

***DESCRIPTIVE EPIDEMIOLOGY OF
REPORTABLE DISEASES***

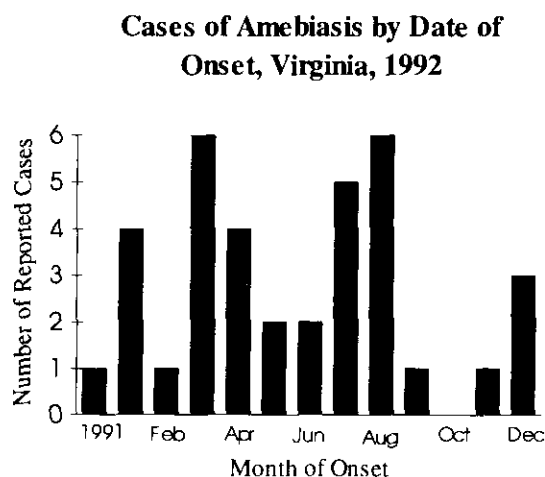
Acquired Immunodeficiency Syndrome (AIDS)

See HIV/AIDS.

Amebiasis

Thirty-six cases of amebiasis were reported in 1992, representing a 16.1% increase over the 31 cases reported in 1991 but well below the ten year annual mean of 45.6 cases. This is the first time since 1983 that an increase in cases of amebiasis was observed for two consecutive years. Onset of illness ranged from four to 12 cases per quarter as shown in Figure 1.

Figure 1



The majority (72.2%) of the cases were between 10 and 39 years of age. Persons in the 20-29 age group (13 cases, 1.2 per 100,000) were most likely to be reported with amebiasis. No cases were reported in infants. The other race category accounted

for 16 cases (4.9 per 100,000), blacks five cases (0.4 per 100,000) and whites seven cases (0.2 per 100,000). Race was unknown for the remaining eight cases. Females were as likely as males to be reported.

Nineteen (53%) of the cases were reported from the northern health planning region, followed by five cases each from the eastern and southwest regions, four cases from the central region and three cases from the northwest region. The incidence rate of 1.3 cases per 100,000 population in the northern health planning region was three times higher than any other region.

Anthrax

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

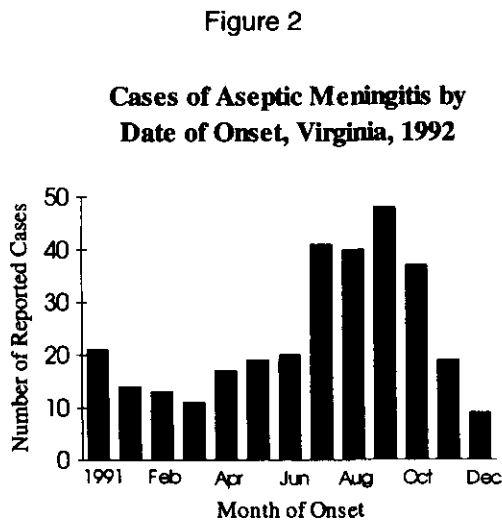
Arboviral Infection

No cases of arboviral infection were reported in Virginia in 1992. The last time a case of arboviral infection was reported in Virginia was in 1990.

Aseptic Meningitis

During 1992, 310 cases of aseptic meningitis were reported compared to 463 cases in 1991. As in most years, cases occurred primarily during the

summer and fall. Sixty percent of the reported cases had a date of onset between June and October, with September being the peak month, when 48 cases occurred (Figure 2).



The etiologic agent was reported for seven of the cases. All seven were enteroviruses (6 echoviruses and 1 unspecified).

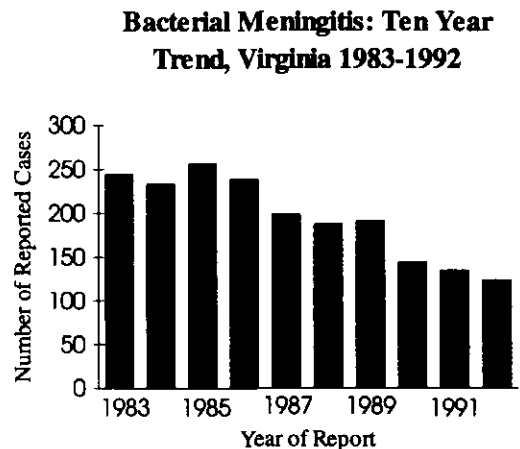
Infants had an incidence rate of 60.5 cases per 100,000 population, which was nine times greater than any other age group. More than half (59%) of the reported cases were white, however, blacks had the highest incidence rate (4.3 per 100,000), followed by whites (3.9), and then the other race category (3.3). Males were more likely than females to be reported with incidence rates of 5.4 and 4.6 per 100,000, respectively.

For the third consecutive year, the northern health planning region had the highest incidence rate of aseptic meningitis (7.5 cases per 100,000 population) with the eastern region a close second (7.0 per 100,000), followed by the northwest (3.8 per 100,000), southwest (2.7 per 100,000) and central (2.3 per 100,000) regions.

Bacterial Meningitis

The decrease in the number of reported cases of bacterial meningitis continued a seven year trend which began in 1986. The 124 cases in 1992 represented the fewest cases reported since a high of 256 cases in 1985 as presented in Figure 3. One explanation for the continual downward trend in reported cases is the decrease in disease due to *H. influenzae* infection. In 1986, *H. influenzae* accounted for 54% of the reported cases of bacterial meningitis compared to 24.4% in 1991 and 15.3% in 1992. The most commonly reported etiologic agents in 1992 were *S. pneumoniae* (45 cases, 36.3%) and *H. influenzae* (19 cases, 15.3%), as presented in Table 8.

Figure 3



The majority (51.6%) of the bacterial meningitis cases that were reported in 1992 occurred during the first half of the year with peak activity occurring during the first quarter of the year. Infants had the highest incidence rate (45.9 cases per 100,000) followed by the 50 and older age group (2.3 cases per 100,000). The incidence rate was more than twice as high in blacks compared to whites. The incidence rate was only slightly higher for females than for males (2.1 and 1.9 per 100,000, respectively).

Table 8. Etiology of Bacterial Meningitis Cases Reported in Virginia, 1992

Organism	Number of Cases	Percent of Cases
<i>Enterobacter cloacae</i>	1	0.81
<i>Escherichia coli</i>	2	1.61
<i>Haemophilus influenzae</i>	19	15.32
<i>Listeria monocytogenes</i>	3	2.42
<i>Pseudomonas aeruginosa</i>	1	0.81
<i>Serratia marcescens</i>	1	0.81
Staphylococcus:		
<i>S. aureus</i>	3	2.42
<i>S. epidermidis</i>	2	1.61
<i>S. unspecified</i>	1	0.81
Streptococcus:		
<i>S. pneumoniae</i>	45	36.29
Group A	1	0.81
Group B	12	9.68
Group D	2	1.61
<i>Enterococcus</i>	1	0.81
unspecified	3	2.42
Unspecified	27	21.77
TOTAL	124	100.00

The highest number of cases and incidence rate (48 cases, 3.0 per 100,000) was observed in the eastern health planning region. Incidence rates in the other four regions ranged from 0.7 cases per 100,000 population in the central region to 2.3 in the northwest and southwest regions.

Twenty-six deaths due to bacterial meningitis were reported in 1992. The majority (46.2%) of the deaths were due to *S. pneumoniae* infection and 50% of those were among infants and the elderly (65 years and older). Meningitis caused by *N. meningitidis* is included under the heading Meningococcal Infection.

Botulism

No cases of botulism were reported in Virginia in 1992. The last reported case occurred in 1991.

Brucellosis

No cases of brucellosis were reported in 1992 compared to two cases per year in 1991 and 1990.

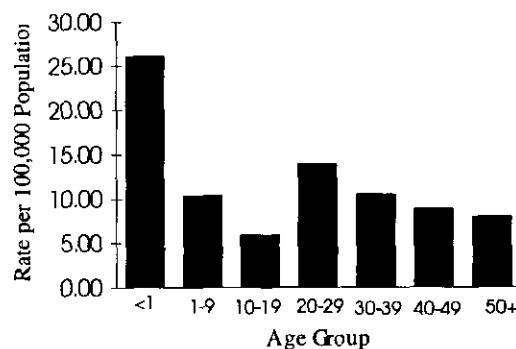
Campylobacteriosis

The 656 cases of *Campylobacter* infection reported in 1992 represented a 2.5% increase over the 640 cases reported in 1991. In contrast, the number of *Salmonella* and *Shigella* infections decreased 27.1% and 34.1%, respectively.

Sixty-five percent of the cases with a 1992 onset date were ill either in the second or third quarter of the year. The highest incidence rate (26.1 cases per 100,000 population) was observed among infants, followed by adults aged 20-29 (14.0 per 100,000). Incidence rates by age group are shown in Figure 4. The incidence rate in whites was 5.7 cases per 100,000 population compared to 3.2 per 100,000 in blacks and 2.1 per 100,000 in the other race category. Males had the highest number of cases and

Figure 4

Campylobacteriosis: Rate by Age Group, Virginia, 1992



incidence rate (328 cases, 10.8 per 100,000 males vs. 309 cases, 9.8 per 100,000 females).

The northwest health planning region reported the highest number of cases (142) and had the highest incidence rate (17.0 per 100,000) for the second consecutive year. Rates in the other health planning regions were as follows: central 14.0; northern 11.3; southwest 8.6; and eastern 5.8 per 100,000.

Chancroid

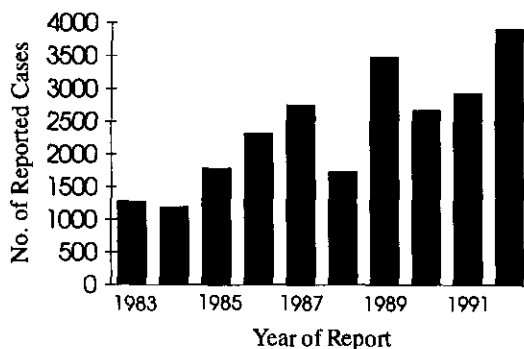
No cases of chancroid were reported in 1992. Thirteen cases had been reported in 1991.

Chickenpox

The 3,911 cases of chickenpox were 32.9% more than the 2,942 cases reported in 1991 and 85.4% higher than the mean for the previous ten years (Figure 5). The eastern health planning region was

Figure 5

Chickenpox: Ten Year Trend
Virginia, 1983-1992



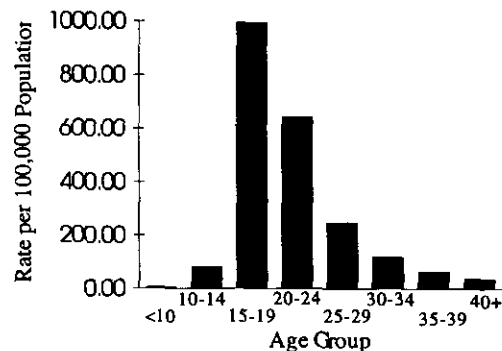
disproportionately represented (188.1 cases per 100,000 population). Rates for the other regions were as follows: northern region (34.5 per 100,000), central region (15.3 per 100,000), northwest region (13.6 per 100,000), and southwest region (12.6 per 100,000).

Chlamydia trachomatis Infection

During 1992, 11,305 cases of *Chlamydia trachomatis* infection were reported. Forty-four percent of the cases were black (5,000 cases, 433.3 per 100,000), 30.4% were white (3,436 cases, 73.0 per 100,000), 2.9% were in the other race category (98.8 per 100,000) and 22.5% were race unspecified. The majority of the cases (83.9%) were between the ages of 10 and 29, with 41.8% of the cases in the 10-19 age group (4,727 cases, 562.5 per 100,000). Teenagers age 15-19 had the highest incidence rate, followed by persons age 20-24, as shown in Figure 6. The female to male ratio was 18 to 1.

Figure 6

Chlamydia trachomatis: Rate by
Age Group, Virginia, 1992



The fewest cases were reported in the third quarter; the most in the fourth. The Eastern health planning region had the highest rate of *Chlamydia trachomatis* infections (286.59), followed by the Central region, with 194.58 cases per 100,000 population.

The data are expected to be an underestimate of 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 uncomplicated *C. trachomatis* infection are asymptomatic, and they do not seek testing or treatment; 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 nearly 16,000 cases of gonorrhea reported in Virginia in 1992, suggesting that *C. trachomatis* morbidity is approximately 32,000 cases per year according to CDC estimates.

Congenital Rubella Syndrome

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

Diphtheria

No cases of diphtheria were reported in 1992. The last case of this vaccine preventable disease in Virginia was reported in 1989.

Ehrlichiosis, Human

Two cases were reported in 1992 compared to three cases for each of the two preceding years. The two 1992 cases were in adult males from the eastern health planning region. One case occurred in the month of June and the other in August. Ehrlichiosis is not an officially reportable disease in Virginia, however, reports are recorded when they are received.

Encephalitis, Primary

The 43 cases of primary encephalitis reported in 1992 is 10.4% less than the 48 cases reported in 1991. The etiologic agent was specified for 19 (44.2%) of the cases. Of these, 13 were of viral origin (including six specified as herpesvirus) and six were due to *Toxoplasma gondii*.

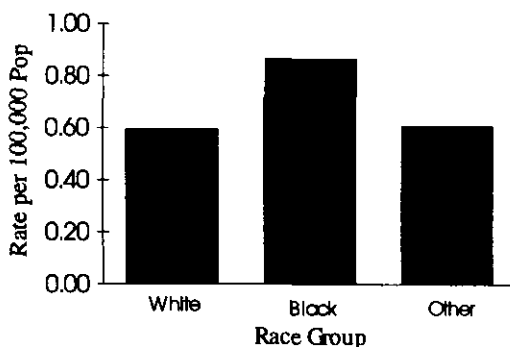
Six of the cases reported in 1992 had onset in 1991 and the onset date for 11 cases was not specified. For the remainder of the cases, eight occurred in the second and third quarters compared to four cases in the first quarter and six in the fourth quarter.

Cases occurred among all the age groups, but infants had the highest incidence rate (3.1 per 100,000). The incidence rate for all other age groups ranged from 0.5 to 0.9 per 100,000.

Blacks (0.9 cases per 100,000 population) were more likely to be reported with primary encephalitis than whites (0.6 per 100,000) and persons in the other race category (0.6 per 100,000), as shown in Figure 7. Race was not reported for three cases.

Figure 7

Primary Encephalitis: Rate by Race, Virginia, 1992



Females (20 cases) were reported almost as frequently as males (23 cases).

The eastern health planning region reported the highest number of cases and had the highest incidence rate (15 cases, 1.0 per 100,000). The northern health planning region reported the next highest number of cases (10), followed by the central (9), the southwest (5) and the northwest regions (4).

The total number of deaths associated with primary encephalitis for 1992 was 19 (12 males and seven females).

Encephalitis, Post-infectious

Thirteen cases of post-infectious encephalitis were reported in 1992. When specified, illness was preceded by an acute onset of chickenpox. Cases occurred during each of the four quarters but peaked in the first when five cases were reported compared to a range of 2-3 for the other three quarters. Ten cases were reported from the northern health planning region, two from the eastern and one from the northwest. No deaths were reported.

Fifth Disease

No cases were reported in 1992. The last case reported in Virginia was in 1990. Fifth disease is not an officially reportable disease in Virginia, however, reports are recorded when they are received.

Foodborne Outbreaks

Seven foodborne outbreaks were reported in 1992. These seven outbreaks are summarized in Table 9. The number of persons becoming ill per outbreak ranged from four to 175. A bacterium was the etiologic agent for two of the outbreaks, a virus was highly suspected for two others, scombroid toxin was responsible for small clusters of cases in different localities, and the etiologic agent was not identified for the remaining two outbreaks.

Four of the seven outbreaks occurred within a 30 day period during the first quarter of the year.

Fungal Diseases

Although fungal diseases other than histoplasmosis are not officially reportable in Virginia, reports of selected fungal diseases are recorded. In 1992, reported fungal diseases other than histoplasmosis included eight cases of cryptococcosis and two cases of blastomycosis. One death was reported in a 56 year old black female with blastomycosis.

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

Giardiasis

The 366 cases of giardiasis reported in 1992 represented a 20.3% decrease from the 459 cases reported in 1991 but is 11.9% higher than the previous five year mean.

The highest incidence rate of 13.5 per 100,000 (106 cases) was in the 1-9 age group. Only 3 cases were reported in infants, and age was not reported for 42 cases. The number of cases ranged from 31 to 66 in the other age groups. Race was not reported for 157 cases. Of the cases where race was reported, persons in the other race category were more likely to be infected than blacks and whites. Females were more likely than males to be reported with giardiasis (6.0 cases per 100,000 population vs. 5.2 per 100,000).

Disease incidence peaked during the third quarter when 123 cases occurred and ranged from 63 to 75 cases for the other three quarters. Incidence rates ranged from 8.6 cases per 100,000 population in the northern health planning region to 4.3 per 100,000 in the central region, as shown in Figure 8.

Gonorrhea

Gonorrhea continued to be the most frequently reported disease in Virginia. In 1992, 15,773 cases of gonorrhea were reported, representing an 8.6% decrease from 1991. This is the second year since 1987 that the number of gonorrhea cases declined compared to the previous year.

Nearly three-fourths (72.1%) of all gonorrhea in Virginia occurred in the 15 to 29 age group (11,367 cases, 738.7 per 100,000), with the highest incidence rate occurring in the 15-19 age group (4,073 cases, 920.2 per 100,000). Persons age 20-29 had an incidence rate of 665.4 cases per 100,000 population. Rates by age group are illustrated in Figure 9.

Figure 8

Giardiasis: Rate by Region
Virginia, 1992

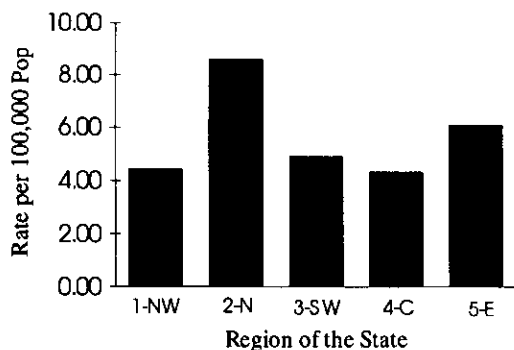


Figure 9

Gonorrhea: Rate by Age Group
Virginia, 1992

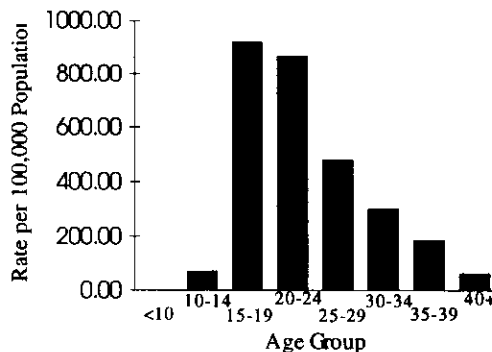
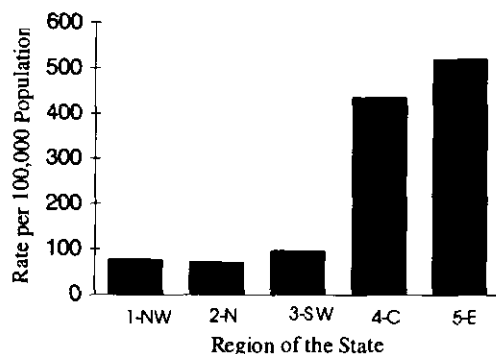


Figure 10

Gonorrhea: Rate by Region
Virginia, 1992



Almost eighty percent of the cases were black (12,600 cases, 1,091.9 per 100,000), six percent were white (955 cases, 20.3 per 100,000), less than one percent (87 cases, 26.4 per 100,000) was in the other race category and 13.5% were race unspecified (2,131 cases). The rate in males was 297.50 compared to 213.80 per 100,000 females.

The eastern health planning region reported the most cases (8,229 cases, 520.8 per 100,000), followed by central (4,639 cases, 436.7 per 100,000), southwest (1,200 cases, 96.4 per 100,000), northwest (654 cases, 78.3 per 100,000), and northern (1,051 cases, 71.7 per 100,000). (Figure 10). Cases were reported throughout the year.

Granuloma Inguinale

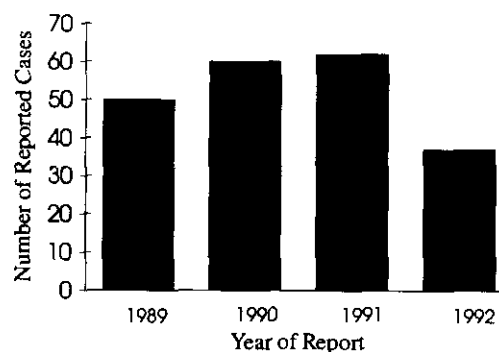
No cases of granuloma inguinale were reported in 1992. Cases of this disease were last reported in 1990.

Haemophilus influenzae Infection, Invasive

Invasive *Haemophilus influenzae* infections (including 19 cases of meningitis) declined by 40.3% in 1992 (37 cases) compared to the 62 cases that were reported in 1991 (Figure 11). Cases occurred throughout the year but peaked during the fall and winter months when 56.8% of the cases occurred.

Figure 11

Invasive H. influenzae: Four Year
Trend, Virginia 1989-1992



H. influenzae infections were more likely to occur in young children and in older adults. Based on 1992 data, infants diagnosed with this infection had an incidence rate of 13.6 cases per 100,000 population and older adults 0.8 per 100,000. Blacks were more likely to be infected than whites and persons in the other race category. Females were slightly more likely than males to be reported (0.7 per 100,000 vs. 0.5 per 100,000, respectively).

The northwest health planning region continued to have the highest incidence rate (1.1 per 100,000), a trend started in 1990. Incidence rates in the other health planning regions were equal to or less than 0.6 cases per 100,000 population.

Four deaths due to invasive *H. influenzae* disease were reported in 1992. Two of the deaths were in children (age 3 and 5) and the other two were in adults (age 57 and 65).

Meningitis caused by *H. influenzae* is also included under the heading Bacterial Meningitis.

Hansen's Disease (Leprosy)

Two cases of this chronic bacterial disease were reported in 1992 in persons whose residence was originally outside of the United States. One case was a 73 year old male from Southeast Asia and the other was a 20 year old female from Central America. The disease is believed to have been acquired while in their native countries.

One case each was reported from the northern and eastern health planning regions. The last previous report of a newly diagnosed case in a resident of Virginia was in 1986.

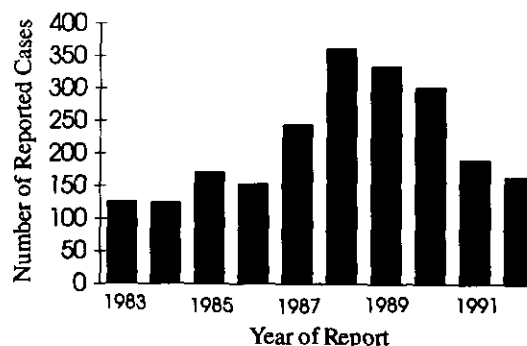
Hepatitis A

Reported cases of hepatitis A declined for the fourth consecutive year. The 164 cases reported in 1992 represented a 14.1% decrease from the 191 cases reported in 1991 and a 45.7% decrease from the 302 cases reported in 1990 (Figure 12). Onset of illness ranged from 20 cases in the second quarter to 51 cases in the fourth quarter.

Hepatitis A incidence rates by age group were higher among 10-19 year olds and 20-29 year olds (4.1 per 100,000 and 4.0 per 100,000, respectively), followed by 40-49 year olds (2.3 per 100,000).

Figure 12

Hepatitis A: Ten Year Trend Virginia, 1983-1992



These three age groups accounted for 59% of the total number of cases reported. The most cases reported by race were white (100 cases, 2.1 per 100,000), however, the incidence rate was highest in the other race category (29 cases, 8.8 per 100,000). Overall, males outnumbered females almost 2 to 1.

The northern health planning region reported 53% of the state total of 164 cases. This region's incidence rate of 5.9 per 100,000 was more than three times the average of 1.6 cases per 100,000 population for the four other health planning regions.

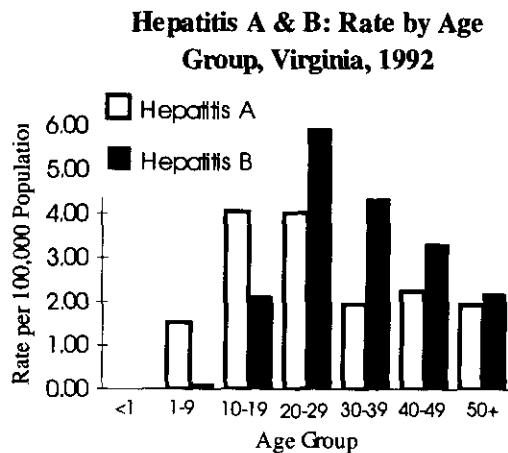
A cluster of twelve hepatitis A cases was reported from Tazewell County in 1992. The index case was an adult female whose infection was linked to a resident of Florida while visiting Virginia. The index case had onset of illness during the month of August. Eleven additional cases among students who attended the same middle school were associated with this outbreak. The onset of illness among the ten boys and one girl occurred during the beginning of the school year. Seven of the students had onset during the month of September and four during the month of October. Person-to-person transmission and common source exposure contributed to this cluster of cases.

Hepatitis B

The 193 cases of hepatitis B reported in 1992 represented a continuation of a downward trend that started in 1986. Cases were fairly evenly distributed through the first three quarters of the year, but declined dramatically during the fourth quarter when only 17 cases (8.8%) occurred.

In contrast to hepatitis A, incidence rates by age group were higher among 20-29 year olds and 30-39 year olds. The third highest incidence rate by age group for hepatitis A and B was in 40-49 year olds. These comparisons are illustrated in Figure 13. The incidence rate of hepatitis B in blacks was 6.3 per 100,000 compared to 4.0 in the other race category and 2.0 in whites. Males were more likely to be reported with hepatitis B than females (3.6 cases per 100,000 population vs. 2.7 cases per 100,000 population, respectively).

Figure 13



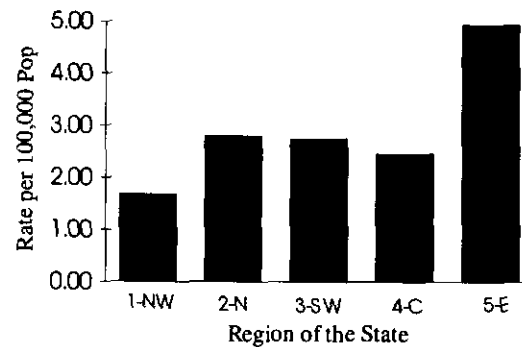
The eastern health planning region reported the most cases and had the highest incidence rate (78 cases, 4.9 per 100,000) which was almost twice as high as any other region (Figure 14).

Seventeen deaths due to viral hepatitis B were reported in 1992. Fifteen of the deaths were in

males compared to two in females. Of the seventeen deaths, eleven were newly reported cases.

Figure 14

Hepatitis B: Rate by Region Virginia, 1992



Hepatitis Non-A Non-B

In 1992, 48 cases of hepatitis non-A non-B were reported. These 48 cases represented a 29.7% increase over the 37 cases reported in 1991 but remained below the five year mean of 56.2 cases per year. Approximately 95% of the cases were in the 20 and older age groups, however, persons age 30-39 had the highest reported incidence rate (1.7 per 100,000). No cases were reported in infants or in the 10-19 age group. Blacks had the highest incidence rate (1.7 cases per 100,000 population). Incidence rates by sex were comparable.

Seventeen hepatitis non-A non-B associated deaths were reported in 1992; nine females and eight males. The age of those that expired ranged from 35 to 79 years.

Hepatitis C virus (HCV) has been identified as the primary etiologic agent of hepatitis non-A non-B in the United States. A screening test for the detection of HCV antibodies was licensed in 1990.

Twenty-two (45.8%) of the hepatitis non-A, non-B cases reported in Virginia in 1992 were reported to be positive for antibodies to HCV.

Hepatitis Unspecified

The 53 reported cases of viral hepatitis type unspecified reported in 1992 is a sizeable decrease from the 138 cases reported in 1991. Approximately 50% of the reported cases were between the ages of 20 and 39 years old. Twenty-three of the cases were black compared to 18 whites and two in the other race category. Race was not reported for ten cases.

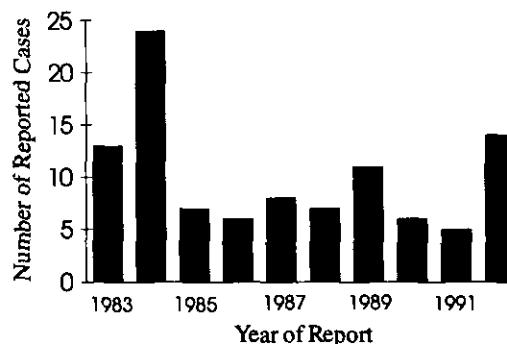
Almost half (47.2%) of the cases were reported from the eastern health planning region and from six to nine cases were reported from the other regions. Three deaths due to hepatitis unspecified were reported.

Histoplasmosis

The 14 cases of histoplasmosis reported in 1992 is the highest number of cases observed since 1984 when 24 cases were reported (Figure 15). Eight cases occurred in the first quarter followed by two cases for each of the remaining quarters. The majority (92.9%) of the cases were age 20 or older. Race was reported for eight of the 14 cases (seven whites and one black). Eight males were reported compared to six females. One death was reported in a 76 year old white male from the central health planning region. At least one case was reported from each health planning region except the north-east.

Figure 15

**Histoplasmosis: Ten Year Trend
Virginia, 1983-1992**



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

HIV

During 1992, 1,372 HIV infections were reported, bringing the cumulative total of cases reported since 1989 to 4,359. Thirty-one percent of the cumulative HIV infections were reported in 1992. Trends in HIV infection are important because they are likely to be predictive of future AIDS trends.

Males represented the majority (1,022 cases, 74.5%) of the HIV infection reports and were greater than three times more likely to have the infection than females (33.7 per 100,000 vs. 11.1 per 100,000 in females). During 1992, the majority of HIV cases were black (894 cases, 65.2%). Whites represented 31.9% of the HIV infections

while the other race category represented 2.1%. Race was not reported in 12 cases. Blacks were 8.3 times more likely than whites to be infected, having an incidence rate of 77.5 cases per 100,000 population compared to 9.3 in whites.

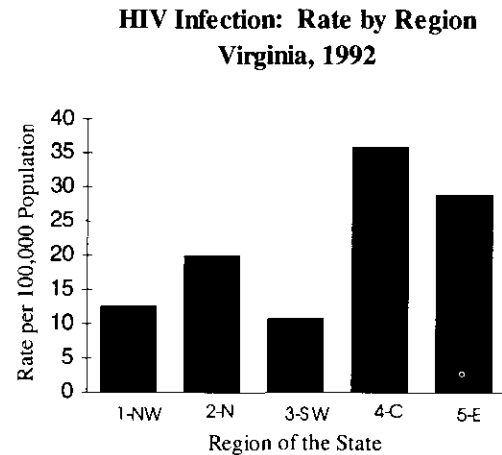
The majority of persons with HIV infection were between the ages of 20 and 39 (1,042 cases, 75.9%). Persons in their thirties had a higher incidence rate than persons in their twenties (581 cases, 53.7 per 100,000 vs. 461 cases, 42.1 per 100,000, respectively). Eight pediatric HIV infections were reported in 1992. Of these children, seven (87.5%) were infected through maternal transmission.

Compared to AIDS, persons with HIV infection were more likely to have become infected through heterosexual contact (18.1% HIV vs. 6.6% AIDS) and less likely to attribute their infection to men having sex with men (MSM) (35.0% HIV vs. 61.1% AIDS). Females comprised a larger proportion of HIV infections (25.5%) than AIDS cases (14.0%), as shown in Figure 16.

The largest incidence rate was calculated for the central health planning region (36.0 cases per 100,000 population), followed by the eastern region (29.0 per 100,000), and the northern region (20.0 per 100,000). The northwest health planning region

experienced an incidence rate of 12.7 per 100,000, while the rate in the southwest was 10.8 per 100,000 (Figure 17).

Figure 17



AIDS

Since reporting began in 1982, the cumulative number of AIDS cases reported through the end of 1992 is 3,493 with 2,035 of these cases known to have died (74.1%). In 1992, 748 cases were reported, representing a 12% increase over 1991 (Figure 18).

Figure 16

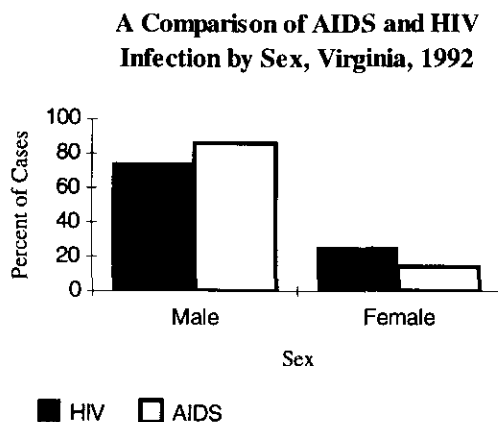
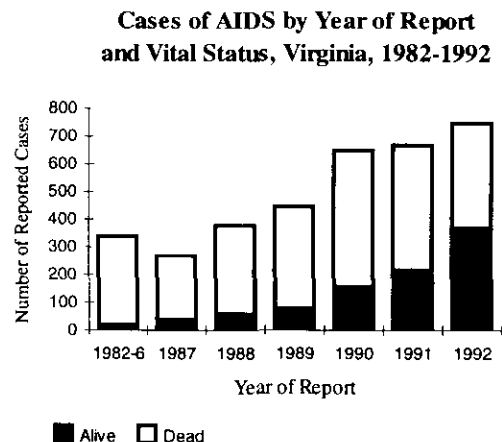
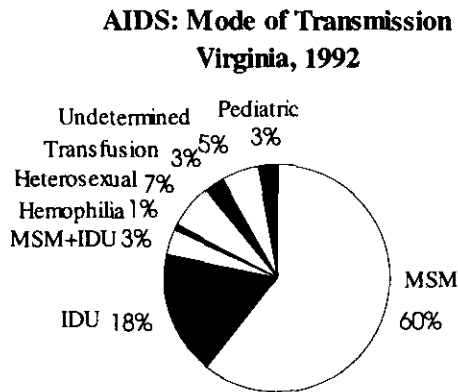


Figure 18



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 1992, men having sex with men (MSM) accounted for the greatest percentage of AIDS cases (61.1%), followed by IDU (17.5%). An additional 3.3% of the cases had both of the above risk factors (Figure 19).

Figure 19



Most AIDS cases reported in 1992 were between the ages of 20 and 49 (649 cases, 86.8%). The age group with the highest incidence rate was the 30-39 age group (31.2 cases per 100,000 population). Nineteen pediatric AIDS cases were reported in 1992. All but one of these children were infected via perinatal transmission (18 cases, 94.7%).

During 1992, the majority of AIDS cases were white (370 cases, 49.5%), 343 cases were black (45.9%) and 35 cases were reported in the other race category (4.7%). Incidence rates, however, were higher for blacks (29.7 per 100,000) and the other race category (10.0 per 100,000) compared to whites (7.9 per 100,000). Males represented a disproportionate share, with an incidence rate 6.4 times higher than females (21.2 vs. 3.3 per 100,000).

The northern health planning region continued to experience the highest incidence rate (18.8 per

100,000), followed by the central region (16.2 per 100,000), eastern region (11.2 per 100,000), southwest region (6.4 per 100,000), and northwest (5.3 per 100,000).

Persons with AIDS develop a variety of life-threatening opportunistic infections due to immunosuppression. The most commonly diagnosed infection is *Pneumocystis carinii* pneumonia (PCP). Nearly half (45.2%) of the cases reported during 1992 developed PCP during the course of their illness. Other frequently diagnosed conditions include HIV wasting syndrome (25.3%), esophageal candidiasis (18.6%), *Mycobacterium avium* infection (17.2%), Kaposi's sarcoma (8.6%) and HIV encephalopathy (6.6%).

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 initiates an active influenza surveillance system. Under this system, weekly surveys of sentinel physicians from around the state regarding the occurrence of influenza are conducted. Through our passive disease reporting system (January -December), sporadic cases of influenza-like illness are reported throughout the calendar year. Information from our passive and active reporting systems, and laboratory identification of influenza viral agents are used to monitor and define influenza activity in Virginia. Cases are tabulated weekly and areas of the state in which there are sporadic, regional or widespread activity of influenza or influenza-like illness are identified.

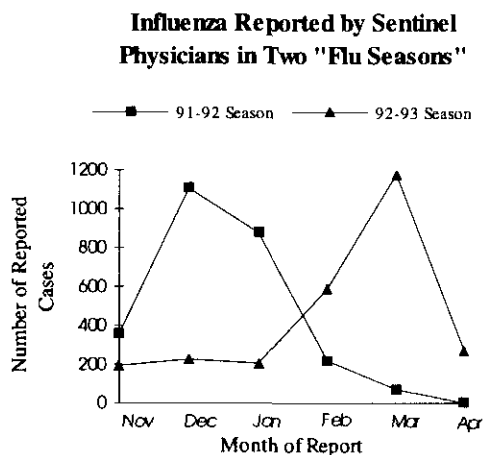
There were 148 cases of influenza reported through the passive surveillance system in calendar year 1992, representing an almost 10-fold decrease

from the 1,392 cases reported in 1991. This decrease may be explained by the early onset of influenza activity during the 1991-92 influenza season and late onset of activity during the 1992-93 season. Typically influenza activity peaks during the month of February in Virginia, however, for the 1991-92 influenza season activity peaked in December and in March for the 1992-93 season.

During the 1991-92 influenza season, influenza A virus was isolated in Virginia. Based on sentinel physician data, activity peaked in December followed by a gradual decline in the level of influenza activity through the end of March. By comparison, influenza type A virus and type B virus were isolated in Virginia during the 1992-93 influenza season. Influenza activity reported through the sentinel system increased sharply in February 1993 and sustained high levels of activity through the end of March when it peaked approximately three months later than during the 1991-92 influenza season (Figure 20).

Influenza incidence rates throughout the state for calendar year 1992 ranged from a low of 0.1 cases per 100,000 population in the northern health planning region to a high of 8.6 per 100,000 in the southwest region.

Figure 20



Kawasaki Syndrome

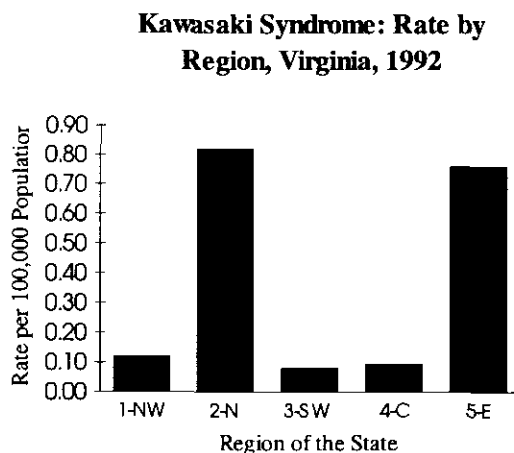
The 27 confirmed cases of Kawasaki syndrome that were reported in 1992 is the highest number reported in five years but comparable to the ten year annual mean. Four to six cases occurred during each quarter of 1992, however, seven cases reported had onset in 1991. An illness primarily of the young, 23 (85.2%) of the cases were less than ten years old, and 59.3% of the cases were less than five years old.

The incidence rate was highest for the 1-9 age group (2.7 cases per 100,000 population), followed by infants (2.1 per 100,000) and the 10-19 age group (0.5 per 100,000).

Blacks and whites were less likely to be reported with this syndrome than persons in the other race category. The male to female ratio was 2.4 to 1.

At least one case was reported from each of the health planning regions. Twelve cases were reported from the northern and the eastern health planning regions for an incidence rate of 0.8 cases per 100,000 population, respectively (Figure 21). No deaths due to Kawasaki syndrome were reported in 1992.

Figure 21

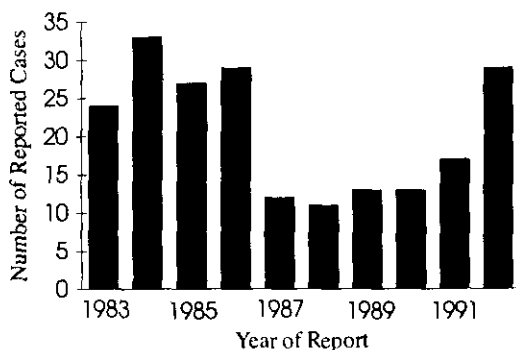


Legionellosis

Reported cases of legionellosis increased to 29 during 1992 compared to 17 in 1991. The 29 cases reported in 1992 is the highest number of cases reported since 1986 and is 16 cases higher than the five year mean of 13 (Figure 22).

Figure 22

Legionellosis: Ten Year Trend
Virginia, 1983-1992



The total number of cases and corresponding incidence rate was highest for the 50 and above age group. The mean age in years for females was 62 compared to 49 for males. Whites accounted for 76% of the cases. The incidence rate for males was 0.6 per 100,000 compared to 0.4 per 100,000 for females.

The northwest health planning region had the highest incidence rate (0.8 per 100,000), followed by the eastern and southwest regions (0.6 per 100,000 each). These three regions accounted for approximately 85% of the reported cases.

Nine legionellosis associated deaths were reported in 1992. Six of the deaths were among females compared to three among males. Persons who died ranged in age from 44 to 86.

Leptospirosis

Two cases of leptospirosis were reported in 1992 compared to none being reported since 1990. These two unrelated cases were reported during the last quarter of 1992. One case was a 37 year old white female and the other was a 21 year old white male. No information regarding exposure was reported.

Listeriosis

Ten cases of *Listeria* infection (including three cases of meningitis) were reported in 1992 compared to 21 cases in 1991. The majority (80%) of the cases occurred between March and August.

The ages of cases ranged from newborn to 85 years. Two cases were infants, one was an 18 year old, and the rest were age 28 or older. Of the ten cases reported, seven (70%) were white and race was not reported for three cases. The incidence rate was higher for females than for males (0.2 per 100,000 vs. 0.1 per 100,000).

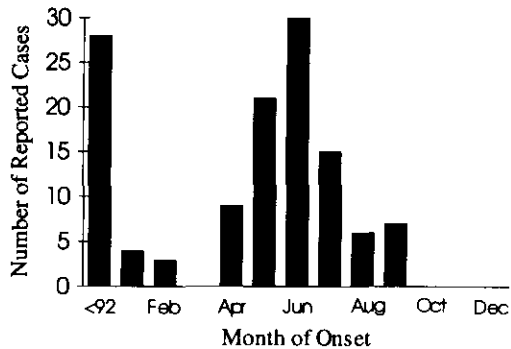
Cases were reported only from the northwest (3 cases), northern (2 cases) and southwest (5 cases) health planning regions.

Lyme Disease

There were 123 confirmed cases of Lyme disease reported in Virginia in 1992. This is the first year in which a decline in the number of cases

Figure 23

**Cases of Lyme Disease
by Date of Onset, Virginia, 1992**



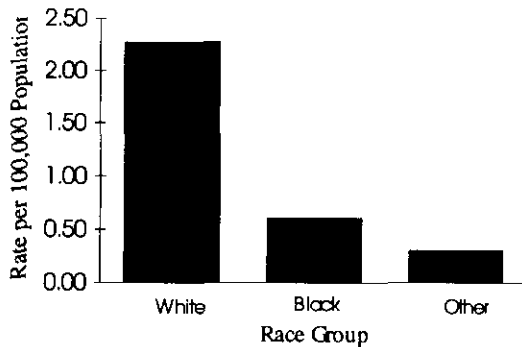
reported was observed since Lyme disease became reportable in 1989.

Seventy-eight percent of the cases had onset between May and September (Figure 23).

The incidence rate was similar for males (2.0 per 100,000) and females (1.9 per 100,000). Whites had the highest number of cases and incidence rate (107 cases, 2.8 per 100,000 population) as shown in Figure 24. Ages of cases ranged from 2 to 84 years; the mean was 39 years. Incidence rates per 100,000 population by age group ranged from a low 0.8 for the 10-19 year olds to a high of 3.7 for 50-59 year

Figure 24

**Lyme Disease: Rate by Race
Virginia, 1992**



olds. The northern health planning region reported the most cases (37 cases, 2.5 per 100,000).

Borrelia burgdorferi has been isolated from rodents in Accomack and York counties. Infected ticks have been identified in Accomack County and on military bases in Caroline, Fairfax and York counties. There have been no human isolates from Virginia to date.

Lymphogranuloma Venereum

Forty-one cases of lymphogranuloma venereum were reported in 1992. Thirty-five of these cases were in military personnel.

Malaria

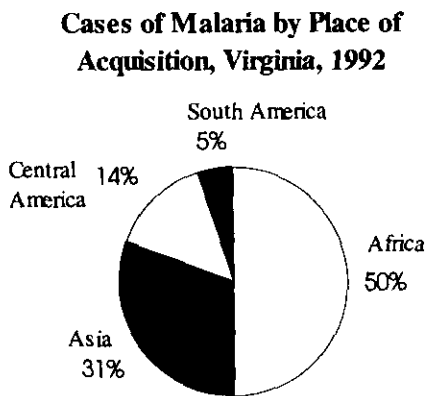
Forty-seven cases of malaria were reported in 1992, which is lower than the 52 cases reported in 1991, but higher than the ten year annual mean of 37 cases.

Eleven cases were reported in each of the following age groups: 10-19, 20-29, 30-39, for rates of approximately 1.0 per 100,000 in each group. No cases occurred in infants. The black race category had the most cases (22 cases, 1.9 per 100,000). The other race category had the highest incidence rate (15 cases, 4.6 per 100,000). The white race category had the least number of cases and the lowest incidence rate (7 cases, 0.2 per 100,000). Males were twice as likely to be reported with malaria (31 cases, 1.0 per 100,000) as females (16 cases, 0.5 per 100,000).

Cases occurred in each quarter of the year, with the fewest in the first quarter (7 cases) and the most in the third (15 cases). The majority (78.7%) of the cases were from the northern health planning region, for a rate of 2.5 per 100,000 population. The rates in the other regions ranged from 0 to 0.4 per 100,000.

Most of the cases (25 cases, 53.2%) were caused by *Plasmodium vivax*; 16 were *P. falciparum*, three were *P. malariae*, and three were not speciated. Country of disease acquisition was reported for 42 cases; 21 had a history of travel to the continent of Africa, 13 to Asia, six to Central America, and two to South America (Figure 25).

Figure 25



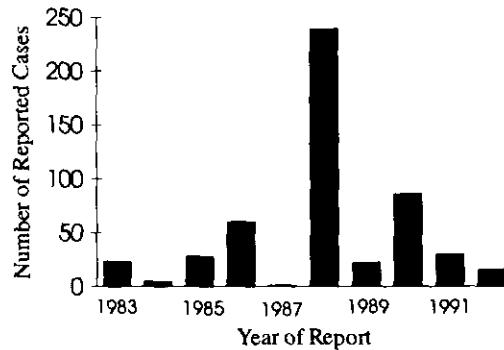
Measles

The sixteen cases of measles reported in 1992 is the lowest annual number reported since 1987 (Figure 26). Eleven of the cases were indigenous and five were imported.

Infants had the highest rate of measles (2 cases, 2.1 per 100,000), followed by children age 1-9 (6

Figure 26

**Measles: Ten Year Trend
Virginia, 1983-1992**



cases, 0.8 per 100,000), persons age 10-19 (5 cases, 0.6 per 100,000), and persons age 20-29 (3 cases, 0.3 per 100,000). Ten of the cases were white (0.2 per 100,000), four were in the other race category (1.2 per 100,000) and one was black (0.1 per 100,000).

Females were much more likely than males to be reported with measles (12 cases, 0.4 per 100,000 females compared to four cases, 0.1 per 100,000 males). Six cases occurred during the first quarter of the year, seven in the second quarter, and three in the third quarter.

Fourteen of the cases were reported from the northern health planning region (1.0 per 100,000). One case occurred in the southwest region and one in the eastern region. The other two regions did not report any measles activity in 1992.

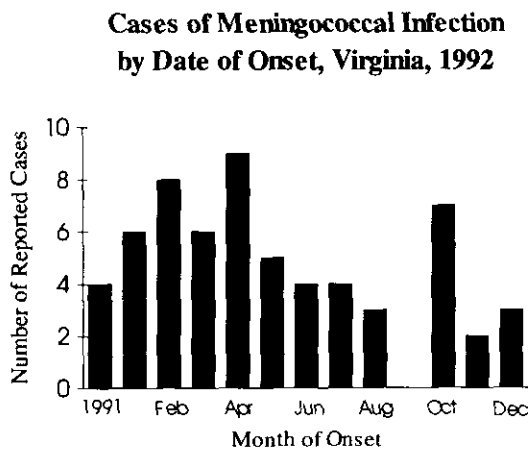
Meningococcal Infection

The number of reported meningococcal infections increased to 61 in 1992, up from 39 in 1991, but consistent with the ten year average of 65.6 cases per year.

The highest incidence rates were seen in children; 14.6 per 100,000 infants, 1.8 per 100,000 children age 10-19, and 1.5 in those age 1-9. The rate in all adult age groups was less than 1.0 per 100,000. Although 70.5% of the cases were white, the incidence rate was highest in the black population (1.1 per 100,000). More cases were female (33 cases, 1.1 per 100,000) than male (27 cases, 0.9 per 100,000).

One-third of the cases had onset in the first quarter of the year (Figure 27). The southwest health planning region reported the most cases (20 cases, 1.6 per 100,000), followed by the eastern region (17 cases, 1.1 per 100,000), the central region (10 cases, 1.0 per 100,000), the northwest region (7 cases, 0.8 per 100,000), and the northern region (7 cases, 0.5 per 100,000).

Figure 27



The subgroup was not reported for half the cases; 10 cases were group B, 10 were group C, 4 were group Y, 2 were W-135, and one was group A. The organism was isolated from the cerebrospinal fluid in 20 cases, from the blood in 27 cases, and from both in 6 cases.

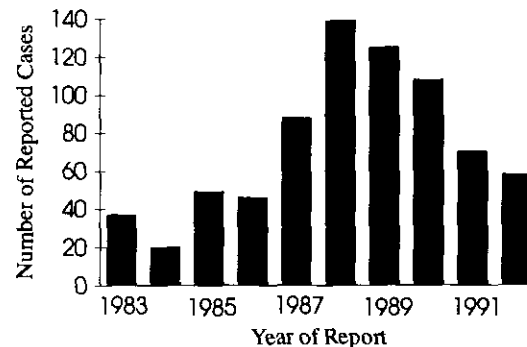
Eight persons died from meningococcal infections. The age at death ranged from 15 to 78, with five of the persons who died being teenagers.

Mumps

The number of cases of mumps continued to decline for the fourth year in a row, to 58 cases in 1992 (Figure 28). Most of the persons reported with mumps were in the 1-9 year age group (30 cases, 3.8 per 100,000), followed by the 10-19 year age group (13 cases, 1.6 per 100,000).

Figure 28

**Mumps: Ten Year Trend
Virginia, 1983-1992**



Race was not reported for 20 cases (34.5%). Of those with race reported, whites had the most cases (30 cases, 0.6 per 100,000), followed by blacks (6 cases, 0.5 per 100,000), and then persons in the other race category (2 cases, 0.6 per 100,000). Males were more likely to be reported with mumps than females (33 cases, 1.1 per 100,000 males compared to 23 cases, 0.7 per 100,000 females).

Cases occurred throughout the year, with the most in the first quarter and the fewest in the fourth quarter. Over two-thirds of the cases were reported from the eastern and northern health planning regions (22 cases and 18 cases, respectively). The southwest region reported 11 cases, for a rate of 0.9 per 100,000.

Nosocomial Outbreaks

Two nosocomial outbreaks in nursing homes were reported in 1992. The first outbreak occurred during the first quarter of the year. Residents and staff reported symptoms of gastroenteritis. A total of 42 cases were reported. A viral agent was suspected. One death occurred during this outbreak.

The second outbreak occurred in a 115 bed nursing home. Illness was characterized by upper respiratory infection and pneumonia. The outbreak, which occurred in the spring, had a 44% attack rate. There were eight deaths associated with this outbreak; each had been diagnosed with pneumonia. The outbreak lasted approximately six weeks. The exact cause for illness was not identified but the conclusion was that an infectious agent transmitted from person to person was responsible.

Occupational Illnesses

Sixty-eight reports of occupational illnesses were received in 1992. Included were 60 cases (88.2%) of asbestosis, three cases of elevated blood lead levels, and one case each of carpal tunnel syndrome, chemical pneumonia, pesticide poisoning, smoke inhalation, and toxic encephalopathy. The remainder of this section will describe the cases of asbestosis.

Cases ranged in age from 44 to 81, with a mean age of 62.8 years. All were male. Forty-four were white (73.3%) and 15 were black (25.0%).

The most commonly reported occupation was pipe fitting (12 cases, 20.0%). Other occupations each had five or fewer cases reported. Two-thirds of the cases worked in the shipbuilding industry (41

cases, 68.3%). All but three were from the eastern health planning region.

Ophthalmia Neonatorum

Data on this condition were not available for 1992.

Other Meningitis

Seventy-one cases of meningitis caused by organisms other than bacteria or viruses were reported in 1992. Cryptococcal meningitis was the diagnosis for 50 of these cases and 15 of those were HIV positive. The cause was not specified for the remaining 21.

Most of the cases (55 cases, 77.5%) were adults age 30 or older. More than twice as many males were reported than females. Thirty cases were reported from the eastern health planning region. From 8 to 13 cases were reported from each of the other regions.

Twenty-one (29.6%) were reported to have died. The average age of these individuals was 41.1 years. Eighteen (85.7%) of the persons who died were male.

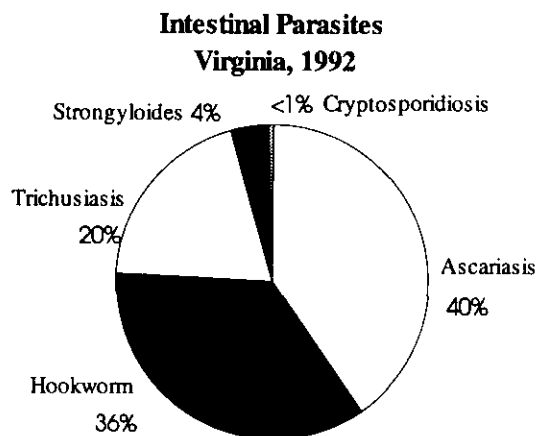
Parasites, Intestinal

In addition to amebiasis and giardiasis, selected reports of other parasitic intestinal diseases are re-

corded. In 1992, these included 126 cases of ascariasis (roundworm), 111 cases of hookworm, 62 cases of trichuriasis (whipworm), 12 cases of strongyloides, and one case of cryptosporidiosis, for a total of 312 reports of intestinal parasites (Figure 29).

The age group most frequently reported with parasites was children age 10-19 (107 cases, 34.3%). Fifty or fewer cases were reported in the other age groups. The majority of reported cases (294 cases, 94.2%) were in the other race category. Males were as likely as females to be infected (150 cases, 4.9 per 100,000 vs. 159 cases, 5.0 per 100,000).

Figure 29



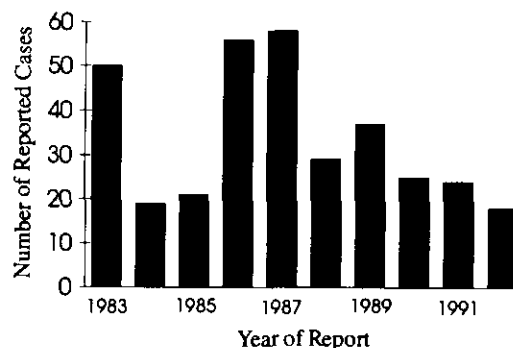
The southwest health planning region reported the most cases (137 cases, 43.9%), followed by the central (119 cases, 38.1%) and the eastern regions (49 cases, 15.7%). Five or fewer cases were reported from the northern and northwest regions.

Pertussis

The 18 cases of pertussis reported in 1992 is well below the ten year annual mean of 34.8 cases. In

Figure 30

**Pertussis: Ten Year Trend
Virginia, 1983-1992**



fact, it is the lowest annual total reported since 1984 (Figure 30).

Most of the cases were infants (13 cases, 13.6 per 100,000); three were age 1-9 (0.4 per 100,000); one was age 10-19 and another was age 20-29. Race is usually not reported for pertussis. Ten of the cases were female (0.3 per 100,000) and eight were male (0.3 per 100,000).

Most of the cases occurred in the last half of the year (11 cases, 61.1%). Three to four cases of pertussis were reported from each health planning region of the state in 1992.

Phenylketonuria (PKU)

Three infants were identified as having PKU through newborn screening programs in 1992 compared to two cases in 1991 and three cases in 1990. Two of the 1992 cases were white females and one was a white male.

Plague

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

Poliomyelitis

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

Psittacosis

One case of psittacosis was reported in 1992. Five cases were reported the previous year.

Q Fever

The last case of Q fever reported in Virginia was in 1987.

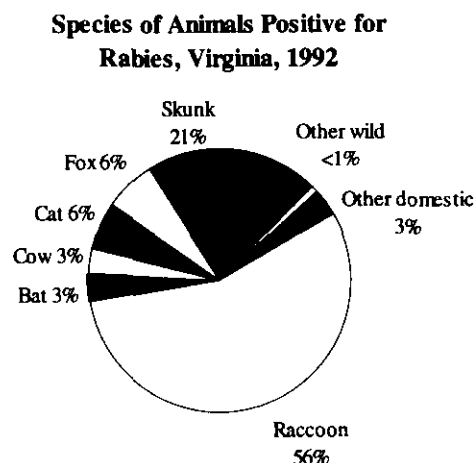
Rabies in Animals

The total number of laboratory confirmed rabid animals for 1992 was 362; a 30% increase over the 1991 total of 253. The expansion of the raccoon rabies outbreak slowed somewhat with only four

localities reporting rabid raccoons for the first time; Franklin County, Roanoke City, Roanoke County, and Virginia Beach.

For the eleventh consecutive year raccoons were the most commonly reported species with rabies. The 203 rabid raccoons accounted for 56% of all rabid animals (Figure 31). Of the 77 (21%) skunks reported, only one was from the skunk endemic area in southwest Virginia. The others were from the raccoon outbreak area and represented either "spillover" from infected raccoons or the transmission of the raccoon rabies virus from skunk to skunk.

Figure 31



Other wildlife reported as rabid in 1992 included 23 foxes, 12 bats, and 1 groundhog. Rabid domestic animals included 21 cats, 11 cows, 7 dogs, 2 horses, 2 sheep, and 1 goat. A pet ferret developed rabies approximately one month after escaping from the house and being attacked by an unknown animal. A mink that was part of a pair caged on a porch was confirmed as rabid after developing neurologic signs.

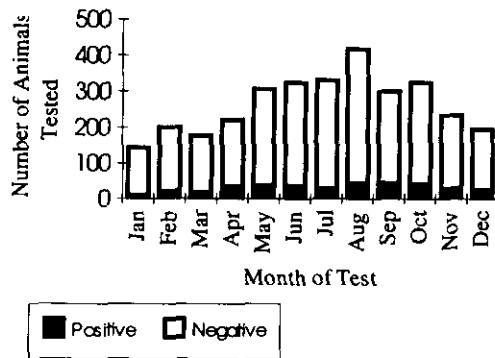
More animals were tested in 1992 than in 1991 (3,179 vs. 2,546). The percent positive was also higher (11% vs. 10%). The most commonly tested animals were cats (29%), raccoons (19%), and dogs (15%). Although skunks only accounted for 4% of the animals tested, 70% of them were rabid. The

proportion of tested raccoons with rabies was 34% while only 2% of cats and dogs were positive.

Fairfax County (including the cities of Fairfax and Falls Church) contributed 10% of the animals tested; 7% came from Loudoun, 5% from Prince William (including Manassas and Manassas Park) and less than 3% from each of the rest of the counties and cities. The localities contributing the largest proportions of positive animals to the state total were: Fairfax (11%), Loudoun (10%), Augusta (7%), Shenandoah (5%), and 4% each from Frederick, Prince William, and Rockingham. The number of animals tested is compared to the number positive for each month in Figure 32.

Figure 32

Animal Rabies Tests by Month and Test Result, Virginia, 1992



Human exposure was reported for 100% of the rabid cattle and horses, 91% of the rabid cats, 86% of the rabid dogs, 33% of the rabid bats, 22% of the rabid foxes, 8% of the rabid raccoons, and 5% of the rabid skunks.

Rabies in Humans

No human rabies cases were reported in 1992. The last reported case occurred in 1953. The num-

ber of persons who received postexposure prophylaxis increased between 1991 and 1992, from 250 to 302. This represented the highest annual number of persons who received prophylaxis since 1987 when 303 were reported. Preexposure vaccinations were reported for 680 persons, an increase of 138 compared to 1991.

Reye Syndrome

No cases of Reye syndrome were reported in 1992. Two cases were reported in 1991.

Rocky Mountain Spotted Fever

Twenty-six cases of Rocky Mountain spotted fever were reported in 1992. This is the highest number reported since 1986, but it is below the ten year annual mean of 35.9 cases.

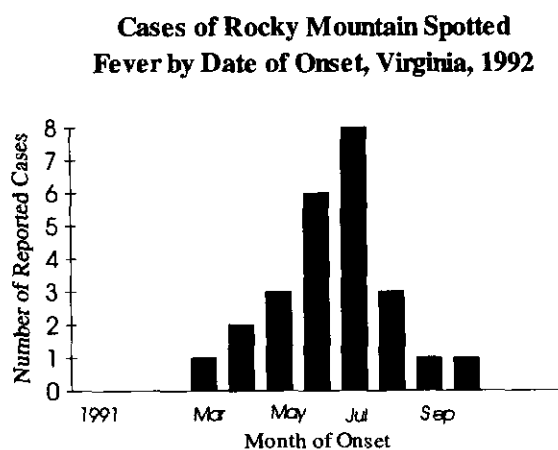
Adults were the most likely to be reported with this disease, with the most cases reported in persons age 50 and older (10 cases, 0.7 per 100,000). Nine of the cases were in their thirties or forties. One case was age 20-29, one was age 10-19, and three were in the 1-9 age group.

The majority (69%) of the cases were white. The incidence rate, however, was higher in the blacks (0.5 per 100,000 population) compared to 0.4 per 100,000 in whites, and 0.3 per 100,000 in the other race category. Males were more likely than females to be reported with this condition (16 cases, 0.5 per 100,000 males compared to 10 cases, 0.3 per 100,000 females).

Onset was almost evenly divided between the second and third quarters of the year; only one case had onset in the first quarter and one in the fourth. Fourteen cases (53.8%) occurred between June and July (Figure 33). The eastern region reported the fewest cases (3 cases, 0.2 per 100,000). The other health planning regions reported 5-7 cases, for rates ranging from 0.4 to 0.6 per 100,000 population.

Eleven cases reported having a rash. Sixteen had a known tick bite, one had been in a tick infested area, two did not recall any tick exposure, and the exposure status was unknown for three.

Figure 33



Rubella

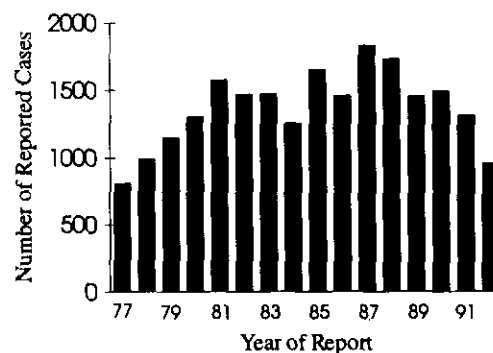
No cases of rubella were reported in 1992 nor in 1991. One case was reported in 1990.

Salmonellosis

Reports of salmonellosis declined to 957 in 1992, the lowest number of cases reported since 1977, as shown in Figure 34. *Salmonella typhimurium*, *S. enteritidis*, and *S. heidelberg* were the most commonly reported species (Table 10), consistent with past years.

Figure 34

**Salmonellosis Trend
Virginia, 1977-1992**



Infants (146 cases, 152.4 per 100,000) and children in the age group 1-9 (218 cases, 27.7 per 100,000) were the most likely age groups to be reported with salmonellosis. The other age groups experienced incidence rates between 8.0 and 11.7 cases per 100,000 population. The rate in the black population (15.6 per 100,000) was more than twice that of the white population (6.8 per 100,000) and the other race category (6.7 per 100,000). Males and females were almost equally likely to be reported with salmonellosis.

Onset occurred throughout the year, peaking in the third quarter. Incidence rates by region ranged from 11.5 per 100,000 in the southwest to 19.5 in the central health planning region.

Table 10. Number and Percent of Salmonella Infections by Species, Virginia, 1992

Species Causing Infection	Number of Cases	Percent of Cases
<i>S. typhimurium</i>	253	26.44
<i>S. enteritidis</i>	166	17.35
<i>S. heidelberg</i>	73	7.63
<i>S. hadar</i>	37	3.87
<i>S. newport</i>	25	2.61
<i>S. thompson</i>	19	1.99
<i>S. agona</i>	17	1.78
<i>S. berta</i>	14	1.46
<i>S. saint paul</i>	13	1.36
<i>S. infantis</i>	12	1.25
<i>S. java</i>	12	1.25
Unspecified	186	19.44
All Others	130	13.58
TOTAL	957	100.00

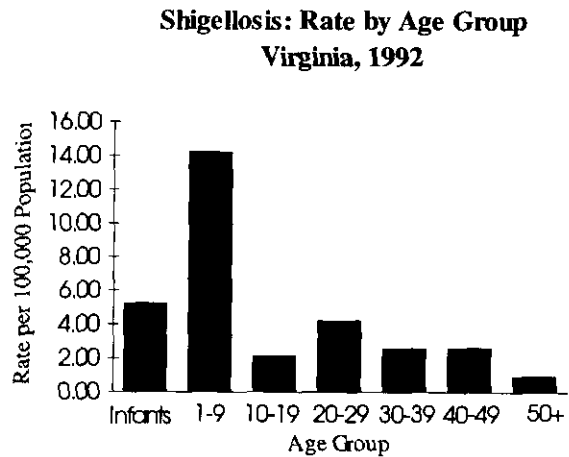
Two persons with salmonellosis died. One was age 28; the other was age 85.

Shigellosis

The 253 cases of shigellosis reported in 1992 is equal to the ten year average annual number of case reports received. Three-fourths of the reported cases were caused by *Shigella sonnei*; 28 cases were due to *S. flexneri* and one each to *S. boydii* and *S. dysenteriae*; species was not identified for 31 cases.

Nearly half (112 cases, 44.3%) of the cases occurred in children age 1-9, for an incidence rate of 14.2 per 100,000 in that age group. The rates in the other age groups ranged from 1.0 in persons age 50 and older to 5.2 in infants (Figure 35). The incidence rate in blacks (42 cases, 3.6 per 100,000)

Figure 35



was the highest for the three race categories. Whites had the highest number of cases but the lowest incidence rate (84 cases, 1.8 per 100,000 population). Race was not reported for 119 cases (47.0%). Males and females were equally likely to be reported with shigellosis.

Onset peaked in the third quarter (87 cases, 34.4%). Shigellosis activity was similar during the second and fourth quarters of the year. The northern health planning region reported the most cases (103 cases, 7.0 per 100,000), and the eastern region the fewest (22 cases, 1.4 per 100,000).

One waterborne outbreak of shigellosis was reported.

Smallpox

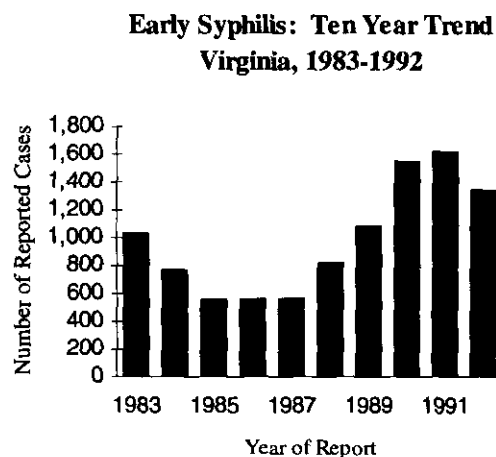
The last reported case of smallpox in Virginia occurred in 1944.

Syphilis

Early Syphilis

Early syphilis includes the primary, secondary, and early latent stages of syphilis. The number of cases of early syphilis reported decreased 17.0% from 1,622 cases in 1991 to 1,347 cases in 1992. This is the first year since 1985 that there has been a decrease in early syphilis cases compared to the previous year (Figure 36).

Figure 36



The majority of early syphilis cases (79.1%) were between the ages of 15 and 34, with nearly half (49.0%) of the morbidity found in the 20-29 age group (660 cases, 60.2 per 100,000). Almost eight percent of the cases were white (102 cases, 2.2 per 100,000), 92.2% were black (1,222 cases, 105.9 per 100,000) and 1.5% (20 cases, 6.1 per 100,000) were in the other race category. Less than one percent of the cases did not have race reported.

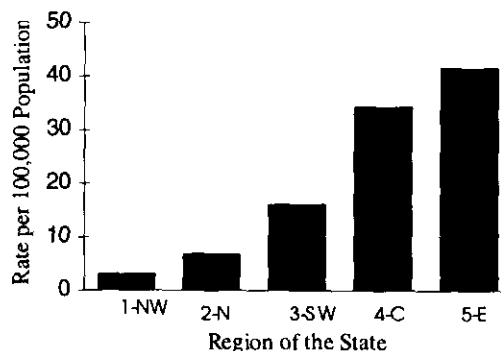
The number of female cases decreased thirteen percent from 788 cases in 1991 to 687 cases in 1992. The corresponding decrease in the number of cases in males was 20.5% from 830 cases in 1991 to 660

cases in 1992. The 1992 incidence rate per 100,000 population was 21.8 for females and 21.7 for males.

The eastern health planning region reported the most cases (657 cases, 41.6 per 100,000), followed by central region (364 cases, 34.3 per 100,000), southwest region (200 cases, 16.1 per 100,000), northern region (100 cases, 6.8 per 100,000), and northwest region (26 cases, 3.1 per 100,000). Incidence rates by region are shown in Figure 37. Onset of disease was fairly evenly distributed throughout the year

Figure 37

Early Syphilis: Rate by Region Virginia, 1992



Congenital Syphilis

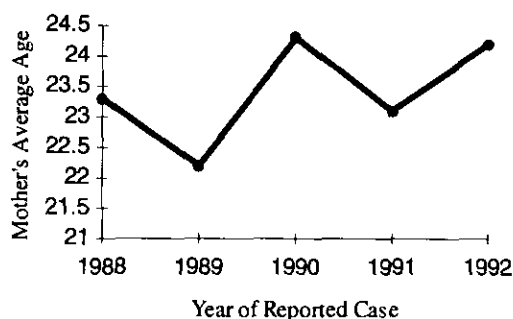
In 1992, fifty-nine cases of congenital syphilis were reported. Twenty-seven of the cases were reported from the eastern health planning region, 18 from the central region, 10 from the northern region, and four from the southwest region. Fifty-three of the infants were black, two were hispanic, three were white, and one was race unspecified.

The mother's average age was 24.2, with a range of 15 to 33 years. Figure 38 illustrates an increasing trend in mother's age over a four year period. Thirty-six (61.0%) of the mothers were single par-

ents. The date of the first doctor's appointment was known for 37 of the 38 mothers who received prenatal care. Fourteen sought prenatal care during their first trimester, 14 during the second trimester, and nine during the third trimester. Of those whose prenatal care began in the last trimester, one began during the final month.

Figure 38

**Congenital Syphilis by Mother's Average Age and Year of Report
Virginia, 1988-1992**



The 59 congenital cases in 1992 represented a 15.7% increase over the 51 cases reported in 1991. The increase in early congenital syphilis is a reflection of the high incidence of early syphilis in women, especially those of childbearing age. Due to the nine month gestation period, there is usually a lag that exists between an increase or decrease of early syphilis and congenital syphilis. A 2.5% increase in the number of early syphilis cases experienced by females in 1991 contributed to the increase in congenital syphilis cases for 1992. Using this same theory, it is expected that congenital syphilis for 1993 will decrease. There was a 13.1% decrease in female early syphilis cases between 1991 and 1992.

Tetanus

No cases of tetanus were reported in 1992 or in 1991. Two cases were reported in 1990.

Toxic Shock Syndrome

Five cases of toxic shock syndrome were confirmed in 1992. Four of the five cases (80.0%) were white. Three were female and two were male. One of the males died.

Toxic Substance Related Illnesses

No diseases in this category were reported in 1992.

Toxoplasmosis

Four cases of toxoplasmosis were reported. All were adult males age 20-49. All four died; two had HIV infection.

Encephalitis due to *Toxoplasma* is included under the heading Encephalitis, Primary.

Trichinosis

No cases of trichinosis were reported in 1992 or in 1991. The last cases reported in Virginia occurred in 1990.

Tuberculosis

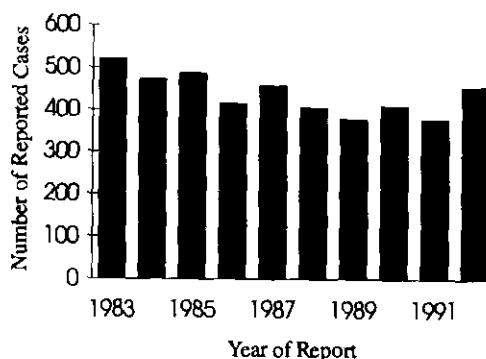
Virginia reported 456 tuberculosis cases in 1992, compared to 379 in 1991. This was a 20.3 percent increase, the largest single year increase in tuberculosis morbidity over the past 12 years. The incidence rate per 100,000 population jumped from 6.1 cases in 1991 to 7.4 cases in 1992. Figure 39 illustrates the annual number of tuberculosis cases from 1983 to 1992. The number of cases reported in 1992 was only two less than the previous five year high of 458 cases reported in 1987. Nationally, the number of tuberculosis cases (26,673) and the incidence rate (10.5 per 100,000) increased for the fourth consecutive year.

The highest tuberculosis incidence rate was reported by the central health planning region (10.1 per 100,000), followed by the northern (9.3 per 100,000) and eastern (8.5 per 100,000) regions. Eight of the 35 health districts reported higher incidence rates than the state. The Eastern Shore Health District topped this list by reporting 17 cases for an incidence rate of 38.0 per 100,000. Richmond City, Arlington and Alexandria reported the highest incidence rates for metropolitan areas with over 100,000 population. Their rates were 23.7, 22.2 and 19.8 cases per 100,000 population, respectively.

The incidence rate for blacks exceeded that for whites by almost 500% (15.8 vs. 3.2 per 100,000). Of the 456 cases reported in 1992, 150 were white, 182 were black, 82 were Asian, 40 were Hispanic

Figure 39

Tuberculosis: Ten Year Trend
Virginia, 1983-1992



and 2 were American Indian. Collectively, non-whites were over six times as likely to develop tuberculosis than whites (22.6 vs. 3.2 per 100,000). Thirty percent or 136 of the tuberculosis cases reported in 1992 were foreign-born and 97 (71%) of those cases resided in the northern health planning region. These individuals emigrated to the United States from 35 different foreign countries. Fifty-seven percent of the total were from Vietnam, the Philippines, El Salvador and India.

Human immunodeficiency virus (HIV) infection is the number one risk for progression to active disease once infected and is identified in an increasing percentage of tuberculosis cases each year. In 1992, 37 or 8.1 percent of all reported tuberculosis cases were also infected with HIV. This was up from 23 (6.1%) in 1991. In fact, 33 percent of all tuberculosis cases with a recorded HIV test result in 1992 were HIV seropositive.

Forty-seven (10.3%) of the 456 persons reported with tuberculosis in 1992 died. Twenty-one were diagnosed at death and 26 died during their course of treatment.

Tularemia

Two cases of this zoonotic, bacterial disease were reported in 1992. Both were white females age 40 or older. The source of infection for these two cases was not determined, however, wild animals, especially rabbits, hares, muskrats, beavers and some domestic animals are potential reservoirs for infection.

Typhoid Fever

Five cases of typhoid fever were reported in 1992, all of which were from the northern health planning region. Countries of exposure were reported for three persons. They were El Salvador, Indonesia and Peru.

Typhus, Flea-borne

No cases of flea-borne typhus were reported in 1992. One case had been reported in 1991.

Vibrio Infection

Eight Virginians were reported to have a *Vibrio* infections in 1992. Four were caused by *V. parahaemolyticus*, two were *V. vulnificus*, and one each *V. fluvialis* and *V. mimicus*. The site of infection was specified for four cases; two were wound infections and two had *Vibrio* isolated from the stool. One person with *Vibrio* infection died.

Waterborne Outbreaks

A waterborne outbreak due to *Shigella* was reported in 1992. This was the first confirmed waterborne outbreak reported in Virginia since 1986. The outbreak occurred among campers who had visited a state park in Prince Edward County. Illness was associated with exposure to a shallow area of a lake designated for swimming. The source of contamination was believed to have been a *Shigella* carrier. A total of 15 cases were linked to this outbreak. Seven cases were identified as swimmers and an additional eight were considered secondary cases. The cases ranged in age from 3 to 17 years. Secondary cases ranged in age from 7 to 44 years. Five of the swimmers were male and all of the secondary cases were female.

Yellow Fever

No cases of yellow fever have been reported in Virginia this century.

Yersiniosis

Yersiniosis is not an officially reportable disease in Virginia, but 30 reports were received and tallied in 1992. Twenty-two (73.3%) of the cases were children under age 10; eleven of these were infants. Females were more likely to be reported with yersiniosis than males (0.6 cases per 100,000 vs. 0.3 cases per 100,000).

