported cases of giardiasis for 2000 was 437, and is a slight decrease from the 471 cases reported in 1999 (Figure 8). The most cases were reported in the month of August (61 cases, 14%).

The highest incidence rate (17.0 cases per 100,000 population) occurred in children aged 1-9 years, followed by adults aged 30-39 years (6.4 per 100,000). Race was recorded as unknown for 154 (35%) cases. Of the cases for which race was reported, the black race category had the highest inci-

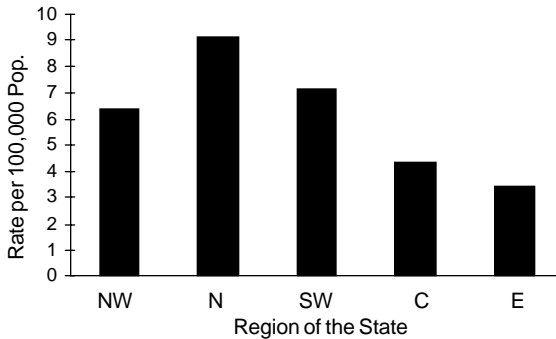
Figure 8. Giardiasis: Ten Year Trend Virginia, 1991 - 2000



dence rate (4.2 cases per 100,000 population), followed by whites (4.1 per 100,000), and the other race category (2.8 per 100,000). Males were slightly more likely than females to be reported with this disease (6.8 vs. 5.1 cases per 100,000 population, respectively).

The northern health planning region had the highest incidence rate (9.2 cases per 100,000 population) and the eastern had the lowest at (3.4 per 100,000) (Figure 9).

Figure 9. Giardiasis: Rate by Region Virginia, 2000



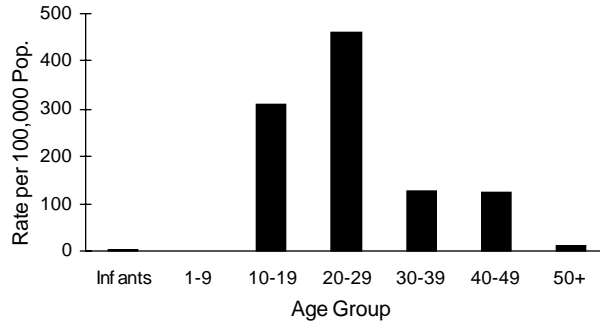
Gonorrhea

In 2000, 10,166 cases of gonorrhea were reported in Virginia. This is a 9% increase from the 9,315 cases reported in 1999 and represents the third consecutive annual increase in Virginia.

Young adults (age 20-29) were most likely to be reported with gonorrhea. They had the highest num-

ber of cases reported (4,724) and the highest incidence rate (461.4 per 100,000), followed by the 10 to 19 year age group (309.5 per 100,000) as shown in Figure 10.

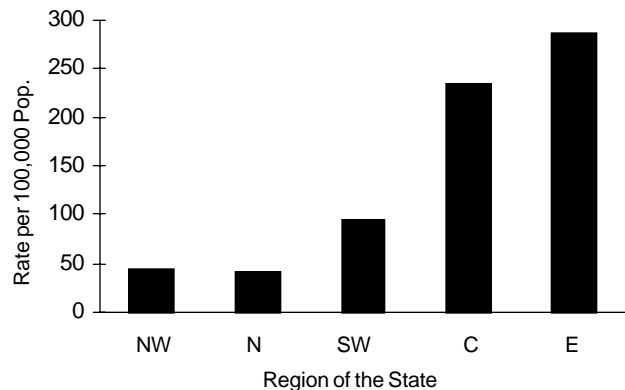
Figure 10. Gonorrhea: Rate by Age Group Virginia, 2000



Eighty percent of the cases were in blacks (8,148 cases, 586.1 per 100,000), 9% were in whites (950 cases, 18.6 per 100,000), and 1% were in the other race category (224 cases, 39.4 per 100,000). Race was not specified for 8%. By gender, 5,297 cases were reported in males (152.6 per 100,000) compared to 4,857 cases in females (134.7 per 100,000). Gender was not reported for 12 cases.

The eastern health planning region reported the most cases (4,895 cases, 285.0 per 100,000), followed by the central (2,856 cases, 234.4 per 100,000), southwest (1,232 cases, 94.2 per 100,000), northern (733 cases, 40.4 per 100,000) and north-west (450 cases, 44.1 per 100,000) regions (Figure 11).

Figure 11: Gonorrhea: Rate by Region Virginia, 2000



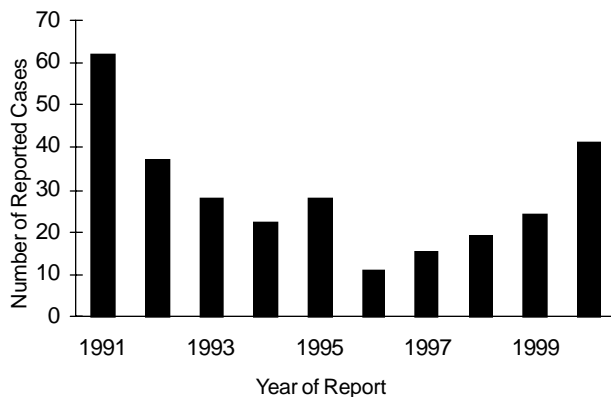
Granuloma Inguinale

No cases of this sexually transmitted disease have been reported in Virginia since 1990.

Haemophilus influenzae Infection, Invasive

The number of reported cases of invasive *Haemophilus influenzae* infection increased for the fourth consecutive year. Forty-one cases were reported in 2000 compared to 24 cases in 1999, 19 cases in 1998, and 15 cases in 1997 (Figure 12). The number of cases reported in 2000 was also more than the five-year mean of 22 cases. Seventy-six percent of cases were in adults aged 20 and older, with 58% in the 50+ year age group. Nine (22%) of the 41 cases reported in 2000 were in persons <5 years of age and seven of those were less than one year of age. Infants were at the greatest risk with an incidence rate of 7.2 cases per 100,000 population.

Figure 12. Invasive *H. influenzae* Infection: Ten Year Trend, Virginia, 1991 - 2000



Peak activity for this disease was observed during the first quarter of the reporting year when 17 of the 41 cases occurred. Eight cases occurred in blacks for an incidence rate of 0.6 cases per 100,000 population, and 23 cases were in whites (0.5 cases per 100,000 population). No cases were reported among

persons in the other race category, and race was recorded as unknown for ten cases. By sex, the risk for disease was slightly higher in females than males (0.7 vs 0.4 per 100,000).

The central and northwest health planning regions had the highest incidence rates (1.1 and 0.8 cases per 100,000 population, respectively). The incidence rate was 0.2 to 0.6 cases per 100,000 population in each of the other health planning regions.

The organism was isolated from blood in 30 cases and from cerebrospinal fluid in 5 cases. Only one case in the <5 year age group was identified as *H. influenzae* type b. Of all the reported cases, 5 were type b, 7 were not typeable, 11 were other types, and 18 were unknown. Two deaths due to invasive *H. influenzae* infection were reported in 2000. One was in an infant and one in an adult over age 60 years.

Hansen Disease (Leprosy)

No cases of this disease of low frequency in Virginia were reported in 2000. One case had been reported in 1997.

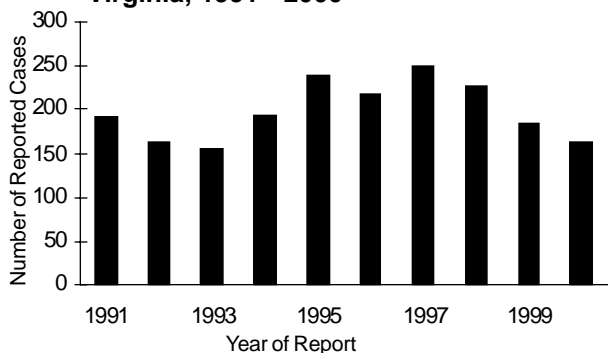
Hepatitis A

The number of reported cases of acute hepatitis A decreased for the third consecutive year. The 164 cases reported in 2000 were 11% fewer than the 185 cases reported in 1999 and 22% fewer than the five-year mean of 209 cases (Figure 13).

Adults in the 30-39 year age group were most at risk for hepatitis A (2.7 cases per 100,000 population), followed by adults in the 40-49 year age group (2.5 per 100,000). Persons in the other race category (2.3 cases per 100,000 population) were at greater risk for hepatitis A than whites (1.9 per 100,000) and blacks (0.9 per 100,000). Race, however, was

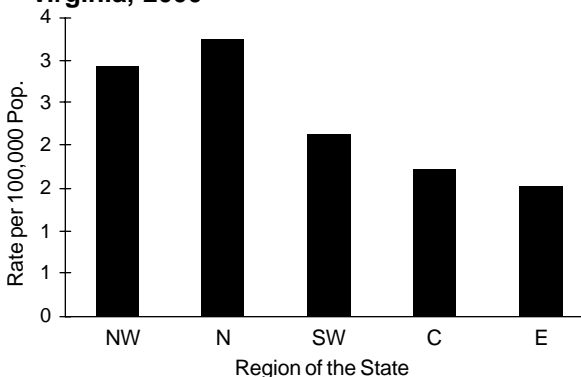
not reported for 39 (24%) cases. The incidence rate for males (102 cases, 2.9 per 100,000) was almost two times the rate for females (61 cases, 1.7 per 100,000). Sex was not recorded for one case.

Figure 13. Hepatitis A: Ten Year Trend Virginia, 1991 - 2000



The northern health planning region reported the most cases and had the highest incidence rate (59 cases, 3.3 per 100,000) of all regions. Incidence rates by region are illustrated in Figure 14.

Figure 14. Hepatitis A: Rate by Region Virginia, 2000



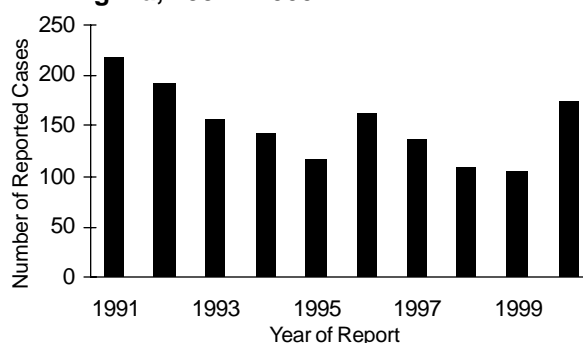
Risk factor data were reported for 75% percent of the hepatitis A cases. International travel (33 cases) and personal contact with a person with hepatitis A (26 cases) were the predominant potential sources of infection reported. Of those who reported international travel, 18 reported travel to Central and/or South America and 5 had traveled to Asia.

No deaths due to acute hepatitis A infection were reported in 2000.

Hepatitis B

The annual number of reported cases of this vaccine preventable disease increased by 64% to 174 cases in 2000 compared to 106 cases in 1999. The ten year trend overall is a decline (Figure 15). Cases occurred throughout the year but the frequency was highest during the third quarter when 30% of the cases reported onset.

Figure 15. Hepatitis B: Ten Year Trend Virginia, 1991 - 2000



The higher number of cases and incidence rates were reported in the adult age groups. Risk was greatest for adults <50 years. The 20-29 year age group had the highest incidence rate of 5.5 cases per 100,000 population compared to 1.6 per 100,000 for adults aged 50 and older. By race, blacks were at the greatest risk for hepatitis B. The incidence rate for blacks was 3.5 cases per 100,000 population compared to 1.2 per 100,000 each for whites and the other race category. Cases were fairly evenly distributed between the sexes (2.7 per 100,000 males vs 2.2 per 100,000 females).

The central health planning region had the highest number of cases reported and the highest incidence rate (51 cases, 4.2 per 100,000), followed by the eastern and southwest regions (2.6 and 2.3 cases per 100,000 population, respectively).

Based on analysis of reported information regarding risk factors, multiple sex partners was the most frequently reported potential source of infection for

hepatitis B. No deaths due to acute hepatitis B were reported in 2000.

For the past few years, the test for acute hepatitis B (IgM antibody to hepatitis B core antigen {IgM antiHBc}) was omitted from the Current Procedural Terminology (CPT) codes. As a result, this test was not done when physicians ordered the laboratory panel for hepatitis. Therefore, acute cases may not have been laboratory confirmed. This was corrected in 2000 and likely accounts for at least some of the increase in cases.

Hepatitis C

Three cases of acute viral hepatitis non-A non-B, C were reported in 2000 compared to 11 cases in 1999. All three cases tested positive for antibodies to hepatitis C. Disease onset for the cases occurred during the first half of the reporting year.

Cases ranged in age from 30 to 49 years. All the cases were in white males. Two cases were from the Southwest region and one was from the northern region.

No deaths due to acute hepatitis C were reported in 2000.

Histoplasmosis

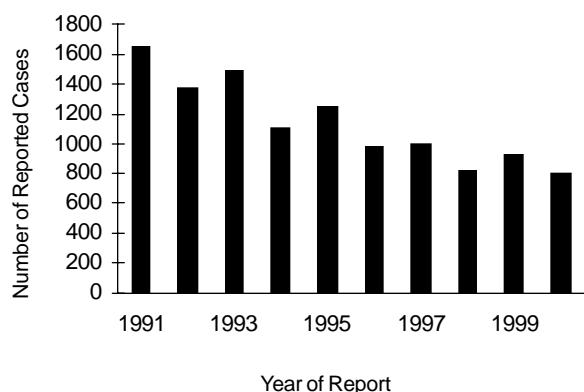
No cases of histoplasmosis were reported in 2000. Histoplasmosis was removed from the reportable disease list effective January 1999.

Human Immunodeficiency Virus (HIV) Infection and the Acquired Immunodeficiency Syndrome (AIDS)

HIV

During 2000, 804 new infections of HIV were reported, bringing the cumulative total of cases reported since 1989 to 12,741. The number of new cases was a decrease of 13% from the 922 cases reported in 1999 (Figure 16).

Figure 16. HIV Infection: Ten Year Trend Virginia, 1991 - 2000



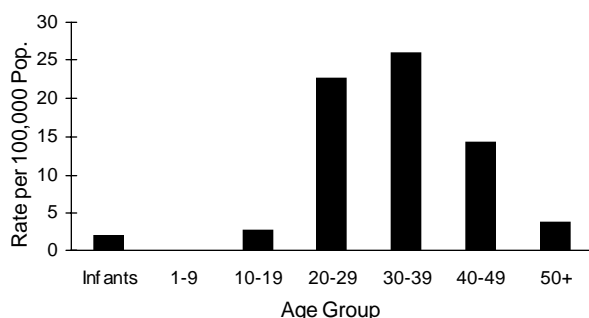
Males continue to represent the majority (553 cases, 69%) of HIV infection case reports. The incidence rate for males was 15.9 per 100,000. Females had 251 (31%) HIV infection case reports in 2000 (7.0 per 100,000). Though the number of cases in females remains much lower than the number of cases in males, the percentage of cases that were in females in 2000 was the highest since reporting began.

During 2000, the majority of cases were in blacks (68%, 549 cases) followed by whites (24%, 194 cases) and the other race category (6%, 52 cases). Blacks were more than ten times more likely than whites to be infected, having an incidence rate of 39.5 per 100,000 compared to 3.8 per 100,000 for

whites. The rate for the other race category was 9.2 per 100,000.

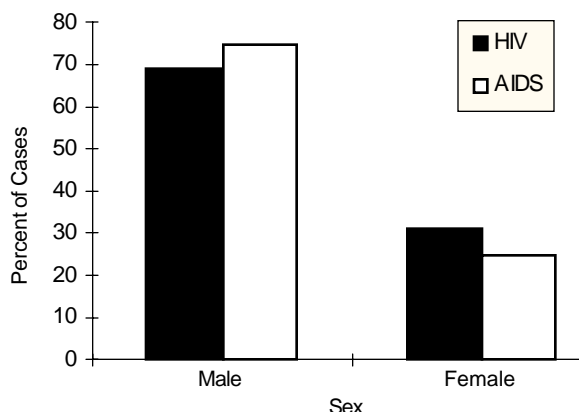
Persons in the 30-39 year age group had the highest incidence rate (315 cases, 26.0 per 100,000), followed by the 20-29 year age group (232 cases, 22.7 per 100,000), and the 40-49 year age group (157 cases, 14.1 per 100,000) as shown in Figure 17. Three pediatric (0-12 years) HIV infections were reported in 2000. All of the children were infected through maternal transmission.

Figure 17. HIV Infection: Rate by Age Group Virginia, 2000



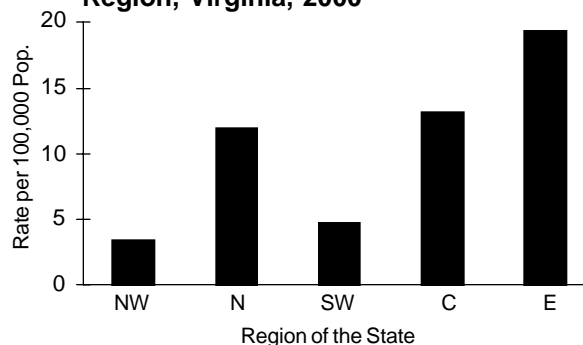
Compared to AIDS in 2000, persons with HIV infection were more likely to have become infected through heterosexual contact (20% HIV infection vs. 18% AIDS) and less likely to attribute their infection to men having sex with men (27% HIV infection vs. 37% AIDS). Females comprised a larger proportion of HIV infections (31%) than AIDS cases (25%) as shown in Figure 18.

Figure 18. A Comparison of AIDS Cases and HIV Infections by Sex, Virginia, 2000



The highest HIV infection incidence rate was calculated for the eastern health planning region (19.2 cases per 100,000 population), followed by the central (13.1 per 100,000), northern (12.0 per 100,000), southwest (4.7 per 100,000) and northwest (3.4 per 100,000) health planning regions (Figure 19).

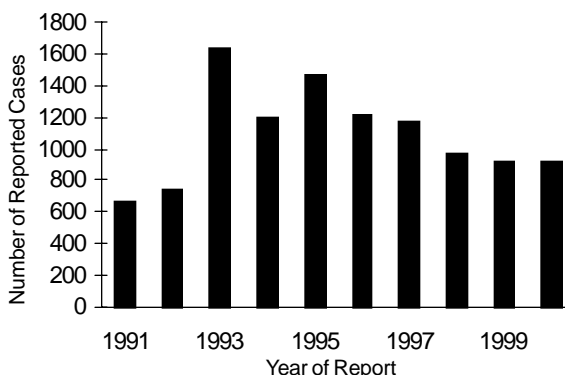
Figure 19. HIV Infection: Rate by Region, Virginia, 2000



AIDS

Since the first AIDS cases were reported in 1982, the cumulative number of cases reported through the end of 2000 is 12,916, with 6,917 deaths (54%). In 2000, 908 cases were reported, representing a less than 1% decrease from 1999 (Figure 20).

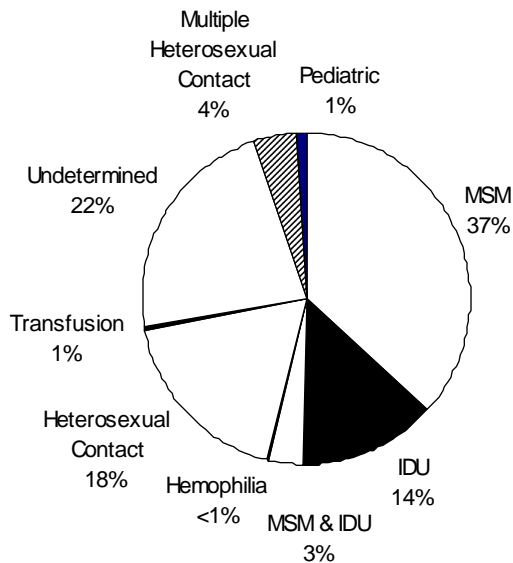
Figure 20. AIDS: Ten Year Trend Virginia, 1991 - 2000



AIDS is caused by the human immunodeficiency virus (HIV). Common modes of transmission are through unprotected sexual intercourse (especially anal intercourse) and injecting drug use (IDU). During 2000, men having sex with men (MSM) accounted for the greatest percentage of AIDS cases

(37%), followed by heterosexual contact (18%) as shown in Figure 21.

Figure 21. AIDS: Mode of Transmission Virginia, 2000



The majority of cases (672 cases, 74%) were adults between the ages of 30 and 49. The 30-39 year age group had the highest incidence rate with 34.9 cases per 100,000 population. Seven pediatric (0-12 years) AIDS cases were reported in 2000. All seven were infected via maternal transmission.

This is the seventh consecutive year that the majority (575, 63%) of reported AIDS cases were in blacks. Two hundred seventy-seven (31%) cases occurred in whites and 55 (6%) cases occurred in the other race category. Blacks were more than 8 times more likely than whites to be reported with AIDS, having an incidence rate of 41.4 per 100,000 compared to 5.4 per 100,000 in whites. The rate per 100,000 for the other race category was 9.7. Males also represented a disproportionate share of AIDS cases, with an incidence rate over three times higher than females (19.7 vs. 6.2 per 100,000, respectively).

The eastern health planning region experienced the highest incidence rate (17.5 per 100,000), followed by the central region (16.8 per 100,000), the northern region (15.1 per 100,000), the southwest region (6.3 per 100,000) and the northwest region (4.5 per 100,000).

Persons with AIDS develop a variety of life-threatening opportunistic infections due to immunosuppression. The most commonly diagnosed disease was *Pneumocystis carinii* pneumonia (PCP). Nineteen percent of the cases reported during 2000 developed PCP during the course of the illness. Other frequently diagnosed conditions included HIV wasting syndrome (8%), esophageal candidiasis (8%), recurrent pneumonia (3%), cytomegalovirus (3%), and pulmonary *M. tuberculosis* (2%). Over half (59%) of the reported cases were reported as immunologic (low CD4 counts) using the 1993 expanded definition of AIDS.

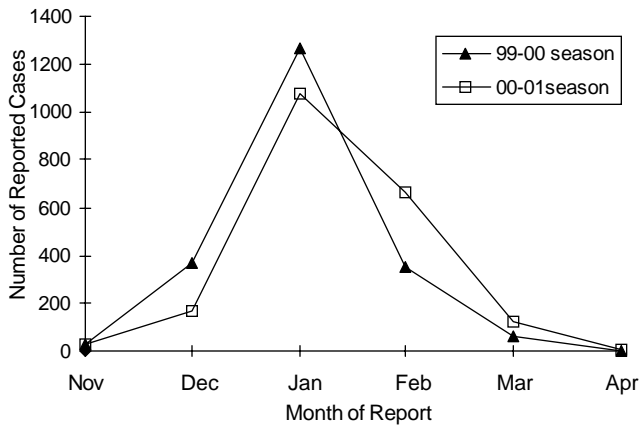
Influenza

The influenza season in Virginia typically runs from the fourth quarter (October - December) of one year through the first quarter (January - March) of the following year. During this period, the health department conducts active influenza surveillance using sentinel physicians from around the state who report cases of influenza-like illness on a weekly basis. Cases are tabulated weekly and the information, along with laboratory identification of viral agents, is used to monitor and define influenza activity in Virginia. Activity is characterized as sporadic, regional or widespread. In addition, sporadic cases of influenza-like illness are reported throughout the calendar year through our passive disease reporting system.

During the 1999-2000 season, influenza type A and influenza type B were isolated in Virginia. Widespread activity occurred during the month of January, with peak activity occurring during the middle of that month (Figure 22). For the third year in a row, A/Sydney was the predominant circulating strain. Nine outbreaks of influenza-like illness were reported in nursing homes and other adult residential facilities in Virginia.

During the 2000-2001 flu season, influenza type A and type B were isolated in Virginia. Widespread

Figure 22. Influenza-like Illness Reported in 2 “Flu Seasons”



activity occurred from early January through mid February, with peak activity during late January. Three outbreaks of influenza-like illness were reported in nursing homes in Virginia this season. Two facilities had serologically confirmed influenza; the third was culture confirmed as respiratory syncytial virus (RSV). Influenza A (H3N2) was confirmed in one of the facilities and influenza B in the other. Nationwide this was the first flu season since 1995-96 that the type A (H3N2) strain did not predominate. Worldwide influenza A (H1N1) predominated.

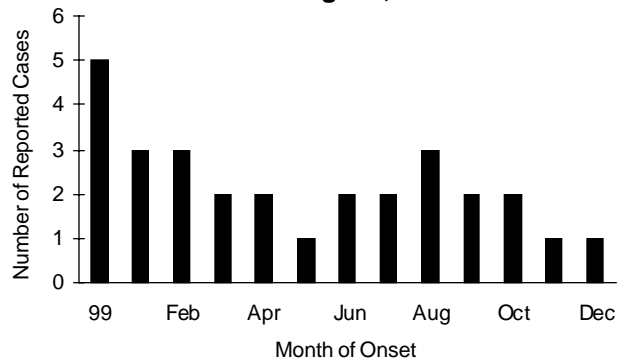
Through the passive surveillance system, 1,909 cases of influenza were reported during calendar year 2000, compared to 2,558 cases in 1999 and 1,160 cases in 1998.

Kawasaki Syndrome

Twenty-nine reported cases of Kawasaki syndrome were confirmed in 2000 compared to 33 in 1999 and 36 in 1998. The cases reported in 2000 occurred throughout the year with the highest percentage (28%) in the first quarter. (Figure 23).

Twenty-five cases occurred in children <5 years; four occurred in 5-9 year olds. The black race category had the highest incidence rate (1.0 cases per 100,000 population), followed by the other race category (0.7 per 100,000) and whites (0.2 per

Figure 23. Kawasaki Syndrome: Month of Onset Virginia, 2000



100,000). Males were more likely than females to be reported with Kawasaki syndrome (0.5 cases per 100,000 population vs. 0.3 cases per 100,000 population, respectively).

The eastern health planning region reported the highest number of cases and had the highest incidence rate (13 cases, 0.8 per 100,000). Incidence rates in the other health planning regions ranged from 0.2 per 100,000 in the northwest region to 0.4 cases per 100,000 population in the southwest region.

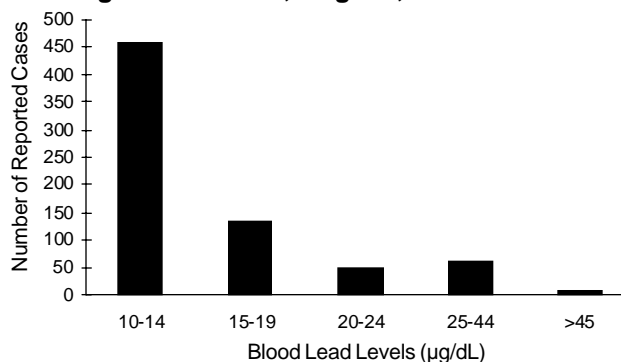
Lead - Elevated Levels in Children

In 2000, 707 children were newly reported with an elevated blood lead level. Virginia law requires reporting to the health department of any child age 15 years or younger, with a venous blood lead level ≥ 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$). (Note: the reportable level changed from $\geq 15 \mu\text{g}/\text{dL}$ to $\geq 10 \mu\text{g}/\text{dL}$ in 1999.)

Four hundred fifty-six (65%) of the children reported in 2000 had blood lead levels in the 10-14 $\mu\text{g}/\text{dL}$ range (Figure 24). This category indicates that the lead level is above normal but no treatment is needed. Education is provided and a new test should be done in 3 months. One hundred thirty-five (19%) had levels in the 15-19 $\mu\text{g}/\text{dL}$ range, the category for which the CDC recommends nutritional and edu-

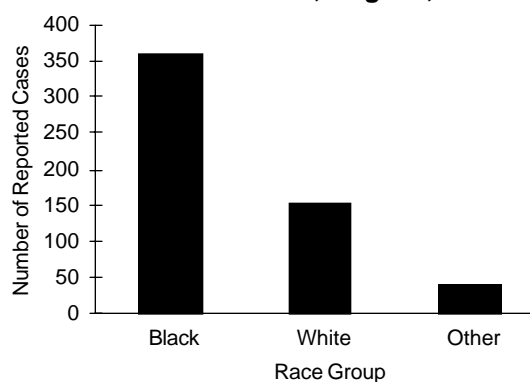
cational interventions and more frequent screening. Forty-eight (7%) had levels in the 20-24 $\mu\text{g}/\text{dL}$ range, for which CDC recommends medical evaluation, environmental evaluation, and environmental remediation. Sixty (8%) had levels in the 25-44 $\mu\text{g}/\text{dL}$ range and 8 (1%) had levels 45 and higher. These high levels require both medical and environmental interventions.

Figure 24. Elevated Blood Lead Levels: Age 0 - 15 Years, Virginia, 2000



Children aged five years and younger comprised 93% (661 cases) of the reported cases with one and two years being the most common ages at diagnosis (36% and 23% of reported cases, respectively). Race was reported for 550 (78%) cases. Of these, 358 (65%) were black, 152 (28%) were white and 40 (7%) were in the other race category (Figure 25). The number (397) of males reported was 87 cases more than the number (310) of females reported.

Figure 25. Race of Children with Elevated Blood Lead Levels, Virginia, 2000



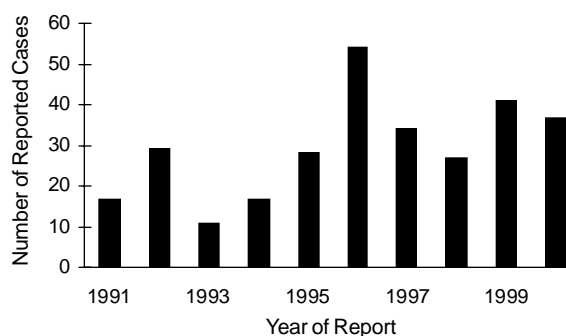
Cases were reported from all health planning regions: central, which includes the federally-funded lead prevention programs in Petersburg and Rich-

mond, 265 cases; eastern, which includes the funded programs in Norfolk and Portsmouth, 209 cases; southwest, which includes the funded program in Lynchburg, 93 cases; northern 70 cases; and northwest 70 cases.

Legionellosis

Thirty-seven laboratory-confirmed cases of legionellosis were reported in 2000 compared to 41 cases in 1999 (Figure 26). The 37 cases reported in 2000 are below the five-year mean of 39 cases. Males were more than twice as likely as females to be reported with this disease (26 cases, 0.8 cases per 100,000 population vs. 11 cases, 0.3 per 100,000, respectively). Age ranged from 32 to 90 years (median=58 years). Twenty-nine reported cases were in whites (0.6 cases per 100,000 population), seven were in blacks (0.5 cases per 100,000 population), and one was in the other race category.

Figure 26. Legionellosis: Ten Year Trend Virginia, 1991 - 2000



Information about risk factors for illness was available for 34 persons. At least one of the following risk factors was reported for most cases: cancer, organ transplant, diabetes mellitus, use of systemic corticosteroids or other immunosuppressants, or cigarette smoking. Cigarette smoking was the primary risk factor reported: 22 persons reported smoking ten or more cigarettes per day. Diabetes mellitus was the next most common risk factor (13 persons).

No outbreaks of legionellosis were reported in 2000. The southwest health planning region reported

the highest incidence rate (1.2 cases per 100,000 population). Each of the other health planning regions had an incidence rate of <1.0 per 100,000. Five deaths due to legionellosis were reported.

Listeriosis

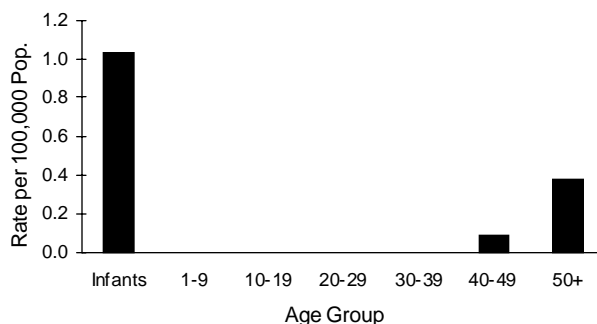
Nine cases of listeriosis were reported in 2000 compared to 17 cases in 1999. Cases occurred throughout the year with 43% of cases having onset in the third quarter of the year.

No cases were reported as having meningitis due to listeriosis.

Information about risk factors for illness was available for eight persons: immunosuppression (5), wound/surgery (2), and pregnancy (1).

Persons with listeriosis ranged in age from a few days to 87 years. One case was in an infant and 8 cases were in adults 40 and older (Figure 27). By race, seven were white (0.1 cases per 100,000 population) and one was black (0.1 per 100,000) and one was reported as unknown. Males were at slightly greater risk for listeriosis than females (0.2 cases vs. 0.1 cases per 100,000 population, respectively).

Figure 27. Listeriosis: Rate by Age Group Virginia, 2000

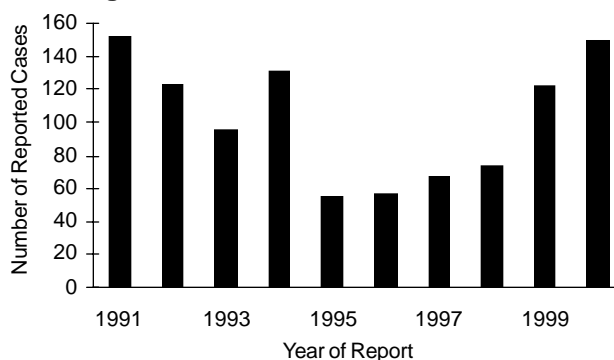


Three cases were reported from the eastern health planning region. Two cases were reported each from the northern, northwest and southwest health planning regions. No deaths were reported.

Lyme Disease

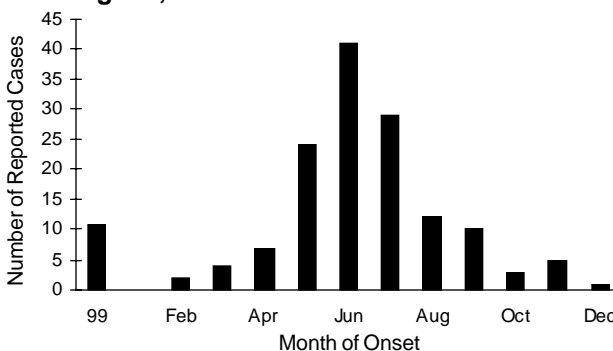
Since becoming a notifiable condition in 1989, Lyme disease has been the most frequently reported tickborne illness in Virginia. The 149 cases of Lyme disease reported in 2000 represents the highest number of cases reported in Virginia since 1991 when 151 cases were reported. For the fifth consecutive year, the number of cases increased as shown in Figure 28.

Figure 28. Lyme Disease: Ten Year Trend Virginia, 1991 - 2000



The majority (63%) of cases occurred in May, June and July when 94 cases were reported (Figure 29). The highest incidence rate occurred in the 1-9 year age group (27 cases, 3.1 cases per 100,000 population), followed by the 40-49 year age group (30 cases, 2.7 per 100,000), and the 10-19 year age group (26 cases, 2.6 per 100,000). Cases were evenly distributed among males (78 cases) and females (71 cases). The rate among whites (131 cases, 2.6 per 100,000) was higher than in blacks (5 cases, 0.4 per 100,000). Race was not reported for 13 persons.

Figure 29. Lyme Disease: Month of Onset Virginia, 2000



The predominant symptom reported was erythema migrans (112 cases, 75%). Other conditions reported were arthritis (32 cases, 21%), Bell's palsy (20 cases, 8%), radiculoneuropathy (4 cases, <1%), lymphocytic meningitis (1 case, <1%), and encephalitis (1 case, <1%). The counties of exposure reported most frequently were Loudoun (53 cases, 36%) and Fairfax (15 cases, 10%).

Cases of Lyme disease were reported from all health planning regions with the highest number of cases and the highest rate reported from the northern region (91 cases, 5.0 per 100,000). *Borrelia burgdorferi*, the causative organism for Lyme disease in this country, has been isolated from rodents and ticks in several counties in Virginia.

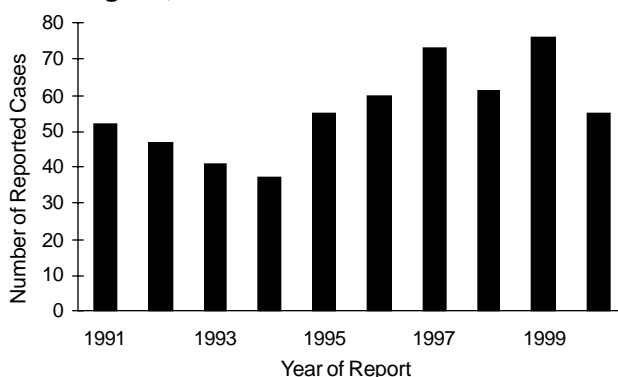
Lymphogranuloma Venereum

One case of lymphogranuloma venereum was reported in 2000.

Malaria

In 2000, 55 cases of malaria were reported compared with 76 cases in 1999. This is a 28% decrease when compared with last year, which represented the highest number reported since 1970. The ten year trend is shown in Figure 30.

Figure 30. Malaria: Ten Year Trend Virginia, 1991 - 2000



The 20-29 year age group had the highest incidence rate of 1.7 cases per 100,000 population, followed by the 40-49 year olds with a rate of 1.0 per 100,000.

Race was reported as unknown for 20 (36%) cases. Where race was reported, blacks had the highest incidence rate (1.6 cases per 100,000 population), followed by the other race category (1.2 per 100,000) and whites (0.1 per 100,000). Males were twice as likely to be reported with malaria as females (1.1 vs. 0.5 per 100,000).

The majority (69%) of cases were reported from the northern health planning region. Each of the other health planning regions reported from 2 to 6 cases.

All of the persons reported with malaria are believed to have acquired the disease while in another county. Of those reported, Africa was the probable source of malaria for 31 cases, Central America 7 cases, Oceania 3 cases, and Asia 2 cases. The probable source of malaria was not reported for twelve persons.

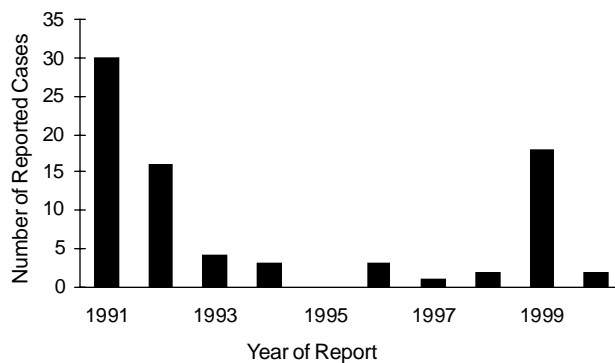
Eighty-four percent had not taken any chemoprophylaxis. Only nine cases reported taking any chemoprophylaxis. Of these nine cases, four took the incorrect drug for the area visited and three did not complete the entire course of their medication.

The *Plasmodium* species was reported for 46 (84%) of the 55 cases. *P. falciparum* was reported in 31 cases, 23 of whom had known travel histories to Africa. *P. vivax* accounted for 14 cases and travel was divided between Central America (4), Africa (3), Oceania (2), Asia (1), and unknown (4). No cases of *P. ovale* were reported. *P. malariae* was reported in one case with travel to India. Three cases were reported in U.S. military personnel. The status of the remaining cases was reported as U.S. civilians (15 cases), civilians of other countries (29 cases) or status unknown (8 cases). The latter two categories included refugees, immigrants, students and children.

Measles

The number of reported measles cases decreased to two in Virginia in 2000 compared to 18 cases in 1999. In 1999, 15 of the cases were related to an outbreak that occurred in the southwest region of the state. Virginia had a record low of zero cases in 1995; the five year mean is five cases per year (Figure 31).

Figure 31. Measles: Ten Year Trend Virginia, 1991 - 2000



Meningococcal Infection

The number of cases of meningococcal infection reported during 2000 was 42, which is 30% less than the 60 cases reported in 1999 and less than the five year mean of 56 cases. This is the lowest number of cases reported since 1991 when 39 cases were reported (Figure 32). Onset of illness was distributed throughout the year, but the majority (22 cases, 52%) of cases occurred during the first quarter.

Figure 32. Meningococcal Infection: Ten Year Trend, Virginia, 1991 - 2000



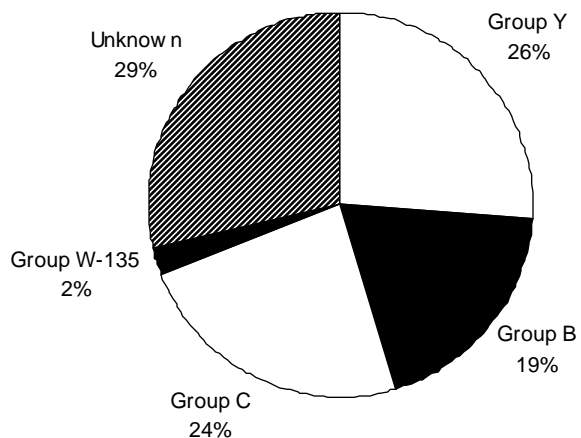
Infants had the highest incidence rate (6.2 cases per 100,000 population), followed by persons in the 10-19 year age group (1.3 per 100,000) and the 1-9 year age group (1.0 per 100,000).

Blacks had a slightly higher incidence rate than whites (0.6 cases per 100,000 population and 0.5 cases per 100,000 population, respectively). Persons in the other race category had an incidence rate of 0.2 per 100,000. Twenty-seven cases were reported in males compared to 15 cases in females.

The highest incidence rate was reported from the southwest health planning region (11 cases, 0.8 per 100,000), followed by the northwest (7 cases, 0.7 per 100,000), and central (8 cases, 0.7 per 100,000) regions.

Serogroup was reported for 30 (71%) of the reported cases: 11 group Y, 10 group C, 8 group B, and 1 group W-135 (Figure 33). The organism was isolated from cerebrospinal fluid in 13 cases and from blood in 28 cases. The source of the organism was not reported for 1 case. Three deaths due to meningococcal disease were reported in 2000. The ages of persons who died ranged from 1 to 95 years.

Figure 33. Meningococcal Serogroups Virginia, 2000



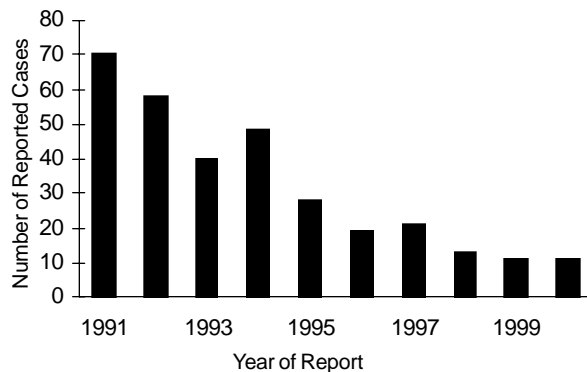
Nine (21%) cases of meningococcal disease occurred in college students. Outbreaks occurred on two college campuses. The May 2000 issue of the *Virginia Epidemiology Bulletin* summarizes the

cases in college students. (http://www.vdh.state.va.us/epi_news/may00.pdf)

Mumps

Reported mumps cases continue to decline. The number (11) of cases reported in 2000 is the same number as reported in 1999 and much lower than the ten-year mean of 32 cases per year (Figure 34). Cases occurred throughout the year with most cases reported in the second quarter of the year.

**Figure 34. Mumps: Ten Year Trend
Virginia, 1991 - 2000**



Children in the 1-9 year age group had the highest incidence rate for mumps (0.8 per 100,000). Adults in the 20-49 year age groups had the next highest rate (0.1 cases per 100,000 population). No cases were reported for infants or children ages 10-19 years.

By race, the black and other race categories (0.2 cases per 100,000 population each) were at greater risk for acquiring mumps than whites (0.1 per 100,000). Race was recorded as unknown for two cases. Females were at slightly more risk than males (0.2 v. 0.1 cases per 100,000 population, respectively).

The risk for mumps was similar in all the health planning regions, with 2-3 cases reported per region.

Nosocomial Outbreaks

A nosocomial outbreak refers to any group of illnesses of common etiology occurring in patients in hospitals or nursing homes acquired while confined in such facilities. Ten nosocomial outbreaks were reported in 2000 (Table 9). Two outbreaks of influenza-like illness in a nursing home were reported during the 2000-2001 season. One was laboratory confirmed influenza type A/Panama and the other was laboratory confirmed influenza type B/Yamanashi. One outbreak of respiratory syncytial virus (RSV) was reported.

Five outbreaks were characterized by symptoms of gastroenteritis. Norwalk-like virus was laboratory confirmed as the cause for all of these outbreaks. Two outbreaks of scabies were reported in nursing homes.

Occupational Illnesses

Since 1999, individual cases of toxic substance related occupational illnesses continue to be reportable. Occupational illnesses that are related to toxic substances can be found under that heading. No outbreaks of occupational illness were reported in 2000.

Ophthalmia Neonatorum

Three cases of ophthalmia neonatorum were reported in 2000; all three were caused by *Chlamydia trachomatis* infection. By race, two were black and race was recorded as unknown for the third case. Three cases of ophthalmia neonatorum had been reported in 1999.

Table 9. Nosocomial Outbreaks Confirmed in Virginia, 2000

Onset Date	Locality	Number of Cases	Etiologic Agent	Mode of Transmission	Place Where Outbreak Occurred
1/01	Henrico	unknown	Norwalk-like virus	person-to-person	nursing home
1/27	Hanover	42	Norwalk-like virus	person-to-person	nursing home
2/22	Hanover	85+	Norwalk-like virus	person-to-person	convalescent center
2/27	Accomack	29	Norwalk-like virus	person-to-person	nursing home
3/04	Louisa	56	Norwalk-like virus	person-to-person	nursing home
8/10	Va Beach	unknown	possible scabies	person-to-person	nursing home
8/17	Tazewell	11	influenza B/Yamanashi	person-to-person	nursing home
11/15	Hopewell	30+	RSV	person-to-person	nursing home
12/01	Henrico	39	influenza A/Panama	person-to-person	nursing home
12/07	Va Beach	6	scabies	person-to-person	nursing home

Other Outbreaks

This section includes eleven outbreaks that occurred in 2000 that are not described in other sections of this report (Table 10). Norwalk-like virus was confirmed as the cause of three outbreaks and suspected as the cause of three others. Most of these occurred in school groups of some type. The mode of transmission was thought to have been person-to-person.

A chemical agent was suspected in one office outbreak. One day care center reported an outbreak of unknown etiology with 35 cases, most likely spread by person-to-person transmission. *Shigella* caused outbreaks in multiple schools in the southwest region.

An international competition involving river swimming caused an outbreak of leptospirosis. Some of the participants were from Virginia. A county fair with contaminated well water is suspected of causing an outbreak of campylobacteriosis.

Parasites, Intestinal

In addition to amebiasis, cryptosporidiosis, cyclosporiasis, and giardiasis, selected reports of other parasitic intestinal diseases are recorded. In 2000, 35 laboratory confirmed cases of intestinal parasites were recorded: 16 cases of trichuriasis (whipworm), 9 cases of ascariasis (roundworm), 6 cases of necatoriasis (hookworm), and 4 cases of strongyloidiasis (Figure 35).

Activity peaked during the fourth quarter when 18 (51%) cases occurred. The 20-29 year age group

Figure 35. Intestinal Parasites Virginia, 2000

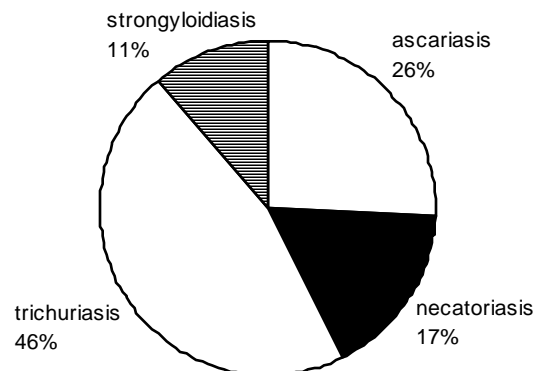


Table 10. Other Outbreaks Confirmed in Virginia, 2000

Onset Date	Locality	Number of Cases	Etiologic Agent	Mode of Transmission	Place Where Outbreak Occurred
2/07	Fairfax	19	Norwalk-like virus	person-to-person	detention center
3/30	Henrico	5	possible chemical agent	catered food (suspected)	doctor's office
4/01	Southwest Region	100+	<i>Shigella sonnei</i>	person-to-person	elementary schools
4/26	Williamsburg	25+	Norwalk-like virus	person-to-person	college campus
5/10	Alexandria - visiting DC from KY	14+	virus suspected	person-to-person	school
5/20	Fairfax	75+	Norwalk-like virus suspected	unknown	gymnastics meet
8/01	Frederick	29	<i>C. jejuni</i>	contaminated well water (suspected)	county fair
8/01	International	68+	Leptospirosis	river swimming	Borneo
10/05	Chesapeake	100+	virus suspected	person-to-person, fomites	school
10/07	Norfolk	35	unknown	person-to-person	day care
11/02	Arlington	19	Norwalk-like virus	person-to-person	middle school

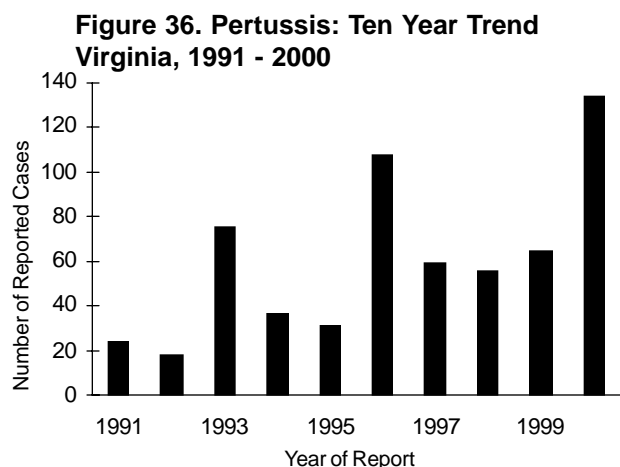
accounted for the highest number of cases (9 cases, 26%). Fifteen (43%) cases were in the other race category. Race was not reported for 5 (14%) cases. Eighteen (52%) of cases were in males compared to 16 (46%) in females. Sex was recorded as unknown for the remaining case.

The southwest health planning region had the highest number of cases (9) followed by the central region with eight cases.

Pertussis

In 2000, 134 confirmed cases of pertussis were reported. This is a 106% increase over the 65 cases reported in 1999, and the highest annual number of cases reported since 1970 when 163 cases were reported (Figure 36). Pertussis has been the most frequently reported childhood vaccine-preventable dis-

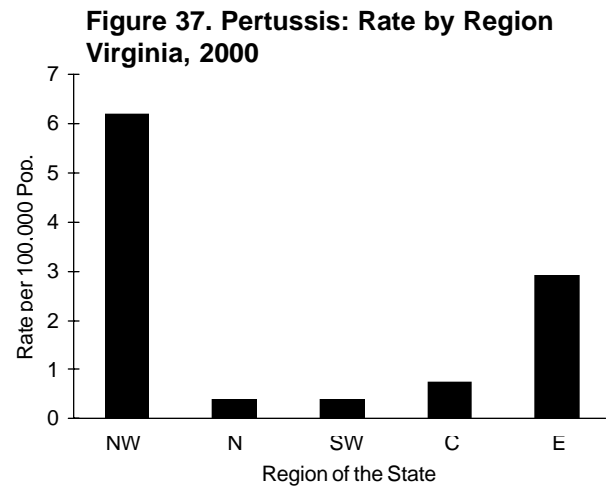
ease in Virginia in recent years. New polymerase chain reaction (PCR) testing may account for some of the increase in cases detected in Virginia. Cases occurred throughout the year, but peaked during the month of August when 27 (20%) cases had onset of symptoms.



Infants had the highest incidence rate at 42.4 cases per 100,000 population, followed by the 10-19 year age group (45 cases, 5.1 per 100,000). Incidence rates in the other age groups were 3.4 or less per 100,000.

One hundred four (78%) pertussis cases were in whites; the incidence rate for whites was 2.0 cases per 100,000 population. The incidence rate for blacks was 1.9 per 100,000. Females and males were at the same risk (1.9 per 100,000).

The majority of cases were reported from the northwest health planning region (63 cases, 6.2 per 100,000) and the eastern health planning region (50 cases, 2.9 per 100,000) (Figure 37). One death due to pertussis was reported in an infant.



Plague

No cases of plague have been reported in Virginia since the nineteenth century.

Poliomyelitis

The last reported case of poliomyelitis in Virginia occurred in 1978.

Psittacosis

Psittacosis is a disease of low frequency in Virginia. No cases were reported in 2000. One case was reported in 1998.

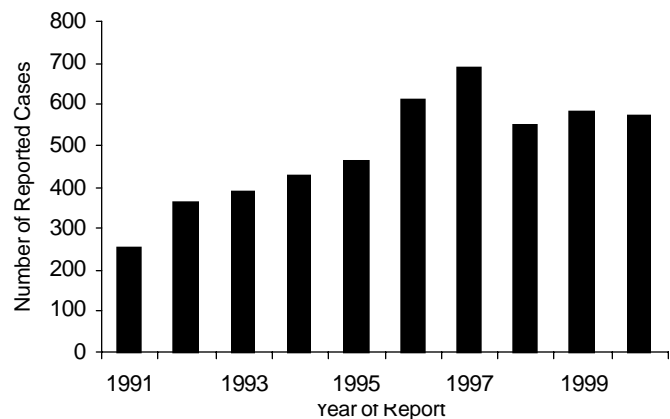
Q Fever

No cases were reported in 2000. One case of Q fever was reported in 1999.

Rabies in Animals

The number of animals confirmed with rabies decreased from 581 cases in 1999 to 574 cases in 2000 (Figure 38). The only new locality reporting a positive animal in 2000 was Norfolk which had previously never reported a case.

Figure 38. Rabies in Animals: Ten Year Trend Virginia, 1991 - 2000

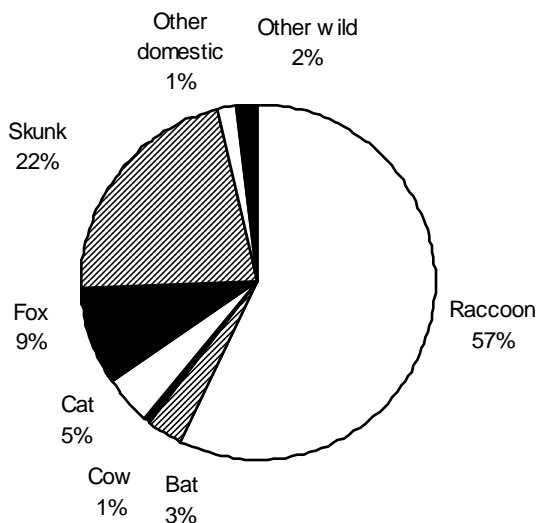


The locality reporting the most cases (70 cases, 12%) was Fairfax County (including the cities of Fairfax and Falls Church). Northampton County had the second highest number of cases (31 cases, 5%) The remaining localities contributed 4% or fewer cases each to the total number of rabid animals.

For the nineteenth consecutive year, raccoons were the most commonly reported species reported

with rabies, accounting for 328 cases or 57% of the total number of animals reported. Skunks were the second most frequently reported species, accounting for 126 (22%) cases (Figure 39). The other wildlife reported with rabies were 50 foxes, 19 bats, 6 groundhogs, 3 bobcats, and 1 mink.

Figure 39. Species of Animals Positive for Rabies, Virginia, 2000



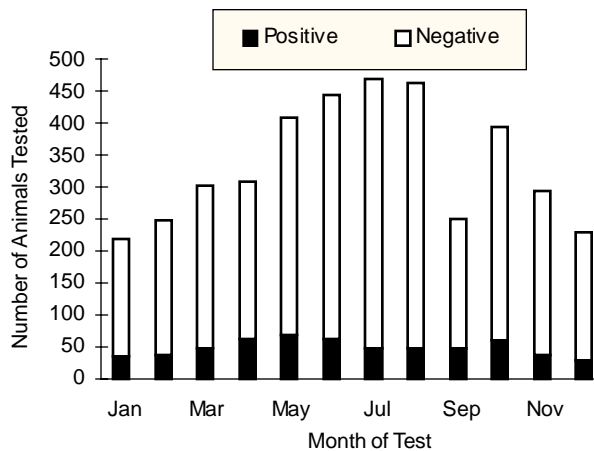
Cats were the most commonly reported domestic animals with rabies. Twenty-seven rabid cats were reported followed by 7 dogs, 3 cows, 2 horses, 1 goat, and 1 sheep.

Animals Tested

The number of animals tested rose from 3,809 in 1989 to 4,025 in 2000. This number is less than the 4,070 tested in 1999. Cats were the most commonly tested domestic animal, accounting for 27% of all animals tested. Raccoons, dogs and bats each accounted for 16% of animals tested, followed by opossums (7%), skunks (5%), and foxes (4%). Overall, 14% of all animals tested were positive for rabies. Although skunks accounted for only 5% of all animals tested, 65% of those tested were positive. Fifty-one percent of tested raccoons were positive, compared with 4% of bats, 2% of cats, and <1% of dogs.

Figure 40 compares the total number of animals tested with the number positive for each month.

Figure 40. Animal Rabies Tests by Month and Test Result, Virginia, 2000



Human Exposure

Human exposure was reported for 12 animal species. The ratio of human exposure to the number of rabid animals by species is as follows; 9/19 rabid bats, 1/3 rabid bobcats, 3/3 rabid cows, 22/27 rabid cats, 5/7 rabid dogs, 2/2 rabid horses, 17/50 rabid foxes, 1/1 rabid goats, 1/1 rabid mink, 25/328 rabid raccoons, 1/1 rabid sheep, and 10/126 rabid skunks.

Rabies in Humans

No cases of rabies in humans were reported in Virginia in 2000. In 1998, the first case of human rabies in 45 years was reported in Virginia.

During 2000, 1,013 persons were reported to have received post-exposure prophylaxis, a 25% increase from the 808 persons reported in 1999 (Figure 41). This is the highest number reported in the 16 years that this information has been collected. In addition, 662 persons received pre-exposure prophylaxis compared to 428 in 1999 and 679 in 1998.

Figure 41. Rabies Post-Exposure Prophylaxis Received, Virginia, 1990 - 2000

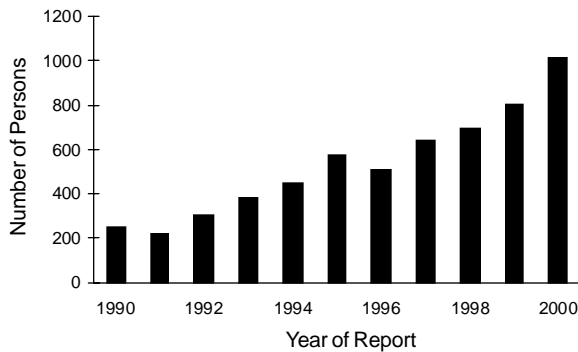
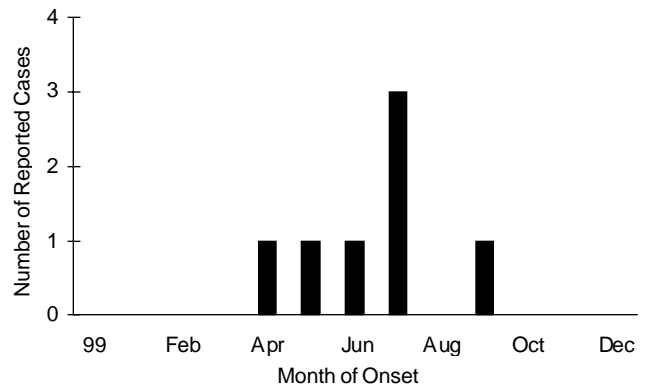


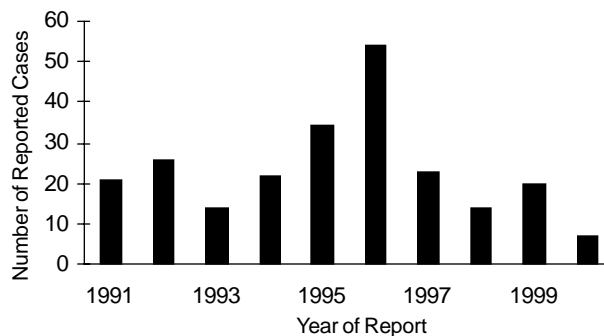
Figure 43. Rocky Mountain Spotted Fever: Month of Onset, Virginia, 2000



Rocky Mountain Spotted Fever

The 7 cases of Rocky Mountain spotted fever reported in 2000 represent a decrease from the 20 cases reported in 1999 and the lowest number recorded since 1931 (6 cases). Figure 42 shows the ten-year trend in the number of reported cases in Virginia. Onset of cases occurred from April through September with a peak in July as shown in Figure 43.

Figure 42. Rocky Mountain Spotted Fever: Ten Year Trend, Virginia, 1991 - 2000



Adults 50 years or older had the highest incidence rate (3 cases, 0.2 per 100,000). It is interesting to note that no cases of this tick-borne disease were reported in young children.

By race, the incidence rate of 0.1 cases per 100,000 population was the same for blacks and whites. No cases were reported in the other race category. Males had an incidence rate of 0.2 cases per 100,000 population. None of the cases were reported in females.

Incidence rates ranged from 0.2 per 100,000 in the southwest and northwest health planning regions to 0.1 per 100,000 in the northern and central region. No cases were reported from the eastern region.

A rash was reported in one of the cases. Five (71%) persons had a known tick bite, one had been in a tick infested area, and exposure status information was not available for one person.

No deaths due to Rocky Mountain spotted fever were reported in 2000.

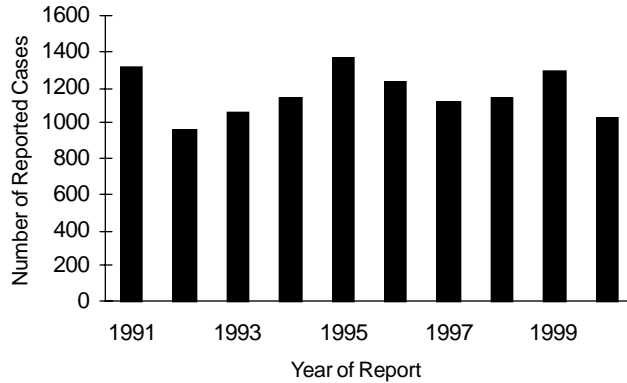
Rubella

No cases of rubella were reported in 2000. One case was reported in 1998.

Salmonellosis

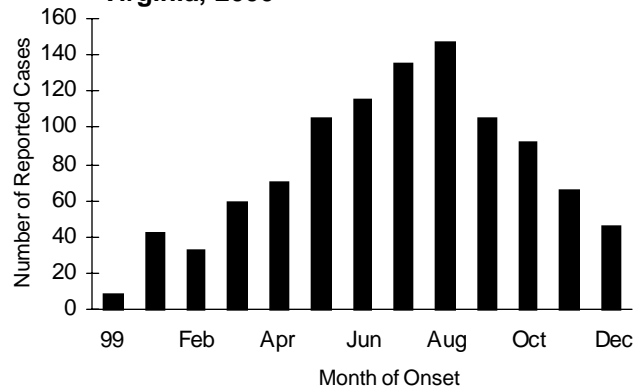
Salmonellosis continues to be the most frequently reported enteric pathogen in Virginia. In 2000, 1,020 *Salmonella* infections were reported compared to 1,286 in 1999 (Figure 44). The most commonly reported serotypes were *S. typhimurium* (249 cases) and *S. enteritidis* (186 cases), followed by *S. newport* (68 cases), and *S. heidelberg* (39 cases). These four serotypes accounted for 53% of the 63 different serotypes reported in 2000 (Table 11).

Figure 44. Salmonellosis: Ten Year Trend, Virginia, 1991 - 2000



Regionally, the highest incidence rate was in the northwest health planning region (16.8 cases per 100,000 population), followed by the northern health planning region (16.5 per 100,000). The lowest rate (12.8 per 100,000) was in the southwest health planning region. The incidence of *Salmonella* infections peaked during the third quarter when 38% of the cases occurred (Figure 45).

Figure 45. Salmonellosis: Month of Onset, Virginia, 2000



Infants were at the greatest risk for *Salmonella* infection (111.7 cases per 100,000 population), followed by children aged 1-9 years (28.3 per 100,000). The age group 40-49 had the lowest rate at 8.1 per 100,000 population. Blacks had the highest incidence rate (10.3 per 100,000) followed by the white race category (8.8 per 100,000). The risk for *Salmonella* infection was slightly higher for males (14.3 per 100,000) than for females (14.1 per 100,000).

Table 11. Number and Percent of Salmonella Infections by Species, Virginia, 2000

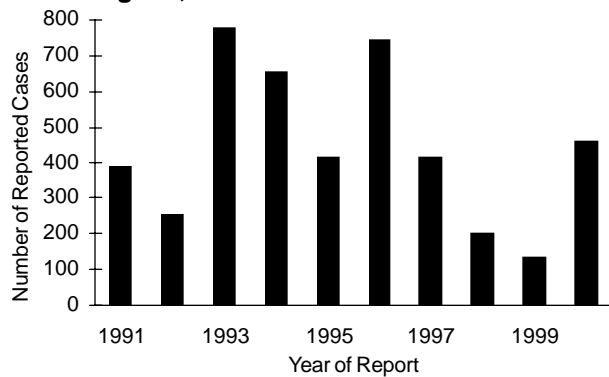
Species Causing Infection	Number of Cases	Percent of Cases
<i>S. typhimurium</i>	249	24.41
<i>S. enteritidis</i>	186	18.24
<i>S. newport</i>	68	6.67
<i>S. heidelberg</i>	39	3.82
<i>S. java</i>	27	2.65
<i>S. javiana</i>	27	2.65
<i>S. berta</i>	20	1.96
<i>S. braenderup</i>	17	1.67
<i>S. bareilly</i>	14	1.37
<i>S. saint paul</i>	14	1.37
Unspecified	209	20.49
All Others	150	14.71
TOTAL	1020	100.00

Seven *Salmonella* outbreaks were reported in 2000. Four outbreaks were due to *Salmonella enteritidis*: two were linked to undercooked eggs and the food vehicle for the other two was not determined. An outbreak of *Salmonella typhimurium* in a restaurant was linked to Hollandaise sauce made with raw eggs. *Salmonella java* caused another restaurant-associated outbreak; the food vehicle was undetermined. Finally, a multi-state outbreak of *Salmonella thompson* was linked to contaminated tomatoes; at least 12 cases occurred in Virginia. (See Foodborne Outbreak Section for more information.)

Shigellosis

The number of reported cases of shigellosis increased 238% in 2000. There were 460 cases reported in 2000 compared to 136 cases reported in 1999 (Figure 46). An outbreak of shigellosis involving elementary schools in the southwest region of the state contributed to the increase.

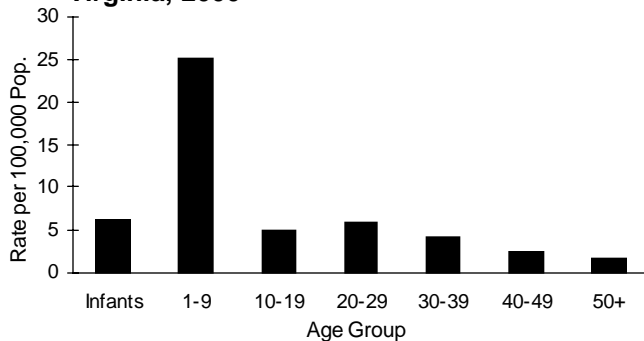
Figure 46. Shigellosis: Ten Year Trend Virginia, 1991 - 2000



Shigella infections occurred most often during the second quarter of the reporting year. Eighty-three percent (383) of *Shigella* infections reported were caused by *S. sonnei*; 31 infections were due to *S. flexneri*; 6 to *S. boydii* and 1 to *S. dysenteriae*. The species was not specified for 39 infections.

Children aged 1-9 years had the highest incidence rate (25.2 cases per 100,000 population), followed by infants (6.2 per 100,000) as shown in Figure 47. Race was recorded as unknown for 130 (28%) cases. Where race was reported, the black race category had an incidence rate of 11.4 cases per 100,000 population compare to 3.2 per 100,000 for whites. Females (6.9 per 100,000) were slightly more at risk than males (5.8 per 100,000).

Figure 47. Shigellosis: Rate by Age Group Virginia, 2000



The southwest health planning region had the highest incidence rate (23.2 cases per 100,000 population), followed by the northern (5.5 per 100,000), central (2.5 per 100,000), northwest (1.4 per 100,000) and eastern (0.6 per 100,000) regions.

Streptococcal disease, Group A, Invasive

In 1999 invasive streptococcal Group A disease became a reportable condition. In 2000, 57 cases were reported from 30 cities and counties in the state. The northwest health planning region reported 18 cases and had the highest incidence rate (1.77 per 100,000), followed by the southwest region with 15 cases, central and eastern regions with 10 cases each, and the northern region with four cases.

Most (23 cases, 40%) infections occurred in the first quarter of the year. The 50+ years age group had 33% of the cases with the rest distributed throughout all the other age groups. Infants had the highest incidence rates (2.07 per 100,000) followed by the 50+ age group (1.58 per 100,000). Incidence rates for blacks and whites were similar (0.79 v. 0.76 per 100,000, respectively). Males were almost twice as likely to be reported as females.

The organism was isolated from blood in 46 cases, from pleural fluid in 3 cases, and from a number of other sterile sites in several cases. Necrotizing fasciitis was the infection in 2 cases.

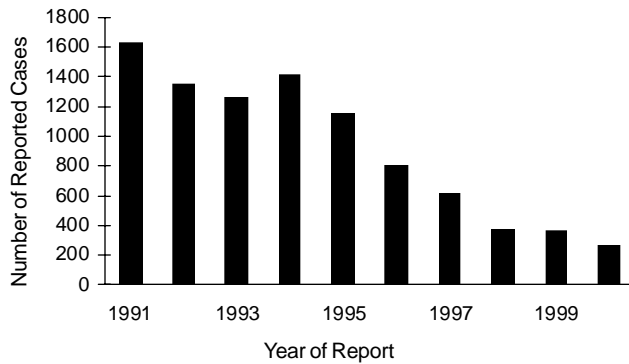
Two deaths occurred in 2000 due to this infection.

Syphilis

Early Syphilis

Early syphilis includes the primary, secondary and early latent stages of syphilis. The number of cases of early syphilis reported decreased 27%, from 364 cases in 1999 to 266 cases in 2000 (Figure 48), continuing a downward trend that began in 1995. The 266 cases reported in 2000 were the lowest annual number reported on record.

Figure 48. Early Syphilis: Ten Year Trend Virginia, 1991 - 2000

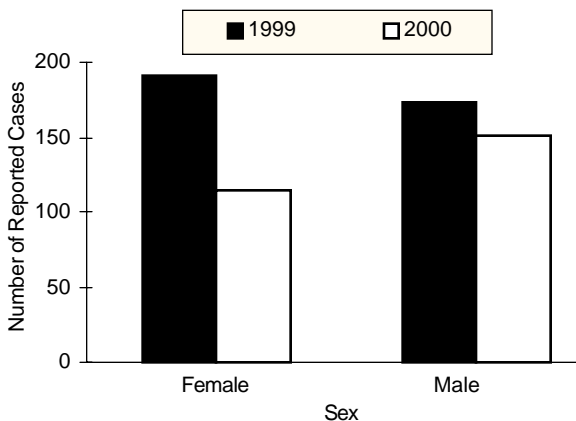


The 40-49 year age group had the highest incidence rate (14.4 cases per 100,000 population), followed by the 30-39 age group (8.0 per 100,000), the 20-29 year age group (5.6 per 100,000), the 10-19 age group (1.7 per 100,000) and the 50 year and older age group (1.4 per 100,000).

Blacks were reported most frequently and had the highest incidence rate (217 cases, 15.6 per 100,000). The incidence rate for blacks was 26 times higher than the rate for whites (0.6 per 100,000) and six times higher than the rate for the other race category (2.6 per 100,000). Three reports did not indicate race.

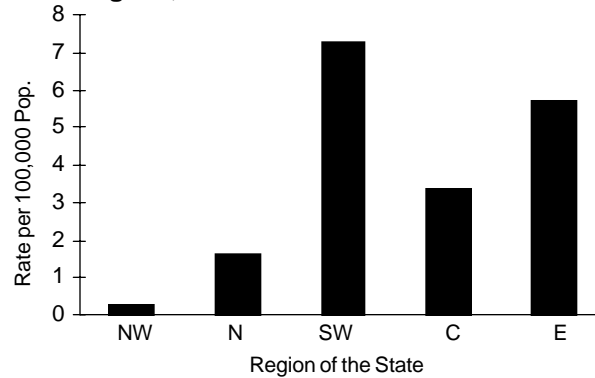
The number of cases decreased for females and males in 2000 (Figure 49). The 2000 incidence rate per 100,000 population was 3.2 for females and 4.4 for males.

Figure 49. Early Syphilis: Cases by Sex Virginia, 1999 - 2000



The southwest health planning region had the highest rate (95 cases, 7.3 per 100,000), followed by the eastern region (98 cases, 5.7 per 100,000), central region (41 cases, 3.4 per 100,000), northern region (29 cases, 1.6 per 100,000), and northwest region (3 cases, 0.3 per 100,000), as shown in Figure 50.

Figure 50. Early Syphilis: Rate by Region Virginia, 2000



Congenital Syphilis

In 2000, six cases of congenital syphilis were reported. Four cases occurred in blacks and two in the Hispanic ethnic group. Four of the cases were reported from the eastern health planning region and two from the northern region.

The mothers' average age was 31.5 years, with a range of 21 to 41 years. All six mothers were single parents. Only three sought prenatal care: two during the first trimester, and one during the third trimester.

The six congenital syphilis cases in 2000 represented an increase from the four cases reported in 1999. Due to the nine month gestation period, there is usually a lag between an increase or decrease in early syphilis and a corresponding change in congenital syphilis. Thus, the decrease in early syphilis in females in Virginia should be associated with a decrease in congenital syphilis.

Tetanus

No cases of tetanus were reported in 2000. One case of tetanus was reported in Virginia in 1998.

Toxic Shock Syndrome

No cases of toxic shock syndrome were reported in Virginia in 2000. The last case was reported in 1997.

Toxic Substance Related Illnesses

During 2000, 365 cases of the following toxic substance related illnesses were reported to the health department: asbestosis (222 cases, 61%), adult lead poisoning (118 cases, 32%), pneumoconiosis (17 cases, 5%), mesothelioma (4 cases, 1%), cadmium poisoning (3 cases, 1%), and silicosis (1 case, <1%). The remainder of this section will present further information on the cases of asbestosis.

Of the 222 persons reported with asbestosis, all but one were male. Cases ranged in age from 45 to 92 years (mean=66 years). Race was not reported for any of the cases.

Cases were reported from all the health planning regions. The eastern region had 211 cases (95%) and central region had 5 cases (2.3%). The other three regions had two cases each. The industries employing the most persons reported with asbestosis were shipbuilding (178 cases, 80%) and the railroad industry (19 cases, 9%).

Toxoplasmosis

No cases of toxoplasmosis were reported in 2000. Toxoplasmosis, a common protozoan infection in man and animals, is not a reportable disease in Virginia; however, cases are recorded when reports are received. The last reported case was in 1977.

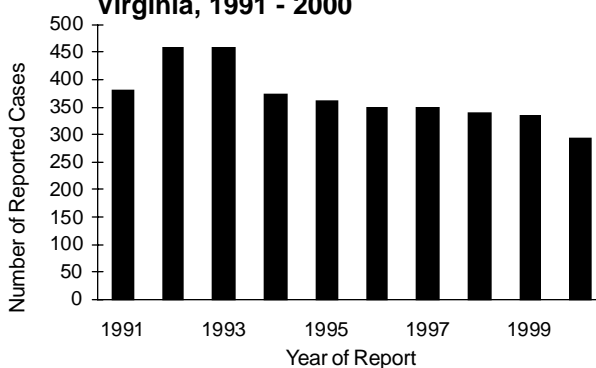
Trichinosis

The last case of trichinosis in Virginia occurred in 1993.

Tuberculosis

In 2000, 292 tuberculosis cases were reported, a decrease of 13% from the 334 cases reported in 1999. This is the lowest number ever reported in Virginia. Twenty-five cases (9%) were reactivations of previously diagnosed and treated disease. The annual incidence rate for Virginia was 4.1 cases per 100,000 population, compared to 5.8 cases per 100,000 population for the nation. Figure 51 shows the ten year trend for tuberculosis in Virginia.

Figure 51. Tuberculosis: Ten Year Trend Virginia, 1991 - 2000

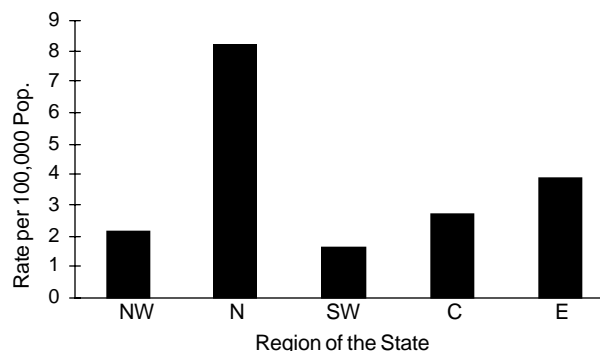


Cases of tuberculosis occurred in all age groups except infants. Nine cases occurred in children under age ten. The highest incidence rate was in the 20-29 year age group (64 cases, 6.3 per 100,000 population). The next highest rate was in persons

age 50 years and older (114 cases, 6.2 per 100,000). Persons in the other race category had the highest incidence rate (92 cases, 16.2 per 100,000), followed by blacks (96 cases, 6.9 per 100,000), and whites (104 cases, 2.0 per 100,000). Males were more likely to be reported with tuberculosis than females (171 cases, 4.9 per 100,000 vs. 121 cases, 3.4 per 100,000, respectively).

The northern health planning region reported the highest number of cases and the highest incidence rate (149 cases, 8.2 per 100,000), followed by the eastern region (67 cases, 3.9 per 100,000), as shown in Figure 52. Persons born in countries outside the United States accounted for the majority of (187) cases, 72% of which were reported from the northern health planning region. This is the first year that the number of foreign-born persons reported with tuberculosis was greater than the number who were U.S.-born.

Figure 52. Tuberculosis: Rate by Region Virginia, 2000



Of 220 isolates tested, 42 (19%) were resistant to at least one anti-tuberculosis medication. This represents an increase of 83% from the 23 resistant cases in 1999. The percent resistant to isoniazid (INH) was 12%, an increase from 1999 when 6% were INH resistant. The number of multi-drug resistant cases, indicating resistance to both INH and rifampin, jumped 75% with seven cases being diagnosed in 2000. The site of disease for 78% of the cases was in the lungs.

During 2000, 241 (83%) persons reported with TB were offered testing for HIV. Of the 188 for whom

test results were available, 16 (9%) were co-infected with HIV. Most (69%) of the co-infected persons were between the ages of 25-44 years.

In 2000, 53% of TB patients received care from the health department, 33% from a private physician, and 14% from a combination of both health department and private physician. Seventy-one percent of patients were on directly observed therapy (DOT) for some portion of the treatment period. Twenty-five (11%) persons reported with tuberculosis in 2000 died: 7 were diagnosed at death and 18 died during the course of their treatment.

Persons who started treatment in 1999 were evaluated in 2000 for completion of therapy. Of the 274 cases starting therapy in 1999, 253 (92%) completed an adequate and appropriate course of therapy within 365 days. Thirty patients died during the treatment period.

Tularemia

One case of tularemia was reported in Virginia in 2000. The case occurred in an adult from the central health planning region.

Typhoid Fever

Twenty-two cases of typhoid fever (*Salmonella typhi*) were reported in 2000 compared to 11 in 1999. This was a 100% increase due to an outbreak (16 cases) in northern Virginia. None of the outbreak-associated cases reported travel to another country. Of the other cases, five reported travel histories to Asia and one reported travel to South America.

Fifty-nine percent of cases ranged in age from 20 to 39 years. Twelve females and ten males were reported. The other race category had the highest incidence rate at 2.3 cases per 100,000 population.

The black race category had one case and the white race category had zero cases.

Fifteen cases were reported from the northern health planning region, and each of the other regions reported at least one case.

Typhus

The last reported case of typhus in Virginia occurred in 1993.

Vibrio Infection

Twelve cases of vibriosis were reported in 2000. *Vibrio vulnificus* was the cause of five infections. *V. parahaemolyticus* caused four infections, and *V. hollisae* caused two infections. *Vibrio* serotype was unspecified for one infection.

All cases except two occurred between June and September. Persons with *Vibrio* infection ranged in age from 9 to 81 years. Seven cases were in whites, one was in the black race category, and race was recorded as unknown for four cases. Eight males and four females were reported.

The eastern health planning region reported six cases, the northern region reported four cases, and the central region reported two cases. No deaths due to this infection were reported in 2000.

Cholera

No cases of cholera were reported in Virginia in 2000. The last case was reported in 1994.

Waterborne Outbreaks

One possible waterborne outbreak due to campylobacteriosis was reported in 2000. [See the heading Campylobacteriosis].

Yersiniosis

Although not officially reportable in Virginia, three reports of yersiniosis were received in 2000 compared to 12 in 1999. Species was reported as *Yersinia enterocolitica* for all three cases. All cases occurred in the first quarter of the year.

The cases ranged in age from a few months to 60 years. All three cases were in males. Race was reported as black for one case, and not specified for two cases. Cases were reported from the southwest and central health planning regions.