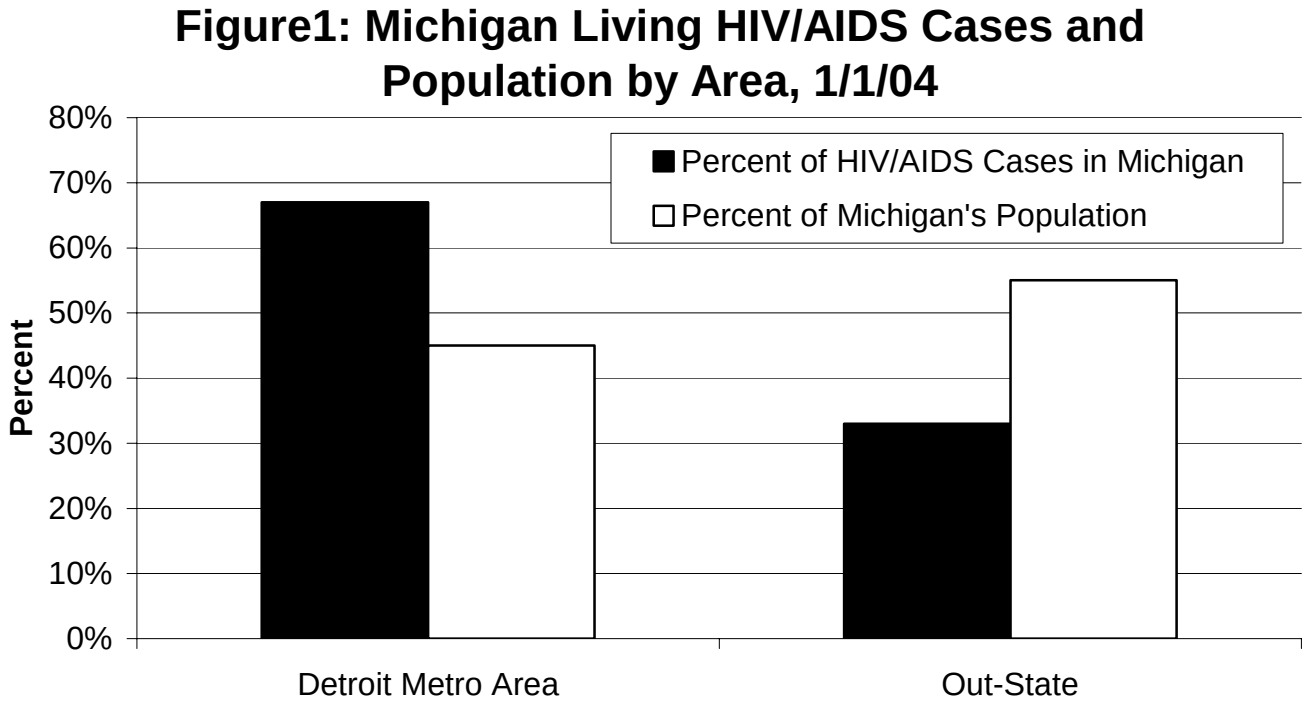
2004 Profile of HIV/AIDS in Michigan



Detroit Metro Area includes City of Detroit, Lapeer County, Macomb County, Monroe County, Oakland County, St. Clair County, and Wayne County

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Statewide Summary of Epidemic for Michigan

- **How many cases?** The Michigan Department of Community Health (MDCH) estimates that there are 16,200 people currently living with HIV/AIDS in the state, of which 11,527 were reported as of January 1, 2004. Incidence of HIV (the number of new HIV infections) was roughly level at around 900 cases each year between 1998 and 2002. The number of HIV-related deaths declined significantly in 1996 and 1997, likely due to effective therapies that prolong life but do not eliminate HIV infection. From 1998-2002, however, the number of HIV related deaths did not decline significantly. (See Figure 8, page 2-11) The prevalence of HIV disease (all persons living with HIV infection or AIDS, whether diagnosed recently or years ago) is increasing because new cases are still being diagnosed and infected persons are living longer.

- **How are the cases geographically distributed?** HIV disease is distributed disproportionately in Michigan. The Detroit Metro Area has 64 percent of those living with HIV (7,337 of the 11,527 cases reported statewide), but only 45 percent of the general population (Figure 1, page 2-1). The rest of the state has fewer cases compared with the general population distribution.

- **How does the epidemic in Michigan compare with national and worldwide statistics?** According to the Joint United Nations Programme on HIV/AIDS, an estimated 5 million new HIV infections and 3 million AIDS deaths occurred during 2003 worldwide, bringing the total persons infected with HIV to 40 million. There have been a cumulative total of 31 million deaths since the beginning of the epidemic. About three-quarters of new cases and deaths were in Sub-Saharan Africa, where transmission is predominately heterosexual.
(Joint United Nations Programme on HIV/AIDS. *AIDS epidemic update: December 2003*. Available at http://www.unaids.org/resources/publications/Corporate_Publications.pdf)

- The number of new diagnoses of HIV/AIDS per year in the 30 areas of the U.S. with confidential-name-based HIV infection reporting in place since 1998 increased steadily from 1999 to 2002 to about 26,500 new HIV cases in 2002. The number of AIDS deaths per year in all 50 states and territories declined to about 16,400 in 2002. Through December 2002, 859,000 adult/adolescents in all 50 states, territories, and Puerto Rico had been reported as having AIDS; of these, 501,669 (58 percent) had died. Michigan is ranked approximately 17th in total number of cases and 30th by cumulative rate per 100,000 population. (Centers for Disease Control and Prevention, *HIV/AIDS Surveillance Report*, Volume 14, October 2003. Available at http://www.cdc.gov/hiv/stats/harslink/htm

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Recommendations: Ranking of Behavioral Groups

To assist in prioritizing prevention activities, the MDCH HIV/STD & Bloodborne Infections Surveillance Section is charged with ranking the top three primary behavioral groups at risk for HIV disease in Michigan. The guiding question used in this process is, "In which populations can strategies prevent the most infections from occurring?" Effectively reducing transmission in populations where most of the HIV transmission is taking place will have the greatest impact upon the overall epidemic. The percentage of cases for each behavioral group was used in determining the ranked order of the following three behavioral groups: MSM, IDU, and heterosexual.

- **Men Who Have Sex With Men (MSM)*:** MSM make up 62 percent of all HIV/AIDS cases with a known mode of transmission (5,951 out of 9,557). The MSM behavioral group continues to be the most affected behavioral group statewide even though the number of new cases indicates a level trend.

- **Injecting Drug Users (IDU)*:** Of all HIV/AIDS cases with a known mode of transmission, 25 percent are IDU (2,365 out of 9,557). Cases among IDUs are closely linked to HIV among women and their infants and the heterosexual groups. The trend in IDU behavior in persons diagnosed each year with HIV infection between 1998 and 2002 decreased significantly from 16 percent to 9 percent (143 to 79 cases).

- **High Risk Heterosexuals (HRH):** Heterosexual cases constitute 17 percent of the total number of cases with a known mode of transmission (1,585 out of 9,557) and are defined as HIV-infected persons whose heterosexual sex partners are known to be IDUs, behaviorally bisexual men, blood recipients known to be HIV +, and/or HIV+ individuals. The trend in heterosexual transmission also appears to be level.

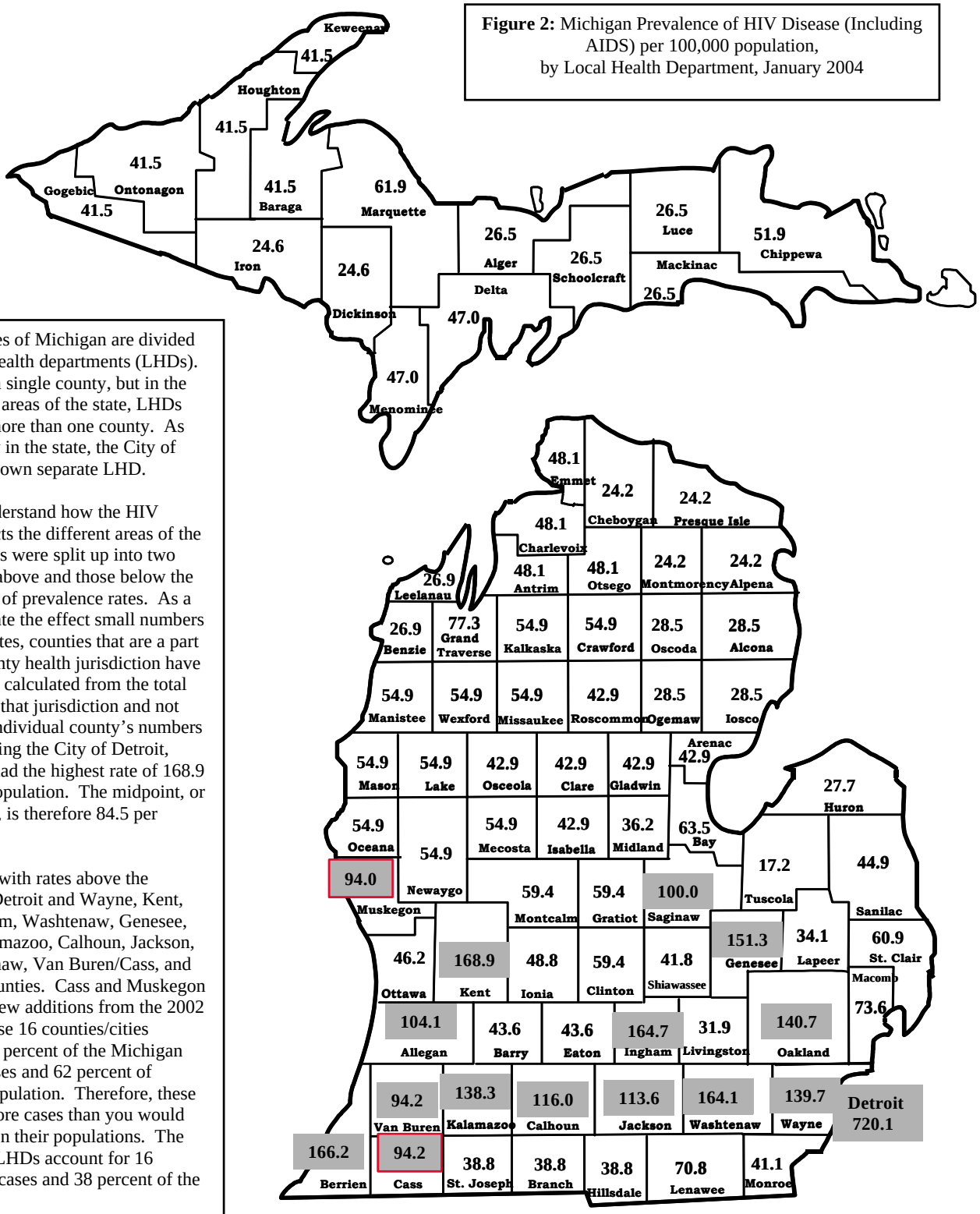
******These numbers include MSM/IDU in totals and percent calculations.*

2004 Profile of HIV/AIDS in Michigan

Distribution of HIV/AIDS Prevalence by Local Health Jurisdiction

Data from HIV/AIDS Reporting System

Figure 2: Michigan Prevalence of HIV Disease (Including AIDS) per 100,000 population, by Local Health Department, January 2004



The 83 counties of Michigan are divided into 45 local health departments (LHDs). Most contain a single county, but in the less populated areas of the state, LHDs may contain more than one county. As the largest city in the state, the City of Detroit has its own separate LHD.

In order to understand how the HIV epidemic affects the different areas of the state, the LHDs were split up into two groups, those above and those below the 50th percentile of prevalence rates. As a way to moderate the effect small numbers can have on rates, counties that are a part of a multi-county health jurisdiction have rates that were calculated from the total numbers from that jurisdiction and not based on the individual county's numbers alone. Excluding the City of Detroit, Kent County had the highest rate of 168.9 per 100,000 population. The midpoint, or 50th percentile, is therefore 84.5 per 100,000.

The 15 LHDs with rates above the midpoint are Detroit and Wayne, Kent, Berrien, Ingham, Washtenaw, Genesee, Oakland, Kalamazoo, Calhoun, Jackson, Allegan, Saginaw, Van Buren/Cass, and Muskegon Counties. Cass and Muskegon Counties are new additions from the 2002 rankings. These 16 counties/cities account for 84 percent of the Michigan HIV/AIDS cases and 62 percent of Michigan's population. Therefore, these LHDs have more cases than you would expect based on their populations. The remaining 30 LHDs account for 16 percent of the cases and 38 percent of the population.

2004 Profile of HIV/AIDS in Michigan

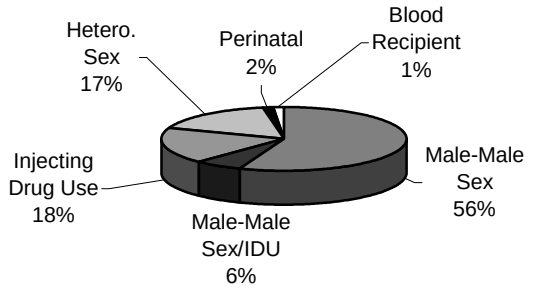
Distribution of HIV/AIDS (Living) Cases by Mode of Transmission

Data from HIV/AIDS Reporting System (HARS)

Current surveillance methods cannot distinguish the specific transmission route in individuals who have engaged in more than one transmission behavior. Although case reporting includes ascertainment of many behaviors associated with HIV transmission, for the purposes of analysis and interpretation, cases are assigned to a risk hierarchy designated by the Centers for Disease Control and Prevention. This hierarchy takes into account the efficiency of HIV transmission associated with each behavior as well as the probability of exposure to an infected person within the population. The adult/adolescent categories, in order, are as follows: (1) men who have sex with men (MSM), (2) injecting drug users (IDU), (3) men who have sex with men and inject drugs (MSM/IDU), (4) hemophilia/coagulation disorders, (5) heterosexual (see glossary for more in-depth description), (6) receipt of HIV-infected blood or blood components, and (7) no identified risk (NIR). This hierarchy is currently being re-examined by a national workgroup.

Figure 3 indicates persons living with HIV/AIDS in Michigan by mode of transmission for the 9,557 cases for which the risk was identifiable.

Figure 3: Reported Persons Living with HIV/AIDS with a Known Risk in Michigan, by Mode of Transmission (n=9,557)



- This chart demonstrates that over half (62 percent) of the people living with HIV/AIDS with a known mode of transmission are MSM, including six percent who also injected drugs (MSM/IDU).
- One fourth (25 percent) are injecting drug users, including six percent who are also MSM (MSM/IDU). Forty-seven percent of non-MSM IDUs also have high-risk heterosexual sex partners (IDU w/ hetero). See Table 5, page 2-45.
- Seventeen percent of the total had high-risk heterosexual sex partners as their only mode of transmission.

Discussion of Persons with 'No Identified Risk':

The 'No Identified Risk' (NIR) category is the only transmission category with a significant trend increase from 1998 to 2002. MDCH does not believe this increase is due to previously unrecognized modes of transmission because cases are investigated where this is suspected. NIRs make up 17 percent of the HIV-infection population in Michigan and are 65 percent male and 35 percent female. Those persons in the NIR category are 69 percent black, 21 percent white, and 10 percent other races. Almost three-quarters of the NIRs fall under the 'presumed heterosexual' subcategory. Presumed Heterosexual accounts for nine percent of men living with HIV and 22 percent of women living with HIV. See Table 6, page 2-47.

There are many reasons why risk is not reported to the Michigan Department of Community Health on the initial care report form. Lack of provider elicitation and patient denial, as well as, patients truly not knowing their risks and the risks of their partners, are reasons why there is a growing proportion of NIRS.

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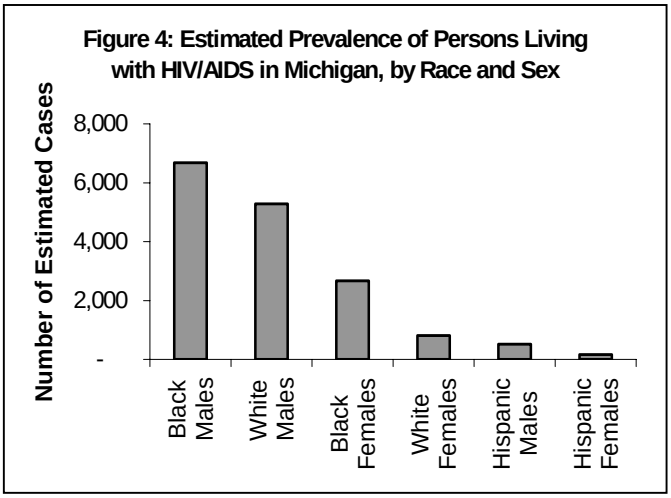
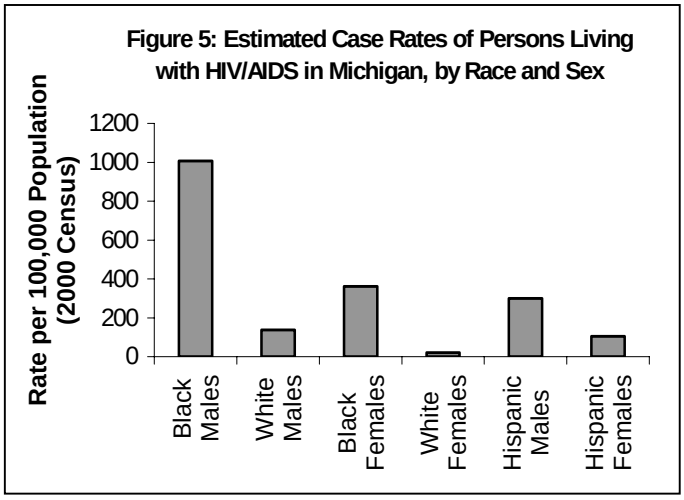
Distribution of Estimated HIV/AIDS Cases by Race and Sex

Data from HIV/AIDS Reporting System (HARS)

Figures 4 and 5 show the impact of this epidemic on six race and sex groups.





- Black males have both the highest rate per 100,000 population (1,011) and the highest estimated number (6,710) of HIV/AIDS cases. This high rate means the impact of the epidemic is greatest on this demographic group.
- Black females have the second highest rate (363) and the third highest estimated number (2,680) of cases of HIV/AIDS.
- Hispanic males have the third highest rate (299) and the fifth highest estimated number (510) of cases. This means that the impact of this epidemic is high on a relatively small demographic group.
- White males have the fourth highest rate (138) and the second highest estimated number (5,300) of cases.
- Hispanic females have the fifth highest rate (104) and the lowest estimated number (160) of HIV/AIDS.
- White females have the lowest rate (20) and the fourth highest estimated number (810) of HIV/AIDS cases.

Trends in HIV/AIDS Data

Data from HIV/AIDS Reporting System (HARS)

- Transmission of HIV 1998-2002: Figure 6 shows that the proportion of persons diagnosed each year with HIV infection between 1998 and 2002 decreased significantly in IDUs from 16 percent to nine percent (143 to 79 cases) and MSM/IDUs from four percent to two percent (32 to 17 cases) and increased significantly in the No Identifiable Risks (NIRs) from six percent to 10 percent (52 to 84 cases). Before adjusting cases for those reported without risk we expect cases diagnosed and reported more recently to be less likely to have a known mode of transmission. However, since these data were adjusted for the trend, the fact that we still see a significant increase in the proportion of NIRs means that this increase cannot be attributed to this expected pattern in risk classification.

Of the 836 new HIV infections diagnosed in 2002, there were 341 (41 percent) diagnoses among MSM, 306 (37 percent) among heterosexuals, 84 (10 percent) among NIRs, 79 (9 percent) among IDUs, 17 (2 percent) among MSM/IDUs, and 9 (1 percent) among persons with other risks. This year the heterosexual category is made up of two subgroups: 'high risk' heterosexuals and 'presumed' heterosexuals. A 'high risk' heterosexual is an HIV-infected person whose heterosexual sex partners are known to be IDUs, behaviorally bisexual men, blood recipients known to be HIV +, and/or HIV+ individuals. A 'presumed' heterosexual is someone who reported heterosexual sex as their only risk but their partner's risk is unknown. 'Presumed Heterosexual' is a sub-category of NIRs and this is the first year "presumed" heterosexuals and the "high risk" heterosexuals are combined into one category for the purpose of measuring trend over time. The trend in heterosexual transmission appears to be level. Other risks include transmission from blood products and perinatal exposures.

Figure 6: Number of New HIV Diagnoses in 2002 and Trends 1998-2002, by Mode of Transmission

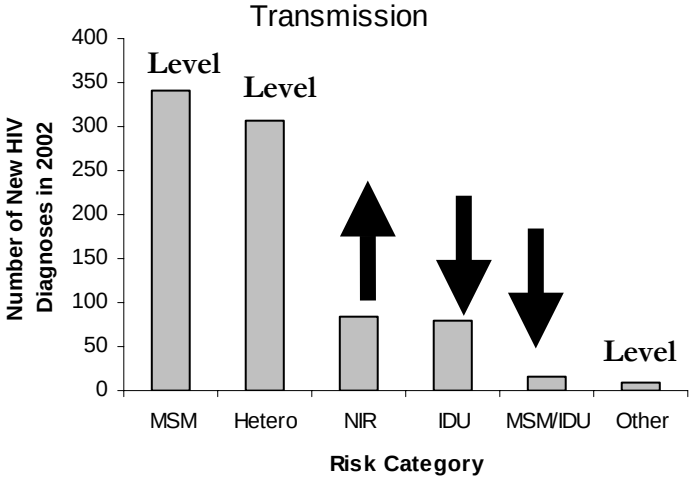
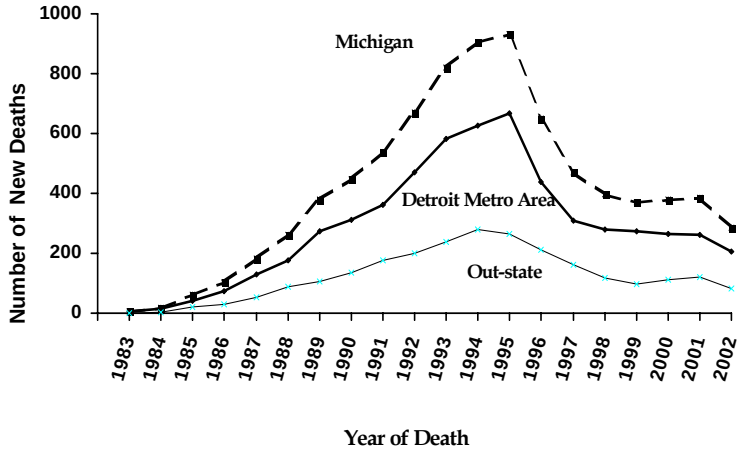


Figure 7: HIV Related Deaths in Michigan, by area

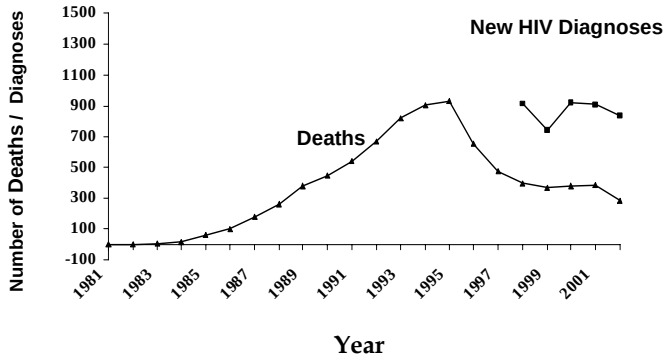


- *The number of HIV related deaths decreased 66 percent between 1995 and 2002.* In Figure 7, the top line reflects the total HIV related deaths for the state of Michigan (the sum of the two lower lines). The second line represents the Detroit Metro Area and the third line consists of the balance of Michigan (Out-state).

Trends in HIV/AIDS Data (Continued)

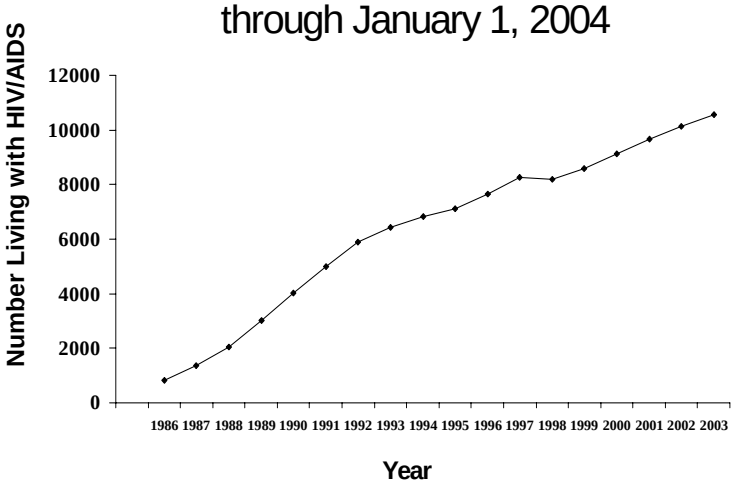
Data from HIV/AIDS Reporting System (HARS)

Figure 8: New Diagnoses of HIV Infection and HIV Deaths in Michigan



- *New HIV diagnoses (HIV incidence) and deaths are statistically level 1998-2002.* HIV incidence and HIV related deaths are shown in Figure 8. The overall decrease in deaths is likely due to the more effective treatments available in 1996 that delay or prevent the onset of AIDS in HIV-infected persons. The number of persons newly diagnosed with HIV each year was roughly level at about 900 cases between 1998 and 2002.

Figure 9: Michigan Residents Reported Living with HIV or AIDS, through January 1, 2004



- The total number of persons living with HIV/AIDS has reached an all-time high and continues to increase because new HIV infections continue to occur but HIV related deaths are dropping. Figure 9 shows this increase using reported HIV and AIDS cases. These cases comprise everyone reported with HIV in Michigan with a name or other identifier, including those who also meet the AIDS case definition. Persons who were reported anonymously or those who have not been diagnosed are not represented in this graph.

2004 Profile of HIV/AIDS in Michigan

Number of People Accessing Services vs. Reported Cases

Data from Uniform Reporting System (URS) & HIV/AIDS Reporting System (HARS)

Table 1: Comparing Services with Cases		
Group	**Services**	**Cases**
Males	73%	77%
Females	27%	23%
White	32%	37%
Black	60%	57%
Hispanic	4%	4%
Other Minorities	2%	1%
Unknown Race	2%	1%
White Males	27%	32%
Black Males	40%	41%
Hispanic Males	3%	3%
Other Minority Males	1%	<1%
Unknown Race Males	1%	1%
White Females	5%	5%
Black Females	20%	16%
Hispanic Females	1%	1%
Other Minority Females	1%	<1%
Unknown Race Females	<1%	<1%
0-12 Years*	1%	1%
13-19 Years*	1%	1%
20-24 Years*	3%	2%
25-44 Years*	58%	56%
45+ Years*	36%	40%
Infants: 0-1 Years*	<1%	<1%
Children: 2-12 Years*	1%	1%
Youth: 12-24 Years*	5%	3%
Women: 25 Years*+	25%	21%
Total HIV Infected	100% (N=6,952)	100% (N=11,527)

** "Years" within this table refers to* ***current age****, not age at diagnosis.*

The Uniform Reporting System collects data on services that are provided to clients, including case-management, physician referrals, and assistance with housing and transportation needs. These services are funded through the Ryan White CARE Act (RWCA) and related sources.

In 2003, 6,952 HIV-infected persons were reported receiving Ryan White services in the state of Michigan. Since it is likely that most of these individuals receiving services are reported cases, when comparing their number to that of the total number of reported cases (11,527), it is apparent that not all reported persons are receiving RWCA-funded services. A comparison also shows that persons receiving Ryan White services were more likely than the reported population to be female or black.

The Ryan White CARE Act puts a priority on providing services to women, infants, children and youth (WICY) with HIV infection. As a result, the proportion of youth age 12 to 24, and women age 25 or older receiving care is somewhat higher than in reported cases.

2004 Profile of HIV/AIDS in Michigan

Estimates of At-Risk Populations

Data from Holtgrave D, et al

Sexual Activity:

A 2002 study by Emory University for the Michigan Department of Community Health estimates that there are 259,344 (range: +/- 1% of the relevant population) persons living in Michigan at continued sexual risk for the HIV infection (Holtgrave D, et al. *Phase I Report: Number of Persons at Risk of HIV Infection in the State of Michigan*, Emory University Center for AIDS Research. Nov 2002). This estimate was gained from compiling estimates from numerous sources and incorporates both homosexual and heterosexual behaviors.

Substance Abuse:

The same study referenced above estimates that there are 229,000 (range: 183,000 - 283,000) persons living in Michigan at substance abuse risk for HIV. This estimate was gained from the 1999 National Household Survey of Drug Abuse and incorporates the use of both injection and non-injection drugs. Of these persons estimated to be at substance abuse risk for HIV, 38,000 are 12-17 years old, 65,000 are 18-25 years old, and 126,000 are 26 years or older. This report also shows that 3.3 percent of Michigan high school males and 1.4 percent of high school females have ever used illicit injection drugs.

Tuberculosis and HIV

Data from TB Registry & HIV/AIDS Reporting System (HARS)

As the HIV/AIDS epidemic continues to grow, there are indications of a correlation between those infected with HIV and the resurgence of tuberculosis. There are now a total of 145 persons known to be living, definitively co-infected, with HIV and Tuberculosis (TB). These include:

- 112 males (77 percent) and 33 females.
- 113 Non-Hispanic Black (78 percent), 20 Non-Hispanic White (14 percent), 11 Hispanic, and 1 Asian/Hawaiian/Pacific Islander.
- Cumulatively, a total of 548 have ever been definitively co-infected with HIV and TB, of which 403 (74 percent) have died.
- Age at diagnosis of HIV: Three (2 percent) were 0 - 9 years, 2 (1 percent) were 10-19 years, 35 (24 percent) were in their 20s, 68 (47 percent) were in their 30s, 26 (18 percent) were in their 40s, and 11 (8 percent) were 50+ years.
- Residence at diagnosis of HIV: Sixty-eight percent lived in the Detroit Metro Area. Areas with the majority of diagnoses are as follows: 75 City of Detroit (52 percent), 12 Wayne County, 9 Kent County, 9 Oakland County, 7 Berrien County, 5 Ingham County, 4 Jackson County, 3 Calhoun County, 3 Washtenaw County, 2 Genesee County, and one each in Macomb County, St. Clair County, and Wexford County. Thirteen had no county listed or were diagnosed with HIV in another state.
- Of the 145 HIV positive persons currently living in Michigan who had been co-infected with tuberculosis, 112 (77 percent) were infected with pulmonary tuberculosis and 33 (23 percent) were infected with extra-pulmonary tuberculosis (outside of the lung).

2004 Profile of HIV/AIDS in Michigan

Sexually Transmitted Diseases

Data from HIV/AIDS Reporting System (HARS) & STD Reporting System

Several sexually transmitted diseases (STDs) are more common than HIV infection, have a short incubation period, and are curable. Reviewing their patterns of transmission can provide additional information regarding recent sexual behavior and potential risk, not available from HIV/AIDS data. Studies have shown that the risk of both acquiring and spreading HIV is two to five times greater in people with STDs. Aggressive STD treatment in a community can help to reduce the rate of new HIV infections.

During 2003 alone, there were over 32,000 cases of chlamydia and nearly 14,000 cases of gonorrhea reported in Michigan. See Table 10, page 2-51. For both diseases, the highest rates of infection were among persons age 15-24. This age group comprises 14 percent of the Michigan population but accounted for 59 percent of gonorrhea and 72 percent of chlamydia cases. The rates of chlamydia and gonorrhea among blacks were much higher than among whites. Even though 40 percent of gonorrhea cases and approximately one-half of chlamydia cases were missing race information, the rates (number of cases per population) among blacks remain higher even if all unknown cases were among whites.

Syphilis was diagnosed much less frequently than gonorrhea and chlamydia (249 syphilis cases) in 2003. Reported syphilis cases have increased each year in Michigan since 1997, peaking in 2002, with 486 cases. There was a steady and statistically significant downward trend in reported cases during the 2002 and 2003 calendar years, resulting in a nearly 50 percent decrease in reported cases compared to 2002. Approximately 54 percent of cases were reported in the 30-49 year age group, representing an older at-risk population (as shown in Table 10 on page 2-51). Syphilis cases reported in 2003 were 81 percent black.

Forty-four percent of gonorrhea cases and 62 percent of syphilis cases were male. However, approximately 80 percent of reported chlamydia cases were female. This is likely because more women than men are screened for chlamydia.

Nationwide, there have been increases in STD cases among men who have sex with men. Michigan does not collect standardized sexual orientation data or site of specimen (pharyngeal, rectal, genital) for gonorrhea or chlamydia cases. However, these data are collected for syphilis cases, and approximately 10 percent of male syphilis cases in Detroit are men who have sex with men and just over 30 percent of male syphilis cases in the rest of the state are men who have sex with men. Most states do not collect sexual orientation for gonorrhea and chlamydia cases, however, some use cases of rectal gonorrhea as a proxy for the prevalence of gonorrhea among men who have sex with men. This data source will likely become part of standard STD surveillance in Michigan in the coming year.

There were fourteen cases (2.5 percent of submitted isolates) of quinolone-resistant *Neisseria gonorrhea* (QRNG) discovered in Michigan in 2003. Several local health departments and private laboratories send their gonorrhea samples to the State Laboratories for susceptibility testing as part of surveillance for QRNG. Enhanced surveillance information such as sexual orientation, symptoms, and STD history are collected to compare quinolone-resistant and susceptible gonorrhea cases. Cases were clustered in Ingham (7) and Kent (4) counties. Three cases were attributed to travel to endemic areas such as Hawaii, California, or Asia. Gonorrhea cases were more likely to have QRNG if they were white, older than 30 years, or a man who has sex with men. QRNG prevalence among men who have sex with men was 14 percent of gonorrhea cases versus two percent in heterosexual males and just under one percent for females.

There are several areas in Michigan that consistently report high rates of STDs. For gonorrhea, there are nine areas with rates above the HM 2010 goal of 180 gonorrhea cases per 100,000. The five areas with the highest rate per 100,000 persons are the City of Detroit (584), Genesee County (421), Saginaw County (335), Calhoun County (296), and Berrien County (257). For chlamydia, there are 13 areas with rates above the HM 2010 goal of 215 cases of chlamydia per 100,000. The five areas with the highest rate per 100,000 persons are the City of Detroit (1,092), Berrien County (593), Genesee County (589), Calhoun County (567) and Muskegon and Kent Counties (both have a rate of 512). For primary and secondary syphilis, the Healthy Michigan 2010 goal is 0.2 cases per 100,000 persons. There are five areas with the highest rates are the City of Detroit (19.4), Monroe County (2.7), Jackson County (2.5), Muskegon County (2.4), and Kalamazoo County (1.3). Although there are counties that report more cases than these counties, when you control for the population, it is evident that the STD burden in these areas is quite large. See Table 11 on page 2-52.

Hepatitis and HIV

Data from Adult and Adolescent Spectrum of Disease (ASD)

The Adult and Adolescent Spectrum of Disease project (ASD) is a supplemental surveillance project that collects data from the medical records of HIV-infected patients at two major medical centers in the Detroit Metropolitan Area. Medical records are reviewed every six months, from the time the patients first contact either site, until they die or are lost to follow-up. The proportion of males in ASD is lower than in the HIV-infected population overall, because ASD includes all the females, but only 40 percent of the males who present for HIV care at ASD sites. Thus, females are purposely over-sampled.

Hepatitis C (HCV) is the most common type of hepatitis among HIV-infected persons. Of the 1,902 persons included in ASD who were in care in 2000-2002, 384 (19 percent) had a diagnosis of HCV, while 184 (10 percent) had a diagnosis of hepatitis B (HBV), and 62 (3 percent) had a diagnosis of hepatitis A (HAV) (Table 10). The proportion of HIV-infected persons who were co-infected with HCV was higher among injecting drug users (IDU) and blood recipients than among persons in other HIV transmission risk groups. It was also higher among persons 40 or more years of age than among persons under 40. The rate of HCV co-infection was slightly higher among females than among males, and higher among persons of black or other race than among whites. The proportion co-infected with HBV or HAV varied less than HCV among the demographic and HIV transmission risk groups.

The impact of HCV co-infection on the health of HIV-infected persons is increasing, especially among those with a history of injecting drug use and persons over the age of 40. The total numbers of new HCV cases in the U.S. increased in the 1970's and 1980's, and dropped precipitously in the early 1990's.[1] These changes created a cohort of HCV-infected persons in the population, and as this cohort ages, the number of persons with HCV-related late stage liver disease is expected to increase through 2015.[2] Because HIV/HCV co-infected persons have a higher risk of liver disease than persons infected with HCV alone,[3] they will be impacted even more. Planning for the care of HIV-infected persons needs to take into account the increasing numbers of HIV-HCV co-infected persons who are expected to develop late stage liver disease over the next decade or more.

The HIV/Hepatitis Co-Infection data are displayed in Table 12 on page 2-53.

References:

[1]Centers for Disease Control and Prevention. Hepatitis Surveillance Report No. 58. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003.

[2]Armstrong GL, et al. 2000. Hepatology 31:777-782.

[3]Graham CS, et al. 2001. Clin Infect Disease 33:562-569.

2004 Profile of HIV/AIDS in Michigan

Ranked Behavioral Group: MSM

Data from HIV/AIDS Reporting System (HARS), Family of HIV Seroprevalence Surveys & Supplement to HIV/AIDS Surveillance Project (SHAS)

Number of Cases:

Men who have sex with men (MSM) are the number-one ranked behavioral group in Michigan for HIV infection. MSM remain the single largest behavioral group affected by this epidemic and account for over half of all reported infected persons with a known risk. MDCH estimates that there are approximately 8,520 MSM living with HIV disease in Michigan. This includes an estimated 880 HIV-infected men whose risk is a combination of having sex with other men and injecting drugs.

Prevalence:

From 1993 to 1999, the percent of MSM who were HIV infected and attended the sexually transmitted diseases (STD) clinics at local health departments in southeast Michigan was quite high. These rates are 10 percent in Wayne County outside of Detroit (average 1993 –1996), 24 percent in Oakland County (average 1991-1993) and 29 percent in the City of Detroit (average 1993-1999). Although data from seroprevalence surveys provide valuable information about clinic attendees, the results cannot be generalized to all MSM. The findings are based on a select group of men at the highest risk for contracting HIV — MSM who engage in unprotected sex and have contracted other STDs. In addition, this behavior is likely under-reported at STD clinics, complicating the implications of these proportions. This under-reporting leads to a small number of known MSM being included in these surveys annually (an average of approximately 25 for Detroit and under 20 each for Wayne and Oakland County clinics). Even so, these results suggest that the percent of MSM who are HIV positive is higher than any other behavioral group discussed in these profiles. HIV seroprevalence ranged from 13 to 54 percent during these years, declining in the early years, and peaking in 1995 and then falling again to its lowest level in 1999. These clinic-based surveys were discontinued in 1999.

Statewide Counseling and Testing data showed that HIV seroprevalence was the highest among black MSM and, in 2002, was 6 times higher than that of white MSM and 4 times that of Hispanic MSM. Seroprevalence also increased among black MSM, from 8 percent in 1999 to 11 percent in 2002, but was more stable among white and Hispanic MSM.

Incidence:

Archived serum from HIV-infected clients tested at HIV Counseling, Testing & Referral (CTR) sites throughout Michigan from 1993-2002 was tested using the less sensitive assay (STARHS) to determine whether HIV infection was recently acquired (in the 4-6 months prior to the blood draw). During this time period, approximately 58,000 and 68,000 HIV tests were performed annually. The number of incident infections ranged from 22-54 (13 to 24 percent of HIV-positive persons tested). Overall HIV incidence was stable throughout most of the study period, reaching a low of 0.17 percent in 2000 and then rising to the highest level during this study period at 0.41 percent in 2002. MSM accounted for almost half of incident HIV infections. Incidence among MSM was stable through the 1990s then dipped and rose, settling at 3 percent in 2002. MSM/IDU had many high peaks, but did drop below that of MSM.

The racial distribution of MSM with newly acquired HIV shifted over time. Whites accounted for the majority of newly acquired infections among MSM (61 percent) in the first 5 study years, but 46 percent in the last 5 years, while the proportion of blacks increased from 34 percent to 47 percent during that same time period. Black MSM had higher incidence compared with the other MSM and had greater increases in incidence in recent years. Incidence increased from two percent in 1999 to seven percent in 2002 among black MSM whereas incidence among white MSM increased from 1.1 percent to 1.6 percent over this same time period. HIV incidence among Hispanic MSM was more erratic due to smaller numbers in this population.

Increases in recent years were most apparent among MSM in the 30-39 year and 40-49 year age groups . Among MSM in their 30s, incidence increased from 1.1 percent in 1998 to 2.6 percent in 2002. The increase was greater still among MSM in their 40s, from 0.8 percent in 1999 to 5.3 percent in 2002.

Ranked Behavioral Group: MSM (continued)

Race/Ethnicity:

Having sex with other men infected most males in Michigan. This is true for black, white and Hispanic men. In reviewing reported cases for MSM and MSM/IDU of all races (total cases equaling 5,951), white males (3,031) comprise the majority (51 percent) of men in this combined category; blacks (2,655) account for more than a third (45 percent). See Table 6, page 2-47.

Age:

Among those reporting male-male sex, the highest percent of all living cases of HIV/AIDS is found among those aged 30-39 (42 percent). MSM is the predominant mode of transmission for males aged 13 and up. See Table 7, page 2-48.

Geographic Distribution:

Just under two-thirds (64 percent) of HIV-infected MSM statewide reside in the Detroit Metro Area. In both the high and low HIV/AIDS prevalence areas (see map on page 2-7), MSM comprise the single largest mode of transmission. Within high prevalence counties MSM comprise over half of the cases with a known risk (61 percent) while in the lower prevalence counties two-thirds (69 percent) of reported persons living with HIV/AIDS are MSM. These percentages include MSM who are also IDU.

Trends and Conclusions:

MDCH estimates that there were about 340 new HIV infections in the year 2002 among men who have sex with men. In 2002, there were twice as many black MSM as there were white MSM. These numbers were level from 1998-2002, however, men who have sex with men will likely continue to be the largest behavioral group affected by the HIV epidemic.

The data also suggest that prevention activities among male teenagers and male young adults should be geared towards males having sex with older males. These activities should recognize that adolescents at highest risk are those whose sex partners are older, since older men are more likely to be HIV-infected than are younger males.

Ranked Behavioral Group: MSM: Discussion of Behaviorally Bisexual Men

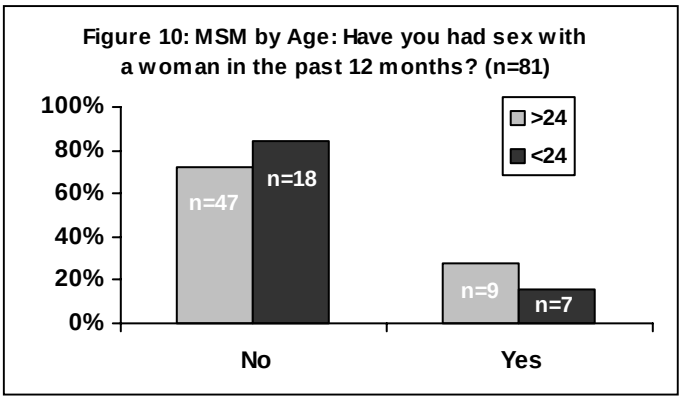
Data from Supplement to HIV/AIDS Surveillance Project (SHAS), HIV Testing Survey (HITS), & HIV/AIDS Reporting System (HARS)

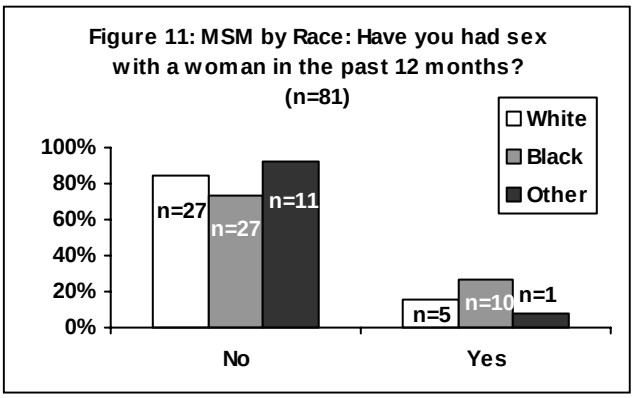
Case reporting data are collected statewide but have only limited information on male bisexual behavior. Case reports are usually completed by health care providers and surveillance staff reviewing medical records rather than through extensive interviews of the infected person. Only 53 percent of all case reports have complete answers to both questions, "has the patient had sex with men," and "has the patient had sex with women." Based on these complete forms, 44 percent of all MSM reported also having sex with women since 1977. These more complete forms also show that three percent of women report having sex with behaviorally bisexual men. These data from case reporting should be viewed as minimum estimates of these behaviors. Nonetheless, they suggest that more women have sex with behaviorally bisexual men than the surveillance system collects. There have been no changes over time.

In an effort to help focus prevention activities, we present the data that are available on bisexual behavior among HIV-infected men in southeast (SE) Michigan from the Supplement to HIV/AIDS Surveillance Project (SHAS). The SHAS interview asks HIV-infected persons directly about specific behaviors. It is conducted only in SE Michigan; therefore, is not representative of all HIV-infected persons in the state. Please see the Data Sources Section (page 1-5) to learn more about SHAS. Of all male SHAS respondents who reported having vaginal, oral, and/or anal sex in the 12 months prior to the interview (530), 63 percent (332) reported having sex with other men* in the 12 months prior to the interview; 254 (77 percent) were black and 72 (22 percent) were white. Of these 332 men, 10 percent (33) also reported having sex with women in the 12 months prior to the interview; 12 percent (30) were black, and three percent (2) were white.

**MSM/IDU are also included in these totals*

During the HIV Testing Survey (HITS) HIV-negative MSM were interviewed in Detroit (55 MSM), Oakland County (5 MSM) and Grand Rapids (23 MSM). The mean age of the respondents sampled at these bars was 30 years. Please see the Data Sources Section (page 1-5) to learn more about HITS. This section describes behaviorally bisexual activity among this group. Among the 81 respondents interviewed in gay bars, the question "Have you had sex with a woman in the past 12 months?" was asked. As can be seen in Figures 10 and 11, men older than 24 years (28 percent) and black men (27 years) were more likely to report bisexual behavior.





Ranked Behavioral Group: MSM: A Look at Condom Usage

Data from Community Intervention Trial for Youth (CITY),
Data Supplement to HIV/AIDS Surveillance Project (SHAS), & HIV Testing Survey (HITS)

A survey of sexual risk and preventive behavior among young men who have sex with men was conducted in the summer of 1999 in Milwaukee, Wisconsin and Detroit called the Community Intervention Trial for Youth (CITY). Men were randomly recruited outside of venues frequented by young men who have sex with men in the two cities. A total of 547 men were surveyed, 48 percent were from Detroit. The mean age from the two cities was 21.2 years. Data specific to Detroit was not yet available, so provisional data from Detroit and Milwaukee combined are presented. The survey shows that 1 in 5 men (20 percent) reported not using a condom during insertive and/or receptive anal sex. Non-white participants were more likely to report insertive anal sex with a condom than white participants. More than half of the total sample (55 percent) had non-main partners in addition to main partners. Almost one-third (32 percent) reported that drugs or alcohol was a factor for having sex with their last non-main partner, while less than a quarter (22 percent) reporting being high on drugs or alcohol during sex with their main partner.

This section discusses questions from interviews with infected MSM regarding condom use with male partners from the SHAS project. Among the 332 men who report having sex with a man in the 12 months prior to the interview, 65 percent (216) reported being in a steady relationship with a man. Fifty-six percent (184) reported having sex with a non-steady man during the 12 months prior to the interview. As shown in Figures 12 and 13, of the 111 male respondents who reported having insertive anal sex with a steady male partner, 28 percent reported not using condoms the last time they had sex. Of the 103 male respondents who reported having receptive anal sex with a steady male partner, 22 percent reported that their partner did not use a condom. The percentages of condom use are similar for most recent non-steady partners the last time they had sex.

Figure 12: Condom Usage During Insertive Anal Sex Among HIV Infected MSM SHAS (n=111)

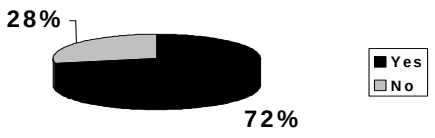
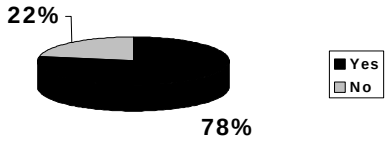


Figure 13: Partners Condom Usage During Receptive Anal Sex Among HIV Infected MSM in SHAS (n=103)



Ranked Behavioral Group: MSM: HIV Negative, At-Risk Persons

Data from HIV Testing Survey (HITS)

During the HIV Testing Survey (HITS) HIV-negative MSM were interviewed in Detroit (55 MSM), Oakland County (5 MSM) and Grand Rapids (23 MSM). Use of condoms with male partners was assessed and indicated inconsistent condom usage. Condom use was more frequent among those who reported being the insertive partner. Figure 14 shows that of 40 respondents reporting a "primary" partner who participated in receptive anal sex, 13 (32 percent) reported that their partner used condoms "Always" in the past year. Figure 15 shows that of the 47 respondents reporting a "primary" male partner who participated in insertive anal sex, 22 (47 percent) reported using a condom "Always".

Figure 14: In the past 12 months, when you had receptive anal sex with a primary male partner, how often did he use a condom? (n=40)

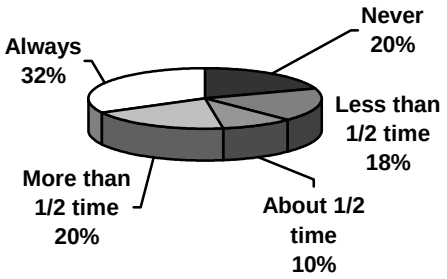


Figure 15: In the past 12 months, when you had insertive anal sex with a primary male partner, how often did you use a condom? (n=47)

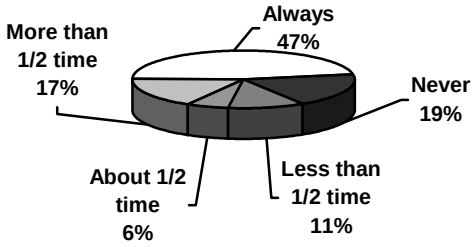


Figure 16 shows that among the 19 respondents with a "non-primary" male partner, 7 (37 percent) reported that their partner used condoms "Always" in the past year when they participated in receptive anal sex. Figure 17 shows that of the 32 respondents who participated in insertive anal sex with a non-primary male partner, 19 (60 percent) reported that they used a condom "Always".

Figure 16: In the past 12 months, when you had receptive anal sex with a non-primary male partner, how often did he use a condom? (n=19)

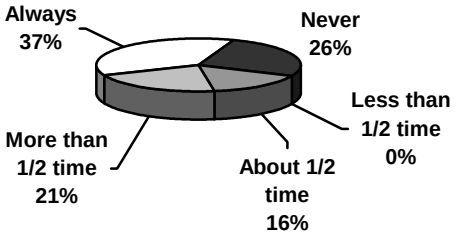
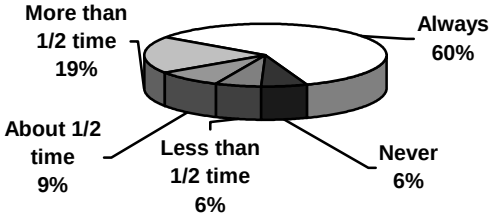


Figure 17: In the past 12 months, when you had insertive anal sex with a non-primary male partner, how often did you use a condom? (n=32)



2004 Profile of HIV/AIDS in Michigan

Ranked Behavioral Group: IDU

Data from HIV/AIDS Reporting System (HARS), Family of HIV Seroprevalence Surveys & Supplement to HIV/AIDS Surveillance Project (SHAS)

Number of Cases

Injecting drug users (IDUs) are the number-two ranked behavioral group in Michigan and account for one quarter of reported infected persons with a known risk (including MSM/IDU). MDCH estimates there are approximately 3,390 IDUs living with HIV disease in Michigan. This estimate includes 880 HIV-infected men whose risk is a combination of having sex with other men and injecting drugs (MSM/IDU).

When considering the effect of IDU on the HIV/AIDS epidemic, it is important to note that this group is additionally linked to heterosexuals, infants, and MSM. Almost half (47 percent) of the reported cases among non-MSM IDUs also had high-risk heterosexual sex partners. Additionally, of the 1,585 cases with reported high-risk heterosexual risk, 489 individuals (31 percent) also reported having IDUs as partners. Fifty-four percent of perinatally infected infants (infants infected at birth) have mothers who are IDU or have a mother whose partner was an IDU. When these linked populations are considered, IDU-related transmission accounts for 31 percent (2,978 cases) of people reported with HIV disease and having a known risk in Michigan. This is similar to the nationwide picture of 24 percent IDU.

Prevalence:

The Family of Seroprevalence Surveys measured HIV seroprevalence among non-injecting drug users (NIDU) and IDUs in treatment. From 1988 to 1999, the percent of IDU who were HIV infected and attended the Detroit Central Diagnostics and Referral Services (CDRS) declined over time, peaking at 10 percent in 1991 and falling to three percent in 1999. In addition, the proportion of heroin injectors with HIV decreased over time (11 percent in 1988 to 3 percent in 1999), while the proportion of cocaine injectors increased (11 percent in 1993 to 40 percent in 1998).

HIV seroprevalence from the Detroit CDRS varied by race, sex, and age. Prevalence among black males declined over time from 15 percent in 1998 to two percent in 1995. HIV prevalence in black females also declined over time after peaking at 14 percent in 1990. Whites comprised a smaller proportion of clients at the treatment center and no consistent trends were observed. Seroprevalence decreased in every age group. The only age group for which seroprevalence increased during the last years of the survey was 25-29 year olds, two percent in 1997 to six percent in 1999. Although data from seroprevalence surveys provide valuable information about treatment center attendees, the results cannot be generalized to all IDU. Please refer to the Data Sources section of this profile for more information on the Family of Seroprevalence Surveys.

Incidence:

In the early 2000s, a less sensitive EIA assay was used to measure incidence (recently acquired infections) by testing stored specimens from the Family of Seroprevalence Surveys that were collected between 1988 and 1999. A total of 20 persons were identified during the period as having recently acquired HIV infection, with the annual number of incident infections ranging from zero-seven (0 to 9 percent of HIV-positive) persons tested. The small number of recently infected persons tested limits the generalizability of the trends. Overall HIV incidence ranged from zero percent in 1988, 1989, and 1993 to two percent in 1992. In the most recent survey years, incidence increased from a low of 0.15 percent in 1997 to 0.62 percent in 1999. Because the number of recent infections identified each year was small, data were pooled in 3-year intervals to get more stable estimates of incidence over time. The pooled estimates show a peak in incidence between 1990-1992 at 0.82 percent and then a decline over the years. Again, in the later years, incidence began to increase, but it did not reach the levels seen from 1990-92.

Ranked Behavioral Group: IDU (Continued)

Incidence (continued):

Black males and black females were the only groups with recently acquired infections. Incidence was highest in these two groups in the early 1990s, peaking for black males in 1992 at 2.82 percent and for black females in 1999 at 2.68 percent. Incident infections occurred more often among older age groups in the early years and occurred in the latter part of the decade in younger persons. For instance, incidence peaked in 1999 for persons 25-29 years (3.34 percent) and 30-34 years (1.58 percent), but the highest incidence occurred in 1992 among persons 40-44 years (6 percent).

IDU and NIDU were the only risk groups with recently acquired infections. HIV incidence was higher among IDU than NIDU in the early years of the survey, peaking at three percent in 1992, but there were no recently acquired infections among IDU after 1996. New infections were identified in NIDU from 1994 onward, with incidence ranging from 0.1 percent in 1996 to 0.88 percent in 1998-99. Among IDU, recently acquired infections were only identified among persons whose primary drug was heroin. Among NIDU, new infections were found primarily among crack cocaine users, and incidence increased among crack users from1997 (0.4 percent) to 1999 (1.4 percent). None of the newly infected clients chose to be HIV tested at intake. Please refer to the Data Sources section of this profile for more information on the Family of Seroprevalence Surveys.

Western Michigan Drug Treatment HIV Seroprevalence Study:

From June 1998 to March 1999 an anonymous, unlinked HIV seroprevalence study was conducted among 1,120 persons receiving drug treatment through a drug and alcohol treatment center in Western Michigan. From these participants 1,115 HIV test results were available and revealed an overall seroprevalence of 1.3 percent (15 persons).

One-fifth of all clients had ever injected drugs, and 61 percent of IDUs had injected in the last 12 months, with heroin being the primary drug injected. Six HIV-infected persons (40 percent) had ever injected drugs, and three of these had injected in the last 12 months. One-third of IDU, including three HIV-infected IDU, had shared works since 1978.

HIV seroprevalence was higher among IDU than non-IDU (2.6 percent versus 1 percent), but the majority of the HIV-infected (60 percent) did not report injecting drugs and their risk factors were not known. Although HIV seroprevalence among white males was low in this population, they accounted for the largest proportion of IDU and the largest proportion of IDU who share needles.

Of the 1,120 persons in the study, 825 persons were tested for hepatitis C virus (HCV), and 202 (25 percent) were positive. Of the 14 HIV-infected persons who were tested, 8 (57 percent) were co-infected with HCV. HCV seroprevalence was much higher among persons who had injected drugs (61 percent) than among persons using non-injected drugs (14 percent).

Race/Ethnicity and Sex:

Of the 2,365 IDU and MSM/IDU HIV/AIDS cases, 1,119 are black men (47 percent), 550 are black women (23 percent), 429 are white men (18 percent), 136 are white women (6 percent), 87 are Hispanic men (4 percent) and 21 are Hispanic women (1 percent). In total, nearly three quarters (1,669 cases) of the cases occur in black IDU. Approximately two-thirds of the cases are men (70 percent) and one-third are women (30 percent). Among the 712 women who's HIV infection has been attributed to IDU, over half (56 percent) were also reported with high-risk heterosexual sex partners. See Table 6, page 2-47.

Additional behavioral data on HIV infected IDUs and other drug users in southeast Michigan is known from the SHAS interview project. Of the 1,174 persons interviewed in SHAS, 15 percent (177) injected drugs at some time during their lives.

Ranked Behavioral Group: IDU (Continued)

Race/Ethnicity and Sex (continued):

This 15 percent (177) was mostly comprised of males (63 percent). Of all injection drug users, 51 percent (90) reported ever being told by a doctor or health care provider that they had hepatitis C; this was 58 percent of males (53) and 71 percent of females (37). One hundred and seventy-four (98 percent) of injection drug users have ever used some kind of non-injection drugs in the past. When injection drug users were asked about ever being in a drug or alcohol treatment program, 135 persons (76 percent) responded in the affirmative. Forty-two percent (74) of injection drug users are potential alcoholics-17 percent of males (44) and 28 percent of females (30).

Other drug use information shows 770 (66 percent) of all respondents (1171) have ever used some kind of non-injection drugs in the past. Among non-injection drug users, the primary non-injected drug for men and women was marijuana, followed by crack for both men and women.

Questions used to screen respondents for potential alcoholism reveal that 32 percent (371) of all respondents are potential alcoholics-31 percent of males (263) and 33 percent of females (108). Further SHAS data describing the drug use behaviors of participants in this project are available online at www.michigan.gov/mdch.

Age:

Among men with a known risk in each age group from 20-59 years at HIV diagnosis, IDU is the second most common mode of transmission. Forty-one percent of all the male IDU cases are recorded among men who were diagnosed with HIV in their thirties (41 percent of these were MSM/IDU), and 32 percent of all the male IDU cases are recorded among men who were diagnosed with HIV in their forties (25 percent of these were MSM/IDU).

Among women with a known risk in each age group from 13-39 years at HIV diagnosis, IDU is the second most common mode of transmission. Over age 50, high-risk heterosexual sex becomes the primary mode of transmission for women. Half of women aged 40-49 years at the time of their HIV diagnosis report IDU behavior (56 percent also had high-risk heterosexual behavior), while the other 50 percent are high-risk heterosexual.

There are very few cases of HIV/AIDS attributed to IDU among persons who were teenagers at the time of their HIV diagnosis (29) and over one third of those are among MSM/IDU; the proportion among those in their twenties is also small (16 percent of cases with a known risk). See Table7, page 2-48.

Geographic Distribution:

IDU is a more common mode of transmission in the higher prevalence areas of the state (see Figure 2 on page 2-7). Within high prevalence counties, just under a quarter of cases with a known risk are IDU (24 percent), while in the lower prevalence counties 17 percent of persons living with HIV/AIDS are IDU. These percentages include those male IDUs who are also MSM.

Trends and Conclusions:

The proportion of persons diagnosed each year with HIV infection between 1998 and 2002 decreased significantly in IDUs from 16 percent to 9 percent (143 to 79 cases) and MSM/IDUs from four percent to two percent (32 to 17 cases). Some of these persons were likely exposed heterosexually because IDUs are more likely to have IDU sex partners than are persons who do not inject drugs. IDU becomes a more primary mode of transmission as people get older. In addition, the impact of this transmission group on non-IDUs is important to recognize. Decreasing HIV among IDUs will decrease the number of cases attributed to heterosexual transmission as well as to their infants via perinatal transmission.

2004 Profile of HIV/AIDS in Michigan

Ranked Behavioral Group: IDU: HIV Negative, At-Risk Persons

Data from HIV Testing Survey (HITS)

The HITS survey assessed behaviors in HIV-negative IDUs. This section includes data from Detroit (66 IDUs), Oakland County (7 IDUs), and Grand Rapids (21 IDUs). Figure 18 shows approximately three in ten respondents reporting use of non-sterile needles at least some of the time during the 12 months prior to the survey. Figure 19 shows that 62 percent reported injecting only heroin on a "Daily" basis.

Figure 18: In the last 12 months, how often have you used a dirty needle? (n=94)

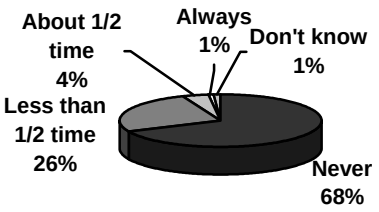
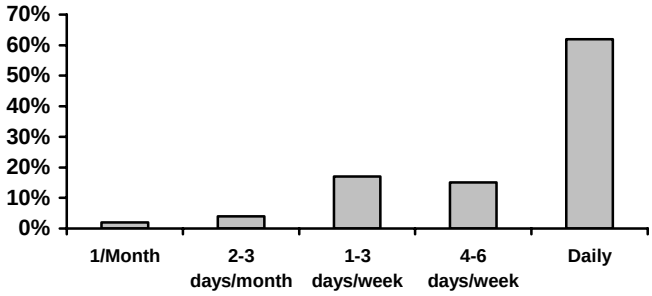


Figure 19: In the past 12 months, how often did you inject heroin only? (n=94)



Inconsistent condom use among female injection drug users is higher with primary male sex partners. Among female IDUs reporting "primary" male sex partners, 57 percent reported "Never" using a condom (Figure 20). Among female IDUS reporting "non-primary" male sex partners, 18 percent reported "Never" using a condom (Figure 21).

Figure 20: Women: In the past 12 months, when you had vaginal sex with a primary male partner, how often did he use a condom? (n=23)

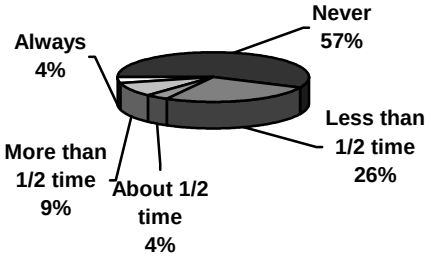
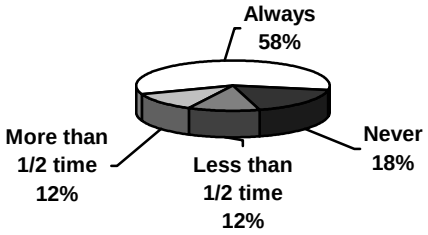


Figure 21: Women: In the past 12 months, when you had vaginal sex with a non-primary male partner, how often did he use a condom? (n=17)



Male injection drug users reported comparable condom usage rates with their female partners. Among those reporting a "primary" female sex partner, 57 percent reported "Never" using a condom with the primary female partner (Figure 22). Fifteen percent of male respondents reported "Never" using a condom with their female non-primary partner (Figure 23).

Figure 22: Men: In the past 12 months, when you had vaginal sex with a primary female partner, how often did you use a condom? (n=37)

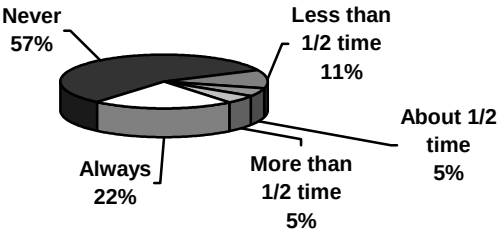
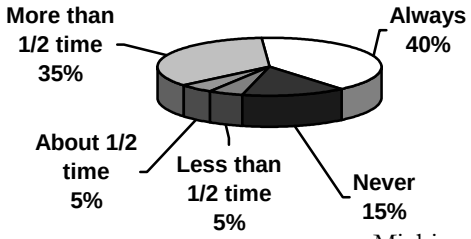


Figure 23: Men: In the past 12 months, when you had vaginal sex with a non-primary female partner, how often did you use a condom? (n=20)



2004 Profile of HIV/AIDS in Michigan

Ranked Behavioral Group: High-Risk Heterosexuals

Data from HIV/AIDS Reporting System (HARS) & Family of HIV Seroprevalence Surveys

Number of Cases:

Heterosexual transmission is the number-three ranked behavioral group in Michigan. Heterosexual sex accounts for 17 percent of reported infected persons with a known risk. MDCH estimates that 2,270 persons living with HIV disease in Michigan were infected with HIV through heterosexual sex. Transmission is classified as heterosexual when one or more heterosexual sex partners are known to be IDUs, behaviorally bisexual men, blood recipients known to be HIV +, and/or HIV+ individuals (these are referred to as high-risk heterosexual partners).

Currently there are an estimated 1,190 infected persons who are classified as IDUs and also had one or more high-risk heterosexual sex partner(s). These persons may have been exposed to HIV heterosexually or through sharing injecting equipment. Among reported cases, the dual risk IDU/heterosexual cases comprise 9 percent of all reported HIV/AIDS cases with a known risk and are 48 percent women and 52 percent men.

Prevalence:

The rate of HIV positives measured among heterosexual attendees of the Detroit Health Department's STD clinic, who were likely among the highest risk heterosexuals in the state, averaged less than one percent in the annual seroprevalence surveys done from 1993 to1999. Seroprevalence surveys done in 1996 at the Berrien and Saginaw counties STD clinics each measured lower seropositive rates of 0.2 percent with the few positives being among black women at each clinic. Rates of HIV infection among heterosexuals outside of these two counties and the Detroit metropolitan area are likely even lower

Incidence:

In the early 2000s, a less sensitive EIA assay, was used to measure incidence (recently acquired infections) by testing stored specimens from the Family of Seroprevalence Surveys that were collected between 1988 and 1999. At Michigan HIV counseling, testing, & referral centers incidence ranged from 22-54 cases (13 to 24 percent) annually. Overall HIV incidence was stable throughout most of the study period, reaching a low of 0.17 percent in 2000 and then rising to the highest level during this study period at 0.41 percent in 2002,. Specifically, heterosexuals were represented by two groups: a person engaging in only heterosexual sex, with no other risk and a person whose sex partner was at risk for HIV. Each of these groups accounted for 14 percent of recently acquired HIV infection during this period. The majority of recently acquired infections in the heterosexual group were black, and the proportion of blacks increased in the later study years, with the greatest increase seen among black females (from 29 to 44 percent).

Race/Ethnicity and Sex:

Among females reported with HIV/AIDS and a known risk, over half (58 percent) of these cases contracted heterosexually. Just over a third of females, 37 percent, were infected through IDU. Among women with a known risk, 21 percent are IDUs who also had high-risk heterosexual sex partners. These data underscore the point that these two modes of transmission are closely intertwined for women.

Among the 1,585 men and women living with HIV/AIDS and infected heterosexually, 31 percent reported their heterosexual partner as injecting drug users, five percent as behaviorally bisexual men (this applies to women only) and two percent as persons infected through blood products. Almost two thirds (62 percent) reported their partner(s) as HIV-infected without reporting the partner(s) risk for contracting HIV.

While women account for 23 percent of all reported HIV/AIDS cases in Michigan, they have consistently accounted for over two-thirds of heterosexually acquired infections -- currently 70 percent. Just over half of all black women were infected heterosexually (55 percent). Sixty-four percent of white women and 68 percent of Hispanic women, nearly two-thirds of each group, were infected through heterosexual sex.

Race/Ethnicity and Sex (continued):

Most heterosexual cases of HIV/AIDS are black--67 percent of female and 71 percent of male. It should be noted that the percent of men infected heterosexually is low--six percent of cases among men of all races with a known risk. See Table 6, page 2-47.

The heterosexual transmission category includes sub-categories to describe mode of transmission in more detail. This is especially helpful for women since they make up most (70 percent) of the heterosexually transmitted cases. To be reported as a heterosexual transmission case, a female must have a male partner who is an IDU, behaviorally bisexual man, blood recipient known to be HIV +, and/or HIV positive. Heterosexual and IDU modes of transmission and associated sub-categories for infected black and white women with known risk are shown in Figures 24 and 25.

Figure 24: Black Females Living with HIV/AIDS in Michigan, by Known Expanded Mode of Transmission (n=1,353)

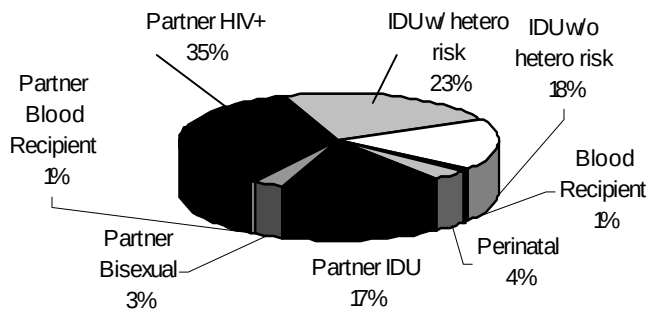
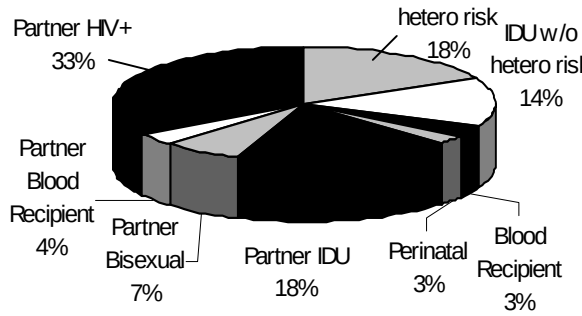


Figure 25: White Females Living with HIV/AIDS in Michigan, by Known Expanded Mode of Transmission (n=452)



Age:

High-risk heterosexual transmission is the predominant mode of HIV transmission for females who were 13-39 and 50 years of age and older at the time of their HIV diagnosis. Among women 40-49, the proportions of IDU and heterosexual transmissions are equal at 50 percent each. See Table 7, page 2-48.

Geographic Distribution:

The 1,090 persons living with HIV/AIDS who acquired HIV heterosexually (prisoners excluded) are located proportionately throughout the state. In the high and low prevalence areas (Figure 2 on page 2-7), they comprise 15 percent and 14 percent, respectively, of cases in these areas reported with a known risk.

Trends and Conclusions:

The proportion of persons diagnosed each year with HIV infection between 1998 and 2002 decreased significantly in high-risk heterosexuals from 17 percent to 12 percent (155 to 101 cases). At the same time, the proportion of cases attributable to presumed heterosexuals, someone who had heterosexual sex as their only risk but their partner's risk is unknown, increased significantly from 16 percent to 25 percent (150 to 205 cases). When 'presumed heterosexuals' are included in the heterosexual category, the proportion with heterosexually acquired infection exceeds the number of cases attributed to IDU.

Ranked Behavioral Group: High-Risk Heterosexuals (Continued)

Trends and Conclusions (continued):

The data show that although there is heterosexual transmission from women to men, it is a much smaller problem in Michigan (and the U.S.) than transmission from men to women. In light of the much lower seroprevalence rates among high-risk heterosexuals compared with men who have sex with men, this mode of transmission is unlikely to surpass that of MSM. However, the overlapping risk of high-risk heterosexuals with IDU makes it difficult to predict whether the total number of heterosexually acquired cases will equal or surpass those classified as IDU in the future.

Ranked Behavioral Group: High-Risk Heterosexuals: Condom Usage

Data from Supplement to HIV/AIDS Surveillance Project (SHAS)

In SHAS, 64 percent (212) of female respondents reported having vaginal, oral, and/or anal sex in the 12 months prior to the interview. Of these, most (207 or 98 percent) reported having sex with a man in the 12 months prior to the interview. We asked these 207 women questions about use of a barrier with their steady (someone they feel committed to above anyone else and have sex with) partners. Eighty-five percent (175) of the (207) women report being in a steady relationship with a man during the 12 months prior to interview. Use of a barrier with these partners is displayed in Table 2.

Sixty-three percent (529) of male SHAS respondents reported having vaginal, oral, and/or anal sex during the 12 months prior to the interview. Of these 529, 228 men (43 percent) report having had sex with a woman in the 12 months prior to the interview. Sixty-five percent (148) of these men reported being in a steady relationship with a woman in the 12 months prior to interview. Condom use at that sexual contact with these partners is displayed in Table 2.

Table 2: Barrier/Condom Use with Steady Partner, Among Heterosexuals

	Females (n=175) Percent (barrier use/sexual activity)	**Males** (n=148) Percent (condom use/sexual activity)
Sexual Activity*		
Vaginal sex	69% (118/172)	78% (113/145)
#*Oral sex	22% (7/32)	40% (16/40)

**Categories are not mutually exclusive*
*#*Oral sex: mouth-vagina and penis-mouth*

In addition, we asked women and men, questions regarding barrier/condom use with their most recent other male and female partners. Among the female SHAS respondents, 68 (33 percent) report having sex with a man other than a steady male partner in the 12 months prior to interview. While among the male SHAS respondents, 115 (50 percent) report having sex with a woman other than a steady female partner in the 12 months prior to interview. Barrier/condom use at last sexual contact with these partners is displayed in Table 3.

Table 3: Barrier/Condom Use with Most Recent Non-Steady Partner, Among Heterosexuals

	Females (n=68) Percent (barrier use/sexual activity)	**Males** (n=115) Percent (condom use/sexual activity)
Sexual Activity*		
Vaginal sex	70% (46/66)	78% (84/108)
#*Oral sex	35% (7/20)	29% (14/48)

**Categories are not mutually exclusive*
*#*Oral sex: mouth-vagina and penis-mouth*

Ranked Behavioral Group: High-Risk Heterosexuals: HIV Negative, At-Risk Persons

Data from HIV Testing Survey (HITS)

High-risk HIV-negative heterosexuals were interviewed as a part of HITS at the sexually transmitted disease clinics of the Detroit City (62), Oakland County (27), and Kent County (28) Health Departments. Men interviewed reported "Never" using a condom 45 percent of the time with their primary female partner and "Never" using a condom 19 percent of the time with a non-primary female partner (Figures 26 and 27). Women interviewed in the STD clinics reported "Never" using a condom 38 percent of the time with their primary male partners, and "Never" using a condom 42 percent with the non-primary male partners (Figures 28 and 29).

Figure 26: Men: In the past 12 months, when you had vaginal sex with a primary female partner, how often did you use a condom? (n=48)

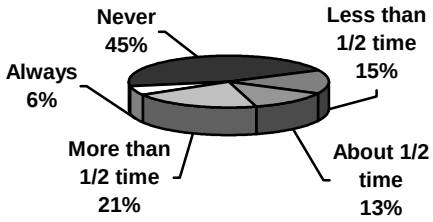


Figure 27: Men: In the past 12 months, when you had vaginal sex with a non-primary female partner, how often did you use a condom? (n=37)

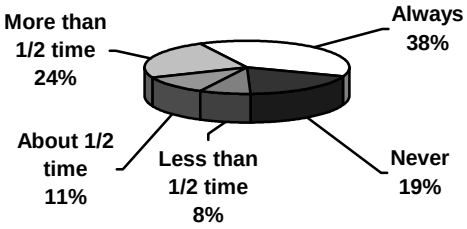


Figure 28: Women: In the past 12 months, when you had vaginal sex with a primary male partner, how often did he use a condom? (n=50)

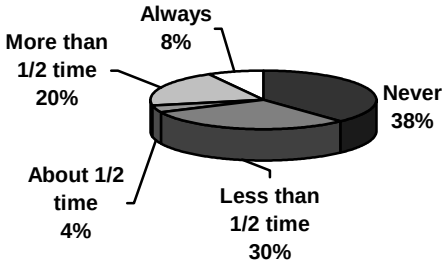
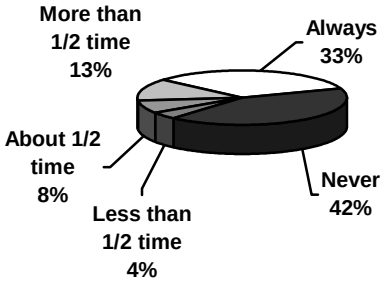


Figure 29: Women: In the past 12 months, when you had vaginal sex with a non-primary male partner, how often did he use a condom? (n=24)



2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Race and Sex

Data from HIV/AIDS Reporting System (HARS)

Number of Cases:

Black persons comprise the majority of those living with HIV/AIDS in Michigan. They comprise 14 percent of Michigan's population yet make up over half (57 percent) of the cases of HIV/AIDS. MDCH estimates 9,390 blacks are living with HIV/AIDS in Michigan. The rate of HIV infection among blacks is 670 per 100,000 population, eight and a half times higher than the rate among whites. MDCH estimates that as many as one out of 100 black males and one out of 280 black females may be HIV-infected.

White persons comprise over a third (37 percent) of reported HIV/AIDS cases and 79 percent of Michigan's population. MDCH estimates 6,110 whites are living with HIV/AIDS in the state. However, since these cases are spread out among a much larger population they have a lower rate of HIV infection (78 per 100,000 population) than blacks or Hispanics. MDCH estimates that as many as one out of 720 white males and one out of 4,900 white females may be HIV-infected.

Hispanics comprise four percent of cases and three percent of the population. MDCH estimates 670 Hispanics are living with HIV/AIDS in Michigan. However, the relatively few cases are spread out among a small population and therefore they have a higher rate (207 per 100,000 population) than that among whites. MDCH estimates that as many as one out of 330 Hispanic males and one out of 960 Hispanic females may be HIV-infected.

Most persons living with HIV/AIDS in Michigan are male (77 percent) and this proportion has decreased over time from 85 percent in 1991. Although women continue to be a smaller proportion of persons living with HIV/AIDS, their proportion has increased and they currently comprise 23 percent of the infected population in Michigan.

The majority of the 8,918 male HIV/AIDS cases are black (53 percent), 42 percent white, four percent Hispanic and two percent are other or unknown race. The majority of the 2,609 female HIV/AIDS cases are black (72 percent), almost one-quarter (22 percent) are white, four percent are Hispanic and two percent are other or unknown race

Mode of Transmission:

Figures 30 and 31 display the proportion of black and white male cases by mode of transmission among those with known transmission.

Figure 30: White Males Living with HIV/AIDS in Michigan by Known Mode of Transmission (N=3,399)

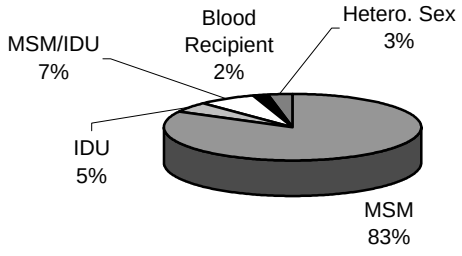
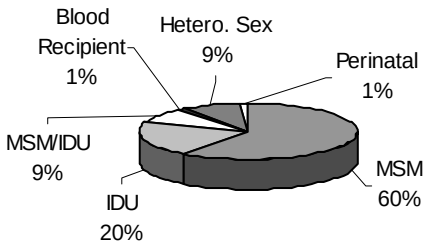


Figure 31: Black Males Living with HIV/AIDS in Michigan by Known Mode of Transmission (N=3,847)



Refer to Figures 24 and 25, page 2-26 for black and white female distributions).

2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Race and Sex (Continued)

Geographic Distribution of Cases:

Looking at the proportions of cases by race in a particular area of the state (e.g., number of black cases/total number of cases) does not fully measure the impact of this disease. This is because the proportions of whites and blacks living in high and low prevalence areas are different. Therefore, instead of proportions, rates are used (e.g., number of black cases/total number of blacks living in that area). Figure 32 shows that the HIV/AIDS case rate among blacks is six to eight times higher than the rate among whites in both high and low prevalence areas of the state, even though there are fewer cases among blacks in the low prevalence areas. This shows that this disease disproportionately affects blacks in both high and low prevalence areas of Michigan. Also, the HIV/AIDS case rate among Hispanics is two to three times higher than the rate among whites in both high and low prevalence areas of the state.

Figure 32: Case Rates of Persons with HIV/AIDS Living in High & Low Prevalence Areas, by Race

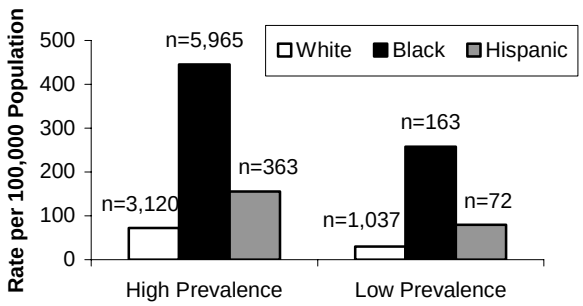
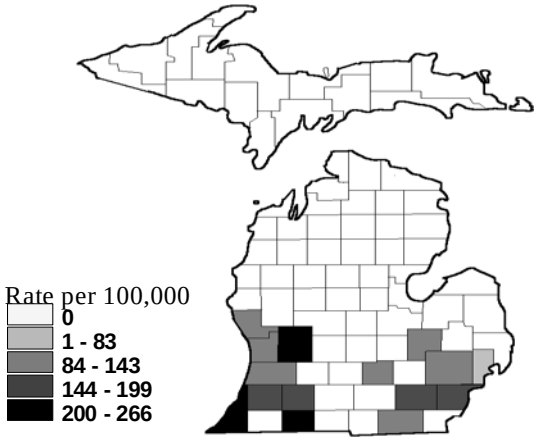


Figure 33: Prevalence Rates for Hispanics Living with HIV



Hispanics comprise four percent of all persons living with HIV/AIDS. Figure 33 shows the rate per 100,000 of Hispanics living with HIV/AIDS in counties across Michigan. The counties with five or more cases are included in the map. The areas with the highest case rates for Hispanics (7 of the 14 counties that meet this definition) are either on the Lake Michigan shoreline or just to the east of it. This is most likely due to the large population of migrant workers in this area. Although Wayne County has the largest number of cases, its rate (175 per 100,000) is actually lower than the statewide rate of 207 per 100,000. The individual county rates include Allegan (99), Berrien (266), Genesee (89), Ingham (130), Kalamazoo (158), Kent (202), Lenawee (87), Macomb (64), Muskegon (117), Oakland (138), Ottawa (102), St. Joseph (201), Van Buren (177), and Washtenaw (170).

Description of the Epidemic by Race and Sex (Continued)

Trends and Conclusions:

MDCH estimates that the number of new HIV infections annually among blacks has remained level at 530 in 2002. During this same time period, the estimated annual number among whites has remained stable at 260 persons in 2002. New HIV infections diagnosed among Hispanic and other races/ethnicities increased significantly from 1998 to 2002 (38 to 49 cases).

Trends in new HIV diagnoses among males and females show similar patterns. The number of males newly diagnosed with HIV each year is stable at about 620 new infections (74 percent of cases) in the year 2002. Among females the number appears to also be stable at 200 (26 percent cases) in the year 2002.

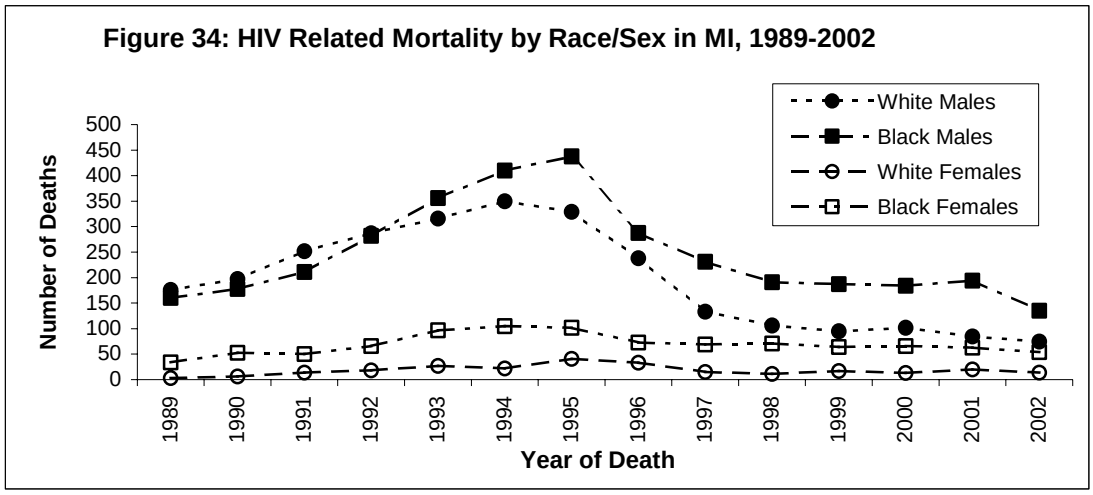


Figure 34 shows that HIV related mortality dropped for the four race and sex groups shown. There was a statistical difference in the 1995-2001 declines among white men (79 percent), black men (65 percent), and women (47 percent). From 2001 to 2002 there was also a 30 percent decline in deaths among black men. The number of deaths among Hispanics was too small to appear on this graph.

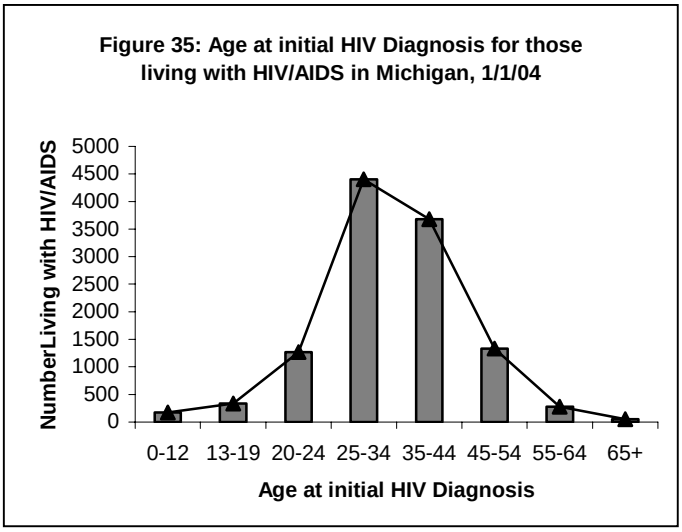
When all the data are considered, the consistent impact across transmission behaviors and geographic areas that this epidemic is having on blacks is apparent. The rate of HIV infection among blacks is nine times higher than the rate among whites.

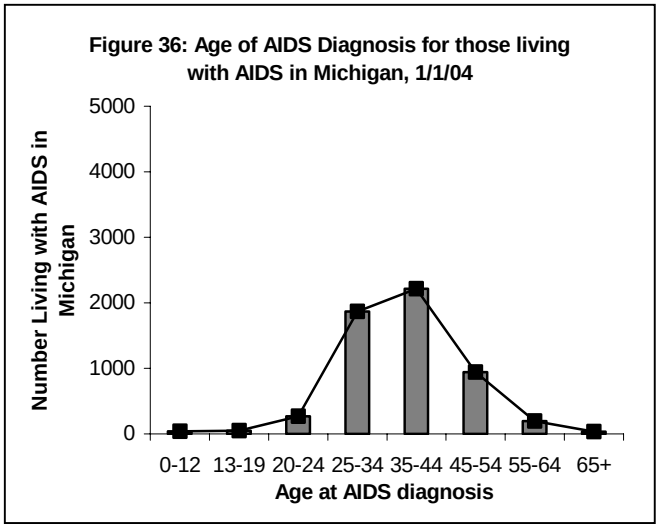
2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Age

Age at Diagnosis:

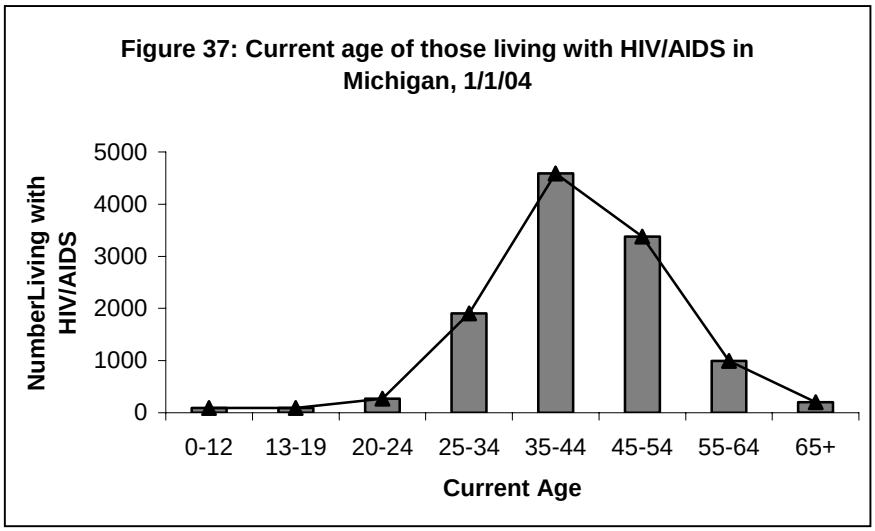
The proportion of persons diagnosed with HIV infection each year from 1998 to 2002 only changed significantly among those diagnosed at 20-24 years of age from 8 percent to 10 percent (72 to 86 cases). Figure 35 shows that persons who were between the ages of 25 and 34 at their initial diagnosis of HIV make up the majority of those living with HIV/AIDS (38 percent), while those between the ages 35-44 at their initial diagnosis of HIV are the second largest group (32 percent). Figure 36 shows this latter group is the largest age group at AIDS diagnosis (39 percent).





Current Age:

Since the start of widespread use of Highly Active Anti-Retroviral Therapy (HAART) in 1996, persons infected with HIV have been living longer. Evidence of this is shown in Figure 37, which displays the current ages of those living with HIV in Michigan. Those currently ages 35 to 44 years make up the largest group of those living with HIV (40 percent). While persons who were ages 55 and older at AIDS diagnosis made up only four percent of those diagnosed with AIDS (Figure 36), persons in this age group make up 10 percent of persons living with HIV/AIDS.



2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Age: Children (0-12)

Data from HIV/AIDS Reporting System (HARS)

Number of Cases:

MDCH estimates that there are 240 children living with HIV, who were ages 0-12 when they were diagnosed. They comprise 1.5 percent of the reported infected persons. Most of them (85 percent) were infected perinatally, i.e., before, during or shortly after birth. (Those infected after birth would be infected via breastfeeding). Of the remaining children, nine percent were infected via blood exposure before 1985 and six percent have an unknown risk.

No children aged 0-12 at HIV diagnosis with known risk have been infected through sexual behavior or injection drug use and two percent of those with an unknown risk were probably due to perinatal transmission or receipt of blood products in other countries.

Description of Cases in Children:

Of the 171 children who were ages 0-12 when diagnosed with HIV/AIDS, living in Michigan, 56 percent are male and 44 percent are female; about two thirds are black (65 percent), over one quarter are white (26 percent) and eight percent are Hispanic or of unknown race. See Table 7, page 48.

Of the 146 children infected perinatally, 51 percent male and 49 percent female; 71 percent were black, 20 percent were white, and nine percent were Hispanic or other races. Fifty-four percent of the HIV infections in these children were IDU related (16 percent of these had a mother was not known to be an IDU but one or more of her sex partners were IDUs). An additional 25 percent had mothers with HIV-infected sex partners. For 21 percent all that was known about the mother is that she was HIV-infected with no additional maternal risk information.

Geographic Distribution of Infected Children:

Eighty-four percent of the 171 children diagnosed and reported with HIV/AIDS between the ages of 0 and 12 years are located in high prevalence counties. The remaining 16 percent are located in low prevalence counties. Sixty-seven percent of HIV cases that were diagnosed as children in Michigan are currently residents of the Detroit Metro Area.

Trends and Conclusions:

The best measurable success in reducing HIV transmission has been among the perinatally infected cases. Without Zidovudine (ZDV) prophylaxis, about 25 percent of children born to HIV-infected women could expect to become HIV-infected. In Michigan, the proportion of these children who become infected has dropped precipitously, from 28 percent in 1992 to two percent in 2003. As of January 1, 2004, seven of the 66 children born in 2001, three of the 54 children born in 2002, and one of the 49 children born in 2003 to HIV-infected women were diagnosed with HIV infection. Also, one of the 66 children born in 2001 to an HIV-infected woman was diagnosed with AIDS.

For further discussion please see: Mokotoff, ED, Malamud BH, Kent JB, Kowalczyk, RJ, Scott LJ, Hammett TA, Lindegren, ML. Progress Towards Elimination of Perinatal HIV Infection-Michigan, 1993-2000, MMWR, 2002:51:5: 93-97.

2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Age: Teens and Young Adults (13-24)

Data from HIV/AIDS Reporting System (HARS), Family of HIV Seroprevalence Surveys, Data from STD Reporting System, Job Corps, Youth Risk Behavior Survey, & Bureau of Juvenile Justice Youth Risk Behavior Survey

Number of Cases:

MDCH estimates that there are about 2,300 persons currently living in Michigan who were ages 13-24 years when they were diagnosed with HIV. They comprise 14 percent of all persons reported with HIV/AIDS in Michigan (3 percent age 13-19 years; 11 percent age 20-24 years). The rate of HIV/AIDS among these young people is lower than the rate among those aged 25-44 years. The level of incident and prevalent cases among persons age 13-24 years is not as high as the level among persons age 25-39 years. However, some young people are at particularly high risk. Specifically these are male youth who live in areas with high HIV prevalence and have male sex partners who are age 20 or older.

STD rates are highest in these age groups. The STD data are shown on Tables 10 and 11 (pages 2-51–52). In persons age 15-24 years, the rate of chlamydia is over two times higher and the rate of gonorrhea is over one and a half times higher than the rate among persons age 25-29 years (please refer to the Sexually Transmitted Diseases section on page 2-14 for further discussion of these high rates). While rates of STDs among 15-19 year olds are quite high, the rates of HIV in this demographic group are comparably low. This is due to the fact that risk factors for STD acquisition are very broad, specifically multiple sex partners and unprotected sexual intercourse, in comparison to the more specific risk factors of injection drug use or homosexual sex for HIV.

The Job Corps training program for disadvantaged youth performs HIV testing for all entrants (for the years 1988-1998). Since testing began in 1988 there have been 24 positives out of over 12,000 tests among Michigan residents (less than one quarter of one percent) and there was no increase over time. All but one of the positives were in black youth and, the geographic distribution is proportional to the epidemic in Michigan, 79 percent were from The Detroit Metro Area; most (17 or 71 percent) were among males.

Teen pregnancy rates have shown decreases over time and decreased significantly from 1998 to 2002. Wayne County and the City of Detroit had the highest teen pregnancy rates in the state in 2002 (83 per 1,000 in Wayne County outside of Detroit and 115 in the City of Detroit). The 2002 rates among teens in Detroit were almost equal to the rates among women age 15-44 years in that same area (115 vs. 114). However, in 2000, the rates among teens in Detroit had exceeded the rates among women aged 15-44. The statewide teen pregnancy rate in 2002 was 56 pregnancies per 1,000 females aged 15-19 years. In Out-State Michigan, the 2002 rates range from 20-80 pregnancies per 1,000 females aged 15-19 and in the Detroit Metro Area, the 2002 rates ranged from 35-115 pregnancies per 1,000 females aged 15-19.

MDCH conducted adolescent seroprevalence surveys in Detroit/Wayne County between 1990 and 1995. These surveys were conducted at two adolescent health care clinics and one youth detention facility where HIV seroprevalence was measured in homeless youth. These three surveys all showed extremely low numbers of HIV-infected youth; eight infected youth out of more than 3,000 tested (less than one quarter of one percent positive). These youth were among the highest risk youth in the area and the state. They lived in Wayne County, including Detroit (the county with the highest rate of HIV), and most were sexually active and some were homeless. Therefore, fewer positives would be expected among youth that live in other areas of the state.

Additional Discussions: Teens and Young Adults (Continued)

Numbers of Cases (continued):

Every two years a Youth Risk Behavior Survey is conducted in Michigan high schools using a nationally standardized survey. This captures behaviors in children grade 9- 12. In an attempt to report on behaviors of children not in mainstream high schools, Michigan was one of the first states to conduct a Youth Risk Behavior Survey in the juvenile justice population (ages 12-21). This Bureau of Juvenile Justice Youth Risk Behavior Survey (BJJ) had 89 percent completion rate and 83 percent were between the ages of 15 and 18 (similar to ages found in YRBS). It showed that 23 percent of females had ever injected drugs, compared with 12 percent of males. Eighty-nine percent had reported ever having sex and 42 percent had sex for the first time at 11 years of age or younger. When comparing BJJ surveys to those taken by mainstream high schoolers, 16 percent of BJJ youth had reported ever injecting drugs, compared with two percent from the mainstream youths. Sixty-two percent of BJJ youths started having sex before age 13 compared with 5 percent of mainstream youths. Fifty-four percent of BJJ youths reported using no form of birth control at their last sexual encounter, compared with five percent of mainstream youths. Finally, 23 percent fit under the umbrella category of sexual minority youth (SMY) due to self-identifying as gay, lesbian, or bisexual, or participating in same-sex behavior. SMY were at higher risk than their mainstream counterparts: 21 percent had ever used injection drugs, 73 percent had sex before age 13, and 86 percent had four or more sexual partners in their lifetime.

Race/Ethnicity:

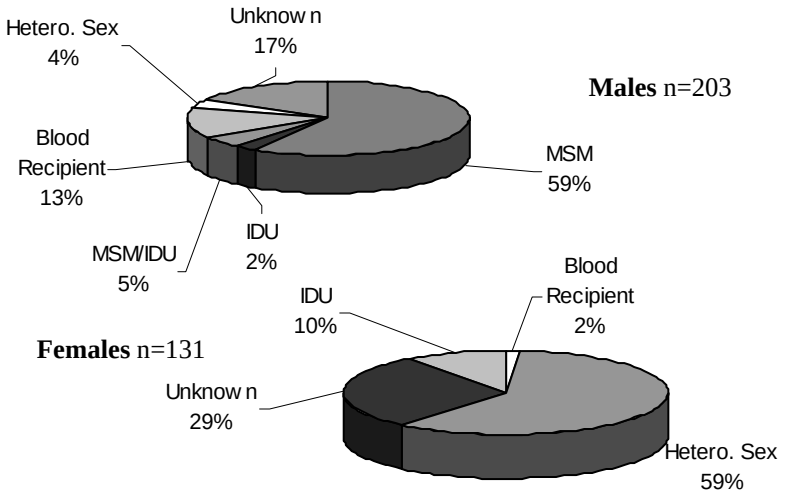
Sixty-three percent of persons aged 13-19 at the time of HIV diagnosis are black, thirty-one percent are white, and five percent are Hispanic or other race. Sixty percent of persons aged 20-24 at the time of HIV diagnosis are black, 35 percent are white, and five percent are Hispanic or other race.

Mode of Transmission:

Teenagers: When discussing mode of transmission in other sections, those individuals with unknown risk were left out of percentage calculations. However, the unknown category for teenagers and young adults is too large to omit. Therefore, the percentages discussed in this section will not match those seen on Table 7. Historically, most infected teenagers were recipients of HIV-infected blood or blood products. However, since screening of all blood products began in 1985 this proportion has steadily declined.

Figure 38 shows that among the 334 persons living with HIV in Michigan who were ages 13-19 at time of diagnosis, 203 (61 percent) are male. Among these male cases, about two-thirds had sex with other males (64 percent) which includes the MSM/IDU cases while 13 percent had been infected with HIV through blood products before 1985. Seven percent could be attributed to IDU (including MSM/IDU) and four percent to heterosexual transmission. Teenage males have the largest proportion of unidentified risk (17 percent) compared with any other age group of men under age 50. Experience with investigating such persons shows that it is likely that many of these males were infected through having sex with other males.

Figure 38: Persons living in Michigan who were aged 13-19 when diagnosed with HIV (Teenagers), by Sex and Mode of Transmission



Additional Discussions: Teens and Young Adults (Continued)

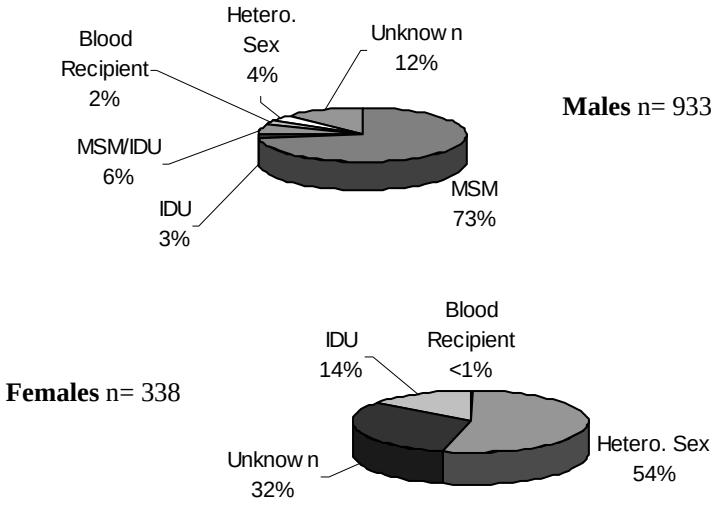
Mode of Transmission (continued):

Teenagers (continued): Figure 38 also shows that among the 131 females living with HIV in Michigan who were ages 13-19 at time of diagnosis, just under two-thirds (59 percent) were infected through heterosexual sex; 10 percent were IDUs. Similar to males of this age, there is a large proportion that did not report a mode of transmission (29 percent). Experience with investigating such persons shows that it is likely that most of these females were infected heterosexually.

Young Adults: Figure 39 shows that among the 1,271 persons living with HIV in Michigan who were ages 20-24 at time of diagnosis, almost three quarters (73 percent) are male. Seventy-nine percent of male young adults reported sex with other males (including those MSM who also are IDU); 12 percent did not report a mode of transmission. Many of these were likely infected through sex with other men.

Figure 39 also shows that among the 338 women living with HIV who were ages 20-24 at time of diagnosis, over half (54 percent) were infected heterosexually and 14 percent were IDUs. Just under a third (32 percent) did not report a mode of transmission. Like the teenage females, many were likely infected heterosexually. Women aged 20-24 at the time of HIV diagnosis have the highest proportion of unknown risk compared with all HIV infected women under 60.

Figure 39: Persons living in Michigan who were aged 20-24 when diagnosed with HIV (Young Adults), by Sex & Mode of Transmission



Geographic Distribution of Teens and Young Adults Cases:

The 1,605 persons diagnosed and reported with HIV/AIDS between the ages 13-24 are located proportionately throughout the state. In the high and low prevalence areas (Figure 2 on page 2-7) they compromise 14 percent of reported cases in each area.

Trends and Conclusions:

The number of cases diagnosed among persons aged 13-24 years increased significantly from 1998 to 2002 (85 to 112 cases). Although this group comprises 16 percent of those living with HIV/not AIDS and five percent of persons living with AIDS, this is likely a reflection that HIV is generally diagnosed before AIDS. Consequently you would expect those with an HIV diagnosis to be younger than those with AIDS. This does not necessarily mean that age of initial HIV infection is decreasing over time. Given the small number of infected teenagers in these age groups, it is likely most are infected by older partners (25+).

The data also suggest that prevention activities among male teenagers and male young adults should be geared towards males having sex with older males. These activities should recognize that adolescents at highest risk are those whose sex partners are older, since older men are more likely to be HIV-infected than are younger males.

2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Age: 50 years and older

Data from HIV/AIDS Reporting System (HARS)

Number:

MDCH estimates there are 1,160 persons living in Michigan, who were 50 years and older when they were diagnosed with HIV. They comprise seven percent of all reported infected persons. This population was mainly infected through sexual contact (either men having sex with men or heterosexually), however those who were in their fifties when diagnosed with HIV have a substantial proportion infected through injection drug use. Three-quarters of this population is male.

Mode of Transmission:

When discussing mode of transmission in other sections, those individuals with unknown risk were left out of percentage calculations. However, the unknown category for this population is too large to omit. Additionally, those who were in their fifties at the time of HIV diagnosis have different transmission mode proportions than those who were aged 60 or older. Therefore, these two populations are discussed separately.

Description of Cases aged 50-59 at the time of diagnosis: Persons who were in their fifties when first diagnosed with HIV are 76 percent male and 24 percent female. Among these 674 persons reported with HIV/AIDS about just under two-thirds are black (60 percent), one third are white (34 percent) and 6 percent are Hispanic or of unknown race.

Figure 40: Males Aged 50-59 at Time of Diagnosis, Living with HIV/AIDS in Michigan by Mode of Transmission (N=515)

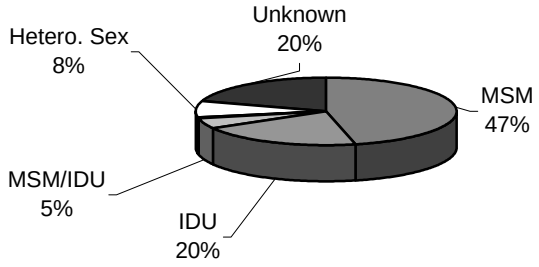
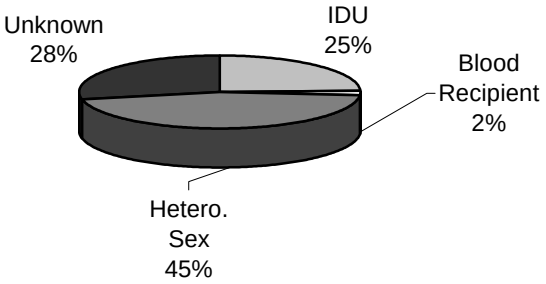


Figure 40 shows that over half of the 515 males in their fifties at time of HIV diagnosis and currently living with HIV (52 percent) reported having sex with other males (including those MSM who also are IDU). One quarter reported injection drug use (including those IDU who were also MSM). Less than eight percent were infected heterosexually. Twenty percent did not report a mode of transmission; many of these were likely infected through sex with other men.

Figure 41 shows that among the 159 females who were in their fifties at time of HIV diagnosis and currently living with HIV, just under half (45 percent) were infected heterosexually and 25 percent were IDUs. Just over a quarter (28 percent) did not report a mode of transmission; many of these were likely infected through heterosexual contact.

Figure 41: Females Aged 50-59 at Time of Diagnosis Living with HIV/AIDS in Michigan by Mode of Transmission (N=159)



Description of the Epidemic by Age: 50 years and older (continued)

Description of Cases 60 years and older at the time of diagnosis: Persons who were 60 years and older when first diagnosed with HIV are 73 percent male and 27 percent female. Among these 138 persons reported with HIV/AIDS over half are black (56 percent), one third are white (34 percent) and 10 percent are Hispanic or of unknown race.

Figure 42: Males Aged 60 and older at Time of Diagnosis Living with HIV/AIDS in Michigan by Mode of Transmission (N=101)

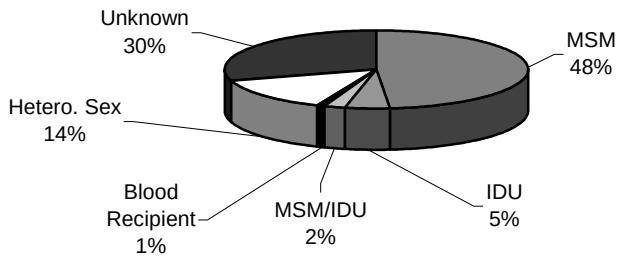
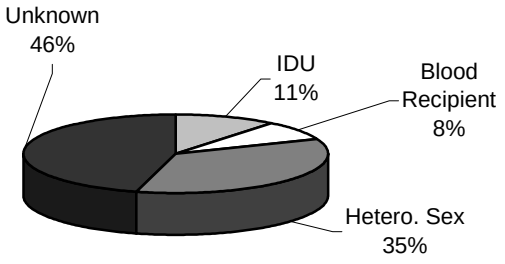


Figure 42 shows that over half of the 101 males who were 60 years and older at time of HIV diagnosis and currently living with HIV (50 percent) reported sex with other males (including those MSM who also are IDU). Less than seven percent reported injection drug use (including those IDU who were also MSM). Fourteen percent were infected heterosexually. Thirty percent did not report a mode of transmission; many of these were likely infected through sex with other men.

Figure 43 shows that among the 37 females who were 60 and older at the time of HIV diagnosis and currently living with HIV, just over a third (35 percent) were infected heterosexually and 11 percent were IDUs. Just under a half (46 percent) did not report a mode of transmission; many of these were likely infected through heterosexual contact.

Figure 43: Females Aged 60 and older at Time of Diagnosis, Living with HIV/AIDS in Michigan by Mode of Transmission (N=37)



2004 Profile of HIV/AIDS in Michigan

Description of the Epidemic by Age: 50 years and older (continued)

Trends and Conclusions: Persons currently age 50 and older, living with HIV/AIDS

As of January 1, 2004 there are 2,394 persons who are **currently** age 50 or older and living with HIV/AIDS in Michigan. This represents 21 percent of the 11,145 persons diagnosed in and living with HIV/AIDS in Michigan as of the first of this year. Data in this section were analyzed differently then for the rest of the profiles. All numbers used in the 2004 Profile of HIV/AIDS in Michigan represent those HIV infected persons currently living in Michigan. This section discusses those HIV infected persons who were initially diagnosed in Michigan, and may currently be living in other states.

These persons are comparable to the population of persons of all ages living with HIV/AIDS in Michigan with regards to sex and race. However, persons in the 50 and older age category are more likely to have been infected by injecting drugs than the total population of HIV infected persons- 28 vs. 15 percent.

The proportion of persons "currently" age 50+ in Michigan has increased over the last five years. This can be attributed, at least in part, to the more effective anti-retroviral medications that became available in 1996. As a result, infected persons are living longer with the infection and are, therefore, getting older. Table 4 shows the percent of persons who were age 50+ at the beginning of each of the six years listed.

Table 4: Percent of Persons aged 50 and older living in Michigan by 'Year End'

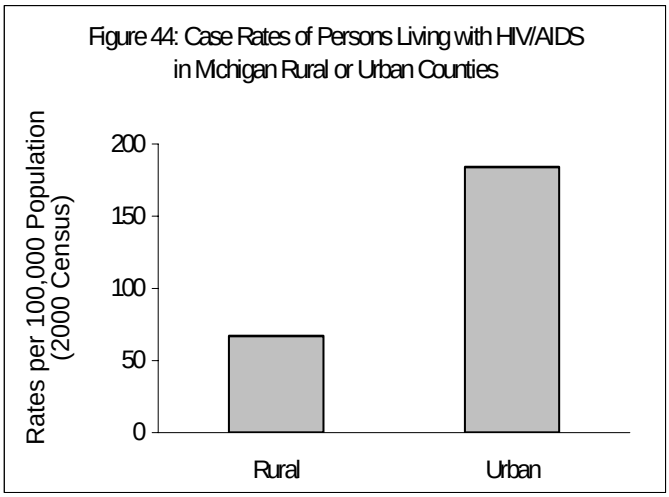
	Number	Percent
1/1/1999	1135	13%
1/1/2000	1347	15%
1/1/2001	1638	17%
1/1/2002	1986	19%
1/1/2003	2047	19%
1/1/2004	2394	21%

Almost half of these persons were not 50+ at the time of diagnosis. However, if persons in this age group have sex with others in their age group, they can infect others their own age. In order to minimize transmission among this age group, sexually active persons of all ages should be offered HIV testing when they present for medical care and given risk reduction messages.

Special Populations: Rural HIV

Data from HIV/AIDS Reporting System (HARS)

Using these US Census Bureau's definitions, MDCH established a category of Urban Counties. For the sake of this publication, we considered a county to be "Urban" if any part of the city or area was part of that county. (i.e., the city of Kalamazoo is in Kalamazoo County and also has substantial commuting interchange with Battle Creek, which is in Calhoun County; so the counties of Kalamazoo and Calhoun are considered to be "Urban"). Please see Appendix A for a more detailed definition of 'Urban County' and the rural/urban categorization of Michigan counties



Using this definition, the reported cases were divided into rural or urban categories. Rural cases constitute nine percent of reported cases (1,023); 21 percent of Michigan's population lives in these counties. The estimated rate of infection in rural areas is 67 per 100,000. Urban areas account for 91 percent of cases and have a rate that is almost three times higher, 184 per 100,000. (Figure 44)

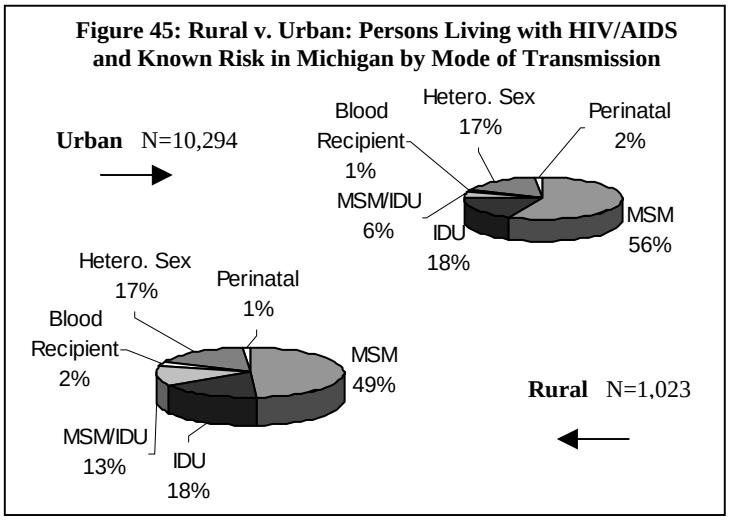


Figure 45 shows that in Michigan's rural communities, HIV is more likely to be attributable to men who have sex with men and less likely to be attributed to injecting drug use when compared with urban areas. There is little to no difference between rural and urban communities with respect to the relative proportion of heterosexual cases.

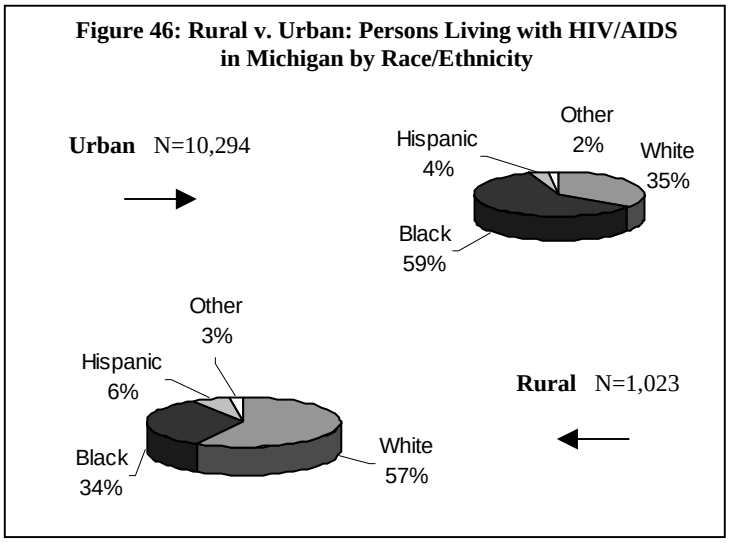


Figure 46 shows that in urban counties of Michigan, the greatest proportion of HIV/AIDS cases occurs among blacks. In rural communities, although, the largest proportion of cases occurs among whites, the rates are higher among blacks (See Figure 32, page 2-30).

2004 Profile of HIV/AIDS in Michigan

Special Populations: Arab-American Community

Data from HIV/AIDS Reporting System (HARS)

In response to requests from an Arab-American community based organization, we began reviewing the size of the epidemic in this community. Arabic is considered an ethnicity and not a racial category and has not been routinely collected by the surveillance system. Consequently, the numbers presented here may be undercounted. Beginning in the year 2001 a question was added about Arabic ethnicity on the HIV/AIDS Case Report Form.

In Michigan, the largest concentration of Arab-Americans is in Southeastern Michigan, where most of these HIV/AIDS cases were diagnosed. Of the 54 known cases, 35 percent were HIV not AIDS and 65 percent were AIDS. The counties where persons were initially diagnosed with HIV included Wayne, including Detroit city (46 percent), Oakland (33 percent), Macomb (13 percent), St. Clair (2 percent), Kalamazoo (2 percent), and 'Other' (4 percent).

Seventy-eight percent (42) of the cases are among males, 22 percent (12) among females. Among the 12 females, one-third were infected heterosexually and 42 percent had no reported mode of transmission. Among the 42 male cases, over two-thirds were attributed to MSM (including MSM/IDU) and 12 percent had no reported mode of transmission. See Figures 47 and 48. The age at HIV diagnosis (including AIDS) is similar to the age distribution for all cases in Michigan, with six percent, ages 0-19, 26 percent (14) ages 20-29, 34 percent (18) ages 30-39, 23 percent (12) ages 40-49, 11 percent (6) ages 50 and older, and one with an unknown age at diagnosis.

Figure 47: Persons of Arabic DescentLiving with HIV/AIDS in Michigan by Mode of Transmission (N=54)

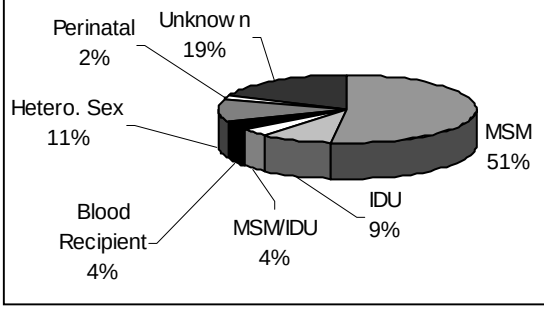
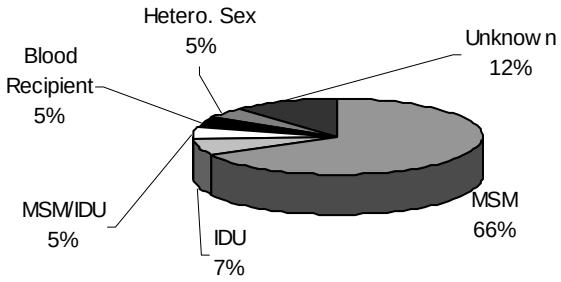


Figure 48: Males of Arabic DescentLiving with HIV/AIDS in Michigan by Mode of Transmission (N=42)



2004 Profile of HIV/AIDS in Michigan

Special Population: Incarcerated Population

Data from HIV/AIDS Reporting System (HARS) , Michigan Department of Corrections & Family of Seroprevalence Surveys

Number of Cases:

From 1989 to present, a cumulative total of 1,611 prisoners have been confirmed with HIV infection. Many were first diagnosed upon intake to prison, some were diagnosed while in prison, and others diagnosed prior to incarceration. A total of 549 are known to have died inside or outside of prison. The Detroit Metro Area and Out-State Michigan profiles include ex-prisoners, but not persons still in prison. This section on the Michigan Department of Corrections describes the 374 inmates known to be incarcerated at state facilities, as of January 2004.

Race/Ethnicity and Sex:

Ninety-five percent of HIV-infected prisoners are male and five percent are female. Most (76 percent) are black, 17 percent are white, and five percent are Hispanic. Please see Table 13, page 2-54 for more information.

Among the 17 females currently in prison living with HIV, less than three-quarters are black and less than 24 percent are white. Figure 49 shows that of those with known risk behavior histories, half give a history of injecting drug use and the other half report a history of high-risk heterosexual behavior (i.e., partner was HIV-infected or who was an injecting drug use).

Among the 357 males currently in prison living with HIV, 77 percent are black. Among the 207 black males with known risk, 34 percent are men who have sex with men, 32 percent have injected drugs, and 20 percent have had both behaviors. Another 14 percent indicate they had a heterosexual sex partner who was HIV-infected or who was an injecting drug user. Among the 53 white males with a known risk, a higher proportion is attributed to men having sex with men (51 percent), 15 percent have injected drugs, and 25 percent have had both behaviors. See Table 14, page 2-55.

Figure 49: Females Living with HIV/AIDS in Prison by Known Mode of Transmission (n=16)

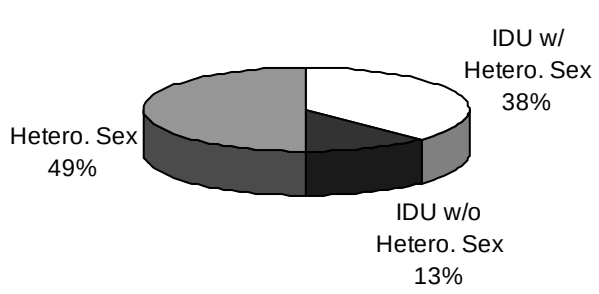
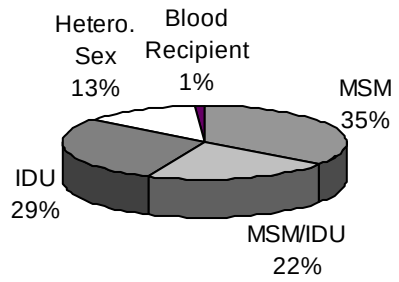


Figure 50: Males Living with HIV/AIDS in Prison by Known Mode of Transmission (n=279)



Prison Populations:

As of January 1, 2004, there are 48,968 prisoners in MDOC correction facilities, 1,040 of these prisoners are less than 20 years old. Since 1989, all prisoners have been tested for HIV infection and other infectious diseases upon intake to state correctional facilities. This testing shows that among both men and women, approximately three percent of all prisoners are HIV-infected. Among young men under age 20, the proportion is lower (1.5 percent). See Table 14, page 2-55. The three percent of overall HIV infection in the prison population is an increase from the one percent reported in 2002. These data are often collected at the time of incarceration, although there are occasional updates.

Wayne County Jail HIV Anonymous Unlinked Serosurvey, 1999

Prevalence:
From March-August 1999, an anonymous, unlinked HIV seroprevalence study was conducted among 5,556 persons who were incoming prisoners to the Wayne County Jail. From these participants, 4,909 HIV test results were available and revealed an overall seroprevalence of 1.7 percent (85 persons). Most of the incoming prisoners were residents of Wayne County (94.1 percent), and most were male (87.8 percent), black (75.5 percent) and had previously been incarcerated (86 percent). MSM had the highest HIV seroprevalence (13 percent), followed by persons exchanging money or drugs for sex (5 percent) and then IDU (4 percent). This population of incoming prisoners had an HIV seroprevalence rate (1.7 percent) comparable to the rate of those who utilize voluntary HIV counseling and testing services in Wayne county (1.2 percent) and higher than the general Michigan population (0.14 percent).

Incidence:
Specimens from the study mentioned above that had adequate samples were tested using the STARHS algorithm for determining recent infections. Of the 85 prisoners that tested positive for HIV, about half had adequate specimens (44), and of these, 5 (11 percent) were determined to be recently acquired infections. After adjustments, overall HIV incidence was 0.4 percent. Incidence was highest among IDU (2.4 percent), followed by persons who exchanged money or drugs for sex (1.8 percent), and persons using non-injecting drugs (0.5 percent). More than a quarter (28 percent) of HIV-infected IDU had recently acquired infections, as did 17 percent of persons exchanging money or drugs for sex and 15 percent of HIV infection non-injecting drug users.

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