

Status of the HIV/AIDS Epidemic in Michigan, 2005
HIV/STD and Other Bloodborne Infections Surveillance Section,
Bureau of Epidemiology
Michigan Department of Community Health

Global and National Overview

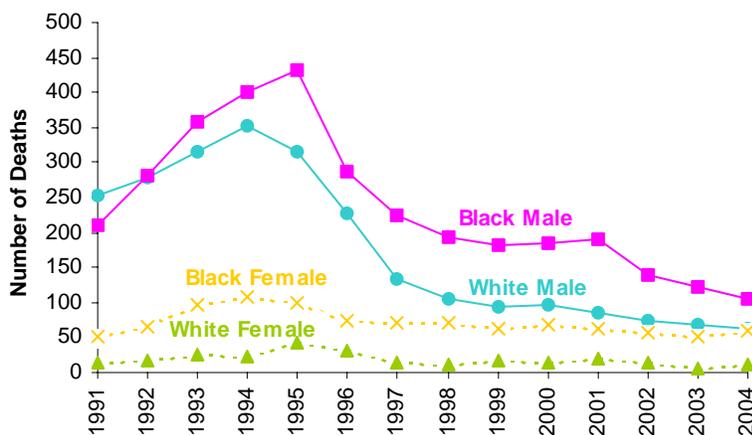
An estimated 4.9 million new HIV infections and 3.1 million AIDS deaths occurred during 2005 worldwide, bringing the total persons infected with HIV to 40.3 million. There have been more than 25 million deaths since the beginning of the epidemic. Nearly two-thirds of new HIV cases and over three-quarters of AIDS deaths were in Sub-Saharan Africa, where transmission is predominately heterosexual¹.

The number of new diagnoses of HIV/AIDS per year decreased slightly from 2001 to 2004 in the 35 areas of the U.S. with confidential, name-based, integrated HIV and AIDS infection reporting in place since 2000. At the end of 2004, an estimated 462,792 persons in the 35 areas were living with HIV/AIDS. The number of AIDS deaths per year in the 50 states, District of Columbia, and U.S. territories, possessions, and associated nations decreased 8% from 2000 through 2004, with 15,798 occurring in 2004. Through December 2004, an estimated 944,306 adult/adolescents have been diagnosed with AIDS; of these, 529,113 (56%) have died².

Michigan HIV-related Deaths Decline

HIV-related deaths declined sharply among all groups between 1995 and 1997, and less sharply between 1998 and 2004. The data in the graph to the left show the trend among white males, black males, black females, and white females. There were statistically significant declines from 1995 through 2001 among white males (79%), black males (65%), and females (47%). From 2001 to 2004 there was also a 45% decline in deaths among black males. There were too few deaths to show other groups.

HIV-Related Deaths in Michigan, 1991-2004



Of the 248 HIV-related deaths in 2004, there were 105 (42%) deaths in black males, 62 (25%) deaths in white males, 59 (24%) deaths in black females, 11 (4%) deaths in white females, 9 (4%) in non-white/non-black males, and 2 (1%) in non-white/non-black females. In comparison, there were 4,932 (41%) black males, 3,715 (31%) white males, 2,056 (17%) black females, 558 (5%) white females, 549 (5%) non-white/non-black males, and 171 (1%) non-white/non-black females living with HIV or AIDS in Michigan as of January 1, 2006. This comparison shows that in most of the race/sex groups (black males, white females, and non-white/non-black males and females), the percentage of deaths is proportional to the percentage of persons currently living HIV/AIDS in each race/sex group. Black females, however, have disproportionately more deaths (24% of deaths versus 17% of HIV/AIDS cases) whereas white males have disproportionately fewer deaths (25% of deaths versus 31% of HIV/AIDS cases).

Trends in New Diagnoses of HIV Infection in Michigan, 2000-2004

Methods: To evaluate trends over time, we approximated the number of persons newly diagnosed with HIV infection each year and determined if there was a statistically significant change from 2000 through 2004. Numbers are approximated by adjusting the number of reported cases diagnosed in

2000-2004 to account for those who may not have been reported to the health department by January 1, 2006. These adjustments are calculated by weighting the data. The date of new HIV *diagnosis* does not tell us when persons were first *infected*, because their HIV diagnosis may take place months or years after infection. However, this is the best current measure of how fast the epidemic is spreading among different populations. Over this time period No Identifiable Risk (NIR) cases were also redistributed to other risk categories based on past patterns of NIR reclassification.

Overall: The number of HIV diagnoses from 2000 to 2004 is stable at around 890 cases per year. These new diagnoses include persons who learned of their HIV infection status after developing symptoms of AIDS. Each year, there are more new diagnoses of HIV infection than deaths. Therefore, the reported number of persons living with HIV/AIDS in Michigan is increasing. MDCH estimates that 16,200 residents are living with HIV infection in Michigan (including those with AIDS).

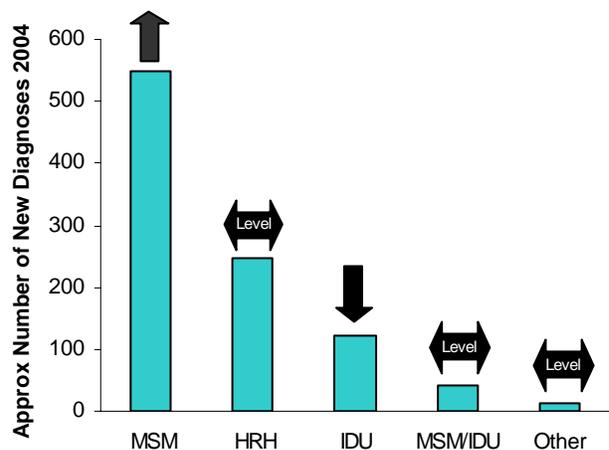
Risk Behaviors for HIV Infection, 2000-2004:

The proportion of persons diagnosed each year with HIV infection between 2000 and 2004 increased significantly in men who have sex with men (MSM) from 51% to 57% (461 to 550 cases) whereas the proportion decreased significantly in Injection Drug Users (IDU) from 17% to 12% (150 to 120 cases). The proportion of new diagnoses remained level in all the other risk groups, including High Risk Heterosexuals (HRH). HRH are persons who knew they had one or more partners that were an IDU, bisexual (for females), a recipient of HIV infected blood, or a person infected with HIV.

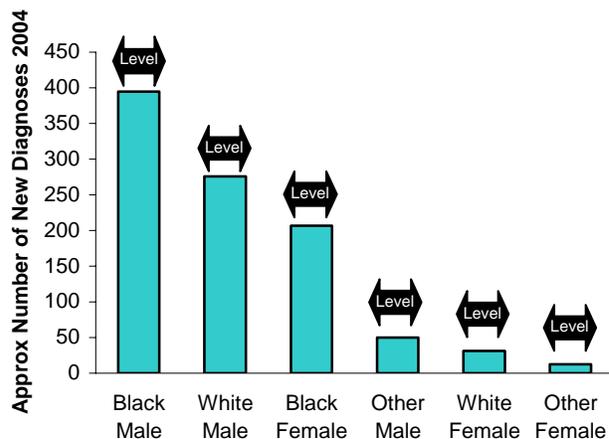
Of the 971 new HIV diagnoses in 2004, there were 550 (57%) among MSM, 246 (25%) among HRHs, 120 (12%) among IDUs, 41 (4%) among MSM/IDUs, and 14 (1%) among persons with other risks. Other risks include transmission from blood product exposure, perinatal exposure, and those with no identified risk. One percent of diagnoses were among persons who first acquired infection from blood products received either before 1985 in the U.S. or in other countries. Less than 1 percent of diagnoses were among infants born to HIV-infected mothers.

Race and Sex 2000-2004: The proportion of persons diagnosed each year with HIV infection between 2000 and 2004 was stable across race/sex groups. In 2004, there were 395 (41%) diagnoses in black males, 276 (28%) in white males, 207 (21%) in black females, 50 (5%) in non-white/non-black males, 31 (3%) in white females, and 12 (1%) in non-white/non-black females. Although the trends in new HIV diagnoses among black males and females are level, they are still impacted disproportionate to their numbers in the population. Black persons make up 14 percent of the general population of Michigan, but account for 62 percent of new HIV diagnoses in 2004 and 58 percent of persons living with HIV/AIDS.

Number of New Diagnoses in 2004 and Trends 2000-2004 According to Risk

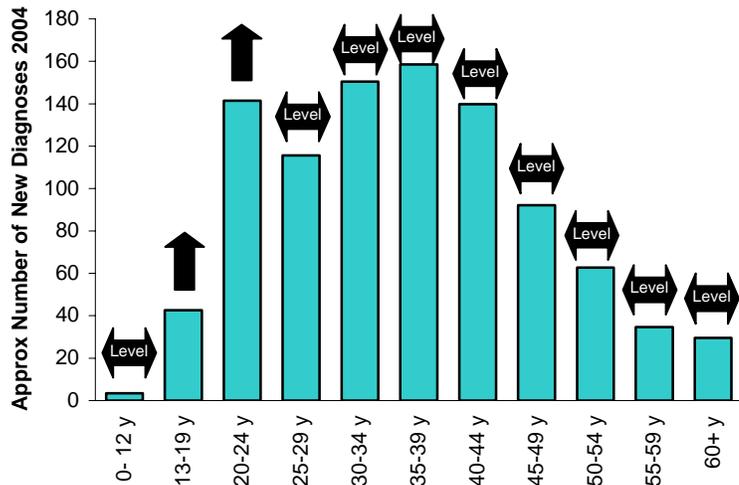


Number of New Diagnoses in 2004 and Trends 2000-2004 According to Race/Sex



Age at HIV Diagnosis 2000-2004: The proportion of persons diagnosed each year with HIV infection increased significantly among those diagnosed at 13-19 years from 2% to 4% (22 to 43 cases) and also increased significantly among those diagnosed at 20-24 years of age from 7% to 15% (61 to 142 cases). In all other age groups, the trends in new diagnoses are level. In 2004, there were 3 (<1%) persons diagnosed at 0-12 years of age, 43 (4%) 13-19 years, 142 (15%) 20-24 years, 116 (12%) 25-29 years, 150 (15%) 30-34 years, 159 (16%) 35-39 years, 140 (14%) 40-44 years, 92 (9%) 45-49 years, 63 (6%) 50-54 years, 35 (4%) 55-59 years, and 30 (3%) 60+ years. §

Number of New Diagnoses in 2004 and Trends 2000-2004 According to Age at HIV Diagnosis



Residence 2000-2004: The proportion of new HIV diagnoses is unchanged across different geographic areas of Michigan. About two-thirds of new diagnoses each year are among residents of southeast Michigan (Wayne, Oakland, Macomb, Monroe, Lapeer and St. Clair counties). One third are diagnosed among residents of the rest of the state.

Concurrent HIV and AIDS Diagnosis, 2000-2004: Among persons who were diagnosed with HIV between 2000 and 2004, the percentage diagnosed concurrently (within the same month) with AIDS remained stable at 24% (210 cases) overall. The proportion of concurrent diagnoses decreased significantly among black females from 26% to 15% (51 to 31 cases). There are no significant changes in any of the other race/sex groups.

Twenty-two percent (212 cases) of the new diagnoses in 2004 were concurrent. The following are proportions of concurrent diagnoses within each race/sex group: 25% of black male diagnoses (98 of 395), 23% of white male diagnoses (64 of 276), 15% of black female diagnoses (31 of 207), 28% of non-white/non-black male diagnoses (14 of 50), 12% of white female diagnoses (4 of 31), and 9% of non-white/non-black female diagnoses (1 of 12). In general, males were significantly more likely to be diagnosed concurrently than females. In 2004, 24 percent of males (176 cases) were diagnosed concurrently compared to 14 percent of females (36 cases). There were no significant differences in concurrent diagnoses among race groups.

Every concurrent diagnosis represents a failure to diagnose HIV early in the course of the person’s infection as well as to start treatment early. Persons who are unaware of their HIV infection cannot benefit from antiretroviral therapy and have a poorer prognosis than those diagnosed early in the disease course. They are also not accessible for secondary prevention. Expanding routine screening for HIV can improve outcomes for those who are infected³.

Trends in New Diagnoses of AIDS in Michigan, 2000-2004

New AIDS cases were statistically level at about 610 persons annually between 2000 and 2004. In order to decrease the number of new AIDS cases, we need to continue efforts to get infected persons tested and into early care. In addition, treatments will need to become more effective and work for longer periods of time.

§ In order to adjust the number of new diagnoses to account for reporting delays, weights are applied to the data. The number of new diagnoses in each of the age groups do not sum to 971 (the total approximate number of new diagnoses in 2004) due to rounding error.

Conclusions

Over the last four years, HIV mortality declined but the number of new HIV diagnoses remained stable. There continue to be more new HIV diagnoses each year than deaths among HIV-infected persons, so the total number of persons living with HIV infection is increasing. However, the overall estimate of HIV prevalence in Michigan has remained the same since 2004. The prevalence estimate has not been increased in part due to Michigan's participation in a nationwide de-duplication of the national HIV/AIDS surveillance database that countered a portion of the increase in prevalence. In addition, in 2005, Michigan began implementing PA 514, the law that removes the previous laboratory HIV reporting exemption. The addition of laboratory reporting to the HIV surveillance system has increased the number of case reports received and has improved reporting completeness, bringing the number of reported cases closer to the previously calculated prevalence estimates. However, since this procedure is still new, MDCH has not had enough months of complete laboratory reporting to fully evaluate the impact of PA 514 on the HIV/AIDS prevalence estimates. Thus, the overall estimate of persons living with HIV/AIDS in Michigan will be examined at a later time.

From 2000-2004, approximately 24 percent of persons newly diagnosed with HIV infection were also diagnosed with AIDS at the same time although the proportion of concurrent diagnoses decreased significantly in black females.

When evaluating the relative impact of the epidemic among different groups it is important to balance both where the largest numbers are as well as trends over time. New HIV infections in Michigan predominantly occur among residents of Southeast Michigan, males who have sex with males (MSM), persons who are black, and persons who are age 20 through 49 years at the time of HIV diagnosis. The proportions of new diagnoses of HIV infection have increased significantly over the past few years in the MSM risk group as well as among 13-19 and 20-24 year olds whereas the proportion of new diagnoses has decreased significantly in the IDU risk group. The geographic distribution of cases among teenagers, young adults and MSM are proportional to the distribution of all persons living with HIV/AIDS in the state, i.e., about two thirds are in the Detroit Metropolitan Area. These trends support the need for routine HIV testing of persons of any age who are sexually active. If testing is increased, we will identify more HIV-infected people who will need assistance getting into and staying in care.

References:

1. Joint United Nations Programme on HIV/AIDS. *AIDS epidemic update: December 2005*. Available at: http://www.unaids.org/epi/2005/doc/report_pdf.asp
2. Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report 2004* (Vol. 16). Atlanta: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2005. Available at: <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2004report/default.htm>
3. Bozzette, SA. Routine Screening for HIV Infection—Timely and Cost-Effective. *N Engl J Med* 352:6 February 10, 2005. pp620-621.