

Trends in Virginia AIDS Case Reporting, 1989 — 1998

Introduction. The AIDS epidemic has changed dramatically during the past ten years both nationally and in Virginia. Virginia witnessed a peak of 1,629 reported cases in 1993 when the Centers for Disease Control and Prevention (CDC) expanded the AIDS case definition to include immunologic status and additional opportunistic infections. Between 1995 and 1998, the number of reported cases declined from 1,459 to 963. All demographic categories have changed in the past ten years but not to an equal extent. Categories include transmission risk, age, race, sex, rural and urban, and health region.

This article presents a preliminary analysis of AIDS cases through the end of 1998; it considers annual data based on reported rather than diagnosed cases. Cases diagnosed in 1998 but not yet reported to the Division of STD/AIDS will have an effect on percentages although this effect will be minor.¹

Transmission risk. An important shift in transmission risk occurred between

1989 and 1998 (Figure 1). In 1989, about two-thirds (68.2%) of all reported AIDS cases were attributed to men having sex with men (MSM). By 1993 this figure had declined to 52.5%. MSM as the risk for AIDS fell below 50% for the first time in 1995 (49.9%) and continued to decline to 38.5% in 1998. As MSM fell other risk factors rose. Heterosexual behavior, which is especially important as a risk factor in female AIDS cases, rose steadily.² In 1989, 5.4% of AIDS cases were attributed to heterosexual behavior; in 1993 the figure was 11.9%. For the years 1996 through 1998, heterosexual behavior has caused over twenty percent of reported AIDS cases. The Virginia data presented here are similar to data compiled in a multi-site validation study which found that "...most cases reported with heterosexually acquired AIDS had valid heterosexual risk exposures."³ Injecting drug use (IDU) continued to be a significant risk factor; IDU rose from 13.1% of all cases in 1989 to 20.5% in 1998.

Age. Adults in the age range 30-39 form the largest group of AIDS cases. Little variation in the percentage this group contributes to the whole occurred year-by-year. In 1989, 30-39 year-olds were 46.4% of AIDS cases; the figure reached a high of 47.6% in 1995 and ended the ten year period at 43.9%. The 20-29 age group experienced a decline from 21.4% in 1989 to 15.4% in 1998. In contrast, the 40-49 group increased from 23.6% in 1989 to 27.3% in 1998. Taken together, these trends may signify that HIV-

white population is the reverse of the black experience; white cases fell from 59.2% of the total in 1989 to 32.9% in 1998. Other population groups for which data is collected include Asians, Pacific Islanders, American Indians, Alaskan Natives, Hispanics and others. Reported AIDS cases in these groups varied between a low of 2.9% in 1991 to a high of 4.8% in 1998.

Sex. Although the majority of AIDS reports are for male cases, the proportion

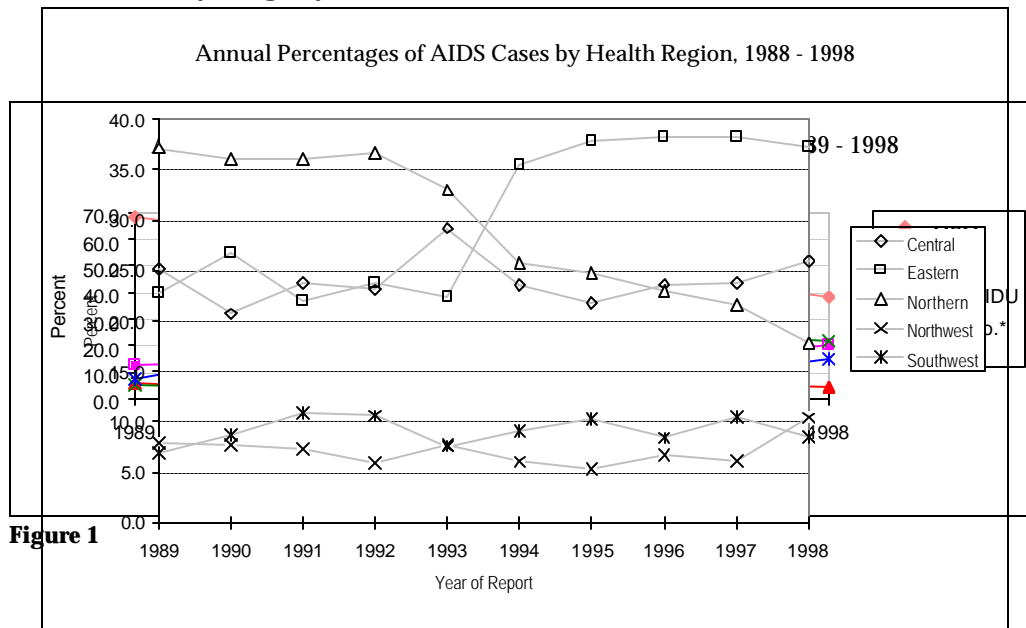


Figure 1

Figure 2

positive people are progressing more slowly to AIDS because of treatment advances.^{4, 5}

Race. The dramatic development in this demographic category is that black cases rose almost 30% as a portion of all cases between 1989 and 1998. In 1989, 37.4% of AIDS cases were among African Americans. By 1998, this figure had risen to 66.0%. AIDS disproportionately affects the state's black population. The trend in AIDS case reports among the

of female cases rose steadily during the period. In 1989, 7.9% of cases were female. By 1993 this figure had risen to 15.5% of all cases and it reached 22.7% in 1998. The rise in the proportion of cases that are female parallels the rise in cases attributable to heterosexual behavior (see figures above); heterosexual relations with an infected partner is the primary cause of female HIV infections. Male AIDS case reports declined from 90.4% in 1989 to 77.3% in 1998.

Urban and Rural. Reported AIDS cases remained a mostly urban phenomenon during this ten year period. A case is classified as an urban one if the person resided in a federally defined Metropolitan Statistical Area (MSA) at the time of the AIDS diagnosis; other cases are classified as rural. In 1989, 91% of reported AIDS cases were urban. This proportion declined by small amounts during most years and reached a low of 87.7% in 1996. Assuming that case reporting in 1998 is complete and is close to the number of diagnosed AIDS cases, the 1998 data show that 84.1% of cases are urban; this figure is a new low in the proportion of urban cases and, conversely, a new high in the number of rural cases.

Health Region. AIDS cases are assigned to one of five health regions on the basis of the patient's residence. The five regions are Central, Eastern, Northern, Northwest and Southwest (see Figure 2).⁶ Central, Eastern and Northern are more urban than Northwest and Southwest and consistently had higher percentages of AIDS cases. An important change is the decline of Northern from the highest urban region, at 37.2%, in 1989 to lowest, at 17.9%, in 1998. Further, Eastern and Central began the period with similar percentages (22.7% and 25.2%, respectively) but diverged greatly in 1994. The Eastern percentage jumped in 1994 to 35.5% while Central fell to 23.5%. A higher proportion of cases has consistently been reported from Eastern Region since 1994 while the proportion from Northern continued to decline. The

Central region rose slightly from 23.5% in 1995 to 26.0% in 1998.

Summary. AIDS in Virginia has changed in important ways between 1989 and 1998. The mode of HIV transmission is increasingly due to heterosexual behavior and injecting drug use and decreasingly due to MSM. Case reports during this period indicate that AIDS diagnoses may be occurring less often among 20-29 year-olds and more often among people 40-49; this may be related to treatment successes delaying AIDS diagnoses in HIV-infected people. The disease now affects Virginia's black population far more than the state's white population, especially given the fact that blacks account for about 20% of the state's population. Women, who are most often infected through heterosexual relations, accounted for almost three times the percent of 1998 case reports they accounted for in 1989. AIDS reports among Virginia's rural population have risen during this period by approximately two-thirds. The Northern Region accounted for many fewer AIDS cases in 1998 than in 1989; in contrast, Eastern has accounted for more than 35% of all cases since 1994. The changing AIDS epidemic has influenced HIV/AIDS prevention planning. Continuing case reporting and surveillance activities allow the STD/AIDS Division to monitor trends in the epidemic.

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Data Tables. Figures discussed in this report come from these tables. Although AIDS has been reported in Virginia since 1982, only the past ten years' worth of case data are analyzed.

Annual Percentages of AIDS Cases by Transmission Risk, 1989 - 1998										
Risk	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
MSM	68.2	64.3	63.4	60.5	52.5	52.5	49.9	45.9	42.5	38.5
IDU	13.1	13.8	13.7	17.3	21.2	19.4	20.8	21.3	17.2	20.5
MSM/IDU	5.9	4.8	5.9	4.7	6.5	6.5	6.0	5.5	5.5	4.4
Hetero.*	5.4	4.3	7.9	7.5	11.9	13.7	15.8	20.2	23.5	21.9
Other	7.4	12.8	9.1	9.9	7.8	7.9	7.5	7.1	11.3	14.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Heterosexual includes both heterosexual and multi-heterosexual.

Annual Percentages of AIDS Cases by Age Group, 1989 - 1998										
Group	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
< 20	1.4	1.9	2.7	3.2	1.2	3.2	1.7	1.4	1.5	0.8
20-29	21.4	23.5	20.4	16.4	18.7	17.2	18.0	18.1	15.4	15.9
30-39	46.4	44.7	42.6	45.1	46.7	46.5	47.6	43.1	45.5	43.9
40-49	23.6	20.2	24.6	25.4	24.6	25.4	24.0	26.9	27.3	29.6
> 49	7.2	9.7	9.7	9.9	8.8	7.8	8.7	10.6	10.2	9.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annual Percentages of AIDS Cases by Race, 1989-1998										
Race	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
White	59.2	54.4	53.6	49.5	45.2	43.7	45.0	35.8	32.9	30.8
Black	37.4	40.6	43.5	45.8	51.1	52.9	51.6	59.8	62.4	66.0
Other	3.4	4.9	2.9	4.7	3.7	3.4	3.4	4.4	4.8	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annual Percentages of AIDS Cases by Sex, 1989 - 1998										
Sex	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Male	92.1	90.1	89.0	85.9	84.5	85.3	81.6	81.9	79.2	77.3
Female	7.9	9.9	11.0	14.1	15.5	14.7	18.4	18.1	20.8	22.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Annual Percentages of AIDS Cases by Rural or Urban Residence*, 1989 - 1998										
Locale	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Rural	9.0	10.4	9.4	11.4	11.0	10.0	9.1	12.3	11.9	15.9
Urban	91.0	89.6	90.6	88.6	89.0	90.0	90.9	87.7	88.1	84.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Urban is defined as residing in a Metropolitan Statistical Area (MSA); rural is defined as living outside an MSA.

Annual Percentages of AIDS Cases by Health Region, 1989 - 1998										
Region	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Central	25.2	20.7	23.7	23.1	29.2	23.5	21.7	23.7	23.7	26.0
Eastern	22.7	26.7	22.1	23.8	22.5	35.5	37.9	38.2	38.2	37.3
Northern	37.2	36.2	36.1	36.6	33.0	25.8	24.7	23.0	21.5	17.9
Northwest	7.9	7.7	7.3	5.9	7.7	6.0	5.3	6.7	6.0	10.4
Southwest	7.0	8.7	10.9	10.6	7.6	9.1	10.3	8.4	10.5	8.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Table 3 on page 8 in this issue presents frequencies of cases by year of report. Table 3 groups the years 1982 - 1991 and presents annual figures for 1992 - 1998.

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- ² See tables 3 (p. 8) and 22 (p. 24) in this issue. Heterosexual risk presented in this article includes both the “heterosexual” and the multi-heterosexual” categories presented in tables.
- ³ Klevens RM, Fleming PL, Neal JJ, et. al. Is there really a heterosexual AIDS Epidemic in the United States? Findings from a multisite validation study, 1992-1995. *American Journal of Epidemiology* 1999; 149(1):75-84. The article “Validation Studies: Enhancing the Performance of Virginia’s HIV/AIDS Surveillance Program” in this issue explains what validation studies are and how they contribute to disease surveillance.
- ⁴ Palella FJ, Delaney KM, Moorman AC, et. al. Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. *NEJM* 1998; 338(13):853-860, March 26.
- ⁵ Mocroft A, Vella S, Benfield TL, et. al. Changing patterns of mortality across Europe in patients infected with HIV-1. *Lancet* 1998 352 (9142):1725-1730, November 28.
- ⁶ Also see Figures B.1 and B.2, pp. 5-6; the heavy lines in B.1 and B.2 trace health region boundaries.