

Acquired Immunodeficiency Syndrome (AIDS)

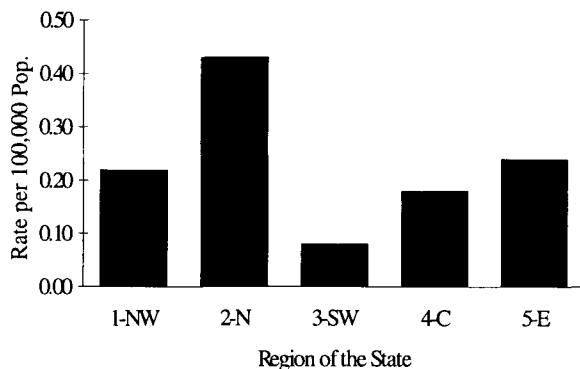
See HIV/AIDS.

Amebiasis

Sixteen cases of amebiasis were reported in 1995 compared to 39 in 1994 and 34 in 1993. The distribution of cases by onset of illness ranged from two to seven cases quarterly. The highest number of cases and incidence rate occurred in the 20-29 year age group (6 cases, 0.6 per 100,000 population). Race was reported for only half of the cases. Of those, five were in the other race category and three were black. By sex, the number of reported cases was comparable. The northern health planning region had the highest number of cases (7 cases) and an incidence rate (0.4 per 100,000 population) that was two times higher than any other region (Figure 1).

Figure 1

Amebiasis: Rate by Region
Virginia, 1995



Anthrax

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

Arboviral Infection

One case of arboviral infection was reported in 1995. Arboviral infections are caused by any of 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 one case reported in Virginia in 1995 was caused by the LaCrosse virus. The patient was a resident of southwest Virginia whose onset of illness occurred in August.

Encephalitis caused by the LaCrosse virus is also included under the heading Encephalitis, Primary.

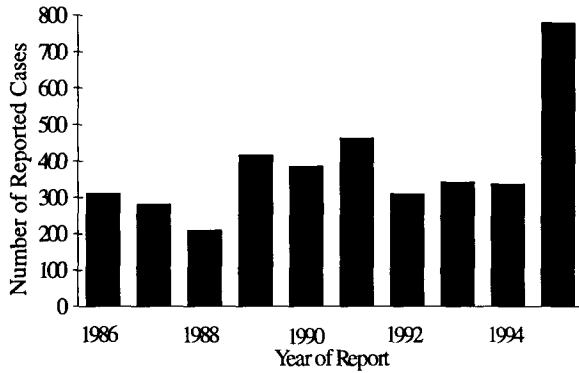
Aseptic Meningitis

The 780 cases reported in 1995 were more than two times greater than the 337 cases reported in 1994 (Figure 2). A community-wide outbreak of this relatively common but rarely serious clinical disease occurred in the eastern health planning region during the summer months, contributing to the increase in cases.

The etiologic agents were reported for only 27 of the 780 reported cases. All 27 were enteroviruses (17 echoviruses, one coxsackievirus and nine unspecified). The onset of disease was highest during the third quarter when 519 (67%) cases occurred. Of these, 283 (55%) occurred in the eastern health planning region.

Figure 2

Aseptic Meningitis: Ten Year Trend
Virginia, 1986-1995

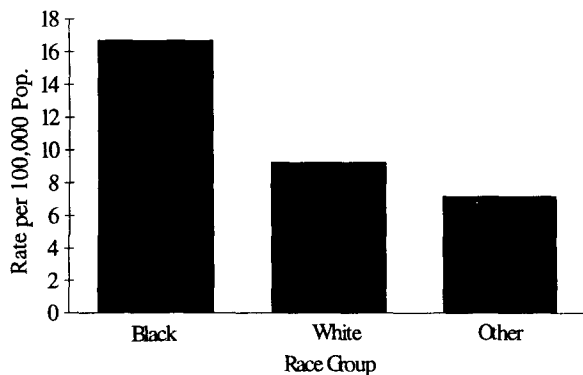


Infants were at the greatest risk for this disease (106 cases, 126.0 per 100,000 population), followed by the age group 1-9 years (164 cases, 20.2 per 100,000 population). Blacks had a higher incidence rate (16.7 cases per 100,000 population) than whites (9.3 per 100,000) and the other race category (7.2 per 100,000), as shown in Figure 3. Males were slightly more likely to be reported with this disease than females (12.4 vs. 11.2 cases per 100,000 population).

Risk of infection was three times higher in the eastern health planning region (28.1 cases per 100,000 population) compared to the northwest

Figure 3

Aseptic Meningitis: Rate by
Race Group, Virginia, 1995



region (9.6 per 100,000) and eight times higher than the southwest region (3.5 per 100,000).

Bacterial Meningitis

The annual number of reported cases (130 cases) of bacterial meningitis increased in 1995, reversing a five year trend of declining disease. Much of the recent decline in the number of reported cases of bacterial meningitis can be attributed to a decrease in *Haemophilus influenzae* disease which, until 1991, was responsible for the majority of the bacterial meningitis cases. The most frequently reported etiologic agent in 1995 was *Streptococcus pneumoniae* (47%), as presented in Table 8. Cases occurred throughout the year but peaked during the first quarter of the year.

Table 8. Etiology of Bacterial Meningitis Cases Reported in Virginia, 1995

Organism	Number of Cases	Percent of Cases
<i>Enterobacter</i>		
<i>E. faecium</i>	2	1.5
<i>E. unspecified</i>	1	0.8
<i>Escherichia coli</i>	4	3.1
<i>Haemophilus influenzae</i>	10	7.7
<i>Listeria monocytogenes</i>	3	2.3
<i>Serratia marcescens</i>	1	0.8
<i>Pseudomonas</i>		
<i>P. unspecified</i>	1	0.8
<i>Staphylococcus</i>		
<i>S. aureus</i>	1	0.8
<i>S. epidemidis</i>	1	0.8
unspecified	2	1.5
<i>Streptococcus</i>		
<i>S. pneumoniae</i>	61	46.9
<i>S. sanguis</i>	1	0.8
Group A	6	4.6
Group B	16	12.3
Group C	1	0.8
Group D	2	1.5
unspecified	1	0.8
Unspecified	16	12.3
TOTAL	130	100.0

Infants had the highest incidence rate (43 cases, 51.1 per 100,000 population). The incidence rate

was no higher than 2.3 cases per 100,000 population for any other age group.

Blacks were at greatest risk for this disease. More males were reported with bacterial meningitis than females and had a higher incidence rate (69 cases, 2.2 per 100,000 population and 61 cases, 1.8 per 100,000 population, respectively).

By health planning region, the northwest had the highest incidence rate (3.2 cases per 100,000 population). Incidence rates in the other health planning regions ranged from a high of 2.3 cases per 100,000 population in the eastern region to a low of 1.4 per 100,000 in the central region. Eighteen deaths due to bacterial meningitis were reported in 1995. The ages of persons who died ranged from newborn to 83 years (mean = 39 years).

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

Botulism

One case of foodborne botulism was reported in an adult female from the northwest health planning region in 1995. Her illness was caused by type F toxin produced by *Clostridium baratii*, a very rare cause of foodborne botulism. Foodborne botulism generally results when a food contaminated with *C. botulinum* is preserved improperly and stored under anaerobic conditions that permit germination, multiplication and toxin production. An investigation did not determine the specific food that was the source of botulism for this case.

Two cases of infant botulism were reported. One case occurred in a three month old white female from the northwest health planning region and the second in a two month old female (race not reported) from the northern health planning region. Infant botulism results after ingested spores of *C. botulinum* have germinated, multiplied and produced

toxin in the intestine. In most cases of infant botulism, the source of spores remains unknown; however, honey is one identified potential source. No deaths due to foodborne or infant botulism were reported in Virginia in 1995.

Foodborne botulism is also included under the heading Foodborne Outbreaks.

Brucellosis

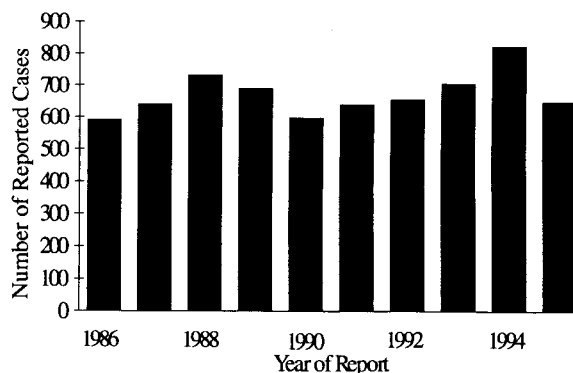
Brucellosis is a zoonotic disease that has become a relatively rare public health event in Virginia. When cases do occur, they usually involve people associated with the meat processing industry. No cases were reported in Virginia in 1995. Two cases had been reported in 1994.

Campylobacteriosis

The 648 cases reported in 1995 represented a decrease of 21% following an unexplained record high of 824 cases reported in 1994 but remained consistent with the ten year mean of 682 cases per year (Figure 4). The majority (61%) of the cases

Figure 4

Campylobacteriosis: Ten Year Trend
Virginia, 1986-1995



occurred during the months of May through September.

The highest incidence rate by age occurred among infants. Their rate of 27.3 cases per 100,000 population was more than double that of any other age group. Although race was not reported for 252 of the cases, 348 were reported as white, 27 were black, and 21 were reported in the other race group. More males were reported with this disease than females and males also had a slightly higher incidence rate (335 cases, 10.4 per 100,000 population vs. 305 cases, 9.1 per 100,000).

The northwest health planning region had the highest incidence rate (17.5 cases per 100,000 population). This was followed by the central region with an incidence rate of 14.0 per 100,000. The eastern region had the lowest incidence rate (5.8 per 100,000).

Chancroid

Two cases of chancroid were reported in 1995 compared to zero cases in 1994.

Chickenpox (Varicella)

The number of reported cases of chickenpox decreased for the third consecutive year in Virginia. The 2,667 cases of chickenpox reported in 1995 represented a six percent decrease compared to the 2,844 cases reported in 1994.

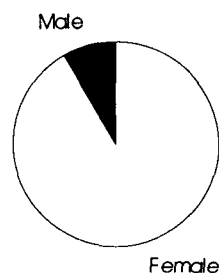
As in the past, the highest number of cases (1,636 cases) and incidence rate (97.5 cases per 100,000 population) occurred in the eastern health planning region. Incidence rates in the other health planning regions ranged from 9.5 to 33.2 cases per 100,000 population.

Chlamydia trachomatis Infection

During 1995, 12,287 cases of *Chlamydia trachomatis* infection were reported. Fifty-two percent occurred in blacks (6,405 cases, 524.2 per 100,000), 26% of the cases were in whites (3,141 cases, 63.1 per 100,000), 3% were in the other race category (393 cases, 112.8 per 100,000), and 19% had no race specified. The majority of cases (74%) were between the ages of 15 and 24 years. The female to male ratio was 11:1 (Figure 5). It should be noted that health department screening is limited to females.

Figure 5

Chlamydia trachomatis: Cases by Sex, Virginia, 1995



The fewest cases were reported in the fourth quarter (22%) and the most in the first quarter (27%). The central health planning region had the highest incidence rate of *Chlamydia trachomatis* infection (310.1 cases per 100,000 population), followed by the eastern region with 210.9 cases per 100,000 population.

The data are expected to underestimate the incidence of *Chlamydia trachomatis* infections because (1) screening has been limited to high risk females attending certain public health clinics, (2) as many as 75% of women and 25% of men with uncompli-

cated *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 10,342 cases of gonorrhea reported in Virginia in 1995, suggesting that there were more than 20,000 *C. trachomatis* infections last year, based on the CDC method to estimate cases.

Congenital Rubella Syndrome

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

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

Three laboratory confirmed cases of HME were reported in Virginia in 1995. All three were white males who ranged in age from 27 to 73 years. The onset of these cases occurred between April and

July. Two cases were reported from the southwest health planning region and one was from the northwest region. Ehrlichiosis is not officially reportable in Virginia; however, reports are recorded when they are received.

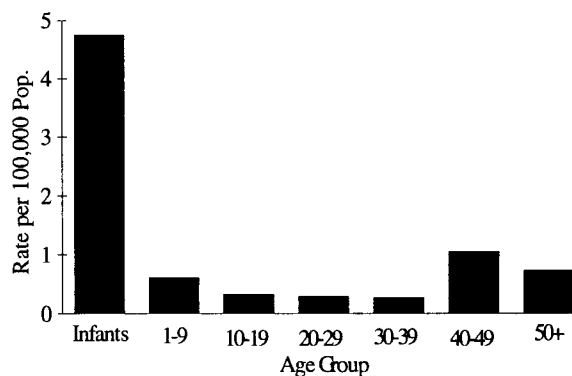
Encephalitis, Primary

Forty cases of primary encephalitis were reported in 1995 compared to 34 cases in 1994. The etiologic agent was reported as viral for 25 of these cases and unspecified for the remaining 15. Of the 25 reported as viral, ten were further specified as herpesvirus, one as cytomegalovirus and one as LaCrosse virus.

Cases occurred throughout the year such that no seasonal trend was established. Infants were at greatest risk for this disease (Figure 6), having an incidence rate of 4.8 cases per 100,000 population. Incidence rates for the other age groups ranged from 0.3 to 1.1 cases per 100,000 population. By race, the highest number of cases was reported among whites who also had the highest incidence rate. Males were as likely to be reported with this disease as females.

Figure 6

Primary Encephalitis: Rate by Age Group, Virginia, 1995



The northwest and eastern health planning regions had the highest and comparable incidence rates (1.0 cases per 100,000 population). Nine deaths were reported among these 40 cases of primary encephalitis. Five of the nine persons who died were female and four were male. The average age at death was 58 years.

Encephalitis, Post-Infectious

Six cases of post-infectious encephalitis were reported in 1995, the same number of cases as were reported in 1994. Five cases occurred among children following a bout with chickenpox. One case of post-infectious encephalitis was reported in an adult female whose preceding illness was not reported.

Four of the six cases were reported as white and two were black. The cases were evenly divided between males and females.

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

***Escherichia coli* O157:H7**

Escherichia coli O157:H7 is recognized as an important emerging pathogen. People at the extremes of age are especially susceptible to *E. coli* O157:H7-associated illness, but individuals of all ages may be affected. Symptoms include diarrhea, which usually becomes bloody several days after onset, associated with severe abdominal cramping. The most important complication of *E. coli* O157:H7 infection is hemolytic uremic syndrome (HUS). Although individual cases are not officially

reportable to the health department, in an effort to learn more about this disease, physicians and laboratory directors are encouraged to report confirmed cases of *E. coli* O157:H7 diarrheal illness and HUS for further investigation.

In 1995, 37 confirmed cases of *E. coli* O157:H7 were reported to the health department. Cases were more likely to occur during the warmer months. Age ranged from infant to 90 years old (mean = 27 years). Infants and children aged 1-9 years were at greatest risk for *E. coli* O157:H7 infection (1.2 and 1.1 cases per 100,000 population, respectively). Race was usually not reported. Twenty (54%) cases were female, 13 (35%) were male, and sex was not reported for 4 (11%) cases.

The highest incidence rate was in the southwest health planning region (0.8 cases per 100,000 population), followed by the northwest (0.7 per 100,000) and northern (0.6 per 100,000) regions.

Foodborne Outbreaks

Seven foodborne outbreaks were reported in 1995. The number of persons who became ill from each outbreak ranged from one to 118. *Salmonella enteritidis* was the etiologic agent in two outbreaks and *Clostridium* species (including a case of botulism) contributed to two others. A specific food item was implicated in six of the outbreaks; some type of meat or poultry product was responsible for four of these six outbreaks. The most common foodhandling practice which contributed to these outbreaks was improper storage or holding temperatures (Table 9).

Fungal Diseases

Other than histoplasmosis, fungal diseases are not officially reportable in Virginia; however, se-

lected fungal diseases are recorded when they are reported. In 1995, recorded fungal diseases other than histoplasmosis included four cases of cryptococcosis, two cases of coccidioidomycosis and one case of blastomycosis.

Four deaths were associated with these opportunistic infections. Three of the persons who died had HIV infection. The age of the persons who died ranged from 29 to 81 years.

Meningitis caused by *Cryptococcus neoformans* is also included under the heading Other Meningitis.

Giardiasis

Reported cases of giardiasis decreased for the second consecutive year. The 318 cases reported in 1995 is 6% less than the 337 cases reported in 1994 and 15% less than the 373 cases reported in 1993. Cases occurred throughout the year but peaked during July through October (Figure 7).

The incidence rate was highest for children aged 1-9 years (13.4 cases per 100,000 population), followed by adults aged 30-39 (6.1 per 100,000). Incidence rates by age are illustrated in Figure 8. Race was not reported for 100 (31%) cases. Of the cases

Figure 7

Cases of Giardiasis by Month of Onset, Virginia, 1995

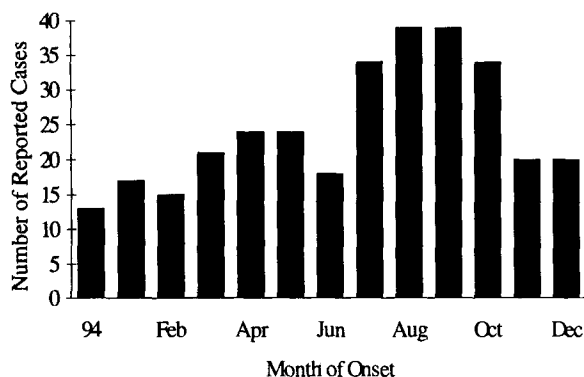
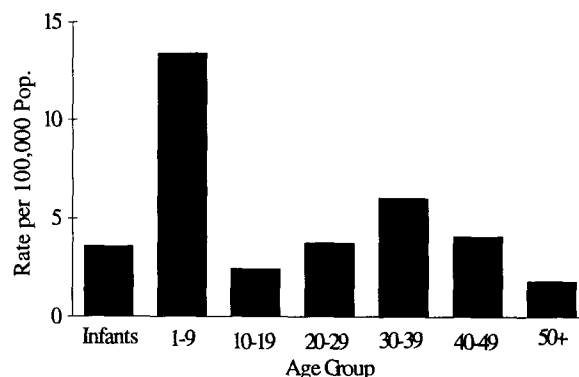


Figure 8

Giardiasis: Rate by Age Group, Virginia, 1995



for whom race was reported, persons in the other race category (11.2 cases per 100,000 population) were more likely to be infected than blacks (1.2 per 100,000) or whites (3.3 per 100,000). Males were slightly more likely than females to be reported with this disease.

The northern health planning region reported the most cases and had the highest incidence rate (7.2 cases per 100,000 population), followed by the southwest region (6.5 per 100,000). Incidence rates in the other three regions ranged from 3.0 to 3.4 cases per 100,000 population.

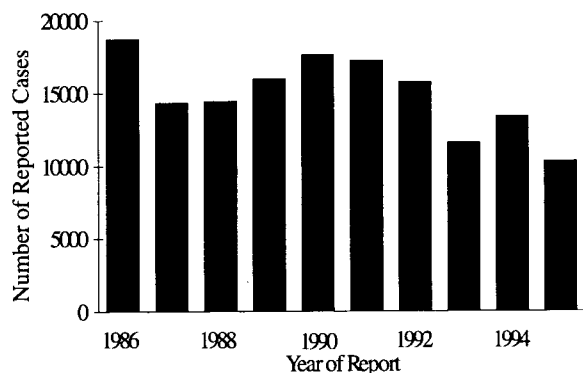
One outbreak caused by *Giardia* was investigated in 1995. Twenty-six persons who attended a company meeting which was held in a hotel became infected with the parasite. The investigation, however, did not determine the exact nature of the exposure which resulted in illness.

Gonorrhea

In 1995, 10,342 cases of gonorrhea were reported. This 23% decrease in cases compared to 1994 is shown in Figure 9.

Figure 9

**Gonorrhea: Ten Year Trend
Virginia, 1986-1995**



More than half (57%) of all gonorrhea cases in Virginia occurred in the 15 to 24 year age group. Seventy-nine percent of the cases were black (8,148 cases, 666.8 per 100,000), nine percent were white (904 cases, 18.2 per 100,000), one percent were in the other race category (108 cases, 31.0 per 100,000) and eleven percent were race unspecified (1,182 cases). The incidence rate for males was 169.2 cases per 100,000 compared to 146.9 per 100,000 for females.

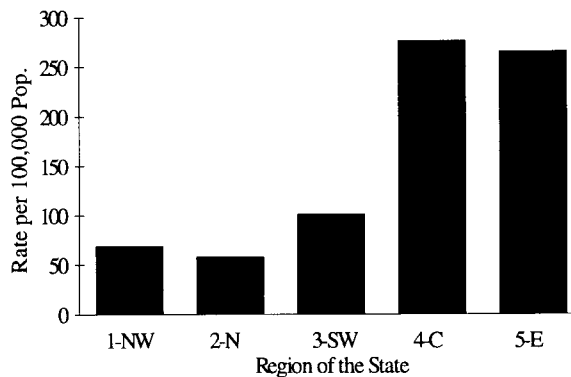
The central health planning region had the highest incidence rate for gonorrhea (276.3 cases per 100,000 population), followed by the eastern (265.3 per 100,000), southwest (101.0 per 100,000), northwest (68.8 per 100,000) and northern (57.8 per 100,000) regions (Figure 10).

Granuloma Inguinale

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

Figure 10

**Gonorrhea: Rate by Region
Virginia, 1995**

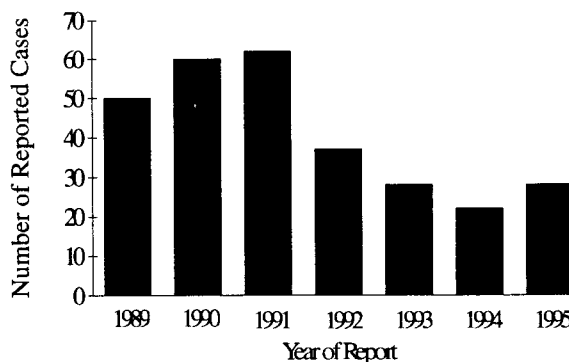


Haemophilus influenzae Infection, Invasive

The number of reported cases of invasive infection due to all types of *Haemophilus influenzae* increased slightly in Virginia in 1995. The 28 cases reported in 1995 reversed a three year decline in the annual number of reported cases (Figure 11). An increase in the use of vaccine to protect infants and children from *H. influenzae* type B (Hib) infection has contributed to the decline in this disease in children under five years of age. Peak activity for

Figure 11

**Invasive H. influenzae: Trend
Virginia, 1989-1995**



dence rates in the other health planning regions were less than 2.0 cases per 100,000 population.

One death was reported among the 118 hepatitis B cases reported in 1995.

Hepatitis Non-A Non-B

Twenty-one cases of hepatitis non-A non-B were reported in 1995 compared to 26 cases in 1994. Disease onset was fairly evenly distributed throughout the year.

Cases ranged in age from 23 to 69 years with a mean age of 40. Adults aged 40-49 were more likely to be reported with this disease than the other age groups (0.9 cases per 100,000 population). Blacks had an incidence rate (0.6 cases per 100,000 population) that was twice as high as whites and the other race category. There was little variation in the rates for males and females.

Incidence rates by health planning region ranged from a low of 0.2 cases per 100,000 population in the northwest to a high of 0.4 per 100,000 in the eastern region.

Hepatitis C virus (HCV) has been identified as the primary etiologic agent of hepatitis non-A non-B in the United States. Eight (38%) of the hepatitis non-A non-B cases reported in Virginia were reported to have tested positive for antibodies to HCV.

One death due to viral hepatitis non-A non-B was reported in 1995.

Hepatitis Unspecified

The annual number of reported cases of hepatitis unspecified dropped to an all time low of three cases. The decline in the number of reports of this

notifiable condition can be attributed to an increase in the use of laboratory tests to confirm clinically diagnosed hepatitis. Onset of these cases occurred in April, July and October.

Cases ranged in age from 23 to 49 and included two blacks and one white. The female to male ratio was 2:1.

All three cases were reported from the eastern health planning region. One case died.

Histoplasmosis

Four cases of histoplasmosis were reported in 1995, representing considerably less morbidity than the 180 cases reported in 1994 when an outbreak of histoplasmosis occurred. The four cases in 1995 ranged in age from 20 to 62 years. One black female and one white male were reported. Race was not reported for two male cases. No deaths were reported.

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

HIV

During 1995, 1,268 HIV infections were reported, bringing the cumulative total of cases reported since 1989 to 8,228. This represents a 12.8% increase over the number of cases reported in 1994. Trends in HIV infection are important because they are likely to be predictive of future AIDS trends.

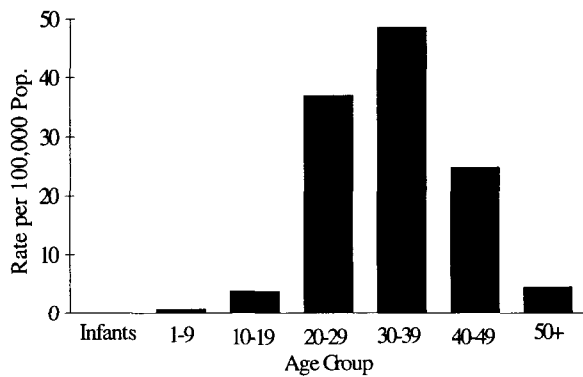
Males represented the majority (939 cases, 74%) of HIV infection reports and were three times more

likely to be reported with the infection than females (29.3 per 100,000 vs. 9.8 per 100,000). During 1995, the majority of persons reported with HIV infection were black (810 cases, 64%), followed by whites (31%) and persons in the other race category 4%. Race was not reported for 12 cases. Nonwhites were seven times more likely than whites to be infected, having an incidence rate of 54.7 per 100,000 compared to 8.0 per 100,000 in whites.

Persons in the 30-39 year age group had a higher incidence rate than persons in their twenties (536 cases, 48.6 per 100,000 vs. 383 cases, 36.9 per 100,000, respectively), as shown in Figure 16. Six pediatric HIV infections were reported in 1995. All of these children were infected through maternal transmission. Sixteen pediatric cases had been reported in 1994.

Figure 16

**HIV Infection: Rate by Age Group
Virginia, 1995**

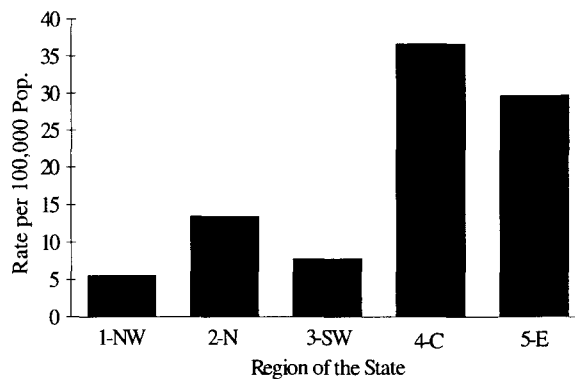


Compared to AIDS, persons with HIV infection were slightly more likely to have become infected through heterosexual contact (14% of reported HIV cases vs. 13% of reported AIDS cases) and less likely to attribute their infection to men having sex with men (35% of reported HIV cases vs. 49% of reported AIDS cases). Females comprised a larger proportion of HIV infections (26%) than AIDS cases (18%).

The highest HIV incidence rate was calculated for the central health planning region (36.6 cases per 100,000 population), followed by the eastern (29.6 per 100,000), northern (13.4 per 100,000), southwest (7.8 per 100,000), and northwest (5.6 per 100,000) regions (Figure 17).

Figure 17

**HIV Infection: Rate by Region
Virginia, 1995**

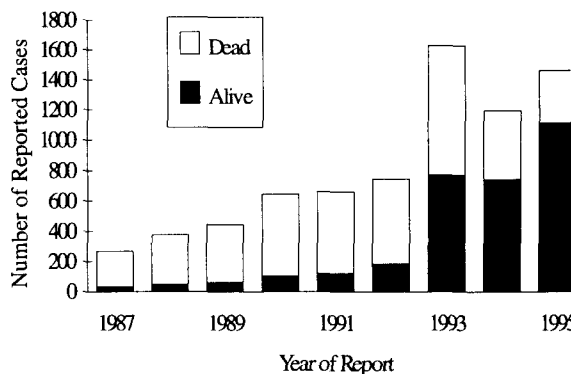


AIDS

Since the first AIDS cases were reported in 1982, the cumulative number of cases reported through the end of 1995 is 7,768, with 4,581 deaths (59%). In 1995, 1,461 cases were reported, representing a 22% increase from 1994 (Figure 18). This increase is due in part to increased efforts by the surveillance pro-

Figure 18

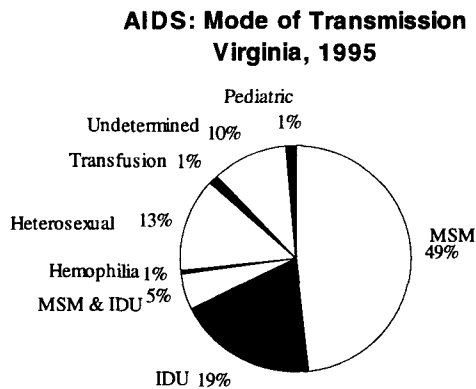
**Reported Cases of AIDS in Virginia
by Year of Report and Vital Status**



gram to encourage reporting. In 1994, Virginia experienced a significant decrease in reported cases. This was primarily due to the increased number of cases reported in 1993 as a result of the expanded AIDS case definition. To determine if the 27% decrease in AIDS reporting in 1994 was the result of under-reporting, Virginia expanded the number and scope of studies conducted in 1995 to assess completeness of reporting throughout the state, resulting in the second largest percentage increase in reporting nationwide.

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 1995, men having sex with men (MSM) accounted for the greatest percentage of AIDS cases (49%), followed by IDU (19%). An additional 5% of cases had both of these risk factors (Figure 19).

Figure 19



Of the reported AIDS cases, 4% were in the 15-24 year age group, with the majority between the ages of 30 and 49 (1,045 cases, 72%). The age group with the highest incidence rate was the 30-39 year olds with 62.8 cases per 100,000 population. Seventeen pediatric AIDS cases were reported in 1995 compared to 32 in 1994. The majority (88%)

of these children were infected via perinatal transmission.

This is the third consecutive year that the majority of reported AIDS cases were black (749 cases, 51%). An additional 660 (45%) cases were white and 52 (4%) cases occurred in the other race category. Blacks had an incidence rate of 61.3 cases per 100,000 population, which was four times higher than whites (13.3 per 100,000) and persons in the other race category (13.8 per 100,000). Males also represented a disproportionate share, with an incidence rate almost five times higher than females (37.1 vs. 8.1 cases per 100,000 population).

The eastern health planning region had the highest incidence rate (33.0 cases per 100,000 population), followed by the central (28.3 per 100,000), northern (22.7 per 100,000), southwest (12.1 per 100,000), and northwest (8.4 per 100,000) health planning regions.

Persons with AIDS develop a variety of life-threatening opportunistic infections due to immunosuppression. The most commonly diagnosed disease was *Pneumocystis carinii* pneumonia (PCP). One-fifth (21%) of the cases reported during 1995 developed PCP during the course of their illness. Other frequently diagnosed conditions include HIV wasting syndrome (10%), esophageal candidiasis (7%), *Mycobacterium avium* complex (6%), Kaposi's sarcoma (4%), and HIV encephalopathy (3%). Nearly half (49%) of the reported cases were reported as immunologic (low CD4 counts) under the 1993 expanded case definition of AIDS.

Influenza

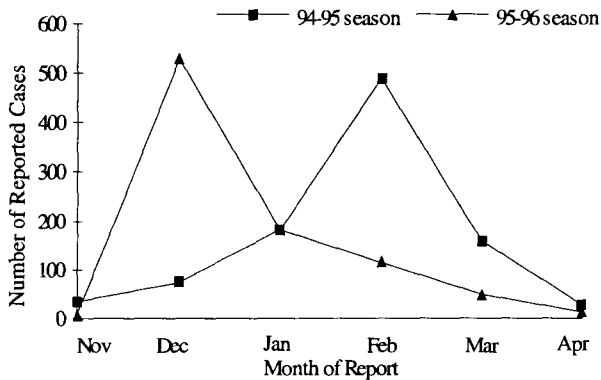
The influenza season in Virginia usually runs from the fourth quarter (October - December) of one year through the first quarter (January - March) of the following year. During this period, the health department conducts active influenza surveillance

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 1994-95 influenza season, influenza type A and influenza type B were isolated in Virginia. Widespread activity occurred from early January to late February, with peak activity occurring in mid-February 1995. During the 1995-96 season, influenza type A and influenza type B were isolated in Virginia with widespread activity occurring from late December through mid-January. Activity peaked during the last week of December 1995 (Figure 20).

Figure 20

Influenza-like Illness Reported by Sentinel Physicians in 2 "Flu Seasons"



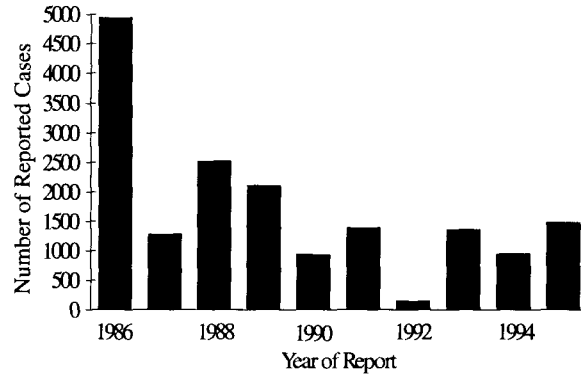
Through the passive surveillance system, 1,484 cases of influenza were reported during calendar year 1995 compared to 957 cases in 1994 and 1,363 cases in 1993 (Figure 21).

Influenza incidence rates throughout the state for calendar year 1995 ranged from a low of 1.0 cases per 100,000 population in the central health plan-

ning region to a high of 79.3 per 100,000 population in the southwest region. The rates are based on passive reporting.

Figure 21

**Influenza: Ten Year Trend
Virginia, 1986-1995**



Kawasaki Syndrome

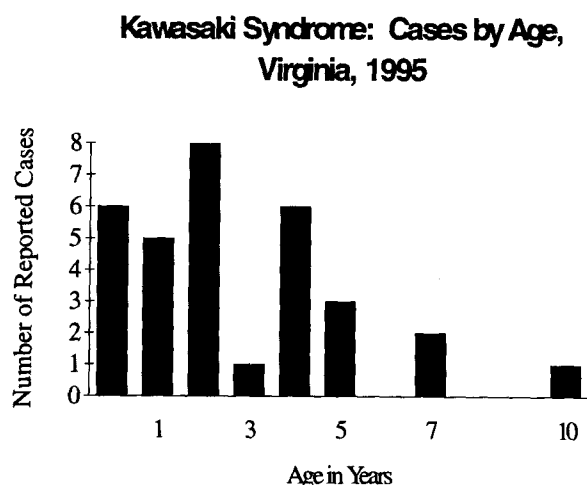
Thirty-two reported cases of Kawasaki syndrome were confirmed in 1995 compared to 27 in 1994 and 31 in 1993. Most (97%) of the cases that had onset in 1995 occurred during the first three quarters of the year with only one case occurring during the last quarter.

Twenty-nine (91%) of the cases of this early childhood condition occurred in children five years of age and younger (Figure 22). Two of the reported cases were seven years of age and one case was age ten. The other race category had the highest incidence rate (1.4 cases per 100,000 population), followed by blacks (1.0 per 100,000) and whites (0.3 per 100,000). Males were more likely than females to be reported with Kawasaki syndrome (0.6 cases per 100,000 population vs. 0.4 cases per 100,000 population, respectively).

The northern health planning region reported the highest number of cases and had the highest incidence rate (14 cases, 0.9 per 100,000 population). Incidence rates in the other health planning regions ranged from 0.2 cases per 100,000 population in the

northwest region to 0.6 per 100,000 in the eastern region. No cases were reported from the central region.

Figure 22



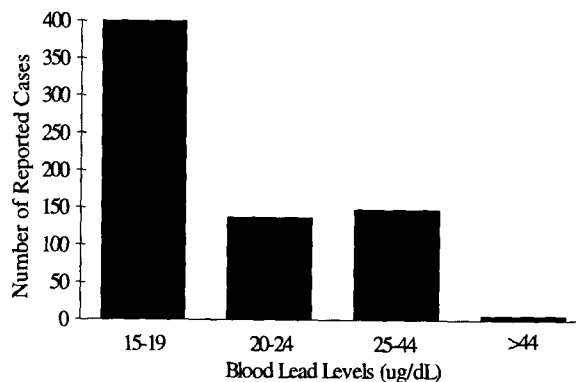
Lead - Elevated Levels in Children

The 691 reported cases of elevated blood lead levels in children in 1995 was a 25% decrease from the 920 cases reported in 1994. Because this condition became reportable in Virginia in mid-1993, 1995 marks the second full year of reporting. Any child age 15 years or younger, with a venous blood lead level greater than or to equal to 15 $\mu\text{g}/\text{dL}$, is reportable to the health department.

Four hundred (58%) of the children had blood lead levels in the 15-19 $\mu\text{g}/\text{dL}$ range, the category for which the Centers for Disease Control and Prevention (CDC) recommends nutritional and educational interventions and more frequent screening; 285 (41%) had levels in the 20-44 $\mu\text{g}/\text{dL}$ range, for which CDC recommends medical evaluation and environmental evaluation and remediation; six (1%) had levels 45 and higher, requiring both medical and environmental interventions (Figure 23).

Figure 23

Elevated Blood Lead Levels: Age 0-15 years, Virginia, 1995

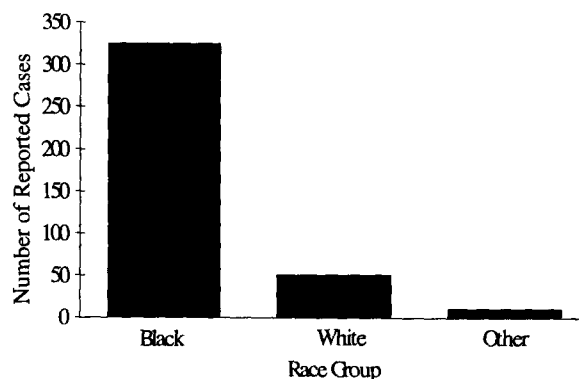


Children aged five years and younger comprised 92% of the reported cases with one and two years being the most common ages at diagnosis (31% and 23% of reported cases, respectively). Race was reported for 395 (57%) of the cases. Of these, 325 (82%) were black, 51 (13%) were white and 19 (5%) were in the other race category (Figure 24). Males outnumbered females 1.3:1.

Cases were reported from all health planning regions: northwest, 30 cases; northern, 20 cases; southwest, which includes the federally funded lead prevention program in Lynchburg, 146 cases; central, which includes funded programs in Petersburg and Richmond, 280 cases; and eastern, which in-

Figure 24

Race of Children with Elevated Blood Lead Levels, Virginia, 1995



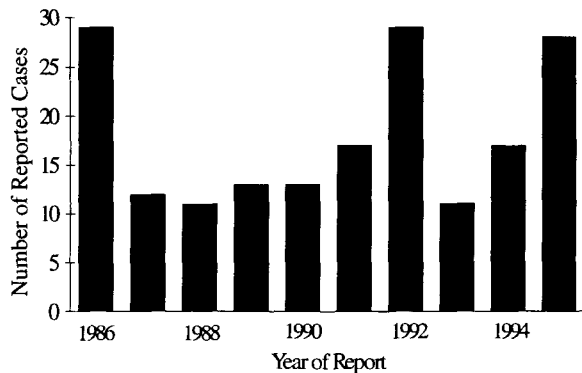
cludes the programs in Norfolk and Portsmouth, 215 cases.

Legionellosis

Twenty-eight confirmed cases of legionellosis were reported in 1995, a 65% increase from the 17 cases reported in 1994 (Figure 25). Males were more likely to be reported with this disease than females (17 cases, 0.5 per 100,000 population vs. 11 cases, 0.3 per 100,000 population). Age ranged from 20 to 84 years (mean = 57 years). Twenty-one (75%) persons reported with legionellosis were white, two (7%) were black, and one (4%) was in the other race category. Race was not reported for four cases.

Figure 25

Legionellosis: Ten Year Trend
Virginia, 1986-1995



Information on risk factors for illness was available for 22 persons, 18 of whom had at least one of the following risk factors: immunocompromised status, diabetes mellitus, or cigarette smoking. Fifteen persons reported smoking ten or more cigarettes per day.

Cases were reported from each health planning region, ranging from two cases from the central health planning region (0.2 per 100,000 population)

to ten from the northwest (1.1 per 100,000). Three deaths were reported, all in women age 60 and older.

Leptospirosis

The last reported cases of leptospirosis in Virginia were in 1992.

Listeriosis

Seventeen cases of listeriosis were reported in 1995 (including three cases of meningitis) which is the same as the number of cases reported in 1994. Cases were fairly evenly distributed throughout the year with no seasonal trend noted.

Persons with listeriosis ranged in age from infants to 83 years (mean = 52 years). Infants were at greatest risk for this disease, with an incidence rate of 2.4 cases per 100,000 population. Of the 13 persons for whom race was reported, seven were white (0.1 cases per 100,000 population), five were black (0.4 cases per 100,000 population) and one was in the other race category (0.3 cases per 100,000 population). Males and females had comparable incidence rates.

From two to six cases were reported from each of the health planning regions. Incidence rates ranged from a low of 0.1 cases per 100,000 population in the northern and eastern regions to a high of 0.5 per 100,000 in the central region. One related death in an adult male was reported for this disease.

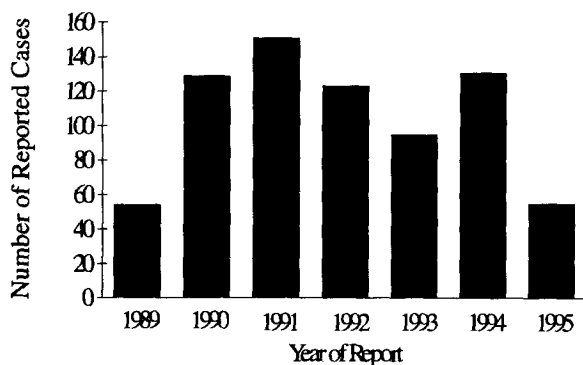
Meningitis due to listeriosis is also included under the heading Bacterial Meningitis.

Lyme Disease

Fifty-five cases of Lyme disease were reported in 1995, compared to 131 cases in 1994. The decrease in the number of reported cases can be attributed to a loss in funding dedicated to Lyme disease surveillance. Figure 26 shows the six year trend since Lyme disease became a reportable condition in February 1989.

Figure 26

Lyme Disease: Trend
Virginia, 1989-1995

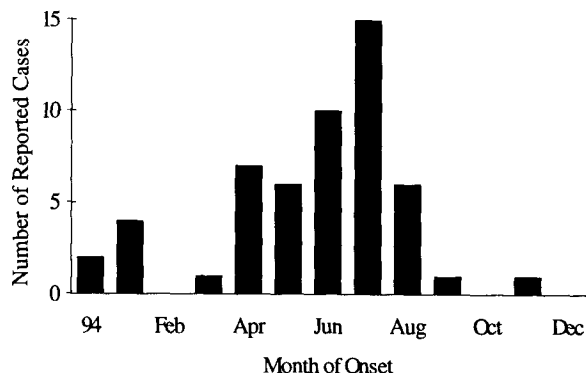


Eighty percent of cases occurred during April through August, peaking in July, with the remaining cases distributed throughout the year (Figure 27). Persons with Lyme disease ranged in age from 3 to 75 years (mean = 36 years). Females accounted for 55% of reported cases (incidence rate 0.9 cases per 100,000 population vs. 0.8 per 100,000 population for males). The incidence rate among whites (42 cases, 0.8 per 100,000 population) was higher than in blacks (1 case, 0.1 per 100,000 population) and in persons in the other race category (2 cases, 0.6 per 100,000 population). Race was not reported for ten persons.

The predominant symptom reported was erythema migrans (73%). Other symptoms reported were arthritis (27%), radiculoneuropathy (7%), Bell's palsy (7%), and lymphocytic meningi-

Figure 27

Cases of Lyme Disease by
Month of Onset, Virginia, 1995



tis (2%). Serologic testing was positive for 40% of cases, negative for 25% of cases, and not reported for the remainder. For early disease, serologic test results are usually negative.

Cases of Lyme disease were reported from all health planning regions with the highest incidence rate (1.0 cases per 100,000 population) reported from both the northwest and central regions. *Borrelia burgdorferi*, the causative organism for Lyme disease in this country, has been isolated from rodents and ticks in several counties in Virginia. There have been no human isolates of this organism in Virginia to date.

Lymphogranuloma Venereum

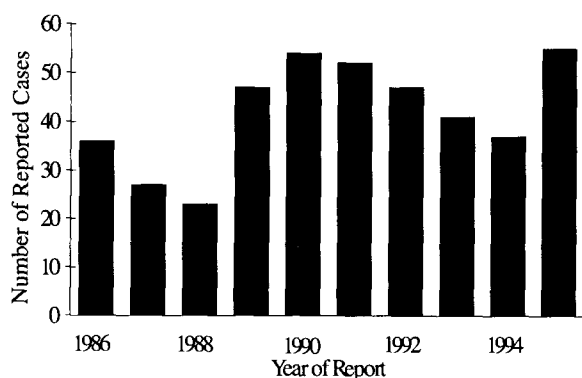
One case of this disease was reported in 1995. This represents the first report received since 1992.

Malaria

Fifty-five cases of malaria were reported in 1995; this was an increase from the 37 cases reported in 1994 (Figure 28). The age group that experienced the highest incidence rate was 20-29 year olds with a rate of 1.5 cases per 100,000 population. This was followed by 10-19 year olds with a rate of 1.2 per 100,000 (Figure 29).

Figure 28

Malaria: Ten Year Trend
Virginia, 1986-1995



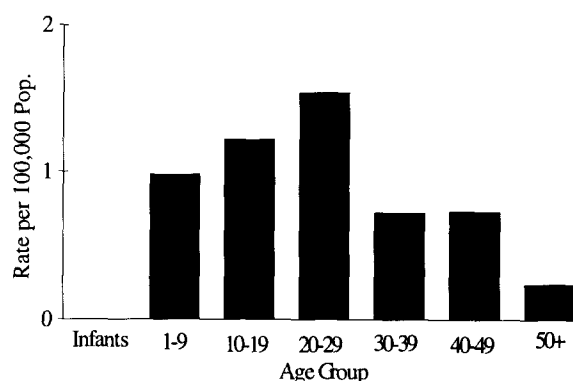
Race was reported as unknown in ten of the cases. When race was reported, the other race category had the highest incidence rate (4.3 cases per 100,000 population). The next highest rate was reported for blacks (1.6 cases per 100,000 population). The rate for males was slightly higher than that for females (0.9 vs. 0.8 cases per 100,000 population).

The majority (87%) of cases were reported from the northern health planning region. The countries of probable acquisition were Africa (58%), Central America (18%), and Asia (16%). Species was reported for 52 of the 55 cases. *Plasmodium falciparum* was reported in 25 cases, 23 of which had travel histories to Africa. *P. vivax* accounted for 23 of the cases and travel was divided between Asia, Africa, and Central America. *P. malariae* was reported in 4 cases. Only one reported case was in

U.S. military personnel; the rest of the cases were reported in U.S. civilians and citizens of foreign countries.

Figure 29

Malaria: Rate by Age Group
Virginia, 1995



Measles

No cases of measles were reported among Virginia residents in 1995. **This is the first year since reporting of measles began in Virginia in 1915 that no cases were identified.**

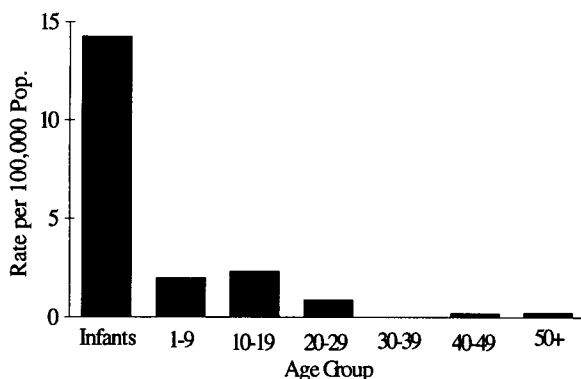
Meningococcal Infection

The number of reported meningococcal infections decreased from the 69 cases reported in 1994 to 64 in 1995 but remained above the ten year average number of 61.9 cases reported per year. Illness onset peaked during the first quarter of the year when 24 (38%) cases occurred.

Infants had the highest incidence rate (14.3 cases per 100,000 population), followed by persons in the 10-19 year age group (2.3 cases per 100,000 population) and the 1-9 year age group (2.0 per 100,000 population). The incidence rate for all other age

Figure 30

**Meningococcal Infection:
Rate by Age Group, Virginia, 1995**



groups was less than 1.0 cases per 100,000 population (Figure 30).

Blacks and persons in the other race category (1.6 and 0.9 cases per 100,000 population, respectively) had a higher incidence rate than whites (0.7 per 100,000 population). Cases were almost evenly divided between males and females.

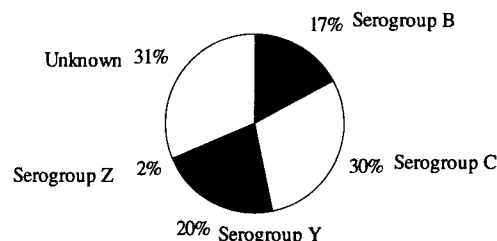
The incidence rate by health planning region ranged from a low of 0.7 cases per 100,000 population in the northwest region to a high of 1.4 per 100,000 in the central region.

The serogroup was reported for 44 (69%) of the cases: 19 were group C, 13 group Y, 11 group B, and 1 group Z (Figure 31). The organism was isolated from cerebrospinal fluid in 18 cases, from blood in 36 cases, and from both in nine cases.

Three epidemiologically linked cases of serogroup C disease among students were reported in 1995. The first two cases occurred in student athletes who had dates of onset within two days of each other. Both students had competed in the same track meet but attended different schools. A third student who attended the same school as one of the athletes was diagnosed with meningococcal disease within 30 days of the first two cases.

Figure 31

**Meningococcal Infections:
by Serogroup, Virginia, 1995**



Three females and two males, ranging in age from infant to 81 years, died from meningococcal disease. Three of the five deaths were related to serogroup C disease, one had serogroup B and the serogroup was not reported for one.

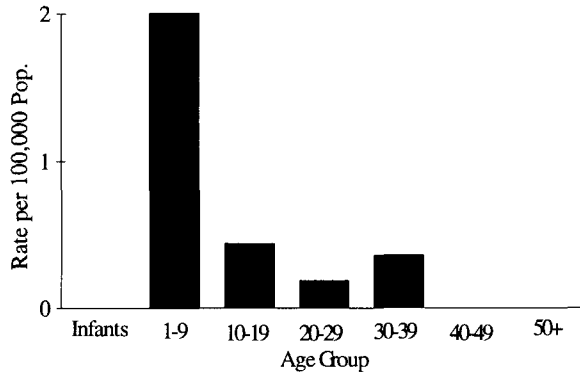
Mumps

Reported cases of mumps decreased in 1995 compared to 1994. The 28 cases reported in 1995 were 42% less than the 48 cases reported in 1994, which had represented the first annual increase in the number of reported cases since 1989.

Cases occurred throughout the year with five to eight cases reported quarterly. Seventeen (61%) cases were reported in the 1-9 year age group. The remaining cases ranged in age from 10 to 37 years (mean = 12 years). Incidence rates of mumps by age group are illustrated in Figure 32. By race, blacks (11 cases, 0.9 per 100,000) were at a greater risk for mumps than whites (10 cases, 0.2 per 100,000) and persons in the other race category (2 cases, 0.6 per 100,000). Males were twice as likely to be reported with this disease as females.

Figure 32

Mumps: Rate by Age Group, Virginia, 1995



The central and eastern health planning regions reported the highest number of cases (8 and 12 cases, respectively) and the highest incidence rates (0.7 per 100,000 each). Six cases were reported from the southwest region and two from the northern region. No cases were reported from the northwest region.

Nosocomial Outbreaks

Three nosocomial outbreaks were reported in 1995. One outbreak was characterized by symptoms of gastrointestinal illness. Onset of illness occurred in a nursing home during the month of February and a viral etiology was suspected but not confirmed. Illness was reported first among employees and spread to residents. No deaths were reported. An outbreak of postoperative wound infections following cataract surgery occurred at an outpatient center. Eight cases occurred during 1994 and 1995 and were primarily associated with one surgeon. The third outbreak involved five cases of acute hepatitis B infections that occurred in long-term care residents of a health care facility. Four of the cases had onset of illness within a one year period (June 1994 to July 1995). The investigation of this outbreak did not determine the source of infection.

Occupational Illnesses

During 1995, 214 cases of the following occupational illnesses were reported to the health department: asbestosis (176 cases, 82%), lead poisoning (37 cases, 17%) and conjunctivitis (1 case, 0.5%). The remainder of this section will present further information on the cases of asbestosis and lead poisoning.

Of the 176 persons reported with asbestosis, all but two were male. Cases ranged in age from 43 to 87 years (mean = 66 years). Race was not reported for any of the cases.

Cases were only reported from the eastern (98%) and central (2%) health planning regions. The industries employing the most persons reported with asbestosis were shipbuilding (110 cases, 63%), the military (23 cases, 13%) and the railroad industry (16 cases, 9%).

The 37 adult males reported with elevated blood lead levels ranged in age from 19 to 51 years (mean = 33 years). Cases were reported from all five health planning regions, ranging from two to eleven cases per region.

Two workers were employed in the stained glass industry. The industry was not reported for the remaining workers.

Ophthalmia Neonatorum

Six cases of ophthalmia neonatorum were reported in 1995; all were due to *Chlamydia trachomatis* infection. Three cases had been reported the previous year.

Other Meningitis

Forty-nine cases of meningitis caused by organisms other than bacteria and viruses were recorded in 1995. Thirty-one (63%) cases were caused by *Cryptococcus neoformans* and the organism was not specified for the remaining 18 cases. Meningitis caused by *C. neoformans* was exclusively reported in adults. These cases ranged in age from 24 to 83 years (mean = 42 years). Eight were also reported with human immunodeficiency virus infection (HIV).

Cases of meningitis in which an organism was not reported ranged in age from infancy to 83 years (mean = 33 years). None of these persons was reported with HIV infection. As with bacterial and aseptic meningitis, over all, blacks were at greatest risk for this disease (12 cases, 1.0 per 100,000). Almost four times as many males as females were reported (38 cases, 1.2 per 100,000 vs. 11 cases, 0.3 per 100,000).

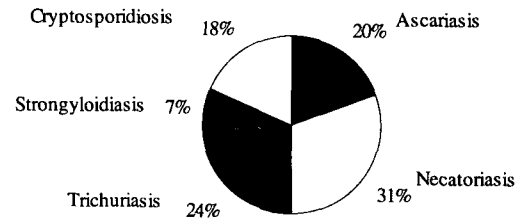
Nineteen deaths occurred among persons reported with this category of meningitis. Fifteen (79%) of these had *C. neoformans* infection, eight (53%) of whom also had HIV infection. Persons who died ranged in age from 25 to 83 years. Males accounted for 79% of the deaths.

Parasites, Intestinal

In addition to amebiasis and giardiasis, selected reports of other parasitic intestinal diseases are recorded. In 1995, 82 cases of these intestinal parasites were reported: 25 cases of necatoriasis (hookworm), 20 cases of trichuriasis (whipworm), 16 cases of ascariasis (roundworm), 15 cases of cryptosporidiosis and 6 cases of strongyloidiasis (Figure 33).

Figure 33

Intestinal Parasites Virginia, 1995



Cases occurred throughout the year with no seasonal trend noted. Adults in the 20-29 year age group were at greatest risk for these infections. They had an incidence rate of 2.0 cases per 100,000 population which was followed closely by the 1-9 year age group (1.8 per 100,000). No cases were reported in infants. The majority of cases were reported in the other race category (52 cases, 14.9 per 100,000) followed by whites (13 cases, 0.3 per 100,000) and blacks (2 cases, 0.2 per 100,000). Race was not reported for 15 cases.

Forty (49%) cases were reported from the central health planning region, which had an incidence rate of 3.6 cases per 100,000 population. Incidence rates in the other health planning regions ranged from 0.2 cases per 100,000 population in the northern region to 1.3 per 100,000 in the southwest.

Pertussis

Thirty-one cases of pertussis were reported in 1995 compared to 37 cases in 1994 and 75 cases in 1993 (Figure 34). Peak activity occurred during the third quarter of the year when 15 cases occurred.

