

# Companion Text for the Slide Set: *Minnesota HIV Surveillance Report, 2002*

## INTRODUCTION

### **Overview**

The *Minnesota HIV Surveillance Report, 2002* describes the occurrence of reported HIV infections in Minnesota by person, place, and time through December 31, 2002. Such data provide information about where and among whom HIV transmission is likely occurring. This knowledge can in turn be used to help educate, target prevention efforts, plan for services, and develop policy.

### **Data Source**

The data in this report are based on confidential case reports collected through the Minnesota Department of Health (MDH) HIV/AIDS Surveillance System. In Minnesota, laboratory-confirmed infections of human immunodeficiency virus (HIV) are monitored by the MDH through this active and passive surveillance system. State law (Minnesota Rule 4605.7040) requires both physicians and laboratories to report all cases of HIV infection (HIV or AIDS) directly to the MDH (passive surveillance). Additionally, regular contact is maintained with several clinical sites to help ensure completeness of reporting (active surveillance).

Data in this report include cases diagnosed with HIV as of December 31, 2002 and reported to the MDH as of April 2003. All data are displayed by earliest date of HIV diagnosis. Refer to the *HIV Surveillance Technical Notes* for a more detailed description of data inclusions and exclusions.

### **Data Limitations**

Factors that impact the completeness and accuracy of the available surveillance data on HIV/AIDS include the level of screening and compliance with case reporting. Thus, any changes in numbers of infections may be due to one of these factors, or due to actual changes in HIV/AIDS occurrence.

The data presented in this report are not adjusted for reporting delays. Thus, the case number presented for the most recent reporting year can be viewed as a minimum and will likely increase in the future as further case reports are received. Changes in past years' totals are updated in every new annual surveillance report.

### **HIV/AIDS in the UNITED STATES**

Compared with the rest of the nation, Minnesota is considered to be a low to moderate HIV/AIDS incidence state. In 2001, state-specific AIDS rates ranged from 0.5 per 100,000 persons in North Dakota to 39.3 per 100,000 persons in New York. Minnesota had the 8th lowest AIDS rate (3.2 AIDS cases reported per 100,000 persons). Compared with states in the Midwest region, Minnesota had a moderate AIDS rate. State-specific HIV rates cannot be compared nationally because some states have not yet instituted HIV case surveillance. At present 34 states have name-based HIV reporting. The states that have HIV case surveillance are at various stages of implementation.

### **HIV/AIDS IN MINNESOTA**

#### **MDH HIV/AIDS Surveillance: Cumulative cases**

AIDS has been tracked in Minnesota since 1982. In 1985, AIDS officially became a reportable disease to state and territorial health departments nationwide. Also in 1985, when the Food and Drug Administration approved the first diagnostic test for HIV, Minnesota became the first state to make HIV infection a reportable condition. As of December 31, 2002, a cumulative total of 7,073 cases of HIV infection have been reported among Minnesota residents.<sup>1</sup> This includes 4,008 AIDS cases and 3,065 HIV, non-AIDS cases. Of these 7,073 HIV/AIDS cases, 2,528 are known to be deceased through correspondence with the reporting source, other health departments, reviews of death certificates and obituaries, active surveillance, and matches with the National Death Index.

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<sup>1</sup> This number includes persons who reported Minnesota as their state of residence at the time of their HIV and/or AIDS diagnosis. It also includes persons who may have been diagnosed in a state that does not have HIV reporting and who subsequently moved to Minnesota and were reported here. HIV-infected persons currently residing in Minnesota, but who resided in another HIV-reporting state at the time of diagnosis are excluded.

## **Overview of HIV/AIDS in Minnesota, 1990-2002**

The annual number of new AIDS cases increased steadily from the beginning of the epidemic to the early 1990s, reaching a peak of 370 cases in 1992. Beginning in 1996, both the number of newly diagnosed AIDS cases and the number of deaths among AIDS cases declined sharply, primarily due to the success of new antiretroviral therapies including protease inhibitors. These treatments do not cure, but can delay progression to AIDS among persons with HIV (non-AIDS) infection and improve survival among those with AIDS. Thus the declines slowed during the late 1990s and the numbers have become relatively stable the past few years. The number of newly diagnosed HIV (non-AIDS) cases has remained fairly constant since the mid 1990s at approximately 200 cases per year, despite consistent increases in the number of people living with HIV/AIDS. By the end of 2002, an estimated 4,598 persons with HIV/AIDS were assumed to be living in Minnesota.<sup>2</sup>

## **NEW HIV INFECTIONS IN MINNESOTA**

In this report, the term “new HIV infections” refers to HIV-infected Minnesota residents who were diagnosed in a particular calendar year and reported to the MDH. This includes persons whose first diagnosis of HIV infection is AIDS (AIDS at first diagnosis). HIV infection data are displayed by earliest known date of HIV diagnosis.

### **New HIV Infections by Geography**

Historically, about 90% of new HIV infections diagnosed in Minnesota have occurred in Minneapolis, St. Paul and the surrounding seven-county metropolitan area. This has not changed over time. Although HIV infection is more common in communities with higher population densities and greater poverty, HIV or AIDS has been diagnosed in over 80% of counties in Minnesota.

### **New HIV Infections by Gender**

Since the beginning of the epidemic, males have accounted for a majority of new HIV infections diagnosed per year. However, the number and the proportion of cases among females

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<sup>2</sup> This number includes persons whose most recently reported state of residence was Minnesota, regardless of residence at time of diagnosis. This estimate does not include persons with undiagnosed HIV infection.

have increased over time. In 1990, males accounted for 90% of new HIV infections. In 2002, 71% of new infections occurred among males and 29% among females.

### **New HIV Infections by Race/Ethnicity<sup>3</sup>**

Trends in the annual number of new HIV infections diagnosed among males differ by racial/ethnic group. New cases among White males drove the epidemic in the 1980s and early 1990s. Although Whites still account for the largest number of new infections among males, this number has generally been decreasing since 1991.

In contrast to the overall large decline in the annual number of cases among White males, the decline among African American males was more gradual. The annual number of cases for African American males peaked in 1992 at 81 and gradually decreased to 37 in 2002.

The numbers of new cases in all other racial/ethnic groups during this same time remained stable or increased. Increases in the annual number of HIV infections diagnosed among Hispanic and African-born males, in particular, have been recorded since the late 1990s. The proportion of new HIV infections diagnosed among men of color as a whole has been increasing over time.

Similarly, trends in the annual number of HIV infections diagnosed among females differ by racial/ethnic group. In the beginning of the epidemic, White women accounted for a majority of newly diagnosed cases among females. Since 1991, the number of new infections among women of color has exceeded the number among White women. From 1990 to 2002, the annual number of new infections diagnosed doubled among African American females (25 cases in 2002) and increased nine-fold among African-born females between 1996 (3 cases) and 2002 (36 cases). The annual number of new infections diagnosed among Hispanic, American Indian, and Asian females continues to be quite small (fewer than 10 cases per year for each of these groups).

The most recent data illustrate that men and women of color are disproportionately affected by HIV/AIDS. Whites make up approximately 88% of the male population in Minnesota and 53% of the new HIV infections diagnosed among men in 2002. Men of color make up approximately 12% of the male population and 47% of the new infections diagnosed

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<sup>3</sup> Black race was broken down into African-born and African American (Black, not African-born). The numbers exclude 50 persons arriving through the HIV-Positive Refugee Resettlement Program.

among men in 2002. Similarly for females, Whites make up approximately 89% of the female population and 16% of new infections among women in 2002 whereas women of color make up approximately 11% of the female population and 84% of the new infections among women.<sup>4</sup>

Please note that race is not considered a biological reason for disparities in the occurrence of HIV experienced by persons of color. Race, however, can be considered a marker for other personal and social characteristics that put a person at greater risk for HIV exposure. These characteristics may include, but are not limited to, lower socioeconomic status, less education, and greater prevalence of drug use.

### **Average Age at HIV Diagnosis, Three-year Averages**

In recent years, Hispanic and American Indian males were slightly younger (approximate age = 33 years) than White, African American, African-born, and Asian males (approximate age = 37 years) at the time of HIV diagnosis. During the past ten years, the average age at HIV diagnosis has been approximately 30 years for females, for all racial/ethnic groups. Age at HIV diagnosis can be used as a proxy for age at HIV *infection*. However, due to differences in testing behavior (e.g. variable lengths of time between HIV infection and diagnosis) across time and between sociodemographic groups, comparisons of average age at diagnosis are difficult to interpret.

### **New HIV Infections among Adolescents and Young Adults<sup>5</sup>, 1990-2002**

Many people are infected with HIV for years before they actually seek testing and become aware of their HIV status. This phenomenon especially affects the observed case counts for younger age groups. And as a result, the reported number of HIV infections among youth<sup>5</sup> (with few or no reports of AIDS at first diagnosis) is likely to underestimate the *true* number of new infections occurring in the population more than the reported number of cases in older age groups does.

In 1990, 9% of new HIV infections reported to the MDH were among youth. In 2002 this percentage was 11%. Among young men, the number of new HIV diagnoses peaked in 1992

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<sup>4</sup> Population estimates based on U.S. Census 2000 data.

<sup>5</sup> In this report, adolescents are defined as 13-19 year-olds and young adults as 20-24 year-olds; these two groups are jointly referred to as “youth.” Analyses are performed for adolescents and young adults combined because case numbers are too small to present meaningful data separately for each.

at 43 cases and then declined through the mid 1990s to a low of 14 cases in 1997. Since 1997 the annual number of cases diagnosed among young men increased steadily to 28 in 2000, but then dropped to 17 cases in 2001 and 18 cases in 2002.

Unlike young men, the annual number of new HIV infections diagnosed among young women has remained relatively consistent over time. For example, 19 cases of HIV infection were diagnosed among young women in 1992 and 16 cases in 2002. Females accounted for 47% of new HIV infections diagnosed among adolescents and young adults in 2002. In contrast, adult females (25 years of age or older) only accounted for 25% of all adult cases.

Similar to the adult HIV/AIDS epidemic, persons of color account for a disproportionate number of new HIV infections among adolescents and young adults. Among young men, Whites accounted for 40% of new HIV infections diagnosed between 2000 and 2002, African Americans accounted for 23% and Hispanics 23% of the cases. Among young women, Whites accounted for 35%, African Americans 30%, and African-born 23% of the new infections diagnosed during the same time period.

Men having sex with men (MSM) is the predominant mode of HIV exposure among adolescent and young adult males, accounting for 71% of the new HIV infections diagnosed between 2000 and 2002. Heterosexual contact and the joint risk of MSM and injecting drug use (IDU) each accounted for 3% of the cases. HIV exposure risk was not obtained for 23% of the young male cases.

Heterosexual contact accounted for 43% of new HIV infections diagnosed among adolescent and young adult females between 2000 and 2002, this includes 11% for whom heterosexual contact with an injecting drug user was their only identified risk factor. IDU accounts for 4% of the cases. The remaining 53% of the young females do not have a risk specified.

Some hypotheses regarding the classification of males and females with unspecified risk are discussed in the next section.

### **New HIV Infections by Mode of Exposure**

Since the beginning, men have driven the HIV/AIDS epidemic in Minnesota and male-to-male sex has been the predominant mode of exposure reported. Though still the majority, both the number and proportion of new HIV infections attributed to MSM have been decreased since

1991 reaching an apparent plateau in 2000 at just under 130 cases per year. On a much smaller scale, the numbers of male cases attributed to IDU and MSM/IDU also have been decreasing over the past decade, while the number of cases attributed to heterosexual contact has been increasing. The number of cases without a specified risk has also been increasing.

Throughout the epidemic, heterosexual contact has been the predominant mode of HIV exposure reported among females. IDU is the second most common mode of transmission making up 2% of cases among women in 2002. Unspecified risk has been designated for a growing percentage of cases for the past several years. In 1996, 7% of women diagnosed with HIV infection did not have a specified mode of transmission. This percentage grew to 25% in 2002 with an additional 32% of female cases who would not agree to or could not be interviewed by a Disease Intervention Specialist from the MDH. Some cases may yet be interviewed, thus, a portion of these women will later have an identified mode of transmission. This explains *part* of the higher percentage of cases in recent years with an unspecified mode of exposure. According to a study conducted by the Centers for Disease Control and Prevention (CDC)<sup>6</sup>, it is likely that at least 80% of women with unspecified risk acquired HIV through heterosexual contact. Heterosexual contact as a mode of HIV transmission is currently only assigned to a female case if she knows that a male sexual partner of hers was HIV-infected or at increased risk for HIV (see *HIV Surveillance Technical Notes* for further details).

The proportion of cases attributable to a certain mode of exposure differs not only by gender, but also by race. Of the new HIV infections diagnosed among males between 2000 and 2002, MSM or MSM/IDU accounted for 84% of cases among White males, 59% of cases among Hispanic males, 47% of cases among African American males, and 6% of cases among African-born males. The latter three also had the highest proportions of cases with unspecified risk (27%, 38%, and 87%, respectively – this includes cases for whom no interview has been obtained). It is hypothesized that due, in part, to social stigma many of the cases with unspecified risk were unclassified MSM cases. This may not hold as true for African-born cases given that heterosexual contact and contaminated medical equipment have been established modes of HIV exposure in their countries of origin. IDU, MSM/IDU or heterosexual contact with an injecting drug user was reported as a risk in 16% of male African American cases and 10% of Hispanic cases diagnosed during 2000-2002, but no more than 6% among Whites or African-born males.

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<sup>6</sup> MMWR 2001; 50(RR-6):31-40.

The number of cases among Asian and American Indian men during the years 2000-2002 were insufficient to make generalizations regarding risk (less than 20 cases in each group), but male to male sex among Asians and IDU among American Indians appear to be the most prominent modes of exposure.

Heterosexual contact with a partner who has or is at increased risk for HIV infection accounted for 54% of cases among African American females, 48% of cases among White females during 2000-2002, and 18% of cases among African-born females. More than 39% of cases in each of these groups had no specified risk (including cases for whom no interview has been obtained). IDU directly accounted for 7% of cases among Whites, 4% among African Americans, and 0% among African-born. The number of cases among Hispanic, Asian, and American Indian women during the years 2000-2002 were insufficient to make generalizations regarding risk (less than 20 cases in each group).

### **Mother-to-Child HIV Transmission**

The ability to interrupt the transmission of HIV from mother to child via antiretroviral therapy and appropriate prenatal care is an important accomplishment in the history of the HIV/AIDS epidemic. Newborn HIV infection rates range from 25-30% without antiretroviral therapy, but decrease to 1-2% with appropriate medical intervention. Unfortunately, these benefits have largely only been realized in the developed world where antiretroviral therapies are more accessible than in undeveloped countries.

In Minnesota, only two cases of perinatal transmission occurred during the past 3 years, representing a 2% rate of transmission. The rate of transmission in Minnesota between 1982 and 1994 (before widespread use of zidovudine<sup>7</sup> to prevent mother-to-child HIV transmission) was 25%. Proper prenatal care, including HIV screening for all pregnant women and appropriate medical intervention for those infected, is a vital element in preventing the spread of HIV.

### **Emerging Trend: New HIV Infections among African-born Persons**

The number of new HIV infections diagnosed among African-born persons in Minnesota has been steadily increasing from 7 cases in 1990 to 65 cases in 2002. During this time there was also a significant increase in African immigration to Minnesota. Among new HIV infections

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<sup>7</sup> A common antiretroviral drug.

diagnosed in 2002, 21% were among African-born persons. Despite the absence of an accurate estimate of the number of African-born persons living in Minnesota, it is fair to speculate that they make up less than 1% of the total Minnesota population and are, therefore, disproportionately affected by HIV<sup>8</sup>. A notable difference in the local epidemic among African-born persons is the fairly equal distribution of cases between males and females. In 2002, 55% of new HIV infections diagnosed among African-born persons were female; among the remaining HIV infections diagnosed in Minnesota during 2002, only 21% were female.

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<sup>8</sup> Based on U.S. Census 2000 data, the U.S. Census Bureau estimates between 20,424 and 35,188 African-born persons are living in Minnesota out of a total population of 4,919,479. Because there are many reasons African-born persons may not be included in the census count (e.g. difficulties with verbal or written English), even 35,188 is likely an underestimate of the actual size of the African-born population living in Minnesota.