

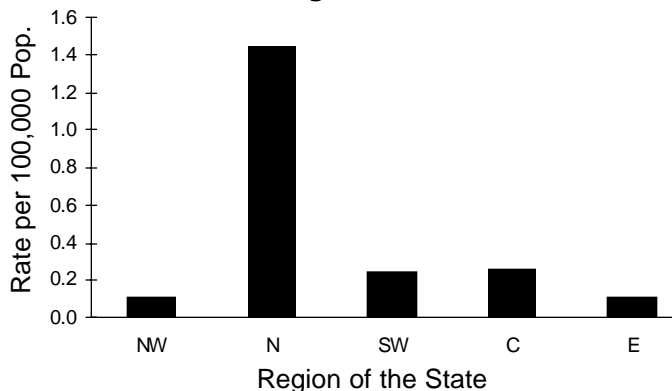
Acquired Immunodeficiency Syndrome (AIDS)

See HIV/AIDS.

Amebiasis

Thirty-four cases of amebiasis were reported in 1999 compared to 31 in 1998 and 30 in 1997. The distribution of cases by onset of illness was greater during June, July and August. The 30-39 year age group had the highest incidence rate (8 cases, 0.7 cases per 100,000 population). Race was reported for only 7 of the 34 cases. Of these, four were white, and three were black. Males were twice as likely to be reported as females (26 cases, 0.8 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 (25 cases, 1.5 per 100,000) as shown in Figure 1.

**Figure 1. Amebiasis: Rate by Region
Virginia, 1999**



Anthrax

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

Arboviral Infection

No cases of arboviral infection were reported in 1999 compared to four in 1998. Arboviral infections are caused by a number of 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 human case of eastern equine encephalitis (EEE) was in 1998. This fatal case of EEE occurred in the eastern region of Virginia. EEE is relatively rare and only three other human cases are known to have occurred in Virginia. Three cases of LaCrosse encephalitis also were reported in 1998. These cases occurred in the southwest region of the state where six cases of LaCrosse had been reported in 1997.

Aseptic Meningitis

Aseptic meningitis was removed from the reportable disease list effective January 1999. In 1998, 240 cases of aseptic meningitis were reported.

Bacterial Meningitis

Bacterial meningitis was removed from the reportable disease list effective January 1999. The 57 cases in 1998 represented the lowest number of cases ever recorded.

Meningitis caused by *Neisseria meningitidis* is included under the heading Meningococcal Infection.

Botulism

Three cases of infant botulism were reported in 1999. There was one case each from the northwest, northern, and southwest health planning regions. Two of the infants were male and one was female. Race was reported as white in one case and unknown in

the other two cases. Using the mouse neutralization test, *Clostridium botulinum* toxin type B was demonstrated in stool specimens from the three infants. None of the infants died. No cases of foodborne botulism were reported in 1999.

Brucellosis

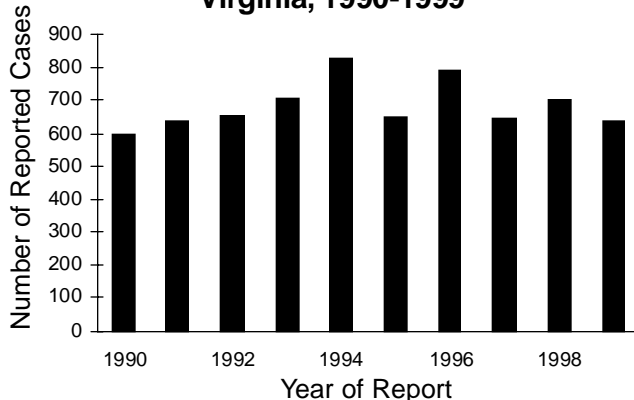
No confirmed cases of brucellosis were reported in 1999. One case of brucellosis was reported in 1998.

Campylobacteriosis

The number of enteric infections reported in Virginia caused by *Campylobacter* is second only to that caused by *Salmonella*. Reported cases of *Campylobacter* infection decreased by 9% in 1999 when compared to the 700 cases reported in 1998 and by 12% when compared to the five-year mean of 721 cases. The 637 cases reported in 1999 is the lowest annual number of cases reported since 1990 when 598 cases were reported (Figure 2).

C. jejuni species was reported for 63% of the cases. Other species identified accounted for 1%. The species was recorded as unknown for 36% of the cases.

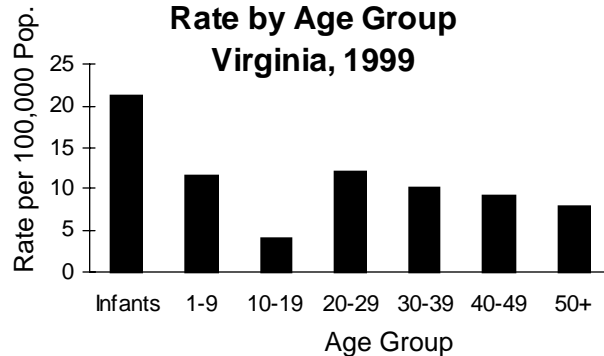
**Figure 2. Campylobacteriosis
Ten Year Trend
Virginia, 1990-1999**



Almost one-half of the cases occurred during May through August. Peak activity was observed in June when 105 (17%) cases occurred.

Infants had the highest incidence rate (21.3 cases per 100,000 population). The 20-29 year age group followed with a rate of 12.1 per 100,000. The lowest incidence rate (4.1 per 100,000) was in the 10-19 year age group (Figure 3).

**Figure 3. Campylobacteriosis
Rate by Age Group
Virginia, 1999**



The other race category had the highest incidence rate at 8.7 cases per 100,000 population. The incidence rate was 6.6 per 100,000 in the white race and 2.6 per 100,000 in the black race. Race was reported as unknown for 238 cases. The number of cases and incidence rate were greater in males (339 cases, 10.2 per 100,000) than in females (286 cases, 8.2 per 100,000).

The highest incidence rate was in the northwest region (16.8 per 100,000), followed by the central region (9.5 per 100,000). The lowest incidence rate (6.5 per 100,000) was from the northern region.

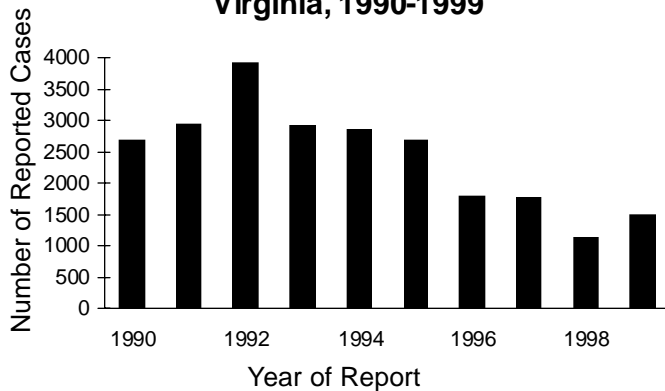
Chancroid

Three cases of chancroid were reported in 1999 compared to seven in 1998. Two of the three cases were reported from the southwest and one from the eastern health planning region.

Chickenpox (Varicella)

The number of reported cases of chickenpox in 1999 increased when compared to 1998, but the trend overall shows a decrease (Figure 4). The 1,490 cases of chickenpox reported in 1999 were 375 cases more than the 1,115 cases reported in 1998.

Figure 4. Chickenpox: Ten Year Trend Virginia, 1990-1999



The highest number (1,142) of cases and the highest incidence rate (65.2 per 100,000) occurred in the eastern health planning region. Incidence rates in the other health planning regions ranged from 3.1 to 8.3 cases per 100,000 population.

A varicella virus vaccine has been licensed for use in all children over the age of twelve months and for adults who are susceptible to chickenpox.

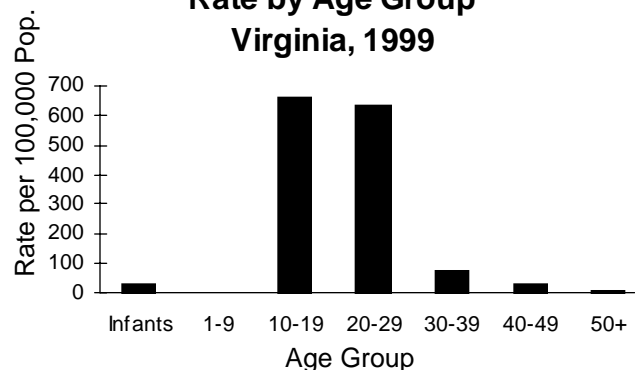
Chlamydia trachomatis Infection

Chlamydia trachomatis infection has emerged as the most commonly reported disease under surveillance in Virginia. During 1999, 13,427 cases of *C. trachomatis* infection were reported. This was a 0.4% increase over the 13,370 cases reported in 1998. This increase was the second in as many years.

Incidence rates were highest in the 10-19 and 20-29 year age groups (656.8 cases per 100,000 population and 635.7 cases per 100,000 population, respectively) (Figure 5). Race was recorded as un-

known for 1,481 persons. Where race was reported, the highest number (8,255) of cases occurred in blacks who also had the highest incidence rate (605.8 per 100,000). The other race category had the second highest incidence rate (275.4 per 100,000), followed by whites (57.3 per 100,000). The female to male ratio was 5.5 to 1. It should be noted that health department screening is limited to high risk females and male partners of positive females.

Figure 5. *Chlamydia trachomatis* Rate by Age Group Virginia, 1999



Cases were heavily distributed in the central (317.7 per 100,000) and eastern (247.2 per 100,000) health planning regions. The rates in the northwest, southwest and northern health planning regions were 170.3 per 100,000, 153.9 per 100,000 and 109.7 per 100,000, respectively.

The data are expected to underestimate the incidence of *C. trachomatis* infection 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 who are also 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 9,315 cases of gonorrhea reported in Virginia in 1999, suggesting that Virginia had more than 18,000 *C. trachomatis* infections last year, 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 when 30 cases were reported. The majority of cases (56%) reported onset during August, September and October. The northern health planning region reported 47% of the cases with each of the other regions reporting at least one case. Twenty-one males and 9 females were reported. Forty-three percent of the cases were in whites and 7% in blacks and 3% in the other race category. No race was reported in 14 cases.

Cyclosporiasis

This disease became officially reportable in 1999 when one case was reported. This case was reported in a 20-29 year old male from the northern health planning region.

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 *Ehrlichia* bacteria. 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 organisms, which are transmitted by ticks, can infect two different types of white blood cells.

Seven confirmed cases of human ehrlichiosis were recorded in Virginia in 1999 compared to four cases in 1998. Four of the seven cases were HME and three cases were unspecified. The onset of illness for all the cases occurred between April and September. Race was reported as white for all of the cases. Six persons were adults ranging in age from 31 to 65 years. One child in the 1-9 year age group was reported. Four males and three females were reported with ehrlichiosis.

Five cases were reported from the eastern health planning region and one each from the central and northern health planning regions. Ehrlichiosis was added to the reportable disease list effective January 1999; however, reports have been recorded since 1986.

Encephalitis, Primary

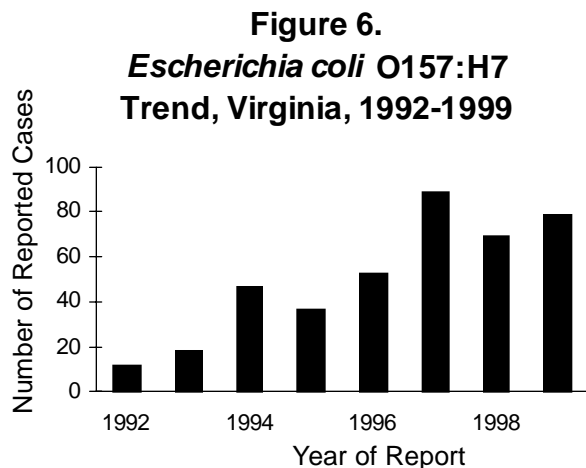
Primary encephalitis was removed from the reportable disease list effective January 1999. Infections such as LaCrosse, St. Louis encephalitis and eastern equine encephalitis are included under the heading Arboviral Infection.

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-nine cases were reported in 1999, compared to 69 cases in 1998 and 88 cases in 1997. In general, the annual number of reported cases of *E.*

coli O157:H7 infection has been increasing (Figure 6).

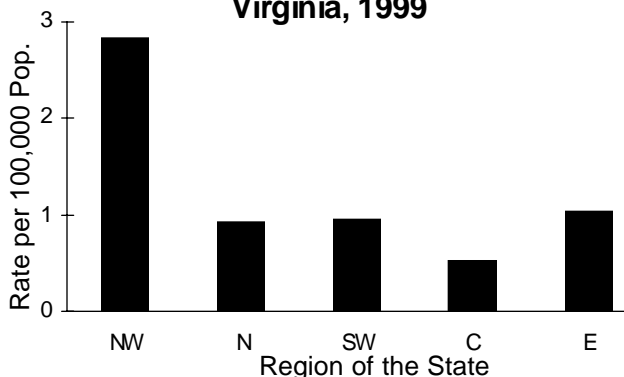


Historically, cases have been reported throughout the year, but have increased in the warmer months. In 1999, activity peaked between the months of April and September when 59 (75%) cases occurred. Infants and persons 1-9 years of age were at the greatest risk for *E. coli* O157:H7 infection (3.4 cases per 100,000 population, each). The incidence rate was 1.2 per 100,000 or less for each of the other age groups. Race was reported for 72% of the cases. Of these, 50 were in whites (1.0 per 100,000), and seven were in blacks (0.5 per 100,000). Females (1.5 per 100,000) had about twice as much risk of developing *E. coli* O157:H7 as males (0.8 per 100,000).

The northwest health planning region had the highest number (27) of cases reported and the highest incidence rate (2.8 per 100,000), followed by the eastern region (18 cases, 1.0 per 100,000) (Figure 7).

In 1999, three cases of Hemolytic Uremic Syndrome (HUS) were reported. They ranged in age from 3 to 10 years and were reported from the central, eastern, and northwest health planning regions. All three cases had a history of *E. coli* O157:H7.

Figure 7. *E. coli* O157:H7
Rate by Region
Virginia, 1999



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 1999. The last case in Virginia was reported in 1997.

Foodborne Outbreaks

Eleven confirmed foodborne outbreaks were recorded in 1999. These outbreaks are summarized in Table 9. The number of ill persons identified for each outbreak ranged from eight to 177 (mean=22). The etiologic agent was confirmed or suspected as bacterial for seven outbreaks, viral for three, and unknown for one outbreak.

A specific food item was implicated in eight of the outbreaks. Consumption of contaminated raw food items and poor hygienic practices were the two most common contributing factors.

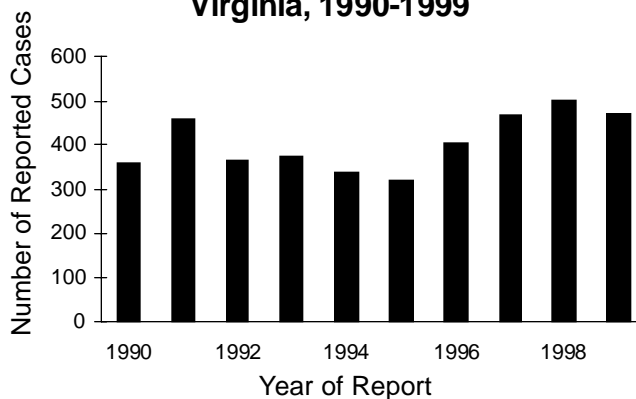
Fungal Diseases

Fungal diseases are not officially reportable in Virginia; however, selected fungal diseases are recorded when reports are received. In 1999, recorded fungal diseases other than histoplasmosis included 22 cases of aspergillosis, two cases of coccidioidomycosis and two cases of cryptococcosis. Almost 50% (12) cases occurred in the age group of 60 years and above. No deaths were reported.

Giardiasis

The number of cases of giardiasis for 1999 was 471, the second highest annual number of cases reported in the last ten years (Figure 8). The majority of the cases had onset during the months of July to September.

**Figure 8. Giardiasis
Ten Year Trend
Virginia, 1990-1999**

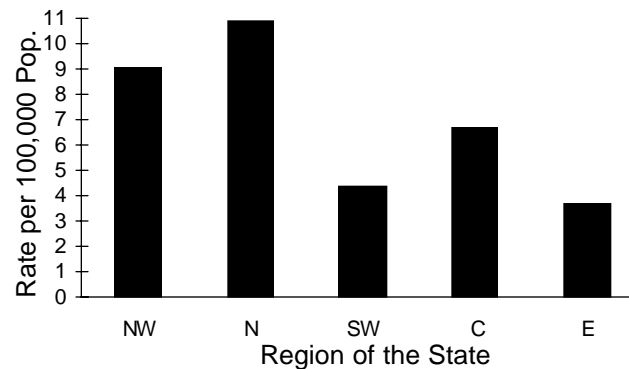


The highest incidence rate (16.7 cases per 100,000 population) occurred in children aged 1-9 years, followed by infants (6.7 per 100,000). Race was recorded as unknown for 209 (44%) of the cases. Of the cases for whom race was reported, the other race category had the highest incidence rate (9.4 per 100,000), followed by whites (4.1 per 100,000), and blacks (2.1 per 100,000). Males were slightly more likely than females to be reported with this disease

(7.5 vs. 6.1 cases per 100,000 population, respectively).

The northern health planning region had the highest incidence rate (10.9 per 100,000) and the eastern had the lowest (3.7 per 100,000) (Figure 9).

**Figure 9. Giardiasis
Rate by Region
Virginia, 1999**



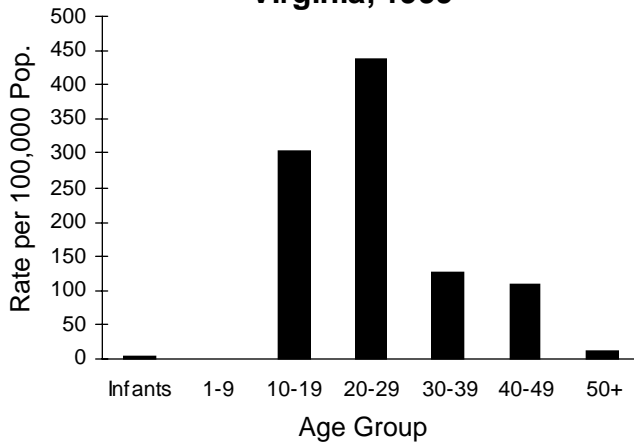
Gonorrhea

In 1999, 9,315 cases of gonorrhea were reported in Virginia. This is a 1% increase from the 9,215 cases reported in 1998. This was the second increase in as many years.

Young adults (age 20-29) were most likely to be reported with gonorrhea. They had the highest number of cases reported (4,288) and the highest incidence rate (439.7 cases per 100,000 population), followed by the 10 to 19 year age group (303.9 per 100,000), as shown in Figure 10.

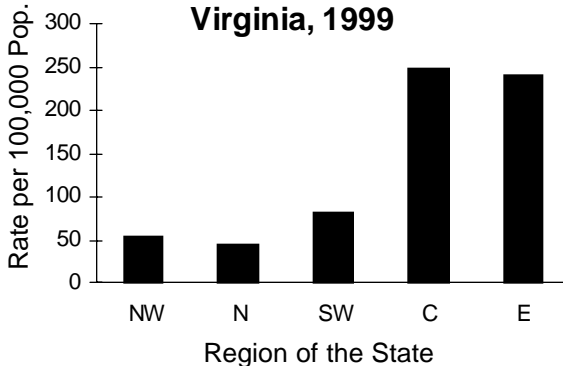
Eighty percent of the cases were in blacks (7,461 cases, 547.6 per 100,000), 9% were in whites (868 cases, 16.8 per 100,000), and 1% were in the other race category (184 cases, 69.2 per 100,000). Race was not specified for 8% of the cases. There were 4,772 cases reported in males (143.9 per 100,000) compared to 4,539 cases in females (130.6 per 100,000). Gender was not reported for four cases.

**Figure 10. Gonorrhea
Rate by Age Group
Virginia, 1999**



The eastern health planning region reported the most cases (4,206 cases, 240.1 per 100,000), followed by the central (which had the highest rate – 2,842 cases, 246.3 per 100,000), southwest (1,017 cases, 81.2 per 100,000), northern (743 cases, 43.2 per 100,000) and northwest (507 cases, 53.4 per 100,000) regions (Figure 11).

**Figure 11. Gonorrhea
Rate by Region
Virginia, 1999**



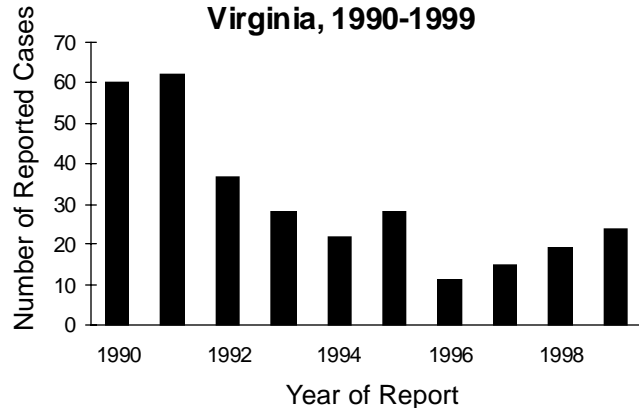
Granuloma Inguinale

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 third consecutive year. Twenty-four cases were reported in 1999 compared to nineteen cases in 1998, 15 cases in 1997, and 11 cases in 1996 (Figure 12). The number of cases reported in 1999 was also more than the five-year mean of 19 cases. Four of the 24 cases reported in 1999 were in persons less than five years of age and two of those were less than one year of age. Serotype was not reported in these four cases. None of these four cases reported receiving vaccine.

**Figure 12. Invasive *H. influenzae*
Ten Year Trend
Virginia, 1990-1999**



Peak activity for this disease was observed during the first quarter of the reporting year when 10 of the 24 cases occurred. Infants were at the greatest risk with an incidence rate of 2.2 cases per 100,000 population. Seven cases occurred in blacks for an incidence rate of 0.5 per 100,000, and twelve cases were in whites (0.2 per 100,000). No cases were reported among persons in the other race category; race was recorded as unknown for five cases. The risk for disease was slightly higher in females than males.

The northwest and central health planning regions had the highest incidence rates (0.6 and 0.5 cases per 100,000 population, respectively). The incidence

rate ranged from 0.2 to 0.3 per 100,000 in the other health planning regions.

The organism was isolated from blood in 19 cases and from cerebrospinal fluid in three cases. Only one case reported meningitis due to *H. influenza*. Meningitis caused by *Neisseria meningitidis* is included under the heading Meningococcal Infection.

No deaths due to invasive *H. influenzae* infection were reported in 1999.

Hansen Disease (Leprosy)

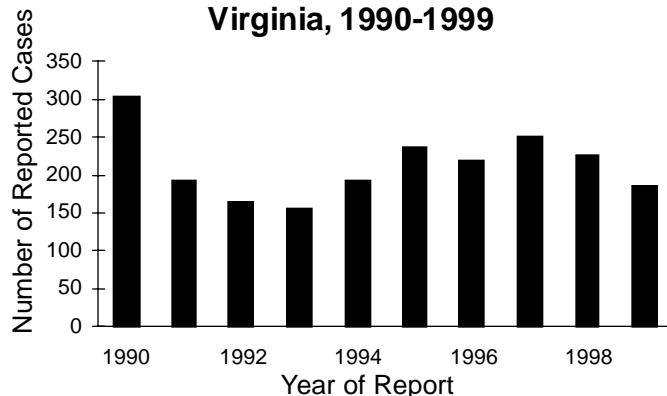
No cases of this disease of low frequency in Virginia were reported in 1999. One case had been reported in 1997.

Hepatitis A

The number of reported cases of hepatitis A decreased for the second consecutive year. The 185 cases reported in 1999 were 18% fewer than the 226 cases reported in 1998 and 18% fewer than the five-year mean of 225 cases (Figure 13).

Adults in the 30-39 year age group (3.8 cases per 100,000 population) and in the 20-29 year age group (3.6 per 100,000) were most at risk for hepatitis A. Persons in the other race category (1.9 per

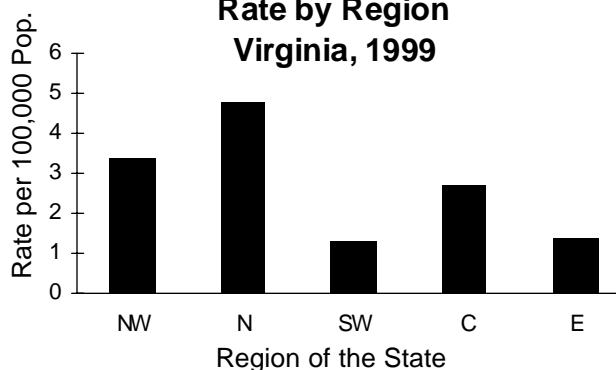
Figure 13. Hepatitis A: Ten Year Trend Virginia, 1990-1999



100,000) were at greater risk for hepatitis A than whites (1.7 per 100,000) and blacks (1.5 per 100,000). Race, however, was not reported for 69 (37%) of the cases. The incidence rate for males (114 cases, 3.4 per 100,000) was almost two times the rate for females (68 cases, 2.0 per 100,000). Gender was not recorded for three cases.

The northern health planning region reported the most cases and had the highest incidence rate (82 cases, 4.8 per 100,000). Incidence rates by region are illustrated in Figure 14.

Figure 14. Hepatitis A Rate by Region Virginia, 1999



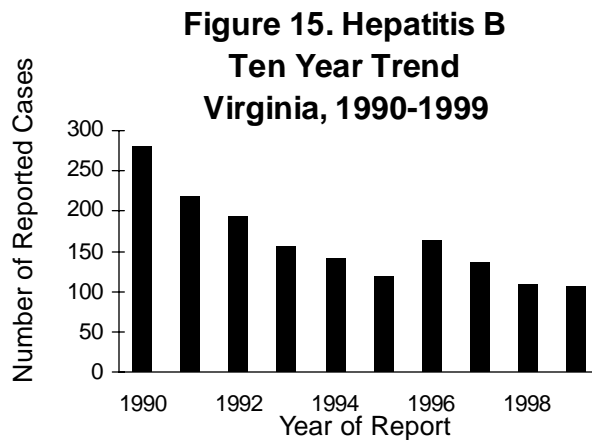
An outbreak of hepatitis A in the Central Shenandoah Health District contributed to an increase in the number of cases reported from the northwest region. This appeared to be a person to person community-wide outbreak.

Risk factor data was reported for 68% of the hepatitis A cases. International travel (30 cases) and personal contact with a person with hepatitis A (29 cases) were the predominant potential sources of infection among persons with hepatitis A.

No deaths due to acute hepatitis A infection were reported in 1999.

Hepatitis B

In 1999, the number of reported cases of this vaccine-preventable disease decreased to an all time low of 106 cases (Figure 15). Cases occurred throughout the year but the frequency was higher during the first quarter of the year when 34% of the cases reported onset.



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 2.9 cases per 100,000 population compared to an incidence rate of 1.3 per 100,000 for adults aged 50 and older. Blacks were at the greatest risk for hepatitis B. The incidence rate for blacks was 4.1 per 100,000 compared to 2.3 per 100,000 for the other race category and 0.5 per 100,000 for whites. Males were at slightly higher risk than females (1.8 vs 1.3 per 100,000, respectively).

The eastern health planning region reported the highest number of cases and had the highest incidence rate (40 cases, 2.3 per 100,000). The central and southwestern regions followed with lower incidence rates (1.7 and 1.4 cases per 100,000 population, respectively).

According to information reported regarding risk factors, multiple sex partners was the most frequently reported potential source of infection for hepatitis

B. During 1999, a higher than expected incidence of hepatitis B in residents of an adult care facility was investigated. The investigation led to the identification of seven persons who had most likely acquired infection with hepatitis B virus while residing at the facility. Improper use of reusable spring-loaded fingerstick devices was implicated as the cause of disease transmission.

No deaths due to acute hepatitis B were reported in 1999.

Hepatitis C

This category also contains reports of acute hepatitis non-A non-B that did not include a laboratory confirmation of hepatitis C virus infection. Eleven cases of acute viral hepatitis C were reported in 1999 compared to 13 cases in 1998. Seven cases were hepatitis C and four cases were hepatitis non-A non-B. Disease onset for the majority (63%) of the cases occurred during the first half of the reporting year.

Cases ranged in age from 25 to 48 years. Adults aged 40-49 (0.7 cases per 100,000 population) were more likely to be reported with this disease than other age groups. Blacks and whites had comparable incidence rates (0.1 and 0.2 cases per 100,000 population, respectively). No cases were reported for the other race category. Ten male cases were reported compared to one female case.

Incidence rates by health planning region ranged from 0.3 per 100,000 in the northwest region to 0.1 per 100,000 in the southwest and eastern regions. The central region had no reported cases.

No deaths due to acute hepatitis C were reported in 1999.

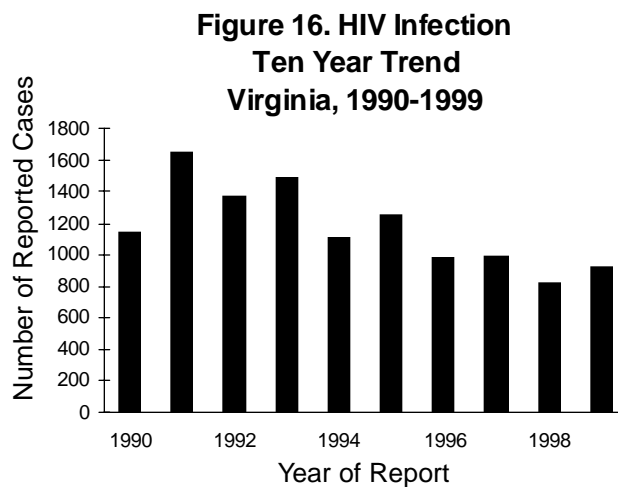
Histoplasmosis

No cases of histoplasmosis were reported in 1999 compared to six cases in 1998. Histoplasmosis was removed from the reportable disease list effective January 1999.

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

HIV

During 1999, 922 new infections of HIV were reported, bringing the cumulative total of cases reported since 1989 to 11,937. The 922 cases reported in 1999 were an increase of 12% over the 825 cases reported in 1998 (Figure 16).

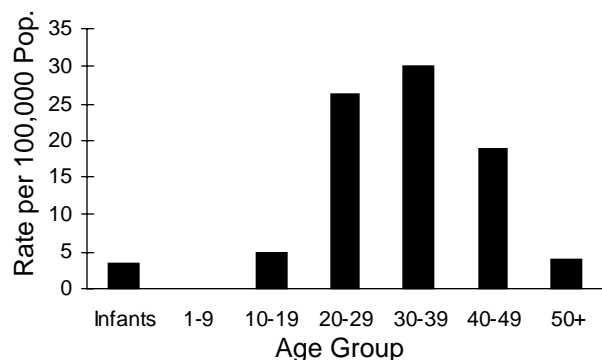


Males continue to represent the majority (633 cases, 69%) of HIV case reports. The incidence rate for males was 19.1 cases per 100,000 population. Females had 289 (31%) HIV case reports in 1999 (8.3 per 100,000). Though the number of cases in females remains much lower than the number of cases in males, the percentage of cases that were female in 1999 (31%) was the highest since reporting began.

During 1999, the majority (69%, 638 cases) of cases were in blacks followed by whites (26%, 238 cases) and the other race category (5%, 46 cases). Blacks were over ten times more likely than whites to be reported with infection, having an incidence rate of 46.8 per 100,000 compared to 4.6 per 100,000. The rate for the other race category was 17.3 per 100,000.

Persons in the 30-39 year age group had the highest incidence rate (350 cases, 30.0 per 100,000), followed by the 20-29 year age group (256 cases, 26.3 per 100,000), and the 40-49 year age group (199 cases, 18.8 per 100,000) as shown in Figure 17. Four pediatric (0-12 years) HIV infections were reported in 1999. All the children were infected through maternal transmission.

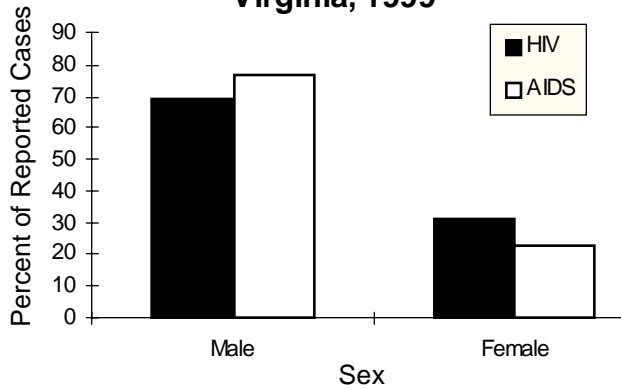
Figure 17. HIV Infection Rate by Age Group Virginia, 1999



Compared to AIDS in 1999, persons with HIV infection were more likely to have become infected through heterosexual contact (27% HIV vs. 18% AIDS) and less likely to attribute their infection to men having sex with men (32% HIV vs. 36% AIDS). Females comprised a larger proportion of HIV infections (31%) than AIDS cases (23%) as shown in Figure 18.

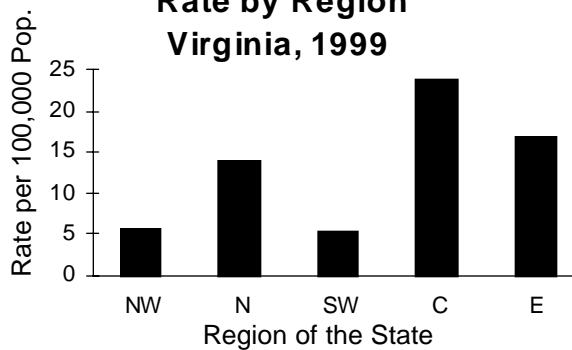
The highest HIV incidence rate was calculated for the central health planning region (23.7 per 100,000), followed by the eastern (16.7 per 100,000), northern (13.8 per 100,000), northwest (5.5 per

Figure 18. A Comparison of AIDS and HIV Infections by Sex, Virginia, 1999



100,000) and southwest (5.3 per 100,000) health planning regions (Figure 19).

Figure 19. HIV Infection Rate by Region Virginia, 1999

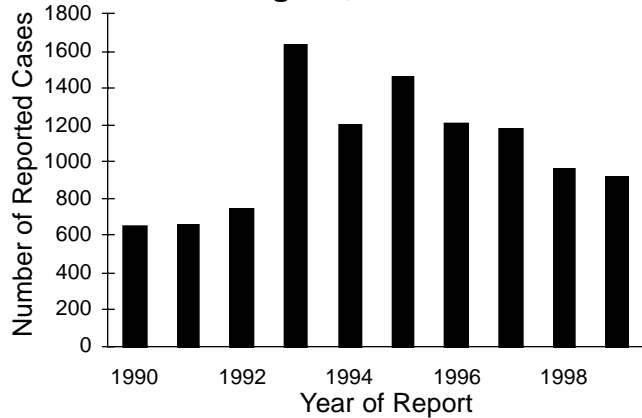


AIDS

Since the first AIDS cases were reported in 1982, the cumulative number of cases reported through the end of 1999 is 12,015, with 6,530 deaths (54%). In 1999, 912 cases were reported, representing a 5% decrease from 1998 (Figure 20).

AIDS is caused by the human immunodeficiency virus (HIV). The most common modes of transmission are through unprotected sexual intercourse (especially anal intercourse) and injecting drug use (IDU). During 1999, men having sex with men (MSM) accounted for the greatest percentage of AIDS cases (35%), followed by heterosexual contact and IDU (19% each), as shown in Figure 21.

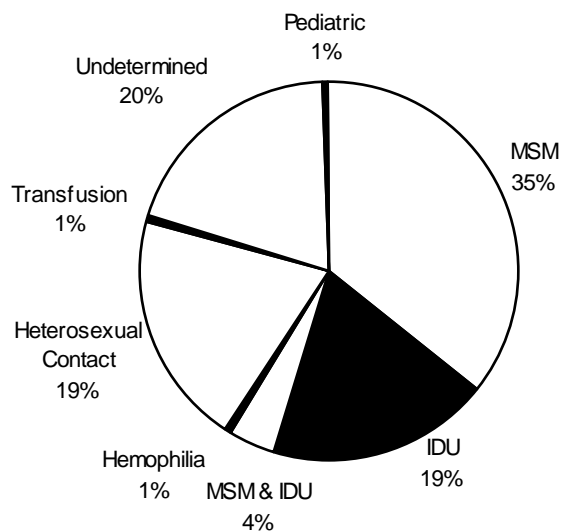
Figure 20. AIDS: Ten Year Trend Virginia, 1990-1999



The majority (681 cases, 75%) of AIDS cases were in persons between the ages of 30 and 49. The age group with the highest incidence rate was the 30-39 age group with 33.9 cases per 100,000 population. Five pediatric (0-12 years) AIDS cases were reported in 1999. Three of the children were infected via maternal transmission. Two of the children were infected due to receipt of blood/clotting factor to treat hemophilia.

This is the seventh consecutive year that the majority of reported AIDS cases were in blacks (605, 66%). Two hundred sixty-two (29%) cases occurred in whites and 45 (5%) cases occurred in the other

Figure 21. AIDS: Mode of Transmission Virginia, 1999



race category. Blacks were more than nine times more likely than whites to be reported with AIDS, having an incidence rate of 44.4 per 100,000 compared to 5.1 per 100,000 in whites. The rate per 100,000 population for the other race category was 16.9. As with HIV infections, males also represented a disproportionate share of AIDS, with an incidence rate over three times higher than females (21.1 vs 6.1 per 100,000, respectively).

The central health planning region experienced the highest incidence rate (19.9 per 100,000), followed by the eastern region (16.7 per 100,000), the northern region (14.8 per 100,000), the southwest region (6.2 per 100,000), and the northwest region (6.1 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). Over one-eighth (13%) of the cases reported during 1999 developed PCP during the course of their illness. Other frequently diagnosed conditions include HIV wasting syndrome (4%), esophageal candidiasis (3%), chronic herpes simplex (2%), extrapulmonary cryptococcosis (2%), and cytomegalovirus retinitis (2%). Over two-thirds (71%) of the reported AIDS cases were reported as immunologic (low CD4 counts) using the 1993 expanded definition of AIDS.

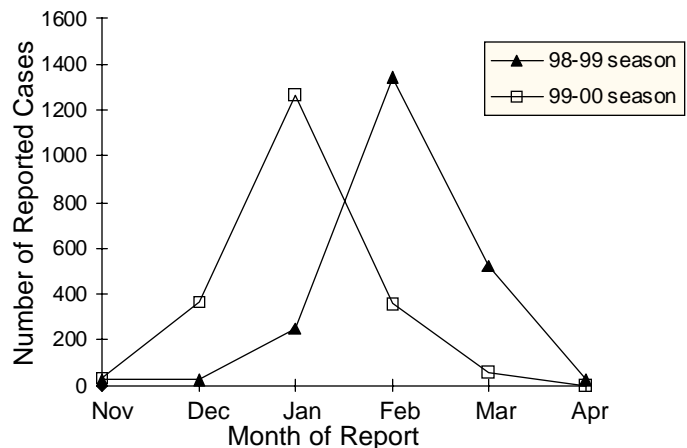
Influenza

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 spo-

radic, 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 1998-99 "flu" season, influenza type A and type B were isolated in Virginia. A/Sydney/05/97 was the predominant circulating strain. Widespread activity occurred from late January through early March, with peak activity during early February. Despite a good match between the vaccine and the circulating strains, 25 nursing homes reported outbreaks of influenza-like illness. Examination of the vaccination rates at these facilities showed that on average only 78% of the residents had received the current influenza vaccine (range 57%-95%). 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.

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

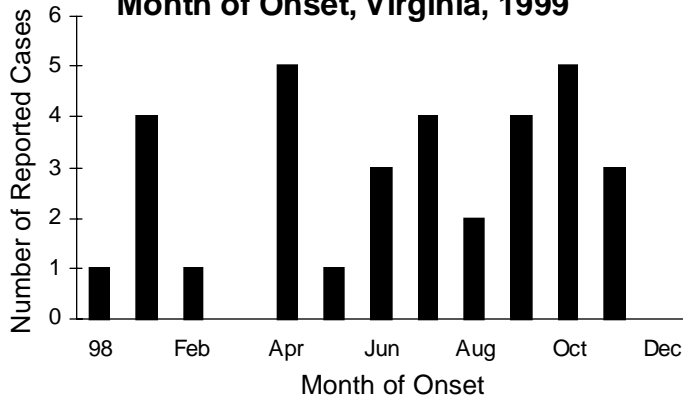


Through the passive surveillance system, 2,558 cases of influenza were reported during calendar year 1999, compared to 1,160 cases in 1998, and 517 cases in 1997.

Kawasaki Syndrome

Thirty-three reported cases of Kawasaki syndrome were confirmed in 1999 compared to 36 in 1998 and 27 in 1997. The cases reported in 1999 occurred throughout the year, with the highest percentage (30%) in the third quarter (Figure 23).

Figure 23. Kawasaki Syndrome Month of Onset, Virginia, 1999



All but six of the 33 cases of this early childhood condition occurred in children five years of age and younger. The black and other race category had the highest incidence rate (0.8 cases per 100,000 population each), followed by whites (0.2 per 100,000). Males were more likely than females to be reported with Kawasaki syndrome (0.6 per 100,000 vs 0.4 per 100,000).

The northern health planning region reported the highest number of cases and had the highest incidence rate (16 cases, 0.9 per 100,000). Incidence rates in the other health planning regions ranged from 0.6 per 100,000 in the eastern region to 0.2 per 100,000 in the northwest region. No cases were reported from the central health planning region.

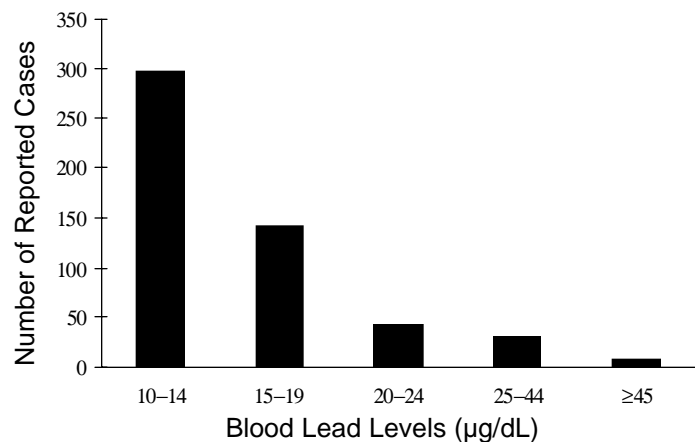
Lead, Elevated Levels in Children

Because this condition became reportable in Virginia in mid-1993, 1999 marks the sixth full year of reporting. Any child age 15 years or younger, with a

venous blood lead level ≥ 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$), is reportable to the health department. (Note: the reportable level changed from $\geq 15 \mu\text{g}/\text{dL}$ to $\geq 10 \mu\text{g}/\text{dL}$ in 1999.)

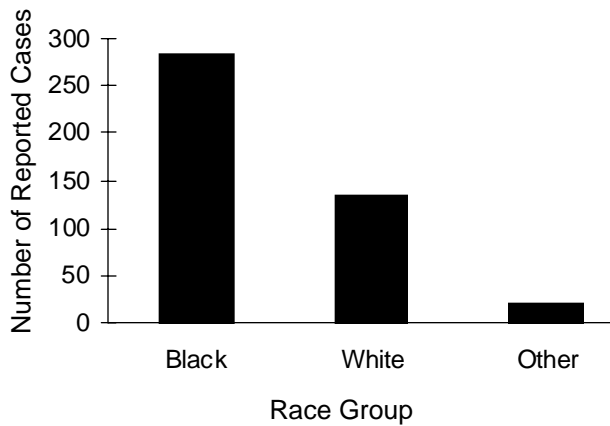
Two hundred ninety-seven (57%) of the 521 children reported in 1999 had blood lead levels in the 10-14 $\mu\text{g}/\text{dL}$ range. Persons in this category have a lead level that is above normal, but no treatment is needed. Education is provided and a new test recommended in three months. One hundred forty-one (27%) of the 521 children reported in 1999 had levels in the 15-19 $\mu\text{g}/\text{dL}$ range, the level for which the CDC recommends nutritional and educational intervention and more frequent screening; 43 (8%) had levels in the 20-44 $\mu\text{g}/\text{dL}$ range, for which CDC recommends medical evaluation and environmental evaluation and remediation; and 40 (8%) had levels 45 and higher, requiring both medical and environmental intervention (Figure 24).

Figure 24. Elevated Blood Lead Levels Age 0-15 years, Virginia, 1999



Children aged five years and younger comprised 92% (478) of the reported cases with one and two years being the most common ages at diagnosis (35% and 25% of reported cases, respectively). Race was reported for 438 (84%) of the cases. Of these, 283 (65%) were in blacks, 134 (31%) were in whites and 21 (5%) were in the other race category (Figure 25). The 281 males reported was 41 cases more than the 240 females reported.

Figure 25. Race of Children with Elevated Blood Lead Levels, Virginia, 1999



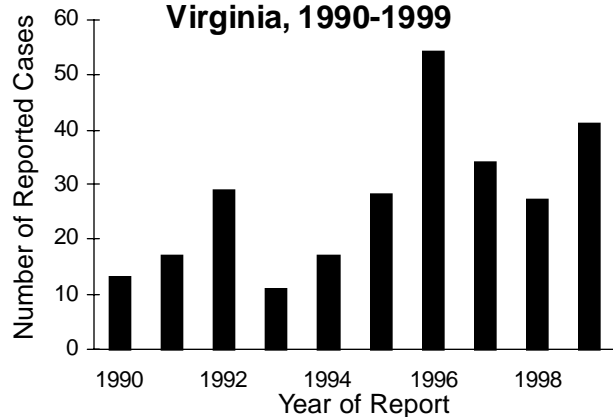
Cases were reported from all health planning regions: central, which includes the federally funded lead prevention programs in Petersburg and Richmond, 170 cases; eastern, which includes the funded programs in Norfolk and Portsmouth, 147 cases; southwest, which includes the funded program in Lynchburg, 102 cases; northern 62 cases; and northwest 40 cases.

Legionellosis

Forty-one laboratory-confirmed cases of legionellosis were reported in 1999 compared to 28 cases in 1998 (Figure 26). This exceeds the ten year average of 27 cases per year. Males were more than four times as likely as females to be reported with this disease (33 cases, 1.0 cases per 100,000 population vs. 8 cases, 0.2 cases per 100,000 population). Age ranged from 32 to 90 years (median=58 years). Thirty persons reported with legionellosis were white (0.6 per 100,000), five were black (0.4 per 100,000), and six were of unknown race.

Information about risk factors for illness was available for 36 persons, all but six of whom had a history of at least one of the following risk factors: cancer, organ transplant, renal dialysis, diabetes mellitus, use of systemic corticosteroids or other

Figure 26. Legionellosis Ten Year Trend Virginia, 1990-1999



immunosuppressants, or cigarette smoking. Cigarette smoking was the primary risk factor reported: 19 persons reported smoking ten or more cigarettes per day.

No outbreaks of legionellosis were reported in 1999; however, the number of reported cases increased in four of the five health planning regions when compared to data from 1998. The northwest and southwest regions reported the highest incidence rates (1.0 per 100,000 each). Five deaths due to legionellosis were reported.

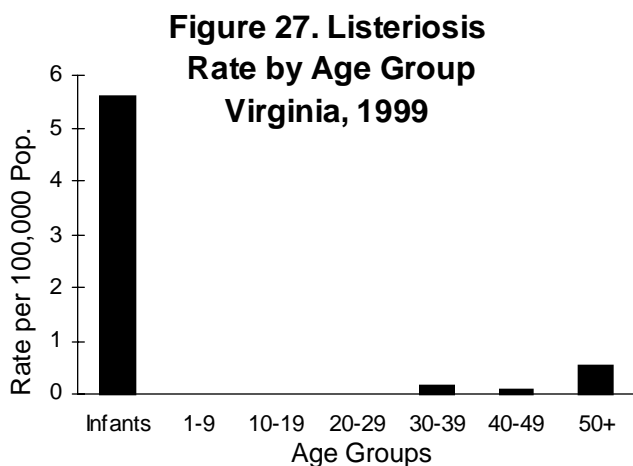
Leptospirosis

No cases of leptospirosis were reported in 1999 compared to one case in 1998. Leptospirosis was removed from the reportable disease list effective January 1999.

Listeriosis

Seventeen cases of listeriosis were reported in 1999. Cases occurred throughout the year with 35% having onset in the second quarter of the year.

Persons with listeriosis ranged in age from a few weeks to 88 years. Five cases were in infants and 9 cases were in adults age 50 years and older (Figure 27). Nine were white (0.2 cases per 100,000 population), five were black (0.4 per 100,000) and three were reported as race unknown. Males were at slightly greater risk for listeriosis than females (0.3 vs 0.2 per 100,000).



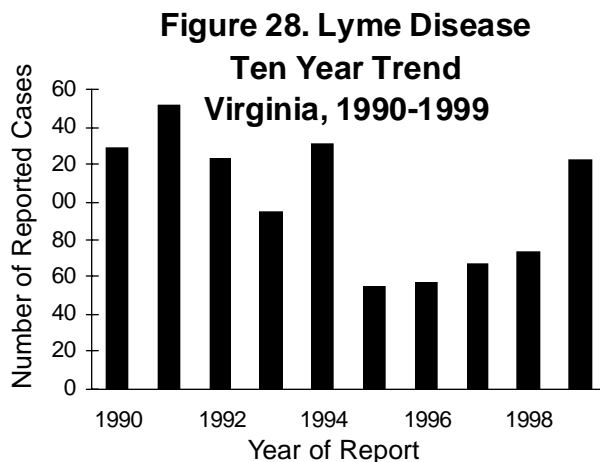
Five cases were reported from the northwest health planning region. Four cases were reported from the central health planning region and three cases each were from the eastern and southwest regions. Two cases were reported from the northern health planning region. Risk, however, was greater in the northwest region where the incidence rate was 0.5 per 100,000. No deaths were reported.

Eight cases reported meningitis due to listeriosis. Meningitis caused by *Neisseria meningitidis* is included under the heading Meningococcal Infection.

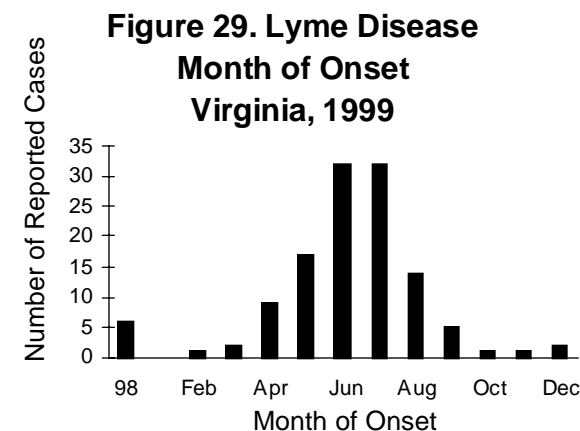
Lyme Disease

Since becoming a notifiable condition in 1989, Lyme disease has been the most frequently reported tickborne illness in Virginia. The 122 cases of Lyme disease reported in 1999 represents the highest number of cases reported in Virginia since 1994 when 131 cases were reported. For the fourth consecutive

year, the annual number of cases has increased as shown in Figure 28.



The majority (52%) of cases occurred in June and July when 64 cases reported onset (Figure 29). The highest incidence rate occurred in the 1-9 year age group (25 cases, 3.0 cases per 100,000 population) followed by the 40-49 year age group (25 cases, 2.4 per 100,000) and the 10-19 year age group (19 cases, 2.1 per 100,000). Risk was the same for males and females (1.8 per 100,000). The rate among whites (96 cases, 1.9 per 100,000) was higher than in blacks (4 cases, 0.3 per 100,000) or in persons in the other race category (1 case, 0.4 per 100,000). Race was reported as unknown for 21 persons.



The predominant symptom reported was erythema migrans (93 cases, 76%). Other conditions reported were arthritis (28 cases, 23%), Bell's palsy (6 cases, 5%), radiculoneuropathy (4 cases, 3%),

lymphocytic meningitis (2 cases, 2%), and encephalitis (2 cases, 2%).

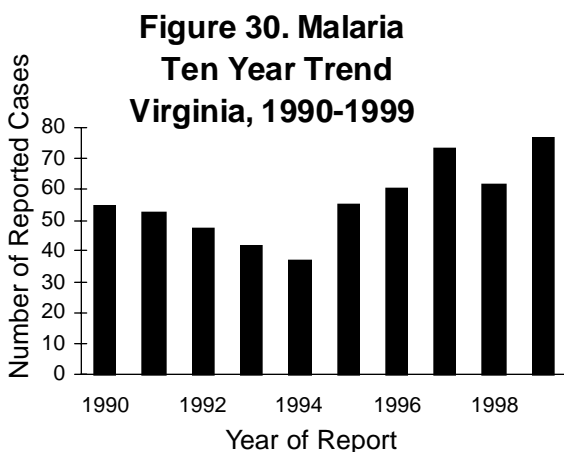
Cases of Lyme disease were reported from all health planning regions with the highest number of cases and the highest incidence rate reported from the northern region (63 cases, 3.7 per 100,000). *Borrelia burgdorferi*, the causative organism for Lyme disease in this country, has been isolated from rodents and ticks in several counties in Virginia.

Lymphogranuloma Venereum

No cases of lymphogranuloma venereum have been reported in Virginia since 1997.

Malaria

In 1999, 76 cases of malaria were reported compared with 61 cases in 1998. This is the highest number reported since 1970 when 91 cases were recorded. The ten year trend is shown in Figure 30.



The 20-29 year age group had the highest incidence rate of 2.1 cases per 100,000 population, followed by the 30-39 year age group with a rate of 1.5 per 100,000.

Race was reported as unknown for 30 (40%) cases. When race was reported, blacks had the highest incidence rate (2.3 per 100,000), followed by the other race category (1.9 per 100,000) and whites (0.2 per 100,000). Males were twice as likely to be reported with malaria as females (1.6 vs. 0.7 per 100,000).

The majority (68%) of cases were reported from the northern health planning region. Each of the other health planning regions reported from 4 to 8 cases.

Fifty-eight of the cases are believed to have acquired malaria while in another county. Africa was the probable source of malaria for 38 cases, Central America 11 cases, Asia 8 cases, and South America one case. The probable source of malaria was not reported for eighteen persons.

Seventy-nine percent had not taken chemoprophylaxis. Only six cases reported taking any chemoprophylaxis. Of these six cases, one case took the incorrect drug for the area visited and one case did not complete the entire course of medication.

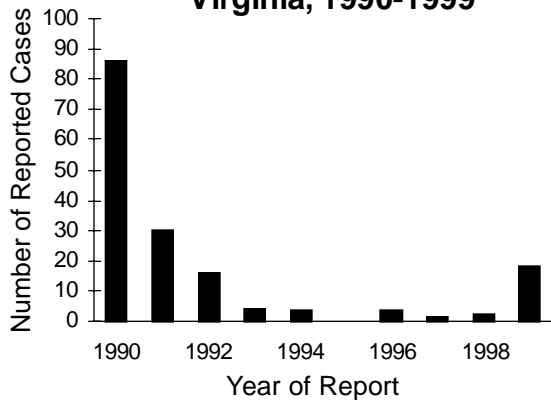
The *Plasmodium* species was reported for 63 (83%) of the 76 cases. *P. falciparum* was reported in 34 cases; 26 of whom had known travel histories to Africa. *P. vivax* accounted for 27 of the cases and travel was divided between Africa (7), Asia (6), and South and Central America (10). *P. ovale* was reported in 2 cases with travel to Africa. No cases of *P. malariae* were reported. No cases were reported in U.S. military personnel. The status of the remaining cases was reported as U.S. civilians (14 cases), civilians of other countries (22 cases), or status unknown (40 cases). The latter category included refugees, immigrants, students and children.

Measles

The number of reported measles cases increased to 18 in Virginia in 1999 compared to two cases in 1998. Fifteen of the cases were related to an out-

break that occurred in the southwest region of the state. The index case is believed to have been an unvaccinated U.S. resident infected while traveling abroad. Virginia had a record low of zero cases in 1995; the five year mean is two cases per year (Figure 31).

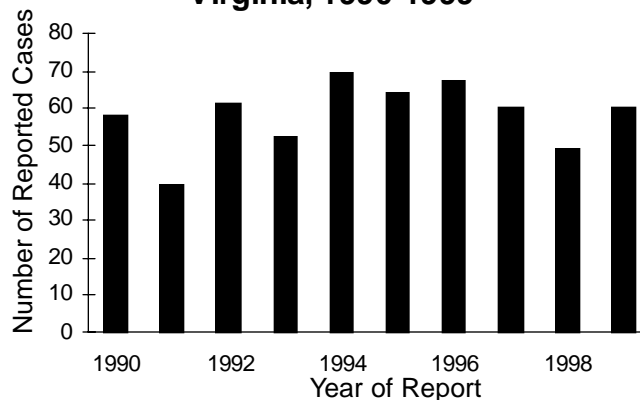
**Figure 31. Measles
Ten Year Trend
Virginia, 1990-1999**



Meningococcal Infection

The number of cases of meningococcal infection reported during 1999 was 60, comparable to the ten year mean of 58 cases annually (Figure 32). Onset of illness was distributed throughout the year, with 36% more cases occurring in the first and fourth quarters.

**Figure 32. Meningococcal Infection
Ten Year Trend
Virginia, 1990-1999**



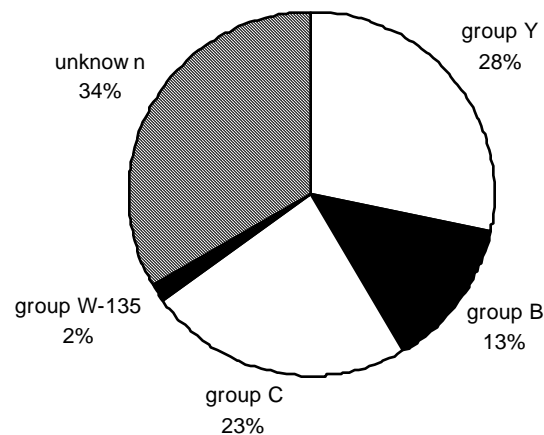
Infants had the highest incidence rate (11.2 cases per 100,000 population), followed by persons in the 1-9 year age group (1.7 per 100,000) and the 10-19 year age group (1.5 per 100,000).

Blacks had a slightly higher incidence rate than whites (1.0 cases per 100,000 population and 0.8 cases per 100,000 population, respectively). Persons in the other race category had an incidence rate of 0.4 per 100,000. Thirty-one cases were reported in males compared to 29 cases in females.

The highest incidence rate was reported from the central health planning region (17 cases, 1.5 per 100,000) followed by the northwest (13 cases, 1.4 per 100,000), and southwest (9 cases, 0.7 per 100,000) regions.

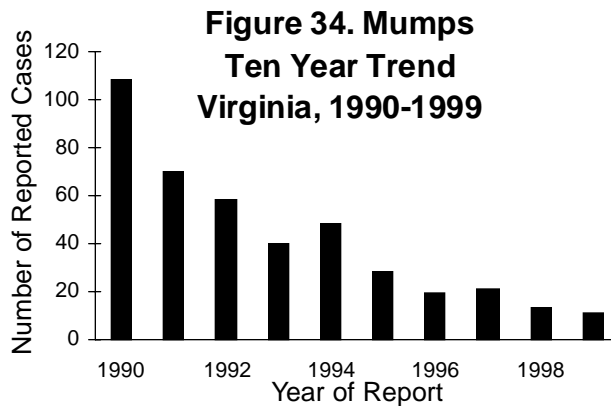
Serogroup was reported for 34 (57%) of the reported cases: 15 group Y, 12 group C, 6 group B, and 1 group W-135 (Figure 33). The organism was isolated from cerebrospinal fluid in 12 cases and from blood in 42 cases. The source of the organism was not reported for six cases. Six deaths due to meningococcal disease were reported.

**Figure 33. Meningococcal
Serogroups
Virginia, 1999**



Mumps

Reported mumps cases continue to decline. The eleven cases reported in 1999 represented a ten-year low (Figure 34). Cases occurred throughout the year with a peak in March with four cases.



Adults in the 30-39 year age group had the highest incidence rate for mumps (0.4 cases per 100,000 population), followed by children in the 1-9 year age group (0.2 per 100,000). No cases were reported for infants or for adults aged 50 and older.

The other race category (0.8 per 100,000) was at greater risk for acquiring mumps than blacks (0.2 per 100,000) and whites (0.1 per 100,000). Race was recorded as unknown for one case. Females were at a slightly higher risk than males (0.2 vs 0.1 per 100,000, respectively).

The risk for mumps was greatest in the eastern health planning region (5 cases, 0.3 per 100,000). Incidence rates in the other four health planning regions ranged from 0.1 to 0.2 per 100,000.

Nosocomial Outbreaks

A nosocomial outbreak refers to any group of illnesses of common etiology occurring in patients in hospitals or nursing homes acquired by exposure of those patients to the disease agent while confined in such facilities. Thirteen nosocomial outbreaks

were reported in 1999. Eight outbreaks of influenza-like illness in nursing homes were reported during the 1999-2000 season. Influenza type A was laboratory-confirmed in six of the outbreaks.

Five outbreaks were characterized by symptoms of gastroenteritis. A virus (Norwalk or Norwalk-like agent) was laboratory-confirmed as the cause of four of these outbreaks.

Occupational Illnesses

In 1999 the only occupational illnesses that continued to be reportable were toxic substance related illnesses. Occupational illnesses that are related to toxic substances can be found under that heading in this report.

Ophthalmia Neonatorum

Three cases of ophthalmia neonatorum were reported in 1999; all three were caused by *Chlamydia trachomatis* infection. One infant was white, one was black, and race was recorded as unknown for the third case. Fifteen cases of ophthalmia neonatorum had been reported in 1998.

Outbreaks

This section includes outbreaks that occurred in 1999 that are not described in other sections of this report.

One outbreak of influenza-like illness was reported in an adult residential facility during the 1999-2000 season. One outbreak of *Staphylococcus aureus* was reported in a city jail affecting about 44 inmates. Also, one adult home reported spread of hepatitis B due to incorrect procedures with glucose monitoring fingerstick devices.

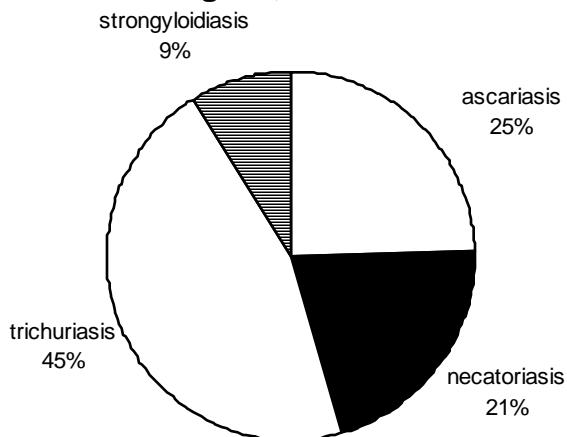
In April 1999, approximately 285 (64%) students and 20 (28%) staff in an elementary school in Greene County developed gastrointestinal symptoms over a period of several days. The clinical presentation of the illness was consistent with Norwalk-like viral infection. Illness occurred by person-to-person transmission and also probably by contact with contaminated fomites.

During the month of June 1999, reports were received of gastrointestinal illness occurring among long-distance hikers on the Appalachian Trail. Of 70 long-distance hikers interviewed, 45 (64%) reported developing symptoms of diarrhea and/or vomiting since the beginning of May. Acute and convalescent sera were collected from seven hikers; all were positive for Norwalk-like virus. The mode of transmission was determined to be person-to-person.

Parasites, Intestinal

In addition to amebiasis, cryptosporidiosis, cyclosporiasis, and giardiasis, selected reports of other parasitic intestinal diseases are recorded. In 1999, 57 laboratory confirmed cases of intestinal parasites were recorded: 26 cases of trichuriasis (whipworm), 14 cases of ascariasis (roundworm), 12 cases of necatoriasis (hookworm), and 5 cases of strongyloidiasis (Figure 35).

**Figure 35. Intestinal Parasites
Virginia, 1999**



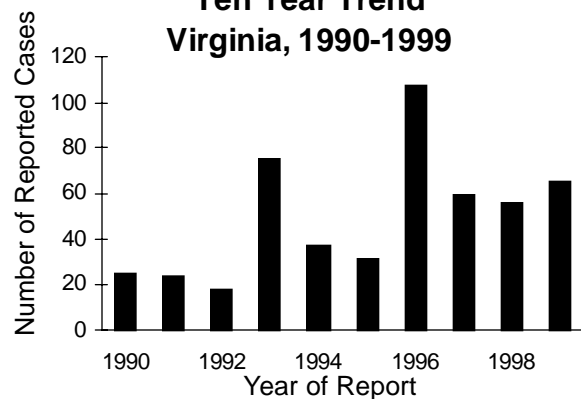
Activity peaked during the third quarter when 32 (56%) cases occurred. The 10-19 and 20-29 year age groups accounted for the highest number of cases, 16 and 15 cases, respectively. Race was not reported for 21% of the cases. Where race was reported, 29 (51%) cases were in the other race category. Thirty-three (58%) cases were in females compared to 17 (30%) in males. Gender was recorded as unknown for the remaining 7 cases.

The southwest health planning region had the highest number of cases (25) followed by the northern and central regions with 11 cases each.

Pertussis

In 1999, 65 confirmed cases of pertussis were reported (Figure 36). Pertussis has been the most frequently reported childhood, vaccine-preventable disease in Virginia in recent years. Cases occurred throughout the year, but peaked during the month of July when 15 (24%) cases had onset of symptoms.

**Figure 36. Pertussis
Ten Year Trend
Virginia, 1990-1999**



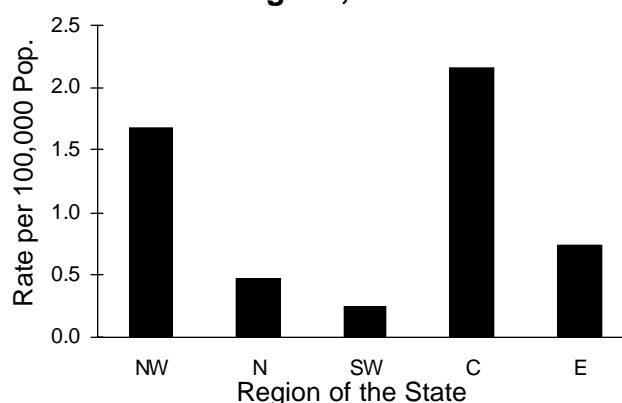
Infants had the highest incidence rate at 12.3 cases per 100,000 population, followed by the 10-19 year age group (22 cases, 2.4 per 100,000). Incidence rates in the other age groups were 1.7 and less per 100,000.

Fifty-four (83%) pertussis cases were in whites; the incidence rate for whites was 1.1 per 100,000.

The other categories were less than 1.0 per 100,000. Females were at greater risk than males at 1.2 vs 0.7 per 100,000, respectively.

The majority of cases were reported from the central health planning region (25 cases, 2.2 per 100,000) and the northwest health planning region (16 cases, 1.7 per 100,000) (Figure 37). No deaths due to pertussis were reported.

Figure 37. Pertussis Rate by Region Virginia, 1999



Phenylketonuria (PKU)

No infants were identified as having PKU through newborn screening programs in 1999, compared to two in 1998.

Plague

No cases of plague have been reported in Virginia during the twentieth century.

Poliomyelitis

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

Psittacosis

Psittacosis is a disease of low frequency in Virginia. The last case was reported in 1998.

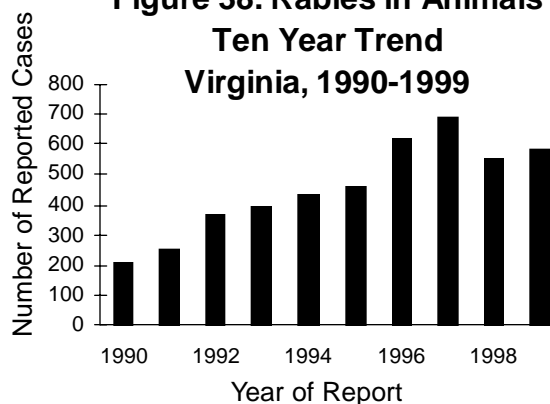
Q Fever

In 1999, one case of Q fever was reported in a farmer from the southwest health planning region. His exposure appeared to be related to his occupation.

Rabies in Animals

The number of animals confirmed with rabies increased from 549 cases in 1998 to 581 cases in 1999 (Figure 38). Danville was the only new locality to report a positive animal (bat) in 1999.

Figure 38. Rabies in Animals Ten Year Trend Virginia, 1990-1999



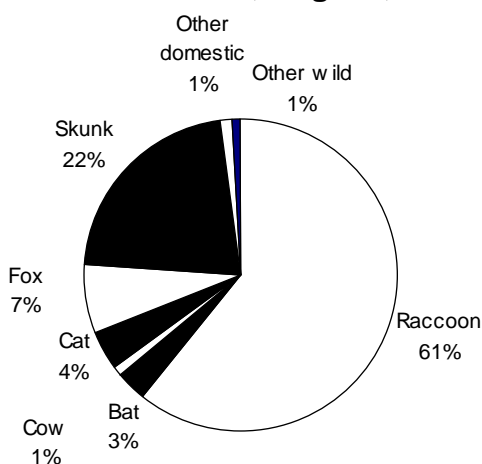
Almost one-fifth of all cases (107 cases, 18%) were reported from Fairfax County (including the cities of Fairfax and Falls Church). Loudoun County had the second highest number of cases (28 cases, 5%). The remaining localities contributed four percent or fewer cases each to the total number of rabid animals.

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

with rabies, accounting for 354 cases or 61% of the total number of animals reported. Skunks accounted for 127 (22%) cases (Figure 39). The other wildlife reported with rabies were 42 foxes, 17 bats, 3 groundhogs, 2 bobcats, and 1 beaver.

Cats were the most commonly reported domestic animals reported with rabies. Twenty-three rabid cats were reported followed by 7 cows, 4 dogs, and 1 horse.

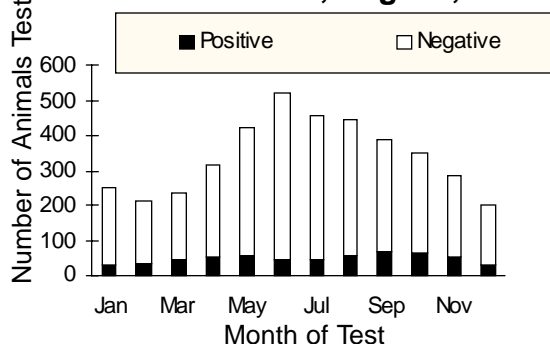
Figure 39. Species of Animals Positive for Rabies, Virginia, 1999



Animals Tested

The number of animals tested rose from 3,809 in 1989 to 4,070 in 1999. Cats were the most commonly tested animal, accounting for 24% of all animals tested. Raccoons accounted for 19% of animals tested, followed by dogs (15%), bats (11%), 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, 70% of those tested were positive. Forty-seven percent of tested raccoons were positive, compared with 4% of bats, 2% of cats, and less than one percent of dogs. Figure 40 compares the total number of animals tested with the number of positive for each month.

Figure 40. Animal Rabies Tests by Month and Test Result, Virginia, 1999



Human Exposure

Human exposure was reported for the rabid horse, 1 of the 2 rabid bobcats, 1 of the 3 rabid groundhogs, all 4 of the rabid dogs, 5 of the 17 rabid bats, 5 of the 127 rabid skunks, 6 of the 7 rabid cows, 12 of the 42 rabid foxes, 17 of the 23 rabid cats, and 32 of the 354 rabid raccoons.

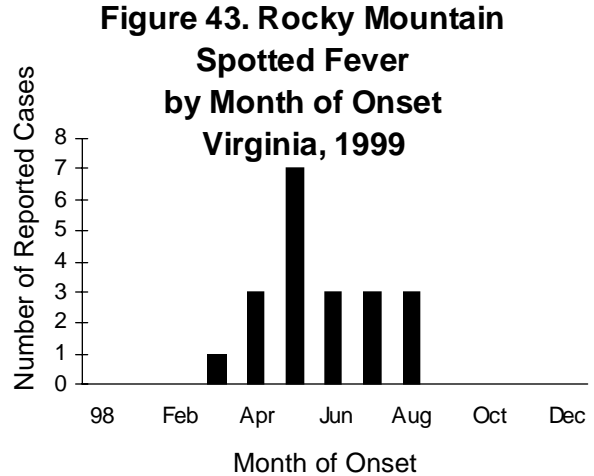
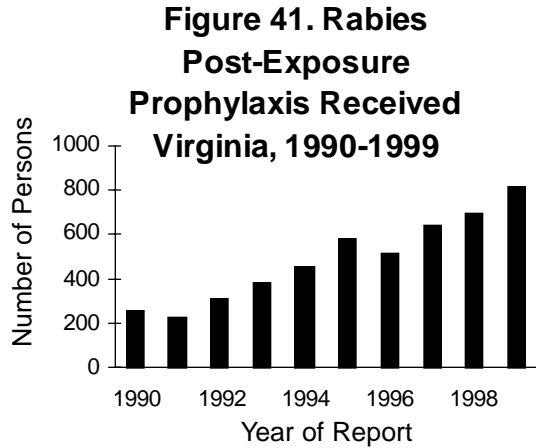
Rabies in Humans

No cases of rabies in humans were reported in Virginia in 1999. In 1998, the first case of human rabies in 45 years was reported.

During 1999, 808 persons were reported to have received post-exposure prophylaxis, a 16% increase from the 696 persons reported in 1998 (Figure 41). This is the highest number reported in the 15 years that this information has been collected. In addition, 428 persons received pre-exposure prophylaxis compared to 679 in 1998 and 712 in 1997.

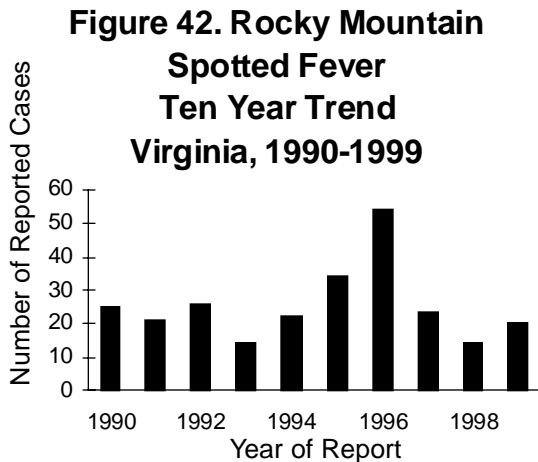
Reye Syndrome

Reye syndrome was removed from the reportable disease list effective January 1999. No cases of Reye syndrome were reported in Virginia in 1999. One confirmed case was reported in 1994.



Rocky Mountain Spotted Fever

The 20 cases of Rocky Mountain spotted fever reported in 1999 represented an increase from the 14 cases reported in 1998. Figure 42 shows the ten-year trend in the number of reported cases in Virginia. Onset of cases occurred from March through August with a peak in May as shown in Figure 43.



Children aged 1-9 years had the highest incidence rate (4 cases, 0.5 cases per 100,000 population), followed by adults aged 40-49 years (4 cases, 0.4 per 100,000).

The incidence rate of 0.3 per 100,000 was the same for blacks and whites. No cases were reported in the other race category. Race was recorded as unknown for one case. Males had an incidence rate

of 0.5 per 100,000, which was five times higher than the incidence rate of 0.1 per 100,000 for females.

Incidence rates ranged from a low of 0.2 per 100,000 in the southwest, northern, and eastern health planning regions to a high of 0.8 per 100,000 in the northwest region.

A rash was reported in thirteen of the cases. Eleven (55%) persons had a known tick bite, four (20%) had been in a tick infested area, three persons did not have a known tick exposure, and exposure status information was not available for one person.

No deaths were reported.

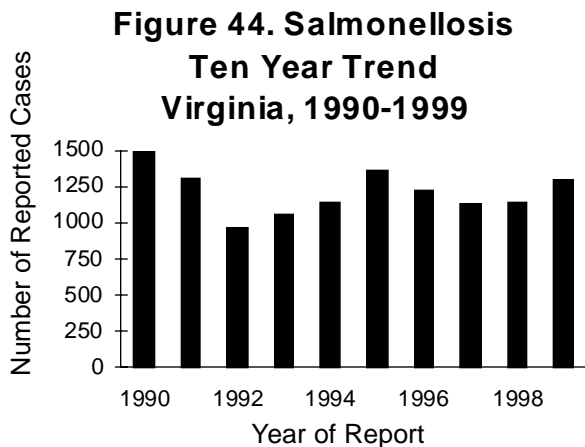
Rubella

No cases of rubella were reported in 1999. One case was reported in 1998.

Salmonellosis

Salmonellosis continues to be the most frequently reported enteric pathogen in Virginia. In 1999, 1,286 *Salmonella* infections were reported compared to 1,135 in 1998 (Figure 44). The most commonly reported serotypes were *S. enteritidis* (304 cases) and

S. typhimurium (287 cases), followed by *S. newport* (102 cases) and *S. heidelberg* (40 cases). These four serotypes accounted for 57% of the 65 different serotypes reported in 1999 (Table 9).

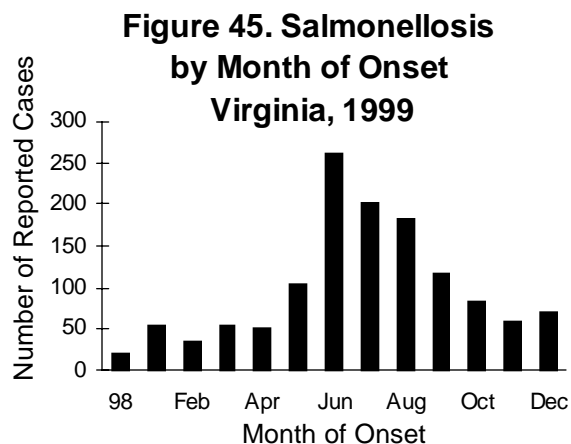


Regionally, the highest incidence rate was in the central health planning region (37.6 cases per

Table 9. Number and Percent of Salmonella Infections by Species, Virginia, 1999

Species Causing Infection	Number of Cases	Percent of Cases
<i>S. enteritidis</i>	304	23.64
<i>S. typhimurium</i>	287	22.32
<i>S. newport</i>	102	7.93
<i>S. heidelberg</i>	40	3.11
<i>S. muenchen</i>	18	1.40
<i>S. braenderup</i>	17	1.32
<i>S. infantis</i>	17	1.32
<i>S. monte</i>	16	1.24
<i>S. javiana</i>	16	1.24
<i>S. bareilly</i>	12	0.93
<i>S. bairdson</i>	11	0.86
Unspecified	296	23.02
All Others	150	11.66
TOTAL	1286	100.00

100,000 population), followed by the northwest health planning region (17.3 per 100,000). The lowest rate was in the southwest health planning region. The incidence of *Salmonella* infections peaked during June (Figure 45).

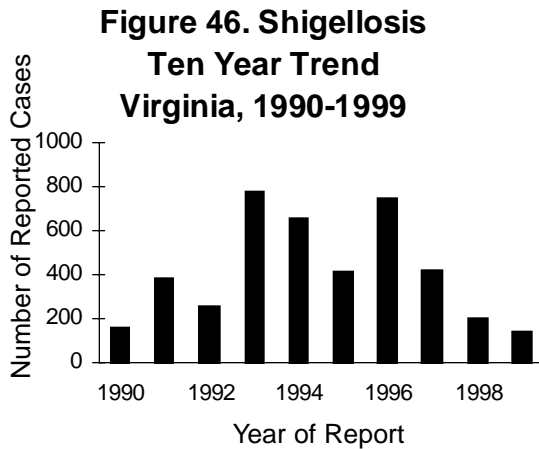


Infants were at the greatest risk for *Salmonella* infection, (141.0 per 100,000), followed by children aged 1-9 years (36.2 per 100,000). The age group 30-39 years had the lowest rate at 12.2 per 100,000. By race, blacks had the highest incidence rate (13.5 per 100,000), followed by the other race category (13.2 per 100,000) and whites (10.5 per 100,000). The risk for *Salmonella* infection was higher for females (19.1 per 100,000) than for males (18.2 per 100,000).

Five *Salmonella* outbreaks were reported in 1999. There were two *S. enteritidis* outbreaks in restaurants. One of these was egg-associated and accounted for more than 150 cases in the Richmond metropolitan area. The southwest region experienced an outbreak of *S. bairdson* with a suspected link to tomatoes. *S. muenchen* caused a restaurant-associated outbreak thought to be due to inadequate cooking of grilled chicken. One outbreak of *S. newport* was traced to consumption of mangoes. (See Foodborne Outbreak Section for more information.)

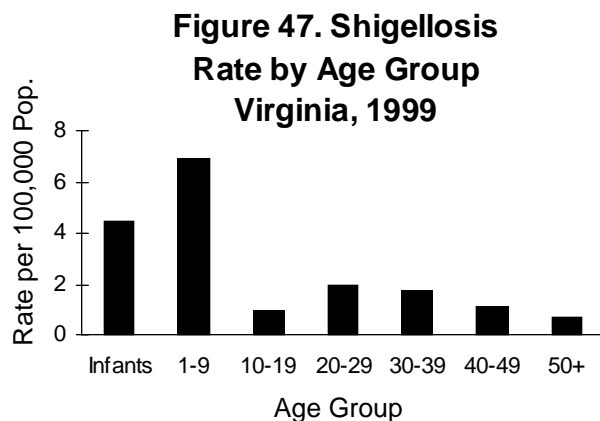
Shigellosis

The number of reported cases of shigellosis decreased to its lowest level in ten years. There were 136 cases reported in 1999, compared to a high of 776 cases in 1993 (Figure 46).



Like other frequently reported enteric diseases, *Shigella* infections occurred most often during the third quarter of the reporting year. Seventy-six (56%) of *Shigella* infections reported were caused by *S. sonnei*; 38 infections were due to *S. flexneri*; 2 to *S. boydii* and 2 to *S. dysenteriae*. The species was not specified for 18 infections.

Children aged 1-9 years had the highest incidence rate (6.9 cases per 100,000 population), followed by infants (4.5 per 100,000) as shown in Figure 47. Race was recorded as unknown for 77 (57%) cases. When race was reported, the other race category had the highest incidence rate (2.6 per 100,000). Females



(2.4 per 100,000) were slightly more at risk than males (1.5 per 100,000).

The northern health planning region had the highest incidence rate (4.8 per 100,000), followed by the southwest (2.1 per 100,000), northwest (1.1 per 100,000), central (0.6 per 100,000) and eastern (0.6 per 100,000) regions.

Streptococcal Disease, Group A, Invasive

In 1999, invasive streptococcal disease, Group A, became a reportable condition. Thirty-six cases were reported from 23 cities and counties in the state. The northwest health planning reported 15 cases (42%), followed by the central and eastern regions each with seven cases, southwest with 4 cases, and the northern region with three cases.

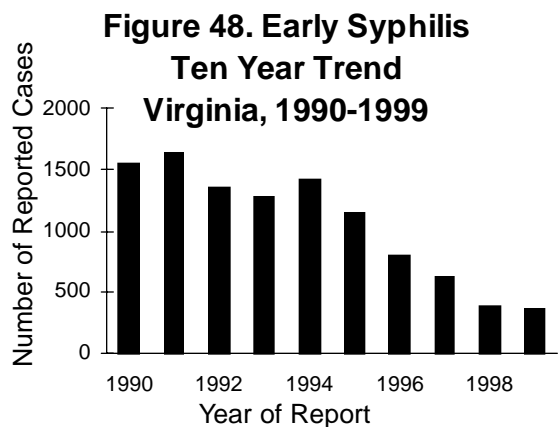
The number of cases (15 cases) peaked in the second quarter. The 50+ years age group had 25% of the cases with the rest spread throughout the other age groups. Twenty-three cases were in whites, 6 in blacks, and race was reported as unknown for 7. Males and females were equally at risk (18 cases each).

One death occurred in 1999 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 4%, from 379 cases in 1998 to 364 cases in 1999 (Figure 48), continuing a downward trend that began in 1995.

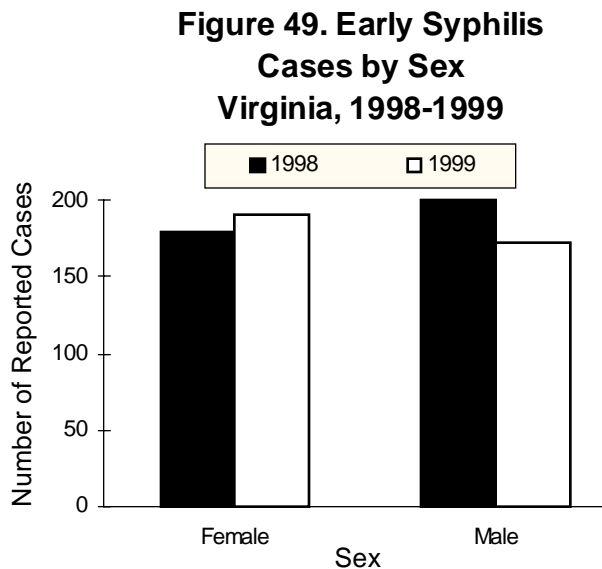


The 40-49 year age group had the highest incidence rate (16.7 cases per 100,000 population), followed by the 30-39 year age group (11.6 per 100,000), the 20-29 year age group (10.3 per 100,000), the 10-19 year age group (2.5 per 100,000), and the 50 year and older age group (1.5 per 100,000).

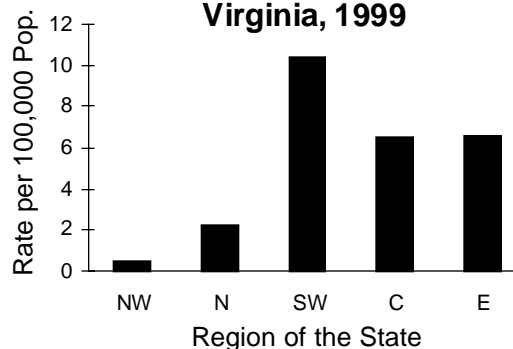
Blacks were reported more frequently and had the highest incidence rate (310 cases, 22.8 per 100,000). The incidence rate for blacks was 33 times higher than the rate for whites (0.7 per 100,000) and over three times higher than the rate for the other race category (6.0 per 100,000). Two reports did not specify race.

The number of cases in females increased 7% from the 179 cases in 1998 to 191 cases in 1999. Among males, however, there was a 14% decrease, from the 200 cases in 1998 to 173 cases in 1999 (Figure 49). The 1999 incidence rate per 100,000 population was 5.5 for females and 5.2 for males.

The southwest health planning region reported the most cases (130 cases, 10.4 per 100,000), followed by the eastern region (115 cases, 6.6 per 100,000), central region (75 cases, 6.5 per 100,000), northern region (39 cases, 2.3 per 100,000), and northwest region (5 cases, 0.5 per 100,000) as shown in Figure 50. Onset of the disease was fairly evenly distributed throughout the year.



**Figure 50. Early Syphilis
Rate by Region
Virginia, 1999**



Congenital Syphilis

In 1999, four cases of congenital syphilis were reported. Three cases occurred in blacks and one in whites. Two of the cases were reported from the northern health planning region and one each from the central and southwest regions.

The mothers' average age was 28 years, with a range of 25 to 32 years. All four mothers were single parents. All four sought prenatal care: one during the first trimester, two during the second trimester, and one during the third trimester.

The four congenital syphilis cases in 1999 represented a 20% decrease from the five cases reported

in 1998. The decrease in congenital syphilis may be associated with the 41% decrease in early syphilis among women from 1997 to 1998. 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.

Tetanus

No cases of tetanus were reported in 1999. One case of tetanus was reported in Virginia in 1998.

Toxic Shock Syndrome

No cases of toxic shock syndrome were reported in Virginia in 1999. The last case was reported in 1997.

Toxic Substance Related Illnesses

During 1999, 345 cases of the following toxic substance related illnesses were reported to the health department: asbestosis (202 cases, 59%), lead poisoning (131 cases, 38%), cadmium poisoning (4 cases, 1%), mercury poisoning (3 cases, 1%), contact dermatitis (3 cases, 1%), carbon monoxide poisoning (2 cases, 1%), and 1 case of herbicide poisoning. The remainder of this section will present further information on the cases of asbestosis.

Of the 202 persons reported with asbestosis, all were males. Cases ranged in age from 38 to 88 years (mean = 61 years). Race was not reported for any of the cases.

Cases were reported from the eastern (99.5%) and central (0.5%) health planning regions. The industries employing the most persons reported with

asbestosis were shipbuilding (173 cases, 86%) and the railroad industry (13 cases, 6%).

Toxoplasmosis

No cases of toxoplasmosis were reported in 1999. Toxoplasmosis, a common protozoan infection in man and animals, is not a reportable disease in Virginia; however, cases are recorded when reports are received.

Trichinosis

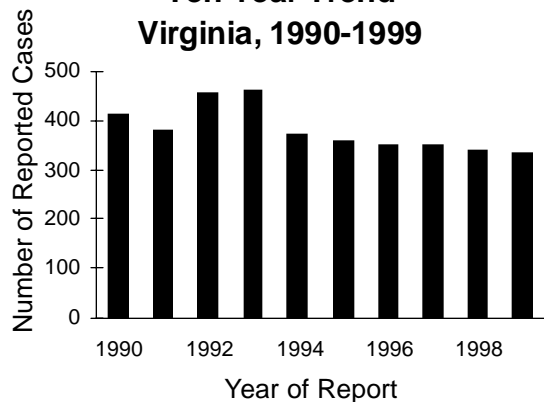
The last case of trichinosis in Virginia occurred in 1993.

Tuberculosis

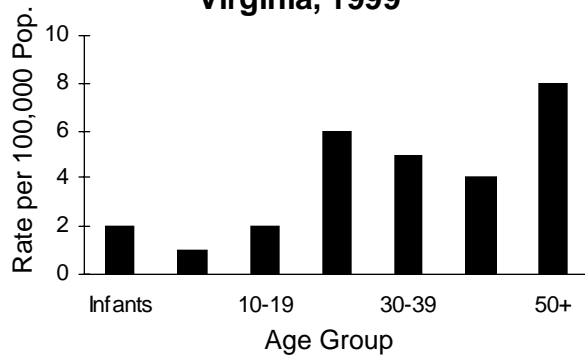
In 1999, 334 tuberculosis cases were reported, slightly less than the 339 cases reported in 1998. Nine cases (2.7%) were reactivations of previously diagnosed and treated disease; six of those cases failed to complete an adequate and appropriate regimen while three reported having completed a recommended course of treatment. The annual incidence rate for Virginia was 4.9 cases per 100,000 population, compared to 6.4 cases per 100,000 population for the nation. Figure 51 shows the ten year trend for tuberculosis in Virginia.

Cases of tuberculosis occurred in all age groups including infants (Figure 52). Forty-three percent of the reported cases were in persons age 50 years and older (145 cases, 8.3 per 100,000). The next highest incidence rate was in the 20-29 year age group (59 cases, 6.1 per 100,000). Eleven cases occurred in infants and children under age ten. Persons in the other race category had the highest incidence rate (70 cases, 26.3 per 100,000), followed by blacks (131 cases, 9.6 per 100,000) and whites (133 cases,

**Figure 51. Tuberculosis
Ten Year Trend
Virginia, 1990-1999**



**Figure 52. Tuberculosis
Rate by Age Group
Virginia, 1999**

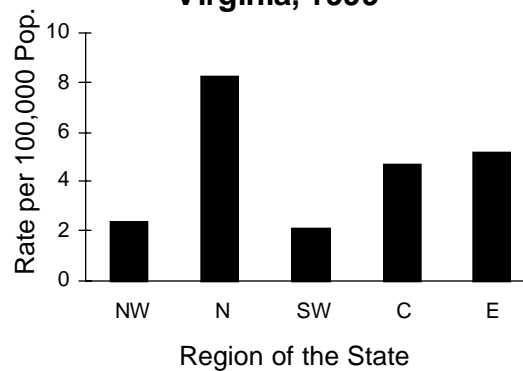


2.6 per 100,000). Males were more likely to be reported with tuberculosis than females (203 cases, 6.1 per 100,000 vs. 131 cases, 3.8 per 100,000, respectively).

The northern health planning region reported the highest number of cases and the highest incidence rate (142 cases, 8.3 per 100,000), followed by the eastern region (90 cases, 5.1 per 100,000), as shown in Figure 53. Persons born in countries outside the United States accounted for 155 cases (46%), 85% of which were reported from the northern health planning region.

Of 252 isolates tested, 23 (9%) were drug resistant. Four were MDR-TB meaning they were resistant to both INH and rifampin. The other 19 were either resistant to one or possibly 2-3 drugs but it did not adversely impact the way the patient was

**Figure 53. Tuberculosis
Rate by Region
Virginia, 1999**



treated. The site of disease for 79% of the cases was in the lungs.

In 1999, 42% of TB patients received care from the health department, 49% from a private physician, and 8% from a combination of both health department and private physician. Sixty-five percent of patients were on directly observed therapy (DOT) for some portion of the treatment period. Of all the 1999 cases, 89% completed an adequate and appropriate course of therapy within twelve months.

Of the 324 cases reported prior to death, 231 (72%) were offered HIV testing; results were available for 197 persons, of whom 17 were HIV positive.

Twenty-six (8%) persons reported with tuberculosis in 1999 died: 10 were diagnosed at death and 16 died during the course of their treatment.

Tularemia

Tularemia was removed from the reportable disease list effective January 1999. Two cases of tularemia were reported in Virginia in 1999. The cases were both adults over the age of 60. The cases occurred during the months of May and July with no geographic clustering.

Typhoid Fever

Eleven cases of typhoid fever (*Salmonella typhi*) were reported in 1999 compared to seven in 1998. The cases ranged in age from 2 to 58 years (mean = 26 years). Eight females and three males were reported.

Only five cases had reported travel histories to Central America or Asia. No travel history was recorded for six cases.

All eleven cases were reported from the northern health planning region, and seven reported onset during the third quarter of the year.

Typhus

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

Vibrio Infection

Twelve cases of vibriosis were reported in 1999. *Vibrio vulnificus* was the cause of four infections. *V. cholerae* non-01, *V. fluvialis*, *V. mimicus*, and *V. parahaemolyticus* each caused one infection. *Vibrio* unspecified accounted for four infections.

All except two cases occurred between May and September with peak activity occurring in August. Cases ranged in age from 5 to 80 years. Nine cases were in whites, one was in the other race category, and race was recorded as unknown for two cases. Ten male cases and two female cases were reported.

The eastern health planning region reported seven cases, the northern region reported three cases and the northwest and central regions each reported one case.

For two cases, the site of infection was a hand wound. Another two cases reported eating seafood prior to developing illness with *Vibrio* infection.

One adult male with chronic liver disease died due to *Vibrio* infection after consuming raw oysters.

Cholera

No cases of cholera were reported in Virginia in 1999. The last case was reported in 1994.

Waterborne Outbreaks

No waterborne outbreaks were reported in 1999.

Yersiniosis

Although not officially reportable in Virginia, twelve reports of yersiniosis were received in 1999. Species was reported as *Yersinia enterocolitica* for 11 cases and not specified for the remaining case. Cases occurred throughout the year.

The majority (42%) of the cases were reported in infants. Cases were fairly evenly distributed between females (7) and males (5). Race was reported as black for three cases, white for two cases, and race not specified for the remaining 7 cases. Cases were distributed in all of the health planning regions except the northwest. The southwest and central regions reported the most cases (4 each).

