2012 Epidemiologic Profile of HIV in Michigan

HIV/STD/VH/TB Epidemiology Section
Bureau of Disease Control, Prevention and Epidemiology
Michigan Department of Community Health
www.michigan.gov/hivstd

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Summary

The HIV epidemic in Michigan:

At the end of 2011, 15,753 persons were known to be living with HIV in Michigan, over half (54 percent) of whom had progressed to stage 3 HIV infection (AIDS) (table 8, page 101) (based on current residence; see page iv for more information). Currently, there are persons living with HIV in all but one county of the state (table 9, pages 102-103). The statewide prevalence of HIV is distributed disproportionately. Most HIV cases are diagnosed and live in the Detroit Metropolitan Area, where 43 percent of the state's population lives but 63 percent of all persons living with HIV in Michigan reside (table 8).

The overall rate of new HIV diagnoses in Michigan remained stable between 2006 and 2010 (See page v-vi for information on *2012 Annual Review of HIV Trends in Michigan*). However, HIV continues to disproportionately impact certain racial and ethnic groups. Rates of new diagnoses among black males are 10 times higher than among white males, and rates among black females are 25 times higher than among white females (Trends). Black males and females make up 14 percent of the general population in Michigan but 56 percent of persons living with HIV (table 8).

The risk transmission category with the highest number of new diagnoses, as well as the majority of all prevalent cases, remains men who have sex with men (MSM). The number of diagnoses among injection drug users (IDU) has declined for the past several years, and persons with a risk of heterosexual sex represent an increasingly larger proportion of new diagnoses (Trends).

Although the highest rates and numbers of new diagnoses were among persons ages 30—44 years at diagnosis in past years, the epidemic continues to shift to a younger population. The rates among 20-24 year olds are now the highest of any age group. Nearly three quarters of all new cases among adolescents and young adults (13-24 year olds) are residents of the Detroit Metro Area at diagnosis (Trends).

Closer analyses of these data reveal that this trend is due to an increase in HIV among young black MSM. Teens newly diagnosed with HIV are more likely to be black MSM compared to adults 20 years and older (62 vs. 23 percent, respectively) (Trends). The section on young black MSM was updated for this publication (page 93). MDCH continues to monitor this change in the epidemic and aid in the development of targeted prevention and care programs.

HIV in the United States and world:

The most recent data show that in 2008, Michigan had the 13th highest number of persons living with HIV in the United States.[1] Nationally, the number of persons living with HIV increased 7.5 percent between 2007 and 2009 while rates of new diagnoses were stable (similar to trends seen in MI). At the end of 2009, an estimated 784,701 persons were living with HIV in the US. In 2010, the estimated national rate of new HIV diagnoses was 16.1 per 100,000 population. The reported number and rate of deaths per year among HIV-positive persons increased between 2007 and 2009 (Centers for Disease Control and Prevention. *HIV Surveillance Report 2010*, vol. 22. http://www.cdc.gov/hiv/surveillance/resources/reports/2010report/pdf/2010_HIV_Surveillance_Report_vol_22.pdf#Page=1).

According to the World Health Organization, an estimated 2.7 million new HIV diagnoses and 1.8 million HIV-related deaths occurred during 2010 worldwide, bringing the total number of persons living with HIV to 34 million. This translates to nearly 7,400 new HIV diagnoses each day. Almost 70 percent of new cases and 72 percent of HIV-related deaths were in sub-Saharan Africa, where transmission is predominately heterosexual (Joint United Nations Programme on HIV/AIDS, *Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access: Progress Report 2011*. http://www.who.int/hiv/pubprogress_report2011/summary_en.pdf).

[1]National statistics in this section include the 46 states with confidential name-based HIV infection reporting as of January 2007.

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Technical Information

Updates on new information:

Prior to the publication of this document, Epi Profile consumers were surveyed in order to solicit their comments and suggestions regarding the content of the Profile. Nearly 170 people completed the survey. Several changes were made based on the feedback received, including but not limited to the inclusion of data on transgender persons and monitored viral load. We hope to continue this practice in the future to ensure that data products we provide are as relevant to consumers as possible.

Michigan is at the forefront of national HIV surveillance and conducts multiple activities to supplement routine HIV surveillance. The 2012 Profile includes updated data from the Medical Monitoring Project (MMP), National HIV Behavioral Surveillance (NHBS), and HIV incidence estimates. HIV resistance data (VARHS) have required extensive analysis by the CDC. Recently, this analysis was completed, and Michigan has begun to investigate state-specific rates of HIV drug resistance and subtype variability. Results are not presented in this document, but please see the 'upcoming' portion of the data sources section to learn more about this data source (page xvi). In response to previous requests for data on sexual minorities, such as transgender persons, this year's Profile includes a new 'Special Populations' section on HIV-positive transgender persons (page 98). Included in the 2010 Profile and updated for this year's publication are sections on minority racial/ethnic groups, including Arab Americans, Asians/Native Hawaiians and other Pacific Islanders, American Indians/Alaska Natives, and foreign-born persons (pages 86-92).

As with the 2010 Profile, the HIV/STD/VH/TB Epidemiology Section is providing prevention and care planning groups with the epidemiologic profiles for the State of Michigan, the Detroit Metropolitan Area, and Out-State Michigan (including the upper peninsula and the remainder of the lower peninsula).

HIV terminology:

As of January 2012, MDCH began using new terminology to describe late stage HIV infection, with "stage 3 HIV infection" replacing the term "AIDS". Additionally, cases previously called "concurrent diagnoses" (receiving an AIDS diagnosis within 30 days of initial HIV diagnosis) are now referred to as "late HIV diagnoses". This new language is in line with language used by the CDC in several recent publications. Please refer to the glossary in appendix A (page 223) for definitions of terms.

Use of current residence vs. residence at diagnosis:

The HIV/STD/VH/TB Epidemiology Section creates the Epi Profile every other year; however, statewide and some county statistical analyses are created and disseminated on a quarterly basis. When reading either of these documents, keep in mind that they are based on two different populations. The HIV Surveillance Quarterly Analyses (statewide and county) use cases of HIV whose **residence at diagnosis** was Michigan (cases that were diagnosed in Michigan can presently be living elsewhere). This method is the standard set by the CDC. The Epidemiologic Profile of HIV in Michigan uses cases of HIV that are **currently living in** Michigan. There are 1,038 more persons included when using the HIV-positive population **currently living in** Michigan, regardless of where they were living when diagnosed with HIV. Different populations are used in order to satisfy questions on both populations. Therefore, there may be differences in numbers, percentages, and rates when comparing the two types of documents.

NOTE: There are limitations to current address data. We use the most recent address data available for this Profile, but some patient addresses are greater than ten years old. Therefore, persons who moved within the state of Michigan or to/from another state since that address was obtained may not be accu-

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rately counted in the correct geographic area. Efforts are underway to improve current address data.

Computation of prevalence estimates:

HIV prevalence estimates in this report are based on adding the following three components and rounding to the nearest 100: 1) the number of reported cases currently living with HIV infection in Michigan; 2) the number of diagnosed HIV infection cases not yet reported, estimated at 10 percent of the reported cases living with HIV infection; and 3) the number of HIV infection cases not yet tested, estimated at 21 percent of the total cases living with HIV infection (identical to the CDC estimate). The prevalence estimate for all HIV-positive persons currently living in Michigan is 20,600 cases. Please note that this calculation is based on the number of reported HIV-positive persons *currently living in* Michigan, not those living in Michigan at the time of diagnosis as in the quarterly HIV statistics.

HIV prevalence estimates for each subgroup are calculated by multiplying the proportion of total cases in that group by 20,600 (the current total prevalence estimate). For example, 78 percent of reported HIV infections are among males. Therefore, the number of males currently living with HIV in Michigan is estimated to be 16,040 (77.88% x 20,600 rounded to the nearest 10; extra decimals provided for calculation purposes). Since the estimates are rounded, totals may not equal 20,600. The minimum estimate is 10.

Prison estimates of HIV infection are not calculated, because all prisoners are tested for HIV upon entry to prison; therefore, there is no need to account for unreported and untested cases. The prison prevalence estimate is the reported number of persons living with HIV infection and diagnosed in prison rounded to the nearest 10.

County estimates of HIV infection are calculated similarly to the subgroup estimates described above; however, for county calculations the proportion of cases in a particular county is multiplied by the statewide estimate minus the prison estimate (20,600 - 370 = 20,230). For example, 12 percent of HIV infection cases (not including cases in prison) are currently living in Oakland County. Therefore, the number of HIV-positive persons currently living in Oakland County is estimated to be 2,400 (11.84% x 20,230; extra decimals provided for calculation purposes). Since the estimates are rounded to the nearest 10, the county totals may not equal 20,230. The method of calculating prevalence estimates for counties was revised as of April 2008; thus, county estimates presented prior to this date may differ from current and future estimates.

Use of date of *diagnosis:*

The date of HIV *diagnosis* does not tell us when persons were first *infected*, because their HIV diagnosis may take place months or years after infection. In order to measure prevention achievements, the number of persons who become newly infected would ideally be followed over time. Methods for measuring new infections (incidence estimates) continue to improve, and new data are presented in this report. Trends continue to be analyzed based on new diagnoses, however. Due to methodological constraints and the relative newness of incidence data, new diagnoses remain the best current measure of how fast the epidemic is spreading among different populations.

Methods to assess trends over time:

To evaluate trends in new HIV diagnoses in Michigan over time, we estimated the number of persons newly diagnosed with HIV infection between 2006 and 2010 by adjusting the number of reported cases to account for those who may not have been reported to the health department by January 1, 2012.

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These adjustments were made by weighting the data.

Unless otherwise noted, numbers cited include persons living with all stages of HIV infection. We used regression modeling on the adjusted data to assess significant changes in annual rates of new diagnoses overall and by race, sex, and age. Rates for race and sex subgroups were calculated using intercensal annual population estimates released by the Census Bureau in 2010 and based on the 2010 census, the most recent year for which 2006-2010 data were available. Rates for age at diagnosis were calculated using the 2010 Bridged-Race Population Estimates produced by the Population Estimates Program of the U.S. Census Bureau in collaboration with the National Center for Health Statistics. For risk groups, we analyzed annual counts as there are no reliable denominator data available for rate calculation. Trends overall and in subgroups are described using average annual percent changes in rates (or counts) of new diagnoses. Only significant trends and their corresponding percent changes are shown. "Significant" indicates statistical significance assessed at $p<0.05$.

Numbers of reported HIV cases in Out-State Michigan were insufficient to apply this methodology. Since trends cannot be reported for Out-State Michigan, the chapter dedicated to this geographic area presents figures created using raw rather than adjusted data. Consequently, comparisons between adjusted numbers in the Statewide or Detroit Metro Area chapters and raw numbers in the Out-State chapter are not valid. For the complete Trends reports, please visit the following link: http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46003-36304--,00.html.

Presentation of risk and exposure categories:
Although case reporting includes ascertainment of multiple behaviors associated with HIV transmission, current surveillance methods cannot distinguish the specific route of HIV transmission in persons who have engaged in more than one risk behavior. For the purposes of analysis and interpretation, the Centers for Disease Control and Prevention created a risk hierarchy to classify people into risk transmission categories. When the transmission categories were created, the order from top to bottom was meant to represent the most likely route through which HIV was transmitted. The hierarchy was established based on what was known at the beginning of the epidemic about how HIV was transmitted, when almost all cases were among males and there was little documented heterosexual transmission. Since then, the hierarchy has not changed, even though our understanding of the most efficient HIV transmission routes has. Additionally, concerns have been raised that use of hierarchical categories masks the identification of multiple risks that a person may have.

For this reason, Michigan also presents exposure categories, which convey all known modes of HIV exposure. Like the traditional risk transmission categories, the exposure categories are mutually exclusive, meaning that each case is included in only one category. Exposure categories, however, allow readers to see all the reported ways in which a person may have been exposed to HIV without stating definitively how that individual was infected. Please see the glossary in appendix A (page 223) for more detailed definitions of risk transmission and exposure categories.
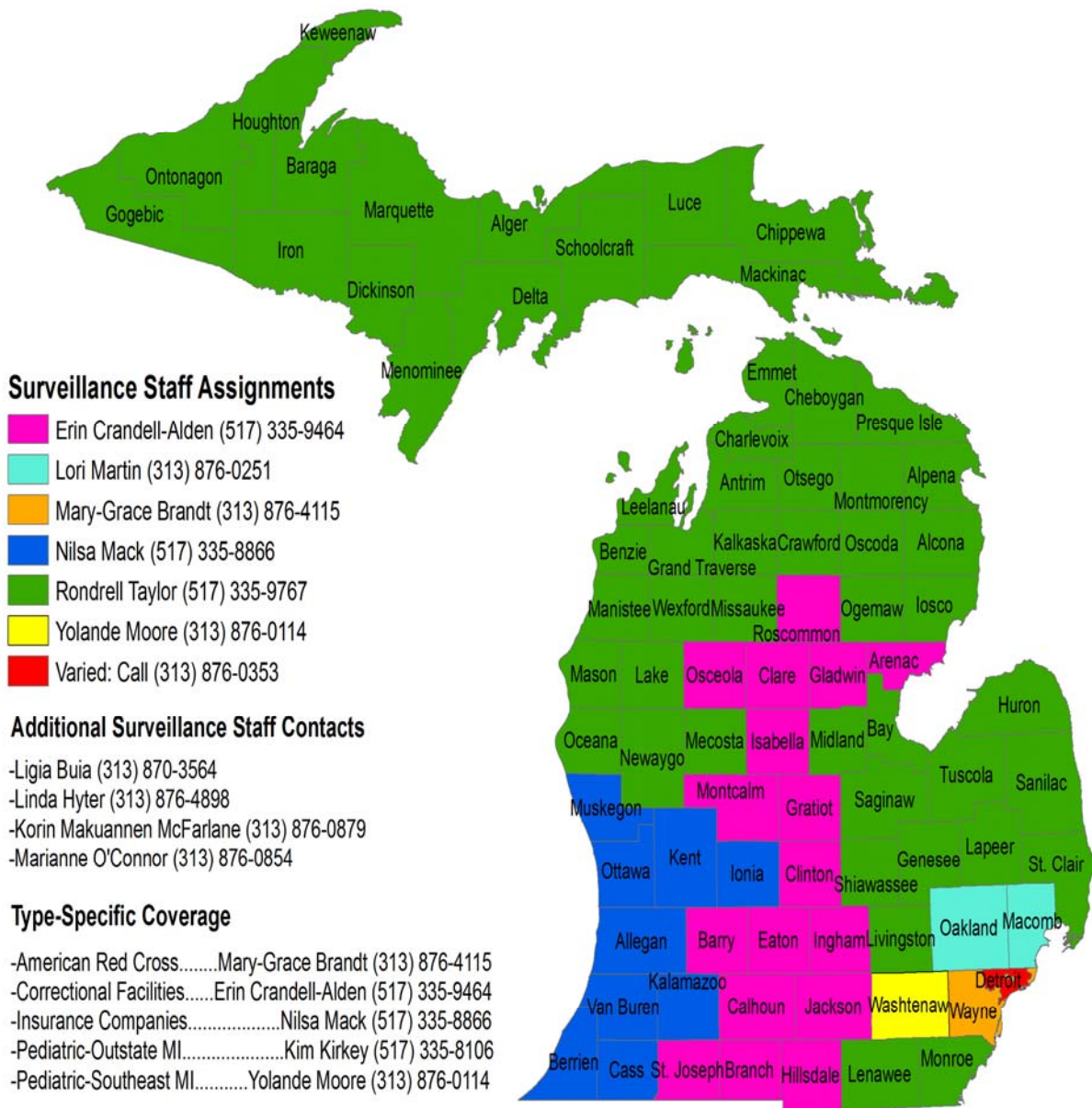
Ranking of behavioral groups:
A simplified method is used to rank the priority of behavioral groups for prevention and planning purposes. This rank is based on the proportion of total reported HIV infection cases and trends over time for each risk transmission category. Ranking is done separately for each geographic area.

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HIV Surveillance Staff Contacts

Contact information:

Staff from the MDCH HIV/STD/VH/TB Epidemiology Section are available to assist in interpretation of this Profile as well as to provide additional analyses. Presentation-friendly versions of the data are also available upon request. Questions or comments about this document should be directed to your county contact. General questions may be directed to Danielle Smith (517-335-8165). With the cooperation of reporting sites, surveillance data will continue to guide HIV prevention strategies and resource allocation for prevention and care services in Michigan.

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Strengths and Limitations

When making planning decisions, it is important to consider the overall strengths and limitations of this document. Although the Epi Profile is comprehensive and draws from a number of data sources, there are many things that the Profile cannot explain.

Although eHARS (the enhanced HIV/AIDS Reporting System, the HIV data management system used nationally and in Michigan) is extensive, it is based on data for persons who have been confidentially reported (i.e., by name). Consequently, HIV-positive persons who have not been tested, have tested anonymously, or have tested by name but were not reported, are not included in these analyses. Therefore, HIV infections are under-detected and underreported. However, HIV surveillance data are considered to be among the most complete compared with other notifiable diseases and infections. In order to compensate for undocumented infections, estimates of HIV infection are provided in several tables.

The data presented in this report do not necessarily represent the characteristics of persons who have been recently infected with HIV, nor do they provide a true measure of HIV incidence. Persons are tested at differing times after they become infected, and many persons are not tested until HIV infection has progressed to stage 3 (late diagnoses). The most extensive population-based incidence estimates (new infections) available to date are included in this document, but incidence estimates are not available for several populations. For this reason, data in all other sections and tables of this document are based on new diagnoses.

Analyses of many different data sets are presented to provide robust representations of particular subpopulations. However, demographic and geographic subpopulations are not equally as sensitive to differences and changes in access to health care, HIV testing patterns, and specific prevention programs and services. All of these issues must be carefully considered when interpreting HIV data. Therefore, it is important to make comparisons across data sources to get the most complete picture of the epidemic.

The most current analysis available is presented for each source of data; however, the date of the most recent data differ from one source to another. For example, the most recent data available for Outreach, Prevention, and Care Services for Young African American MSM (YMSM) are from 2009, whereas some data (such as the Michigan Profile for Healthy Youth (MiPHY)) were collected in 2012. Strengths and limitations for each individual data set are further discussed in the Data Sources section (page ix).

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Data Sources

Data were compiled from a variety of sources to provide the most complete picture of HIV in Michigan as possible. When interpreting data, keep in mind that each of data source has strengths and limitations. A brief description of each data source follows. Throughout this document, the data source(s) is listed at the top of each page. Wherever possible, readers are directed to the appropriate table or figure where data are presented. Please note that the majority of data from external sources (non-surveillance data) are not presented in tables.

Core HIV Surveillance

Enhanced HIV/AIDS Surveillance System (eHARS): HIV Surveillance Data (1983—present)

In 1983, the Michigan Department of Community Health (MDCH) established a surveillance system to track newly diagnosed cases of AIDS. This surveillance system is managed by the HIV/STD/VH/TB Epidemiology Section and was expanded in 1989 to include confidential name-based HIV reporting. In 2005, laboratory reporting was added to the surveillance system, and in 2011 HIV cases were reportable in the Michigan Disease Surveillance System (MDSS) as electronic case reports (ECRs). Standardized case report forms and laboratory reports are used to collect sociodemographic information, exposure data, laboratory and clinical information, vital status (i.e., living or dead), and referrals for treatment or services. These data are obtained from medical record abstractions. Patients are not interviewed as a part of routine core surveillance. HIV surveillance data may underestimate the number of recently infected persons, because some HIV-positive persons have not been tested or have been tested but not yet reported to MDCH. Persons who test positive at anonymous test sites and have not sought medical care (where they would likely be re-tested and reported by name) are not included in HIV surveillance statistics, because cases without names cannot be de-duplicated. Therefore, HIV infection data provide minimum estimates of the number of persons who are HIV-positive and living in Michigan. In addition, newly diagnosed cases may be reported to the health department at any point along the clinical spectrum of disease. Consequently, HIV infection data do not necessarily represent characteristics of persons who have been recently infected.

Serologic Testing Algorithm for Recent HIV Seroconversion (STARHS) - Incidence Data (2006—2009)

Michigan participates in STARHS (Serologic Testing Algorithm for Recent HIV Seroconversion), a CDC-funded initiative to incorporate HIV incidence testing into routine surveillance nationwide. The goal of STARHS is to produce incidence rates (rates of recent infection in the last six months) for HIV. HIV incidence data have important public health implications for evaluating HIV intervention and prevention programs for effectiveness, for targeting prevention efforts associated with ongoing transmission, and for allocating resources to populations in greatest need of prevention efforts. STARHS generates population-based estimates of HIV incidence based on the results of an incidence test (BED Assay) and testing and treatment history questions answered by the infected person. The STARHS incidence test is performed automatically on leftover serum from the diagnostic, confirmed positive specimen. The remnant serum is sent, without name, to the New York State STARHS Lab for the incidence test. If the original diagnostic specimen is not available, a subsequent serum or plasma specimen obtained within three months of diagnosis is acceptable for testing. The BED Assay classifies each infection as recent or

long-standing based on the amount of HIV antibody present. At a population level, these results can help estimate the number of new HIV infections occurring each year in a population.

Supplements to HIV Surveillance

Medical Monitoring Project (MMP) (2009)

The Medical Monitoring Project is an ongoing population-based surveillance project designed to assess clinical outcomes and behaviors of HIV-positive persons receiving care in the U.S. The MMP collects information on both behavioral and clinical data from confidential in-person interviews and medical record abstraction (MRA). There were 164 patients interviewed and 149 medical record abstractions during the 2009 MMP data cycle. For MMP, the surveillance period is defined as the 12 months preceding the interview, and the medical history period is defined as the time between first entry into HIV care and the start of the surveillance period. Due to lower than anticipated response rates, the 2009 MMP data were not weighted to provide a representative sample of the whole state, and the results may not be generalizable to the entire HIV-positive population in Michigan. For more about MMP, please visit www.michigan.gov/mmp.

Communicable Disease Surveillance

Michigan Disease Surveillance System (MDSS): TB Data (1992—present)

The MDCH HIV/STD/VH/TB Epidemiology Section conducts statewide surveillance of cases of tuberculosis. All TB cases reported in the State of Michigan are reported using the CDC Report of a Verified Case of Tuberculosis (RVCT) form. Until December 2007, surveillance information and laboratory reports on active and suspect TB cases were maintained and reported to CDC in the Tuberculosis Information Management System (TIMS) database. Starting in January, 2008, data have been managed in the Michigan Disease Surveillance System (MDSS). Surveillance data are analyzed to monitor statewide tuberculosis trends, including HIV/TB co-infection, as well as to determine appropriate treatment regimen, drug susceptibility results, and completion of TB therapy status. Each year, the TB registry is matched to the HIV surveillance database. Outcomes from the match include documenting progression from HIV to stage 3 infection (AIDS), completing TB infections reported directly to HIV surveillance, and, occasionally, identifying new HIV cases.

Michigan Disease Surveillance System (MDSS): STD Data (2004—present)

The MDCH Division of Health Wellness and Disease Control conducts statewide surveillance of sexually transmitted diseases (STDs) to determine the number of reported cases, monitor trends in new diagnoses, and provide partner counseling and referral services for examination and treatment. All of these objectives aim at reducing the spread of STDs in the community. In Michigan, gonorrhea, chlamydia, syphilis, lymphogranuloma venerum, chancroid, and granuloma inguinale are reportable by physicians and laboratories. Chlamydia is the most frequently reported reportable communicable disease in Michigan, and gonorrhea is the second most frequently reported. Michigan STD data has some limitations. There are significant variations in the completeness of data from public vs. private providers. Approximately 88 percent of female cases and 73 percent of male cases come from private providers. Among public providers, only 16 percent of race data is missing; however, 42 percent of race data is missing in reports from private providers. Michigan does not collect standardized sexual orientation or sexual risk

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behavior data for gonorrhea or chlamydia cases. However, these data are collected for syphilis cases. For more Michigan STD data, please refer to http://www.mdch.state.mi.us/pha/osr/Index.asp?Id=12.

Michigan Disease Surveillance System (MDSS): Hepatitis C Data (1992—present)

The MDCH Division of Communicable Diseases requires physicians, health care professionals, and laboratories to report cases of communicable diseases, including acute and chronic hepatitis C, in accordance with Michigan's Communicable Disease Rules. Cases of hepatitis C are reported to MDCH via the Michigan Disease Surveillance System (MDSS), a web-based communicable disease reporting system developed for the state of Michigan. MDSS collects basic demographic data on each case, as well as additional information such as laboratory test results, clinical information and exposure history. Completeness of this additional information varies. Since acute and chronic hepatitis C infections are often asymptomatic and can remain undetected and unreported for years, the number of reported cases is less than the actual number of hepatitis C cases in Michigan.

Behavioral Surveys

National HIV Behavioral Surveillance (NHBS) (2005—present)

The National HIV Behavioral Surveillance program is a CDC funded project that monitors risk behaviors and access to HIV prevention services among three identified risk groups at a national and local level. Data collection is implemented in annual cycles with each cycle focusing on one risk group, i.e., men who have sex with men (MSM), injection drug users (IDU), and heterosexuals (HET) living in targeted areas. This project is different from all other HIV surveillance activities in that it collects data from people based on behavioral and/or residential characteristics and not their HIV status; thus, most interviewees are uninfected. In 2005, Michigan's HIV Surveillance Program participated in the IDU cycle of NHBS Round 1, interviewing IDUs in the City of Detroit. A pilot for the HET cycle was also performed in 2005, with the full HET cycle 1 being performed in the Detroit Metro Area in 2006. At this time, a supplementary Partner Study was also performed in which information was gathered from participants' partners. These data were analyzed to determine the degree of risk that females perceive for themselves compared to the actual behaviors reported by their male partners. The 2nd round of NHBS was started in 2008, in which the MSM2 cycle was implemented in Wayne County. Injection drug users (IDU2) and heterosexuals at increased risk for HIV (HET2) were completed in 2009 and 2010, respectively. NHBS Round 3 was implemented in 2011 beginning with men who have sex with men (MSM3) followed by injection drug users (IDU3) in 2012, followed by heterosexuals at increased risk for HIV (HET3) in 2013. Completed NHBS data reports are posted on the MDCH HIV/STD/Hepatitis website: www.michigan.gov/hivstd.

Michigan Birthing Hospital Assessment (2007-2010)

From 2007-2010, MDCH's Perinatal Hepatitis B Prevention Program (PHBPP) conducted an assessment of hepatitis B, syphilis, and HIV screening in Michigan birthing hospitals. The assessment, funded through the Centers for Disease Control and Prevention (CDC), included a survey of Michigan's 91 birthing hospitals in 2007; a follow-up survey of Michigan's 81 birthing hospitals in 2010; and review of 5,711 paired maternal-infant medical records from 91 birthing hospitals across the state.

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Youth Risk Behavior Survey (YRBS) (2011)

The Youth Risk Behavior Survey (YRBS) is conducted every other year in Michigan by the Department of Education and assesses a broad range of health practices among a representative sample of the state's students in grades nine through 12. Data are weighted so that survey results can be generalized to all high school students in the state. Michigan is one of only a few states with high enough response rates on eight consecutive YRBS survey administrations (1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011) to have scientific trend data spanning 14 years. The YRBS collects information on six categories of behaviors related to the leading causes of mortality and morbidity among both youth and adults. Sexual behaviors that contribute to unintended pregnancies and STDs, including HIV infection, constitute one of the six categories. Questions in this category ask about HIV prevention education, sexual activity (age at initiation, number of partners, condom use, past drug or alcohol use, forced sex, sex of sexual partner), and contraceptive use. The YRBS is a standardized questionnaire, so comparisons can be made between states, participating cities, and the nation on core questions. States and cities may also add questions of local interest. Michigan has added three questions to the sexual behavior section: parent-child communication, age of first sexual partner, and sex of sexual partner (new in 2011). Because the YRBS relies upon self-reported information, sensitive behavioral information may be under-reported or over-reported. Also, because the YRBS questionnaire is administered in schools, the data are representative only of adolescents who are enrolled in school and cannot be generalized to all adolescents. For example, students at highest risk, who may be more likely to be absent from school or to drop out of school, may be underrepresented in this survey, especially those in upper grades. The Michigan questionnaire does not currently include a question about sexual orientation. For more about the Michigan YRBS, go to www.michigan.gov/yrbs.

Michigan Profile for Healthy Youth (MiPHY) (2012)

The Michigan Profile for Healthy Youth (MiPHY) is an online student survey developed by the Michigan Department of Education and available at no cost to school districts interested in assessing student risk behaviors and protective factors for students in grades seven, nine, and 11. The MiPHY was developed in 2006 to provide districts with a local mechanism for data collection that could be used to assess needs, plan and implement programs, and access resources. The MiPHY instrument parallels the YRBS questionnaire but also includes risk and protective factor questions that are most predictive of substance use and violence. As questions are added or dropped from the state YRBS survey, the same is done for the MiPHY questionnaire. The survey is available to school districts every other year (in off years from the YRBS). Districts have the option of implementing the full MiPHY or the MiPHY basic, which doesn't include the questions related to sexual behavior and suicide. The online survey typically takes one class hour, and districts have almost immediate access to data reports after survey completion. Districts receive school- and district-specific reports. Aggregated county reports are available with school identity suppressed for counties with two or more participating districts. The MiPHY results apply to those students who took the survey and cannot be generalized to the entire student body or to the high school population in Michigan. The state and national YRBS results are often used as benchmarks for local districts reviewing MiPHY results. Districts that have participated in multiple cycles of MiPHY can also look at trends. To learn more about the MiPHY system and access county reports, go to www.michigan.gov/miphy.

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Evaluation of the AIDS Partnership Michigan Community Re-entry Program (December 2011)

In 2011, the state commissioned an evaluation of its centralized prison intake re-entry program, which is designed to facilitate linkage to care for HIV-positive prisoners who are about to be released from prison. The evaluation used data from a variety of sources to determine how well the ex-offenders who had used the program were faring three or more years later. The evaluation focused on health status in 2011 of 190 ex-offenders who were released from prison between May of 2003 and May of 2008. The evaluation used a variety of data sources, including CAREWare data, vital records, and face-to-face interviews with 60 HIV-positive ex-offenders throughout the state.

Outreach, Prevention, and Care Services for Young African American MSM (YMSM) — January 2009

Brothers Saving Brothers (BSB) was a Health Resources and Services Administration (HRSA) Special Project of National Significance (SPNS) implemented by the Horizons Project from 2004 to 2009. It involved encouraging African American young men who have sex with men (YMSM) to learn their HIV status and sought to obtain information on possible barriers to HIV counseling and testing (HIV C&T). A motivation-based intervention (motivational interviewing, MI) was implemented along with field outreach to encourage African American YMSM in the Detroit Metropolitan Area to know their HIV status (i.e., receive HIV C&T and return for test results). BSB compared two forms of interventions for effectiveness: Field Outreach plus MI vs. Field Outreach Alone. A web-based survey was also sent to African American YMSM in the Detroit Metropolitan Area to assess sexual behaviors among online African American YMSM and to determine possible barriers to HIV C&T for this population. Data from both the field outreach and web survey are included in this publication.

The Young Men's Health Study: A Statewide Needs Assessment of Young Black MSM (October 2009)

In 2009, Michigan State University conducted a statewide needs assessment of young black men who have sex with men (YBMSM). The needs assessment was designed and conducted in collaboration with six YBMSM from around the state. Using a variety of recruitment methods, 180 young men completed semi-structured face-to-face interviews that lasted, on average, 70 minutes. Young men were asked about a wide variety of topics, including family, community, religion, social support, health care utilization, mental health, substance use, violence, sex, and sexual relationships.

Community Health Awareness Group/Michigan AIDS Coalition Focus Groups - Young Transgender Women of Color (March 2012)

Between March and May 2012, Community Health Awareness Group (CHAG), in collaboration with the Michigan AIDS Coalition (MAC), conducted a series of focus groups targeting young transgender women of color. The purpose of these groups was to gather additional information to further inform the implementation of the agency's new Centers for Disease Control and Prevention (CDC)-funded project. The women were brought together to talk about those behaviors that place them at risk for HIV and the hepatitis C virus (HCV) and to discuss their experiences and expectations of health care accessed in the Detroit Metro Area.

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Service Utilization Data

Ryan White HIV/AIDS Program: The State of Michigan Uniform Reporting System (URS) Data Collection Process (2011)

The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act was first enacted in 1990 to provide federal funds to help communities and states increase the availability of health care and supportive services for people living with HIV/AIDS (PLWH/A). In 2006, the CARE Act was replaced by the Ryan White HIV/AIDS Treatment Modernization Act (Ryan White), which was reauthorized in 2009 as the Ryan White Treatment Extension Act. Under this legislation, Part A funds are allocated to Eligible Metropolitan Areas heavily impacted by the epidemic (e.g., Detroit), while Part B, including the AIDS Drug Assistance Program (ADAP) earmark, provides resources to States and U.S. Territories. Ryan White Part C resources fund outpatient HIV early intervention services at local health care facilities and clinics. Part D is used to coordinate and enhance services for women, infants, children and youth. Ryan White HIV/AIDS Program resources are funds of last resort.

The services supported by Ryan White funds vary by jurisdiction but include health care services such as out-patient ambulatory medical care, medications, medical case management, mental health services, and supportive services that link PLWH/A to care (e.g., transportation). The Michigan Department of Community Health (MDCH), Division of Health, Wellness and Disease Control (DHWDC), HIV/AIDS Prevention & Intervention Section (HAPIS), is the Grantee for the Part B, ADAP, and Part D resources allocated to Michigan. The City of Detroit Department of Health and Wellness Promotion (DHWP) is the Part A Grantee designee. There were four Part C funded programs in Michigan in 2011: Wayne State University's Adult HIV/AIDS Clinic at the Detroit Medical Center, the Detroit Community Health Connection, the University of Michigan's HIV/AIDS Treatment Program in Ann Arbor, and Saint Mary's Health Care Special Immunology Services in Grand Rapids.

The Uniform Reporting System (URS) is a statewide client-level data standard designed to consistently document the quantity and types of services provided by agencies receiving Ryan White funds and describe the populations receiving services. The URS standards were originally developed by the Health Resources Services Administration (HRSA) and were implemented in Michigan beginning in 1994 as a demonstration project.

CAREWare, the software program developed by HRSA to collect and report URS data, is the program used by all Ryan White programs in Michigan. There are currently four separate CAREWare databases. The MDCH CAREWare system includes all the Part B- and Part D-funded programs, as well as data from two Part C-funded programs and from programs funded through the Michigan Health Initiative (MHI). DHWP maintains another CAREWare database for Part A-funded programs. MCDH and DHWP each implemented CAREWare as a centralized database accessed by service providers through a secure internet portal. Two Part C programs, the University of Michigan and the Detroit Community Health Connection each maintain their own individual CAREWare systems. Clients and services from ADAP and the Michigan Dental Program (MDP) are imported into the MDCH CAREWare database from other data systems on a regular basis.

For this profile, the URS data from these various CAREWare databases were extracted into a standard format and combined into a single database. The client records were then de-duplicated by means of

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Data Sources

the standard confidential URS client identifier. This produced a single record for each client with a combined total of services received across all agencies and Ryan White Parts. The clients in the URS database for this report are HIV-positive and have received at least one service during the calendar year 2011. Clients identifying as transgender have been excluded at this time due to small numbers and lack of comparability with surveillance data.

Vital Statistics Data

Birth and Death Data

The National Center for Health Statistics receives information on births and deaths in the United States through a program of voluntary cooperation with state government agencies (i.e., state departments of health, state offices of vital statistics) called the Vital Statistics Cooperative Program. States use standard forms to collect birth and death data. The birth certificate form includes demographic information on the newborn and the parents, insurance status, prenatal care, prenatal risk factors, maternal morbidity, mode of delivery, pregnancy history, and clinical characteristics of the newborn. Death certificates include demographics, underlying causes of death, and contributions of selected factors to the death (i.e., smoking, accident, or injury) of all deceased persons. Reporting is virtually 100 percent complete for births and deaths. Therefore, inferences can be made concerning the number of live births in a service area. The data can also be used to determine the effect of deaths related to HIV infection in a service area. Birth certificate data are obtained from patient medical records (i.e., smoking history, morbidity), which may be incomplete. In addition, deaths resulting from HIV, or whose underlying cause was HIV infection, may be underreported on death certificates. Clinical information related to HIV infection may be missing.

Population Data

U.S. Bureau of the Census (Census Bureau) (2010)

The Census Bureau collects and provides timely information about the people and economy of the United States every 10 years. The Census Bureau's recently updated Web site (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml) includes data on demographic characteristics (e.g., age, race, Hispanic ethnicity, sex) of the population, family structure, educational attainment, income level/employment status, housing status, and the proportion of persons who live at or below the Federal Poverty Level (FPL). Summaries of the most requested information for states and counties are provided, as well as analytical reports on population changes, age, race, family structure, and apportionment. State- and county-specific data are easily accessible, and links to other web sites with census information are included. All Michigan-specific census data used in this document are data that were collected during the 2010 census unless otherwise noted.

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Historical and Upcoming Data Sources

Historical Data Sources - Removed in 2012

This year, the following data sources were removed from the Epidemiologic Profile of HIV in Michigan due to their age and/or a lack of updated data:

- Adult/Adolescent Spectrum of HIV Disease (ASD) Project;

- Supplement to HIV/AIDS Surveillance (SHAS) Project;

- Bureau of Juvenile Justice Youth Risk Behavior Survey (BJJ YRBS);

- HIV/AIDS and Health Related Needs Among Commercial Sex Workers in Michigan;

- HIV/AIDS and Health Related Needs and Risk Perceptions Among African-American Men who Have Sex with Men in Michigan;

- Assessment of HIV and Other Recommended Perinatal Screening Tests Project;

- HIV/AIDS and Health-Related Needs Among Homeless Persons in Michigan; and

- HIV/AIDS and Health-Related Needs of Formerly Incarcerated Persons in Michigan.

Wherever possible, we found data to fill the gaps left by these sources. We continue to work with our partners and to seek new data to include in these profiles. Most data and products from removed sources are available on the web. Data from surveillance projects can be found by going to www.michigan.gov/hivstd —> HIV/AIDS —> Statistics and Reports, or clicking on the following link: http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46003---,00.html. Data from needs assessments are available at http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46001-280667--,00.html.

Upcoming Data Sources - Not included in this publication

Michigan's HIV Surveillance Program is at the forefront of HIV surveillance in the country. This program has been able to incorporate many supplements to routine surveillance. However, not all programs have data available for this publication. Below is a description of the HIV resistance surveillance project not included in this document.

VARHS (Variant, Atypical and Resistant HIV Surveillance) Data (2004—present)

VARHS is a CDC-funded surveillance initiative that incorporates HIV drug-resistant genotype testing (specifically sequencing the reverse transcriptase (RT) and protease regions of the *pol* gene of HIV) into routine diagnostic HIV testing protocols. Beginning in 2004 and continuing until mid-2010, all individuals who had their first confidential HIV diagnosis identified through MDCH's laboratory system or a cooperating private/public laboratory, and who are not known to have taken antiretroviral therapy, were provided with a clinically useful genotype and assessment of drug resistance and HIV subtype. Beginning in 2010 and in line with new recommendations that advocate physician-initiated baseline genotype testing for newly diagnosed HIV-positive individuals, private and commercial labs that conduct HIV genotyping are required to report nucleotide sequence data to MDCH so that statewide trends in HIV drug resistance and subtype can continue to be accurately and comprehensively monitored. Results from VARHS surveillance should be available for dissemination by the end of 2012.

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2012 Profile of HIV in Michigan (Statewide)

Sociodemographic Description of the Michigan Population

Population:

According to the 2010 Census, Michigan has the 8th largest population in the United States with a total of 9,883,640 persons. This is a decrease of 0.6 percent since the 2000 Census and the first time in history that Michigan had a net population loss between censuses. Michigan is composed of 83 counties. County populations range from a low of 2,156 persons in Keweenaw County to 1.8 million persons in Wayne County. The Detroit Metropolitan Area (DMA) (Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties) represents 43 percent of Michigan's population. Michigan cities with populations over 100,000, in order of descending population, are Detroit, Grand Rapids, Warren, Sterling Heights, Lansing, Ann Arbor, and Flint, with populations ranging from 713,777 to 102,434. Fifteen of Michigan's 20 most populous cities experienced a decrease in population between the 2000 and 2010 Census.

Figure 1 shows population change in Michigan between the 2000 and 2010 Census. Several counties in the upper peninsula and northeast Michigan experienced net loss while mid/west Michigan counties experienced either no change or a gain. The City of Detroit lost 25 percent of it's population between the 2000 and 2010 Censuses (237,493 persons). Michigan was the only state in the country to have a decrease in population during this time period.

Figure 1: Percent population change in Michigan counties between the 2000 and 2010 census
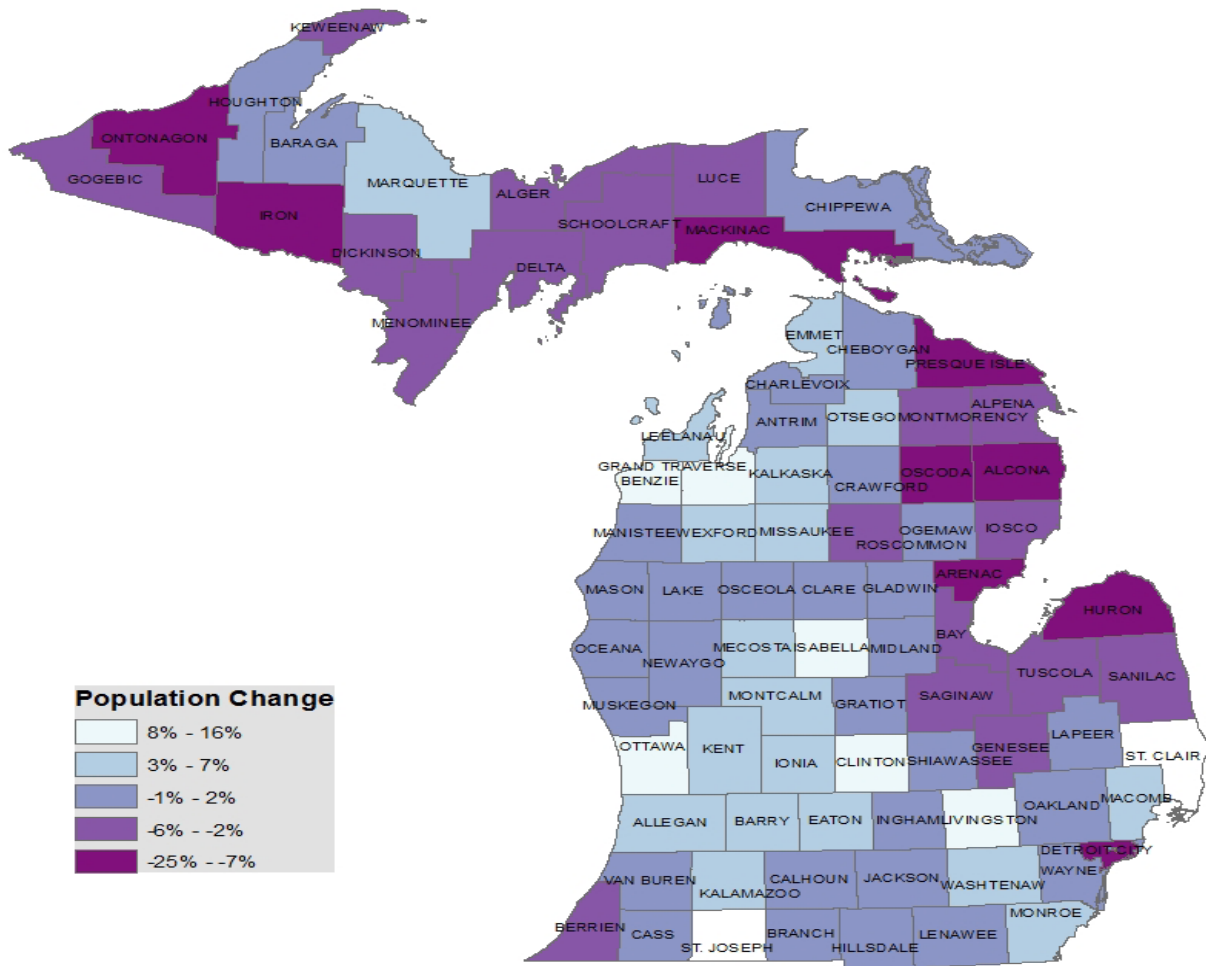
Source. Census 2010, US Census Bureau.

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Sociodemographic Description of the Michigan Population

Local health jurisdiction structure:
Michigan is divided into 45 local health departments (LHDs) (see map on page 18). Since many counties of Michigan have low population density, some district LHDs are composed of multiple counties. These multi-county LHDs each contain two to 10 counties and can deliver services more efficiently then single county LHDs in rural areas. LHD activities include clinical services for family planning, STD screening and treatment, maternal and child health services, special health care services for children, nutrition programs, and immunizations. Services also include sanitation, environmental monitoring, and epidemiologic investigations.

Age and sex:
According to the 2010 Census, the median age of Michigan residents is 40 years, two years older than the median age in the 2000 Census. Six percent of the population is under 5 years of age; 34 percent are younger than 24 years of age; and 14 percent of the population are 65 or older. The largest proportion of individuals is 45-64 years of age. The proportion of males in the overall population is lower than the proportion of females (49 vs. 51 percent, respectively). Table 1 shows the percent distribution of each age group, broken down by sex. Proportions in each age group are similar between males and females, except there is a higher proportion of males 5-14 years old than females. A larger proportion of females are 65 years of age and older than are males (15.4 percent vs. 12.1 percent, respectively). There was little change in any sex/age group between the 2000 to the 2010 Census.

Table 1: Age and sex distribution of the Michigan population, 2012

Age (years)	Male % (N = 4,848,114)	Female % (N = 5,035,526)	Total Population % (N = 9,883,640)
< 5	6	6	6
5—14	14	13	13
15—24	15	14	14
25—44	25	24	25
45—64	28	28	28
65 and older	12	15	14

Source. Census 2010, US Census Bureau.
Note: Percentages may not add to 100 percent due to rounding.

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Sociodemographic Description of the Michigan Population

Demographic composition:

According to the 2010 Census, the racial and ethnic composition of the state is 77 percent white, non-Hispanic; 14 percent black, non-Hispanic; four percent Hispanic; two percent Asian/Native Hawaiian or Other Pacific Islander; one percent American Indian/Alaska Native; and two percent multiracial or other race (table 2). Proportions of each racial/ethnic group are similar between males and females. There was little change in any racial or ethnic group between the 2000 and 2010 Census.

Table 2: Race/ethnicity and sex distribution of the Michigan population, 2012

	Male % (N = 4,848,114)	Female % (N = 5,035,526)	Total Population % (N = 9,883,640)
White, non-Hispanic	77	76	77
Black, non-Hispanic	14	14	14
Hispanic, all races	5	4	4
Asian/Native Hawaiian or Other Pacific Islander	<1	2	2
American Indian/Alaska Native	<1	<1	1
Multiracial/Other	2	2	2

Source. Census 2010, US Census Bureau.

Note: Percentages may not add to 100 percent due to rounding.

When broken down by geographic area, the racial/ethnic distribution of Michigan changes (table 3). In the Detroit Metro Area, non-Hispanic white persons make up 68 percent of the population compared to 83 percent in Out-State Michigan. The largest difference between the two areas of Michigan is among the distribution of non-Hispanic black persons, who make up 23 percent of the population in the Detroit Metro Area and only seven percent in Out-State Michigan. All other racial/ethnic groups (Hispanic, Asian/Native Hawaiian or Other Pacific Islander, American Indian/Alaska Native, and multiracial persons/persons of other race) have relatively equal representation throughout the state, although persons of other race make up a slightly higher proportion of the population in Out-State Michigan. The percent distributions of racial/ethnic groups by sex are relatively equal in both areas.

2012 Profile of HIV in Michigan (Statewide)

Sociodemographic Description of the Michigan Population

Table 3: Race/ethnicity and sex distribution of the Michigan population, by geographic area, 2012

Detroit Metro Area	Male %	Female %	Total population %
Race/Ethnicity	(N = 2,066,529)	(N = 2,200,775)	(N = 4,267,304)
White, non-Hispanic	68	67	68
Black, non-Hispanic	22	24	23
Hispanic, all races	4	4	4
Other	6	6	6
Out-State Michigan	Male %	Female %	Total population %
Race/Ethnicity	(N = 2,781,585)	(N = 2,834,751)	(N = 5,616,336)
White, non-Hispanic	83	84	83
Black, non-Hispanic	7	7	7
Hispanic, all races	5	5	5
Other	4	5	5

Source. Census 2010, US Census Bureau.

Note: Percentages may not add to 100 percent due to rounding.

Poverty, income, employment, and insurance[1]:

In 2010, the median household income in Michigan was estimated to be $48,432, compared to the United States median income of $51,914. About 15 percent of Michigan residents' yearly incomes fell below the Federal Poverty Level (FPL), compared to 14 percent of all persons in the United States. Among persons under 18 years of age, 24 percent had family incomes that fell below the FPL in Michigan compared to 22 percent nationally. Fifteen percent of Michigan residents were unemployed in 2010 compared to 10.8 percent of all persons in the US. Michigan's unemployment rate was the highest of all 50 states (http://www.michigan.gov/documents/treasury/MEU-January2010_315716_7.pdf).

In 2010, 12 percent of Michigan residents did not have health insurance. Four percent of Michigan residents under 18 years of age were uninsured. These proportions are slightly lower than those seen nationally.

1. Data from US Census Bureau unless otherwise noted.

2012 Profile of HIV in Michigan (Statewide)

Summary of the HIV Epidemic in Michigan

Data from enhanced HIV/AIDS Reporting System (eHARS)

How many cases?

The Michigan Department of Community Health (MDCH) estimates that there are 20,600 persons currently living with HIV in the state of Michigan, of whom 15,753 were reported as of January 1, 2012 (table 8, page 101). The number and rate of new HIV diagnoses remained stable in Michigan between 2006 and 2010, with an average of 803 new cases each year and an average rate of 8.1 cases per 100,000 population (See pages v-vi for information on *2012 Annual Review of HIV Trends in Michigan*). Despite a stable number of new diagnoses each year, there are more new diagnoses of HIV infection than deaths. As a result, the reported number of persons living with HIV infection in Michigan is increasing.

How are the cases geographically distributed?

HIV infections are distributed disproportionately in Michigan. Sixty-three percent of those living with HIV reside in the Detroit Metro Area (DMA) (9,919 of the 15,753 cases currently living in Michigan), but the DMA has only 43 percent of the general population (figure 2). The rest of the state has 34 percent of Michigan HIV cases but 57 percent of the population. The number of new diagnoses remained stable in both geographic areas between 2006 and 2010 (Trends).

Figure 2: Michigan living HIV infection cases and population by area, January 2012
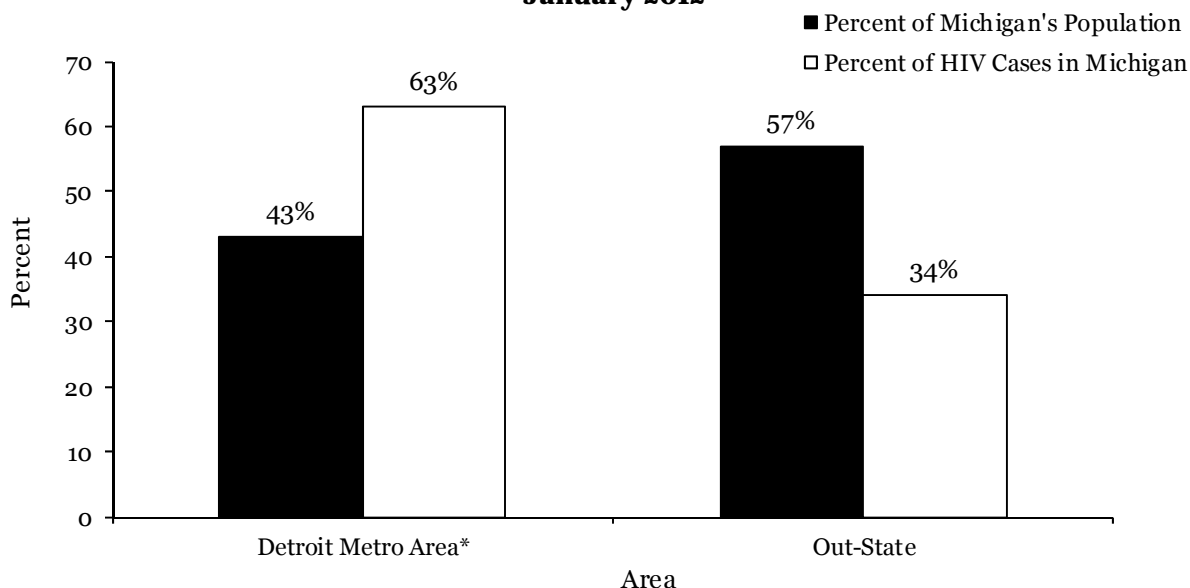
■ Percent of Michigan's Population
□ Percent of HIV Cases in Michigan

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

Distribution of HIV Cases by Local Health Department Jurisdiction

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 3: Reported HIV prevalence rate per 100,000 by local health department jurisdiction, January 2012

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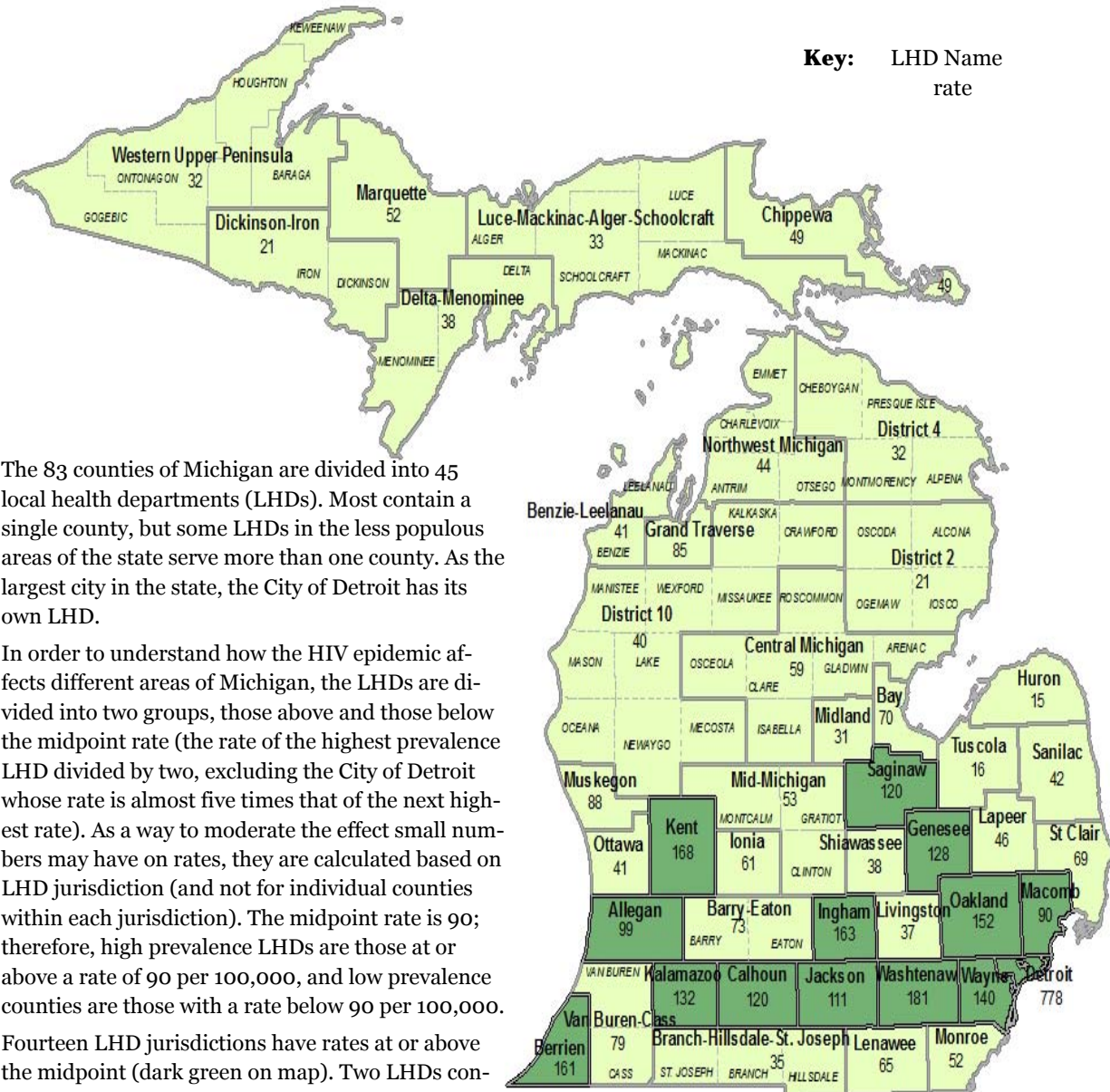
The 83 counties of Michigan are divided into 45 local health departments (LHDs). Most contain a single county, but some LHDs in the less populous areas of the state serve more than one county. As the largest city in the state, the City of Detroit has its own LHD.

In order to understand how the HIV epidemic affects different areas of Michigan, the LHDs are divided into two groups, those above and those below the midpoint rate (the rate of the highest prevalence LHD divided by two, excluding the City of Detroit whose rate is almost five times that of the next highest rate). As a way to moderate the effect small numbers may have on rates, they are calculated based on LHD jurisdiction (and not for individual counties within each jurisdiction). The midpoint rate is 90; therefore, high prevalence LHDs are those at or above a rate of 90 per 100,000, and low prevalence counties are those with a rate below 90 per 100,000.

Fourteen LHD jurisdictions have rates at or above the midpoint (dark green on map). Two LHDs considered high prevalence in 2010 are now low prevalence: Muskegon and Van Buren/Cass. The 14 high-prevalence LHDs account for 89 percent of Michigan HIV cases but just 66 percent of Michigan's population. Excluding the City of Detroit, Washtenaw and Kent LHDs have the highest rates at 181 and 168 cases per 100,000, respectively.

2012 Profile of HIV in Michigan (Statewide)

Recommendations: Ranking of Behavioral Groups

Data from enhanced HIV/AIDS Reporting System (eHARS)

To assist in prioritizing prevention activities, the MDCH HIV/STD/VH/TB Epidemiology Section ranks the three behavioral groups most at risk for HIV infection 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 on the overall epidemic. The percentage of cases for each behavioral group and trends over time were used to determine the ranked order of the following three behavioral groups: MSM, heterosexuals, and IDU.

- **Men who have sex with men (MSM)*:** MSM make up 54 percent of all reported cases of HIV currently living in Michigan (8,470 out of 15,753 cases) (table 8, page 101). The MSM behavioral group continues to be the most affected behavioral group statewide. Between 2006 and 2010, the number of new diagnoses among MSM remained stable with an average of 388 new cases each year. Although the number of new MSM cases did not increase, the majority of new cases in this behavioral group continue to be among black MSM (Trends).

- **Heterosexuals**: Heterosexual cases constitute 17 percent of the total number of reported cases (2,754 out of 15,753 cases) currently living in Michigan (table 8). This behavioral group is comprised of males who had sex with females known to be at risk for HIV (heterosexual contact with female with known risk, HCFR) and females who had sex with males, regardless of what is known about the male partners' risk behaviors (heterosexual contact with male, HCM). HCFR is more completely defined as males who had sex with females known to be IDU, recipients of HIV-infected blood products, or HIV-positive persons. See the glossary in appendix A, page 223, for further description of the heterosexual risk transmission category. Eighty percent of all heterosexual cases are among females. The number of new HIV diagnoses in persons with heterosexual transmission decreased by eight percent between 2006 and 2010. This is the third consecutive trend analysis showing a decrease in new diagnoses among persons with heterosexual risk (Trends).

- **Injection drug users (IDU)*:** Of all reported cases of HIV currently living in Michigan, 14 percent are IDU (2,238 out of 15,753 cases) (table 8). The number of new HIV diagnoses among IDU decreased between 2006 and 2010 by an average of 12 percent per year. This is the seventh consecutive trend analysis showing significant decreases in new HIV diagnoses among IDU (Trends).

*Both MSM and IDU numbers and percentages include persons with a dual risk of MSM/IDU.

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Distribution of Living HIV Cases by Risk Transmission Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

Although case reporting includes ascertainment of multiple behaviors associated with HIV transmission, current surveillance methods cannot determine the specific route of HIV transmission in persons who have engaged in more than one risk behavior. For the purposes of analysis and interpretation, in the 1980s the Centers for Disease Control and Prevention created a risk hierarchy to classify people into risk transmission categories. The hierarchy is intended to account for the efficiency of HIV transmission associated with each behavior, along with 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) injection drug users (IDU); (3) men who have sex with men and inject drugs (MSM/IDU); (4) hemophilia/coagulation disorders; (5) heterosexual contact (HC); (6) receipt of HIV-infected blood or blood components; and (7) no identified risk (NIR). Figure 4 shows the distribution of risk for all persons currently living with HIV in Michigan as of January 2012 (data also found on table 8, page 101).

Figure 4: HIV infection cases currently living in Michigan by risk transmission category, January 2012 (N = 15,753)
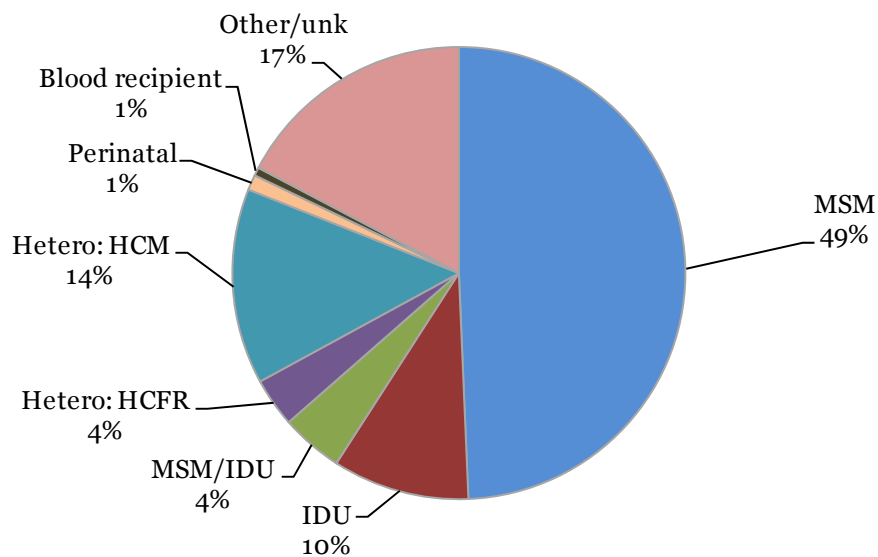
- Over half (53 percent) of persons currently living with HIV in Michigan are men who have sex with men (MSM), including four percent who also inject drugs (MSM/IDU).

- Eighteen percent have a risk of heterosexual sex, 14 percent of whom are females who had sex with males (HCM) and four percent of whom are males who had sex with females with known risk (HCFR).

- Fourteen percent are injection drug users (IDU), including four percent who are also MSM (MSM/IDU).

- Two percent are other known risk, including perinatal transmission and receipt of HIV-infected blood products.

- Seventeen percent have unknown risk, which includes males who had sex with females of unknown risk.

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Distribution of Living HIV Cases by Exposure Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

When the risk transmission categories were created, the hierarchy was based on what was known at the beginning of the epidemic about how HIV was transmitted, when almost all cases were among males and there was little documented heterosexual transmission. Since then, the hierarchy has not changed, even though our understanding of the most efficient HIV transmission routes has. Additionally, concerns have been raised that use of hierarchical categories masks the identification of multiple risks that a person may have. For this reason, Michigan also presents exposure categories, which convey all known modes of HIV exposure. Like the traditional risk transmission categories, the exposure categories are mutually exclusive, meaning that each case is included in only one category. Exposure categories, however, allow readers to see all the reported ways in which a person may have been exposed to HIV without stating definitively how the person was infected. Please see the glossary in appendix A (page 223) for more detailed definitions of exposure categories.

It is important to note that in the exposure categories, unlike the risk transmission categories, males are counted in the heterosexual contact (HC) category regardless of what is known about their female partners' risk behaviors. This results in an increased proportion of persons in the HC category.

Figure 5 below shows the distribution of exposures among HIV-positive persons currently living in Michigan as of January 2012 (data also found on table 10, page 104).

Figure 5: HIV infection cases currently living in Michigan by exposure category, January 2012 (N = 15,753)
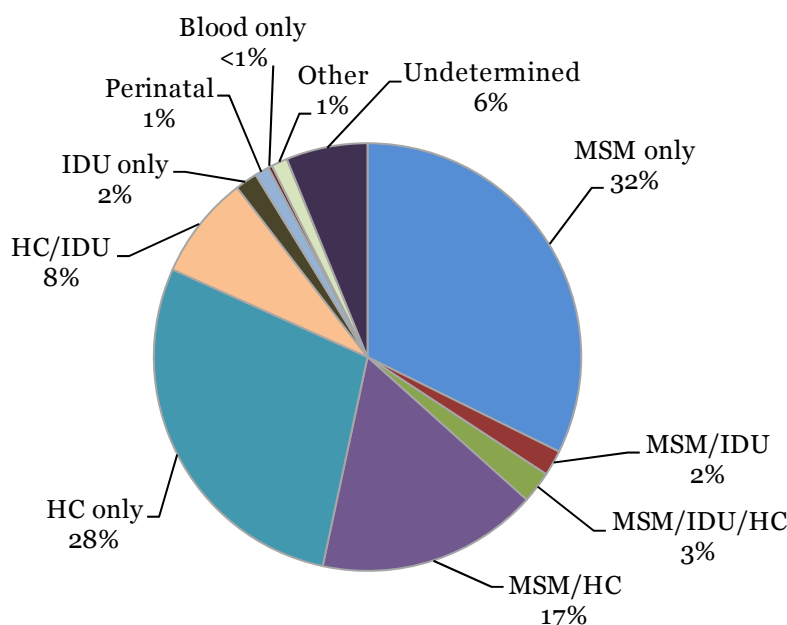
- While over half of all prevalent HIV cases are classified as men who have sex with men (MSM) in the risk transmission hierarchy, nineteen percent are behaviorally bisexual, reporting sex with both males and females (MSM/HC and MSM/HC/IDU).

- Almost all injection drug users (IDU) reported additional risk behaviors, including eight percent reporting heterosexual contact (HC/IDU) and three percent reporting both heterosexual contact and male-male sex (MSM/IDU/HC).

2012 Profile of HIV in Michigan (Statewide)

Distribution of Living HIV Cases by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figures 6 and 7 show the impact of the HIV epidemic on six race/sex groups.

Figure 6: Estimated prevalence of persons living with HIV in Michigan by race and sex, January 2012
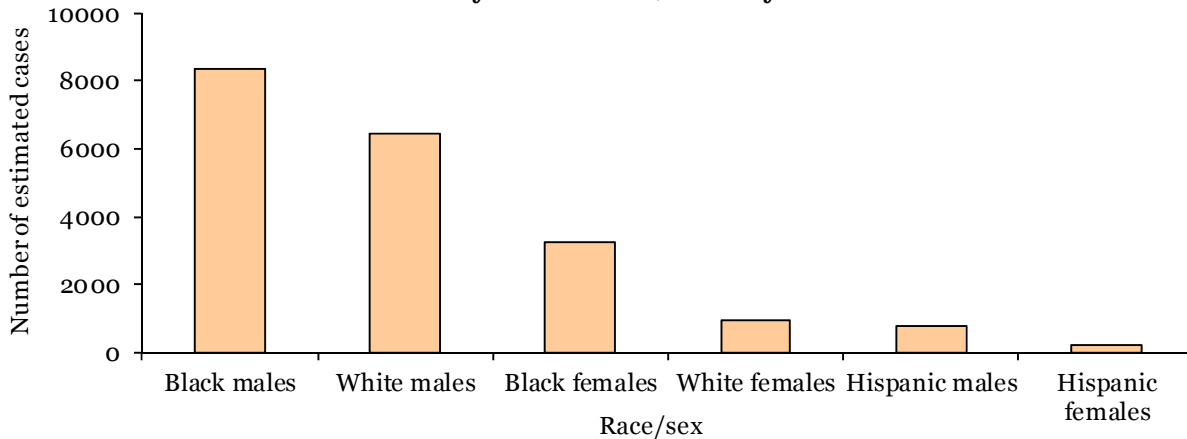
Figure 7: Reported prevalence rate of persons living with HIV in Michigan by race and sex, January 2012
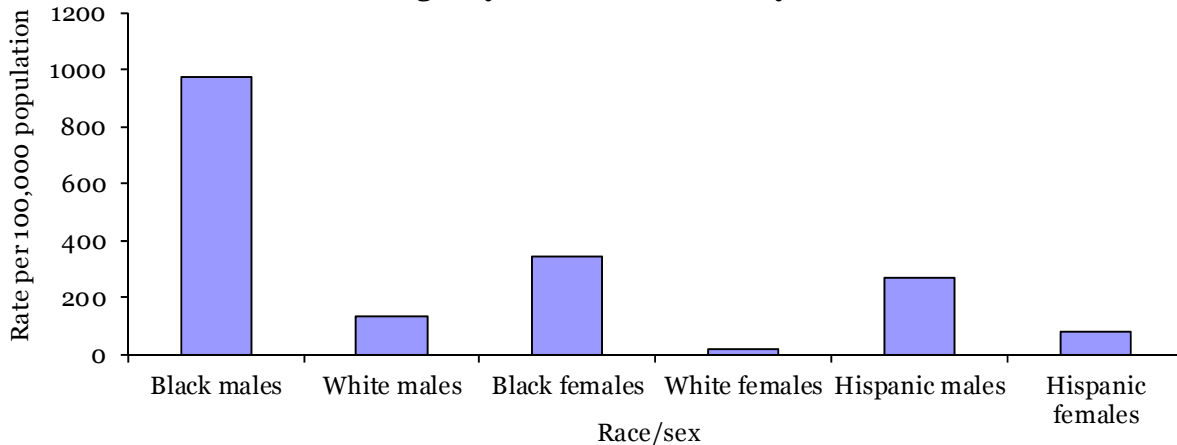
- Black males have both the highest rate per 100,000 (973) and the highest estimated number (8,360) of HIV cases. This high rate means the impact of the epidemic is greatest on this demographic group.

- Black females have the second highest rate (343) and the third highest estimated number (3,260) of cases of HIV.

- Hispanic males have the third highest rate (272) and the fifth highest estimated number (790) of cases. This indicates the impact of the epidemic is high on a relatively small demographic group.

- White males have the fourth highest rate (133) and the second highest estimated number (6,470) of cases.

- Hispanic females have the fifth highest rate (76) and the second lowest estimated number (210) of cases.

- White females have the lowest rate (19) and the lowest estimated number (940) of HIV cases.

- Data can also be found on table 8, page 101.

Distribution of Living HIV Cases by Age at Diagnosis

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figures 8 shows the breakdown of prevalent cases by age at diagnosis.

Figure 8: Estimated prevalence of persons living with HIV in Michigan by age at diagnosis, January 2012
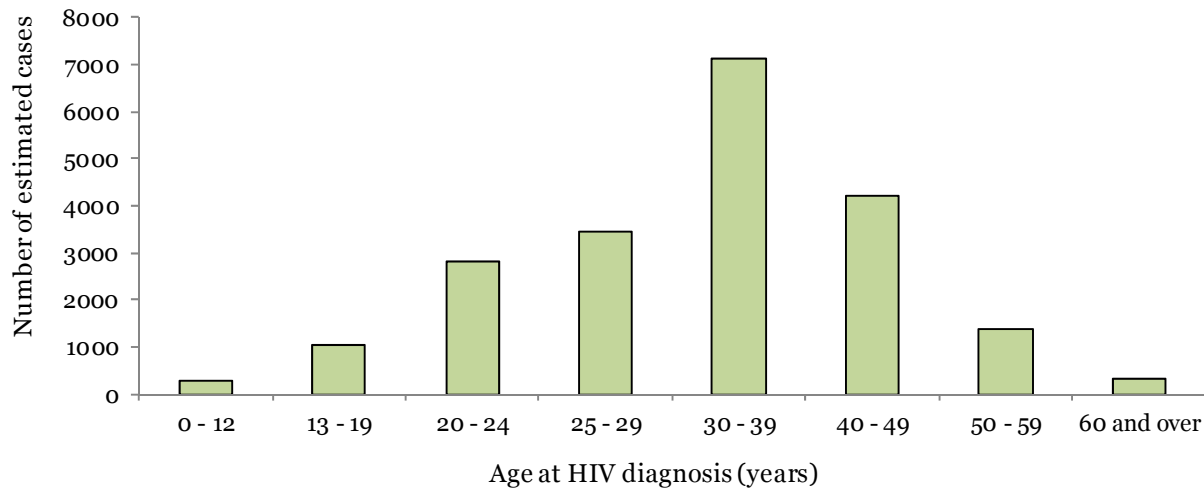
- The majority of all prevalent cases (an estimated 7,140) were 30-39 years old at the time of diagnosis.

- The next highest number of estimated cases is among persons 40-49 years at diagnosis, followed closely by 25-29 year olds (4,200 vs. 3,440, respectively).

- The smallest number of estimated cases is among individuals diagnosed at 60 years and older, followed by individuals diagnosed between the ages of 0 and 12 years.

- There were an estimated 10 cases with unknown age at diagnosis not included in this figure.

- Data can also be found on table 8, page 101.

2012 Profile of HIV in Michigan (Statewide)

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

To evaluate recent trends in new HIV diagnoses in Michigan, we estimated the number of persons newly diagnosed with HIV infection each year by adjusting the number of reported cases diagnosed between 2006 and 2010. This adjustment was applied to account for cases that may not have been reported to the health department by January 1, 2012. The adjustments were calculated by weighting the data. Please see the forward (pages v-vi) for an in-depth description of the methods used to evaluate trends. The full Trends documents can be found by visiting the following link: http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46003-36304--,00.html.

New diagnoses of HIV, 2006-2010:
The number and rate of new HIV diagnoses remained stable in Michigan between 2006 and 2010, with an average of 803 new cases each year (8.1 cases per 100,000 population) (figure 9).

Figure 9: Adjusted number and rate of new HIV diagnoses in Michigan, 2006-2010
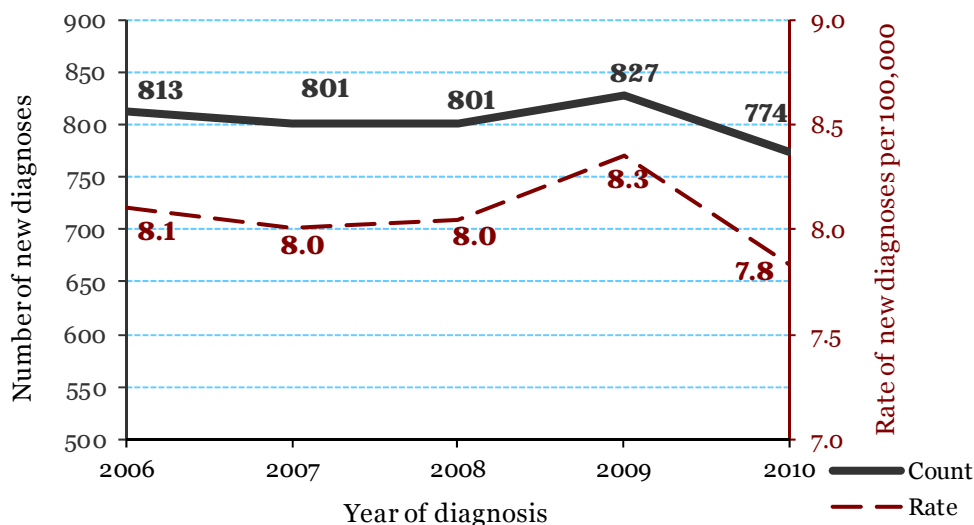
New diagnoses by risk, 2006-2010:
Between 2006 and 2010, the number of newly diagnosed persons who were injection drug users (IDU) decreased by an average of 12 percent per year, and the number who were both men who have sex with men and injection drug users (MSM/IDU) decreased by 17 percent per year (figure 10). The decrease in new diagnoses among IDU has been seen for the past seven consecutive annual trend reports and the decrease among MSM/IDU for the past two reports. Data from Michigan's HIV Behavioral Surveillance suggest reductions among IDU may be partly attributable to the success of harm reduction programs, such as needle exchanges. The number of new diagnoses also decreased among persons with heterosexual risk by an average of eight percent per year. This is the third consecutive trend report to show decreases among persons with heterosexual risk. This is likely due to decreases among black females, who make up the majority of heterosexual infections. The number of new diagnoses among MSM remained stable.

The "other known" risk category includes perinatal and blood product transmission. The numbers have been low in this group for many years due to programmatic successes in preventing perinatal and blood-borne transmissions.

2012 Profile of HIV in Michigan (Statewide)

Trends in HIV Data

Newly diagnosed persons with no identified risk (NIR) includes males who reported sex with females of unknown risk/HIV status as their only risk and males and females for whom no risk has yet been reported. This group accounts for about 28 percent of new diagnoses each year (Trends) but only 17 percent of all persons currently living with HIV in Michigan (regardless of year of diagnosis) (table 8, page 101).

Figure 10: Adjusted number of new HIV diagnoses in Michigan in 2010 and trends between 2006-2010, by risk transmission category
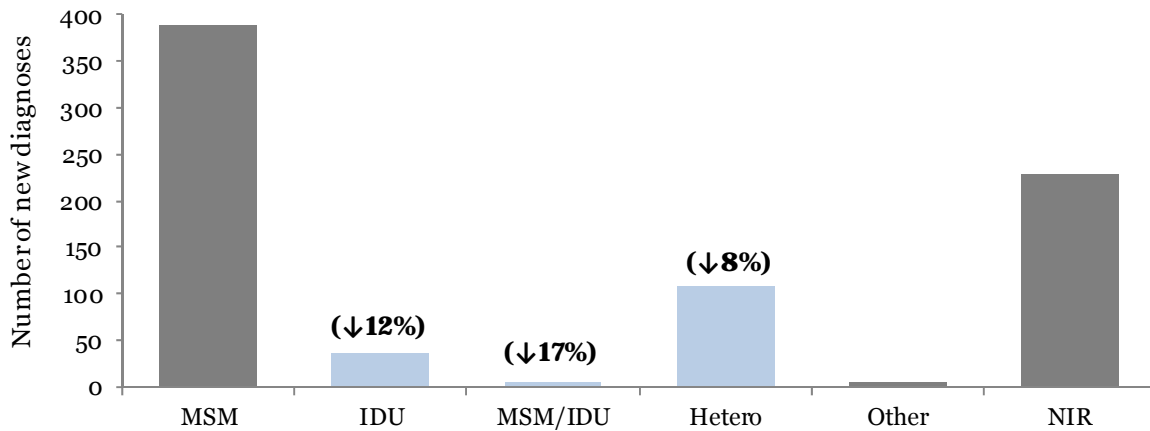
New diagnoses by race and sex, 2006-2010:

The rate of new diagnoses decreased among black females (average 5 percent per year) between 2006 and 2010 (figure 11). This is the third consecutive trend report showing decreases in this group. The rate also decreased among females of other race (average 15 percent per year) and among females overall (6 percent per year). The rate increased among all males by an average one percent per year. Rates among all other race/sex groups were stable.

Figure 11: Adjusted rate of new HIV diagnoses in Michigan in 2010 and trends between 2006-2010, by race/sex
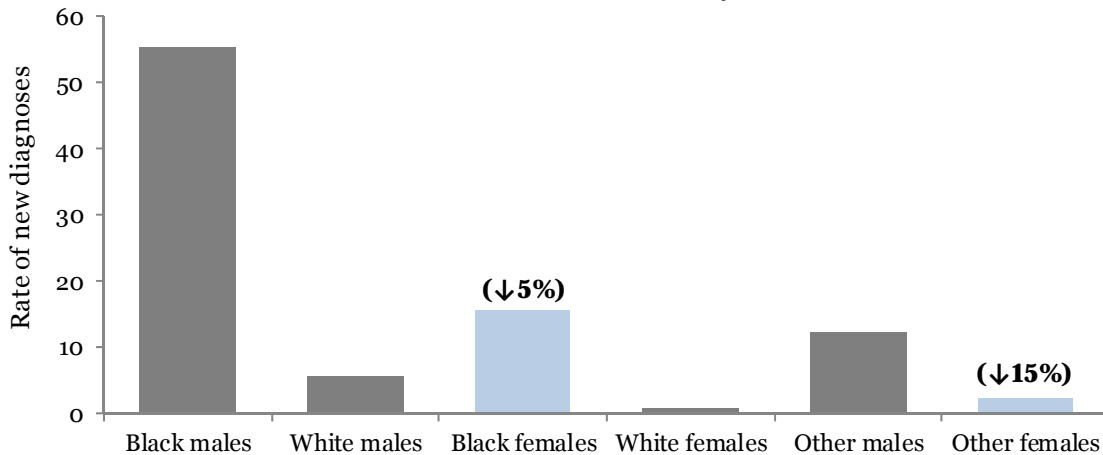
2012 Profile of HIV in Michigan (Statewide)

Trends in HIV Data

New diagnoses by age at HIV diagnosis, 2006-2010:

The rate of new HIV diagnoses increased significantly among persons 20-24 years of age at diagnosis (an average 12 percent per year) and among those 25-29 years of age (average 7 percent per year) (figure 12). For the first time in six annual trend reports, the rate did not increase among those 13-19 years of age at diagnosis. This is the second consecutive report, however, showing increases among 20-24 year olds. Additionally, rates in older age groups (35-39 year olds and 40-44 year olds) decreased significantly by an average seven percent per year and 12 percent per year, respectively. Although the majority of prevalent cases are still among persons 30-39 years at diagnosis (figure 8, page 23), twenty to twenty-four year olds now have the highest rate of new diagnoses of any age group.

Figure 12: Adjusted rate of new HIV diagnoses in Michigan in 2010 and trends between 2006-2010, by age at diagnosis
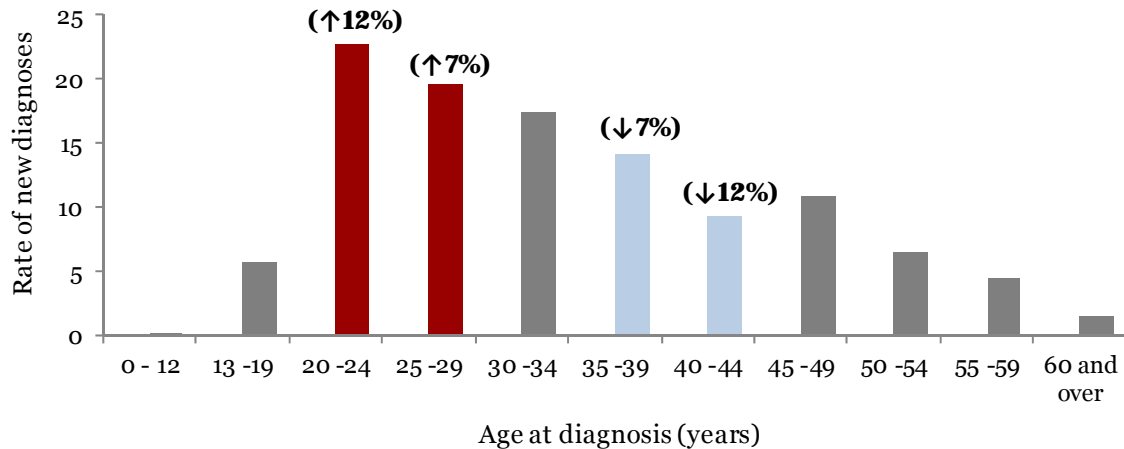
Figure 13: New diagnoses, deaths, and prevalence of HIV in Michigan by year, January 2012
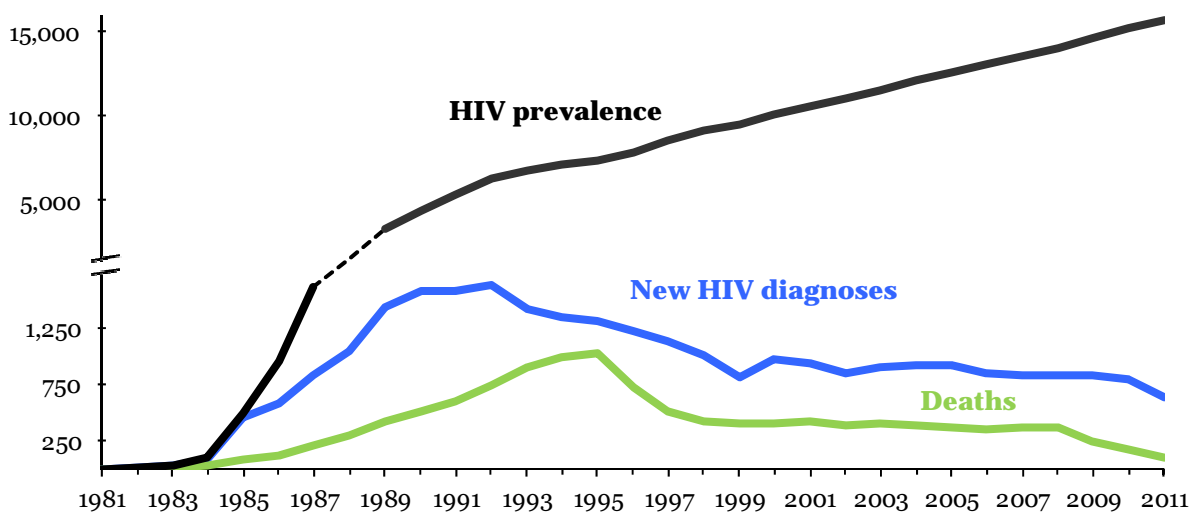
2012 Profile of HIV in Michigan (Statewide)

Trends in HIV Data

New diagnoses, deaths and prevalence of HIV by year:

The unadjusted number of new HIV diagnoses, number of deaths among HIV-positive persons, and HIV prevalence are presented in figure 13. The trend among new HIV diagnoses reflects reported cases. These data were not adjusted for reporting delay as they were in figures 9-12. Consequently, the decreases in new diagnoses seen in the most recent years will likely level out as more cases diagnosed during those years are reported. Although the number of deaths among HIV-positive persons is decreasing, the number of new HIV diagnoses is stable. As a result, HIV prevalence (the number of people currently living with HIV in Michigan) continues to rise.

Deaths among HIV-positive persons by race and sex:

Figure 14 shows the number of HIV-positive Michigan residents reported as deceased by a local health department, the department of vital records (via a data match, death transcript, or death certificate), the National Death Index, or an alternate source. The number of deaths increased in all race/sex groups from the beginning of the epidemic through approximately 1994-1995. The number of deaths decreased markedly between 1995 and 1998 due to the availability of much more effective treatment and were relatively stable until 2001. It should be noted that the percent decrease in deaths among white males (75 percent) between 1995 and 2001 was more pronounced than the percent decrease among black males (54 percent), and the percent decrease among white females (59 percent) was larger than the percent decrease among black females (37 percent). Encouragingly, the number of deaths in black males fell substantially between 2001 and 2009 (50 percent). The number of deaths among white males did not change as appreciably (29 percent), nor did the number of deaths among black females (23 percent). Deaths among white females decreased by 50 percent between 2001 and 2009, but this decrease is exaggerated as there is a small number of deaths in this group (data not shown in tables).

Figure 14: Michigan HIV deaths by race/sex, January 2012
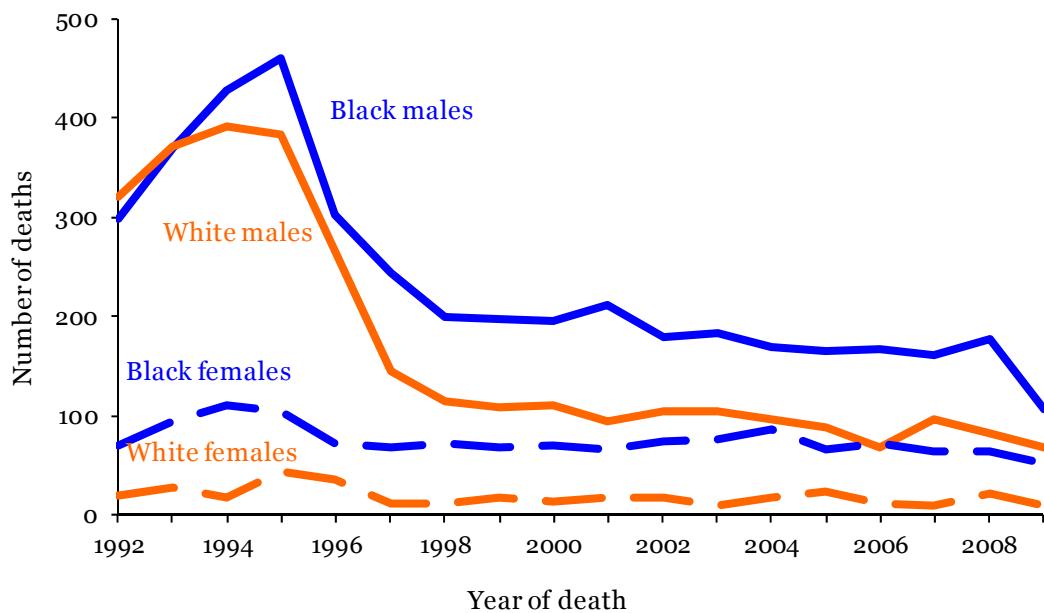
2012 Profile of HIV in Michigan (Statewide)

HIV Incidence Estimates

Data from enhanced HIV/AIDS Reporting System (eHARS) & Incidence Data

Overview:

HIV incidence data provide estimates of new infections in a particular year compared to prevalence data, which measure everyone living with HIV (whether they were infected recently or years earlier). Michigan's HIV incidence rate was stable overall between 2006 and 2009. The state had an average of 754 new infections per year (range 674 - 924) for an overall HIV incidence rate of 9.0 cases per 100,000 population among those ages 13 and older (range 8.1 – 11.1). This rate is half the national rate for the same time period, which range from 19.0 to 22.5 infections per 100,000 population. Consistent with national rates, Michigan data show that males, blacks, 30 to 39 year olds, and MSM have higher incidence rates and counts than other groups.

Rates were calculated for all cases greater than 12 years of age at infection. Data are reported for subgroups (risk, sex, race, and age) where there are a minimum of 200 reported HIV cases, 40 incidence tests (or 20 percent completeness), and 10 recent incidence results. Some demographic groups must be combined to satisfy the minimum number of reported cases required to release estimates. Risk groups include men who have sex with men (MSM), injection drug users (IDU, including MSM/IDU), and heterosexuals. Since reliable denominator data are not available for risk groups, rates cannot be calculated.

Note: In 2008, Michigan estimated HIV incidence rates for the year 2006, corresponding to a national report for the same time period. Since that time, more data have been collected and the estimation procedure used nationwide has undergone significant refinements. The revised estimate for 2006 should not be compared to the initial estimate for 2006, which was included in the 2010 Epi Profile.

Incidence estimates overall:

Figure 15 shows the number and rates of new infections between 2006 and 2009. Both nationally and in Michigan, a spike in HIV numbers and rates was seen in 2007, returning to more typical levels in 2008. An explanation has not been found for this spike, but it should be emphasized that rates remained stable overall between 2006 and 2009.

Figure 16 shows that numbers of new infections in Michigan did not change significantly over time by showing that the 95 percent confidence intervals (95 percent certainty that the true number falls between the upper and lower values) overlap from year to year. Confidence intervals provide the ranges seen in the graph. They are large due to the estimation process.

Figure 15: Estimated number and rate of new HIV infections in Michigan, 2006-2009
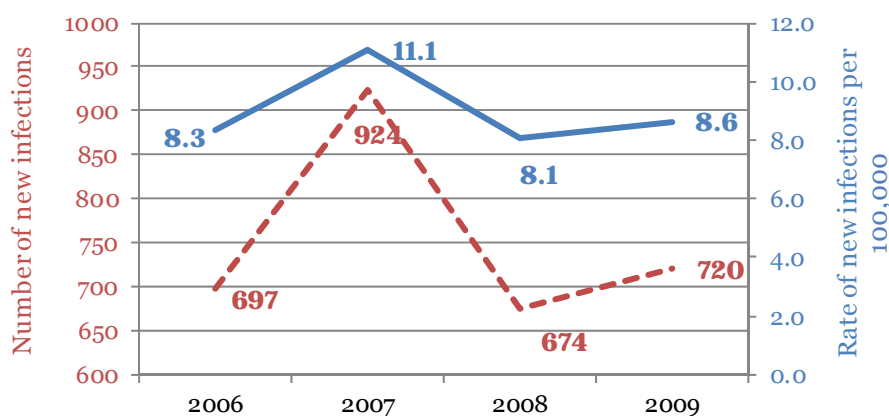
2012 Profile of HIV in Michigan (Statewide)

HIV Incidence Estimates

Data from enhanced HIV/AIDS Reporting System (eHARS) & Incidence Data

Risk:

As in the national data, MSM represent the largest number of new infections (figure 17). There were insufficient data on IDU in 2006 to produce reliable estimates for that year. There were no statistically significant changes in the estimated number of new infections per year for any risk group between 2006 and 2009. Although not shown, the 95 percent confidence intervals overlap, indicating that no significant changes occurred from year to year. The gradual increase in the number of IDU cases seen between 2007 and 2009, though not statistically significant, warrants close scrutiny in the future.

Race:

Estimated rates of new infections for black persons in Michigan ranged from 7.9 to 15.0 times higher than the rates among white persons. The disproportionate impact on black persons is seen between 2006 and 2009 and is more variable in Michigan than in national data. Nationally, rates among black persons were 7.1 to 8.4 times the rates among white persons. There were not enough data to report rates for Hispanics or other racial/ethnic groups. There were no statistically significant changes in estimated rates of new infections for any race group between 2006 and 2009 (figure 18).

Figure 16: Estimated number of new HIV infections and 95% confidence intervals in Michigan, 2006-2009
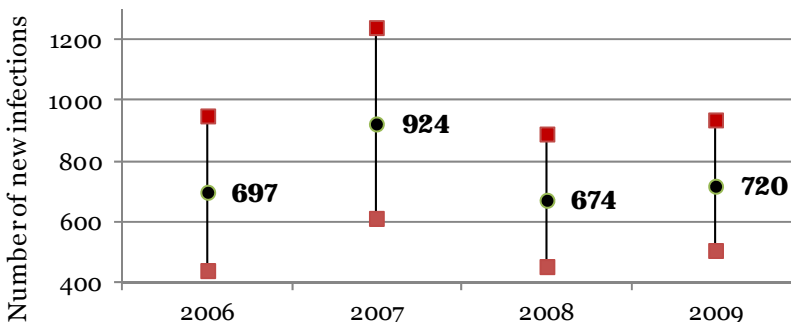
Figure 17: Estimated number of new HIV infections in Michigan, by risk, 2006-2009
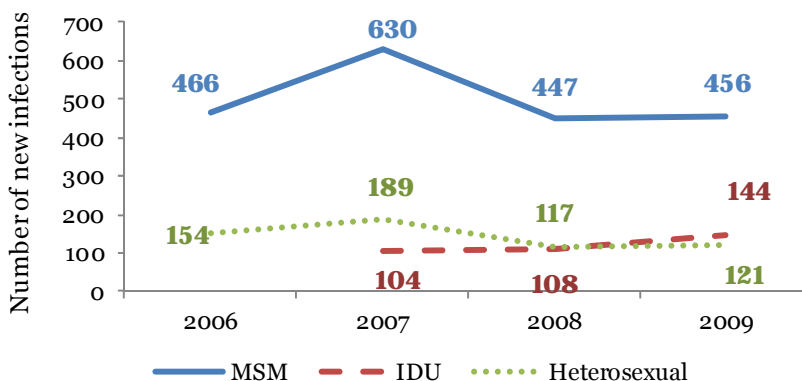
Figure 18: Estimated HIV incidence rate and 95% confidence intervals in Michigan, by race, 2006-2009
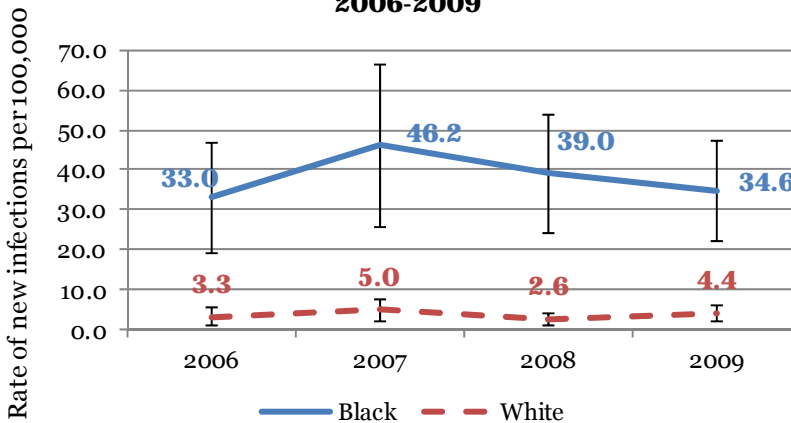
HIV Incidence Estimates

Data from enhanced HIV/AIDS Reporting System (eHARS) & Incidence Data

Note how 95 percent confidence intervals shown by brackets for each data point overlap, demonstrating no significant change from year to year.

Sex:

Estimated rates of recent HIV infection for males in Michigan ranged from 3.0 to 5.3 times the rates for females. This is a larger range than differences between the sexes nationally, where rates for males are 3.1 to 3.5 times the rates for females. There were no statistically significant changes in estimated rates of new infections for males or females between 2006 and 2009 (figure 19). Note how 95 percent confidence intervals shown by brackets for each data point overlap, demonstrating no significant change from year to year.

Figure 19: Estimated HIV incidence rate and 95% confidence intervals in Michigan, by sex, 2006-2009
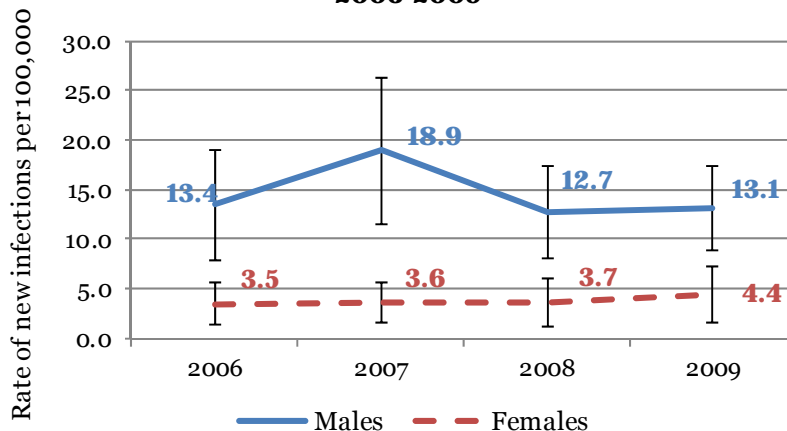
Age at HIV infection:

In Michigan, as at the national level, the highest rates of new infections are among 30-39 year olds. There were no statistically significant changes in estimated rates for any age group between 2006 and 2009 (figure 20). 95 percent confidence intervals are not shown in Figure 20, but as in previous figures they overlap, indicating no significant changes from year to year.

Figure 20: Estimated HIV incidence rate in Michigan, by age at infection, 2006-2009
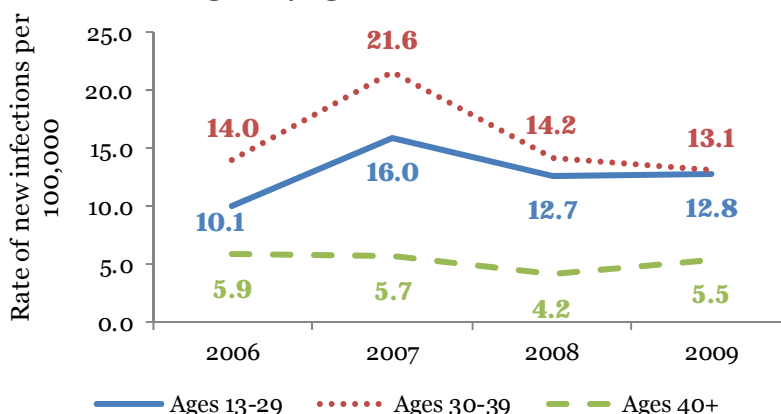
Summary and conclusions:

HIV incidence estimates are an additional tool to study the trajectory of the epidemic and help inform efforts to interrupt ongoing transmission.

Michigan's HIV incidence rates are lower than those seen nationally and were stable overall for the 2006 to 2009 time period. The most highly impacted groups in Michigan are also the groups most impacted nationally. For more MI incidence data, please see table 14 on page 108. For further analysis on national data or subgroups, please refer to "Estimated HIV Incidence in the United States, 2006-2009" in the online journal PLos One, August 2011, Volume 6, Issue 8, e17502 (www.plosone.org).

2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: MSM

**Data from enhanced HIV/AIDS Reporting System (eHARS) &
National HIV Behavioral Surveillance (NHBS)**

Overview:

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 the epidemic and account for over half (53 percent) of all reported HIV-positive persons, including MSM/IDU. MDCH estimates that there are approximately 11,070 MSM living with HIV infection in Michigan. This includes an estimated 910 HIV-positive males whose risk is a combination of having sex with other males and injecting drugs (table 8, page 101).

Race/ethnicity:

MSM account for most HIV infections among males in Michigan for all racial and ethnic groups. When considering reported cases among MSM and MSM/IDU of all races (8,470 reported cases), white males make up 47 percent (4,015 cases); black males account for 46 percent (3,883 cases); and Hispanic males account for four percent (367 cases) (table 11, page 105).

Age at HIV diagnosis:

Among MSM (including MSM/IDU), the highest proportion of all persons living with HIV infection were 30-39 years old at diagnosis (36 percent). MSM is the predominant mode of transmission for males ages 13 and up; male-male sex accounts for 76 percent and 78 percent of infections among those ages 13-19 years and 20-29 years at diagnosis, respectively (table 13, page 107).

Late HIV diagnoses:

Of the 15,753 persons living with HIV infection in Michigan, 54 percent (8,565 cases) have progressed to stage 3 HIV infection. Of these, 3,594 (42 percent) were diagnosed with stage 3 HIV infection at the time of their initial diagnosis (late HIV diagnosis). MSM make up 55 percent (4,725 cases) of persons living with stage 3 infection, of whom 41 percent (1,951 cases) had late HIV diagnoses (table 8, page 101). This is higher than among other behavioral groups, suggesting that MSM get tested for HIV later in the course of their infections.

Geographic distribution:

In both the Detroit Metro Area (DMA) and Out-State Michigan, MSM (including MSM/IDU) comprise the single largest mode of transmission. About two thirds (61 percent) of HIV-positive MSM statewide reside in the DMA, which is similar to the proportion of all cases that reside in the DMA. Within high prevalence counties, MSM comprise 53 percent of persons living with HIV infection, while in the lower prevalence counties 60 percent of reported persons living with HIV infection are MSM (data not shown in tables; see figure 3 on page 18 for high/low prevalence county classification).

Sex partners and condom use:

MSM were interviewed about their sexual partners and condom use for the National HIV Behavioral Surveillance (NHBS) project. It is important to note that HIV status is not a requirement for participation; thus, the majority of NHBS participants are HIV-negative. Among 362 males who reported having sex with another male in the 12 months prior to their NHBS interviews in 2008, 52 percent (n=190) reported having sex with a main partner and 44 percent (n=159) reporting sex with a casual partner at last sexual encounter. The remaining four percent (n=13) reported last sexual encounter with an exchange partner (a partner with whom goods, such as drugs or money, were exchanged for sex) (see footnote of figure 23 for definitions of partner types). Sixteen percent (n=58) reported having

Ranked Behavioral Group: MSM

Data from National HIV Behavioral Surveillance (NHBS)

both insertive and receptive anal sex at last sexual encounter. As shown in figures 21 and 22, of the 156 male respondents who reported receptive anal sex, 63 percent (n=98) reported their partners used condoms the last time they had sex. Of the 187 male respondents who reported having insertive anal sex, 65 percent (n=121) reported using condoms.

Figure 21: Condom use during receptive anal sex among MSM (NHBS, 2008) (n=156)

No 37%

Yes 63%
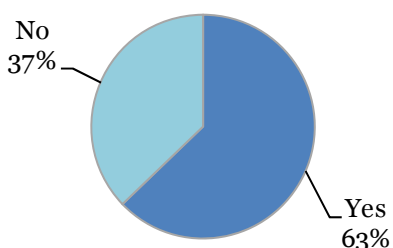
Figure 22: Condom use during insertive anal sex among MSM (NHBS, 2008) (n=187)

No 35%

Yes 65%
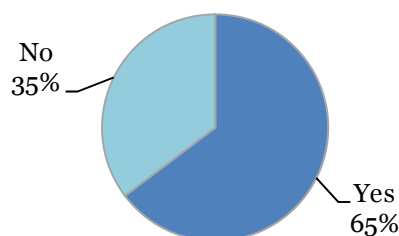
Male respondents classified their sexual partners in the 12 months prior to interview by partner type. Sixty-eight percent (n=246) reported having sex with a main partner(s), 61 percent (n=222) reported having sex with a casual partner(s), and 7 percent (n=25) reported sex with an exchange partner(s). Figure 23 shows condom use by sexual partner type for MSM reporting anal sex in the 12 months prior to interview. Note that the graph takes into consideration all partners that a respondent listed; therefore, only 246 respondents said they had one or more main partners, but there were 347 partnerships considered for condom use. Thirty-seven percent of respondents (n=128) reported not using condoms with main partner(s) and 28 percent (n=72) reported unprotected sex with casual partner(s).

**Figure 23: Condom use during anal sex by partner type*†
among MSM (NHBS, 2008)**

Number

- Any main partners (n=347): Yes 63%, No 37%
- Any casual partners (n=256): Yes 72%, No 28%
- Any exchange partners (n=21): Yes 66%, No 33%

Legend: Yes, No
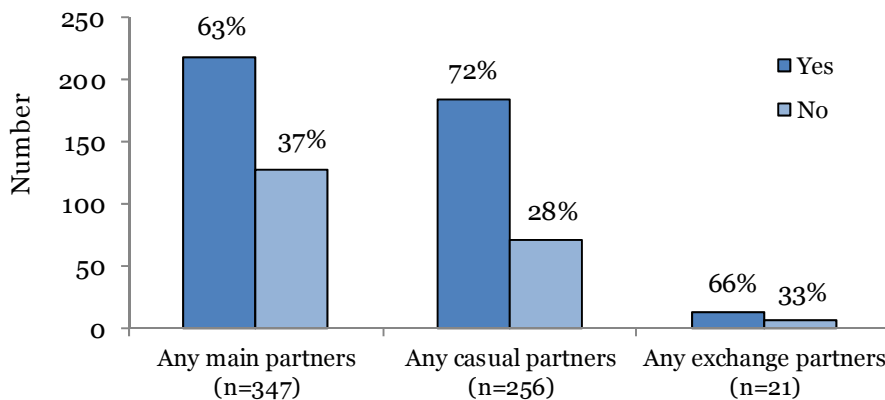
*Categories are not mutually exclusive, meaning one person may be represented in more than one category.
†A main partner was defined as a man you have sex with and who you feel committed to above anyone else; a partner you could call your boyfriend, significant other, or life partner. A casual partner was defined as a man you have sex with but do not feel committed to or don't know very well. An exchange partner was defined as a man you have sex with in exchange for things like money or drugs.

Ranked Behavioral Group: MSM

**Data from Medical Monitoring Project (MMP) &
enhanced HIV/AIDS Reporting System (eHARS)**

Table 4: Number of sexual partners in the past 12 months of HIV-positive persons in care*† (MMP, 2009)			
	MSM (n= 53)	MSW only (n=25)	WSM (n=23)
One	26 (53%)	19 (76%)	22 (96%)
Two or more	25 (47%)	6 (24%)	1 (4%)
No. of partners (range)	1-30	1-4	1-4

*Men who have sex with men (MSM), men who have sex with women only (MSW Only), women who have sex with men (WSM); note that these MSM and MSW are mutually exclusive categories.
†Includes oral, anal, and vaginal sex.

Data from the Medical Monitoring Project (MMP) show that MSM were more likely to report two or more different partners in the 12 months prior to interview than persons in other risk groups (table 4). Half of all MSM reported unprotected sex with at least one partner in the 12 months prior to interview.

It is important to note that both the NHBS and MMP are conducted in the Detroit Metro Area and therefore may not be representative of all MSM in the state. Please see the data source descriptions (pages x and xi) in the Forward for further information on these projects.

Behaviorally bisexual males:

Case reporting data are collected statewide but have only limited information on male bisexual behavior. Case reports are completed by health care providers and surveillance staff reviewing medical records rather than through interviews with HIV-positive persons. Only 57 percent of all completed case reports have complete 'yes' or 'no' answers to both of the following: "Before the 1st positive HIV test/AIDS diagnosis, patient had: Sex with male" and "Before the 1st positive HIV test/AIDS diagnosis, patient had: Sex with female." Based on these complete forms, 57 percent of all MSM (including MSM/IDU) reported also having sex with females. These more complete forms also show that three percent of females report having sex with behaviorally bisexual males. These data should be viewed as minimum estimates of these behaviors as 43 percent of case reports did not have the two questions answered completely.

Trends and conclusions:

The estimated number of new HIV infections among men who have sex with men (MSM) remained stable from 2006 to 2010, while the estimated number of new HIV infections among MSM who were also IDU (MSM/IDU) decreased an average of 17 percent per year. MSM and MSM/IDU together constituted 51 percent of all new diagnoses in

Figure 24: New HIV diagnoses among MSM by race, 2006-2010
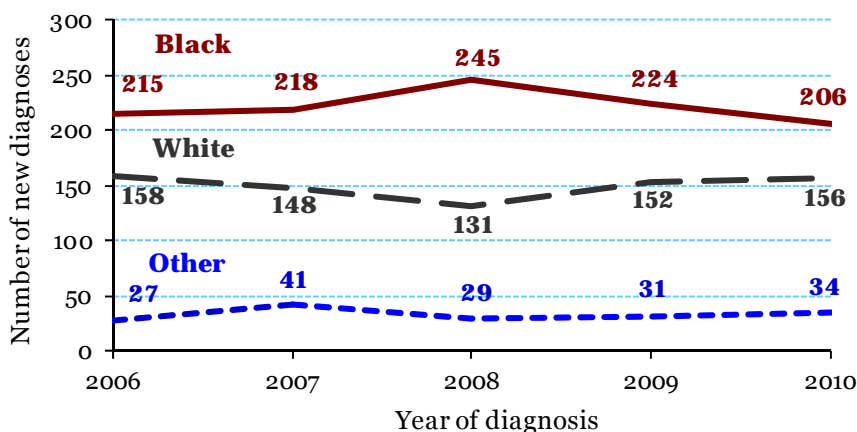
2010 (Trends). The majority of new MSM and MSM/IDU cases are black (figure 24). There were no statistically significant increases or decreases in number of new diagnoses in MSM or MSM/IDU in any racial/ethnic group. "Other" in this figure includes Hispanics and individuals of other or unknown race.

2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: Heterosexuals

Overview:

Heterosexual risk is the second highest ranked behavioral group in Michigan. Persons with heterosexual risk account for 17 percent of reported HIV infection cases. MDCH estimates that 3,600 persons living with HIV infection in Michigan have a risk factor of heterosexual contact (HC). Heterosexual contact is comprised of heterosexual contact with female with known risk (HCFR) and heterosexual contact with male (HCM). HCFR is only applicable to males and constitutes persons who had sex with females with known risk factors for HIV, including IDU, recipients of HIV-infected blood products, and/or HIV-positive individuals with unknown risk. HCM is composed of all females whose only reported risk is sex with males, regardless of what is known about the male partners' risk factors. Currently there are an estimated 720 HIV-positive persons who are HCFR (males) and 2,880 persons who are HCM (females) (table 8, page 101).

Race/ethnicity and sex:

Among the 2,754 persons currently living with HIV infection in Michigan with a risk of heterosexual contact, the majority (80 percent) are female. While females account for 22 percent of all reported HIV infection cases in Michigan, they have consistently accounted for over three-quarters of cases with heterosexual risk. The overall proportion of HIV-positive males with heterosexual risk is four percent. However, many males report heterosexual sex in addition to other risk factors, such as male-male sex (MSM) or injection drug use (IDU). See table 10, page 104 for data on exposure categories, which represent all reported modes of HIV exposure.

Most heterosexual cases of HIV infection are among black persons (70 percent), largely driven by the high number of black females with heterosexual risk. Nearly two thirds of all HIV-positive black females have heterosexual risk (62 percent). Sixty-five percent of white female cases, 70 percent of Hispanic female cases, and 66 percent of female cases of other or unknown race have heterosexual risk (table 11, page 105).

Expanded risk:

Of the 2,754 HIV-positive persons with heterosexual risk currently living in Michigan, 18 percent report their heterosexual partners are injection drug users (73 percent of whom are female, 27 percent male); five percent have partners who are behaviorally bisexual males (this applies to females only); and two percent have partners who are persons infected with HIV through blood products (75 percent female, 25 percent male). Forty-five percent of HIV-positive persons with heterosexual risk report having sex with HIV-positive persons of unknown risk (30 percent female, 70 percent male) (expanded risk data not shown in tables). As the majority of cases with heterosexual risk are female, it is useful to examine this expanded risk among different female subgroups. Figures 25 and 26 show detailed risk information for black females and white females, respectively. While the risk distribution between black and white females is similar, of note is the fact that white females more frequently report having partners with known risks (such as IDU or behaviorally bisexual males). Black females have a higher proportion of heterosexual contact without specific risk factors indicated.

2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: Heterosexuals

Figure 25: Black females living with HIV infection in Michigan by expanded risk transmission category, January 2012 (n = 2,494)

Unk/other 17%
Hetero-partner IDU 9%
Hetero-partner bisexual 3%
Hetero-partner blood recip <1 %
Hetero-partner HIV+ 22%
Other hetero contact
Perinatal 2%
Blood recipient <1 %
IDU 18%
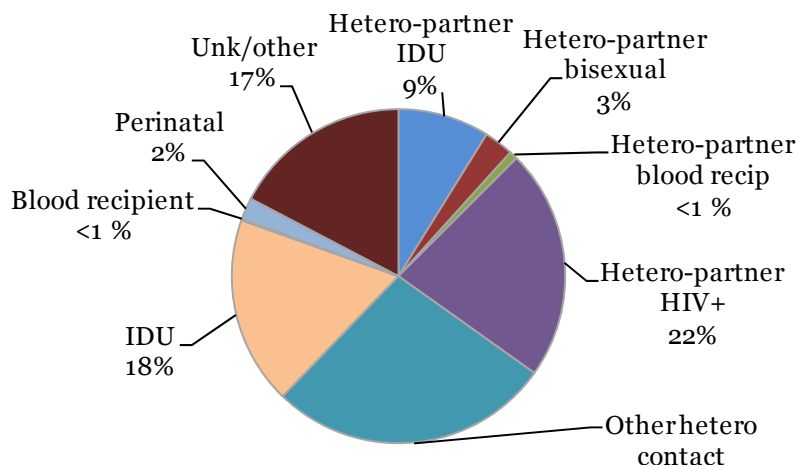
Figure 26: White females living with HIV infection in Michigan by expanded risk transmission category, January 2012 (n = 722)
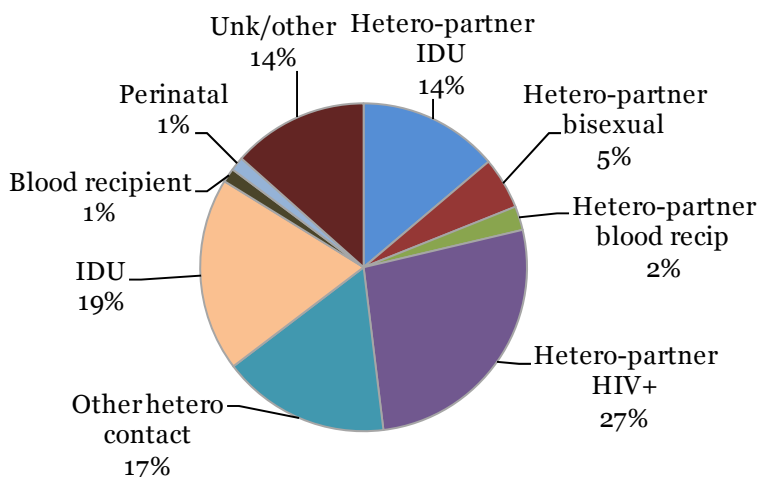
Unk/other 14%
Hetero-partner IDU 14%
Hetero-partner bisexual 5%
Hetero-partner blood recip 2%
Hetero-partner HIV+ 27%
Other hetero contact 17%
IDU 19%
Blood recipient 1%
Perinatal 1%

Age at HIV diagnosis:

Heterosexual contact is the predominant reported risk factor for females who were 13 years of age and older at the time of HIV diagnosis. Over three-quarters (78 percent) of females 13-19 at the time of HIV diagnosis report heterosexual sex. As age increases, the proportion of HIV-positive females with heterosexual risk decreases, but it remains at least four times higher than injection drug use (IDU) for all age groups 13 years and older (table 13, page 107).

Among HIV-positive males, the proportion with a risk factor of heterosexual sex is low overall (4 percent). However, as age at diagnosis increases, heterosexual contact becomes a larger proportion of the overall risk (with 7 percent of males 60 years and over reporting a risk of heterosexual contact) (table 13). It is important to note that for males to be classified as heterosexual risk, they must have female partners with known HIV risk factors (such as IDU). When considering exposure categories, which represent all possible HIV exposures a person had, 47 percent of all males report heterosexual contact (with or without partners with known risk) (table 10, page 104).

2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: Heterosexuals

Late HIV diagnoses:

Of the 15,753 persons living with HIV in Michigan, 54 percent (8,565 cases) have progressed to stage 3 HIV infection. Of these, 3,594 (42 percent) were diagnosed as stage 3 HIV infection at the time of their initial HIV diagnoses. Persons with a risk of heterosexual sex make up 17 percent (1,437 cases) of persons living with stage 3 infection, of whom 37 percent (534 cases) had late HIV diagnoses. Overall, heterosexuals are more likely than IDU and less likely than MSM to have late HIV diagnoses (table 8, page 101).

Geographic distribution:

In the Detroit Metro Area, persons living with HIV infection with heterosexual risk comprise 17 percent of the total reported cases. In the Out-State areas, they comprise 18 percent of the total reported cases. The distribution is similar when considering high and low prevalence counties, with persons with heterosexual risk comprising 18 percent of all HIV-positive persons in high prevalence counties and 15 percent of those in low prevalence counties (data not included in tables; see figure 3 on page 18 for high/low prevalence county classification).

Sex partners and condom use:

In the 2010 NHBS heterosexual cycle, 619 persons (57 percent female, 42 percent male, and less than 1 percent transgender) completed the survey. Ninety-five percent (n=591) of participants reported vaginal sex at last sexual encounter prior to interview. Nineteen percent (n=66) of female participants and 16 percent (n=40) of male participants reported using a condom during vaginal sex. Thirteen percent (n=79) of participants reported using a condom the whole time during vaginal sexual intercourse. Figures 27 and 28 show unprotected vaginal sex by partner type(s) among participants for females and males, respectively. Additionally, 14 percent (n=88) of NHBS participants reported anal sex at last sexual encounter prior to interview (fifteen percent (n=53) of females and 14 percent (n=35) of males). Seven percent reported using condoms at least part of the time. Fifty-six percent (n=199) of female participants and 70 percent (n=182) of males reported having vaginal, oral, and/or anal sex with three or more partners in the 12 months prior to the interview.

Figure 27: Unprotected vaginal sex (UPS) among female heterosexuals by partner type* (NHBS, 2010) (n=277)

UPS w/ exchange 16%

UPS w/ casual 23%

UPS w/ main 61%
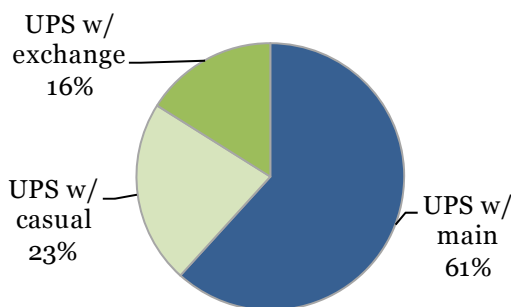
Figure 28: Unprotected vaginal sex (UPS) among male heterosexuals by partner type* (NHBS, 2010) (n=208)
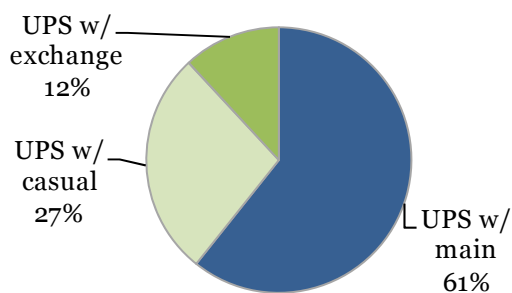
UPS w/ exchange 12%

UPS w/ casual 27%

UPS w/ main 61%

*A main partner was defined as a person you have sex with and who you feel committed to above anyone else; a partner you could call your boyfriend, girlfriend, significant other, or life partner. A casual partner was defined as a person you have sex with but do not feel committed to or don't know very well. An exchange partner was defined as a person you have sex with in exchange for things like money or drugs.

2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: Heterosexuals

**Data from National HIV Behavioral Surveillance (NHBS) &
enhanced HIV/AIDS Reporting System (eHARS)**

Partner study:

Data from the NHBS Partner Study explored minority female's perceptions of their male partner's risk behaviors. Each partner was asked the same questions separately, and their responses were compared. The partners were considered in agreement when both gave the same response. Sixty-five percent of couples were in agreement regarding whether they discussed using condoms with their partner in the past three months. Thirty-four percent agreed that they discussed, 32 percent agreed they had not discussed, and 35 percent were in disagreement as to whether or not the discussion took place. There was low agreement on condom use in the three months prior to interview. Thirty-six percent of couples disagreed on how often they used condoms. Half of the females said they never asked their male partner to use a condom in the three months prior to interview. Only three percent were not comfortable asking their male partners to use condoms. Forty percent were very comfortable asking their male partner to use a condom. Interestingly, of this 40 percent, 33 percent of partners agreed that they never use condoms, and only nine percent agreed that they always use condoms for vaginal sex.

There was a high proportion (74 percent) of males who said they had another sex partner while in sexual relationships with female Partner Study participants (concurrent partnerships). Twenty-nine percent of couples had females unaware of their male partners' concurrency. Fifty-six percent of couples were in agreement about whether or not they discussed the male partner's HIV status. Eighteen percent discussed male partner's HIV status and 38 percent had not discussed. Eight percent of couples agreed that they discussed whether or not the male ever had sex with another male, 52 percent had not discussed, and 40 percent were in disagreement about whether they had this discussion (figure 29). After further data analysis, males and females may have different perceptions of what constitutes a conversation about the male partner ever having sex with a male.

Trends and conclusions:
Between 2006 and 2010, the number of new HIV diagnoses among persons with heterosexual risk decreased by an average of eight percent per year (Trends). The majority of HIV-positive females in Michigan, regardless of race or age, have heterosexual risk. A small proportion of males have heterosexual risk, but a large proportion (47 percent) of males who have other risks, such as MSM, also had heterosexual contact (table 10, page 104). Cases with heterosexual risk have surpassed the proportion of cases attributed to IDU (table 8, page 101), and the number of new cases each year among persons with heterosexual risk is over three times that of IDU (Trends).

Figure 29: Discussed whether male partner ever had sex with another male (NHBS Partner Study, 2007)

Y-axis: Percent of partnerships (0 to 60)
X-axis: Female response/Male response

- Yes/Yes: 8%
- Yes/No: 30%
- No/Yes: 10%
- No/No: 52%
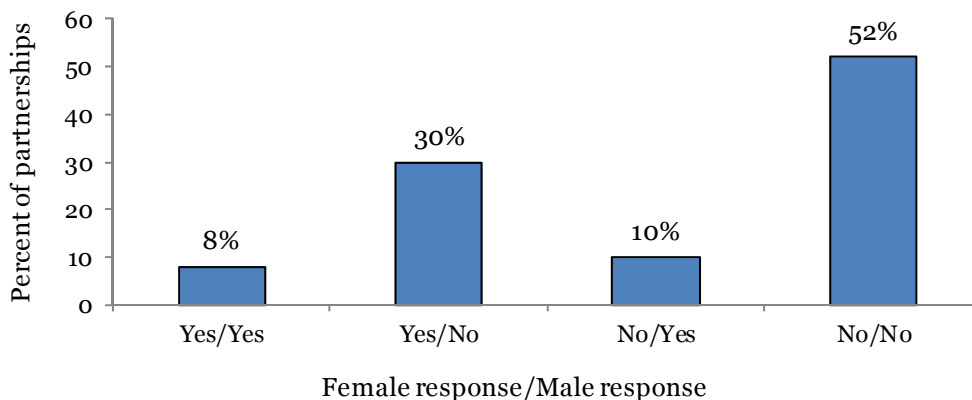
2012 Profile of HIV in Michigan (Statewide)

Ranked Behavioral Group: IDU

**Data from enhanced HIV/AIDS Reporting System (eHARS) &
National HIV Behavioral Surveillance (NHBS)**

Overview:

Injection drug users (IDU) are the third ranked behavioral group in Michigan and account for 14 percent (2,238 cases) of reported HIV-positive persons (including MSM/IDU). MDCH estimates that there are 2,920 IDU currently living with HIV in Michigan. This estimate includes 910 HIV-positive males whose risk is a combination of having sex with other males and injecting drugs (MSM/IDU) (table 8, page 101).

Race/ethnicity and sex:

Of the 2,238 IDU and MSM/IDU living with HIV, 72 percent are male (1,603 cases). Black males make up the largest proportion of the total number of IDU and MSM/IDU currently living with HIV in Michigan (43 percent), followed by white males (22 percent), black females (20 percent), white females (6 percent), Hispanic males (4 percent) and Hispanic females (1 percent). In total, two-thirds (63 percent, 1,414 cases) of all IDU and MSM/IDU cases occur among black persons (table 11, page 105).

Age at HIV diagnosis:

Among males diagnosed in their 30s and 40s, IDU (including MSM/IDU) is nearly tied with undetermined risk for the second most common risk (15 percent vs. 19 percent, respectively). As age at diagnosis increases, the proportion with a risk of IDU increases (as opposed to MSM, where the proportion decreases with age). This proportion peaks, however, with males 40-49 years at diagnosis and then begins to decrease (table 13, page 107).

Overall, IDU is the second most common risk for HIV-positive females. However, this is true only for females 30-39 and 40-49 years at the time of HIV diagnosis (22 percent and 25 percent, respectively). For females in all other age groups, IDU falls behind undetermined risk and becomes the third most common mode of transmission. When considering males and females together, there are few HIV infection cases with a risk of IDU among persons who were teens (13-19 years) at the time of HIV diagnosis (4 percent). Half of these cases are MSM/IDU (table 13).

Late HIV diagnoses:

Of the 15,753 persons living with HIV infection in Michigan, 54 percent (8,565 cases) have progressed to stage 3 infection. Of these, 3,594 (42 percent) were diagnosed as stage 3 at the time of their HIV diagnoses. IDU make up 16 percent (1,351 cases) of persons living with stage 3 infection, of whom 33 percent (440 cases) were diagnosed with stage 3 infection at the time of their initial HIV diagnosis (late HIV diagnosis). These data indicate that IDU are less likely then either heterosexuals or MSM to get tested later in the progression of HIV infection (table 8).

Geographic distribution:

The majority (63 percent) of IDU and MSM/IDU currently living with HIV infection reside in the Detroit Metro Area (DMA), which is similar to the proportion of all cases living in the DMA. Within high prevalence counties, 14 percent of reported cases are IDU (including MSM/IDU), while in the lower prevalence counties 12 percent of persons living with HIV infection are IDU (data not included in tables; see figure 3 on page 18 for high/low prevalence county classification).

Hepatitis C infection:

Of the 413 injection drug users interviewed for NHBS in 2009, 34 percent (n=142) reported ever being told by a doctor or health care provider that they had hepatitis C; 69 percent of those with hepatitis C were males (n=98) and 30 percent were females (n=43).

Ranked Behavioral Group: IDU

**Data from National HIV Behavioral Surveillance (NHBS) &
Medical Monitoring Project (MMP)**

Injection drug use and equipment sharing:

Forty-three percent (n=178) of injection drug users interviewed during the IDU2 cycle of NHBS in 2009 in Wayne County shared some form of drug equipment, while 33 percent (n=137) report-ed using a new sterile needle for all injections in the 12 months prior to interview. Thirty-five percent (n=145) used a new sterile needle most of the time and 23 per-cent (n=94) about half of the time. There was no consistent pattern among which equipment was or was not shared: 43 percent shared needles, 38 percent shared cookers, 31 percent shared water, 33 per-cent shared cotton, and 31 percent shared syringes for dividing drugs (figure 30). Among respondents that reported sharing any injection equipment during the previous 12 months (n=178), 71 percent did not know their last injection partner's HIV status and 83 percent did not know their last injection part-ner's hepatitis C status. However, 31 percent of respondents got sterile needles for free (not including items given by a friend, relative , or sex partner) and 19 percent received free drug use materials/kits. Free needles and drug paraphernalia were most commonly obtained from needle exchange programs.

Figure 30: Equipment sharing among IDU who share drug equipment (NHBS, 2009) (N=413)
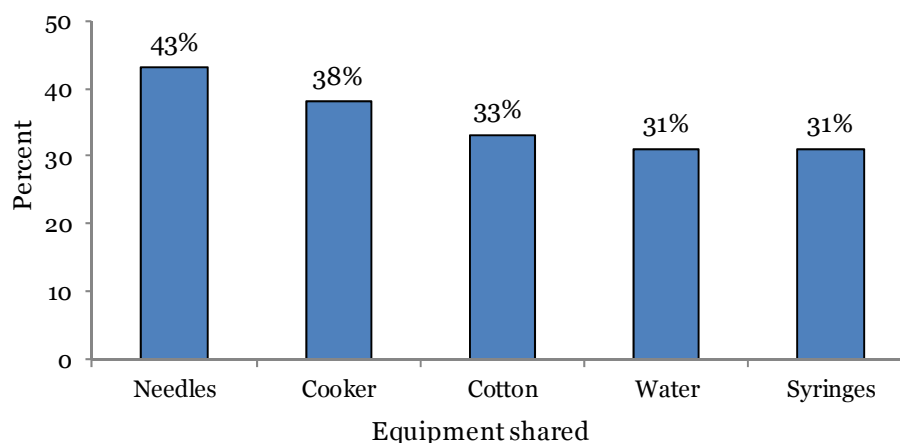
Data from the Medical Monitoring Project (MMP), which includes only HIV-positive per-sons in care, show that the majority of medical records reviewed did not indicate injection drug use (90 percent). The most commonly used substance was marijua-na (26 percent) followed by cocaine (19 percent) (figure 31). About 39 percent of participants had documentation of use of one or more non-

Figure 31: Top five most commonly used substances* noted in medical records of HIV-positive persons in care (MMP, 2009) (N=149)
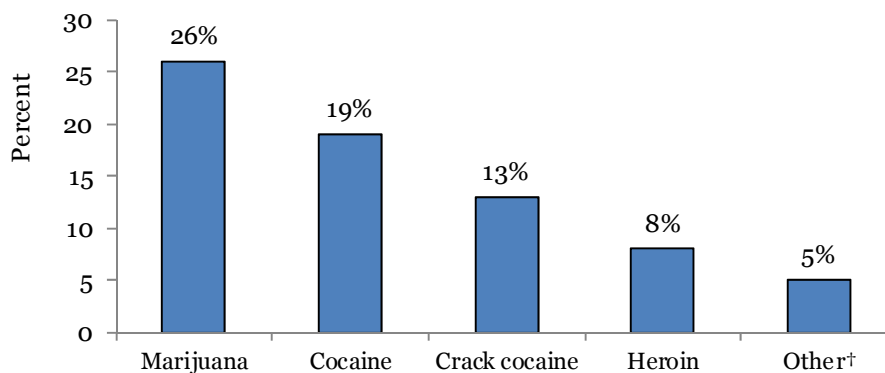
*Categories are not mutually exclusive.
†'Other' includes opiates, mescaline, diet pills, depressants, speed, morphine, and Demerol.

Ranked Behavioral Group: IDU

**Data from National HIV Behavioral Surveillance (NHBS) &
enhanced HIV/AIDS Reporting System (eHARS)**

prescription drug since entry into HIV care. Additionally, among participants who reported consuming alcohol in the 12 months prior to the interview (75 percent), 28 percent of males and 33 percent of females reported binge drinking at least one day in the last month. Fifty-four percent of those who drank consumed alcohol before or during sex.

Non-injection drug use:

Among NHBS IDU2 participants (2009), 57 percent (n=234) of respondents reported drinking alcohol in the 12 months prior to interview. Of these respondents, 49 percent (n=115) revealed drinking 11 or more days in the 30 days prior to interview and 35 percent (n=82) reported drinking 4-5 drinks on a typical day when drinking. NHBS participants were asked about ever being in a drug or alcohol treatment program; 318 persons (n=77 percent) had ever been in a treatment program and 31 percent (n=98) participated in alcohol or drug treatment programs in the 12 months prior to interview. Eleven percent (n=44) reported trying to get into an alcohol or drug treatment program but being unable to (for reasons unknown).

Condom use:

Data were collected on condom use during the IDU2 cycle of NHBS. Sixty-eight percent (n=282) of injection drug users reported having unprotected vaginal sex 12 months prior to the interview, and of the 85 respondents reporting anal sex, only 24 percent (n=20) reported using condoms during anal sex in the 12 months prior to interview. Sixteen percent of respondents reported no partners and 34 percent reported one partner (n=64 and n=139, respectively) in the 12 months prior to interview. Of the

321 participants reporting vaginal sex at last sexual encounter prior to interview, 17 percent (n=55) reported using a condom. Figure 32 shows condom use by sexual partner type at last vaginal sex. Forty-five percent (n=184) of this mainly HIV-negative sample did not have knowledge of their partner's HIV status at last sexual encounter prior to interview.

**Figure 32: Unprotected vaginal sex (UPS) among
IDU at last sexual encounter by partner type
(NHBS, 2009) (n=321)**

No UPS 17%

UPS w/ main 60%

UPS w/ exchange 11%

UPS w/ casual 12%
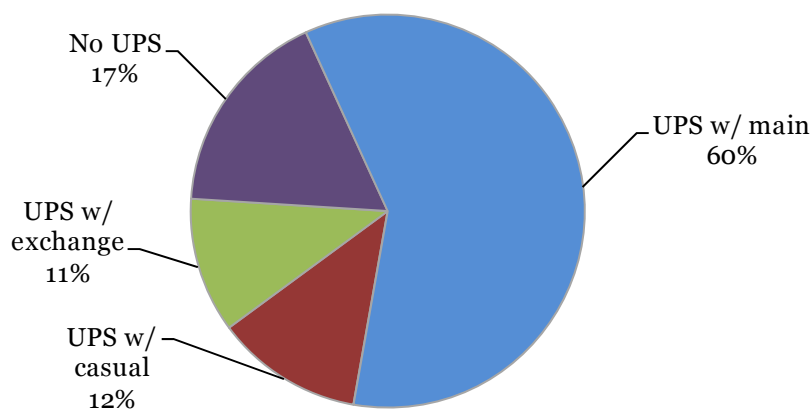
Trends and conclusions:

Between 2006 and 2010, the proportion of newly diagnosed persons who were injection drug users (IDU) decreased by an average of 12 percent per year, and the proportion who were MSM/IDU decreased by an average of 17 percent per year (Trends). This a continuation of the decreasing trend seen in the past seven annual trend analyses. Data from Michigan's HIV Behavioral Surveillance suggest reductions among IDU may be partly attributable to the success of harm reduction programs, such as needle exchange.

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Race and Sex

Overview:

The majority of those living with HIV infection in Michigan are black persons, who make up 14 percent of Michigan's population yet over half (56 percent) of all Michigan HIV cases. MDCH estimates 11,620 black persons are living with HIV in Michigan. The reported prevalence rate among black persons is 642 cases per 100,000, and the rate among black males is 973. Over one out of 100 black males and one out of 290 black females are known to be living with HIV (table 8, page 101).

White persons comprise over a third (36 percent) of reported HIV infection cases and 77 percent of Michigan's population. MDCH estimates 7,410 whites are living with HIV in the state. Since these cases occur among a larger overall population, they have a lower reported prevalence rate (75 per 100,000 persons) than black or Hispanic persons. One out of every 750 white males and one out of 5,320 white females are known to be living with HIV (table 8).

Hispanic persons comprise five percent of HIV cases and four percent of the population. MDCH estimates that 1,000 Hispanic persons are living with HIV infection in Michigan. The prevalence rate (176 per 100,000 persons) is higher than that among white persons as a result of a smaller overall population. One out of 370 Hispanic males and one out of 1,300 Hispanic females are known to be living with HIV (table 8). See page 42 for a more in-depth analysis of Hispanic persons.

Arab, Asian/Native Hawaiian or Other Pacific Islander, and American Indian/Alaska Native persons living with HIV are discussed further on pages 86-89.

Most persons living with HIV infection in Michigan are male (78 percent). The majority of the 12,269 male cases are black (52 percent), 40 percent are white, five percent are Hispanic, and three percent are other or unknown race. The majority of the 3,484 female HIV cases are also black (72 percent), 21 percent are white, five percent are Hispanic, and three percent are other or unknown race (table 8).

Racial and ethnic health disparities:

The state of Michigan is similar to the rest of the country in that large racial and ethnic disparities are seen in HIV prevalence rates and rates of new diagnoses. The epidemic disproportionately impacts black persons. The HIV prevalence rate among blacks is 642 cases per 100,000 persons, almost nine times higher than the rate among whites (75 per 100,000) (table 8). Black persons are also disproportionately represented in new diagnoses. Between 2006 and 2010, the rate of new diagnoses among black males was over 10 times that of white males, and the rate among black females was 25 times that of white females (Trends).

Michigan's population is currently 77 percent white, non-Hispanic, 14 percent black, non-Hispanic, four percent Hispanic, and five percent other minorities and multiracial persons. This equates to 23 percent of persons in the state who identify as a race or ethnicity other than white (table 2, page 15). Given that HIV disproportionately impacts minorities, and Michigan has a large proportion of persons who identify as a racial or ethnic minority, it is important to focus attention on these disparities in order to reduce them.

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Race and Sex

Exposure:

Since the majority of HIV-positive males have a risk of male-male sex (MSM), it is particularly useful to examine exposure categories (as many other exposures may be masked if a person is MSM). Figures 33 and 34 show black and white male cases by exposure category, which show all possible exposures a person had. A smaller proportion of HIV-positive black males have an exposure of MSM only compared to white males (32 percent vs. 55 percent, respectively). Twenty-seven percent of black male cases reporting MSM also report heterosexual contact (MSM/HC and MSM/HC/IDU) compared to 22 percent of white males. Twenty-one percent of black male cases report heterosexual contact as their only exposure, compared to eight percent of white males. A larger proportion of black male cases report both injection drug use and heterosexual contact (seven percent compared to three percent of white males).

Figure 33: Black male HIV infection cases currently living in Michigan by exposure category, January 2012 (n = 6,394)
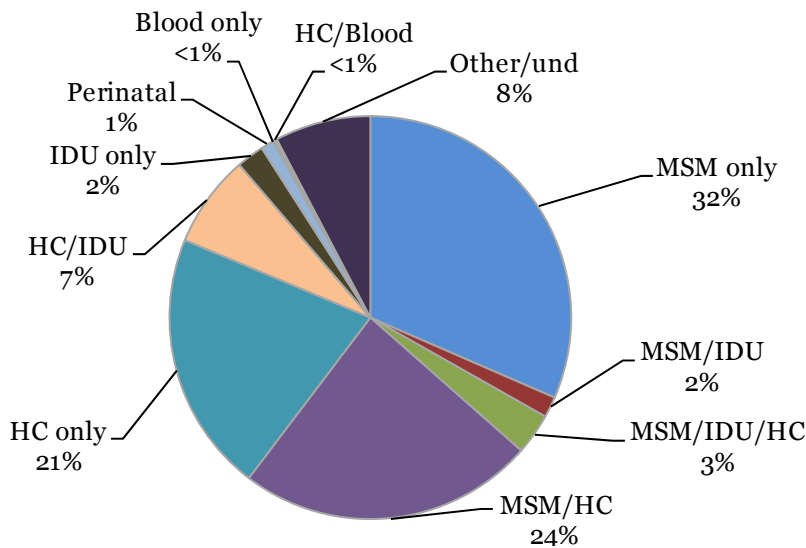
Figure 34: White male HIV infection cases currently living in Michigan by exposure category, January 2012 (n = 4,944)
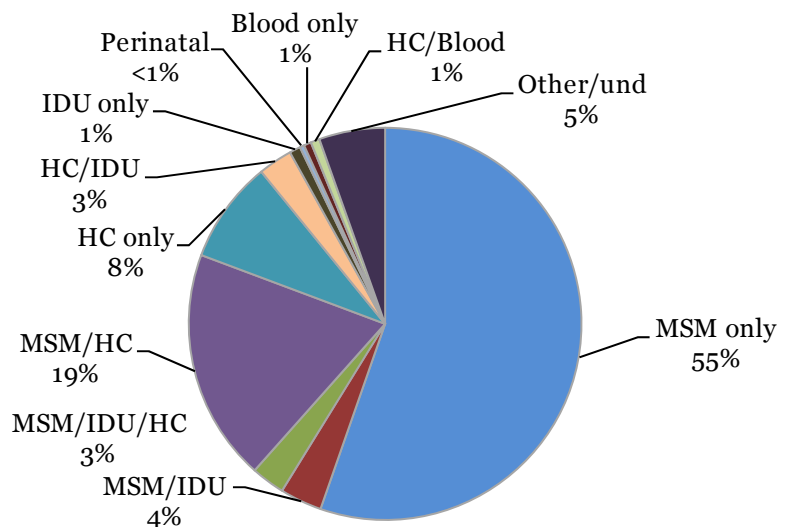
2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

See figures 25 and 26 on page 35 for expanded risk among black and white female cases. For females, expanded risk transmission categories are examined as the majority of female cases have heterosexual risk. The large number of male cases who report both MSM and heterosexual contact is interesting, given that just three percent of females report sex with behaviorally bisexual males. This is likely an underestimate due to incomplete information in the medical record and/or incomplete answers to the risk factor questions on the case report form (data not shown in tables).

Late HIV diagnoses:

Of the 15,753 persons living with HIV infection in Michigan, 54 percent (8,565 cases) have progressed to stage 3 infection. Of these, 3,594 (42 percent) were diagnosed as stage 3 at the time of their initial HIV diagnoses (late HIV diagnoses). Males make up 80 percent of stage 3 cases, of whom 43 percent had late HIV diagnoses. Females make up 20 percent of stage 3 cases, of whom 37 percent had late HIV diagnoses (table 8, page 101).

Although black persons make up a larger proportion of persons living with stage 3 compared to white persons (56 vs. 36 percent, respectively), a larger proportion of white persons living with stage 3 had late HIV diagnoses than black persons (45 vs. 40 percent). Hispanic persons make up five percent of stage 3 cases, of whom 48 percent had late HIV diagnoses. Other minorities make up roughly four percent of stage 3 cases, but Asians/Native Hawaiians or Other Pacific Islanders have the highest proportion of stage 3 cases that were late HIV diagnoses (55 percent) (table 8).

Geographic distribution:

The distribution of HIV among various racial groups differs throughout the state. The impact of HIV, regardless of race, is greater in high prevalence areas than in low prevalence areas of the state (see figure 3 on page 18 for high/low prevalence county classification). Figure 35 shows that the HIV prevalence rate in high prevalence areas is nearly twice as high as the rates in low prevalence areas for all racial groups. Additionally, the HIV infection prevalence rate among black persons is over six times higher than white persons in high prevalence areas and seven and a half times higher than the rate

Figure 35: Prevalence rates of persons living with HIV infection in high and low prevalence areas of Michigan, by race, January 2012
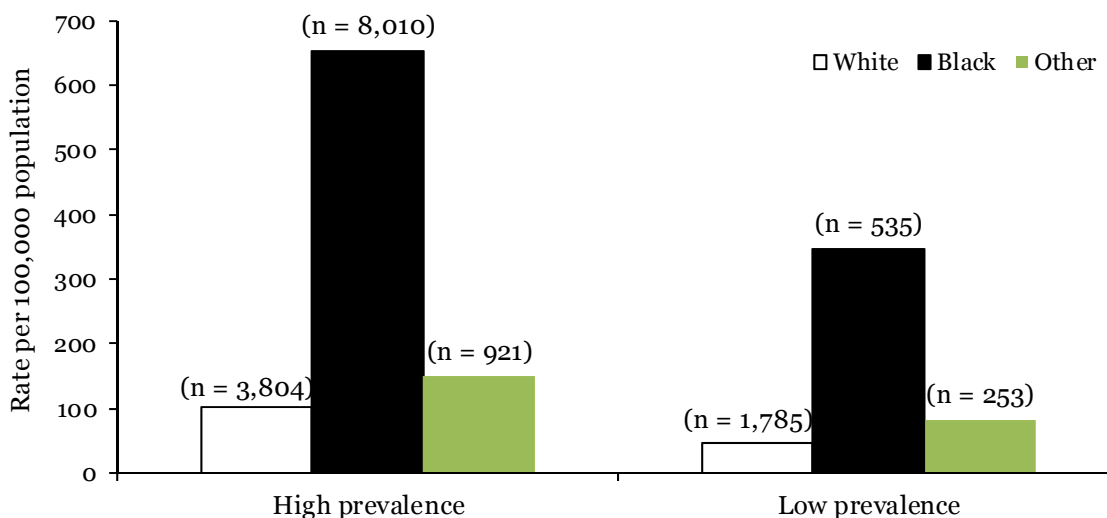
2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Race and Sex

among white persons in low prevalence areas. This disparity exists despite the fact that there are fewer cases among black persons in low prevalence areas. The HIV infection prevalence rates among persons of other races/ethnicities (including Hispanics, Asians/Native Hawaiians or Other Pacific Islanders, American Indians/Alaska Natives, and persons of other, multi-, or unknown race) is nearly twice as high as the rate among white persons in both high and low prevalence areas.

Figure 36: HIV infection prevalence rates among Hispanic persons by Michigan county, January 2012

Hispanics:

Hispanic persons comprise five percent of all persons living with HIV infection in Michigan (table 8, page 101). Figure 36 shows the HIV prevalence rate of Hispanic persons by county for those counties with five or more reported Hispanic cases. Eight of the 23 counties that meet this definition are either on the Lake Michigan shoreline or just east of it. This is most likely due to the large population of migrant workers in this area. The City of Detroit has both the highest number and the highest rate of Hispanic cases at 372 cases per 100,000 persons. The individual rates for the remaining counties are as follows, in order of decreasing rate: Clinton (271), Washtenaw (253), Berrien (241), Kent (228), Oakland (184), Van Buren (180), St. Joseph (174), St. Clair (170), Ingham (151), Jackson (145), Allegan (134), Macomb (126), Genesee (123), Muskegon (121), Bay (118), Wayne (114), Monroe (107), Lenawee (105), Kalamazoo (100), Calhoun (97), Saginaw (90), and Ottawa (88). Data not shown in tables.

Rate per 100,000

	0
	1 - 134
	135 - 184
	185 - 372
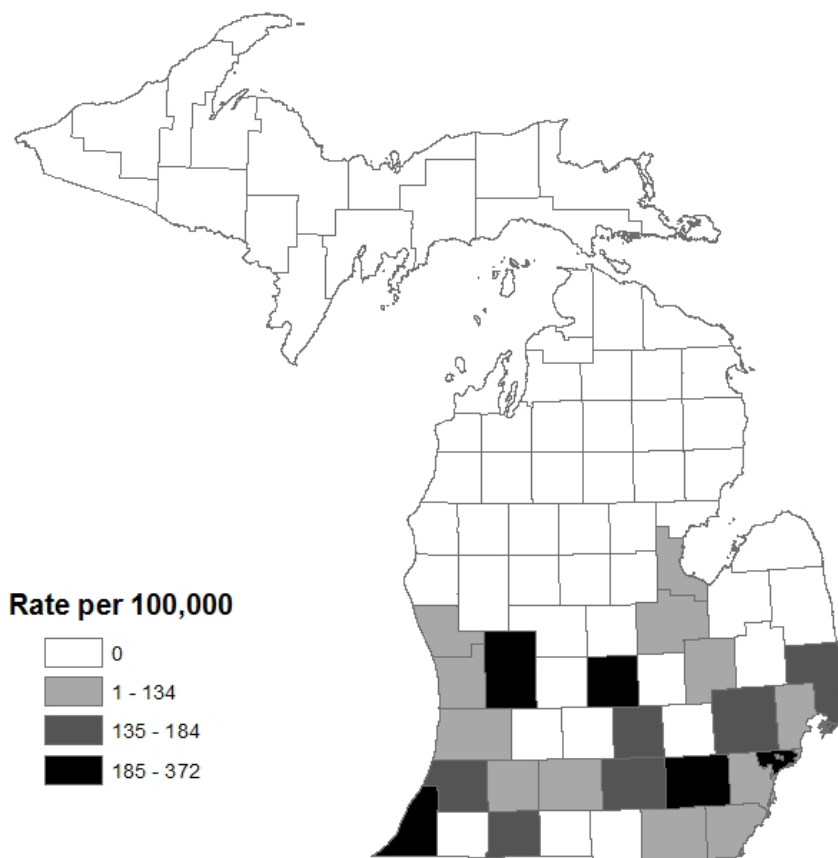
Trends and conclusions:

The rate of new HIV diagnoses increased among males (average one percent per year) between 2006 and 2010, while the rate among females decreased by six percent per year for the third consecutive trend report (Trends). This was largely due to a decrease among black females (average five percent per year), who make up the majority of female cases. The rate also decreased among females of other race (average 15 percent per year) (figure 11, page 25). Diagnosis and prevalence rates remain highest among blacks of both sexes compared to all other race/sex groups (table 8).

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Age

Data from enhanced HIV/AIDS Reporting System (eHARS)

Age at diagnosis:

The majority of persons newly diagnosed with HIV are between 30 and 39 years old, followed by persons 40-49 years of age (figure 37). The pattern changes when looking at age at stage 3 diagnosis in figure 38, where 40-49 year olds make up a higher proportion of new stage 3 diagnoses than all new HIV diagnoses (29 percent vs. 20 percent, respectively), and 20-24 and 25-29 year olds make up smaller proportions of stage 3 diagnoses than all new HIV diagnoses (18 vs. 30 percent, respectively). This is because many years may pass between HIV diagnosis and progression to stage 3 infection (data on age at HIV diagnosis found on table 8, page 101; data on age at stage 3 diagnosis not shown in tables).

Figure 37: Age at HIV diagnosis of persons living with HIV infection in Michigan, January 2012 (N = 15,751*)
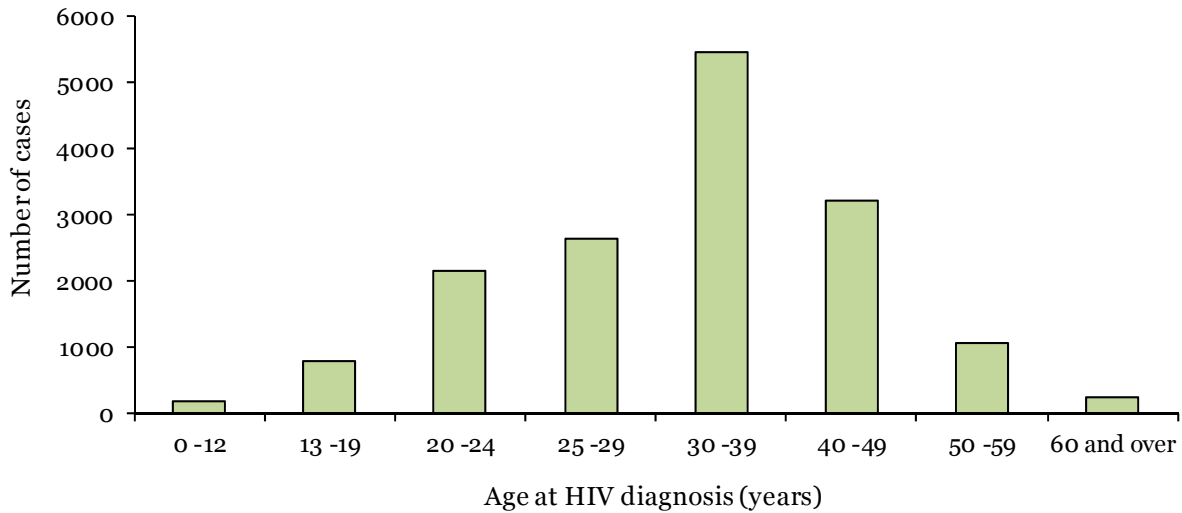
*Not included are 3 HIV infection cases with missing date of birth/age information.

Figure 38: Age at stage 3 diagnosis of persons living with HIV infection in Michigan, January 2012 (n = 8,565)

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Age

Figure 39: Current age of persons living with HIV infection in Michigan, January 2012 (N = 15,751*)
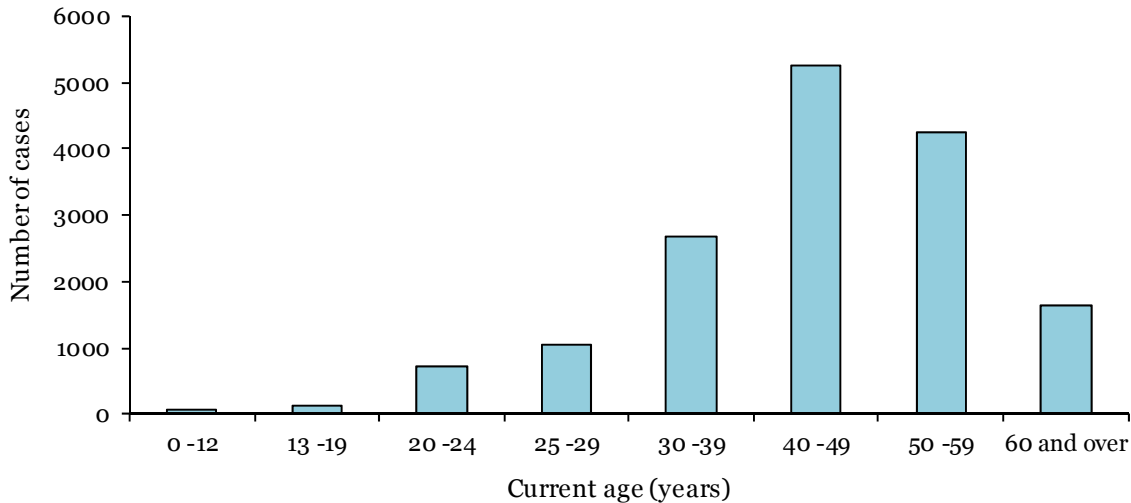
*Not included are 3 HIV infection cases with missing date of birth/age information.

Current age:

Since use of Highly Active Anti-Retroviral Therapy (HAART) became widespread in 1996, HIV-positive persons have been living longer. This is evident in figure 39, which shows the current age of persons living with HIV in Michigan as of January 1, 2012. Those currently in their forties make up the largest proportion of persons living with HIV (33 percent). While persons who were 50 years and older at the time of HIV diagnosis represent only eight percent of newly diagnosed cases (figure 37), they make up over one third (37 percent) of persons living with HIV when considering current age (data on current age not shown in tables).

Late HIV diagnoses:

Of the 15,753 persons living with HIV infection in Michigan, 54 percent (8,565 cases) have progressed to stage 3 infection. Of these, 3,594 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). When examining persons living with stage 3 infection by age at diagnosis, the proportion of cases with late HIV diagnoses increases as age increases. Among persons 60 years and older at stage 3 diagnosis, 71 percent had late diagnoses (table 8, page 101).

Trends and conclusions:

The rate of new HIV diagnoses increased significantly among persons 20-24 years of age (an average 12 percent per year) and among those 25-29 years of age (average seven percent per year). This is the second consecutive report showing increases among 20-24 year olds. Additionally, rates in older age groups (35-39 year olds and 40-44 year olds) decreased significantly by an average seven percent per year and 12 percent per year, respectively. Twenty to twenty-four year olds now have the highest rate of diagnosis of any age group (figure 12, page 26). The largest number of new diagnoses and highest prevalence, however, remains\ among persons 30-39 years old at the time of diagnosis (table 8). When considering current age, persons 40-49 years, followed by persons 50-59 years, make up the largest proportion of persons living with HIV infection (figure 39).

2012 Profile of HIV in Michigan (Statewide)

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

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 203 individuals living with HIV in Michigan who were 0-12 years old at diagnosis. They comprise one percent of all reported HIV infection cases (table 8, page 101). Most 0-12 year olds (83 percent) were infected perinatally, i.e., before, during, or shortly after birth (table 13, page 107). Those infected after birth were infected via breastfeeding. Of the remaining individuals, seven percent were infected via exposures to HIV-infected blood products before 1985. Four individuals were infected through sexual assault. The majority of the remaining individuals (eight percent) have suspected perinatal exposures but were born in countries other than the U.S., and thus their risk cannot be confirmed (data not shown in tables).

Race/ethnicity and sex:

Of the 203 individuals living in Michigan who were ages 0-12 when diagnosed with HIV, 58 percent are male and 42 percent are female. About two thirds are black (65 percent), 22 percent are white, and six percent are Hispanic. The remaining seven percent are of other or unknown race (table 12, page 106).

Of the 173 individuals with confirmed perinatal exposures, 56 percent are male and 44 percent are female. Sixty-nine percent are black, 16 percent are white, and 15 percent are Hispanic or other or unknown race (table 11, page 105). For all but one of these perinatally infected cases, the only information about the mother is that she was HIV-positive; no additional maternal risk information was available.

Late HIV diagnoses:

Children make up less than one percent of persons living with stage 3, of whom 30 percent (23 cases) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). A slightly higher proportion of persons with a risk of perinatal transmission had late HIV diagnoses (38 percent) (table 8).

Geographic distribution:

Seventy-one percent of the 203 children diagnosed with HIV between the ages of 0-12 years are currently residents of high prevalence counties (see figure 3, page 18 for high/low prevalence county classification). Twenty-eight percent reside in low prevalence counties, while one percent are currently in prison. Fifty-nine percent of HIV cases that were diagnosed as children are currently residents of the Detroit Metro Area (DMA) (data not shown in tables).

Trends and conclusions:

Among the best measurable successes in reducing HIV transmission has been prevention of mother to child (perinatal) transmission. Without Zidovudine (ZDV) prophylaxis, about 25 percent of children born to HIV-positive females could expect to become HIV-positive themselves. In Michigan, the proportion of children who become infected perinatally has dropped precipitously, from 29 percent prior to 1997 to six percent between 1997 and 2009. As of January 1, 2012, one of the 39 children born in Michigan in 2008 and three of the 40 children born in 2009 to HIV-positive females were diagnosed with HIV infection. None of the 70 children born in Michigan in 2010 or 2011 to HIV-positive females have been diagnosed with HIV, although data are not complete at this time (data not shown in tables). NOTE: numbers in this paragraph are based on residence at *birth*, NOT current residence.

2012 Profile of HIV in Michigan (Statewide)

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

**Data from Michigan Birthing Hospital Assessment &
enhanced HIV/AIDS Reporting System (eHARS)**

Perinatal testing for HIV in Michigan:

The majority (83 percent) of persons diagnosed with HIV between the ages of 0-12 years were infected perinatally (table 13, 107). Of the 4,560 females estimated to be living with HIV in Michigan, approximately 730 (21 percent) are unaware of their HIV status. The predominant risk factor for females diagnosed with HIV during child-bearing age (15-49 years) is heterosexual contact (table 13). This HIV prevalence data, coupled with the fact that nearly 50 percent of pregnancies in the US are unplanned (Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion. http://www.cdc.gov/reproductivehealth/unintendedpregnancy/), underscore the importance of screening females for HIV during pregnancy.

In August 2010, MDCH updated its Guidelines for Testing and Reporting Perinatal Human Immunodeficiency Virus (HIV), Hepatitis B and Syphilis to include routinized third trimester HIV testing. All pregnant females in Michigan are to be tested as early as possible at diagnoses of pregnancy and again at 26-28 weeks gestation, regardless of perceived risk and/or whether they had a previous negative test result. It is recommended that females who are considered high-risk be tested again at 36 weeks gestation or at delivery. The addition of third trimester testing as a best practice guideline in Michigan is consistent with MDCH's commitment to being a part of the national effort to eliminate maternal to child transmission of HIV. The Michigan Statewide Perinatal Prevention Working Group (PPWG) works to ensure that there is provider compliance with Public Health Code 333.5123, requiring prenatal HIV testing unless a woman refuses to consent or testing is medically inadvisable.

Despite these recommendations and requirements, HIV is tested for less frequently than other infectious diseases (figure 40). Data from surveillance and the Michigan Birthing Hospital Assessment show that the prevalence rate of disease among females is inversely proportional to the proportion of pregnant females tested for it. In 2010, the HIV prevalence rate per 100,000 females was 66.3 (3,370 cases), the hepatitis B rate was 20 (1,017 cases), the syphilis rate was 0.4 (20 cases), and there were no cases of rubella. Only 71 percent of pregnant females had a documented HIV test in their hospital chart compared to 95-96 percent of all pregnant females for the other three infections.

Figure 40: Testing and prevalence rates of select STDs and other infections among females in Michigan, 2010
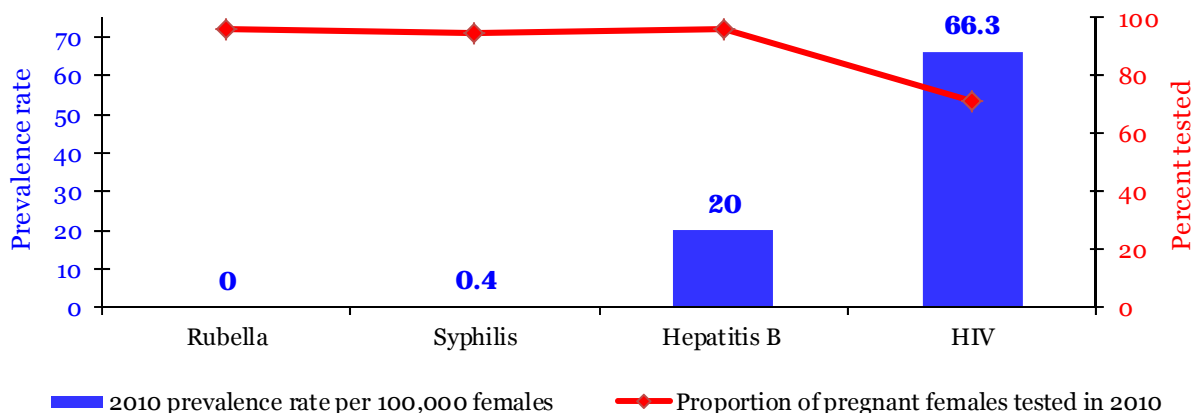
Description of the Epidemic by Age: Children (0-12 years)

Data from Michigan Birthing Hospital Assessment

Data also show that only 63 percent of Michigan birthing hospitals had written policies (WP) or standing orders (SO) in place to verify a mother's HIV testing upon admission. While this represents an increase from 43 percent in 2007, the number of hospitals with WP/SO for HIV testing continues to be less than those with WP/SO in place for hepatitis B and syphilis screening (83 percent and 73 percent, respectively).

These differences are reflected in testing practices, as evidenced by paired maternal-infant chart reviews. From 2007-2010, an average 97 percent of charts reviewed included documentation of maternal screening for hepatitis B and rubella, and 95 percent had documented syphilis test results (figure 41). Only 69 percent of charts reviewed documented a maternal HIV test result. While there was an apparent increase in testing for HIV between 2007 and 2010, the levels are still well below the levels for other infectious diseases, even though HIV is more prevalent in this population than other diseases (see 2010 Epi Profile for 2003 perinatal testing data). The differences in documentation of maternal test results in the infant's chart were even more striking, with 80 percent of infant charts having the mother's hepatitis B test documented, 64 percent having the syphilis test, and 43 percent having the HIV test documented.

Figure 41: Proportion of pregnant females tested for select STDs and other infections in Michigan, 2007-2010
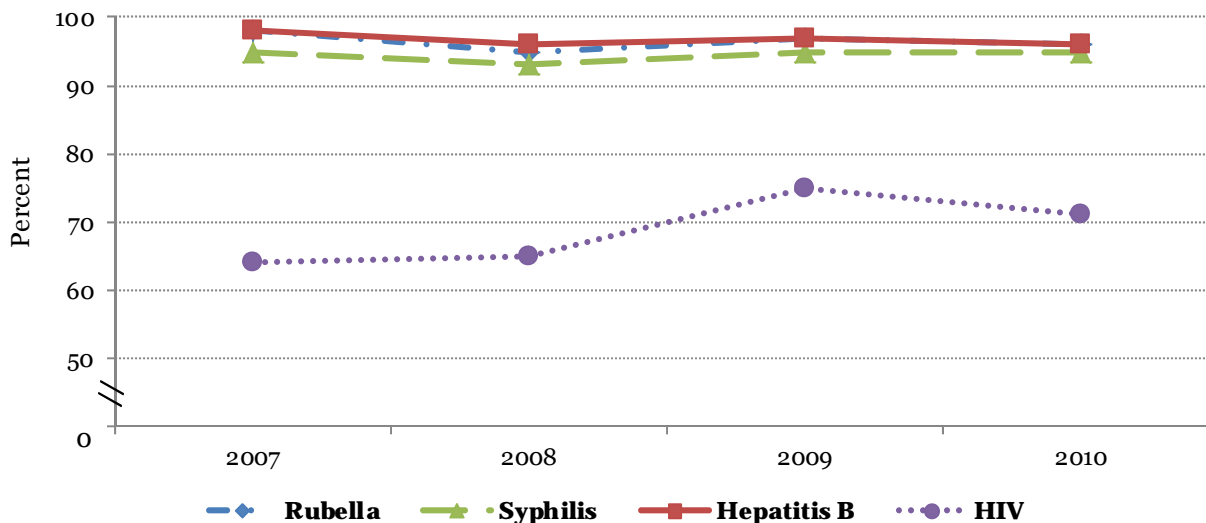
In recent years, MDCH has become aware of several cases of late perinatal HIV diagnosis. These were cases in which the mother tested negative in early pregnancy, and the infant (prompted by the presence of AIDS-defining illnesses) was later tested and diagnosed HIV-positive. Four such cases, referred to the Children's Hospital of Michigan/Wayne State University Pediatric HIV Clinic, are examined in an article in the May 2012 edition of the Journal of the International Association of Physicians in AIDS Care by doctors Faghih and Secord. None of the four mothers met any of the indicators for high HIV risk, emphasizing the importance of both first trimester and 26-28 week screening of all pregnant females for HIV.

Description of the Epidemic by Age: Teens and young adults (13-24 years)

Data from enhanced HIV/AIDS Reporting System (eHARS),
Michigan Profile for Healthy Youth (MiPHY), & Youth Risk Behavioral Survey (YRBS)

Overview:

As of January 2012, there were 2,935 persons living in Michigan who were ages 13-24 years old at HIV diagnosis. They comprise 19 percent of all persons reported with HIV infection in Michigan (five percent ages 13-19 years; 14 percent ages 20-24 years). The number of prevalent cases among persons ages 13-24 years at diagnosis is now higher than the number of prevalent cases among persons ages 25-29 years at diagnosis (table 8, page 101).

General risk behaviors:

Every two years, the Youth Risk Behavior Survey (YRBS) is conducted in Michigan high schools using a nationally standardized survey. Presented below are data from the 2011 survey on sexual risk behaviors and substance use behaviors that may be risk factors for acquiring HIV. Forty-one percent of all Michigan high school students (9-12th grade) have had sexual intercourse, 29 percent having had intercourse in the three months prior to taking the survey. Three percent of 9-12th graders have used heroin and three percent have used methamphetamines one or more times during their life. Three percent of 9-12th graders have used a needle to inject any illegal drug into their body one or more times during their life. Focusing on 12th graders, 54 percent reported having had intercourse. Fifteen percent of 12th graders report having had four or more sexual partners. Of students who had sexual intercourse during the past three months, 61 percent used a condom during last sexual intercourse. Of students who had ever had sexual intercourse, 20 percent drank alcohol or used drugs before their last sexual intercourse.

There were disparities among students based on race/ethnicity. Black students (grades 9—12) were more likely to have had sexual intercourse than Hispanic and white students (53, 47, and 38 percent respectively), although these differences were not statistically significant. Black students were more likely than white students to have four or more lifetime sexual partners (28 and 10 percent, respectively) and to have sex before the age of 13 (12 and 3 percent, respectively). Black and Hispanic students were more likely than white students to have had sex before age 13 (12, 12, and 2 percent, respectively), but white students were more likely than black students to have used alcohol or other drugs before sex (21 and 12 percent) (data not shown in tables).

Sexual minority youth:

Michigan first obtained information on sexual minority youth via the state Youth Risk Behavior Survey (YRBS) in 2011. Sexual minority students were identified as those who had any same-sex sexual contact (this includes persons who had sexual contact with same-sex partners only, as well as persons who had sexual contact with both sexes). A study was conducted to assess health risk behaviors associated with these students. Only sexually active students (students who had at least one sexual experience in their lifetimes) were included in the analysis. A total of 236 students (11 percent of all sexually active students) had experienced a same-sex sexual encounter. These students were more likely to stay home from school because they believed they would be unsafe. Students who had same-sex sexual contact were at a higher risk fir reporting bullying at school or online compared to students who had opposite-sex sexual encounters only. They were also more likely to report being the victims of forced sexual intercourse. Associations were also found between sexual minority students and physical fights and physical abuse by a significant other. However, these associations may have been confounded by the students also reporting being forced to have sexual intercourse. The relationship between sexual minority

Description of the Epidemic by Age: Teens and young adults (13-24 years)

**Data from Youth Risk Behavioral Survey (YRBS) &
Michigan Disease Surveillance System (MDSS)**

students, physical abuse, and forced sex may require more research to fully understand the associations.

Sexual minority students were more likely to report being depressed compared to students who had opposite-sex sexual encounters only. Risk factors, such as feeling sad or hopeless almost every day for two weeks or more, seriously considering suicide, attempting suicide, or being injured from a suicide attempt were highly associated with students who had same-sex sexual contact. Compared to students who experienced opposite-sex sexual contact only, sexual minority students reported trying substances such as cigarettes, alcohol, and marijuana before the age of 13 significantly more often. Students who had same-sex sexual contact were also more likely to report injecting illegal drugs and/or using drugs such as heroin, methamphetamines, club (rave) drugs, or prescription drugs without a doctor's prescription compared to students who had opposite-sex sexual encounters only.

Reporting sexual intercourse for the first time before the age of 13 and sexual intercourse for the first time with a partner three or more years older were highly associated with sexual minority students. Sexual minority students were also less likely to report using a condom during their last sexual intercourse compared to students who had opposite-sex sexual encounters only.

Sexual minority students were more likely to be overweight or obese (>85th percentile for body mass index, by age and sex) compared to students who had opposite-sex sexual encounters only. Not surprisingly, a higher proportion of this group viewed themselves as overweight or obese and were trying to lose weight. Sexual minority students were more likely to report attempted weight loss by fasting for more than 24 hours, vomiting, or taking laxatives than students who had opposite-sex sexual encounters only (data not shown in tables).

STDs:
STD rates in Michigan are highest among teens and young adults (13-24 year olds). The STD data are shown on tables 17 and 18 (pages 111-112). In persons ages 20-24 years, the rate of chlamydia is five and a half times higher and the rate of gonorrhea is over five times higher than the rate among the rest of the population. Although those ages 15-24 make up only 14 percent of the population, they represent 67 percent of gonorrhea cases and 76 percent of chlamydia cases.

Teen pregnancy:
Teen (ages 15-19) pregnancy rates in Michigan have decreased over time, from 63.5 pregnancies per 1,000 females ages 15-19 years in 2000 to 51 pregnancies per 1,000 in 2010. Since 2005, however, the rate has remained relatively stable. The 2010 rate among teens in Wayne County (including the City of Detroit) was the highest of any county in Michigan (76 pregnancies per 1,000). Wayne County is followed closely by Clare, Oceana, and Lake counties with 68 pregnancies per 1,000 each, demonstrating that teen pregnancy is a rural as well as an urban concern.

In the Detroit Metro Area (DMA), the 2010 range was from 30 pregnancies per 1,000 females ages 15-19 (Oakland County) to 76 pregnancies per 1,000 in Wayne County. In Out-State Michigan, the 2010 rates ranged from 16 to 76 pregnancies per 1,000 females ages 15-19 (data not shown in tables).

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Age: Teens and young adults (13-24 years)

Risk-teens (13-19 years):

In the 1980s, most HIV-positive 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.

Among the 784 persons living with HIV in Michigan who were ages 13-19 at the time of HIV diagnosis, 577 (74 percent) are male (table 13, page 107). Among these male cases, over three-quarters are males who have sex with males (MSM) (78 percent), including those who also inject drugs (MSM/IDU) (figure 42). Three percent were recipients of HIV-infected blood products prior to 1985, and another three percent were injection drug users (including MSM/IDU). Two percent had heterosexual contact with females with known risk (HCFR). Fifteen percent of 13-19 year old males had undetermined risk.

The other 207 persons living with HIV in Michigan who were ages 13-19 at the time of diagnosis are female (26 percent). This is slightly higher than the proportion of all HIV-positive persons in Michigan who are female (22 percent; table 8, page 101). Of females who were 13-19 years at the time of diagnosis, over three-quarters (78 percent) have a risk of heterosexual contact (HCM). Six percent are injection drug users (IDU), and 15 percent had undetermined risk (figure 43).

Figure 42: Males ages 13-19 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 577)
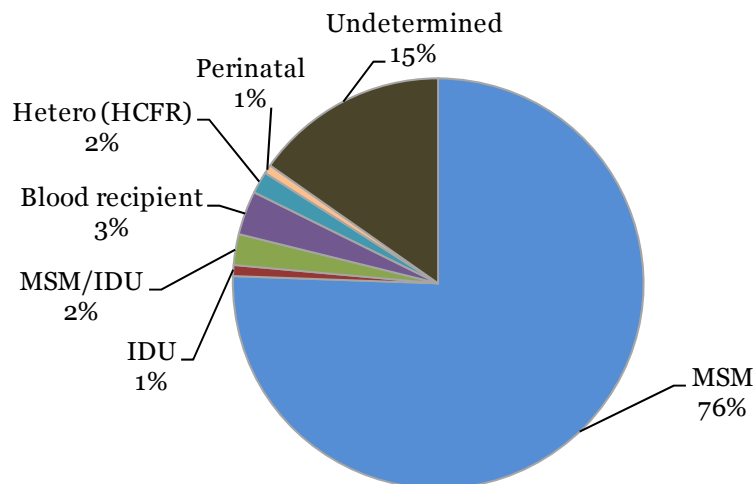
Description of the Epidemic by Age: Teens and young adults (13-24 years)

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 43: Females ages 13-19 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 207)

IDU
6%

Blood recipient
1%

Undetermined
15%

Hetero (HCM)
78%
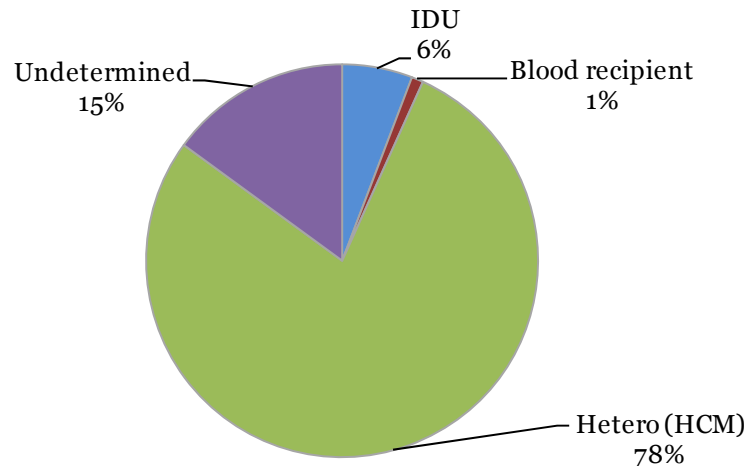
Risk-young adults (20-24 years):

Among the 2,151 persons living with HIV in Michigan who were ages 20-24 at the time of HIV diagnosis, over three-quarters (78 percent) are male (figure 44). Eighty-three percent of these HIV-positive male young adults report sex with other males (including MSM/IDU); 12 percent had undetermined risk; seven percent reported IDU (including MSM/IDU); two percent had heterosexual risk (HCFR); and one percent received HIV-infected blood products.

Figure 45 shows that, among the 483 females living with HIV who were ages 20-24 at the time of diagnosis, almost three-quarters (72 percent) had heterosexual risk (HCM). Fifteen percent of HIV-positive females in this age group had undetermined risk, 13 percent were IDU, and less than one percent received HIV-infected blood products..

Figure 44: Males ages 20-24 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 1,668)
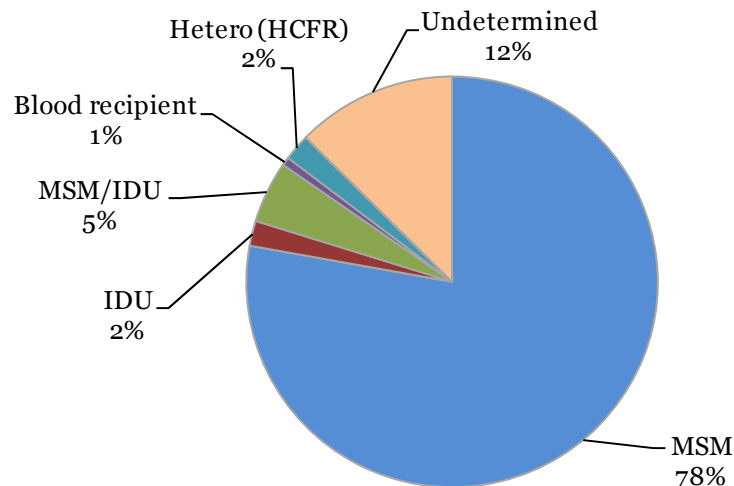
Hetero (HCFR)
2%

Undetermined
12%

Blood recipient
1%

MSM/IDU
5%

IDU
2%

MSM
78%

Description of the Epidemic by Age: Teens and young adults (13-24 years)

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 45: Females ages 20-24 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 483)

Pie chart:
- IDU 13%
- Blood recipient <1%
- Hetero (HCM) 72%
- Undetermined 15%
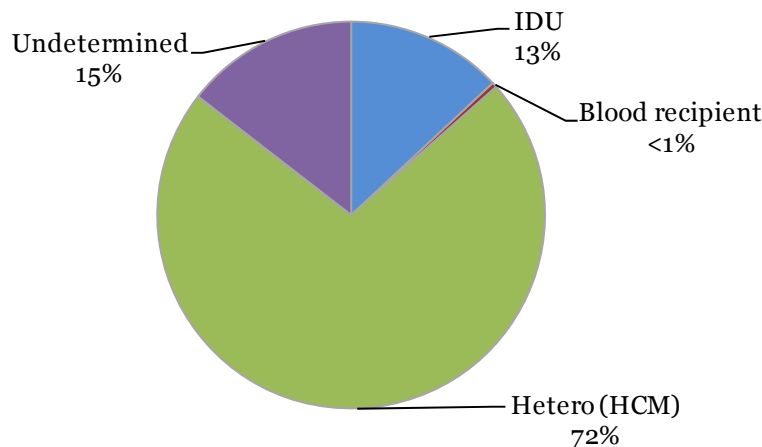
Race/ethnicity:

Seventy-six percent of persons ages 13-19 at the time of HIV diagnosis are black, 17 percent are white, four percent are Hispanic, and two percent are of other or unknown race. Sixty-five percent of persons ages 20-24 at the time of HIV diagnosis are black, 28 percent are white, five percent are Hispanic, and three percent are of other or unknown race. Comparing these proportions with the racial/ethnic break-down of those over 24 years at diagnosis (54 percent black, 39 percent white, five percent Hispanic, and 3 percent other or unknown race) shows that HIV-positive youth are disproportionately black (table 12, page 106).

Geographic distribution:

The majority (82 percent) of persons 13-24 years old at diagnosis live in high prevalence counties. They make up a slightly higher proportion of the total number of HIV-positive persons in high prevalence counties compared to low prevalence counties (19 percent vs. 17 percent, respectively) (see figure 3 on page 18 for high/low prevalence county classification). Two-thirds of teen (ages 13-19) cases live in the Detroit Metro Area (DMA) (data not shown in tables). While nearly two thirds of persons living with HIV in Michigan are living in the DMA, nearly three fourths of the new diagnoses among persons 13 to 19 years old are residents of the DMA (Trends). Of these DMA teens, 62 percent are living in City of Detroit.

Trends and conclusions:

The rate of new diagnoses remained stable among persons 13-19 years of age between 2006 and 2010. This is the first time in six consecutive annual trend analyses that there was not a significant increase in the rate of new diagnoses among this group. However, the rate of new diagnoses among 20-24 year olds increased for the second consecutive trend report. Additionally, decreasing rates among 35-39 year and 40-44 year olds have resulted in 13-24 year olds representing a larger proportion of new diagnoses and prevalent cases (Trends). The majority of male teen and young adult cases are males who have sex with males (MSM), while the majority of female teen and young adult cases have heterosexual risk. The majority of HIV-positive persons diagnosed in these age groups are black and live in the DMA.

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Age: 50 years and older

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 1,311 persons living with HIV infection in Michigan who were 50 years and older at the time of diagnosis. They comprise eight percent of all reported HIV-positive persons, and over three-quarters (77 percent) are male. Fifty-four percent are black, 39 percent are white, and seven percent are Hispanic or other/unknown race (table 12, page 106).

Risk-males:

When examining risk, those who were in their fifties at the time of HIV diagnosis have a different risk profile than those who were ages 60 and older. Therefore, the risks of these two populations are discussed separately.

As of January 2012, there were 809 males currently living with HIV in Michigan who were diagnosed in their 50s (76 percent of all persons 50-59 years at diagnosis). Of all persons 60 and over at HIV diagnosis, 197 are males (78 percent).

As with all other age groups (excluding 0-12 year olds), over half of the HIV-positive males in both groups report male-male sex (including those who also injected drugs, or MSM/IDU). Males who were in their 50s at HIV diagnosis are more likely to be injection drug users (IDU) compared to males 60 years and older at diagnosis (16 percent vs. eight percent, respectively; figures 46 and 47). This includes males with a dual risk of male-male sex and IDU (MSM/IDU). A larger proportion of males 60 years and older have undetermined risk than those in their 50s at diagnosis.

Figure 46: Males ages 50-59 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 809)
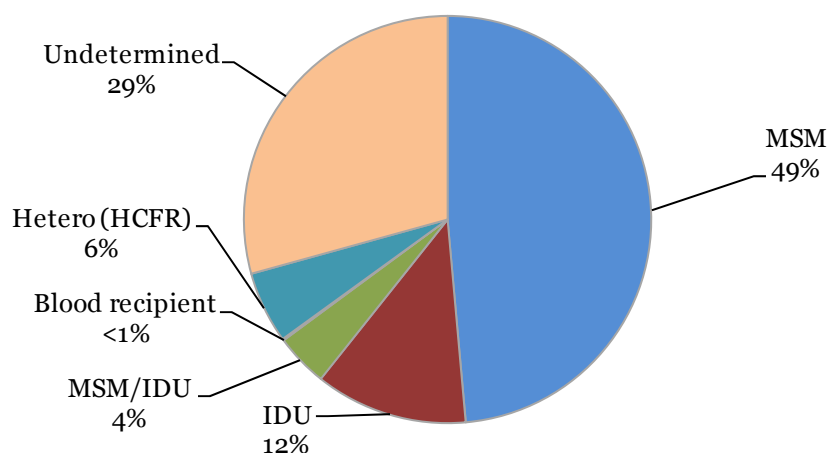
Undetermined 29%
MSM 49%
Hetero (HCFR) 6%
Blood recipient <1%
MSM/IDU 4%
IDU 12%

Description of the Epidemic by Age: 50 years and older

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 47: Males ages 60 and older at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 197)

Undetermined
38%

MSM
47%

Hetero (HCFR)
7%

MSM/IDU
1%

IDU
7%
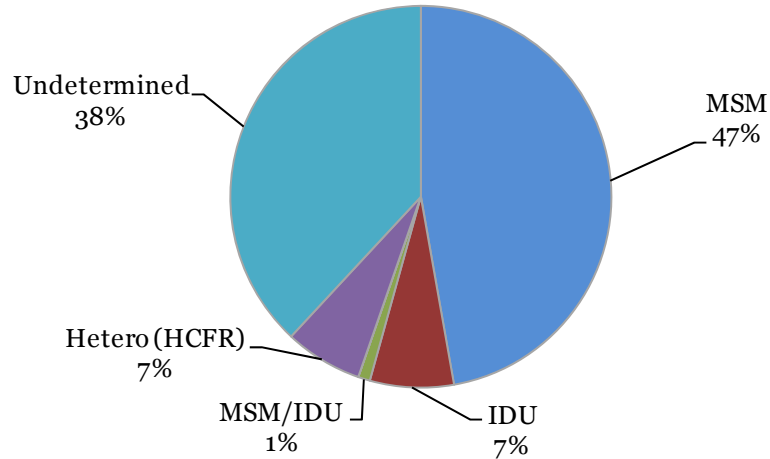
Risk-females:

Overall, females who were in their 50s at HIV diagnosis have similar risks as females who were 60 years and older at diagnosis (figures 48 and 49). As with females in other age groups, the most common risk is heterosexual contact (HC) (62 percent and 57 percent, respectively). HIV-positive females 60 years and older at diagnosis are more likely to be blood recipients than females in their 50s at diagnosis (6 percent vs. 1 percent, respectively), and females in their 50s at diagnosis are more likely to be injection drug users than females who were 60 and older at diagnosis (18 percent vs. 14 percent, respectively). Females 60 and older at diagnosis have a larger proportion of undetermined risk than females in their 50s at diagnosis.

Figure 48: Females ages 50-59 at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 249)
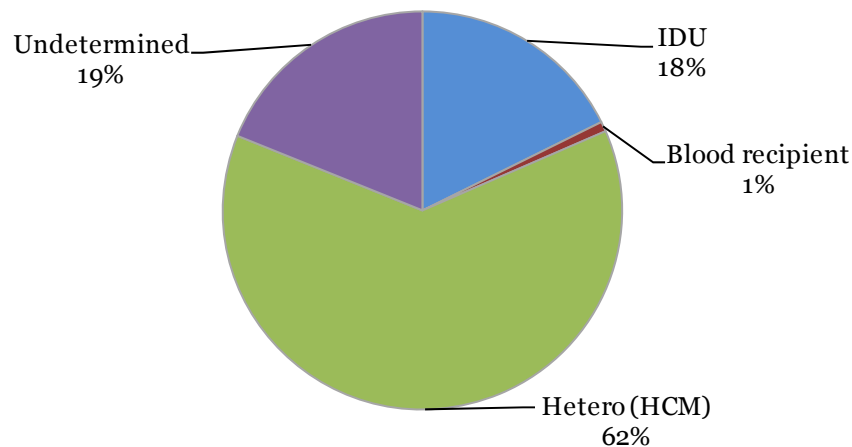
Undetermined
19%

IDU
18%

Blood recipient
1%

Hetero (HCM)
62%

2012 Profile of HIV in Michigan (Statewide)

Description of the Epidemic by Age: 50 years and older

Figure 49: Females ages 60 and older at diagnosis currently living with HIV infection in MI, by risk transmission category (n = 56)

Pie chart:
- IDU 14%
- Blood recipient 6%
- Hetero (HCM) 57%
- Undetermined 23%
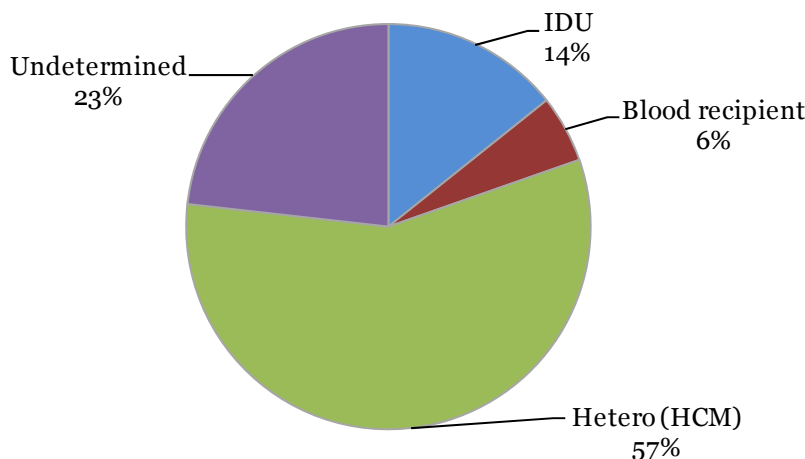
STDs:

Gonorrhea and chlamydia are largely epidemics affecting young people, with less than one percent of chlamydia cases and just over two percent of gonorrhea cases being among persons 50 years and older at diagnosis. In contrast, ten percent of primary and secondary syphilis cases are over the age of 50 at diagnosis. These individuals are more likely to be male than persons diagnosed at other ages (100 percent vs. 90 percent, respectively) and are more likely to be white than black (64 percent vs. 34 percent, respectively). Of primary and secondary syphilis cases, the highest proportion of cases ages 50 and older lived in Kent, Macomb, and Wayne counties (10 percent each) and the City of Detroit (28 percent) (age breakdown and specific geographic data not shown in tables).

Late HIV diagnoses:

Of the 15,753 persons living with HIV infection in Michigan, 54 percent (8,565 cases) have progressed to stage 3 infection. Of these, 3,594 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Persons who were in their fifties at HIV diagnosis make up seven percent (620 cases) of persons living with stage 3 infection, of whom 62 percent had late HIV diagnoses. Those who where 60 years and older at diagnosis make up two percent of persons living with stage 3 infection (157 cases), of whom 71 percent had late HIV diagnoses. These two age groups have the highest proportion of late diagnoses of all age groups (table 8, page 101).

Trends and conclusions:

In Michigan, the rate of HIV diagnoses among persons who were 50 years and older at the time of diagnosis remained level between 2006 and 2010 (Trends). Although persons 50 years and older have the lowest rates of new diagnoses (except for those 0-12 years), it is important to understand the specific challenges faced by older Michiganders and to ensure that they receive information and services to help protect them from infection.

Although it is low (6 percent), males who were 50 years and older at HIV diagnosis have the highest proportion of heterosexual risk of males in any age group (table 13, page 107). This is an important distinction when preparing targeted HIV prevention and interventions.

2012 Profile of HIV in Michigan (Statewide)

Service Utilization of HIV-Positive Persons in Care

Table 5: Characteristics of Ryan White clients who received services compared to All living HIV infection cases in Michigan, January 2012

Characteristic	RY clients	Cases
White	34%	36%
Black	55%	56%
Hispanic	5%	5%
Other	4%	3%
Unknown*	1%	N/A
Male	76%	78%
White male	*30%*	*31%*
Black male	*38%*	*41%*
Hispanic male	*5%*	*4%*
Other male	*3%*	*2%*
Unknown male	*1%*	*N/A*
Female	24%	22%
White female	*5%*	*5%*
Black female	*17%*	*16%*
Hispanic female	*1%*	*1%*
Other female	*1%*	*1%*
Unknown female	*<1%*	*N/A*
0-12 years[†]	1%	<1%
13-19 years[†]	2%	1%
20-24 years[†]	5%	5%
25-44 years[†]	43%	38%
45+ years[†]	48%	56%
Unknown age[†]	N/A	<1%
Infants: 0-1 years[†]	<1%	0%
Children: 2-12 years[†]	1%	<1%
Youth: 13-24 years[†]	7%	5%
Women 25+ years[†]	17%	21%
Total	**100%** (N = 7,278)	**100%** (N = 15,753)

*"Unknown" included in "Other" category for surveillance.

[†]"Years" within this table refers to current age, not age at diagnosis.

Overview:

The Ryan White HIV/AIDS Treatment Extension Act of 2009 (Ryan White), which replaced the Treatment and Modernization Act of 2006, provides federal funds to help communities and states increase the availability of primary health care and support services for people living with HIV/AIDS (PLWH/A). Ryan White funds are funds of last resort. Ryan White Part A funds are allocated to Eligible Metropolitan Areas (EMA) heavily impacted by the epidemic, and in Michigan the Detroit EMA receives Part A funds. States and U.S. Territories receive Ryan White Part B funds, including resources earmarked for AIDS Drug Assistance Programs (ADAP). Part C funds are allocated to local clinics for outpatient HIV early intervention services and Part D is used to coordinate and enhance services for women, infants, children, and youth (WICY).

The Uniform Reporting System (URS) is a statewide client-level data system designed to document the quantity and types of services provided by agencies receiving Ryan White funds and to describe the populations receiving services. A wide range of clinical and supportive services are reported in the URS, including outpatient medical care, dental care, mental health services, case management, and use of the ADAP. URS data may include HIV services that are not directly funded by Ryan White, as long as the reported service is eligible to be funded. However, most services reported in the URS are at least partially funded by Ryan White resources, and all services are provided by agencies receiving Ryan White funds.

There are several client-level data systems in Michigan that collect URS data. Demographic and service data from all these systems were extracted into a standard format, and these data were then combined and unduplicated to produce a statewide URS dataset for analysis. The statewide dataset includes records from all Ryan White

2012 Profile of HIV in Michigan (Statewide)

Service Utilization of HIV-Positive Persons in Care

Parts A-D funded programs in Michigan, including ADAP.

Comparing services with cases:

Table 5 compares Ryan White clients served during 2011 to all persons currently living with HIV in Michigan. In 2011 there were 7,278 HIV-positive persons who received Ryan White services in the state of Michigan. Ryan White clients represent 46 percent of the total reported living cases in Michigan. Overall, the comparison table shows that persons receiving Ryan White care services are similar demographically to reported cases; however, reported cases are slightly older and more likely to be black males. Additionally, the Ryan White Treatment Modernization Act puts a priority on providing services to women, infants, children and youth (WICY) with HIV infection. As a result, the proportion of youth ages 13 to 24 served is somewhat higher than among all reported cases. Despite these differences, it appears that Ryan White-funded programs are generally serving clients who are representative of all persons living with HIV infection in Michigan.

It is important to note that URS data have a higher proportion of records with unreported race than surveillance data due to lack of client self-report and/or lack of documentation at the provider level. Additionally, the service utilization data available for this report are limited to the HIV care service programs contained in the four Ryan White CAREWare data systems in Michigan. Services provided by private physicians or HIV Service programs not funded by Ryan White or Michigan Health Initiative (MHI) resources are not included.

Core services:

Table 6 gives additional detail about the core services of outpatient medical care, oral health care, mental health care, medical case management, and ADAP delivered by these HIV service programs in 2011. The service counts in the table are visits, not units of time. Only one "visit" per day is counted for any one service category in URS summary data.

Table 6: Core services received by Ryan White clients in Michigan, 2011 (N=7,278)

	Outpatient medical care	Oral health care	Mental health care	Medical case management	ADAP (medication assistance)
No. of unduplicated clients served[*]	5,683	702	724	4,228	3,512
Percent receiving service	78%	10%	10%	58%	48%
Total days of service (visits)[†]	25,342	2,784	4,626	74,237	75,335
Average no. of visits per client	4.8	3.9	4.4	18.1	32.5
Median no. of visits per client	4	3	2	11	25
Range of visits per client	1-47	1-45	1-51	1-286	1-231

[*]Clients are unduplicated for a particular service across all providers but may be counted in more than one service category.

[†]The Drug Assistance service unit is a prescription filled rather than a visit or day of service.

2012 Profile of HIV in Michigan (Statewide)

Service Utilization of HIV-Positive Persons in Care

Outpatient medical care services in this table are for outpatient ambulatory medical care visits, ranging from a complete physical with a physician to a brief or repeat visit with a physician or nurse practitioner. This may include adherence counseling with a medical practitioner. The average of 4.8 visits per client, with a median of four, is consistent with HIV care standards that recommend monitoring of health status every three to four months (table 6).

Oral health care services reported in the URS are provided primarily through the statewide Michigan Dental Program (MDP), administered by the Division of Health, Wellness and Disease Control of MDCH. The University of Detroit/Mercy Dental School provides many of these services for MDP clients in the Detroit area. Dental services for clients may be extensive and require multiple visits, but they may also be for annual or more frequent prophylaxis. The average of 3.9 visits per client is consistent with an initial exam to plan the care needed and one or more treatment visits following approval of the care plan (table 6).

The AIDS Drug Assistance Program (ADAP), administered by the Division of Health, Wellness and Disease Control of MDCH, pays for medications dispensed to eligible HIV-positive clients throughout Michigan. ADAP covers all HIV medications and many other medications, in addition to CD4 and viral load tests. The unit of service reported in table 6 for ADAP is each prescription filled rather than a day of service. In 2011, 48 percent of Ryan White clients in Michigan received medications or tests through ADAP services at an average of 32.5 prescriptions filled per year (or slightly less than 3 per month). The need for ADAP services continues to increase, because more people are living with HIV each year, more are entering into care where drugs are prescribed to treat the disease, and fewer have access to prescription drug coverage through other sources.

Mental health care services encompass mental health assessments, individual counseling, and group sessions for HIV-positive clients with mental health diagnoses. They must be conducted by a licensed mental health professional. Mental health services do not include substance abuse treatment. In 2011, 10 percent of statewide clients received mental health care services at an average of 4.4 visits per person (table 6).

Health insurance coverage:
Among HIV-positive persons interviewed for the Medical Monitoring Project (MMP), the majority (76 percent) had health insurance coverage and no gap in coverage in the past 12 months (figure 50). Some persons had a gap in health coverage in the past 12 years (15 percent), while 10 percent had no health coverage in the past 12 months. This was consistent with data found through medical record abstractions, which indicated that 81 percent (n=96) of persons had at least one documented source of medical coverage. Private insurance was the most frequently documented source of medical coverage, followed closely by Medicaid (figure 51). Ten percent of persons had documentation of self-pay.

Service Utilization of HIV-positive-Persons in Care

Data from Medical Monitoring Project (MMP)

Figure 50: Health coverage* in the 12 months prior to interview among HIV-positive persons in care (MMP, 2009) (N=164)
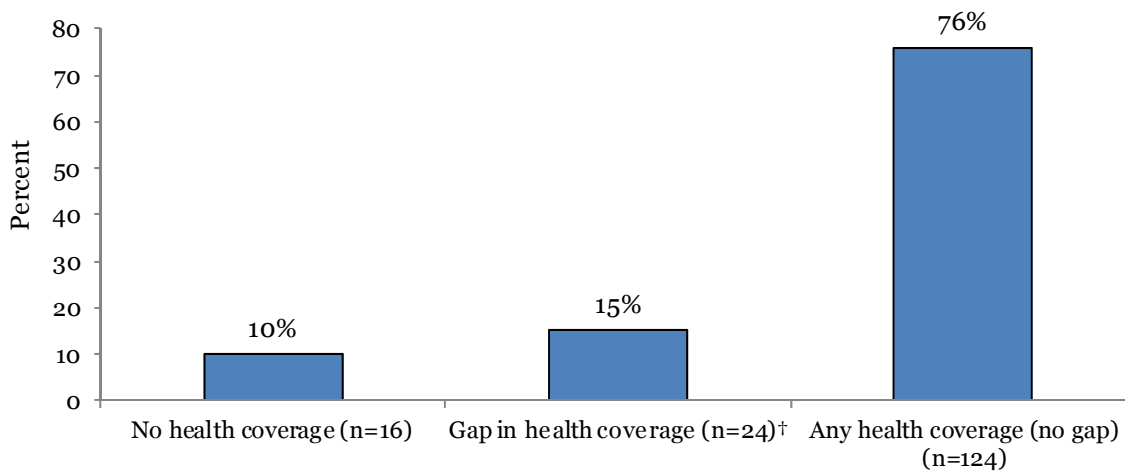
*Self-reported health coverage in response to the question, "During the past 12 months, have you had any kind of health insurance or health coverage? This includes Medicaid and Medicare."
† Self-reported gap in health coverage in response to the question "During the past 12 months, was there a time that you didn't have any health insurance or health coverage?"

Figure 51: Type of medical coverage* noted in medical records of HIV-positive persons in care (MMP, 2009) (n=118)
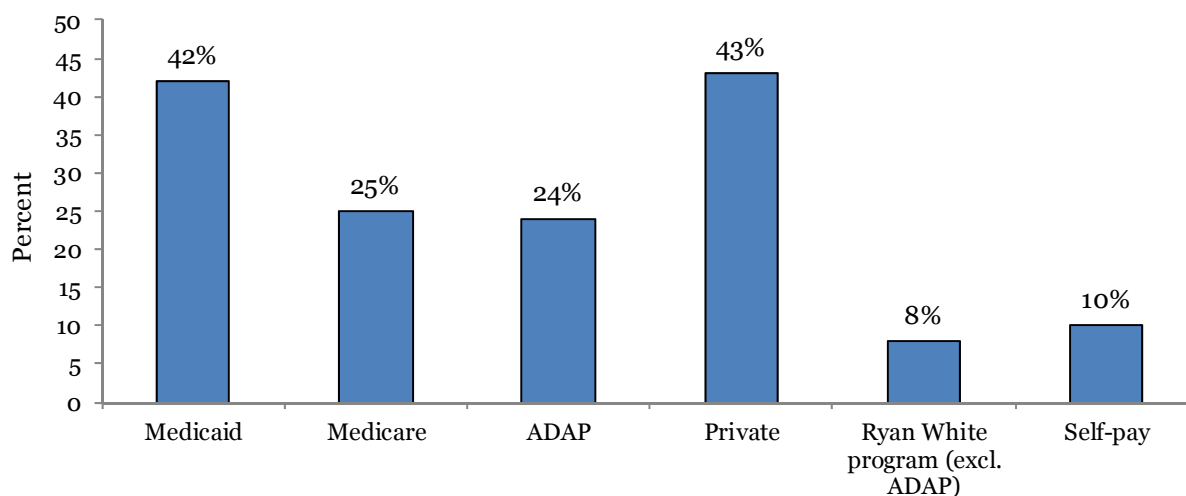
*Categories are not mutually exclusive.

Service Utilization of HIV-Positive Persons in Care

Data from Medical Monitoring Project (MMP)

Use of services:

In the 12 months prior to MMP interview, the median number of outpatient visits among HIV-positive persons in care was seven (range: 1-42 visits). Thirteen percent of persons interviewed had a HIV-related ER visit, and 10 percent had a HIV-related hospitalization. Fourteen percent had at least one inpatient hospital stay, with the median length of stay being three days.

Persons interviewed for MMP were also asked about services other than health care. Figure 52 shows the most commonly used services named by HIV-positive persons during their interviews, which were HIV case management (51 percent) and dental services (50 percent). Shelter services were the least frequently named service.

Figure 52: Top 10 most commonly used services in the 12 months prior to interview among HIV-positive persons in care (MMP, 2009) (N=164)*
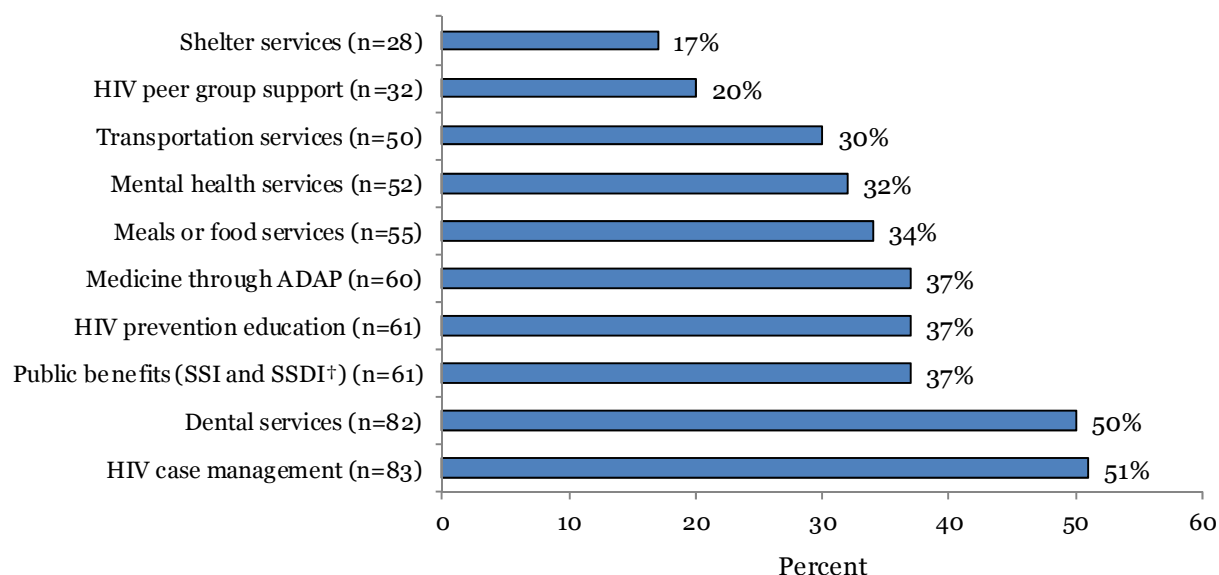
*Categories are not mutually exclusive.
†Supplemental Security Income/Social Security (SSI) and Social Security Disability Insurance (SSDI).

Medical records were also reviewed for documentation of auxiliary services provided during visits to HIV care providers (figure 53). The auxiliary service most frequently documented in the medical record was an education session (38 percent), followed by case management (21 percent). Dental care was the least frequently noted service. Education sessions referred to any individual or group sessions specifically designed to educate the patient about a particular behavior and/or health issue; it did not have to be HIV-related.

Service Utilization of HIV-Positive Persons in Care

Data from Medical Monitoring Project (MMP)

Figure 53: Other services noted in medical record and provided at HIV care facilities to HIV-positive persons in care (MMP, 2009) (N=149)*

Service	Percent
Dental care	<1%
Substance abuse counseling or treatment	3%
Receipt of equipment or services	6%
Other services†	9%
Nutritional counseling	12%
Pharmacist consultation	13%
Mental health counseling or treatment	14%
Case management	21%
Education session	38%
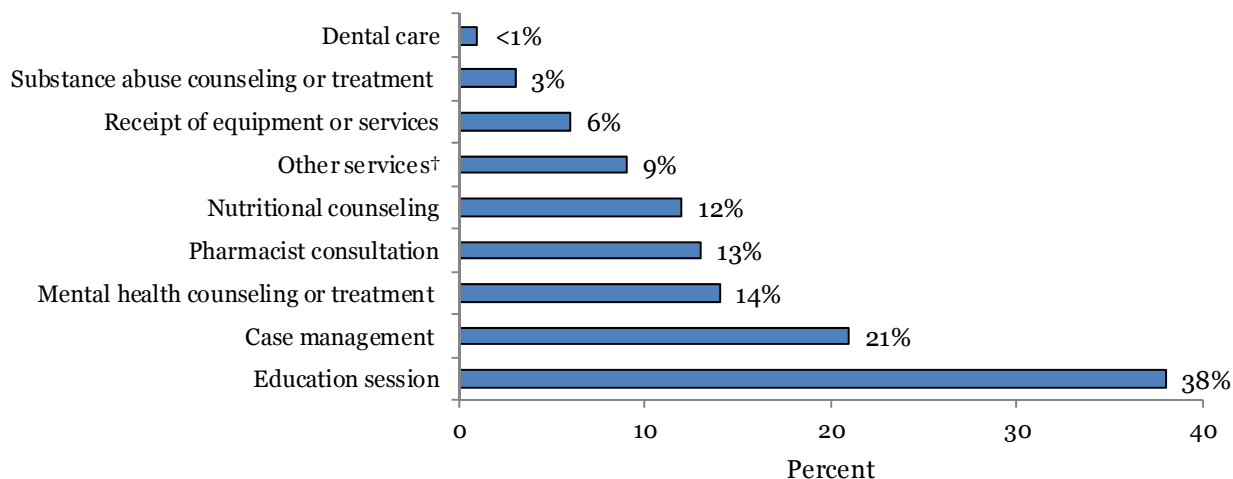
*Categories are not mutually exclusive.

†Other services included medication adherence counseling, hepatitis C treatment follow-up, and smoking cessation counseling.

About 29 percent (n=43) of medical records reviewed had documentation of at least one referral provided during the surveillance period. The most common referral was for mental health services (15 percent), followed by case manager services (9 percent) (figure 54). Home-based care was the least frequent referral (2 percent).

Figure 54: Referrals noted in medical records of HIV-positive persons in care (MMP, 2009) (N=149)*

Referral	Percent
Home-based care services	2%
Substance abuse prevention services	3%
Reproductive health services	3%
HIV prevention counseling services	3%
Dental care	3%
Adherence support	3%
Financial assistance	4%
Social worker services	5%
Food and housing support services	5%
Case manager services	9%
Mental health services	15%

*Categories are not mutually exclusive.

Service Utilization of HIV-Positive Persons in Care

Data from Medical Monitoring Project (MMP)

About 70 percent (n=114) of HIV-positive persons interviewed had at least one unmet service need in the 12 months prior to interview (figure 55). The most common service needed but not received was dental services (37 percent of persons interviewed), followed by public benefits such as SSI (26 percent).

Figure 55: Top 10 services needed but didn't receive in 12 months prior to interview among HIV-positive persons in care (MMP, 2009) (N=164)*

Service	Percent
Home health services (n=10)	6%
Meal or food services (n=11)	7%
Medicine through ADAP (n=12)	7%
Mental health services (n=13)	8%
HIV case management (n=20)	12%
Shelter services (n=22)	13%
HIV peer group support (n=26)	16%
Transportation services (n=30)	18%
Public benefits (SSI, SSDI) (n=43)	26%
Dental services (n=60)	37%
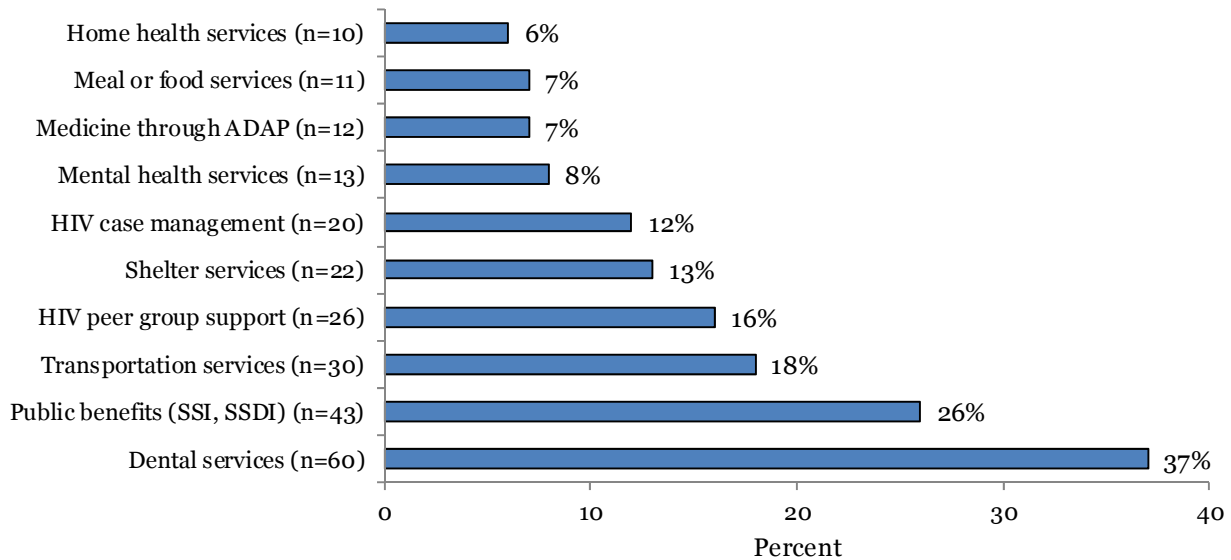
*Categories are not mutually exclusive.

2012 Profile of HIV in Michigan (Statewide)

Unmet Need and Time to Care

Overview:

Primary Medical Care (PMC) for persons living with HIV infection is having a laboratory result for a CD4 count and/or CD4 percent and/or a viral load (VL) test during a 12-month time period. Those who did not receive PMC were considered to have unmet need. For this report, unmet need was calculated by determining the number of persons living with HIV infection in Michigan who were diagnosed prior to October 1, 2010 and had not received a VL or CD4 test between October 1, 2010 and September 30, 2011 (fiscal year 2011). Table 15 on page 109 shows the overall proportion of unmet need for various demographic groups. In total, 36 percent of HIV-positive persons in Michigan had unmet need. The highest levels of unmet need were among persons with HIV non-stage 3 (44 percent), Hispanics (50 percent), American Indians/Alaska Natives (46 percent), injection drug users (IDU) (48 percent), persons who were 20-24 years at diagnosis (45 percent), persons 65 years of age and older as of November 2011 (44 percent), and persons currently living in Berrien County and Genesee County (excluding prisoners).

Risk:

Injection drug users (IDU) had the highest proportion of unmet need (48 percent), followed by persons with undetermined risk (39 percent) (figure 56). The lowest proportion of unmet was among persons infected perinatally or through blood products (24 percent and 37 percent, respectively).

Figure 56: Persons living with HIV in Michigan with unmet need, by risk transmission category, November 2011
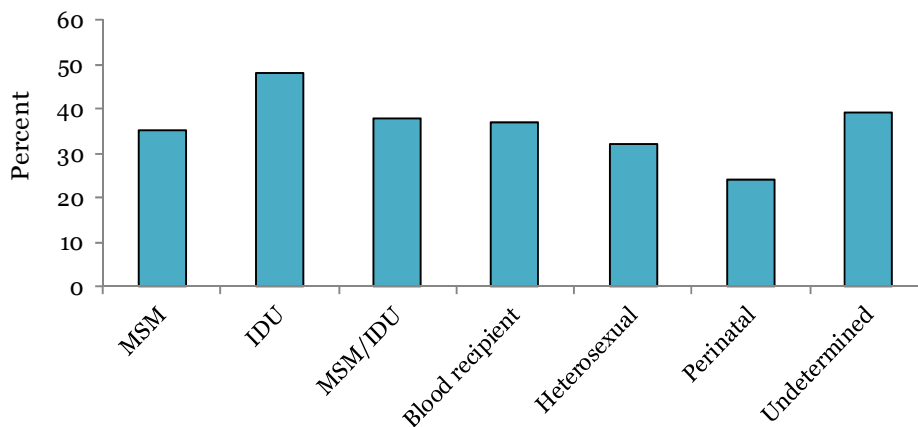
Race/ethnicity and sex:

Hispanics had the highest proportion of unmet need of any racial/ethnic group (50 percent), followed by American Indians/Alaska Native (46 percent). Overall, males and females had equivalent levels of unmet

Figure 57: Persons living with HIV in Michigan with unmet need, by race/sex, November 2011
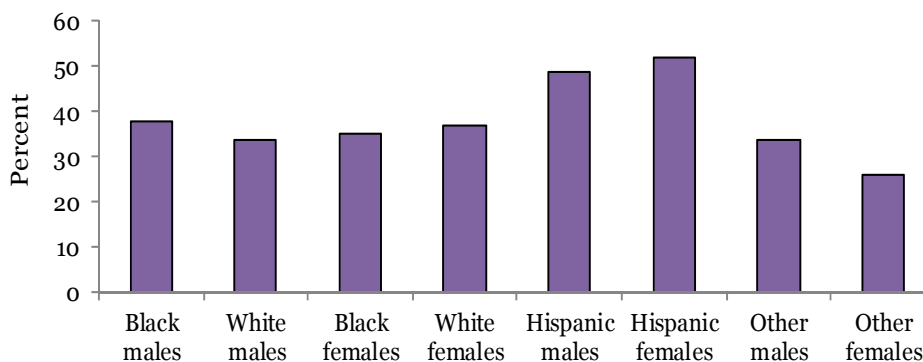
Unmet Need and Time to Care

need (36 percent). Examining race/sex breakdowns, however, reveals the disproportionate levels of unmet need among different groups (figure 57). The highest proportion of unmet need during this period was among Hispanics of both sexes, with 52 percent of HIV-positive Hispanic females and 49 percent of Hispanic males not having received care during FY 2011. The lowest proportion of unmet need was among females of multi-, other, or unknown race/ethnicity (26 percent).

Current age:

The highest proportion of unmet need was among persons who were 65 years of age and older as of November 2011, while the lowest proportion was among persons who were 0-12 years (figure 58). Children may be eligible to receive care through their parents' insurance or may qualify for government-funded health care, such as Medicaid, reducing the likelihood of unmet need (data not shown in tables).

**Figure 58: Persons living with HIV in Michigan with unmet need,
by current age, November 2011**

Current age (years)
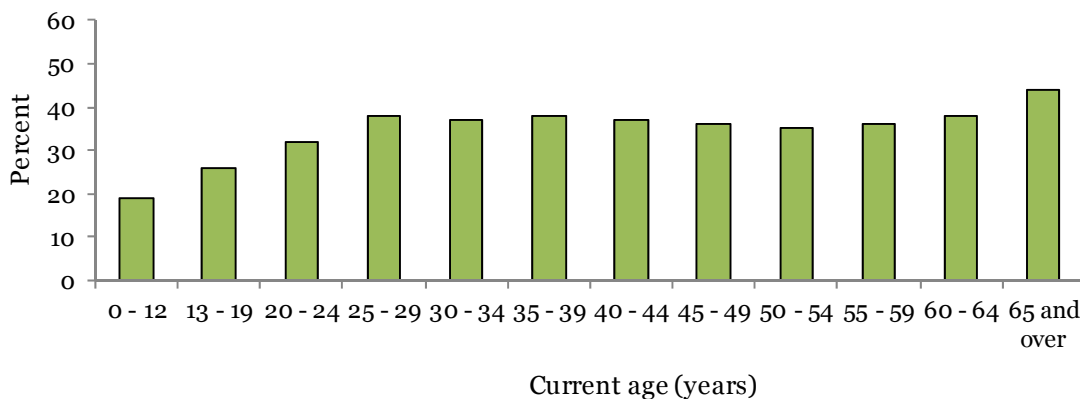
Age at diagnosis:

Persons who were diagnosed between the ages of 20 and 24 years had the highest proportion of unmet need (45 percent), with 25-29 year olds having the second highest proportion at 42 percent. Persons who were diagnosed when they were 0-12 years had the lowest proportion of unmet need (24 percent) (table 15, page 109).

Geographic distribution:

In Michigan, 63 percent of HIV-positive persons reside in the Detroit Metro Area (DMA), 34 percent reside in Out-State Michigan, and the remaining three percent are in prison or have an unknown residence (table 8, page 101). The level of unmet need in the DMA was 35 percent, which is comparable to the unmet need in Out-State Michigan (38 percent). When broken down by county, Berrien had the highest proportion of unmet need at 46 percent, followed by Genesee County at 43 percent. Washtenaw had the lowest proportion (33 percent) (table 15).

2012 Profile of HIV in Michigan (Statewide)

Clinical Outcomes of Persons in Care

Entry into care:

Among HIV-positive persons in care and interviewed for the medical monitoring project (MMP), five percent could not recall the year they received an HIV diagnosis. Seventy-four percent received an HIV diagnosis over five years prior to the interview date while 21 percent received their diagnosis within five years of the interview. Among persons who received their HIV diagnosis within five years of the interview, 82 percent entered HIV care within three months following diagnosis, nine percent entered HIV care between three and twelve months following diagnosis, and nine percent could not recall when they entered HIV care (data not shown in tables).

CD4 and viral load tests:

The Department of Health and Human Services recommends that CD4 count and viral load tests for HIV-positive persons be conducted every 3-4 months. In the 12 months before the Medical Monitoring Project (MMP) interview, five percent of persons did not have a CD4 count test documented in their medical record, 14 percent did not have a documented CD4 percentage test, and nine percent did not have a documented viral load test.

Of the 141 persons who had a CD4 count test documented during the surveillance period, 17 percent had values below 200 cells/mm^3 (a criterion for stage 3 HIV infection (AIDS) diagnosis) (figure 59). Twenty-three percent of participants had CD4 counts in the range of 200-350. The majority (33 percent) had CD4 counts above 500, indicating little immunosuppression.

Figure 59: Lowest CD4 count in medical records of HIV-positive persons in care (MMP, 2009) (n=141)*
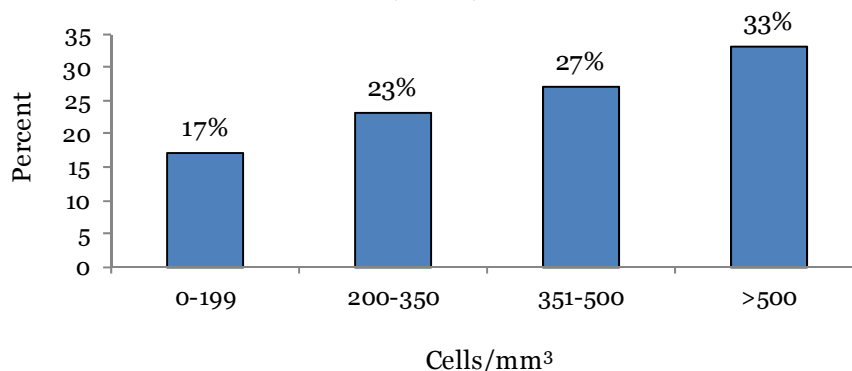
*Excludes persons with no documentation of a CD4 count value during the surveillance period (n=8).
†Not all persons with a CD4 count documented had a CD4 percent, but all persons with a CD4 percent had a CD4 count (due to differences in laboratory testing). For this reason, only CD4 counts are shown.

Of the 136 persons with a viral load test result during the surveillance period, 48 percent had viral load results below the level of detection, indicating adequate HIV suppression (figure 60). Twenty-three percent had values that were detectable but less than 5,000 copies/ml, and 29 percent had one or more viral load test values of >=5,000 copies/ml (indicating inadequately suppressed and rapidly progressing HIV infection). Seventy-five percent of those persons (n=30) had documentation of ARV prescription(s) prior to the viral load test value of >=5,000. Of the 10 remaining persons, nine had no documentation of ARV prescriptions at any time (during the medical history period or the surveillance period), and one person had documentation of receiving an ARV prescription during the visit with the viral load value of >=5,000.

Clinical Outcomes of Persons in Care

Data from Medical Monitoring Project (MMP)

Figure 60: Highest viral load value noted in medical records of HIV-positive persons in care (MMP, 2009) (n=136)*
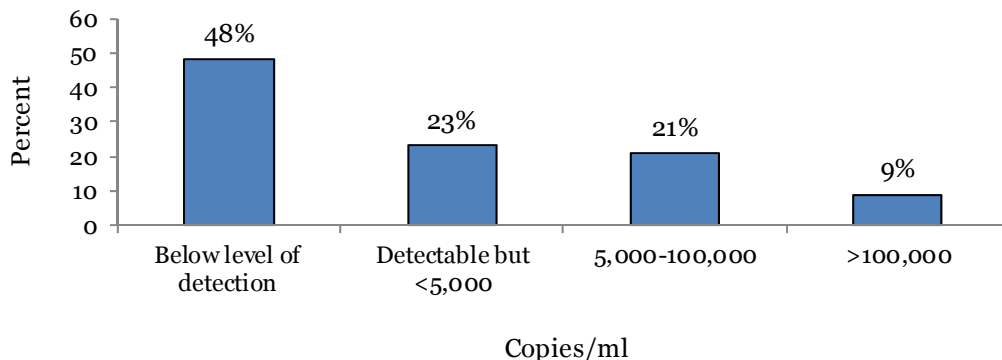
*Excludes persons with no documentation of a viral load test during the surveillance period (n=13); summarizes the highest viral load result for outpatient and inpatient visits during the surveillance period.

ART use:

About 92 percent of persons had documentation of a prescription for antiretroviral (ART) medication, while nine percent had no documentation of a ART prescription. The main reason why persons were not currently on ART was that the doctor advised a delay or discontinuation of treatment. Figure 61 shows ART use by demographic characteristics. A slightly larger proportion of white persons reported current ART use during the interview than did black persons. Numbers for Hispanics and persons of other race are small and should therefore be interpreted with caution. A roughly equivalent proportion of males and females reported current ART use.

Figure 61: Current ART use by sex and race/ethnicity among HIV-positive persons in care (MMP, 2009) (N=164)
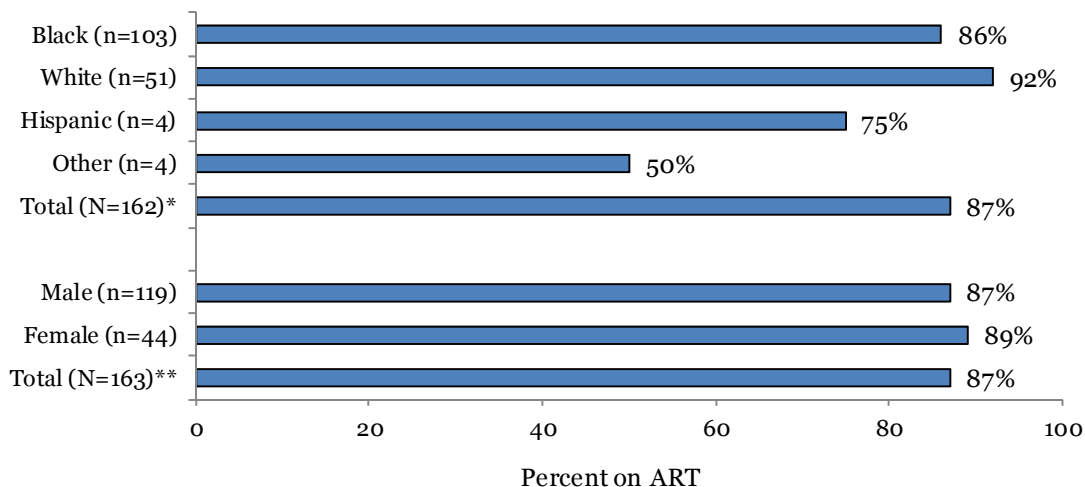
*Two participants refused to answer and were excluded.
**One participant identified as transgender and so was excluded from this analysis.

2012 Profile of HIV in Michigan (Statewide)

Clinical Outcomes of Persons in Care

Among persons who were on ART, 65 percent achieved consistent viral suppression (viral load tests <=200 copies/ml); 35 percent of persons had one or more viral loads of >200 copies/ml.

One third of persons interviewed for MMP reported never skipping any ART medicine (34 percent); however, 51 percent reported skipping their ART medication within the past 3 months (figure 62).

Figure 62: Last time missed any ART medication among HIV-positive persons in care (MMP, 2009) (n=143)

Category	Percent
Don't Know	2%
Never Skip	34%
>3 months ago	13%
1-3 months ago	8%
3-4 weeks ago	8%
1-2 weeks ago	18%
In past week	17%
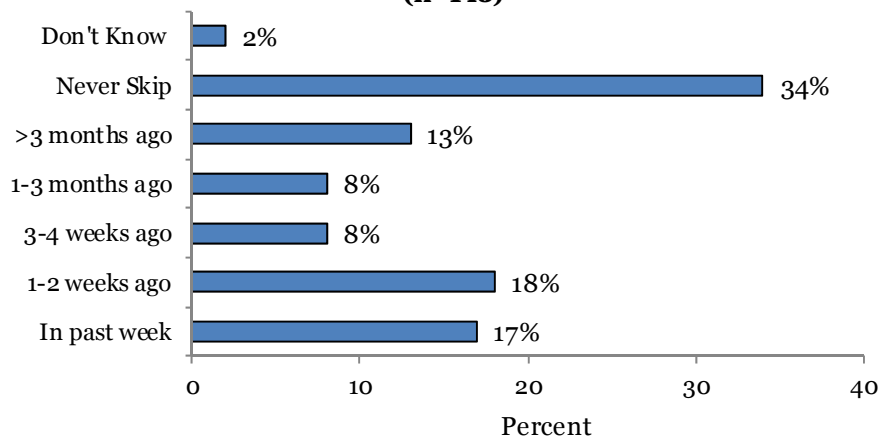
Figure 63: How frequently troubled by side effects of ART medications in the past 30 days among HIV-positive persons in care (MMP, 2009) (n=143)

Category	Percent
Don't Know	2%
Always	3%
Most of the Time	10%
About Half the Time	4%
Rarely	26%
Never	55%
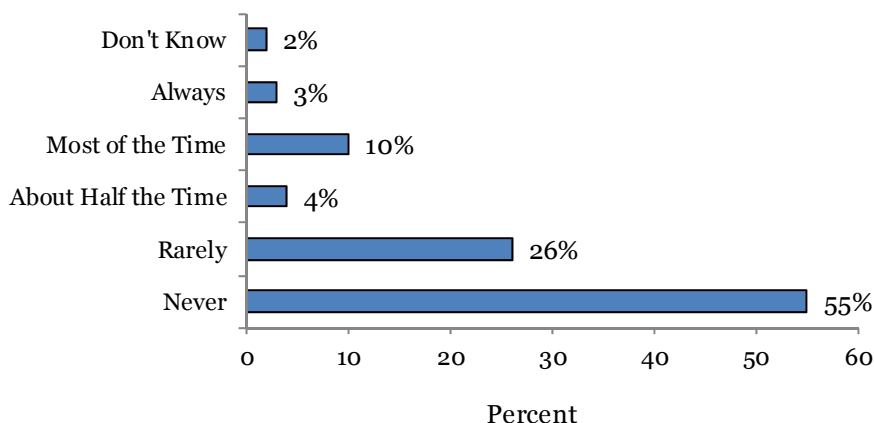
Most persons (55 percent) interviewed for MMP reported never being troubled by the side effects of ART medication during the past 30 days (figure 63). Twenty-six percent of those interviewed reported rarely being troubled by side effects, and 10 percent said they were troubled by side effects of ART "most of the time".

Opportunistic illnesses (OIs):

In order to be classified as stage 3 HIV infection (AIDS), persons must either meet immunologic criteria (determined by CD4 test values) or be diagnosed with one of the AIDS-defining opportunistic illnesses (OIs). About 28 percent (n=42) of persons whose medical records were reviewed for MMP had documentation of at least one OI, and 31 percent were diagnosed with two or more. Figure 64 shows the distribution of OIs for persons with at least one OI documented in their medical records. The most common OI was pneumocystis jiroveci pneumonia, or PCP, at 48 percent, followed by esophageal candidiasis at 36 percent. Cytomegalovirus (CMV) disease, Kaposi's sarcoma, and HIV encephalopathy were the least commonly documented.

Clinical Outcomes of Persons in Care

Figure 64: Opportunistic illnesses noted in medical records of HIV-positive persons in care (MMP, 2009) (n=42)*

Illness	Percent
Cytomegalovirus disease† (n=2)	5%
Kaposi's sarcoma (n=2)	5%
HIV encephalopathy (n=2)	5%
Pneumonia, recurrent in 12 month period (n=5)	12%
Wasting syndrome due to HIV (n=6)	14%
Candidiasis, esophageal (n=15)	36%
Pneumocystis jiroveci pneumonia (PCP) (n=20)	48%
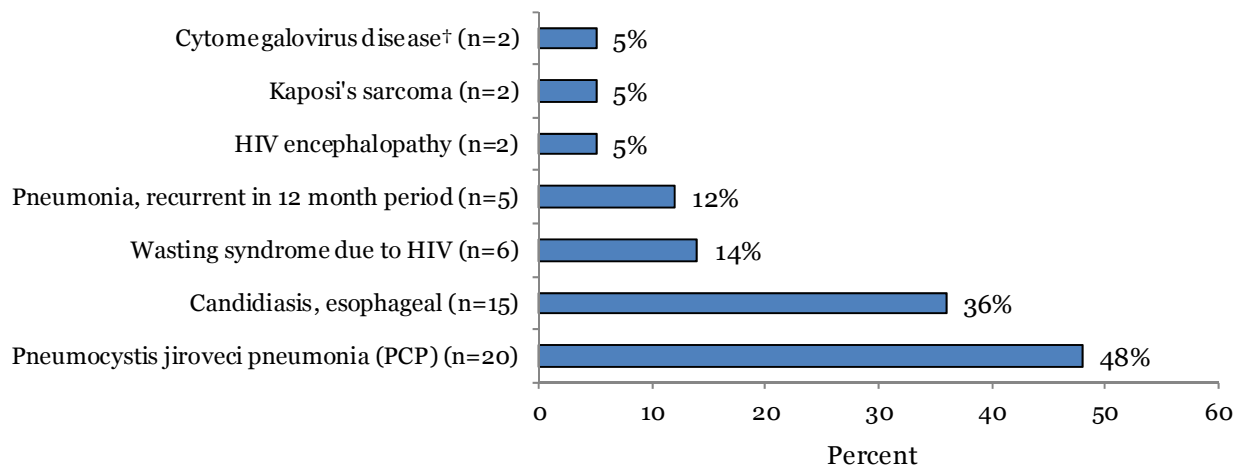
Percent

*Categories are not mutually exclusive.
†Other than in liver, spleen, or node.

Psychiatric illnesses:

About 55 percent of persons whose medical records were reviewed for MMP had a documented diagnosis of at least one of the four psychiatric disorders abstracted from medical records (anxiety disorder, bipolar disorder, depression, and psychosis) (figure 65). Forty-six percent of persons (n=68) had documentation of a diagnosis of depression (major depression, depressive disorder); this is compared with a 16.5 percent lifetime prevalence of major depression in the U.S. adult general population (Kessler et al. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). Archives of General Psychiatry 62(6):593-602.).

Figure 65: Psychiatric disorders* noted in medical records of HIV-positive persons in care (MMP, 2009) (N=149)

Disorder	Percent
None	45%
Three or More Disorders	4%
Bipolar Disorder Only	1%
Psychosis Only	2%
Anxiety Disorder Only	6%
Depression and Bipolar	1%
Depression and Psychosis	5%
Depression and Anxiety	7%
Depression Only	28%

Percent
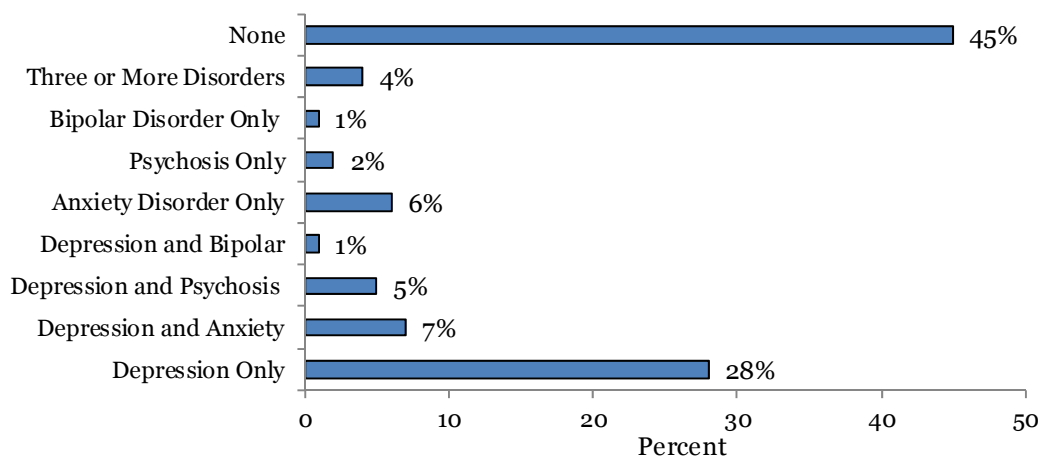
*Any documentation of physician-diagnosed anxiety disorder, depression, bipolar disorder, or psychosis (including schizophrenia) during the medical history period and/or the surveillance period that required treatment (e.g. counseling, medications, hospitalization).

2012 Profile of HIV in Michigan (Statewide)

Monitored Viral Load

The National HIV/AIDS Strategy (NHAS) and the Centers for Disease Control and Prevention (CDC) have recently developed a "High Impact HIV Prevention" approach (http://www.cdc.gov/hiv/topics/funding/PS12-1201/resources/factsheet/pdf/foa-partner.pdf), which emphasizes the need to target resources to maximize the impact of HIV prevention activities. Measuring viral load has been highlighted as a useful tool in this effort. A viral load test is a measure of the amount of HIV in a person's body, and it is a proxy measure for disease progression and infectiousness. Persons with lower viral loads are less likely to transmit HIV to uninfected partners.

Monitored viral load is the viral load of persons with HIV in care who have had viral load tests. It is impossible to know the viral load values of persons in care but without a viral load test (in-care viral load), persons diagnosed but not in care (community viral load), and undiagnosed persons (population viral load); therefore, monitored viral load is used to identify and target persons or groups with high viral loads. The following categorical measures are used to assess the quality of HIV care or the possible transmission potential for particular groups in care:

- *Suppressed*: Viral load is ≤ 200 copies/mL (> 200 copies/mL is considered not suppressed);

- *Undetectable*: Viral load is ≤ 50 copies/mL (> 50 copies/mL is considered detectable);

- *High VL*: Viral load is > 100,000 copies/mL.

Table 16 on page 110 shows the proportion of persons living with HIV infection in Michigan as of December 31, 2009 with suppressed viral loads by select characteristics. Among those with at least one viral load test between January 1, 2009 and December 31, 2009 (roughly half of all persons living with HIV), 69 percent of males and 63 percent of females had at least one suppressed viral load value. When broken down by age, persons who were 13-24 years old on December 31, 2008 had the lowest proportion of suppressed viral loads (37 percent). Viral load suppression increases with age, with 80 percent of persons 65 years and older having suppressed viral loads. This has implications for prevention, as the majority of new infections are among persons 30-39 years of age at diagnosis, and persons with unsuppressed viral loads are more infectious. There are also racial/ethnic disparities in viral load suppression. A smaller proportion of black persons who had a viral load test in 2009 had suppressed viral load values (61 percent) compared to 77 percent of white persons with at least one test. Seventy-four percent of HIV-positive Hispanics/Latinos had viral load suppression. The proportion of persons with suppressed viral loads is relatively constant across risk groups (62-69 percent), except that female injection drug users (IDU) have the lowest proportion of viral load suppression at 57 percent. Men who have sex with men (MSM), including MSM/IDU, have the highest proportion of viral load suppression at 69 percent.

It is important to note that these percentages are among persons with at least one viral load test in 2009, which only represents about half of persons living with HIV. In order to have a more accurate picture of monitored viral load, more persons living with HIV and in care need to have viral load testing at least annually.

The NHAS has three goals specifically related to viral load to reduce health disparities: 1) Increase the proportion of HIV diagnosed gay and bisexual men with undetectable viral load by 20 percent; 2) Increase the proportion of HIV diagnosed blacks with undetectable viral load by 20 percent; and 3) Increase the proportion of HIV diagnosed Latinos with undetectable viral load by 20 percent. Analyses of monitored viral load will continue and help Michigan to track the progress of these goals.

2012 Profile of HIV in Michigan (Statewide)

HIV and Other Infectious Diseases

Recommendations for screening for other infectious diseases among HIV-positive persons vary based on patient characteristics. Test results presented here are broadly defined as having at least one laboratory test performed for the particular infectious disease. Figure 66 shows other infectious diseases MMP participants were screened for and the proportion who tested positive. The most common co-infection was Hepatitis B at 14 percent of those screened (18 positive tests of 132 screened). The next most common co-infection was mycobacterium tuberculosis (10 percent of those screened).

Figure 66: Diagnoses of other infectious diseases among HIV-positive persons in care with documentation of screening in medical record (MMP, 2009)*
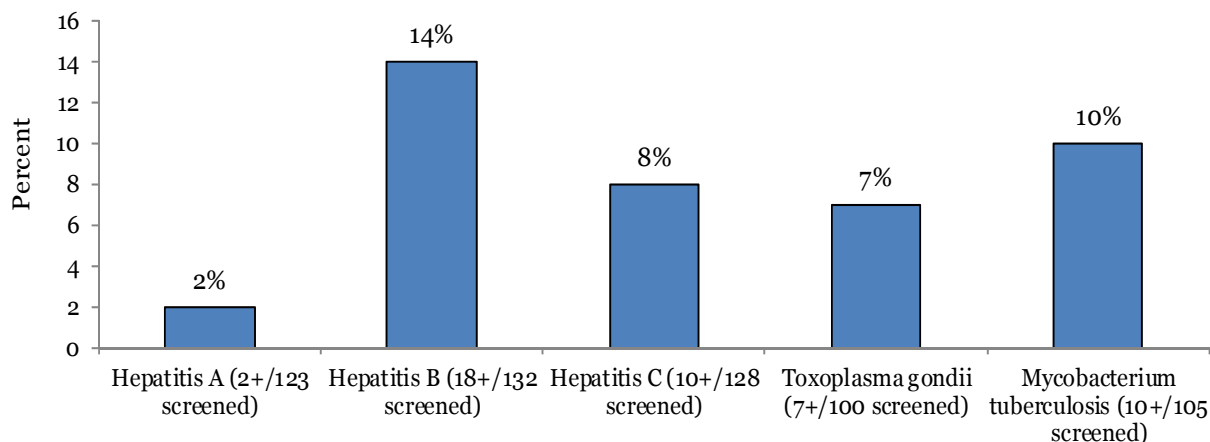
*Screening was defined as having documentation of at least one type of laboratory test for the specified infection. Hepatitis A infection was defined as a positive anti-HAV IgM and a positive anti-HAV total (n=2); hepatitis B infection was defined as positive for HBsAg and/or positive for anti-HBc IgM, and/or a positive HBV DNA result (n=18); hepatitis C infection was defined as having a positive HCV RNA quantitative (PCR) and/or a positive HCV RNA qualitative (n=8), or if the person had specific documentation of hepatitis C infection from physician notes (n=2).

2012 Profile of HIV in Michigan (Statewide)

Tuberculosis

Overview:

The incidence rate for tuberculosis (TB) in 2011 was 1.7 cases per 100,000. While Michigan has a low incidence of TB, the demographic distribution of TB cases warrant some attention. Sixty-three percent of the 170 reported TB cases reside in the Detroit Metro Area (DMA). Of these, thirty percent (53 cases) are residents of the City of Detroit. The Detroit Department of Health and Wellness Promotion (DDHWP) manages and reports all TB cases that are residents of Detroit and its surrounding areas. The remaining cases in the DMA are residents of the following counties: Wayne County (excluding Detroit) (14 percent, 24 cases), Oakland County (13 percent, 22 cases), and Macomb County (5 percent, 8 cases).

Figure 67: Number of TB cases in US-born vs. foreign-born persons in MI, 1993-2011
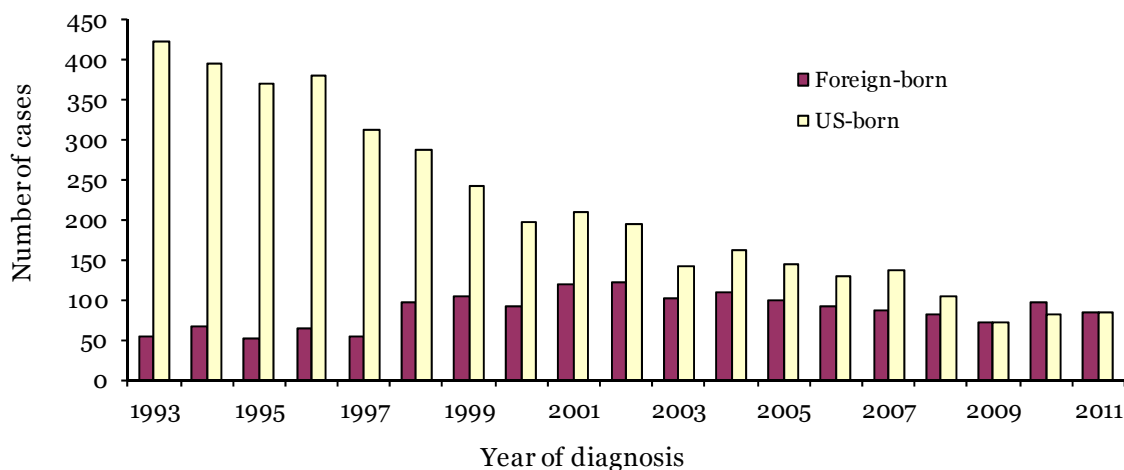
Since 1993, an increasingly larger proportion of TB cases are found among persons born outside the US. In 2011, 51 percent of Michigan cases were born in the US and 49 percent were foreign-born (figure 67). It is expected that the number of foreign-born cases will continue to increase.

Racial disparities:

TB disproportionately impacts certain racial/ethnic groups in Michigan (figure 68). The rate of TB disease among white persons is 0.6 cases per 100,000 population. The rate among black persons is higher (3.4 per 100,000), and the highest rate is

Figure 68: Racial distribution of TB cases living in Michigan compared to the general MI population, 2011
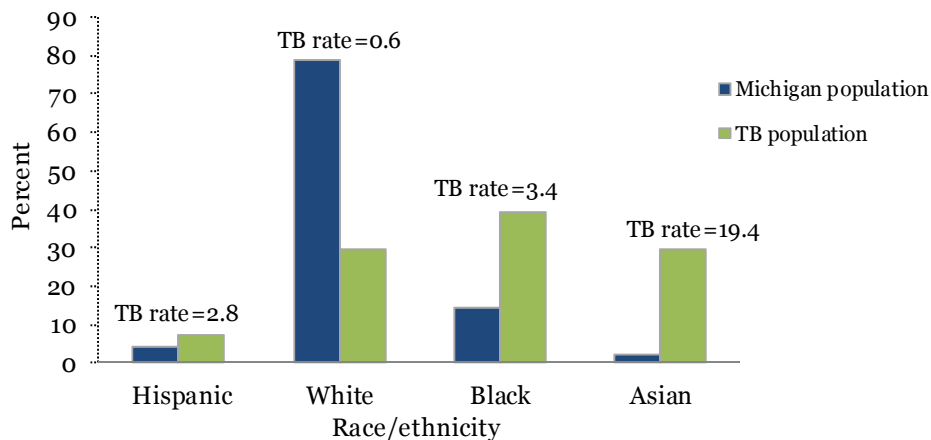
TB/HIV Co-infection

among Asians/Native Hawaiians or Other Pacific Islanders (19.4 per 100,000). This group comprises 30 percent of TB cases but only two percent of the general population. While black persons make up only 14 percent of the general population, they represent 39 percent of the TB population. These data demonstrate a need for targeted intervention and education among disproportionately affected groups. Data on other racial/ethnic minorities is not shown due to small numbers.

Overview:

As the HIV epidemic continues to grow, there are indications of a correlation between those infected with HIV and TB, although the number of TB cases have been declining in Michigan since the early 1990s. As of January 2012, there were 168 persons known to be living in Michigan and co-infected with HIV and TB (data for this section not shown in tables).

Race/ethnicity and sex:

Seventy-four percent of co-infected cases are male and 26 percent are female. The majority are black (67 percent), 15 percent are white, 12 percent are Hispanic, four percent are Asian/Native Hawaiian or Other Pacific Islander, and the remaining two percent are persons of other or unknown race.

Age at HIV diagnosis:

The largest proportion of co-infected cases were in their thirties at HIV diagnosis (41 percent), followed by those in their forties (20 percent). Teens (13-19 years at HIV diagnosis) make up two percent and young adults (20-24 years at HIV diagnosis) make up eight percent of co-infected cases.

Birth country:

Twenty-nine percent of co-infected persons were born outside of the United States. Country of birth is missing or unknown for 17 percent of cases, and the remaining 54 percent were born in the US.

Other information:

Of the 168 HIV cases currently living in Michigan who were co-infected with TB, 131 (78 percent) had pulmonary tuberculosis and 37 (22 percent) had extra-pulmonary tuberculosis (outside of the lung).

As of January 2012, a total of 661 co-infected cases have been definitively diagnosed with HIV and TB, of whom 493 (75 percent) have died. Tuberculosis is one of the opportunistic illnesses (OIs) that defines a person as stage 3 HIV infection, so all persons with a TB diagnosis are stage 3 cases.

Conclusions:

Data on HIV/TB co-infection are gleaned by matching the HIV surveillance data to the TB surveillance data, but these data could still be underreported. The HIV status of 18 percent of active Michigan TB cases tested in 2011 is unknown. Of these, 19 percent refused an HIV test, 71 percent were never offered the test, and 10 percent were reported with an unknown HIV status. This demonstrates a need for education, not only for patients regarding their risk for HIV infection but also for health care practitioners on the need to test for HIV in this population.

2012 Profile of HIV in Michigan (Statewide)

Sexually Transmitted Diseases

Data from Michigan Disease Surveillance System (MDSS)

Overview:

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 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 may help to reduce the rate of new HIV infections.

Gonorrhea and chlamydia:

During 2011, there were over 50,000 cases of chlamydia and over 13,000 cases of gonorrhea reported in Michigan (figure 69). For both diseases, the highest rates of infection were among persons ages 20-24. This age group comprises 6.7 percent of the Michigan population but accounted for 34 percent of gonorrhea and 38 percent of chlamydia cases. For chlamydia, the rate among 15-19 year olds is comparable to the 20-24 year old rate. The rates of chlamydia and gonorrhea among black persons were much higher than among white persons (461 vs. 19 cases per 100,000 population for gonorrhea and 1,294 vs. 144 cases per 100,000 for chlamydia). Even though 38 percent of gonorrhea cases and 39 percent of chlamydia cases were missing race information, the rates among black persons remain higher even if all unknown cases were among white persons. Forty-one percent of gonorrhea cases were male; however, approximately 73 percent of reported chlamydia cases were female (table 17, page 111). This is because chlamydia screening specifically targets females (and if more males were screened, we would expect the number of cases detected to increase proportionally).

Figure 69: Michigan gonorrhea and chlamydia cases, 1992-2011
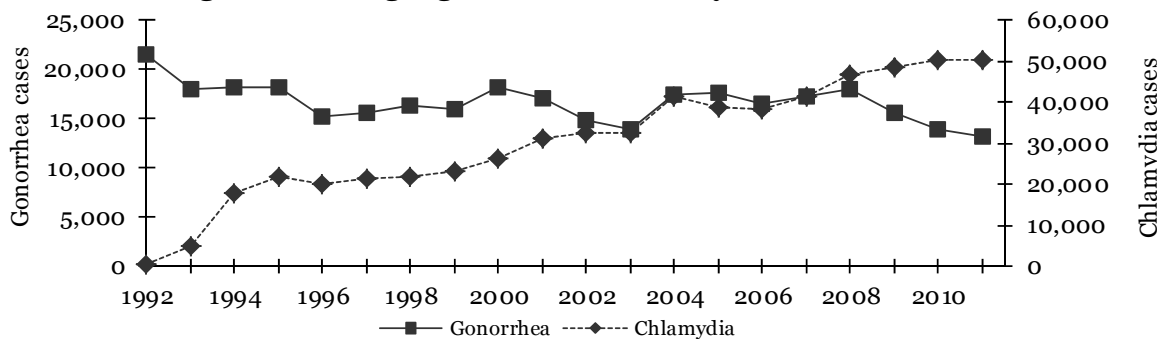
Syphilis:

Figure 70 shows that primary and secondary syphilis were diagnosed less frequently than gonorrhea and chlamydia (273 primary and secondary syphilis cases) in 2011. Syphilis in Michigan and nationally has followed a cyclical trend, increasing every ten years. Major outbreaks occurred in 1991 then decreased until 1997. Reported syphilis cases increased each year in Michigan from 1997 to 2002, peaking at 486 cases. There was a statistically significant downward trend in reported cases during 2002 and 2003, resulting in a nearly 50 percent decrease in reported cases compared to 2002. However, syphilis cases have increased since that time due to general increases in cases among men who have sex with men (MSM), many of whom are HIV-positive, and because of an outbreak in Genesee County in 2008. Approximately 28 percent of cases were reported in those younger than 25 years, representing a trend towards younger syphilis cases. However, an equal percentage of cases (29 percent) are still over the age of 40, representing an older at-risk population as compared to the at-risk population for gonorrhea or chlamydia. Syphilis cases reported in 2011 were 62 percent black and 90 percent male (table 17, page 111).

2012 Profile of HIV in Michigan (Statewide)

Sexually Transmitted Diseases

Figure 70: Michigan primary and secondary syphilis cases by region, 1986-2011
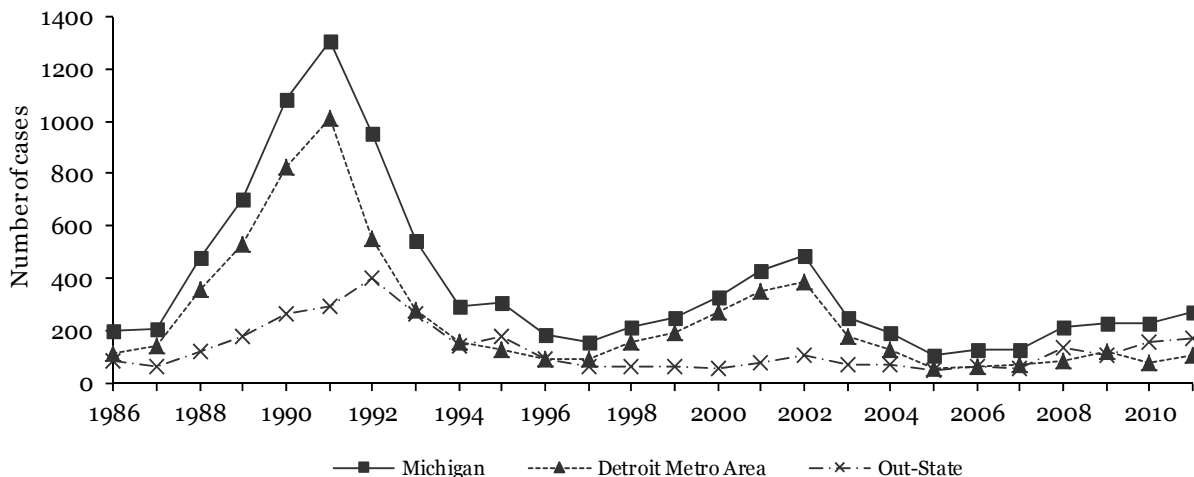
Sexual orientation:

Nationwide, there have been increases in STD cases among self-identified MSM. Michigan does not collect data on sexual orientation for all gonorrhea or chlamydia cases. Sexual orientation data are collected for syphilis cases. Of primary and secondary syphilis cases in 2011, approximately 73 percent of male syphilis cases in Detroit and 81 percent of male syphilis cases in the rest of the state were among MSM. Seventy-one percent of Detroit MSM cases were HIV-positive, as were 52 percent of cases outside of Detroit. Between 2001 and 2004, the syphilis epidemic in Detroit was largely heterosexual with the male to female ratio being closer to 1:1, while MSM transmission was prevalent in most other areas. In 2005, the male to female ratio was 3.1:1 in the Detroit area and 6.3:1 in Out-State Michigan. In 2011, the male to female ratio was over 8:1 in Detroit and over 10:1 in Out-State Michigan, showing an increase in the number of male cases compared to female cases. This is a trend that is mirrored nationally and is the focus of prevention efforts around the country (data not shown in tables).

Geographic distribution:

There are several areas in Michigan that consistently report high rates of STDs. For gonorrhea, the highest rates are in the City of Detroit (914), Genesee County (206), Berrien County (143), and Kalamazoo County (140). For chlamydia, the highest rates are in the City of Detroit (3,000), Saginaw County (778), Genesee County (750), and Muskegon County (708). For primary and secondary syphilis, the highest rates are in the City of Detroit (14), Kalamazoo County (6), Delta/Menominee counties (5), and Washtenaw County (3) (table 18, page 112).

HIV/gonorrhea:

In 2011, 259 of the 13,070 gonorrhea cases were co-infected with HIV (2 percent). More than half of these cases resided in the City of Detroit (60 percent); however, cases were also found in Oakland (15 percent) and Wayne (excluding Detroit) counties (6 percent). Sixty percent of the cases were black and the majority were male (86 percent). The majority of male cases were MSM (77 percent) and diagnosed with HIV prior to 2011 (82 percent); 18 percent were diagnosed with gonorrhea and HIV in the same year. Of the cases diagnosed with both in 2011, 76 percent resided in either the City of Detroit or Oakland County. The age distribution of all gonorrhea cases compared to co-infected cases is shown in figure 71 (data on co-infections not shown in tables).

STD/HIV Co-infection

Data from Michigan Disease Surveillance System (MDSS) & enhanced HIV/AIDS Reporting System (eHARS)

Figure 71: Proportion of gonorrhea (GC) cases and HIV/GC co-infected cases by age at GC diagnosis, 2011
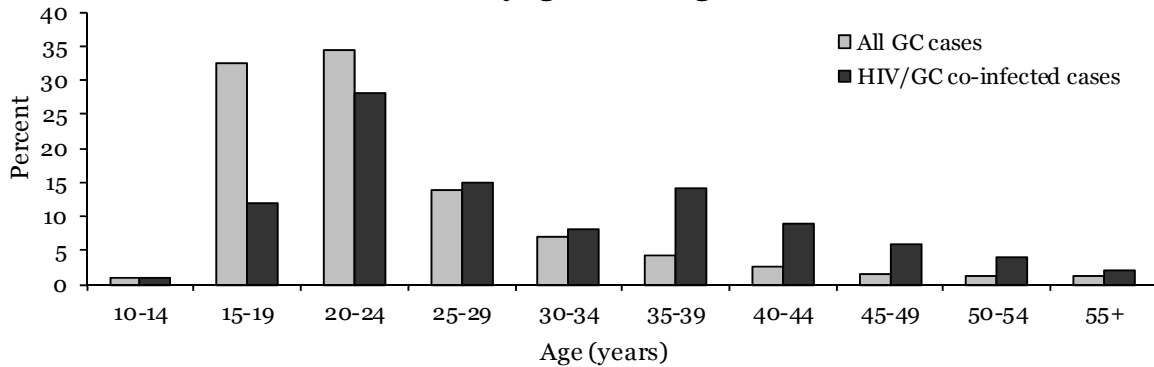
HIV/syphilis:

In 2011, 38 percent of all syphilis cases (including non-infectious cases) were co-infected with HIV, and 47 percent of male syphilis cases were co-infected (compared to 30 percent of all cases and 40 percent of male cases in 2009). Of the co-infected cases in 2011, 48 percent had primary and secondary syphilis. Seventy-two percent were residents of the DMA. Seventy percent were black, 28 percent were white, and two percent were Hispanic. Thirty-five percent were between 20-29 years old. The distribution of co-infected cases by selected county is show in figure 72. Syphilis infections increase the likelihood of acquiring and spreading HIV infection two to five fold.

Figure 72: Proportion of 2011 syphilis cases that are HIV-positive by local health department jurisdiction
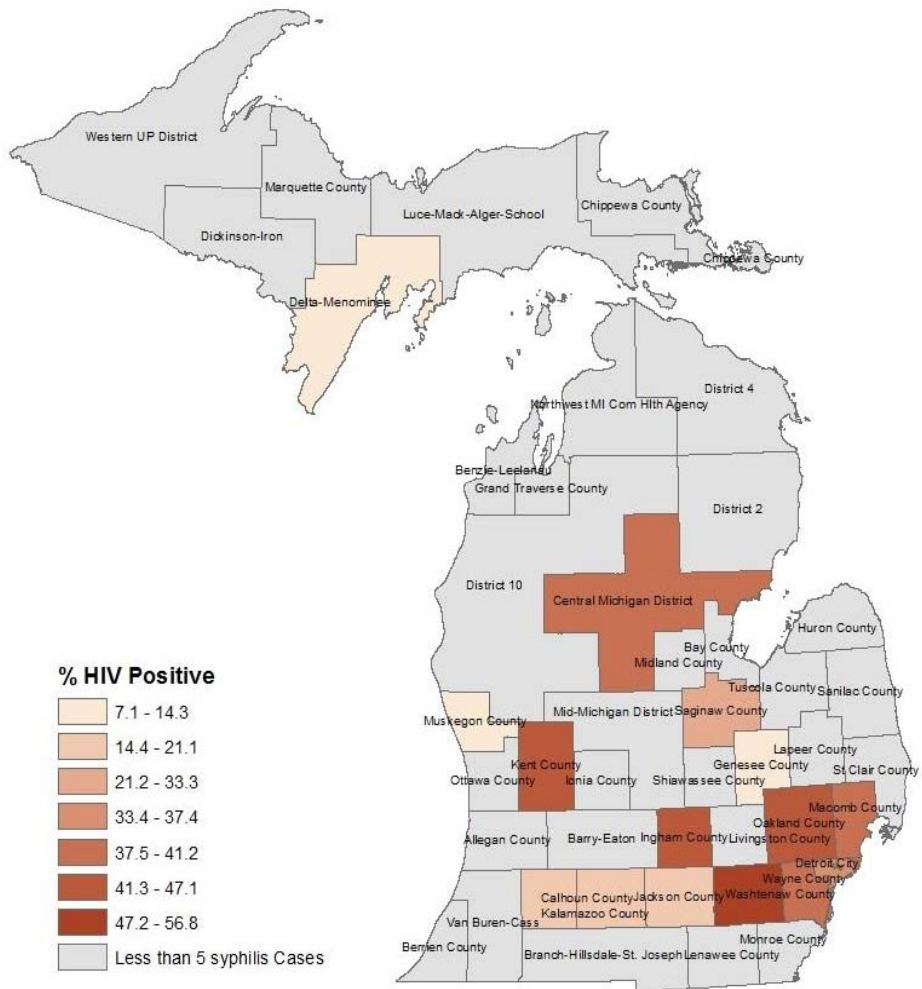
2012 Profile of HIV in Michigan (Statewide)

Hepatitis C

Overview:

Hepatitis C is a disease of the liver caused by infection with the hepatitis C virus (HCV), in which the acute (or newly acquired) infection can progress to a chronic, long-term infection. Hepatitis C is the most common bloodborne infection in the United States and is the leading indicator for liver transplantation.

Fifteen to 25 percent of those acutely infected will resolve the infection on their own. However, the majority of infected people (75 to 85 percent) will develop chronic infection. Disease progression in those chronically infected is variable but can advance from fibrosis to cirrhosis to end-stage liver disease and death. An estimated 60 to 70 percent of hepatitis C-infected individuals are unaware of their infection.

HCV is transmitted primarily through exposure to infected blood through non-intact skin, which can result from sharing infected equipment during injection-drug use, needle-stick injuries, receipt of blood or blood products before the availability of a standard screening test in 1992,and inadequate infection control in health care settings. Much less often, HCV transmission occurs as a result of sexual contact with an HCV-infected partner and among infants born to HCV-infected mothers. No vaccine for hepatitis C exists, but major advancements have recently been made in the treatment of HCV, leading to a nationwide push to increase HCV testing in those individuals born between 1945 and 1965 and others at risk for infection.

Acute hepatitis C:

In 2011, 31 cases of acute hepatitis C were reported statewide in Michigan (table 19, page 113). Fifty-two percent of acute cases were among males, while 48 percent were among females. Ethnicity is not consistently collected for hepatitis C cases; therefore, we cannot provide a measure of infection among Hispanic or non-Hispanic persons. Additionally, the race/ethnicity of the client was unknown in 19 percent of reported acute cases. Due to small numbers, rates are unavailable for cases of acute hepatitis C in 2011.

Chronic hepatitis C:

In 2011, 6,991 cases of chronic hepatitis C were reported statewide in Michigan (table 19), a rate of 71 cases of chronic hepatitis C per 100,000 Michigan residents. Sixty-three percent of chronic cases were among males while 36 percent were among females. The rate of chronic hepatitis C in Michigan was the highest among multiracial persons (99 per 100,000) and black persons (98 per 100,000), compared to 35 per 100,000 in white persons (figure 73). However, these rates must be viewed with caution as the race/ethnicity of the client was unknown in 36 percent of reported chronic cases.
The highest rate of chronic hepatitis C was found in the 55-64 year age group (figure 74). The lowest rates were among persons 15-19 years and those 65 years and over.

Hepatitis C

Figure 73: Rates of chronic hepatitis C among Michigan residents by race/ethnicity, 2011
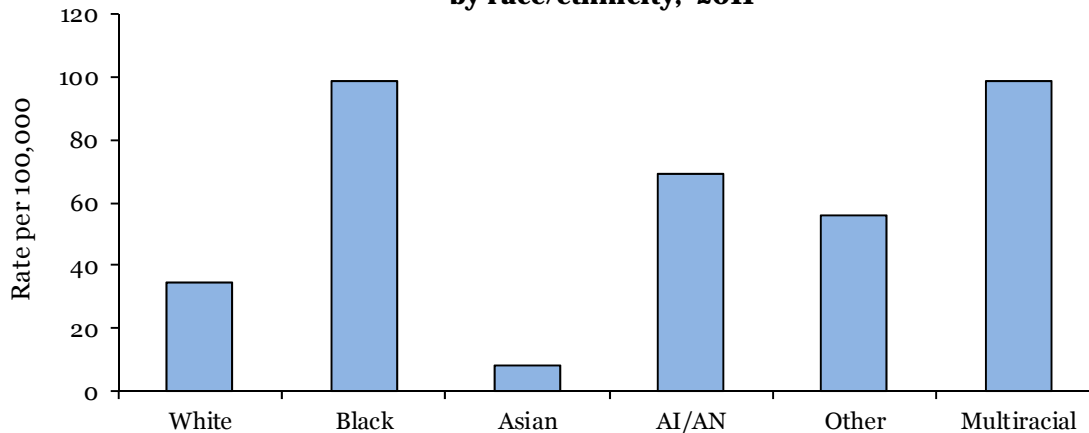
Figure 74: Rate of chronic hepatitis C among Michigan residents by age, 2011
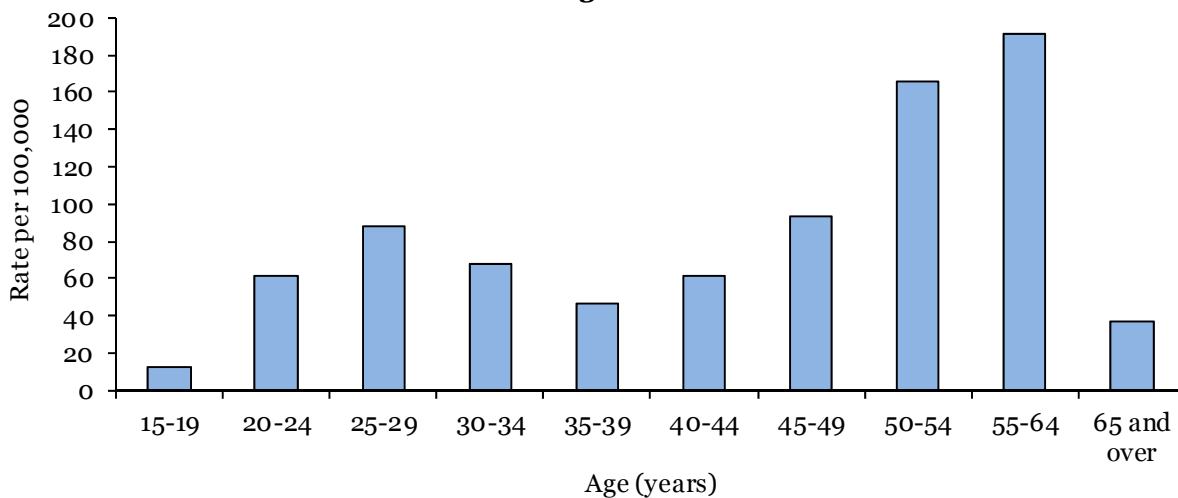
Please note that chronic hepatitis C data must be interpreted with caution. These data do not represent the incidence or prevalence of chronic hepatitis C in Michigan; rather, the data represent an aggregate of newly diagnosed cases reported to local health departments by laboratories and healthcare providers. Although these cases were newly diagnosed in 2011, the patient may have been chronically infected with hepatitis C for years but remained undiagnosed until 2011.

Limitations of the data:

Since acute and chronic hepatitis C infections are often asymptomatic and can remain undetected and unreported for years, the official number of reported cases is much lower than the actual number of cases. An estimated 3.2 million persons in the United States have chronic hepatitis C virus infection. Most people do not know they are infected because they do not look or feel sick.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Rural HIV

Overview:

Using the U.S. Census Bureau's definitions, MDCH classified counties as urban or rural. For the purpose of this publication, a county was considered "urban" if any part of a Metropolitan Statistical Area (MSA) was within that county or had high commuter exchange with a county. For example, the city of Kalamazoo is in Kalamazoo County and also has substantial commuting exchange with Battle Creek, which is in Calhoun County. Therefore, the counties of Kalamazoo and Calhoun are both considered "urban". Please see appendix B on page 227 for a more detailed explanation of urban/rural categorization of Michigan counties. Cases residing in urban counties make up 91 percent of all HIV cases currently living in MI, while rural cases constitute nine percent. Conversely, 21 percent of Michigan's population reside in rural counties, indicating urban counties are disproportionately impacted by HIV (data not shown in tables). The HIV prevalence rate in urban counties is 183 cases per 100,000 population, three times the rate in rural areas (66 cases per 100,000) (figure 75).

Figure 75: Prevalence rates of persons living with HIV infection in Michigan in urban vs. rural counties, January 2012

Race/ethnicity:

Figure 76 shows that in Michigan, the highest rates of HIV occur among black persons, regardless of whether they live in urban or rural counties. Despite the fact that the largest proportion of cases in rural counties are white, the rates are highest among black persons. The rate among black persons in rural counties is almost two times higher than the rate among blacks in urban counties (1,111 per 100,000 vs. 625 per 100,000), indicating that rural blacks are more impacted by the epidemic than blacks in urban counties.

Figure 76: Prevalence rates of persons living with HIV in urban vs. rural counties of Michigan by race/ethnicity, 2012
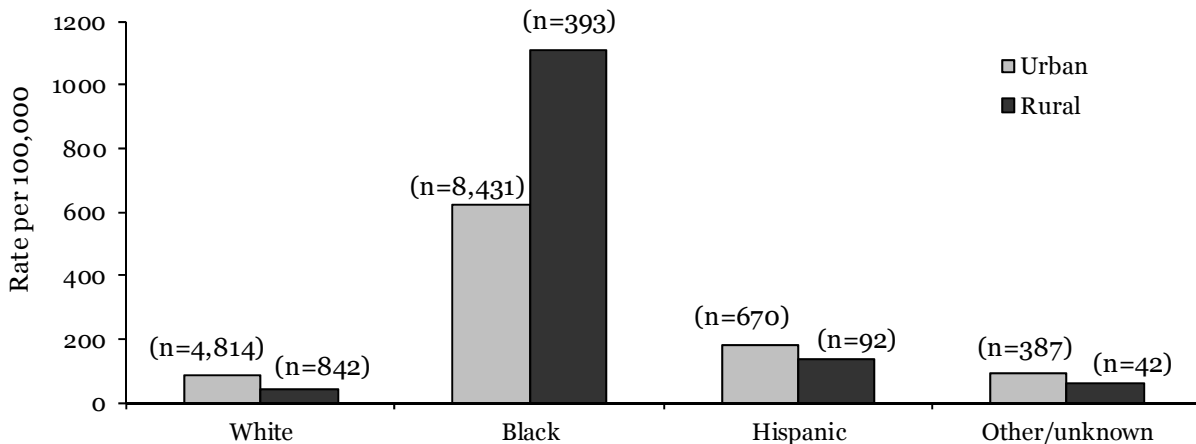
2012 Profile of HIV in Michigan (Statewide)

Special Populations: Rural HIV

Data from enhanced HIV/AIDS Reporting System (eHARS)

Risk:

Figures 77 and 78 show that in Michigan's urban and rural counties, there is little difference with respect to the risk distribution among people living with HIV. However, the proportion of MSM/IDU is almost twice as high in rural counties as in urban counties. The proportion who reported heterosexual contact is lower in rural counties than in urban counties.

Figure 77: Persons living with HIV infection in urban counties of Michigan by risk transmission category, January 2012 (n = 14,302)

- Undetermined 17%
- Perinatal 1%
- Hetero: HCM 14%
- Hetero: HCFR 3%
- Blood recipient 1%
- MSM/IDU 4%
- IDU 10%
- MSM 50%
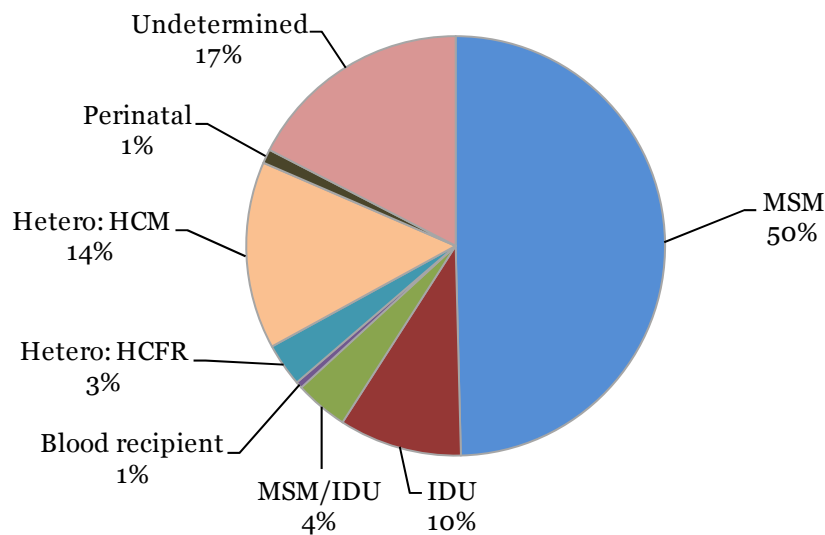
Figure 78: Persons living with HIV infection in rural counties of Michigan by risk transmission category, January 2012 (n = 1,369)

- Undetermined 16%
- Perinatal 2%
- Hetero: HCM 10%
- Hetero: HCFR 5%
- Blood recipient 1%
- MSM/IDU 7%
- IDU 11%
- MSM 48%

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Incarcerated Persons

Overview:

From 1989 to present, a cumulative total of 1,939 prisoners have been confirmed with HIV infection. Some were diagnosed prior to incarceration, many were first diagnosed upon intake to prison, and others were diagnosed while in prison. A total of 793 HIV-positive inmates (41 percent) are known to have died either while in or after release from prison. This section describes the 363 HIV-positive inmates known to be incarcerated at state facilities as of January 2012.

General Michigan prison population:

As of January 1, 2012, there were 42,737 prisoners in Michigan Department of Corrections (MDOC) facilities, 938 (two percent) of whom were 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. Currently, 0.8 percent of all prisoners are HIV-positive; among prisoners under 20 years of age, the proportion is currently lower (0.1 percent). Between 2010 and 2012, the proportion of persons living with HIV in the overall prison population did not change (0.9 percent vs. 0.8 percent, respectively), while the proportion among prisoners less than 20 years old decreased from 3.6 percent to 0.1 percent (data not shown in tables).

Race/ethnicity and sex:

Ninety-three percent of currently incarcerated HIV-positive persons are male. Most (77 percent) HIV-positive prisoners are black, 18 percent are white, two percent are Hispanic, and two percent are of other or unknown race. Of the 341 HIV-positive male prisoners, the majority (78 percent) are black. Among the 22 females currently living with HIV in prison, 55 percent are black and 36 percent are white (table 20, page 114).

Age at HIV diagnosis:

The majority of HIV-positive males currently in prison and living with HIV were diagnosed between the ages of 25 and 39 years (61 percent), consistent with the statewide HIV-positive population. Females had a higher proportion who were diagnosed in their twenties than did males, who were more likely to be diagnosed in their thirties (table 21, page 115).

Risk:

Forty-seven percent of HIV-positive black male prisoners reported a risk of male-male sex (MSM), including those who reported male-male sex and injected drugs (MSM/IDU) (figure 79). The proportion who were MSM/IDU was 12 percent, which is over twice as high as the proportion who are MSM/IDU in the statewide HIV-positive black male population (5 percent). Twenty-seven percent had injected drugs (including MSM/IDU), which is also higher than their counterparts in the statewide HIV-positive black male population (15 percent) (table 11, page 105). Eleven percent reported heterosexual contact with partners with known risks for HIV (HCFR). Twenty-six percent had undetermined risk.

Figure 80 shows that among HIV-positive white male prisoners, 54 percent reported male-male sex (including MSM/IDU). Thirty-three percent injected drugs (including MSM/IDU), which is over three times higher than the statewide HIV-positive white male population (10 percent). Another seven percent indicated they had heterosexual contact with partners with known risks for HIV (HCFR). Seventeen percent had undetermined risk (table 20, page 114).

Special Populations: Incarcerated Persons

Data from enhanced HIV/AIDS Reporting System (eHARS)

**Figure 79: Black males living with HIV infection in prison
by risk transmission category, January 2012 (n = 267)**

Undetermined
26%

Perinatal
1%

Hetero: HCFR
11%

MSM/IDU
12%

MSM
35%

IDU
15%
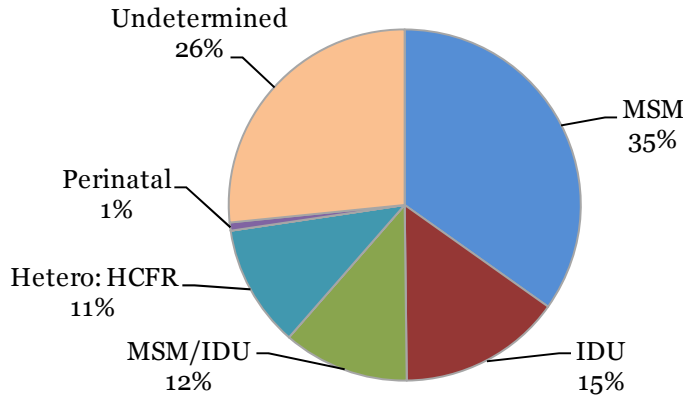
**Figure 80: White males living with HIV infection in prison
by risk transmission category, January 2012 (n = 59)**

Undetermined
17%

Hetero: HCFR
7%

Blood Recipient
2%

MSM/IDU 13%

IDU 20%

MSM 41%
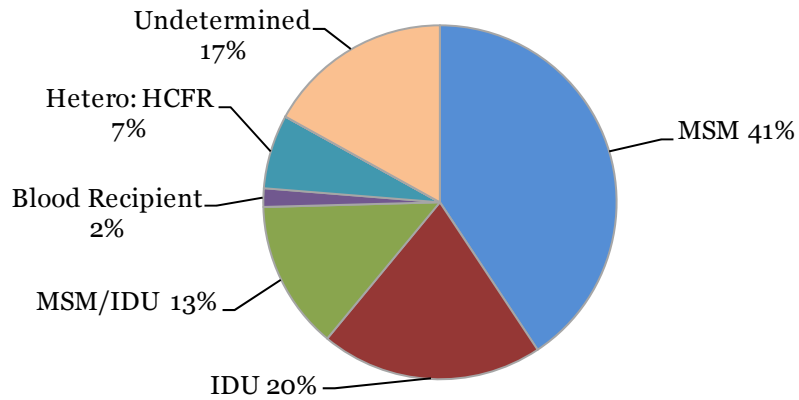
Figure 81 shows that most HIV-positive female prisoners (55 percent) had a risk of heterosexual contact. Forty-one percent were injection drug users (IDU). This is over twice as high as the proportion of IDU cases among HIV-positive females statewide (table 11, page 105).

**Figure 81: Females living with HIV infection in prison
by risk transmission category, January 2012 (n = 22)**

Undetermined
4%

IDU
41%

Hetero: HCM
55%
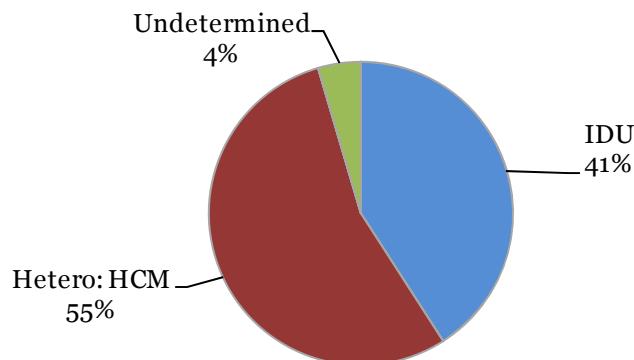
2012 Profile of HIV in Michigan (Statewide)

Special Populations: Incarcerated Persons

**Data from the Evaluation of the AIDS Partnership Michigan
Community Re-entry Program**

In 2011, the state commissioned an evaluation of its centralized intake re-entry program, which is designed to facilitate linkage to care for HIV-positive prisoners who are about to be released from prison. The evaluation used data from a variety of sources to determine how well the ex-offenders who had used the program were faring three or more years after release. The evaluation focused on the health statuses (in 2011) of 190 ex-offenders who were released from prison between May 2003 and May 2008. Data sources used include CAREWare, vital records, and face-to-face interviews with 60 HIV-positive ex-offenders throughout the state.

Among the 190 persons who had used the centralized re-entry program, 23 percent were re-incarcerated at the time the study was conducted and 17 percent were deceased. Receiving care routinely was defined as having CD4 counts and viral loads monitored once every six months. Data from CAREWare indicate that the majority of the ex-offenders who have not died or are not re-incarcerated have not received routine HIV care since they were released.

**Figure 82: Proportion of re-entry clients with CD4 and viral loads
recorded among those ever listed in CAREWare (n=119)**
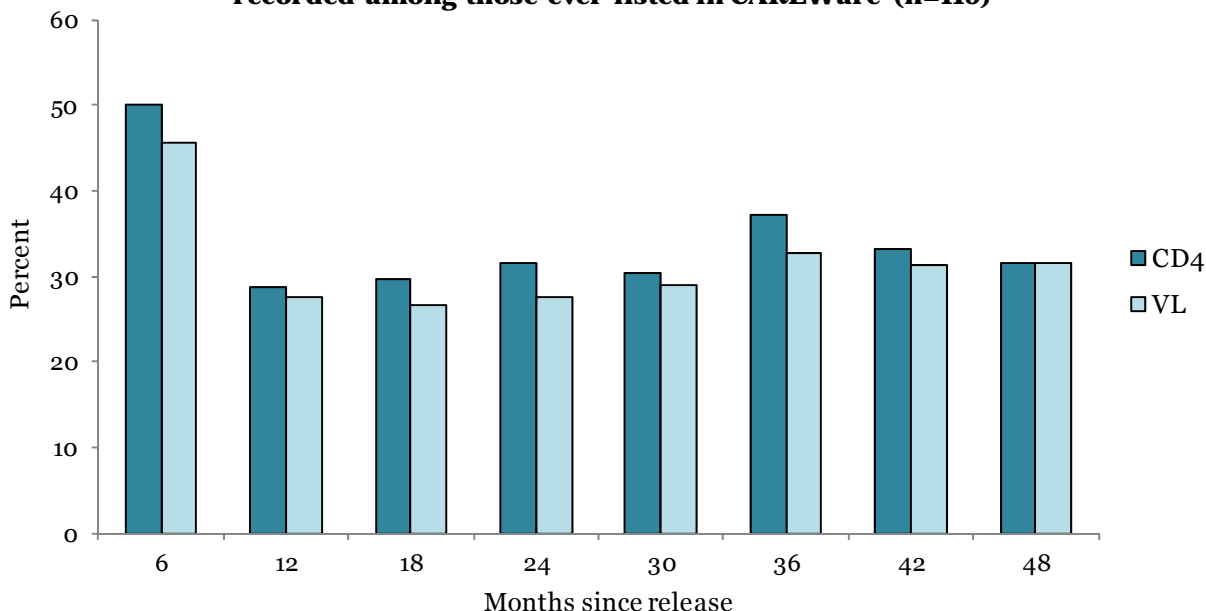
Note: Persons who were re-incarcerated or died were removed from the denominators of the six month intervals after the event occurred.

Figure 82 shows the proportion of clients who were ever listed in CAREWare (63 percent of total) who had a CD4 and viral load recorded within each six month period after their date of release, taking into account timing of re-incarcerations and deaths. As these data show, among those with a clinical record in CAREWare, engagement in care declined after the first six months following release, with roughly 27-38 percent of ex-offenders engaged in care after the initial six month period. Regarding actual lab values, only 16-39 percent of the viral loads recorded were undetectable at each time period.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Incarcerated Persons

Sixty ex-offenders participated in face-to-face interviews. Most were black (85 percent; 13 percent white, 2 percent Latino) and male (96 percent; 2 percent female, 2 percent transgender). A majority identified as heterosexual (65 percent; 17 percent gay, 13 percent bisexual, 5 percent other). Their average level of educational attainment was high school (22 percent less than high school, 33 percent high school, 40 percent some college, 3 percent associates' degree, 2 percent college degree). The average age was 46.7 years old. The average length of most recent incarceration was 6.1 years. A majority resided in the Detroit Metropolitan Area (62 percent).

Employment, income, and housing were major obstacles to care. At the time of the interview, 82 percent were unemployed. Among those who worked, only 46 percent were employed full time. The median monthly household income from all sources was $874; 75 percent of the population earned less than $1,299 per month. Sixty-five percent had been homeless at least once since their release. Respondents reported that their first homeless episode lasted, on average, 375 days. Forty-seven percent were not satisfied with their current housing, typically because it was too costly, located in an inconvenient or dangerous area, or in poor condition.

Most respondents (85 percent) had a place they could go to access routine care, with a majority of individuals citing public and Veterans' Administration (VA) clinics (92 percent). Eighty percent indicated they had CD4 and viral loads checked within the prior six months. However, CAREWare data indicated that 27 percent had no tests ever recorded and 66 percent had no CD4 or viral load values recorded in the six month period preceding their interview. Eighty-seven percent had a prescription for highly active anti-retroviral therapy (HAART), but 59 percent reported forgetting to take their medications. On average, respondents reported they took 82 percent of their medication. Side effects and worrying that others would discover they were HIV-positive were leading concerns about taking medications. Taking medications was described as depressing and as a reminder that they were not "normal like everyone else".

Disclosure was a major concern. Thirty-one percent had not told health professionals other than those involved in their HIV care that they were HIV-positive. Although most were sexually active (71 percent), half had not told their sexual partners about their status. Some had not told their spouse. Among those who were sexually active in the prior 90 days, 27 percent reported they had not used condoms consistently for vaginal sex and 50 percent reported not they had not used condoms consistently for anal sex; 36 percent said they never used condoms for anal sex.

Although problems with housing, employment, and transportation were cited as factors that interfered with daily functioning by a sizeable minority of respondents, mental illness was the top-listed problem that interfered with daily functioning, with 58 percent citing mental health as an issue. On the CES-D, a validated measure of depression, 63 percent scored above the clinical cutoff for distress. In the general population, 20 percent of people would be expected to score in this range.

Special Populations: Arab Americans

Data from enhanced HIV/AIDS Reporting System (eHARS)

Arab is considered an ethnicity and not a racial category and has not been routinely collected by the HIV surveillance system. Consequently, the numbers presented here are an underestimate. Beginning in the year 2001 and at the request of an Arab community-based organization, a question was added about Arab ethnicity on the HIV/AIDS Adult case report form that reads, "Does this patient consider him or herself Arab?". For additional data on Arab Americans living with HIV in Michigan, please see tables 23 and 24, pages 117-118.

In Michigan, the largest concentration of Arab Americans is in the Detroit Metro Area (DMA). This is also where most of the HIV infections among Arab persons were diagnosed. A total of 126 persons of Arab descent have ever been diagnosed with HIV and confidentially reported to MDCH. Of these, 92 persons are living; 57 percent have progressed to stage 3 infection. Of those currently living, counties of residence of HIV diagnosis include Wayne (43 percent), Oakland (28 percent), and Macomb (19 percent) counties. The remaining 10 percent were diagnosed in Chippewa, Ingham, Jackson, Kalamazoo, Kent, St. Clair, and Washtenaw counties or were diagnosed out of state or have an unknown residence at diagnosis (data not shown in tables).

Eighty-four percent of HIV infection cases of Arab descent are among males and 16 percent are among females. Forty-four percent of cases reported male-male sex (including MSM/IDU). Eighteen percent of cases had a risk of heterosexual contact (HC), of whom sixty-five percent are females. Thirty percent have undetermined risk (figure 83).

Figure 83: Arab persons living with HIV infection in Michigan by risk transmission category, January 2012 (n = 92)
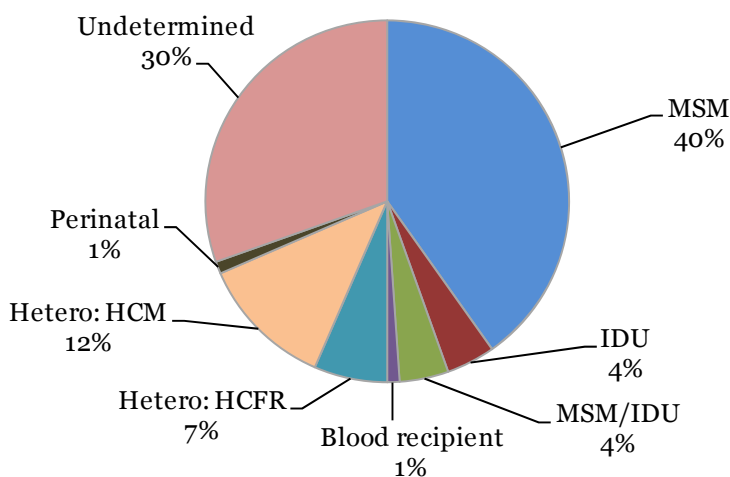
The age at HIV diagnosis is similar to the age distribution for all cases in Michigan, with five percent ages 0-19, nine percent 20-24, 23 percent 25-29, 33 percent 30-39, 23 percent 40-49, four percent 50 – 59, and two percent ages 60 and older.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Arab Americans

Within the U.S., the largest concentration of Arab Americans lives in Dearborn, Michigan. This ethnic group constitutes less than two percent of the Michigan population but 42 percent of the population in Dearborn. Studies show that being foreign-born makes someone more likely to face barriers to access to health care services, particularly HIV care (http://hab.hrsa.gov/newspublications/careactionnewsletter/may2010.pdf). Since approximately 75 percent of Arab Americans living in Dearborn were born outside of the U.S., it is important to focus HIV prevention and care efforts among this group.

From October 2003 through July 2005, the Arab Community Center for Economic and Social Services (ACCESS) conducted 15 rounds of focus group discussions with men in the Arab American community identifying as gay or bisexual. Approximately 95 percent of attendees were Arab or Chaldean and were residents of Detroit, Dearborn, and other areas of Metro Detroit. A few were residents of Toledo, OH and Toronto, ON. The age of the attendees ranged from 13 to 58. From October 2002 through September 2004, the majority of attendees were older than 25; however, from October 2004 through July 2005 the majority were men under 25 years of age.

These focus groups allowed participants to freely discuss concerns surrounding being a gay or bisexual male in the Arab community. About 80 percent of attendees rarely negotiated safer sex practices with their partners, stating that barriers were a lack of negotiating skills and exchanging sex for money, drugs, or gifts. The attendees were also afraid of getting tested for HIV for fear of the results and backlash from family and community. This discussion also uncovered a belief that if men only have sex with other Arabic or Chaldean men, they have no risk for contracting HIV.

Additionally, these participants discussed their desire for more social networks among gay Arab males, which they felt would allow for more opportunities to deliver prevention, education, and counseling on risk behaviors.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Asians and Native Hawaiians/Other Pacific Islanders

In this report Asians and Native Hawaiians/Other Pacific Islanders (A/NH/OPI) are combined into one racial/ethnic category. This group makes up one percent of those living with HIV infection in Michigan and two percent of the general population of Michigan (table 8, page 101). For more data on A/NH/OPI persons living with HIV in Michigan, please see tables 25 and 26 on pages 119-120.

MDCH estimates that there are approximately 130 A/NH/OPI persons living with HIV in Michigan. Of the 96 reported living cases, 47 percent are HIV non-stage 3 and 53 percent are stage 3. Of those who have progressed to stage 3 infection, 55 percent were diagnosed with stage 3 at the time of their initial HIV diagnosis. This is higher than the proportion of all late diagnoses (42 percent), suggesting that A/NH/OPI persons test later than persons living with HIV statewide overall.

Fifty percent of this population live in the Detroit Metro Area (DMA), where most of the cases were living when they were diagnosed. Those living in the DMA reside in the city of Detroit and Oakland, Wayne, and Macomb Counties. Those living in Out-State Michigan reside primarily in Ingham, Kent, and Calhoun Counties.

Seventy-three percent of A/NH/OPI cases are among males and 27 percent are among females. The majority of cases (41 percent) had an undetermined risk for HIV infection (figure 84). The next largest proportion had a risk of male-male sex (MSM, including MSM/IDU). Eighteen percent were females who had sex with males (HCM), and seven percent were injection drug users (including MSM/IDU).

Figure 84: Asian and Native Hawaiian/Other Pacific Islander persons living with HIV infection in Michigan by risk transmission category, January 2012 (n = 96)
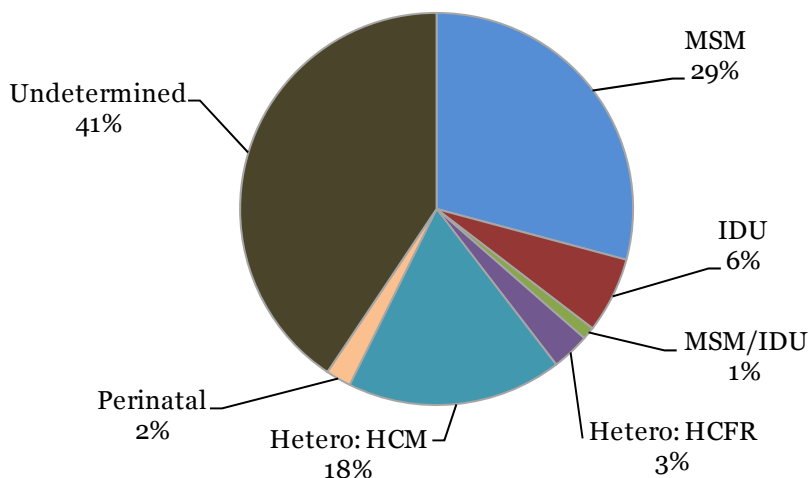
The age at HIV diagnosis was similar to the age distribution for all cases in Michigan, with five percent diagnosed between the ages of 0 and 19, 11 percent 20-24, 30 percent 25-29, 32 percent 30-39, 19 percent 40-49, and two percent 50 –59. None were diagnosed past the age of 59. A larger proportion of HIV-positive A/NH/OPI persons were 25-29 at HIV diagnosis compared to the rest of the HIV-positive population in the state (30 percent vs. 17 percent, respectively).

2012 Profile of HIV in Michigan (Statewide)

Special Populations: American Indians and Alaska Natives

In this report, American Indians and Alaska Natives (AI/AN) are combined into one racial/ethnic category. This group makes up less than one percent of those living with HIV in Michigan and one percent of the general Michigan population (table 8, page 101). American Indians and Alaska Natives may not be recorded as such in their medical records. Therefore, the information presented here should be viewed as the minimum number of AI/AN persons living with HIV infection in Michigan. For more data on AI/AN persons living with HIV in Michigan, please see tables 27 and 28 on pages 121-122.

MDCH estimates that approximately 50 AI/AN persons are living with HIV infection in Michigan. Of the 41 reported cases, 63 percent are HIV, non-stage 3, and 37 percent are stage 3 HIV infection. The proportion of AI/AN who have progressed to stage 3 infection is lower than the proportion diagnosed with stage 3 among all persons living with HIV statewide (54 percent). Of those who have progressed to stage 3, 27 percent were diagnosed with stage 3 at the time of their initial HIV diagnoses. This is lower than the proportion of all cases with late HIV diagnoses (44 percent).

Over half of AI/AN case live in Out-State Michigan (59 percent), residing in a variety of northern lower peninsula and upper peninsula counties as well as Kent, Ingham, Eaton, Jackson, and Washtenaw Counties. Those residing in the Detroit Metro Area live in the City of Detroit, Oakland, Wayne, and Macomb Counties.

Seventy-eight percent of the cases are among males and 22 percent are among females. Fifty-two percent of cases had a risk of male-male sex (MSM), including MSM/IDU (figure 85). The proportion who were MSM/IDU is 15 percent, which is higher than in the overall HIV-positive population. Nineteen percent of cases were females who had sex with males (HCM). Twenty percent of cases had undetermined risk.

Figure 85: American Indian and Alaska Native persons living with HIV infection in Michigan by risk transmission category, January 2012 (n = 41)
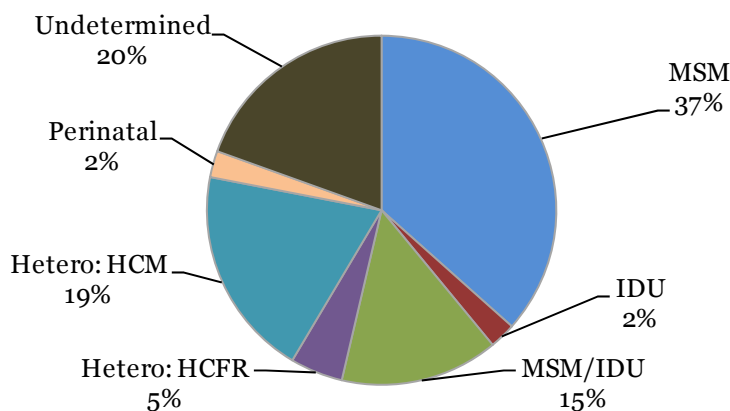
The age at HIV diagnosis among AI/AN persons was similar to the age distribution for all cases in Michigan, with two percent diagnosed between the ages of 0-12, 27 percent 20-24, 10 percent 25-29, 46 percent 30-39, 12 percent 40-49, and two percent ages 60 and older. The main differences are that more HIV-positive AI/AN persons were 20-24 when diagnosed compared to the overall Michigan HIV-positive population (27 percent versus 14 percent, respectively), and more were diagnosed in their 30s (46 percent AI/AN compared to 35 percent all cases).

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Foreign-born Persons

Overview and trends:

While the majority of HIV infection in Michigan is among persons born in the US (71 percent of all living cases), almost one-quarter (24 percent) have a missing or unknown country of birth. Six percent (n=880) of the total number of HIV infection cases currently living in Michigan were born in a country other than the US (foreign-born). Due to the high proportion of missing data, this is considered to be a minimum estimate of the number of foreign-born persons living with HIV in MI and must be interpreted with caution. Data on HIV-positive foreign-born persons is not shown in tables.

Figure 86: HIV diagnoses among foreign-born persons living in Michigan by year of diagnosis and birth country, January 2012 (n = 880)
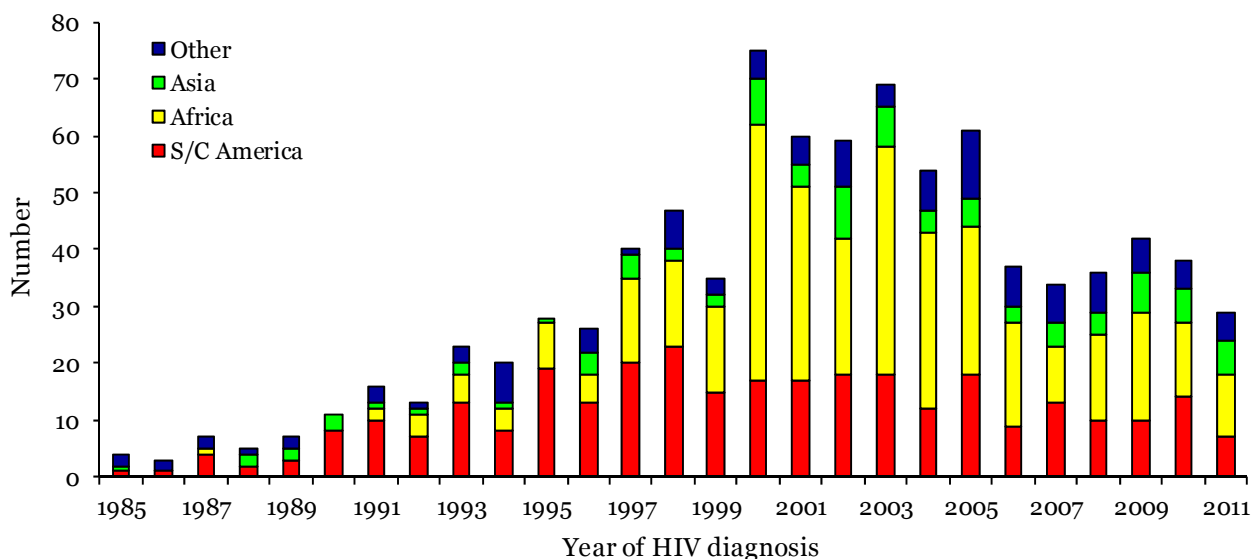
The Immigration and Nationality Act was updated in 1999. This allowed HIV-positive refugees to enter the US. From 1999 to 2000, Michigan experienced a 110 percent increase in HIV diagnoses among foreign-born individuals, which was likely an effect of the updated Act. The number of HIV infections diagnosed in Michigan among foreign-born individuals increased from 14 cases in 1985 to 31 cases in 2011, with a peak of 84 cases in 2000 (figure 86). The majority of these persons were born in Africa and South and Central America, including Mexico (S/C America). Prior to 2000, the largest proportion of foreign-born persons were born in S/C America, but this shifted in 2000 to those born in Africa.

Birth country:

Figure 87 shows that 39 percent of foreign-born persons living with HIV in Michigan were born in S/C America; 33 percent were born in Africa; 11 percent were born in Asia; and 17 percent were born in other countries.

Figure 87: Birth country of foreign-born persons living with HIV infection in Michigan, January 2012 (n = 880)

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Foreign-born Persons

Risk:

Risk differs for foreign-born persons based on country of birth. Figures 88 and 89 show risk among foreign-born males and females. Of all regions, S/C America most mirrors risk in the U.S. Among males born in S/C America, half had male-male sex (MSM), including MSM/IDU. Ten percent injected drugs (IDU), and 11 percent had sex with females with known risks for HIV (HCFR). Twenty-eight percent had undetermined risk. Among cases born in Africa, the majority of male cases have undetermined risk (60 percent). These are likely MSM or males who had sex with females of unknown risk/HIV status. Twenty-four percent had sex with females with known risk (HCFR), and just seven percent were MSM. Eight percent were infected perinatally. Males born in Asia also had a high proportion with undetermined risk (43 percent), but a larger proportion were MSM (42 percent, including MSM/IDU). Ten percent were HCFR, and four percent were IDU. Males born in other countries were almost evenly split between undetermined risk and MSM (46 percent vs. 49 percent, respectively).

Figure 88: Foreign-born males living with HIV infection in Michigan by risk transmission category and birth country, January 2012 (n = 552)
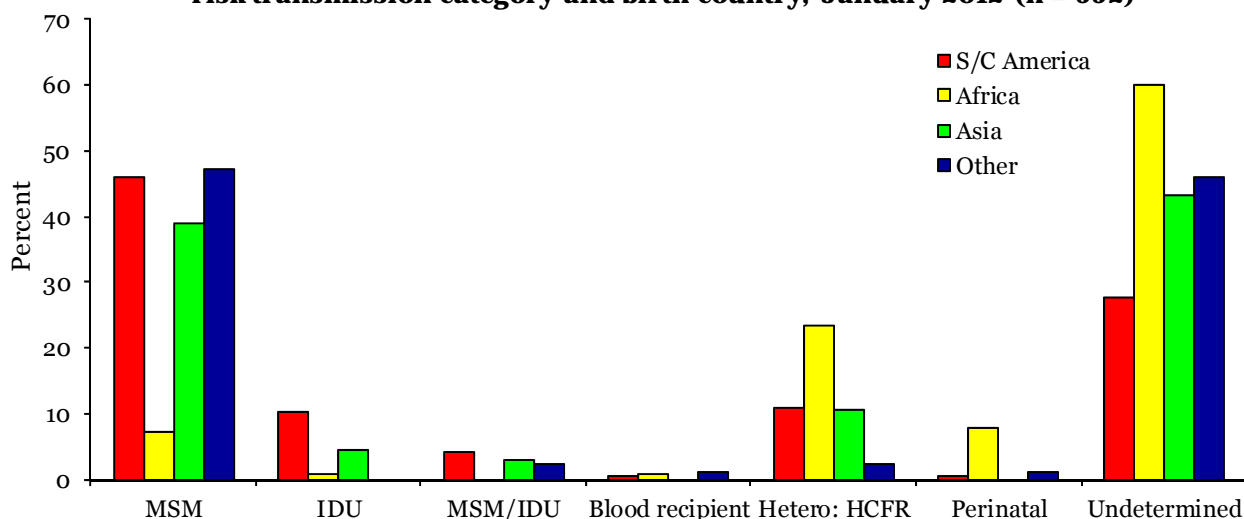
As with males, the risk pattern among female foreign-born persons differs based on birth country (figure 89). Seventy-two percent of females born in S/C America had a risk of heterosexual contact (HCM), and 17 percent were IDU. Eight percent were undetermined risk, and three percent were infected perinatally. Over three-quarters of females born in Africa had a risk of heterosexual contact (HCM). Twenty percent had an undetermined risk, and almost none were IDU. Two percent were infected perinatally. Females born in Asian countries were also largely HCM (69 percent). Twenty-seven percent had undetermined risk, and four percent were infected perinatally. None were IDU. Females born in other countries had risks most similar to those born in S/C America, although they had a much larger proportion with undetermined risk (27 percent) and less HCM (57 percent).

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Foreign-born Persons

Figure 89: Foreign-born females living with HIV in Michigan by risk transmission category and birth country, January 2012 (n = 328)
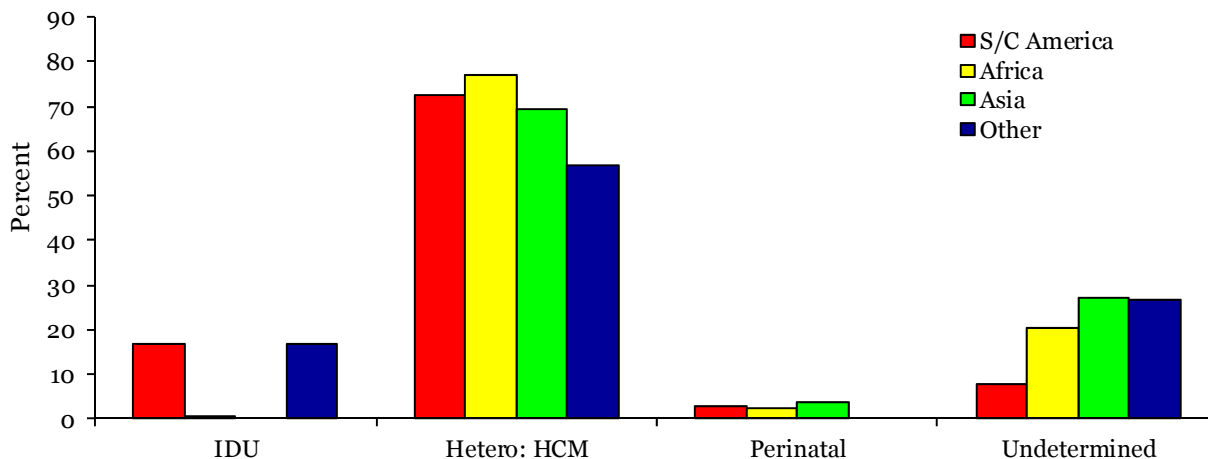
Race/ethnicity and sex:

As would be expected, the racial breakdown of foreign-born individuals differs depending on the country of birth. African-born individuals are almost entirely black (98 percent). Persons born in S/C America are 84 percent Hispanic, 12 percent black, and four percent white, while persons born in Asia are 52 percent Asian/Native Hawaiian/Other Pacific Islander, 42 percent white, two percent black, and three percent other or unknown race. Persons born in other countries were 42 percent white, 38 percent black, and nine percent Hispanic.

Overall, 63 percent of foreign-born persons currently living with HIV in MI are male and 37 percent are female. This is different from the proportion seen among all persons living with HIV in Michigan (78 percent male and 22 percent female). Persons born in Africa are more likely to be females than males (58 percent vs. 42 percent, respectively), while those born in S/C America, Asia, and other countries are closer to the proportion seen among all persons living with HIV in MI (72 percent male, 79 percent male, and 74 percent male, respectively). This difference reflects the higher proportion of heterosexual cases among persons born in Africa.

Geographical distribution:

The highest proportion of African-born cases reside in Kent county (26 percent); 13 percent reside in the city of Detroit; 12 percent in Berrien County; 11 percent in Oakland; eight percent in Ingham; seven percent in Wayne; six percent in Washtenaw; and the rest in other counties of MI.

The highest proportion of S/C American-born cases were diagnosed among residents of Wayne and Kent Counties (16 and 14 percent, respectively). Eight percent were diagnosed in a state other than Michigan, 33 percent were diagnosed in an unknown location, and the rest were diagnosed while living throughout the remainder of Michigan.

Forty-one percent of Asian-born cases were among residents of the Detroit Metro Area (9 percent in Oakland county, 18 percent in Wayne county and 5 percent in Macomb county). Five percent were among residents of Kent county, three percent were diagnosed in a state other than Michigan, 35 percent were diagnosed in an unknown location, and the rest were diagnosed while living throughout the remainder of Michigan.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Young Black MSM

Race/ethnicity and age:

Nationally and in Michigan, the fastest growing population of HIV-positive persons are young black males who have sex with males (MSM) (ages 13-24). Surveillance data from the 40 states with confidential HIV reporting since 2006 show that HIV diagnoses among black MSM ages 13-24 increased by 48 percent between 2006 and 2009, the only group with a statistically significant increase in diagnoses during that time periods (Centers for Disease Control and Prevention, *HIV Surveillance Supplemental Report,* Vol. 17, No.2, http://www.cdc.gov/hiv/surveillance/resources/reports/2009supp_vol17no2/pdf/hssr_vol_17_no_2.pdf#page=3). In Michigan, MSM (regardless of age) were 48 percent of all new HIV diagnoses between 2006 and 2010 (Trends). Of these newly diagnosed MSM, 55 percent were black. Of all teens diagnosed in the last five years, 84 percent are black compared to 61 percent of persons diagnosed at older ages (figure 90). Furthermore, teens are significantly more likely to be black MSM compared to adults 20 years and older (58 percent v 25 percent). These data underscore a need for prevention campaigns tailored to young black MSM, as the shift in new diagnoses to this young group will likely widen the already large racial gap among persons living with HIV.

Figure 90: 13-19 year olds vs. persons 20 and older at HIV diagnosis by race and risk, 2006-2010
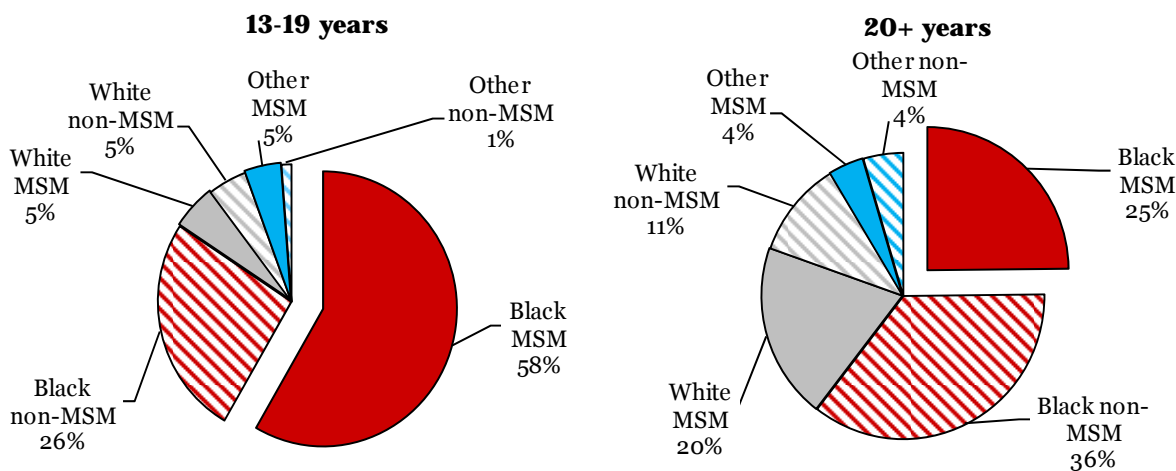
MSM behavior:

During the Young MSM Study of the 2008 MSM2 cycle of NHBS, 52 13-17 year old males who ever had sex (anal or oral) with another male were interviewed about their last or most recent sexual encounter (anal or oral). Seventy-one percent were with their main partner compared to 25 percent who reported their last sexual encounter was with a casual partner. Eighty-one percent of respondents (42) reported having anal sex at their most recent sexual encounter. Among respondents who had anal sex, about two-thirds (69 percent) used a condom during anal sex the whole time compared to five percent using a condom part of the time and 26 percent not using a condom at all.

Figure 91 shows the type of anal sex experienced by the 81 percent of participants (42 of 52) who reported having anal sex at last sexual encounter. About two-thirds (62 percent) had only receptive anal sex (26 of 42) compared to 21 percent who reported insertive anal sex only (9 of 42). Seventeen percent

Special Populations: Young Black MSM

**Data from National HIV Behavioral Surveillance (NHBS) Young MSM Study &
Michigan Disease Surveillance System (MDSS)**

reported having both receptive and insertive anal sex (7 of 42) during last sexual encounter. Of those that engaged in receptive anal sex only, 88 percent reported that their partners were older than them. Participants who reported insertive anal sex only had a smaller proportion with older partners (67 percent). Participants who reported both types of anal sex at last intercourse all had partners who were older than them. Thirteen percent of participants had their first sexual encounter with another man when they were 13 years old or younger, including one respondent who reported his first male-male sexual encounter was at 10 years of age.

**Figure 91: Receptive and insertive anal sex during last sexual encounter
among Detroit YMSM relative to age of partner (NHBS, 2008)**
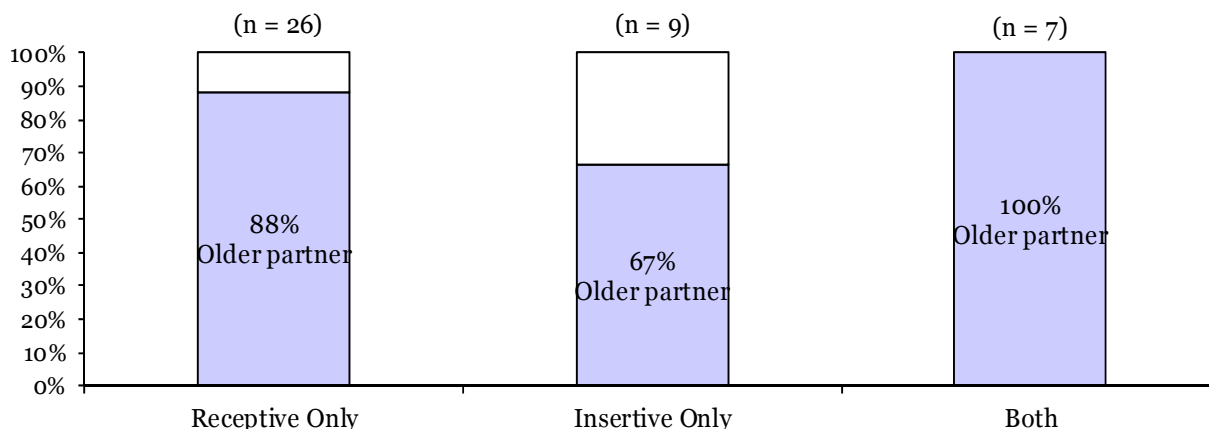
STDs:

In 2011, 14 cases of primary and secondary syphilis were detected among 13-19 year old black males. This is an increase from 2010 levels (7 cases). The 14 2011 cases represented four percent of the total male cases with primary and secondary syphilis. All but two were MSM and nearly 30 percent were HIV-positive. This population represented 6 percent of all male syphilis cases and 9 percent of black male cases (data not shown in tables).

In 2011, 1,775 chlamydia cases were reported among black males ages 13 to 19. The rate of infection in this population is 1,929 per 100,000, nearly 4 times the rate of infection among all persons in Michigan. In terms of gonorrhea, 627 cases were reported in this demographic in 2011 with a rate of 681 per 100,000. In 2011, only 505 cases of chlamydia and 51 cases of gonorrhea were reported among white males in this same age group. This rate is over five times the rate of infection in the general Michigan population, and nearly times the rate of infection among those 13-19. Gonorrhea rates among young black males in cities such as Flint, Detroit, Kalamazoo, and Ypsilanti have rates showing even higher levels of disproportional impact. NOTE: data on sex of sexual partner is not consistently reported for chlamydia and gonorrhea cases; therefore, the data in this paragraph pertain to all black males, not MSM only.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Young Black MSM

Data from Outreach, Prevention, and Care Services for Young African American MSM (YMSM)

Brothers Saving Brothers:

The Health Resources and Services Administration (HRSA) Special Project of National Significance (SPNS) project Brothers Saving Brothers (BSB) involved encouraging African American young men who have sex with men (YMSM) to learn their HIV status, and obtain information on possible barriers to HIV counseling and testing (HIV C&T). A motivation-based intervention (motivational interviewing; MI) was implemented in field outreach to encourage African American YMSM in the Detroit metropolitan area to know their status (i.e., receive HIV C&T and return for test results) and to compare two forms of field outreach (Field Outreach plus MI vs. Field Outreach Alone) to encourage HIV C&T and returning for test results. A web-based survey was also implemented as part of BSB to African American YMSM in the Detroit metropolitan area to assess the sexual behavior among online African American YMSM and to determine possible barriers to HIV C&T for this population. Both studies are discussed in detail below.

Participants for the field outreach intervention were 188 African American YMSM aged 16-24. Participants were randomly assigned to one of the following intervention conditions: Field Outreach plus Motivational Interviewing (MI) (N=96) or Field Outreach alone (N=92). Both conditions encouraged HIV C&T and returning for test results (OraSure testing). A baseline survey inquired about risk behaviors (i.e., sexual risk and substance use). Results indicated that African American YMSM in the Outreach plus MI condition received HIV C&T and returned for test results at a significantly higher rate than African American YMSM in the Field Outreach alone condition. There were no other significant differences between the groups. Overall, African American YMSM participants reported risk behavior in the past 90 days (i.e., unprotected intercourse and substance use) and being 'Unsure/Not Ready" to change some of these behaviors.

Participants for the internet survey were 270 African American YMSM chat room participants aged 18-24. The survey inquired about: sexual behavior (e.g., condom use, sexual partners, etc.); barriers to HIV C&T: structural barriers (e.g., transportation, etc.), stigma (e.g., I don't want others to know I am being tested, etc.), invulnerability (e.g., I don't think I have HIV, etc.); and preferred testing venues (e.g., health department, physician's office, etc.). Results indicated that 39 percent of African American YMSM engaged in sexual intercourse without a condom in the past 30 days. Barriers to HIV C&T included fear of testing and/or receiving the test results, and waiting too long for test results. Finally, African American YMSM endorsed a physician's office/professional setting or the privacy of home as more comfortable locations for HIV C&T.

The addition of MI to field outreach is effective in encouraging a high-risk population (i.e., African American YMSM) to know their HIV status and increasing their awareness of risk sexual behavior. The data support the efficacy of an intervention based on individual motivation to reduce sexual risk in addition to traditional HIV C&T. Adapting prevention programming to the Internet can also be effective in targeting high-risk youth. These data support the need for more innovative outreach strategies to target high-risk and difficult to engage populations (e.g., the integration of Internet outreach with opportunities for HIV C&T in more private settings).

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Young Black MSM

Statewide needs assessment:

Young men in the Young Men's Health Study were between the ages of 14 and 24, with a mean age of 20.4 (SD=2.3). Men aged 18 years and younger composed 23 percent of respondents. Most identified their sexual identity as gay (75 percent gay, 22 percent bisexual, 3 percent other) and their gender identity as male (93 percent male, 7 percent female). 22 percent had not completed high school (largely because they were still enrolled), 41 percent had a high school degree, 34 percent had completed some college, and 4 percent had a college degree. A majority was in school (62 percent) and employed (59 percent). Young men reported an average monthly income of $648 (SD=$800). Roughly half (51 percent) lived with a parent or other relative. The remainder of the young men lived independently in an apartment (36 percent) or dormitory (1 percent); a minority was unstably housed (8 percent). 59 percent of young men lived in the Detroit metropolitan area; 41 percent lived in the Out-State regions.

Although most young men reported positive relationships with their families of origin and felt that their families provided them a safe and supportive environment, a sizeable minority reported negative relationships with their family of origin resulting from their family members' disapproval of same-sex attractions. 87 percent had ever participated in a religious institution. However, only 52 percent participated in places of worship at the time of the interview. The dominant reason for leaving a religious institution was religious intolerance of homosexuality. Among those who participated in places of worship, 75 percent did not feel supported by their religious community. About 67 percent said they were part of a gay, lesbian, bisexual community, a majority of whom found it supportive. Young men relied heavily on their peers for general social support and, to a lesser extent, on their mothers. However, peers were the primary source of support for topics related to sex and sexuality. When asked where young men felt most safe they named their family of origin and the gay community; they felt least safe and supported in Black and religious communities.

Hospital emergency rooms were the most common source of health care, followed by private physicians. Although 62 percent of the participants were in school, school-based care was used infrequently. Young men reported limited use of specialized facilities for LGBT populations. Men frequently reported more than one location as their usual source of care. It was especially common for men to combine the use of hospital emergency rooms with visits to private physicians' offices (41 percent) and public health clinics (33 percent). For HIV and STD testing, public clinics and the health department were named as preferred locations.

The participants completed well-validated measures of substance abuse and depression. The substances that were most commonly used by men in the sample in the 90 days prior to their interview were alcohol (75 percent) and marijuana (47 percent). The average score for substance abuse was 3.1 on a scale where 2 indicates problem substance use; 54 percent scored in the abusive range. Thirty-three percent of the young men met clinical criteria for depression. Young men in the Out-State regions reported significantly more substance abuse and depression than men in the Detroit area. Young men reported high rates of exposure to multiple forms of violence: 32 percent reported they had been sexually assaulted, 74 percent had been exposed to physical abuse, and 91 percent had been exposed to emotional abuse. 75 percent had been exposed to more than one of these kinds of violence. Physical and emotional violence increased young men's risk of substance abuse and depression. Sexual violence and substance abuse increased their risk of inconsistent condom use.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Young Black MSM

Data from The Young Men's Health Study:
A Statewide Needs Assessment of Young Black MSM

The average age at which young men had initiated sex was 14.3 years (SD=3.4). Ninety-four percent of men had been sexually active in the year prior to being interviewed, with an average of 4.7 sexual partners (SD=6.5). Among these men, 86 percent had exclusively male partners, 14 percent male and female partners, and 1 percent female partners only. Although attitudes toward condoms were positive on the average, twenty-six percent of men had not used a condom on their last intercourse occasion. One hundred fifty-five men reported having vaginal or anal sex in the prior 90 days with a total of 363 sexual partners. Fifty-four percent of sexual partners were casual or one-time partners. Having sex with partners who were not of a similar age or Black was associated with a pattern of high-risk substance use and sexual activity.

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Transgender Persons

Overview:

In April 2010, the Michigan Department of Community Health (MDCH) added a current gender variable to the adult HIV case report form (ACRF) in an effort to collect data on HIV-positive sexual minorities, such as transgender persons. It is important to note that collection of the current gender variable is very new, and numbers presented here are considered a minimum estimate of the actual number of HIV-positive transgender persons in Michigan. Data from HIV counseling and testing sites and epidemiologic studies suggest high rates of HIV infection among transgender persons (Centers for Disease Control and Prevention, *Guidance for HIV Surveillance Programs: Working with Transgender-Specific Data,* version 1.0*)*. For this reason, it is important to provide surveillance data on transgender persons to prevention partners in order to facilitate improved prevention efforts among this high-risk group.

Individuals are included in this analysis if they meet the definition of transgender as defined by the Gay and Lesbian Alliance Against Defamation (GLAAD): "An umbrella term (adj.) for people whose gender identity and/or gender expression differs from the sex they were assigned at birth. The term may include but is not limited to: transsexuals, cross-dressers and other gender-variant people. Transgender people may identify as female-to-male (FTM) or male-to-female (MTF). Use the descriptive term (transgender, transsexual, cross-dresser, FTM or MTF) preferred by the individual. Transgender people may or may not decide to alter their bodies hormonally and/or surgically." A modified version of this definition was used by the MDCH Division of Health, Wellness, and Disease Control, HIV/AIDS Prevention and Intervention Section (HAPIS) in their 2010-2013 prevention plan.

As of January 2012, there were 76 transgender persons ever diagnosed with HIV with a current residence of Michigan. Fifty-five of those individuals were alive and living in Michigan as of January 2012. Table 7 presents demographic information on these 55 prevalent transgender cases. All 55 individuals were born male but currently identify or express their gender as female (MTF). According to CDC guidance, some of these individuals would be classified as "Additional Gender Identity", such as transvestites, cross-dressers, and drag queens. Due to small cell numbers, this distinction is not made in the analysis. Rates are not calculated as there is not an accurate estimate of the total number of transgender persons living in Michigan for the denominator. Please note that all other analyses/tables in this document are based on sex at birth; therefore, male to female transgender persons are included in the 'male' category.

Of the 55 currently living HIV-positive transgender persons, 22 had a diagnosis of stage 3 HIV infection (AIDS). Half of these cases were diagnosed with stage 3 at the time of their initial HIV diagnosis (late HIV diagnosis) (data not shown in tables).

Demographic characteristics:

Table 7 shows demographic characteristics of HIV-positive transgender persons currently living in Michigan. The majority (76 percent) of HIV-positive transgender persons are black. Almost half (40 percent) were between 13 and 24 years old at the time of diagnosis, while 27 percent were 25-29 years old. Over three-quarters (78 percent) were living in the Detroit Metro Area as of January 2012. Sixteen percent resided in Out-State Michigan, and five percent were incarcerated. Five of the 55 currently living transgender persons have ever been incarcerated (data not shown in tables).

Special Populations: Transgender Persons

Data from enhanced HIV/AIDS Reporting System (eHARS)

Table 7: Demographic characteristics of HIV-positive transgender persons currently living in Michigan, 2012

	Number	Percent
Male to female (MTF)	55	100%
Race/ethnicity		
White, non-Hispanic	6	11%
Black, non-Hispanic	42	76%
Hispanic, all races	3	5%
Other/unknown	4	7%
Age at HIV diagnosis		
13-24 years	22	40%
25-29 years	15	27%
30-39 years	13	24%
40 years and older	5	9%
Current residence		
Detroit Metro Area (DMA)	43	78%
Out-State	9	16%
In prison	3	5%
Total	**55**	**100%**

Risk:

As a result of having been assigned male sex at birth, transgender male to female persons are often incorrectly classified as men who have sex with men (MSM) based on the CDC risk hierarchy. Figure 92 shows the modes of exposure to HIV for the 55 prevalent transgender HIV cases based on the behavior rather than risk transmission categories. Sixty-three percent of the cases reported sex with males only, while 27 percent reported sex with both males and females. Four percent had sex with males and injected drugs (IDU), and two percent reported sex with females only.

Figure 92: Transgender persons currently living with HIV infection in MI, by risk (n = 55 MTF)
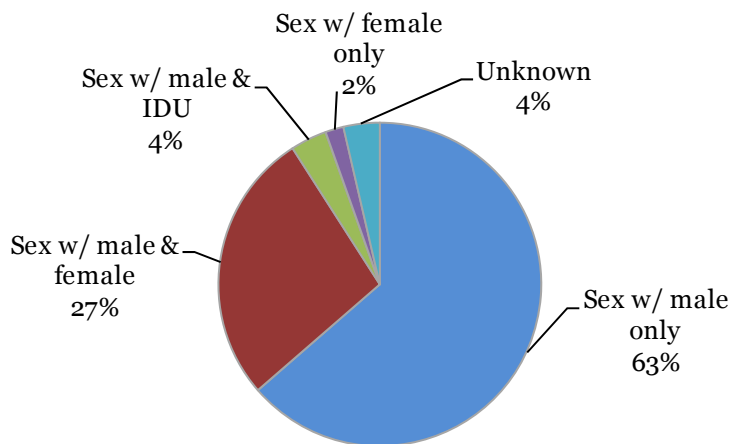
Sex w/ female only 2%
Sex w/ male & IDU 4%
Unknown 4%
Sex w/ male & female 27%
Sex w/ male only 63%

2012 Profile of HIV in Michigan (Statewide)

Special Populations: Transgender Persons

**Data from Community Health Awareness Group/
Michigan AIDS Coalition Focus Groups**

Focus group discussions:

The Community Health Awareness Group (CHAG), in collaboration with the Michigan AIDS Coalition (MAC), conducted a series of focus groups in March and April 2012 targeting young transgender women of color.

Ages of participants ranged from 21 to 57, and 97 percent were African American. Participants reported living as women for an average of 15 years (ranging from two to 42 years). All had accessed HIV testing within the past year, and only a small percentage had been tested for hepatitis C virus (HCV). A total of 71 percent rated themselves at medium to high risk for HIV; the reverse was true for HCV, with 71 percent rating themselves as low risk or not at risk for HCV. The participants also discussed various risk behaviors for HIV and HCV. These included:

- Not using condoms, particularly among the younger girls who "prostituted themselves";

- Sex as validation, which has nothing to do with prostitution –e.g., a fascination that men want to have sex with you as a woman, which may also cause issues around using condoms;

- Injecting at pump parties or injections of silicon or Crisco, which creates shared needle risks as well as other health problems;

- Many girls dating the same men in the community with diseases being passed around.

Stereotypes and stigma were also consistent topics. It was discussed that not all transgender women engage in exchange sex because they are out on the streets and need money. Many have full-time jobs but see having sex with anyone as validating them as a woman. It is a quick way of validating their sexuality.

Participants saw medical care as important and incorporated it into larger pictures within their lives rather than just as access to health insurance and physicians. They perceived stigma within the healthcare system, often related to sensitivity around gender reassignment or having both breasts and a penis. Having medical professionals who were able to focus on the standard medical treatment for disease conditions (e.g., bronchitis/nodes on vocal cords, breast exams for lumps, bladder infections) rather than having to explain what's under the clothes (being transgender) every time they seek out care was a priority. Medical emergencies where physicians and nurses were unprepared for transgender persons were cited as examples. The importance of recognizing their legal rights, such as name changes on medical records, was also described.

Mentoring from older women to younger girls was noted as important, particularly for realizing and holding on to the importance of getting a job and going to school.

Table 8: Demographic information on HIV infection cases currently living in Michigan, 2012

REPORTED HIV INFECTION PREVALENCE

	EST PREV*	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL			Late HIV diagnosis		CENSUS 2010**	
	Num	Num	Percent	Num	Percent	Num	Percent	Rate per 100,000	Num	Percent of stage 3 cases	Num	Percent
RACE/ETHNICITY§												
White	7,410	2,545	35%	3,121	36%	5,666	36%	75	1,409	45%	7,569,939	77%
Black	11,620	4,111	57%	4,777	56%	8,888	56%	642	1,895	40%	1,383,756	14%
Hispanic	1,000	337	5%	431	5%	768	5%	176	207	48%	436,358	4%
Asian/NH/OPI	130	45	1%	51	1%	96	1%	40	28	55%	238,660	2%
AI/AN	50	26	<1%	15	<1%	41	<1%	75	4	27%	54,665	1%
Multi/other/unk	380	124	2%	170	2%	294	2%	N/A	51	30%	200,262	2%
SEX & RACE												
Male	16,040	5,450	76%	6,819	80%	12,269	78%	253	2,952	43%	4,848,114	49%
White male	*6,470*	*2,160*	*30%*	*2,784*	*33%*	*4,944*	*31%*	*133*	*1,292*	*46%*	*3,728,507*	*38%*
Black male	*8,360*	*2,894*	*40%*	*3,500*	*41%*	*6,394*	*41%*	*973*	*1,415*	*40%*	*657,181*	*7%*
Hispanic male	*790*	*258*	*4%*	*346*	*4%*	*604*	*4%*	*272*	*175*	*51%*	*221,913*	*2%*
Other male	*430*	*138*	*2%*	*189*	*2%*	*327*	*2%*	*136*	*70*	*37%*	*240,513*	*2%*
Female	4,560	1,738	24%	1,746	20%	3,484	22%	69	642	37%	5,035,526	51%
White female	*940*	*385*	*5%*	*337*	*4%*	*722*	*5%*	*19*	*117*	*35%*	*3,841,432*	*39%*
Black female	*3,260*	*1,217*	*17%*	*1,277*	*15%*	*2,494*	*16%*	*343*	*480*	*38%*	*726,575*	*7%*
Hispanic female	*210*	*79*	*1%*	*85*	*1%*	*164*	*1%*	*76*	*32*	*38%*	*214,445*	*2%*
Other female	*140*	*57*	*1%*	*47*	*1%*	*104*	*1%*	*41*	*13*	*28%*	*253,074*	*3%*
RISK†												
Male-male sex (MSM)	10,160	3,451	48%	4,320	50%	7,771	49%	--	1,832	42%	--	--
Injection drug use (IDU)	2,010	593	8%	946	11%	1,539	10%	--	321	34%	--	--
MSM/IDU	910	294	4%	405	5%	699	4%	--	119	29%	--	--
Blood products	120	31	<1%	61	1%	92	1%	--	17	28%	--	--
Heterosexual contact (HC)	3,600	1,317	18%	1,437	17%	2,754	17%	--	534	37%	--	--
HCFR (male)	*720*	*239*	*3%*	*313*	*4%*	*552*	*4%*	*--*	*123*	*39%*	*--*	*--*
HCM (female)	*2,880*	*1,078*	*15%*	*1,124*	*13%*	*2,202*	*14%*	*--*	*411*	*37%*	*--*	*--*
Perinatal	230	108	2%	65	1%	173	1%	--	25	38%	--	--
Undetermined	3,560	1,394	19%	1,331	16%	2,725	17%	--	746	56%	--	--
AGE AT HIV DIAGNOSIS												
0 - 12 years	270	127	2%	76	1%	203	1%	--	23	30%	--	--
13 - 19 years	1,030	473	7%	311	4%	784	5%	--	58	19%	--	--
20 - 24 years	2,810	1,204	17%	947	11%	2,151	14%	--	198	21%	--	--
25 - 29 years	3,440	1,275	18%	1,356	16%	2,631	17%	--	401	30%	--	--
30 - 39 years	7,140	2,266	32%	3,193	37%	5,459	35%	--	1,340	42%	--	--
40 - 49 years	4,200	1,306	18%	1,905	22%	3,211	20%	--	1,078	57%	--	--
50 - 59 years	1,380	438	6%	620	7%	1,058	7%	--	385	62%	--	--
60 years and over	330	96	1%	157	2%	253	2%	--	111	71%	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	--	--	--	--
AREA OF CURRENT RESIDENCE¶												
Detroit Metro	13,040	4,453	62%	5,466	64%	9,919	63%	232	2,325	43%	4,267,304	43%
Out-State	7,080	2,512	35%	2,877	34%	5,389	34%	96	1,213	42%	5,616,336	57%
Prison	370	174	2%	189	2%	363	2%	N/A	43	23%	N/A	N/A
Unknown††	110	49	1%	33	<1%	82	1%	N/A	13	39%	N/A	N/A
STATEWIDE TOTAL	**20,600**	**7,188**	**100%**	**8,565**	**100%**	**15,753**	**100%**	**159**	**3,594**	**42%**	**9,883,640**	**100%**

*See pages iv-v for descriptions of prevalence estimate calculations. NOTE: prevalence estimates throughout this document are based on the number of people currently living with HIV in Michigan as of January 2012. Prevalence estimates in other MDCH documents (such as quarterly stats) are based on the number of people living with HIV who were diagnosed in MI.

† See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

§ In this report, persons described as white, black, Asian/Native Hawaiian or Other Pacific Islander (Asian/NH/OPI), or American Indian/Alaskan Native (AI/AN) are all non-Hispanic; persons described as Hispanic may be of any race.

¶ The Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State Area.

** Rates are not reported for risk categories and age at diagnosis because no reliable denominator data exist for these groups.

†† Unknown residence consists of 80 persons released from prison with unknown current location and two non-prisoners with no known residence.

Table 9: HIV infection cases currently living in Michigan by county of current residence, 2012

REPORTED HIV INFECTION PREVALENCE

COUNTY	EST PREV* Num	HIV, non-stage 3 Num	Percent	HIV, stage 3 (AIDS) Num	Percent	TOTAL Num	Percent	Rate per 100,000	Late diagnosis Num	Percent of stage 3 cases	CENSUS 2010 Num	Percent
Alcona	10	0	0%	1	<1%	1	<1%	9	1	100%	10,942	<1%
Alger	10	1	<1%	4	<1%	5	<1%	52	0	0%	9,601	<1%
Allegan	140	38	1%	72	1%	110	1%	99	27	38%	111,408	1%
Alpena	10	1	<1%	9	<1%	10	<1%	34	2	22%	29,598	<1%
Antrim	10	6	<1%	5	<1%	11	<1%	47	3	60%	23,580	<1%
Arenac	10	3	<1%	4	<1%	7	<1%	44	2	50%	15,899	<1%
Baraga	10	1	<1%	4	<1%	5	<1%	56	3	75%	8,860	<1%
Barry	30	6	<1%	18	<1%	24	<1%	41	10	56%	59,173	1%
Bay	100	36	1%	39	<1%	75	<1%	70	15	38%	107,771	1%
Benzie	10	3	<1%	4	<1%	7	<1%	40	1	25%	17,525	<1%
Berrien	330	105	1%	148	2%	253	2%	161	61	41%	156,813	2%
Branch	20	8	<1%	4	<1%	12	<1%	27	2	50%	45,248	<1%
Calhoun	220	80	1%	84	1%	164	1%	120	21	25%	136,146	1%
Cass	40	15	<1%	18	<1%	33	<1%	63	7	39%	52,293	1%
Charlevoix	10	4	<1%	7	<1%	11	<1%	42	3	43%	25,949	<1%
Cheboygan	10	4	<1%	6	<1%	10	<1%	38	1	17%	26,152	<1%
Chippewa	20	11	<1%	8	<1%	19	<1%	49	3	38%	38,520	<1%
Clare	40	10	<1%	17	<1%	27	<1%	87	7	41%	30,926	<1%
Clinton	70	26	<1%	29	<1%	55	<1%	73	13	45%	75,382	1%
Crawford	10	3	<1%	4	<1%	7	<1%	50	3	75%	14,074	<1%
Delta	20	10	<1%	8	<1%	18	<1%	49	2	25%	37,069	<1%
Dickinson	10	1	<1%	5	<1%	6	<1%	23	3	60%	26,168	<1%
Eaton	130	47	1%	51	1%	98	1%	91	11	22%	107,759	1%
Emmet	20	5	<1%	7	<1%	12	<1%	37	4	57%	32,694	<1%
Genesee	720	261	4%	286	3%	547	3%	128	113	40%	425,790	4%
Gladwin	10	2	<1%	2	<1%	4	<1%	16	2	100%	25,692	<1%
Gogebic	10	2	<1%	2	<1%	4	<1%	24	1	50%	16,427	<1%
Grand Traverse	100	35	<1%	39	<1%	74	<1%	85	20	51%	86,986	1%
Gratiot	20	10	<1%	9	<1%	19	<1%	45	5	56%	42,476	<1%
Hillsdale	10	2	<1%	7	<1%	9	<1%	19	4	57%	46,688	<1%
Houghton	10	7	<1%	4	<1%	11	<1%	30	2	50%	36,628	<1%
Huron	10	3	<1%	2	<1%	5	<1%	15	1	50%	33,118	<1%
Ingham	600	227	3%	231	3%	458	3%	163	95	41%	280,895	3%
Ionia	50	21	<1%	18	<1%	39	<1%	61	7	39%	63,905	1%
Iosco	10	5	<1%	2	<1%	7	<1%	27	0	0%	25,887	<1%
Iron	10	1	<1%	1	<1%	2	<1%	17	1	100%	11,817	<1%
Isabella	70	22	<1%	28	<1%	50	<1%	71	10	36%	70,311	1%
Jackson	230	82	1%	96	1%	178	1%	111	35	36%	160,248	2%
Kalamazoo	430	161	2%	169	2%	330	2%	132	57	34%	250,331	3%
Kalkaska	10	3	<1%	0	0%	3	<1%	17	--	--	17,153	<1%
Kent	1,330	452	6%	559	7%	1,011	6%	168	250	45%	602,622	6%
Keweenaw	10	0	0%	0	0%	0	0%	0	--	--	2,156	<1%
Lake	20	5	<1%	7	<1%	12	<1%	104	4	57%	11,539	<1%
Lapeer	50	17	<1%	24	<1%	41	<1%	46	10	42%	88,319	1%
Leelanau	10	3	<1%	6	<1%	9	<1%	41	4	67%	21,708	<1%
Lenawee	90	35	<1%	30	<1%	65	<1%	65	16	53%	99,892	1%
Livingston	90	28	<1%	39	<1%	67	<1%	37	17	44%	180,967	2%
Luce	10	1	<1%	1	<1%	2	<1%	30	0	0%	6,631	<1%

Table 9: HIV infection cases currently living in Michigan by county of current residence, 2012 (continued)

REPORTED HIV INFECTION PREVALENCE

COUNTY	EST PREV* Num	HIV, non-stage 3 Num	HIV, non-stage 3 Percent	HIV, stage 3 (AIDS) Num	HIV, stage 3 (AIDS) Percent	TOTAL Num	TOTAL Percent	TOTAL Rate per 100,000†	Late diagnosis Num	Late diagnosis Percent of stage 3 cases	CENSUS 2010 Num	CENSUS 2010 Percent
Mackinac	10	3	<1%	1	<1%	4	<1%	36	0	0%	11,113	<1%
Macomb	990	365	5%	391	5%	756	5%	90	189	48%	840,978	9%
Manistee	10	4	<1%	7	<1%	11	<1%	44	3	43%	24,733	<1%
Marquette	50	11	<1%	24	<1%	35	<1%	52	14	58%	67,077	1%
Mason	20	6	<1%	10	<1%	16	<1%	56	6	60%	28,705	<1%
Mecosta	20	7	<1%	8	<1%	15	<1%	35	4	50%	42,798	<1%
Menominee	10	4	<1%	1	<1%	5	<1%	21	1	100%	24,029	<1%
Midland	30	12	<1%	14	<1%	26	<1%	31	9	64%	83,629	1%
Missaukee	10	4	<1%	3	<1%	7	<1%	47	2	67%	14,849	<1%
Monroe	100	37	1%	42	<1%	79	1%	52	22	52%	152,021	2%
Montcalm	30	9	<1%	13	<1%	22	<1%	35	7	54%	63,342	1%
Montmorency	10	0	0%	3	<1%	3	<1%	31	3	100%	9,765	<1%
Muskegon	200	79	1%	72	1%	151	1%	88	34	47%	172,188	2%
Newaygo	20	5	<1%	9	<1%	14	<1%	29	1	11%	48,460	<1%
Oakland	2,400	865	12%	958	11%	1,823	12%	152	402	42%	1,202,362	12%
Oceana	10	5	<1%	2	<1%	7	<1%	26	1	50%	26,570	<1%
Ogemaw	10	1	<1%	2	<1%	3	<1%	14	1	50%	21,699	<1%
Ontonagon	10	0	0%	3	<1%	3	<1%	44	2	67%	6,780	<1%
Osceola	10	2	<1%	5	<1%	7	<1%	30	2	40%	23,528	<1%
Oscoda	10	2	<1%	1	<1%	3	<1%	35	0	0%	8,640	<1%
Otsego	20	4	<1%	9	<1%	13	<1%	54	5	56%	24,164	<1%
Ottawa	140	45	1%	62	1%	107	1%	41	34	55%	263,801	3%
Presque Isle	10	0	0%	2	<1%	2	<1%	15	1	50%	13,376	<1%
Roscommon	20	5	<1%	12	<1%	17	<1%	70	7	58%	24,449	<1%
Saginaw	320	119	2%	121	1%	240	2%	120	47	39%	200,169	2%
Sanilac	20	10	<1%	8	<1%	18	<1%	42	6	75%	43,114	<1%
Schoolcraft	10	1	<1%	0	0%	1	<1%	12	--	--	8,485	<1%
Shiawassee	40	11	<1%	16	<1%	27	<1%	38	9	56%	70,648	1%
St. Clair	150	51	1%	61	1%	112	1%	69	29	48%	163,040	2%
St. Joseph	40	13	<1%	20	<1%	33	<1%	54	9	45%	61,295	1%
Tuscola	10	5	<1%	4	<1%	9	<1%	16	3	75%	55,729	1%
Van Buren	90	36	1%	33	<1%	69	<1%	90	12	36%	76,258	1%
Washtenaw	820	313	4%	310	4%	623	4%	181	139	45%	344,791	3%
Wayne Total	9,340	3,118	43%	3,990	47%	7,108	45%	390	1,673	42%	1,820,584	18%
Wayne, excl. Detroit	*2,040*	*672*	*9%*	*882*	*10%*	*1,554*	*10%*	*140*	*385*	*44%*	*1,106,807*	*11%*
Detroit	*7,300*	*2,446*	*34%*	*3,108*	*36%*	*5,554*	*35%*	*778*	*1,288*	*41%*	*713,777*	*7%*
Wexford	20	4	<1%	8	<1%	12	<1%	37	2	25%	32,735	<1%
AREA †												
Detroit Metro	13,040	4,453	62%	5,466	64%	9,919	63%	232	2,325	43%	4,267,304	43%
Out-State	7,080	2,512	35%	2,877	34%	5,389	34%	96	1,213	42%	5,616,336	57%
Prison	370	174	2%	189	2%	363	2%	N/A	43	23%	N/A	N/A
Unknown§	110	49	1%	33	<1%	82	1%	N/A	13	39%	N/A	N/A
STATEWIDE TOTAL	**20,600**	**7,188**	**100%**	**8,565**	**100%**	**15,753**	**100%**	**159**	**3,594**	**42%**	**9,883,640**	**100%**

*See pages iv-v for descriptions of prevalence estimate calculations. NOTE: prevalence estimates throughout this document are based on the number of people currently living with HIV in Michigan as of January 2012. Prevalence estimates in other MDCH documents (such as quarterly stats) are based on the number of people living with HIV who were diagnosed in MI.

† The Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State Area.

§ Unknown residence consists of 80 persons released from prison with unknown current location and two non-prisoners with no known residence.

Table 10: Risk transmission and exposure categories for HIV infection cases currently living in Michigan by sex, 2012

REPORTED HIV INFECTION PREVALENCE

	Male		Female		Overall	
	Num	Percent	Num	Percent	Num	Percent
RISK TRANSMISSION CATEGORIES (CDC Hierarchy) *§						
(Mutually exclusive: one case is represented in ONLY one category)						
Male-male sex (MSM)	7,771	63%	N/A	--	7,771	49%
Injection drug use (IDU)	904	7%	635	18%	1,539	10%
MSM/IDU	699	6%	N/A	--	699	4%
Blood products	77	1%	15	<1%	92	1%
Heterosexual contact (HC)	552	4%	2,202	63%	2,754	17%
HCFR (male)	*552*	*4%*	*N/A*	*--*	*552*	*4%*
HCM (female)	*N/A*	*--*	*2,202*	*63%*	*2,202*	*14%*
Perinatal	97	1%	76	2%	173	1%
Undetermined	2,169	18%	556	16%	2,725	17%
EXPOSURE CATEGORIES *†						
(Mutually exclusive: one case is represented in ONLY one category)						
Male-male sex only	5,087	41%	N/A	--	5,087	32%
MSM & HC	2,637	21%	N/A	--	2,637	17%
MSM & IDU	306	2%	N/A	--	306	2%
MSM & blood products	25	<1%	N/A	--	25	<1%
MSM & HC & IDU	377	3%	N/A	--	377	2%
MSM & HC & blood products	22	<1%	N/A	--	22	<1%
MSM & IDU & blood products	4	<1%	N/A	--	4	<1%
MSM & HC & IDU & blood products	12	<1%	N/A	--	12	<1%
Heterosexual contact only	1,959	16%	2,506	72%	4,465	28%
HC & IDU	680	6%	555	16%	1,235	8%
HC & blood products	50	<1%	40	1%	90	1%
HC & IDU & blood products	22	<1%	17	<1%	39	<1%
Injection drug use only	201	2%	63	2%	264	2%
IDU & blood products	1	<1%	0	0%	1	<1%
Perinatal exposure	97	1%	76	2%	173	1%
Exposure to blood products only	41	<1%	4	<1%	45	<1%
Undetermined	748	6%	223	6%	971	6%
TOTAL	**12,269**	**100%**	**3,484**	**100%**	**15,753**	**100%**
SUMMARIZED EXPOSURE CATEGORIES ¥						
(NOT mutually exclusive: one case may be represented in multiple categories)						
Any MSM	8,470	69%	N/A	--	8,470	54%
Behaviorally bisexual males	3,048	25%	N/A	--	3,048	19%
Any heterosexual contact	5,759	47%	3,118	89%	8,877	56%
Any IDU	1,603	13%	635	18%	2,238	14%

*See page ii for descriptions of risk transmission and exposure categories.

§ Risk transmission categories are grouped based on hierarchical categories determined by the CDC. Any one person with multiple risks is only represented in the highest category, with the exception of MSM/IDU (based on the hierarchical algorithm).

† Exposure categories are mutually exclusive and grouped to allow all possible combinations of exposures that any one person may have. NOTE: Heterosexual contact (HC) in exposure categories includes males and females who had heterosexual contact, regardless of what is known about their partners' risk or HIV status.

¥ Summarized exposure categories are NOT mutually exclusive, i.e. a case may be represented in multiple categories. These summarized categories are meant to give a broader picture of exposure and will NOT add up to the total number of persons living with HIV infection.

Table 11: Sex, race, and risk among HIV infection cases currently living in Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	3,702	75%	3,557	56%	332	55%	180	55%	7,771	63%
Injection drug use (IDU)	189	4%	634	10%	60	10%	21	6%	904	7%
MSM/IDU	313	6%	326	5%	35	6%	25	8%	699	6%
Blood products	59	1%	14	<1%	2	<1%	2	1%	77	1%
Heterosexual contact (HCFR)	109	2%	386	6%	43	7%	14	4%	552	4%
Perinatal	18	<1%	67	1%	4	1%	8	2%	97	1%
Undetermined	554	11%	1,410	22%	128	21%	77	24%	2,169	18%
Male Subtotal	4,944	40%	6,394	52%	604	5%	327	3%	12,269	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	138	19%	454	18%	29	18%	14	13%	635	18%
Blood products	10	1%	4	<1%	1	1%	0	0%	15	<1%
Heterosexual contact (HCM)	467	65%	1,552	62%	114	70%	69	66%	2,202	63%
Perinatal	10	1%	52	2%	9	5%	5	5%	76	2%
Undetermined	97	13%	432	17%	11	7%	16	15%	556	16%
Female Subtotal	722	21%	2,494	72%	164	5%	104	3%	3,484	100%

ALL

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	3,702	65%	3,557	40%	332	43%	180	42%	7,771	49%
Injection drug use (IDU)	327	6%	1,088	12%	89	12%	35	8%	1,539	10%
MSM/IDU	313	6%	326	4%	35	5%	25	6%	699	4%
Blood products	69	1%	18	<1%	3	<1%	2	<1%	92	1%
Heterosexual contact (HC)	576	10%	1,938	22%	157	20%	83	19%	2,754	17%
HCFR (male)	109	2%	386	4%	43	6%	14	3%	552	4%
HCM (female)	467	8%	1,552	17%	114	15%	69	16%	2,202	14%
Perinatal	28	<1%	119	1%	13	2%	13	3%	173	1%
Undetermined	651	11%	1,842	21%	139	18%	93	22%	2,725	17%
RACE ALL	5,666	36%	8,888	56%	768	5%	431	3%	15,753	100%

Table 12: Sex, race, and age at HIV diagnosis among HIV infection cases currently living in Michigan, 2012

MALE

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	All male Num	All male Percent
0 - 12 years	32	1%	73	1%	4	1%	9	3%	118	1%
13 - 19 years	86	2%	454	7%	21	3%	16	5%	577	5%
20 - 24 years	467	9%	1,078	17%	78	13%	45	14%	1,668	14%
25 - 29 years	828	17%	1,025	16%	123	20%	66	20%	2,042	17%
30 - 39 years	1,928	39%	2,036	32%	220	36%	116	35%	4,300	35%
40 - 49 years	1,152	23%	1,242	19%	106	18%	56	17%	2,556	21%
50 - 59 years	353	7%	407	6%	33	5%	16	5%	809	7%
60 years and over	98	2%	77	1%	19	3%	3	1%	197	2%
Unknown	0	0%	2	<1%	0	0%	0	0%	2	<1%
Male Subtotal	4,944	40%	6,394	52%	604	5%	327	3%	12,269	100%

FEMALE

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	All female Num	All female Percent
0 - 12 years	12	2%	59	2%	9	5%	5	5%	85	2%
13 - 19 years	48	7%	144	6%	12	7%	3	3%	207	6%
20 - 24 years	131	18%	315	13%	24	15%	13	13%	483	14%
25 - 29 years	139	19%	402	16%	30	18%	18	17%	589	17%
30 - 39 years	226	31%	835	33%	55	34%	43	41%	1,159	33%
40 - 49 years	109	15%	510	20%	22	13%	14	13%	655	19%
50 - 59 years	47	7%	185	7%	9	5%	8	8%	249	7%
60 years and over	9	1%	44	2%	3	2%	0	0%	56	2%
Unknown	1	<1%	0	0%	0	0%	0	0%	1	<1%
Female Subtotal	722	21%	2,494	72%	164	5%	104	3%	3,484	100%

ALL

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	Age all Num	Age all Percent
0 - 12 years	44	1%	132	1%	13	2%	14	3%	203	1%
13 - 19 years	134	2%	598	7%	33	4%	19	4%	784	5%
20 - 24 years	598	11%	1,393	16%	102	13%	58	13%	2,151	14%
25 - 29 years	967	17%	1,427	16%	153	20%	84	19%	2,631	17%
30 - 39 years	2,154	38%	2,871	32%	275	36%	159	37%	5,459	35%
40 - 49 years	1,261	22%	1,752	20%	128	17%	70	16%	3,211	20%
50 - 59 years	400	7%	592	7%	42	5%	24	6%	1,058	7%
60 years and over	107	2%	121	1%	22	3%	3	1%	253	2%
Unknown	1	<1%	2	<1%	0	0%	0	0%	3	<1%
RACE ALL	5,666	36%	8,888	56%	768	5%	431	3%	15,753	100%

Table 13: Sex, risk, and age at HIV diagnosis among HIV infection cases currently living in Michigan, 2012

MALE	0 – 12 years		13 – 19 years		20 – 24 years		25 – 29 years		30 – 39 years		40 – 49 years		50 – 59 years		60 years and over		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	436	76%	1,298	78%	1,439	70%	2,740	64%	1,372	54%	393	49%	93	47%	7,771	63%
Injection drug use	0	0%	5	1%	33	2%	85	4%	330	8%	338	13%	98	12%	14	7%	903	7%
MSM/IDU	0	0%	14	2%	81	5%	131	6%	293	7%	144	6%	34	4%	2	1%	699	6%
Blood products	14	12%	20	3%	11	1%	12	1%	15	<1%	4	<1%	1	<1%	0	0%	77	1%
Heterosexual contact (HCFR)	0	0%	10	2%	35	2%	96	5%	227	5%	125	5%	46	6%	13	7%	552	4%
Perinatal	93	79%	4	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	97	1%
Undetermined	11	9%	88	15%	210	13%	279	14%	695	16%	573	22%	237	29%	75	38%	2,168	18%
Male Subtotal*	118	1%	577	5%	1,668	14%	2,042	17%	4,300	35%	2,556	21%	809	7%	197	2%	12,267	100%

FEMALE	0 – 12 years		13 – 19 years		20 – 24 years		25 – 29 years		30 – 39 years		40 – 49 years		50 – 59 years		60 years and over		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use	0	0%	12	6%	63	13%	91	15%	250	22%	167	25%	44	18%	8	14%	635	18%
Blood products	0	0%	2	1%	2	<1%	0	0%	4	<1%	2	<1%	2	1%	3	5%	15	<1%
Heterosexual contact (HCM)	0	0%	162	78%	348	72%	396	67%	720	62%	388	59%	156	63%	32	57%	2,202	63%
Perinatal	76	89%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	76	2%
Undetermined	9	11%	31	15%	70	14%	102	17%	185	16%	98	15%	47	19%	13	23%	555	16%
Female Subtotal*	85	2%	207	6%	483	14%	589	17%	1,159	33%	655	19%	249	7%	56	2%	3,483	100%

ALL	0 – 12 years		13 – 19 years		20 – 24 years		25 – 29 years		30 – 39 years		40 – 49 years		50 – 59 years		60 years and over		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	436	56%	1,298	60%	1,439	55%	2,740	50%	1,372	43%	393	37%	93	37%	7,771	49%
Injection drug use	0	0%	17	2%	96	4%	176	7%	580	11%	505	16%	142	13%	22	9%	1,538	10%
MSM/IDU	0	0%	14	2%	81	4%	131	5%	293	5%	144	4%	34	3%	2	1%	699	4%
Blood products	14	7%	22	3%	13	1%	12	<1%	19	<1%	6	<1%	3	<1%	3	1%	92	1%
Heterosexual contact (HC)	0	0%	172	22%	383	18%	492	19%	947	17%	513	16%	202	19%	45	18%	2,754	17%
HCFR (male)	0	0%	10	1%	35	2%	96	4%	227	4%	125	4%	46	4%	13	5%	552	4%
HCM (female)	0	0%	162	21%	348	16%	396	15%	720	13%	388	12%	156	15%	32	13%	2,202	14%
Perinatal	169	83%	4	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	173	1%
Undetermined	20	10%	119	15%	280	13%	381	14%	880	16%	671	21%	284	27%	88	35%	2,723	17%
AGE TOTAL*	203	1%	784	5%	2,151	14%	2,631	17%	5,459	35%	3,211	20%	1,058	7%	253	2%	15,750	100%

*Not included in this table are the following cases with unknown age at diagnosis: one male IDU, one male with unknown risk, and one female with unknown risk.

Table 14: Estimated number and rate of new HIV infections in Michigan and the U.S., 2006-2009

	2006				2007				2008				2009			
	Num*	Percent	Rate†	U.S. rate§	Num*	Percent	Rate†	U.S. rate§	Num*	Percent	Rate†	U.S. rate§	Num*	Percent	Rate†	U.S. rate§
SEX																
Male	548	79%	13.4	30.1	770	83%	18.9	34.9	517	77%	12.7	29	531	74%	13.1	29.8
Female	150	21%	3.5	9.8	154	17%	3.6	10.7	157	23%	3.7	9.5	188	26%	4.4	8.6
RACE/ETHNICITY																
White	221	32%	3.3	9.8	327	35%	5	11.2	174	26%	2.6	8.7	287	40%	4.4	9.1
Black	373	54%	33	72.7	522	57%	46.2	79.2	440	65%	39	73.2	389	54%	34.6	69.9
AGE AT INFECTION																
13-29 years	239	34%	10.1	21.8	379	41%	16	27.2	298	44%	12.7	26.5	298	41%	12.8	25.8
30-39 years	184	26%	14	37	276	30%	21.6	27.9	178	26%	14.2	34.2	161	22%	13.1	32.2
40+ years	274	39%	5.9	N/A¶	269	29%	5.7	N/A¶	198	29%	4.2	N/A¶	261	36%	5.5	N/A¶
RISK																
Male-male sex (MSM)	466	67%	--	--	630	68%	--	--	447	66%	--	--	456	63%	--	--
Injection drug user (IDU)	N/A	N/A	--	--	104	11%	--	--	108	16%	--	--	144	20%	--	--
Heterosexual contact (HC)	154	22%	--	--	189	20%	--	--	117	17%	--	--	121	17%	--	--
TOTAL	697	100%	8.3	19.8	924	100%	11.1	22.5	674	100%	8.1	19.0	720	100%	8.6	19.0

*Numbers have been adjusted to account for reporting delay.

† Rate per 100,000 population for ages 13 and older, 2009 intercensal estimates.

§ U.S. Rates are from "Estimated HIV Incidence in the United States, 2006-2009" in the online journal, PLos One, August 2011, Volume 6, Issue 8, e17502 (www.plosone.org).

¶ National data did not include a 40+ age group. Rates were reported for 40-49 and 50-99 age groups.

	Met need		Unmet need		Total		Overall percent unmet need
	Num	Percent of total	Num	Percent of total	Num	Percent of total	
STAGE OF INFECTION							
HIV, non-stage 3	3,691	38%	2,861	52%	6,552	43%	44%
HIV stage 3 (AIDS)	5,974	62%	2,670	48%	8,644	57%	31%
RACE/ETHNICITY [*]							
White	3,635	38%	1,867	34%	5,502	36%	34%
Black	5,393	56%	3,175	57%	8,568	56%	37%
Hispanic	366	4%	361	7%	727	5%	50%
Asian/NH/OPI	48	<1%	34	1%	82	1%	41%
AI/AN	20	<1%	17	<1%	37	<1%	46%
Multi/other/unk	203	2%	77	1%	280	2%	28%
SEX & RACE							
Male	7,526	78%	4,313	78%	11,839	78%	36%
White male	*3,204*	*33%*	*1,616*	*29%*	*4,820*	*32%*	*34%*
Black male	*3,833*	*40%*	*2,318*	*42%*	*6,151*	*40%*	*38%*
Hispanic male	*288*	*3%*	*276*	*5%*	*564*	*4%*	*49%*
Other male	*201*	*2%*	*103*	*2%*	*304*	*2%*	*34%*
Female	2,139	22%	1,218	22%	3,357	22%	36%
White female	*431*	*4%*	*251*	*5%*	*682*	*4%*	*37%*
Black female	*1,560*	*16%*	*857*	*15%*	*2,417*	*16%*	*35%*
Hispanic female	*78*	*1%*	*85*	*2%*	*163*	*1%*	*52%*
Other female	*70*	*1%*	*25*	*<1%*	*95*	*1%*	*26%*
RISK							
Male-male sex (MSM)	4,875	50%	2,601	47%	7,476	49%	35%
Injection drug use (IDU)	844	9%	782	14%	1,626	11%	48%
MSM/IDU	442	5%	275	5%	717	5%	38%
Blood recipient	59	1%	35	1%	94	1%	37%
Heterosexual contact (HC)[†]	1,825	19%	847	15%	2,672	18%	32%
Perinatal	130	1%	40	1%	170	1%	24%
Undetermined	1,490	15%	951	17%	2,441	16%	39%
AGE AT HIV DIAGNOSIS							
0 - 12 yrs	143	1%	44	1%	187	1%	24%
13 - 19 yrs	352	4%	244	4%	596	4%	41%
20 - 24 yrs	976	10%	803	15%	1,779	12%	45%
25 - 29 yrs	1,391	14%	1,011	18%	2,402	16%	42%
30 - 34 yrs	1,606	17%	1,100	20%	2,706	18%	41%
35 - 39 yrs	1,587	16%	938	17%	2,525	17%	37%
40 - 44 yrs	1,215	13%	701	13%	1,916	13%	37%
45 - 49 yrs	746	8%	402	7%	1,148	8%	35%
50 - 54 yrs	426	4%	223	4%	649	4%	34%
55 - 59 yrs	197	2%	90	2%	287	2%	31%
60 - 64 yrs	87	1%	48	1%	135	1%	36%
65 yrs and older	55	1%	32	1%	87	1%	37%
CURRENT RESIDENCE							
Detroit Metro Area	6,167	64%	3,379	61%	9,546	63%	35%
Lapeer	*28*	*<1%*	*8*	*<1%*	*36*	*<1%*	*19%*
Macomb	*468*	*5%*	*228*	*4%*	*630*	*4%*	*33%*
Monroe	*49*	*1%*	*29*	*1%*	*75*	*<1%*	*43%*
Oakland	*1,080*	*11%*	*606*	*11%*	*1,551*	*10%*	*39%*
St Clair	*77*	*1%*	*29*	*1%*	*87*	*1%*	*33%*
Wayne, excl. Detroit	*935*	*10%*	*486*	*9%*	*1,421*	*9%*	*35%*
Detroit	*3,530*	*37%*	*1,993*	*36%*	*5,251*	*35%*	*39%*
Out-State Michigan	3,236	33%	1,953	35%	5,189	34%	38%
Washtenaw	*392*	*4%*	*192*	*3%*	*584*	*4%*	*33%*
Berrien	*132*	*1%*	*112*	*2%*	*244*	*2%*	*46%*
Genesee	*302*	*3%*	*229*	*4%*	*531*	*3%*	*43%*
Allegan, Kent, Muskegon and Ottawa	*834*	*9%*	*466*	*8%*	*1,300*	*9%*	*36%*
Jackson	*143*	*1%*	*102*	*2%*	*245*	*2%*	*42%*
Kalamazoo and Calhoun	*292*	*3%*	*168*	*3%*	*460*	*3%*	*37%*
Clinton, Eaton and Ingham	*363*	*4%*	*197*	*4%*	*560*	*4%*	*35%*
Saginaw, Bay and Midland	*193*	*2%*	*135*	*2%*	*328*	*2%*	*41%*
Other Out-State counties	*585*	*6%*	*352*	*6%*	*937*	*6%*	*38%*
Other/unknown[§]	262	3%	199	4%	461	3%	43%
TOTAL	**9,665**	**100%**	**5,531**	**100%**	**15,196**	**100%**	**36%**

[*] In this report, persons described as white, black, Asian/Native Hawaiian or Other Pacific Islander (A/NH/OPI) or American Indian/Alaska Native (AI/AN) are all non-Hispanic. Persons described as Hispanic may be of any race.

[†] Heterosexual contact (HC) includes males who had sex with females with known risk for HIV (HCFR) and females who had sex with males, regardless of what was known about the male partners' risks (HCM).

[§] Persons who are currently in prison are included in 'Other/Unknown' residence.

Table 16: Selected characteristics of HIV-positive persons with viral suppression (<=200 copies/ml) among persons living with HIV infection in Michigan as of 2009[*]

	Overall population		Persons with at least 1 VL test in 2009		Persons with VL<=200[†§]	
	Num	Percent	Num	Percent	Num	Percent
SEX						
Male	10,547	78%	5,764	55%	3,954	69%
Female	3,056	22%	1,749	57%	1,096	63%
Missing/unknown	1	<1%	0	0%	--	--
AGE AS OF 12/31/2008						
13-24 years	736	5%	416	57%	152	37%
25-34 years	1,940	14%	1,025	53%	569	56%
35-44 years	4,381	32%	2,372	54%	1,596	67%
45-54 years	4,476	33%	2,509	56%	1,799	72%
55-64 years	1,709	13%	998	58%	779	78%
65 years and over	362	3%	193	53%	155	80%
RACE/ETHNICITY[¶]						
Black/African American	7,493	55%	4,199	56%	2,544	61%
Hispanic/Latino	669	5%	293	44%	217	74%
White	5,033	37%	2,778	55%	2,134	77%
Other	409	3%	243	59%	155	64%
RISK						
Male-male sex (MSM)	6,706	49%	3,854	57%	2,677	69%
Injection drug use (IDU) - males	864	6%	409	47%	272	67%
Injection drug use (IDU) - females	612	4%	300	49%	171	57%
MSM/IDU	677	5%	340	50%	219	64%
Heterosexual contact - males	517	4%	283	55%	190	67%
Heterosexual contact - females	1,259	9%	769	61%	502	65%
Other/unknown - males	1,783	13%	878	49%	596	68%
Other/unknown - females	1,185	9%	680	57%	423	62%
COUNTRY OF BIRTH						
U.S.	9,688	71%	5,531	57%	3,635	66%
U.S. dependency	77	1%	27	35%	19	70%
Foreign country	680	5%	318	47%	248	78%
Missing/unknown	3,159	23%	1,637	52%	1,148	70%
TOTAL	**13,604**	**100%**	**7,513**	**55%**	**5,050**	**67%**

Monitored viral load is calculated based on laboratory testing data which has a longer lag than case reporting. For that reason, data from 2009 is the latest year viral load analyses can be conducted at this time. Analysis based on HIV surveillance data reported through 05/25/2012.

[†]*Based on the most recent viral load test result from 01/01/2009 through 12/31/2009.*

[§] *Among persons with at least 1 VL test.*

[¶] *Persons described as white, black, and other are all non-Hispanic; persons described as Hispanic/Latino may be of any race. "Other" includes American Indian/Alaska Native, Asian/Native Hawaiian or Other Pacific Islander, multiple races, and unknown race.*

[e] *Heterosexual contact with a person known to have, or to have a known risk factor for, HIV infection.*

Table 17: Gonorrhea, syphilis, and chlamydia cases by sex, race, and age group, Michigan, 2011

	Gonorrhea			P&S syphilis*			Chlamydia			Census 2010	
	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent
RACE/ ETHNICITY											
White	1,399	11%	18.5	93	34%	1.2	10,866	22%	143.5	7,569,939	77%
Black	6,382	49%	461.2	169	62%	12.2	17,912	36%	1294.4	1,383,756	14%
Hispanic	146	1%	33.5	4	1%	0.9	1,069	2%	245.0	436,358	4%
Other/multi	155	1%	31.4	3	1%	0.6	894	2%	181.1	493,587	5%
Unknown race	4,988	38%	N/A	4	1%	N/A	19,322	39%	N/A	N/A	N/A
SEX & RACE											
Male	5,343	41%	110.2	247	90%	5.1	13,221	26%	272.7	4,848,114	49%
White male	*412*	*3%*	*11.0*	*88*	*32%*	*2.4*	*2,491*	*5%*	*66.8*	*3,728,507*	*38%*
Black male	*2,975*	*23%*	*452.7*	*149*	*54%*	*22.7*	*5,497*	*11%*	*836.5*	*657,181*	*7%*
Hispanic male	*39*	*<1%*	*17.6*	*4*	*1%*	*1.8*	*287*	*1%*	*129.3*	*221,913*	*2%*
Other male	*60*	*<1%*	*N/A*	*3*	*1%*	*1.2*	*224*	*<1%*	*N/A*	*240,513*	*2%*
Unknown male	*1,857*	*14%*	*N/A*	*3*	*1%*	*N/A*	*4,722*	*9%*	*N/A*	*N/A*	*N/A*
Female	7,706	59%	153.0	26	9%	0.0	36,732	73%	729.5	5,035,526	51%
White female	*981*	*8%*	*25.5*	*1*	*<1%*	*0.0*	*8,364*	*17%*	*217.7*	*3,841,432*	*39%*
Black female	*3,406*	*26%*	*468.8*	*20*	*7%*	*2.8*	*12,407*	*25%*	*1707.6*	*726,575*	*7%*
Hispanic female	*107*	*1%*	*49.9*	*0*	*0%*	*0.0*	*779*	*2%*	*363.3*	*214,445*	*2%*
Other female	*101*	*1%*	*39.9*	*0*	*0%*	*0.0*	*667*	*1%*	*263.6*	*253,074*	*3%*
Unknown female	*3,111*	*24%*	*N/A*	*1*	*<1%*	*N/A*	*14,515*	*29%*	*N/A*	*N/A*	*N/A*
Unknown sex - all races	21	<1%	N/A	0	0%	N/A	110	<1%	N/A	N/A	N/A
AGE											
0-4 years	10	<1%	1.7	0	0%	0.0	11	<1%	1.8	596,286	6%
5-9 years	3	<1%	0.5	0	0%	0.0	10	<1%	1.6	637,784	6%
10-14 years	148	1%	21.9	0	0%	0.0	662	1%	98.0	675,216	7%
15-19 years	4,249	33%	574.5	14	5%	1.9	19,426	39%	2626.6	739,599	7%
20-24 years	4,473	34%	668.5	63	23%	9.4	18,877	38%	2821.4	669,072	7%
25-29 years	1,806	14%	306.3	44	16%	7.5	6,026	12%	1022.1	589,583	6%
30-34 years	925	7%	161.0	35	13%	6.1	2,556	5%	444.9	574,566	6%
35-39 years	550	4%	89.8	40	15%	6.5	1,185	2%	193.5	612,493	6%
40-44 years	348	3%	52.3	28	10%	4.2	583	1%	87.6	665,481	7%
45-54 years	368	3%	24.4	36	13%	2.4	450	1%	29.8	1,510,033	15%
55-64 years	113	1%	9.0	13	5%	1.0	107	<1%	8.5	1,251,997	13%
65 and over	27	<1%	2.0	1	<1%	0.1	31	<1%	2.3	1,361,530	14%
Unknown age	50	<1%	N/A	0	0%	N/A	139	<1%	N/A	N/A	N/A
TOTAL	**13,070**	**100%**	**132.2**	**274**	**100%**	**2.8**	**50,063**	**100%**	**506.5**	**9,883,640**	**100%**

*P&S: Primary and secondary syphilis.
^Rate per 100,000 population.

Table 18: Gonorrhea, syphilis, and chlamydia cases by area and local health department jurisdiction, 2011

Local health department jurisdiction	Gonorrhea		P&S syphilis*		Chlamydia		Census 2010
	Num	Rate^	Num	Rate^	Num	Rate^	Num
Allegan	31	27.8	1	0.9	268	240.6	111,408
Barry/Eaton	55	32.9	1	0.6	424	254.0	166,932
Bay	28	26.0	0	0.0	339	314.6	107,771
Benzie/Leelanau	1	2.5	0	0.0	83	211.6	39,233
Berrien	224	142.8	0	0.0	1,067	680.4	156,813
Br/Hills/St Joseph	25	16.3	0	0.0	299	195.1	153,231
Calhoun	125	91.8	2	1.5	924	678.7	136,146
Chippewa	-	0.0	0	0.0	88	228.5	38,520
Central MI Dist	54	28.3	4	2.1	474	248.4	190,805
Delta/Menominee	4	6.5	3	4.9	101	165.3	61,098
Dickinson/Iron	2	5.3	0	0.0	70	184.3	37,985
District #2	3	4.5	0	0.0	70	104.2	67,168
District #4	11	13.9	1	1.3	92	116.6	78,891
District #10	30	11.5	2	0.8	541	206.8	261,616
Genesee	875	205.5	5	1.2	3,192	749.7	425,790
Grand Traverse	5	5.7	1	1.1	255	293.2	86,986
Huron	-	0.0	0	0.0	47	141.9	33,118
Ingham	342	121.8	7	2.5	1,915	681.7	280,895
Ionia	7	11.0	0	0.0	128	200.3	63,905
Jackson	84	52.4	2	1.2	696	434.3	160,248
Kalamazoo	351	140.2	15	6.0	1,759	702.7	250,331
Kent	734	121.8	9	1.5	3,615	599.9	602,622
Lapeer	13	14.7	1	1.1	122	138.1	88,319
Lenawee	34	34.0	2	2.0	209	209.2	99,892
Livingston	12	6.6	1	0.6	251	138.7	180,967
LMAS District	5	18.3	0	0.0	38	139.0	27,345
Macomb	501	59.6	25	3.0	1,960	233.1	840,978
Marquette	10	14.9	0	0.0	142	211.7	67,077
Midland	14	16.7	1	1.2	191	228.4	83,629
Monroe	64	42.1	1	0.7	352	231.5	152,021
Muskegon	217	126.0	4	2.3	1,219	707.9	172,188
Mid-MI District	42	23.2	2	1.1	349	192.6	181,200
NW Michigan	21	19.7	0	0.0	216	203.0	106,387
Oakland	989	82.3	30	2.5	3,691	307.0	1,202,362
Ottawa	66	25.0	3	1.1	571	216.5	263,801
Saginaw	202	100.9	1	0.5	1,558	778.3	200,169
Sanilac	3	7.0	0	0.0	50	116.0	43,114
Shiawassee	18	25.5	1	1.4	163	230.7	70,648
St Clair	56	34.3	2	1.2	425	260.7	163,040
Tuscola	8	14.4	0	0.0	104	186.6	55,729
Van Buren/Cass	49	38.1	0	0.0	323	251.3	128,551
Washtenaw	237	68.7	11	3.2	1,392	403.7	344,791
Wayne excl Detroit	989	89.4	34	3.1	3,774	341.0	1,106,807
City of Detroit	6,521	913.6	102	14.3	16,414	2299.6	713,777
WestUpDist	3	4.2	0	0.0	91	128.4	70,851
Detroit Metro Area#	9,132	214.0	194	4.5	26,738	626.6	4,267,304
Out-State	3,937	70.1	79	1.4	26,738	476.1	5,616,336
TOTAL	13,070	132.2	274	2.8	50,063	506.5	9,883,640

#Detroit Metro Area includes Lapeer, Monroe, Macomb, Oakland, St. Clair, and Wayne counties.

* P&S: Primary and secondary syphilis.

^ Rate per 100,000 population.

Table 19: Reported cases of acute and chronic hepatitis C by sex, race, and age group, Michigan, 2011

	Acute hepatitis C		Chronic hepatitis C			Census 2010	
	Num	Percent	Num	Percent	Rate*	Num	Percent
SEX							
Male	16	52%	4,426	63%	91	4,848,114	49%
Female	15	48%	2,543	36%	51	5,035,526	51%
Unknown	0	0%	22	<1%	N/A	N/A	N/A
RACE †							
White	20	65%	2,712	39%	35	7,803,120	79%
Black	3	10%	1,379	20%	98	1,400,362	14%
Asian	1	3%	20	<1%	8	238,199	2%
Native Hawaiian/Other Pacific Islander	0	0%	4	<1%	--	2,604	<1%
American Indian/Alaska Native	0	0%	43	1%	69	62,007	1%
Other	1	3%	82	1%	56	147,029	1%
Unknown race	6	19%	2,524	36%	N/A	N/A	N/A
Multiracial	0	0%	227	3%	99	230,319	2%
AGE							
0-4 years	1	3%	4	<1%	--	596,286	6%
5-9 years	0	0%	2	<1%	--	637,784	6%
10-14 years	0	0%	2	<1%	--	675,216	7%
15-19 years	1	3%	94	1%	13	739,599	7%
20-24 years	5	16%	414	6%	62	669,072	7%
25-29 years	7	23%	516	7%	88	589,583	6%
30-34 years	5	16%	387	6%	67	574,566	6%
35-39 years	3	10%	287	4%	47	612,493	6%
40-44 years	0	0%	411	6%	62	665,481	7%
45-49 years	3	10%	695	10%	93	744,581	8%
50-54 years	3	10%	1,268	18%	166	765,452	8%
55-64 years	2	6%	2,394	34%	191	1,251,997	13%
65 and over	1	3%	501	7%	37	1,361,530	14%
Unknown age	0	0%	16	<1%	N/A	N/A	N/A
TOTAL	**31**	**100%**	**6,991**	**100%**	**71**	**9,883,640**	**100%**

* *Rates are not displayed for <10 cases.*

† *Hispanic ethnicity is not categorized due to incomplete data. Each race category includes both Hispanic and non-Hispanic persons.*

Table 20: Sex, race, and risk among HIV-positive persons currently incarcerated in Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	24	41%	93	35%	2	22%	3	50%	122	36%
Injection drug use (IDU)	12	20%	40	15%	3	33%	0	0%	55	16%
MSM/IDU	8	14%	31	12%	1	11%	3	50%	43	13%
Blood products	1	2%	0	0%	0	0%	0	0%	1	<1%
Heterosexual contact (HCFR)	4	7%	30	11%	3	33%	0	0%	37	11%
Perinatal	0	0%	2	1%	0	0%	0	0%	2	1%
Undetermined	10	17%	71	27%	0	0%	0	0%	81	24%
Male Subtotal	59	17%	267	78%	9	3%	6	2%	341	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	3	38%	6	50%	0	0%	0	0%	9	41%
Blood Products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	5	63%	6	50%	0	0%	1	0%	12	55%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	0	0%	0	0%	0	0%	1	0%	1	5%
Female Subtotal	8	36%	12	55%	0	0%	2	9%	22	100%

All

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	24	36%	93	33%	2	22%	3	38%	122	34%
Injection drug use (IDU)	15	22%	46	16%	3	33%	0	0%	64	18%
MSM/IDU	8	12%	31	11%	1	11%	3	38%	43	12%
Blood products	1	1%	0	0%	0	0%	0	0%	1	<1%
Heterosexual contact (HC)	9	13%	36	13%	3	33%	1	13%	49	13%
HCFR (male)	*4*	*6%*	*30*	*11%*	*3*	*33%*	*0*	*0%*	*37*	*10%*
HCM (female)	*5*	*7%*	*6*	*2%*	*0*	*0%*	*1*	*13%*	*12*	*3%*
Perinatal	0	0%	2	1%	0	0%	0	0%	2	1%
Undetermined	10	15%	71	25%	0	0%	1	13%	82	23%
RACE ALL	**67**	**18%**	**279**	**77%**	**9**	**2%**	**8**	**2%**	**363**	**100%**

Table 21: Sex, race, and age at HIV diagnosis among HIV-positive persons currently incarcerated in Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	0	0%	2	1%	0	0%	0	0%	2	1%
13 - 19 years	2	3%	16	6%	0	0%	0	0%	18	5%
20 - 24 years	11	19%	49	18%	2	22%	1	17%	63	18%
25 - 29 years	15	25%	59	22%	3	33%	1	17%	78	23%
30 - 39 years	22	37%	103	39%	3	33%	3	50%	131	38%
40 - 49 years	8	14%	30	11%	1	11%	1	17%	40	12%
50 - 59 years	1	2%	8	3%	0	0%	0	0%	9	3%
60 years and over	0	0%	0	0%	0	0%	0	0%	0	0%
Male Subtotal	59	17%	267	78%	9	3%	6	2%	341	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	0	0%	0	0%	0	0%	0	0%	0	0%
13 - 19 years	1	13%	0	0%	0	0%	0	0%	1	5%
20 - 24 years	2	25%	3	25%	0	0%	0	0%	5	23%
25 - 29 years	2	25%	4	33%	0	0%	2	0%	8	36%
30 - 39 years	2	25%	3	25%	0	0%	0	0%	5	23%
40 - 49 years	1	13%	2	17%	0	0%	0	0%	3	14%
50 - 59 years	0	0%	0	0%	0	0%	0	0%	0	0%
60 years and over	0	0%	0	0%	0	0%	0	0%	0	0%
Female Subtotal	8	36%	12	55%	0	0%	2	9%	22	100%

ALL

	White		Black		Hispanic		Other or unknown		Age all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	0	0%	2	1%	0	0%	0	0%	2	1%
13 - 19 years	3	4%	16	6%	0	0%	0	0%	19	5%
20 - 24 years	13	19%	52	19%	2	22%	1	13%	68	19%
25 - 29 years	17	25%	63	23%	3	33%	3	38%	86	24%
30 - 39 years	24	36%	106	38%	3	33%	3	38%	136	37%
40 - 49 years	9	13%	32	11%	1	11%	1	13%	43	12%
50 - 59 years	1	1%	8	3%	0	0%	0	0%	9	2%
60 years and over	0	0%	0	0%	0	0%	0	0%	0	0%
RACE ALL	67	18%	279	77%	9	2%	8	2%	363	100%

Table 22: Sex, risk, and age at HIV diagnosis among HIV-positive persons currently incarcerated in Michigan, 2012

MALE

MALE	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	10	56%	35	56%	31	40%	39	30%	6	15%	1	11%	0	0%	122	36%
Injection drug use	0	0%	0	0%	6	10%	7	9%	28	21%	11	28%	3	33%	0	0%	55	16%
MSM/IDU	0	0%	3	17%	6	10%	14	18%	15	11%	3	8%	2	22%	0	0%	43	13%
Blood products	0	0%	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
Heterosexual contact (HCFR)	0	0%	2	11%	3	5%	10	13%	15	11%	7	18%	0	0%	0	0%	37	11%
Perinatal	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%
Undetermined	0	0%	3	17%	12	19%	16	21%	34	26%	13	33%	3	33%	0	0%	81	24%
Male Subtotal	**2**	**1%**	**18**	**5%**	**63**	**18%**	**78**	**23%**	**131**	**38%**	**40**	**12%**	**9**	**3%**	**0**	**0%**	**341**	**100%**

FEMALE

FEMALE	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use	0	0%	0	0%	3	60%	4	50%	0	0%	2	67%	0	0%	0	0%	9	41%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	0	0%	1	100%	2	40%	3	38%	5	100%	1	33%	0	0%	0	0%	12	55%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	0	0%	0	0%	0	0%	1	13%	0	0%	0	0%	0	0%	0	0%	1	5%
Female Subtotal	**0**	**0%**	**1**	**5%**	**5**	**23%**	**8**	**36%**	**5**	**23%**	**3**	**14%**	**0**	**0%**	**0**	**0%**	**22**	**100%**

ALL

ALL	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		Age all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	10	53%	35	51%	31	36%	39	29%	6	14%	1	11%	0	0%	122	34%
Injection drug use	0	0%	0	0%	9	13%	11	13%	28	21%	13	30%	3	33%	0	0%	64	18%
MSM/IDU	0	0%	3	16%	6	9%	14	16%	15	11%	3	7%	2	22%	0	0%	43	12%
Blood products	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	<1%
Heterosexual contact (HC)	0	0%	3	16%	5	7%	13	15%	20	15%	8	19%	0	0%	0	0%	49	13%
HCFR (male)	*0*	*0%*	*2*	*11%*	*3*	*4%*	*10*	*12%*	*15*	*11%*	*7*	*16%*	*0*	*0%*	*0*	*0%*	*37*	*10%*
HCM (female)	*0*	*0%*	*1*	*5%*	*2*	*3%*	*3*	*3%*	*5*	*4%*	*1*	*2%*	*0*	*0%*	*0*	*0%*	*12*	*3%*
Perinatal	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%
Undetermined	0	0%	3	16%	12	18%	17	20%	34	25%	13	30%	3	33%	0	0%	82	23%
AGE ALL	**2**	**1%**	**19**	**5%**	**68**	**19%**	**86**	**24%**	**136**	**37%**	**43**	**12%**	**9**	**2%**	**0**	**0%**	**363**	**100%**

Table 23: Demographic information on Arab American HIV infection cases currently living in Michigan, 2012

REPORTED PREVALENCE

	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL		Late HIV diagnosis	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent of stage 3 cases
SEX								
Male	30	75%	47	90%	77	84%	23	44%
Female	10	25%	5	10%	15	16%	1	2%
RISK*								
Male-male sex (MSM)	16	40%	21	40%	37	40%	10	19%
Injection drug use (IDU)	2	5%	2	4%	4	4%	1	2%
MSM/IDU	1	3%	3	6%	4	4%	2	4%
Blood products	1	3%	0	0%	1	1%	--	--
Heterosexual contact (HC)	7	18%	10	19%	17	18%	1	2%
HCFR (male)	*1*	*3%*	*5*	*10%*	*6*	*7%*	*0*	*0%*
HCM (female)	*6*	*15%*	*5*	*10%*	*11*	*12%*	*1*	*2%*
Perinatal	1	3%	0	0%	1	1%	--	--
Undetermined	12	30%	16	31%	28	30%	10	19%
AGE AT HIV DIAGNOSIS								
0 - 12 years	1	3%	0	0%	1	1%	--	--
13 - 19 years	4	10%	0	0%	4	4%	--	--
20 - 24 years	2	5%	6	12%	8	9%	0	0%
25 - 29 years	13	33%	8	15%	21	23%	1	2%
30 - 39 years	11	28%	19	37%	30	33%	10	19%
40 - 49 years	6	15%	15	29%	21	23%	9	17%
50 - 59 years	2	5%	2	4%	4	4%	2	4%
60 and over	0	0%	2	4%	2	2%	2	4%
Unspecified	1	3%	0	0%	1	1%	--	--
AREA OF CURRENT RESIDENCE †								
Detroit Metro Area	37	93%	49	94%	86	93%	24	46%
Out-State	3	8%	3	6%	6	7%	0	0%
TOTAL	**40**	**100%**	**52**	**100%**	**92**	**100%**	**24**	**46%**

*See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

† The Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State Area.

Table 24: Sex, risk, and age at HIV diagnosis among Arab American HIV infection cases currently living in Michigan, 2012

MALE

MALE	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1	25%	13	68%	12	41%	11	44%	37	48%
Injection drug use (IDU)	0	0%	0	0%	1	3%	1	4%	2	3%
MSM/IDU	0	0%	0	0%	3	10%	1	4%	4	5%
Blood products	1	25%	0	0%	0	0%	0	0%	1	1%
Heterosexual contact (HCFR)	0	0%	1	5%	3	10%	2	8%	6	8%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	2	50%	5	26%	10	34%	10	40%	27	35%
Male Subtotal	4	5%	19	25%	29	38%	25	32%	77	100%

FEMALE

FEMALE	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	0	0%	1	10%	1	100%	0	0%	2	14%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	0	0%	9	90%	0	0%	2	100%	11	79%
Perinatal	1	100%	0	0%	0	0%	0	0%	1	7%
Undetermined	0	0%	0	0%	0	0%	0	0%	0	0%
Female Subtotal*	1	7%	10	71%	1	7%	2	14%	14	100%

ALL

ALL	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1	20%	13	45%	12	40%	11	41%	37	41%
Injection drug use (IDU)	0	0%	1	3%	2	7%	1	4%	4	4%
MSM/IDU	0	0%	0	0%	3	10%	1	4%	4	4%
Blood products	1	20%	0	0%	0	0%	0	0%	1	1%
Heterosexual contact (HC)	0	0%	10	34%	3	10%	4	15%	17	19%
HCFR (male)	0	0%	1	3%	3	10%	2	7%	6	7%
HCM (female)	0	0%	9	31%	0	0%	2	7%	11	12%
Perinatal	1	20%	0	0%	0	0%	0	0%	1	1%
Undetermined	2	40%	5	17%	10	33%	10	37%	27	30%
AGE ALL *	5	5%	29	32%	30	33%	27	30%	91	100%

*Not included in this table are the following cases with unknown age at diagnosis: one female with unknown risk.

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Table 25: Demographic information on Asian, Native Hawaiian, and Other Pacific Islander HIV infection cases currently living in Michigan, 2012

REPORTED PREVALENCE

	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL		Late HIV diagnosis	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent of stage 3 cases
SEX								
Male	29	64%	41	80%	70	73%	23	45%
Female	16	36%	10	20%	26	27%	5	10%
RISK*								
Male-male sex (MSM)	13	29%	15	29%	28	29%	12	24%
Injection drug use (IDU)	3	7%	3	6%	6	6%	1	2%
MSM/IDU	0	0%	1	2%	1	1%	0	0%
Blood products	1	2%	0	0%	1	1%	--	--
Heterosexual contact (HC)	8	18%	12	24%	20	21%	5	10%
HCFR (male)	*0*	*0%*	*3*	*6%*	*3*	*3%*	*1*	*2%*
HCM (female)	*8*	*18%*	*9*	*18%*	*17*	*18%*	*4*	*8%*
Perinatal	2	4%	0	0%	2	2%	--	--
Undetermined	19	42%	20	39%	39	41%	10	20%
AGE AT HIV DIAGNOSIS								
0 - 12 years	2	4%	0	0%	2	2%	--	--
13 - 19 years	1	2%	2	4%	3	3%	--	--
20 - 24 years	7	16%	4	8%	11	11%	2	4%
25 - 29 years	13	29%	16	31%	29	30%	7	14%
30 - 39 years	16	36%	15	29%	31	32%	11	22%
40 - 49 years	6	13%	12	24%	18	19%	8	16%
50 - 59 years	0	0%	2	4%	2	2%	0	0%
60 and over	0	0%	0	0%	0	0%	--	--
Unspecified	0	0%	0	0%	0	0%	--	--
AREA OF CURRENT RESIDENCE †								
Detroit Metro Area	21	47%	27	53%	48	50%	17	33%
Out-State	24	53%	22	43%	46	48%	9	18%
Prison or unknown	0	0%	3	6%	3	3%	2	4%
TOTAL	**45**	**100%**	**51**	**100%**	**96**	**100%**	**28**	**55%**

*See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

† The Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State Area.

Table 26: Sex, Risk, and Age at HIV Diagnosis Among Asian, Native Hawaiian and Pacific Islander HIV Infection Cases Currently Living in Michigan, 2012

MALE

	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	0	0%	12	41%	9	39%	7	47%	28	40%
Injection drug use (IDU)	0	0%	3	10%	2	9%	1	7%	6	9%
MSM/IDU	0	0%	1	3%	0	0%	0	0%	1	1%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCFR)	0	0%	2	7%	1	4%	0	0%	3	4%
Perinatal	1	33%	0	0%	0	0%	0	0%	1	1%
Undetermined	2	67%	11	38%	11	48%	7	47%	31	44%
Male Subtotal	**3**	**4%**	**29**	**41%**	**23**	**33%**	**15**	**21%**	**70**	**100%**

FEMALE

	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	0	0%	0	0%	0	0%	0	0%	0	0%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	1	50%	7	64%	4	50%	5	100%	17	65%
Perinatal	1	50%	0	0%	0	0%	0	0%	1	4%
Undetermined	0	0%	4	36%	4	50%	0	0%	8	31%
Female Subtotal *	**2**	**8%**	**11**	**42%**	**8**	**31%**	**5**	**19%**	**26**	**100%**

ALL

	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	0	0%	12	30%	9	29%	7	35%	28	29%
Injection drug use (IDU)	0	0%	3	8%	2	6%	1	5%	6	6%
MSM/IDU	0	0%	1	3%	0	0%	0	0%	1	1%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HC)	1	20%	9	23%	5	16%	5	25%	20	21%
HCFR (male)	*0*	*0%*	*2*	*5%*	*1*	*3%*	*0*	*0%*	*3*	*3%*
HCM (female)	*1*	*20%*	*7*	*18%*	*4*	*13%*	*5*	*25%*	*17*	*18%*
Perinatal	2	40%	0	0%	0	0%	0	0%	2	2%
Undetermined	2	40%	15	38%	15	48%	7	35%	39	41%
AGE ALL *	**5**	**5%**	**40**	**42%**	**31**	**32%**	**20**	**21%**	**96**	**100%**

Table 27: Demographic information on American Indian and Alaska Native HIV infection cases currently living in Michigan, 2012

REPORTED PREVALENCE

	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL		Late HIV diagnosis	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent of stage 3 cases
SEX								
Male	20	77%	12	80%	32	78%	3	20%
Female	6	23%	3	20%	9	22%	1	7%
RISK*								
Male-male sex (MSM)	9	35%	6	40%	15	37%	2	13%
Injection drug use (IDU)	1	4%	0	0%	1	2%	--	--
MSM/IDU	3	12%	3	20%	6	15%	0	0%
Blood products	1	4%	0	0%	1	2%	--	--
Heterosexual contact (HC)	6	23%	4	27%	10	24%	1	7%
HCFR (male)	*1*	*4%*	*1*	*7%*	*2*	*5%*	*0*	*0%*
HCM (female)	*5*	*19%*	*3*	*20%*	*8*	*20%*	*1*	*7%*
Perinatal	1	4%	0	0%	1	2%	--	--
Undetermined	6	23%	2	13%	8	20%	1	7%
AGE AT HIV DIAGNOSIS								
0 - 12 years	1	4%	0	0%	1	2%	--	--
13 - 19 years	0	0%	0	0%	0	0%	--	--
20 - 24 years	8	31%	3	20%	11	27%	1	7%
25 - 29 years	1	4%	3	20%	4	10%	0	0%
30 - 39 years	11	42%	8	53%	19	46%	3	20%
40 - 49 years	4	15%	1	7%	5	12%	0	0%
50 - 59 years	0	0%	0	0%	0	0%	--	--
60 and over	1	4%	0	0%	1	2%	--	--
Unspecified	0	0%	0	0%	0	0%	--	--
AREA OF CURRENT RESIDENCE [†]								
Detroit Metro Area	11	42%	5	33%	16	39%	1	7%
Out-State	15	58%	9	60%	24	59%	3	20%
Prison	0	0%	1	7%	1	2%	0	0%
TOTAL	**26**	**100%**	**15**	**100%**	**41**	**100%**	**4**	**27%**

*See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

[†] The Detroit Metro Area consists of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties. The remaining counties comprise the Out-State Area.

Table 28: Sex, risk, and age at HIV diagnosis among American Indian and Alaska Native HIV infection cases currently living in Michigan, 2012

MALE

MALE	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	0	0%	5	42%	8	50%	2	50%	15	47%
Injection drug use (IDU)	0	0%	0	0%	1	6%	0	0%	1	3%
MSM/IDU	0	0%	4	33%	2	13%	0	0%	6	19%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCFR)	0	0%	1	8%	0	0%	1	25%	2	6%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	0	0%	2	17%	5	31%	1	25%	8	25%
Male Subtotal	**0**	**0%**	**12**	**38%**	**16**	**50%**	**4**	**13%**	**32**	**100%**

FEMALE

FEMALE	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	0	0%	0	0%	0	0%	0	0%	0	0%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	0	0%	3	100%	3	100%	2	100%	8	89%
Perinatal	1	100%	0	0%	0	0%	0	0%	1	11%
Undetermined	0	0%	0	0%	0	0%	0	0%	0	0%
Female Subtotal*	**1**	**11%**	**3**	**33%**	**3**	**33%**	**2**	**22%**	**9**	**100%**

ALL

ALL	0 - 19 years		20 - 29 years		30 - 39 years		40 years and older		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	0	0%	5	33%	8	42%	2	33%	15	37%
Injection drug use (IDU)	0	0%	0	0%	1	5%	0	0%	1	2%
MSM/IDU	0	0%	4	27%	2	11%	0	0%	6	15%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HC)	0	0%	4	27%	3	16%	3	50%	10	24%
HCFR (male)	0	0%	1	7%	0	0%	1	17%	2	5%
HCM (female)	0	0%	3	20%	3	16%	2	33%	8	20%
Perinatal	1	100%	0	0%	0	0%	0	0%	1	2%
Undetermined	0	0%	0	0%	0	0%	0	0%	8	20%
AGE ALL *	**1**	**2%**	**15**	**37%**	**19**	**46%**	**6**	**15%**	**41**	**100%**

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2012 Profile of HIV in the Detroit Metro Area

Summary of the HIV Epidemic in the Detroit Metro Area

Data from enhanced HIV/AIDS Reporting System (eHARS)

How many cases?

The Michigan Department of Community Health (MDCH) estimates that there are 13,040 persons currently living with HIV in the Detroit Metro Area (DMA), of whom 9,919 were reported as of January 1, 2012 (table 3, page 164). The DMA is the Detroit Metropolitan Statistical Area as defined by the US Census, composed of Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne counties (including the City of Detroit). The number and rate of new HIV diagnoses remained stable in the DMA between 2006 and 2010, with an average of 803 new cases each year and an average rate of 8.1 cases per 100,000 population (See pages v-vi for information on *2012 Annual Review of HIV Trends in Michigan*). Despite a stable number of new diagnoses each year, there are more new diagnoses of HIV infection than deaths. As a result, the reported number of persons living with HIV infection in the DMA is increasing.
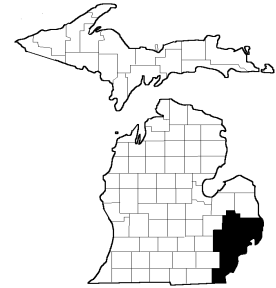
How are the cases geographically distributed?

HIV infections are distributed disproportionately, both in Michigan and in the DMA. Sixty-three percent of those living with HIV reside in the DMA (9,919 of the 15,753 cases currently living in Michigan), but the DMA has only 43 percent of the general population (table 8 of Statewide chapter, page 101). Figure 1 shows the distribution of reported cases and population by local health department (LHD) within the DMA. The City of Detroit experienced a population decline of 21 percent between the 2000 and 2010 Censuses and now holds only 17 percent of the DMA's population. However, 56 percent of all DMA HIV cases reside in Detroit. All other LHDs in the DMA have a greater proportion of the population than they do cases.

All LHDs in Michigan are classified as high or low prevalence based on the HIV prevalence rate (see page 17 of the Statewide chapter for further explanation). The City of Detroit and Macomb, Oakland, and Wayne counties are considered high prevalence and hold 98 percent of the DMA's HIV cases. Lapeer, Monroe, and St. Clair counties are considered low prevalence.

Figure 1: Detroit Metro Area prevalent HIV infection cases and population by area, January 2012
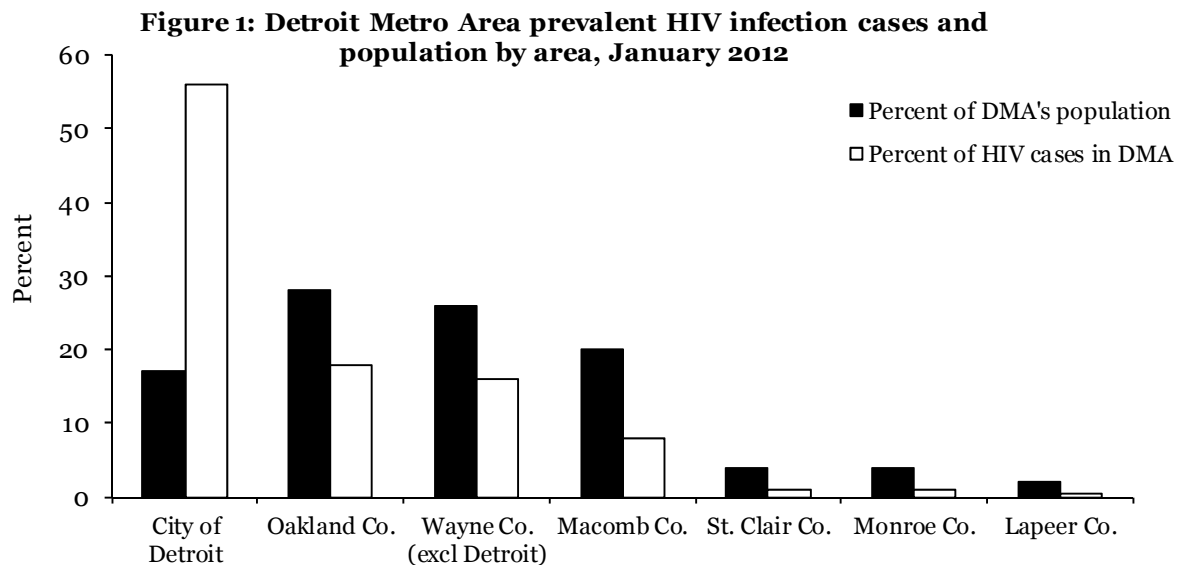
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Recommendations: Ranking of Behavioral Groups

Data from enhanced HIV/AIDS Reporting System (eHARS)

To assist in prioritizing prevention activities, the MDCH HIV/STD/VH/TB Epidemiology Section ranks the three behavioral groups most at risk for HIV infection in the Detroit Metro Area (DMA). 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 on the overall epidemic. The percentage of cases for each behavioral group and trends over time were used to determine the ranked order of the following three behavioral groups: MSM, heterosexuals, and IDU.

- **Men who have sex with men (MSM)*:** MSM make up 53 percent of all reported cases of HIV currently living in the DMA, including MSM/IDU (5,207 out of 9,919 cases) (table 3, page 164). The MSM behavioral group continues to be the most affected behavioral group in this area. Between 2006 and 2010, there was an average of 261 new cases among MSM each year. The number of new MSM cases increased by an average of one percent per year (Trends).

- **Heterosexuals**: Heterosexual cases constitute 17 percent of the total number of reported cases (1,727 out of 9,919 cases) currently living in the DMA (table 3). This behavioral group is comprised of males who had sex with females known to be at risk for HIV (heterosexual contact with female with risk, HCFR) and females who had sex with males, regardless of what is known about the male partners' risk behaviors (heterosexual contact with male, HCM). HCFR is more completely defined as males who had sex with females known to be IDU, recipients of HIV-infected blood products, or HIV-positive persons. See the glossary in appendix A, page 223, for further description of the heterosexual risk transmission category. Eighty-two percent of all heterosexual cases in the DMA are among females. The number of new HIV diagnoses among persons with heterosexual risk decreased by eight percent between 2006 and 2010. This is the third consecutive trend analysis showing a decrease in new diagnoses among persons with heterosexual risk in the DMA (Trends).

- **Injection drug users (IDU)*:** Of all reported cases of HIV currently living in the DMA, 15 percent are IDU, including MSM/IDU (1,415 out of 9,919 cases) (table 3). The number of new HIV diagnoses among IDU decreased between 2006 and 2010 by an average of 10 percent per year. This is the seventh consecutive trend analysis showing significant decreases in new HIV diagnoses among IDU in the DMA (Trends).

*Both MSM and IDU numbers and percentages include persons with a dual risk of MSM/IDU.

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Distribution of Living HIV Cases by Risk Transmission Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

Although case reporting includes ascertainment of multiple behaviors associated with HIV transmission, current surveillance methods cannot determine the specific route of HIV transmission in persons who have engaged in more than one risk behavior. For the purposes of analysis and interpretation, in the 1980s the Centers for Disease Control and Prevention created a risk hierarchy to classify people into risk transmission categories. The hierarchy is intended to account for the efficiency of HIV transmission associated with each behavior, along with the probability of exposure to a HIV-positive person within the population. The adult/adolescent categories, in order, are as follows: (1) men who have sex with men (MSM); (2) injection drug users (IDU); (3) men who have sex with men and inject drugs (MSM/IDU); (4) hemophilia/coagulation disorders; (5) heterosexual contact (HC); (6) receipt of HIV-infected blood or blood components; and (7) no identified risk (NIR). Figure 2 shows the distribution of risk for all persons currently living with HIV in the DMA as of January 2012 (data also found on tables 3 and 4, pages 163-164).

Figure 2: HIV infection cases currently living in the Detroit Metro Area by risk transmission category, January 2012 (N = 9,919)
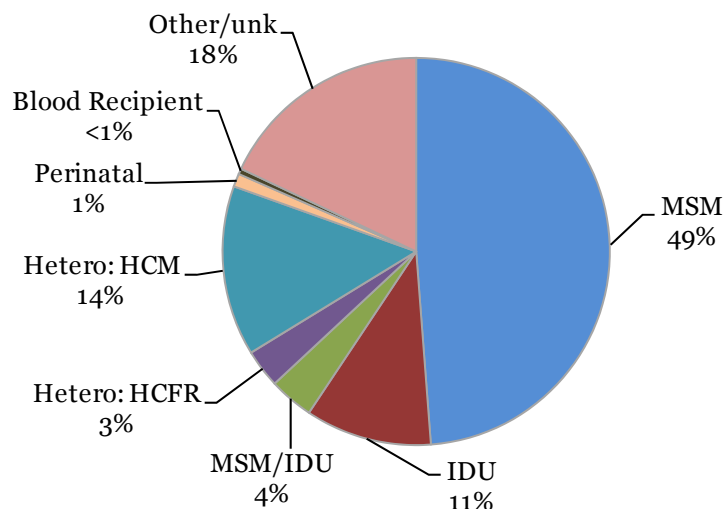
- Over half (53 percent) of persons currently living with HIV in the DMA are men who have sex with men (MSM), including four percent who also inject drugs (MSM/IDU).

- Seventeen percent have a risk of heterosexual sex, 14 percent of whom are females who had sex with males (HCM) and three percent of whom are males who had sex with females of known risk (HCFR).

- Fifteen percent are injection drug users (IDU), including four percent who are also MSM (MSM/IDU).

- Two percent are other known risk, including perinatal transmission and receipt of HIV-infected blood products.

- Eighteen percent have unknown risk, which includes males who had sex with females of unknown risk.

2012 Profile of HIV in the Detroit Metro Area

Distribution of Living HIV Cases by Exposure Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

When the risk transmission categories were created, the hierarchy was based on what was known at the beginning of the epidemic about how HIV was transmitted, when almost all cases were among males and there was little documented heterosexual transmission. Since then, the hierarchy has not changed, even though our understanding of the most efficient HIV transmission routes has. Additionally, concerns have been raised that use of hierarchical categories masks the identification of multiple risks that a person may have. For this reason, Michigan also presents exposure categories, which convey all known modes of HIV exposure. Like the traditional risk transmission categories, the exposure categories are mutually exclusive, meaning that each case is included in only one category. Exposure categories, however, allow readers to see all the reported ways in which a person may have been exposed to HIV without stating definitively how the individual was infected. Please see the glossary in appendix A (page 223) for more detailed definitions of exposure categories.

It is important to note that, unlike in the risk transmission categories, males are counted in the heterosexual contact (HC) exposure category regardless of what is known about their female partners' risk behaviors. This results in an increased proportion of persons in the heterosexual category.

Figure 3 shows the distribution of exposures among HIV-positive persons currently living in the Detroit Metro Area (DMA) as of January 2012 (data also found in table 4, page 164).

Figure 3: HIV infection cases currently living in the Detroit Metro Area by exposure category, January 2012 (N = 9,919)
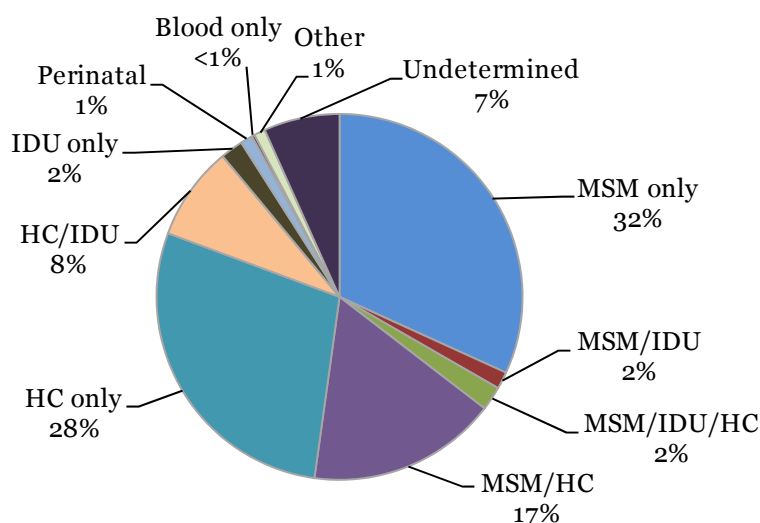
- While over half of all prevalent HIV cases are classified as men who have sex with men (MSM) in the risk transmission hierarchy, over 20 percent reported additional exposures. Nineteen percent were also behaviorally bisexual, reporting sex with a female (MSM/HC and MSM/HC/IDU).

- Almost all injection drug users (IDU) reported additional risk behaviors, including eight percent reporting heterosexual contact (HC/IDU) and two percent reporting both heterosexual contact and male-male sex (MSM/IDU/HC).

- 'Other' includes the following combinations of risks: HC/Blood, HC/IDU/Blood, MSM/Blood, MSM/HC/Blood, MSM/IDU/HC/Blood, and MSM/IDU/Blood.

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Distribution of Living HIV Cases by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figures 4 and 5 show the impact of the HIV epidemic on six race/sex groups in the DMA.

Figure 4: Estimated prevalence of persons living with HIV in the Detroit Metro Area by race and sex, January 2012
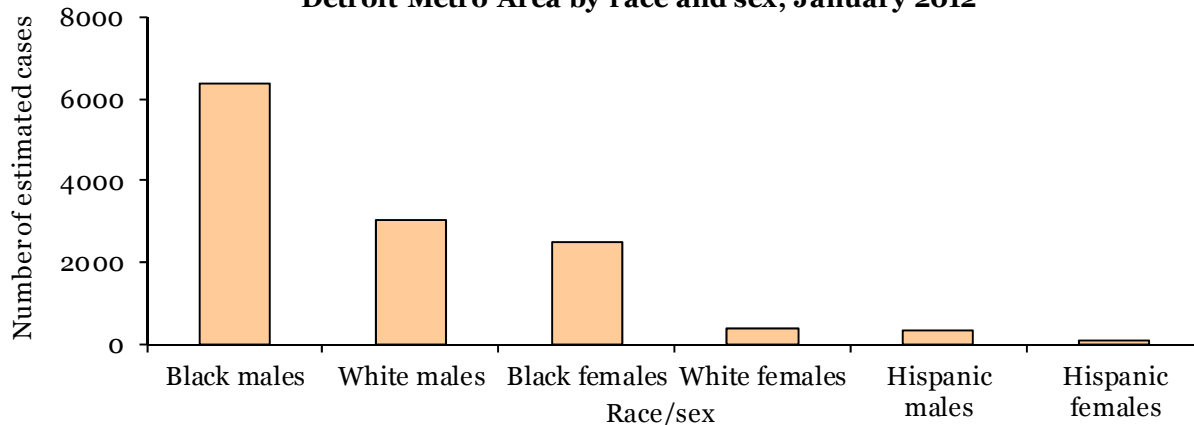
Figure 5: Reported prevalence rate of persons living with HIV in the Detroit Metro Area by race and sex, January 2012
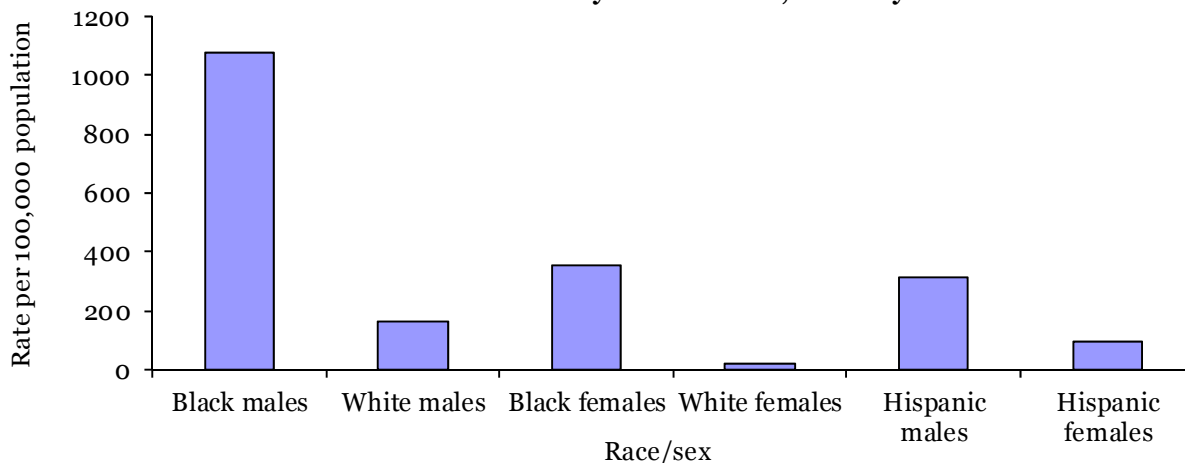
- Black males have both the highest rate per 100,000 (1,076) and the highest estimated number (6,360) of HIV cases. This high rate means the impact of the epidemic is greatest on this demographic group.

- Black females have the second highest rate (358) and the third highest estimated number (2,480) of cases of HIV.

- Hispanic males have the third highest rate (311) and the fifth highest estimated number (350) of cases. This indicates the impact of the epidemic is high on a relatively small demographic group.

- White males have the fourth highest rate (162) and the second highest estimated number (3,020) of cases.

- Hispanic females have the fifth highest rate (99) and the second lowest estimated number (110) of HIV cases.

- White females have the lowest rate (20) and the lowest estimated number (390) of HIV cases.

- Data can also be found in table 3, page 163.

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Distribution of Living HIV Cases by Age at HIV Diagnosis

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 6 shows the breakdown of prevalent cases in the Detroit Metro Area (DMA) by age at HIV diagnosis.

Figure 6: Estimated prevalence of persons living with HIV in the Detroit Metro Area by age at diagnosis, January 2012
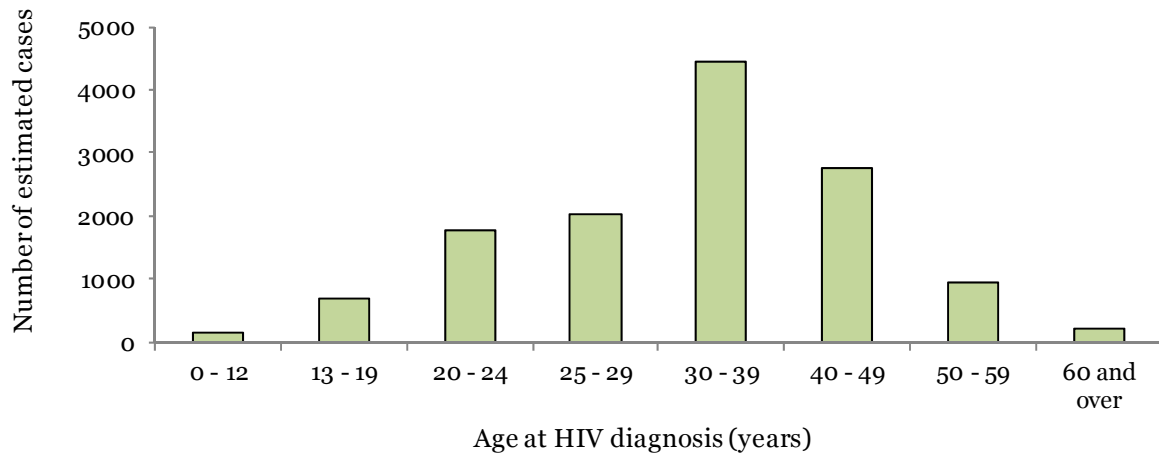
- The majority of all prevalent cases (an estimated 4,440) were 30-39 years old at the time of diagnosis.

- The next highest number of estimated cases is among persons 40-49 years at diagnosis, followed closely by 25-29 year olds (2,760 vs. 2,040, respectively).

- The smallest number of estimated cases is among individuals diagnosed at 60 years and older, followed by individuals diagnosed between the ages of 0 and 12 years.

- There were an estimated 10 cases with unknown age at diagnosis not included in this figure.

- Data also found on table 3, page 163.

2012 Profile of HIV in the Detroit Metro Area

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

To evaluate recent trends in new HIV diagnoses in the DMA, we estimated the number of persons newly diagnosed with HIV infection each year by adjusting the number of reported cases diagnosed between 2006 and 2010. This adjustment was applied to account for cases that may not have been reported to the health department by January 1, 2012. The adjustments were calculated by weighting the data. Please see the Forward (pages v-vi) for an in-depth description of the methods used to evaluate trends. The full Trends documents can be found by visiting the following link: http://www.michigan.gov/mdch/0,4612,7-132-2940_2955_2982_46000_46003-36304--,00.html.

New diagnoses of HIV, 2006-2010:

The number and rate of new HIV diagnoses remained stable in the DMA between 2006 and 2010, with an average of 548 new cases each year (12.7 cases per 100,000 population) (figure 7). This surpasses the statewide rate of 8.1 cases per 100,000.

Figure 7: Adjusted number and rate of new HIV diagnoses in the Detroit Metro Area, 2006-2010
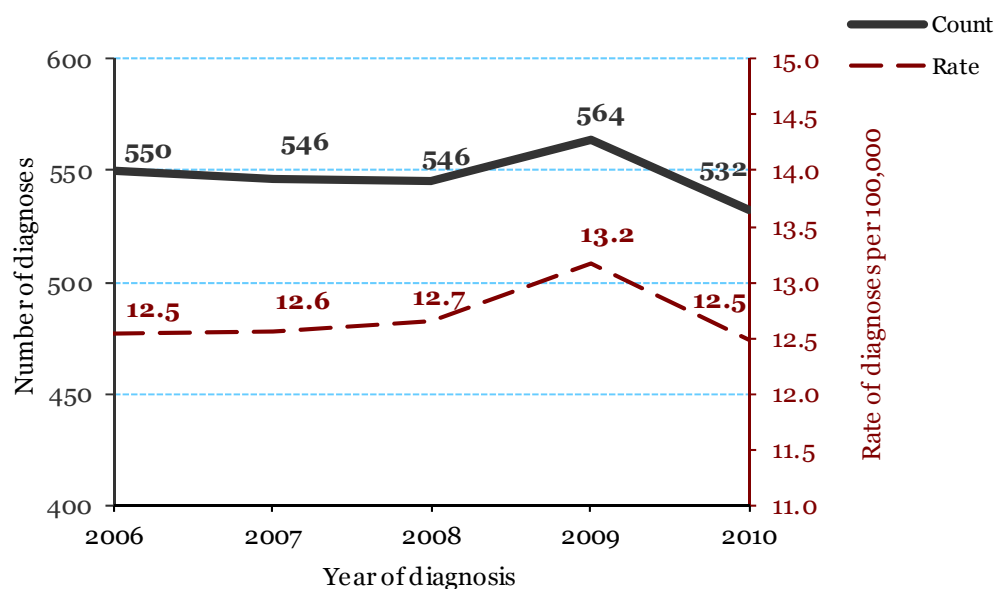
New diagnoses by risk, 2006-2010:

Between 2006 and 2010, the number of newly diagnosed persons who were men who have sex with men (MSM) increased by an average one percent per year (figure 8). The number of newly diagnosed persons who were injection drug users (IDU) decreased by an average of 10 percent per year, and the number of new diagnoses also decreased among persons with heterosexual risk by an average of eight percent per year. The decrease in new diagnoses among IDU has been seen for the past seven consecutive annual trend reports. Data from Michigan's HIV Behavioral Surveillance suggest reductions among IDU may be partly attributable to the success of harm reduction programs, such as needle exchanges. This is the third consecutive annual trend report to show decreases among persons with heterosexual risk. The "other known" risk category includes perinatal and blood product transmission. The numbers have been low in this group for many years due to programmatic successes in preventing perinatal and blood-borne transmissions.

2012 Profile of HIV in the Detroit Metro Area

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

Newly diagnosed persons with no identified risk (NIR) includes males who reported sex with females of unknown risk/HIV status as their only risk and males and females for whom no risk has yet been reported. This group accounts for about 28 percent of new diagnoses each year (Trends) but only 18 percent of all persons currently living with HIV in the DMA (regardless of year of diagnosis) (table 3, page 163).

Figure 8: Adjusted number of new HIV diagnoses in the Detroit Metro Area in 2010 and trends between 2006-2010, by risk
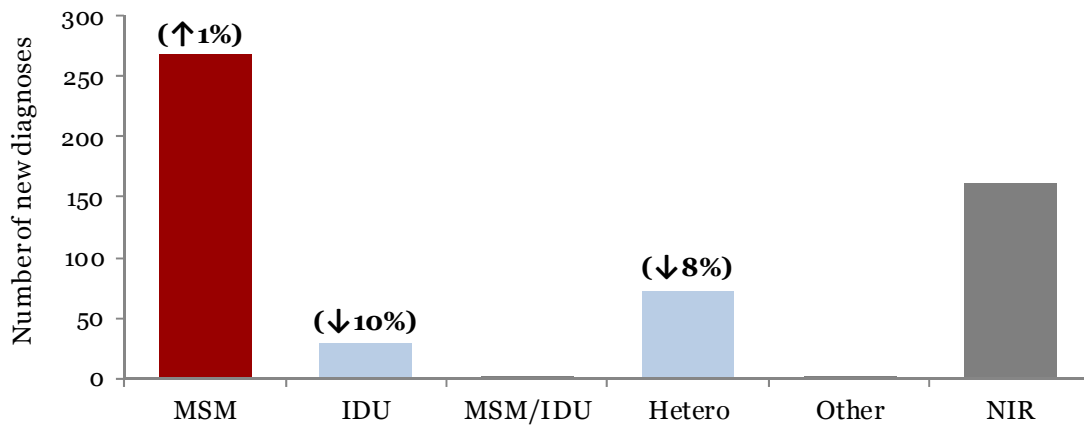
New diagnoses by race and sex, 2006-2010:

The rate of new diagnoses increased among black males (average 4 percent per year) between 2006 and 2010 (figure 9). The rate also increased among all males by an average two percent per year, driven by the increase among black males. The rate among females overall decreased by an average six percent per year for the second annual consecutive trend report (Trends).

Figure 9: Adjusted rate of new HIV diagnoses in the Detroit Metro Area in 2010 and trends between 2006-2010, by race/sex
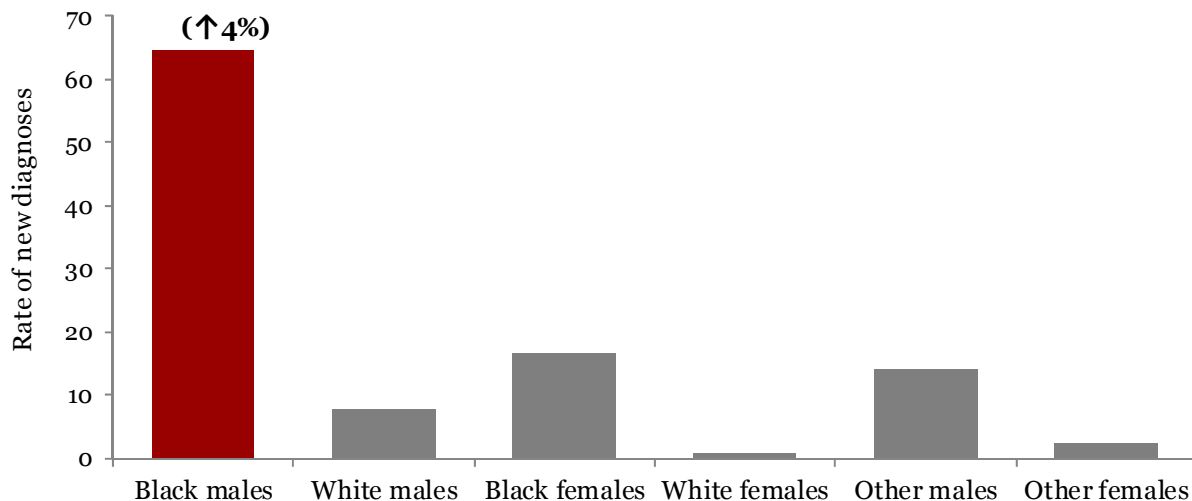
2012 Profile of HIV in the Detroit Metro Area

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

New diagnoses by age at HIV diagnosis, 2006-2010:

The rate of new HIV diagnoses increased significantly among persons 20-24 years of age (an average 11 percent per year) and those 25-29 years of age at HIV diagnosis (an average eight percent per year) (figure 10). For the first time in six trend reports, the rate did not increase among those 13-19 years of age at diagnosis. This is the second consecutive report, however, showing increases among 20-24 and 25-29 year olds. Additionally, rates in older age groups (35-39 year olds and 40-44 year olds) decreased significantly by an average six percent per year and 10 percent per year, respectively. Twenty to twenty-four year olds now have the highest rate of diagnosis of any age group.

Figure 10: Adjusted rate of new HIV diagnoses in the Detroit Metro Area in 2010 and trends between 2006-2010, by age at diagnosis
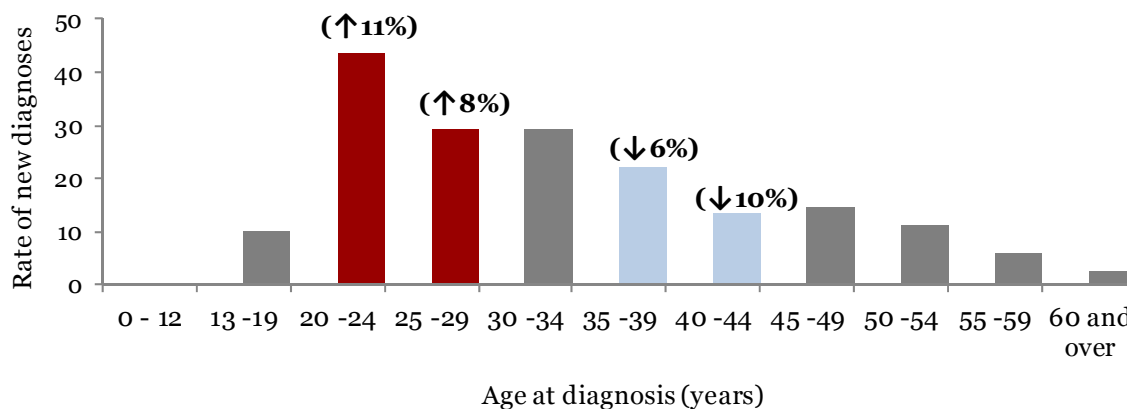
New diagnoses by Detroit zip code, 2009-2010:

Figure 11 shows HIV infection cases diagnosed in 2009 and 2010 by zip code at diagnosis for the City of Detroit as well as Highland Park and Hamtramck. There were 587 new HIV diagnoses total, 303 in 2009 and 284 in 2010. Twenty-two of the cases were residents of Highland Park or Hamtramck, and the rest lived in the City of Detroit.

The map shows that the highest numbers of new diagnoses were in zip codes 48203 and 48205 (41-50 new diagnoses each), followed by zip codes 48219, 48227, and 48238 (31-40 new diagnoses each). All the rest of the zip codes had 30 or less new diagnoses.

Geocoding and mapping data to the zip code level may assist with more focused prevention activities in areas of high HIV burden. Understanding the specific areas of the city in which new HIV diagnoses occur allows for resources to be maximized in these areas, potentially reducing the risk of transmission and the overall prevalence of HIV.

It is important to note that this map shows the number of reported cases, which are not adjusted for reporting delay. It also does not take into account persons unaware of their infection. Thus, this map should be viewed as the minimum number of new diagnoses for the two year period.

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 11: Reported number of new HIV diagnoses in the City of Detroit, Highland Park, and Hamtramck by zip code, 2009-2010 (N=587*)
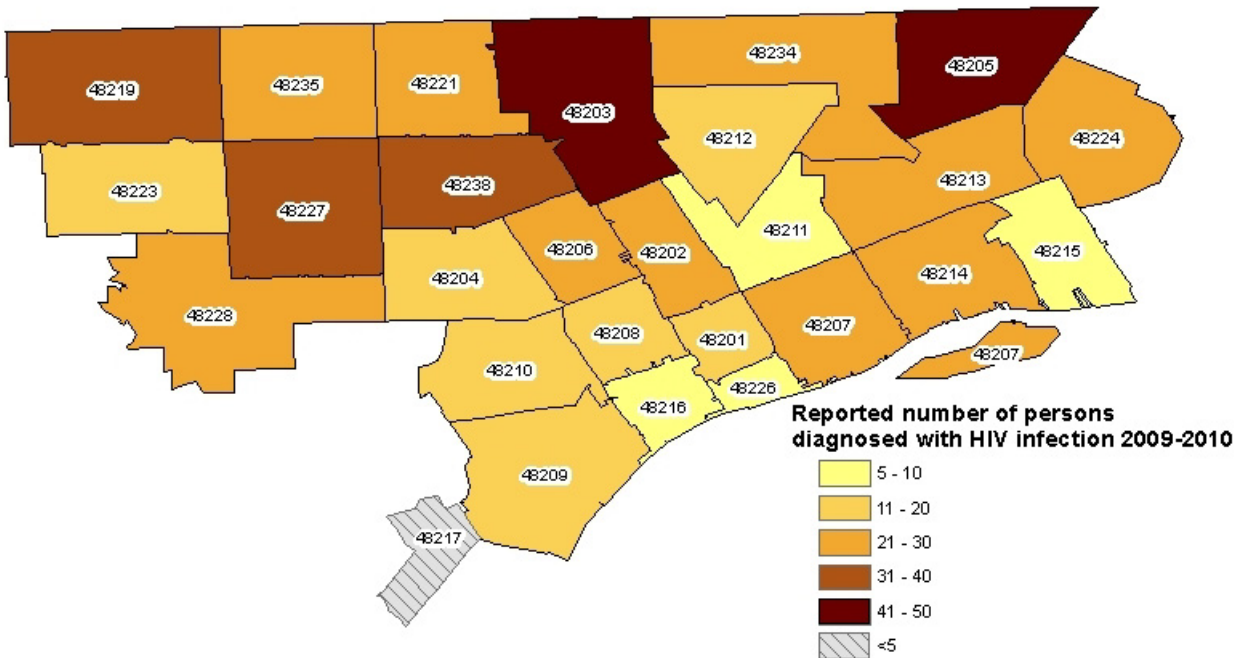
*Data were geocoded in 2010 for 2009 cases and 2011 for 2010 cases, and numbers should be viewed as minimum estimates due to reporting delay.

New diagnoses, deaths and prevalence of HIV by year:

The unadjusted number of new HIV diagnoses, number of deaths among HIV-positive persons, and HIV prevalence are presented in figure 12. The trend among new HIV diagnoses reflects reported cases. These data were not adjusted for reporting delay as they were in figures 7-10. Consequently, the decreases in new diagnoses seen in the most recent years will likely level out as more cases diagnosed during those years are reported. Although the number of deaths among HIV-positive persons is decreasing, the number of new HIV diagnoses is stable. As a result, HIV prevalence (the number of people currently living with HIV in Michigan) continues to rise.

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Trends in HIV Data

Figure 12: New diagnoses, deaths, and prevalence of HIV in the Detroit Metro Area by year, January 2012
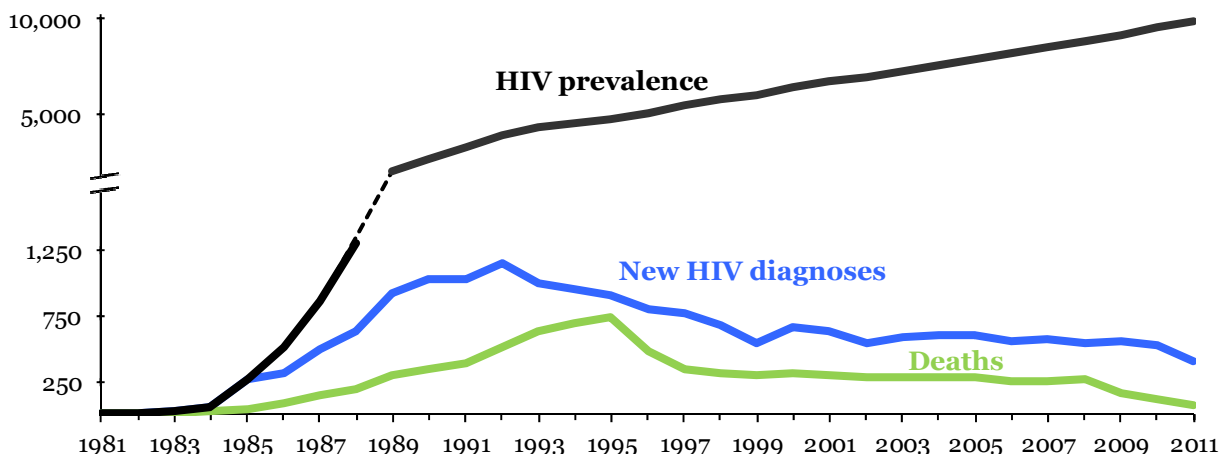
Deaths among HIV-positive persons by race and sex:

Figure 12 shows the number of HIV-positive Detroit Metro Area (DMA) residents reported as deceased by a local health department, the department of vital records (via a data match, death transcript, or death certificate), the National Death Index, or an alternate source. The number of deaths increased in all race/sex groups from the beginning of the epidemic through approximately 1994-1995. The number of deaths decreased markedly between 1995 and 1998 and were relatively stable until 2001. It should be noted that the percent decrease in deaths among white males (76 percent) between 1995 and 2001 was more pronounced than the percent decrease among black males (59 percent), and the percent decrease among white females (68 percent) was larger than the percent decrease among black females (44 percent). Between 2001 and 2009, the number of deaths among all groups fell once again. The percent decrease among white males (54 percent) was again greater than the percent decrease in black males (48 percent). The number of deaths did not change as appreciably in black females (22 percent). Deaths among white females decreased by 60 percent between 2001 and 2009, but this decrease is exaggerated as there is a small number of deaths in this group (data not shown in tables).

Figure 13: Detroit Metro Area HIV deaths by race/sex, January 2012
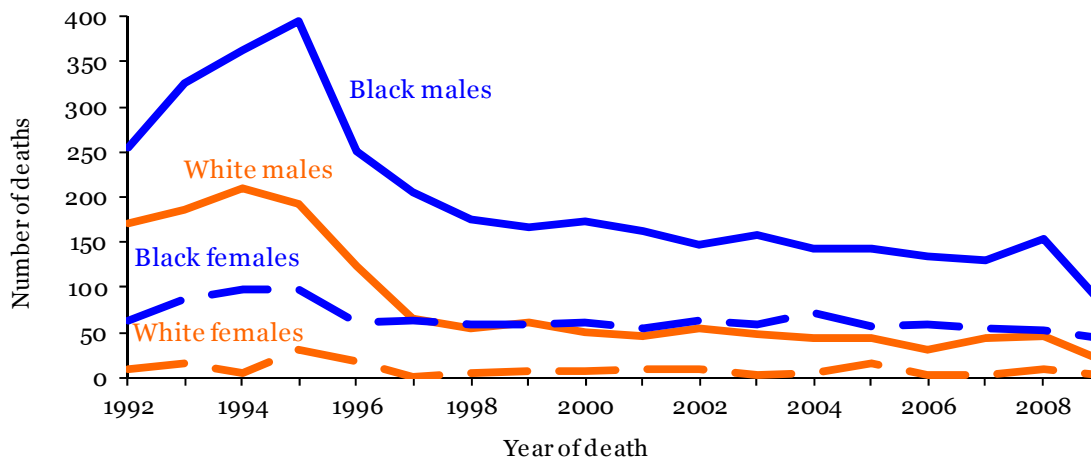
2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: MSM

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

Men who have sex with men (MSM) are the number one ranked behavioral group in the DMA for HIV infection. MSM remain the single largest behavioral group affected by the epidemic and account for over half (53 percent) of all reported HIV-positive persons, including MSM/IDU. MDCH estimates that there are approximately 6,840 MSM living with HIV infection in the DMA. This includes an estimated 480 HIV-positive males whose risk is a combination of having sex with other males and injecting drugs (table 3, page 163).

Race/ethnicity:

MSM account for most HIV infections among males in the DMA for all racial and ethnic groups. When considering reported cases for MSM and MSM/IDU of all races (5,207 reported cases), white males comprise 36 percent of males in this combined category (1,864 cases); black males account for well over half (59 percent, 3,062 cases); and Hispanic males account for three percent (156 cases) (table 5, page 164).

Age at HIV diagnosis:

Among those reporting male-male sex (including MSM/IDU), the highest proportion of all living HIV infection cases were 30-39 years old at diagnosis (35 percent). MSM is the predominant mode of transmission for males ages 13 and up; male-male sex accounts for 78 percent and 81 percent of infections among males ages 13-19 years and 20-29 years at diagnosis, respectively (table 7, page 167).

Among newly diagnosed cases in the City of Detroit, younger age groups are more likely to be MSM than those at older ages (Trends). Figure 13 shows that 73 percent of newly diagnosed 20-24 year olds and 64 percent of 13-19 year olds are MSM. The proportion who are MSM decreases as age at diagnosis increases, with MSM representing less than half of new diagnoses among persons 30 years and older. Additionally, 61 percent of newly diagnosed teens (13-19 year olds) are black MSM, compared to 38 percent of persons who are 20 years and older (Trends).

Figure 14: Percent MSM by age at HIV diagnosis among persons diagnosed in the City of Detroit, 2006-2010
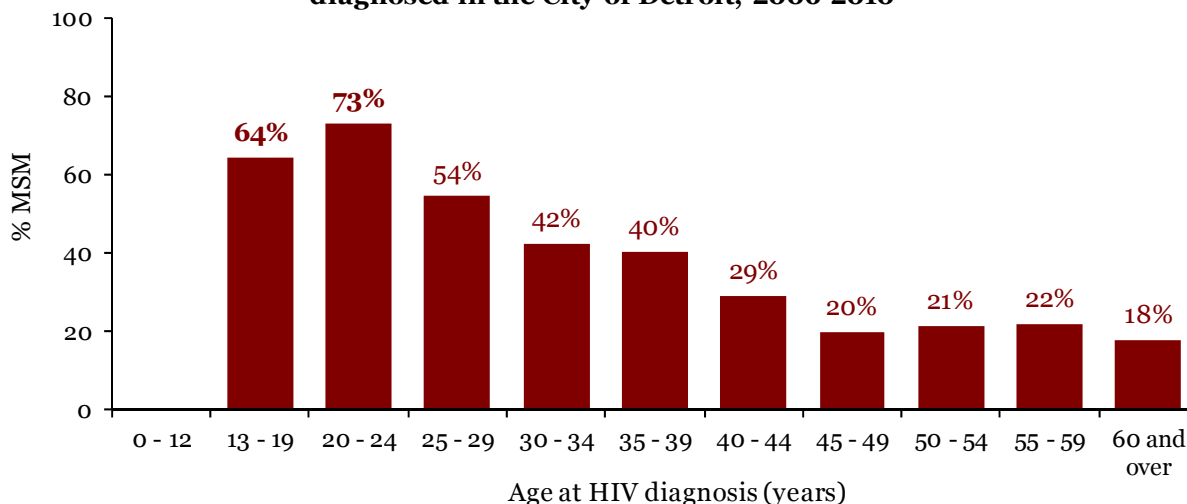
2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: MSM

Late diagnoses:

Of the 9,919 persons living with HIV infection in the DMA, 55 percent (5,466 cases) have progressed to stage 3 HIV infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). MSM and MSM/IDU make up 53 percent (2,936 cases) of persons living with stage 3 infection, of whom 42 percent (1,238 cases) had late HIV diagnoses (table 3, page 163). This suggests that MSM get tested for HIV later in the course of their infections than persons in other risk groups.

Geographic distribution:

About two thirds (61 percent) of HIV-positive MSM statewide reside in the DMA, which is similar to the proportion of all cases that reside in the DMA. Within high prevalence counties (City of Detroit, Macomb, Oakland, and Wayne), MSM comprise 52 percent of persons living with HIV infection, while in the lower prevalence counties (Lapeer, Monroe, and St. Clair), 61 percent of reported persons living with HIV infection are MSM (data not shown in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification). The majority of HIV-positive MSM and MSM/IDU in the DMA live in the city of Detroit (49 percent).

Behaviorally bisexual males:

Case reporting data are collected statewide but have only limited information on male bisexual behavior. Case reports are completed by health care providers and surveillance staff reviewing medical records rather than through interviews with HIV-positive persons. Only 55 percent of all completed case reports among persons currently living in the DMA have complete 'yes' or 'no' answers to both of the following: "Before the 1st positive HIV test/AIDS diagnosis, patient had: Sex with male" and "Before the 1st positive HIV test/AIDS diagnosis, patient had: Sex with female." Based on these complete forms, 58 percent of all HIV-positive MSM (including MSM/IDU) reported also having sex with females. These more complete forms also show that three percent of females report having sex with behaviorally bisexual males. These data should be viewed as minimum estimates of these behaviors as 45 percent of case reports did not have the two questions answered completely (data not shown in tables).

Trends and conclusions:

The estimated number of new HIV infections among men who have sex with men (MSM) in the Detroit Metro Area increased from 2006 to 2010 by an average one percent per year. The estimated number of new HIV infections among MSM who were also IDU (MSM/IDU) did not change. MSM and MSM/IDU together constituted 51 percent of all new diagnoses in the DMA in 2010 (Trends). Additional information on MSM from National HIV Behavioral Surveillance (NHBS) and the Medical Monitoring Project (MMP) focuses largely on the Detroit Metro Area and can be found on pages 31-33 in the Statewide chapter of this document.

2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: Heterosexuals

Overview:

Heterosexual risk is the second highest ranked behavioral group in the Detroit Metro Area (DMA). Persons with heterosexual risk account for 17 percent of reported HIV infection cases. MDCH estimates that 2,270 persons living with HIV infection in the DMA have a risk factor of heterosexual contact (HC). Heterosexual contact is comprised of heterosexual contact with a female with known risk (HCFR) and heterosexual contact with male (HCM). HCFR is only applicable to males and constitutes persons who had sex with females with known risk factors for HIV, including IDU, recipients of HIV-infected blood products, and/or HIV-positive individuals with unknown risk. HCM is composed of all females whose only reported risk is sex with males, regardless of what is known about the male partners' risk factors. Currently there are an estimated 420 HIV-positive persons who are HCFR (males) and 1,850 persons who are HCM (females) (table 3, page 163).

Race/ethnicity and sex:

Among the 1,727 persons currently living with HIV infection in the DMA with a risk of heterosexual contact, 82 percent are females and 18 percent are males. While females account for 23 percent of all reported HIV infection cases in the DMA, they have consistently accounted for over three quarters of cases with heterosexual risk. The overall proportion of males with heterosexual risk is four percent (table 5, page 165). However, many males report heterosexual contact in addition to other risk factors, such as male-male sex (MSM) or injection drug use (IDU). See table 4, page 164 for data on exposure categories, which represent all reported modes of HIV exposure.

Most heterosexual cases of HIV infection are among black persons (81 percent), largely driven by the high number of black females with heterosexual risk. Sixty-six percent of all black female cases report heterosexual risk (61 percent). Fifty-eight percent of white female cases, 66 percent of Hispanic female cases, and 61 percent of female cases of other or unknown race have heterosexual risk (table 5).

Expanded risk:

Of the 1,727 HIV-positive persons with heterosexual risk currently living in the DMA, 17 percent report their heterosexual partners are injection drug users (74 percent female, 26 percent male); three percent have partners who are behaviorally bisexual males (this applies to females only); and two percent have partners who are persons infected with HIV through blood products (71 percent female, 29 percent male). Forty-three percent of HIV-positive persons with heterosexual risk report having sex with HIV-positive persons (68 percent female, 32 percent male) (expanded risk data not shown in tables). As the majority of cases with heterosexual risk are female, it is useful to examine this expanded risk among different female subgroups. Figures 15 and 16 show detailed risk information for black females and white females, respectively. While the risk distribution between black females and white females is similar, of note is that white females more frequently report having partners with known risks (such as IDU or behaviorally bisexual males). Black females have a higher proportion of heterosexual contact without specific risk factors indicated.

2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: Heterosexuals

Figure 15: Black females living with HIV infection in the Detroit Metro Area by expanded risk transmission category, January 2012 (N = 1,883)

Hetero-partner IDU 9%
Hetero-partner bisexual 2%
Unk/other 18%
Hetero-Partner Blood Recip 1%
Perinatal 2%
Blood Recipient <1 %
Hetero-partner HIV+ 21%
IDU 19%
Other hetero contact 28%
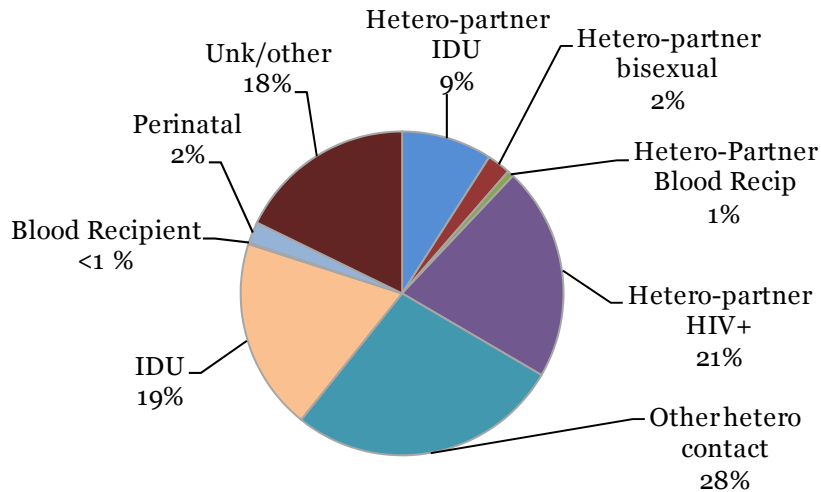
Figure 16: White females living with HIV infection in the Detroit Metro Area by expanded risk transmission category, January 2012 (N = 299)
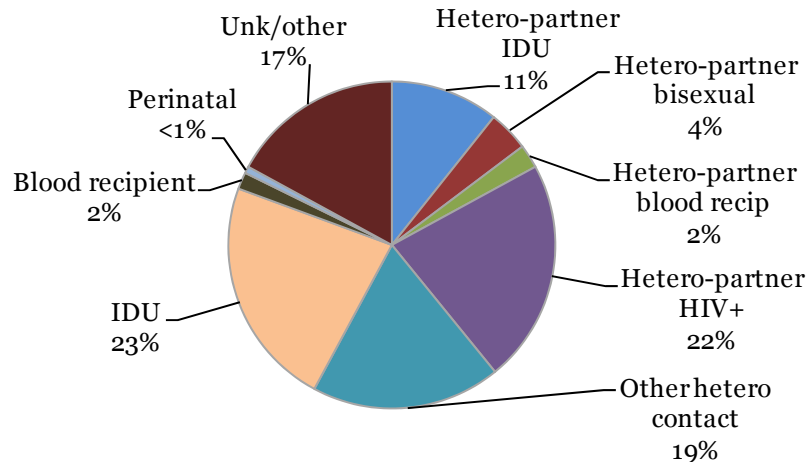
Unk/other 17%
Hetero-partner IDU 11%
Hetero-partner bisexual 4%
Perinatal <1%
Hetero-partner blood recip 2%
Blood recipient 2%
Hetero-partner HIV+ 22%
IDU 23%
Other hetero contact 19%

Age at HIV diagnosis:

Heterosexual contact is the predominant reported risk factor for females who were 13 years of age and older at the time of HIV diagnosis. Over three-quarters (78 percent) of those 13-19 years at the time of diagnosis have heterosexual risk. As age increases, the proportion of HIV-positive females with hetero-sexual risk decreases, but it remains at least twice as high as injection drug use (IDU) for all females 13 years and older at diagnosis (table 7, page 167).

2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: Heterosexuals

Among HIV-positive males, the proportion with a risk factor of heterosexual sex is low overall (4 percent). However, as age at diagnosis increases, heterosexual contact becomes a larger proportion of the overall risk (with 8 percent of males 60 years and over at diagnosis reporting a risk of heterosexual contact) (table 7). It is important to note that for males to be classified as heterosexual risk, they must report female partners with known HIV risk factors (such as IDU). When considering exposure categories, which represent all reported modes of HIV exposure, 47 percent of HIV-positive males report heterosexual contact (with or without partners with known risk) (table 4, page 164).

Late diagnoses:

Of the 9,919 persons living with HIV in the Detroit Metro Area (DMA), 55 percent (5,466 cases) have progressed to stage 3 HIV infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Persons with a risk of heterosexual sex make up 17 percent (939 cases) of persons living with stage 3 infection, of whom 38 percent (356 cases) had late HIV diagnoses. Overall, heterosexuals are more likely than IDU and less likely than MSM to have late diagnoses (table 3, page 163).

Geographic distribution:

Heterosexual contact accounts for roughly the same proportion of cases in both high and low prevalence counties of the DMA, representing 17 percent in high prevalence counties and 16 percent in low prevalence counties (data not included in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

Trends and conclusions:

Between 2006 and 2010, the number of new HIV diagnoses among persons with heterosexual risk decreased by an average of eight percent per year (Trends). The majority of HIV-positive females in the DMA, regardless of race or age, have heterosexual risk. A small proportion of males have heterosexual risk, but a large proportion (47 percent) of males who have other risks, such as MSM, also had heterosexual contact (table 4). Cases with heterosexual risk have surpassed the proportion of cases attributed to IDU (table 3), and the number of new cases each year among persons with heterosexual risk is over three times that of IDU (Trends). Additional information on heterosexuals from National HIV Behavioral Surveillance (NHBS) focuses largely on the Detroit Metro Area and can be found on pages 36-37 in the Statewide chapter of this document.

2012 Profile of HIV in the Detroit Metro Area

Ranked Behavioral Group: IDU

Overview:

Injection drug users (IDU) are the third ranked behavioral group in the Detroit Metro Area (DMA) and account for 14 percent (1,415 cases) of reported HIV-positive persons (including MSM/IDU). MDCH estimates that there are 1,860 IDU currently living with HIV in the DMA, including 480 HIV-positive males who reported male-male sex and injecting drugs (MSM/IDU) (table 3, page 163).

Race/ethnicity and sex:

Of the 1,415 IDU and MSM/IDU living with HIV, 68 percent are male (957 cases). Black males make up the largest proportion of all IDU and MSM/IDU currently living with HIV in the DMA (49 percent), followed by black females (26 percent), white males (14 percent), white females (5 percent), and Hispanic males (3 percent). In total, three quarters (74 percent, 1,052 cases) of all IDU and MSM/IDU HIV infection cases occur among black persons (table 5, page 165).

Age at HIV diagnosis:

Among males diagnosed in their 30s and 40s, IDU (including MSM/IDU) is nearly tied with undetermined risk for the second most common risk (17 percent vs. 19 percent, respectively). As age at diagnosis increases, the proportion with a risk of IDU increases (as opposed to MSM, where the proportion decreases with age). This proportion peaks, however, with males 40-49 years at diagnosis and then begins to decrease (table 7, page 167).

Overall, IDU is the second most common risk for females. However, this is true only for females between 30 and 49 years old at the time of HIV diagnosis (23 to 29 percent). For females in all other age groups, IDU falls behind undetermined risk and becomes the third most common risk. When considering males and females together, there are few HIV infection cases with a risk of IDU or MSM/IDU among persons who were teens (13-19 years) at the time of HIV diagnosis (3 percent).

Late diagnoses:

Of the 9,919 persons living with HIV infection in the DMA, 55 percent (5,466 cases) have progressed to stage 3 infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). IDU make up 16 percent (890 cases) of persons living with stage 3 infection, of whom 34 percent (301 cases) had late diagnoses. These data indicate that IDU are more likely then heterosexuals and MSM to get tested earlier in the course of HIV infection (table 3).

Geographic distribution:

The majority (63 percent) of IDU and MSM/IDU currently living with HIV infection in Michigan live in the DMA. Within high prevalence counties of the DMA, 14 percent of reported cases are IDU (including MSM/IDU), while in the lower prevalence counties 12 percent of persons living with HIV infection are IDU (data not included in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

Trends and conclusions:

Between 2006 and 2010, the proportion of persons diagnosed in the DMA who were injection drug users (IDU) decreased by an average of 10 percent per year (Trends). This a continuation of the decreasing trend seen in the past seven trend analyses. Data from Michigan's HIV Behavioral Surveillance suggest reductions among IDU may be partly attributable to the success of harm reduction programs, such as needle exchange. The majority of IDU are black males (table 5). Additional information on IDU from National HIV Behavioral Surveillance (NHBS) and the Medical Monitoring Project (MMP) focuses largely on the Detroit Metro Area and can be found on pages 38-40 of the Statewide chapter of this document.

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Race and Sex

Overview:

Black persons comprise the majority of those living with HIV infection in the DMA. They make up 23 percent of the DMA's population yet over two thirds (68 percent) of the persons living with HIV. MDCH estimates that 8,840 black persons are living with HIV in the DMA. The reported prevalence rate among black persons is 689 cases per 100,000, (1,076 among black males and 358 among black females). One out of 90 black males and one out of 280 black females in the DMA are known to be living with HIV (table 3, page 164).

White persons comprise 26 percent of reported HIV infection cases and 68 percent of the DMA's population. MDCH estimates 3,410 white persons are living with HIV in the DMA. Since these cases occur among a larger overall population, they have a lower reported prevalence rate (90 per 100,000 persons) than black or Hispanic persons. One out of every 620 white males and one out of 4,910 white females are known to be living with HIV in the DMA (table 3).

Hispanic persons make up four percent of HIV cases and four percent of the DMA population. MDCH estimates that 1,000 Hispanic persons are living with HIV infection in the DMA. The prevalence rate (206 per 100,000 persons) is higher than that among white persons as a result of a smaller overall population. One out of 320 Hispanic males and one out of 1,010 Hispanic females are known to be living with HIV (table 3). See page 44 of the Statewide chapter for a more in-depth analysis of Hispanic persons.

Arab, Asian/Native Hawaiian or Other Pacific Islander, and American Indian/Alaska Native persons living with HIV in Michigan are discussed further on pages 86-89 of the Statewide chapter.

Most persons living with HIV infection in the DMA are male (77 percent). The majority of the 7,593 male cases are black (64 percent), 30 percent are white, four percent are Hispanic, and three percent are other or unknown race. The majority of the 2,326 female HIV cases are also black (81 percent), 13 percent are white, four percent are Hispanic, and three percent are other or unknown race (table 3).

Racial and ethnic health disparities:

The DMA is similar to the state of Michigan as a whole in that large racial and ethnic disparities are seen in HIV prevalence rates and rates of new diagnoses. The epidemic disproportionately impacts black persons. The HIV prevalence rate among black persons in the DMA is 689 cases per 100,000 persons, almost eight times higher than the rate among white persons (90 per 100,000) (table 3). Black persons are also disproportionately represented in new diagnoses. Between 2006 and 2010, the rate of new diagnoses among black males was over nine times that of white males, and the rate among black females was 22 times that of white females. Overall, black persons are diagnosed with HIV at over 10 times the rate of white persons (Trends). In addition to the black community, the Hispanic population is also disproportionately impacted. While only four percent of reported cases occur among this group, the prevalence rate is over twice that of the white population (table 3).

Three quarters of all persons living with HIV in the DMA are a racial or ethnic minority (table 3). Given that HIV disproportionately impacts minorities, and the DMA has the highest burden of HIV in the state, it is important to focus attention on these disparities.

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Exposure:

Since the majority of HIV-positive males have a risk of male-male sex (MSM), it is particularly useful to examine exposure categories (as many other exposures may be masked if the person is MSM). Figures 17 and 18 show black and white male cases living in the Detroit Metro Area (DMA) by exposure category. A smaller proportion of HIV-positive black males have an exposure of MSM only compared to white males (34 percent vs. 58 percent, respectively). Twenty-seven percent of black male cases reporting male-male sex are behaviorally bisexual, also reporting heterosexual contact (HC), including three percent who report male-male sex, injection drug use, and heterosexual contact (MSM/IDU/HC). Nineteen percent of black males report heterosexual contact as their only exposure, compared to eight percent of white male cases. A larger proportion of HIV-positive black males report a dual risk of injection drug use and heterosexual contact compared to white males (7 percent vs. 2 percent, respectively).

See figures 15 and 16 on page 142 for expanded risk among black and white HIV-positive females in the DMA. For females, expanded risk transmission categories are examined since the majority of female cases have heterosexual risk. The large number of male cases who report both MSM and heterosexual contact is interesting, given that just three percent of females report sex with behaviorally bisexual males. This is likely an underestimate due to lack of completion of risk factor questions on the case report form (data not shown in tables).

Figure 17: Black male HIV infection cases currently living in the Detroit Metro Area by exposure category, January 2012 (N = 4,838)
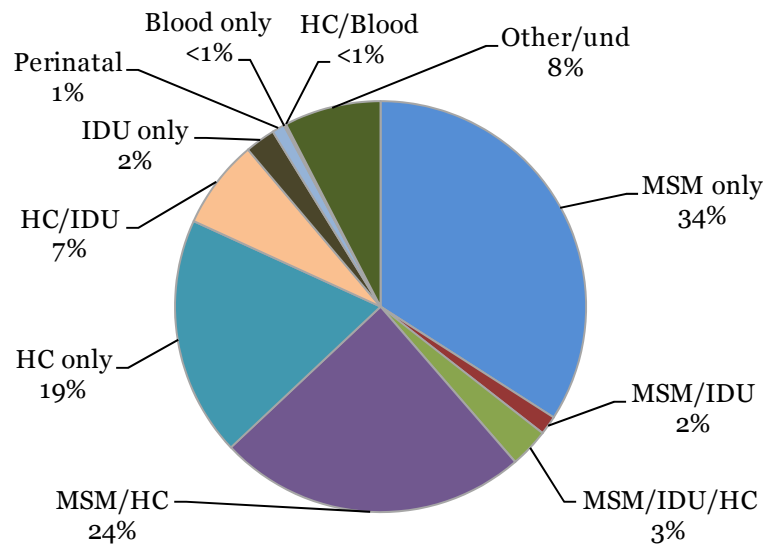
- Perinatal 1%
- Blood only <1%
- HC/Blood <1%
- Other/und 8%
- IDU only 2%
- HC/IDU 7%
- MSM only 34%
- HC only 19%
- MSM/IDU 2%
- MSM/HC 24%
- MSM/IDU/HC 3%

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Race and Sex

Figure 18: White male HIV infection cases currently living in the Detroit Metro Area by exposure category, January 2012 (N = 2,298)
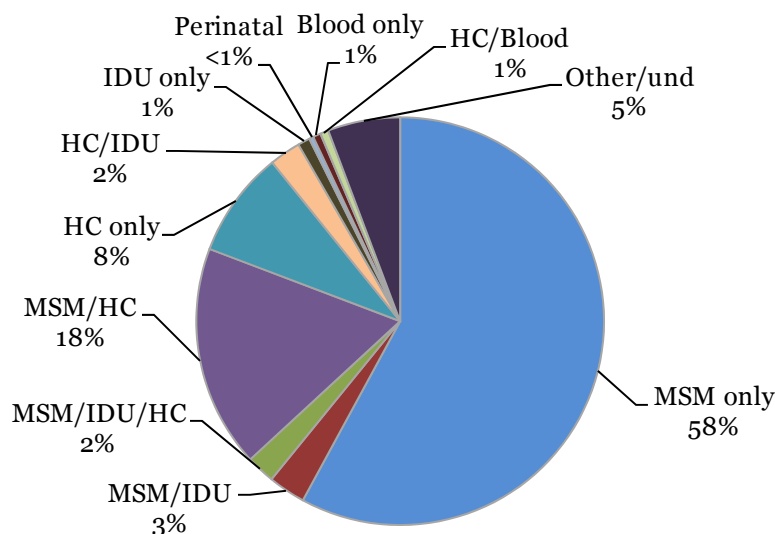
Late Diagnoses:

Of the 9,919 persons living with HIV infection in the DMA, 55 percent (5,466 cases) have progressed to stage 3 infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Males make up 78 percent of stage 3 cases, of whom 44 percent had late HIV diagnoses. Females make up the remaining 22 percent of stage 3 cases, of whom 38 percent had late diagnoses (table 3, page 163).

Although black persons make up a larger proportion of persons living with stage 3 compared to white persons (67 vs. 26 percent, respectively), a larger proportion of white persons living with stage 3 infection had late diagnoses than did black persons (47 vs. 41 percent). Hispanic persons make up three percent of stage 3 cases, of whom 46 percent had late HIV diagnoses. Other minorities make up roughly three percent of stage 3 cases, but Asians/Native Hawaiians or Other Pacific Islanders have the highest proportion of stage 3 cases that were late diagnoses (63 percent). Statewide, only 55 percent of stage 3 cases among Asians/Native Hawaiians or Other Pacific Islanders were late diagnoses (which is similar to the proportion of late diagnoses among other racial/ethnic groups (table 3).

Geographic distribution:

The distribution of HIV among various racial/ethnic groups differs throughout the DMA. When examining the rates of different racial/ethnic groups in high and low prevalence areas, it becomes apparent that the impact of the epidemic is greater in high prevalence areas than in low prevalence areas (see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 18 shows that HIV prevalence rates in high prevalence areas of the DMA are at least one and a half times as high as those in low-prevalence areas for all racial/ethnic groups. Additionally, the HIV infection prevalence rate among black persons is over seven times higher than white persons in high prevalence areas and almost ten times higher than the rate among white persons in low prevalence areas. This disparity exists despite the fact that black persons make up a smaller proportion of HIV infection cases in low prevalence areas than they do in high prevalence areas (16 percent vs. 69 percent, respectively).

The HIV infection prevalence rates among persons of other races/ethnicities (including Hispanics, Asians/Native Hawaiians or Other Pacific Islanders, American Indians/Alaska Natives, and persons of other, multi-, or unknown race) are one and a half times as high as the rate among white persons in high prevalence areas and twice as high as the rate among whites in low prevalence areas.

Figure 19: Prevalence rates of persons living with HIV infection in high and low prevalence areas of the DMA by race, January 2012
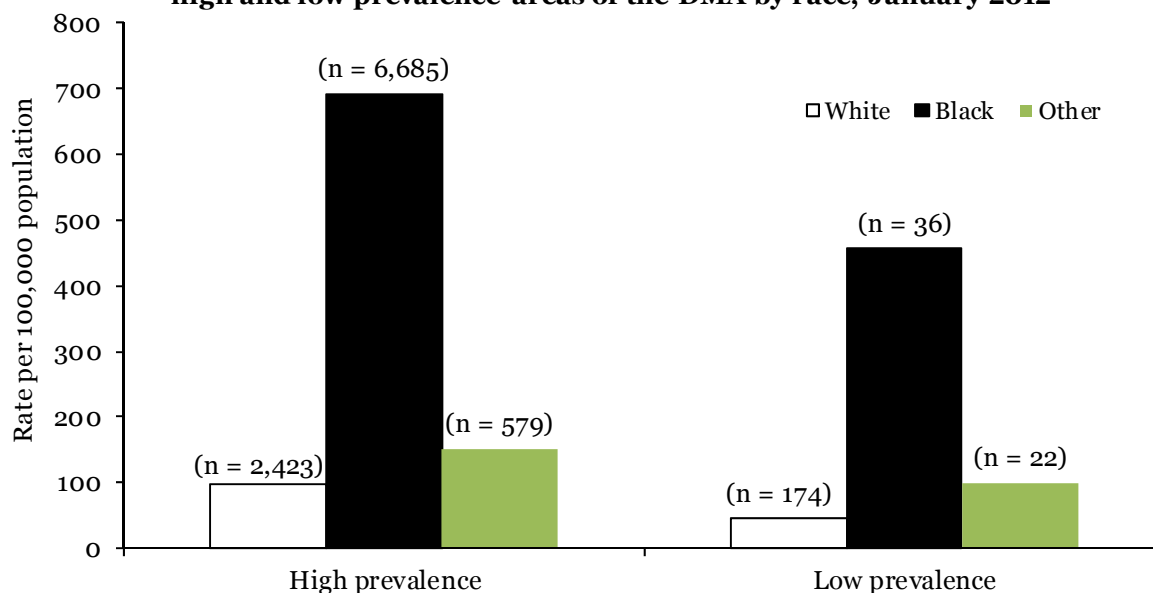
Trends and conclusions:

The rate of new HIV diagnoses in the Detroit Metro Area (DMA) increased among males (average 1percent per year) between 2006 and 2010 while the rate among females decreased by six percent per year for the third consecutive trend report (Trends). Diagnosis and prevalence rates remain highest among black persons of both sexes compared to all other race/sex groups (table 3, page 163).

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Age

Age at diagnosis:

The majority of persons newly diagnosed with HIV in the DMA are between 30 and 39 years old, followed by persons 40-49 years of age (figure 20). The pattern changes when looking at age at stage 3 diagnosis in figure 21, where 40-49 year olds make up a higher proportion of new stage 3 diagnoses than new HIV diagnoses (30 percent vs. 21 percent, respectively), and 20-24 and 25-29 year olds make up smaller proportions of stage 3 diagnoses than all new HIV diagnoses (19 percent vs. 32 percent, respectively). This is because many years may pass between HIV diagnosis and progression to stage 3 infection (data on age at HIV diagnosis found in table 3, page 163; data on age at stage 3 diagnoses not shown in tables).

Figure 20: Age at HIV diagnosis for persons living with HIV infection in the Detroit Metro Area, January 2012 (N = 9,916*)
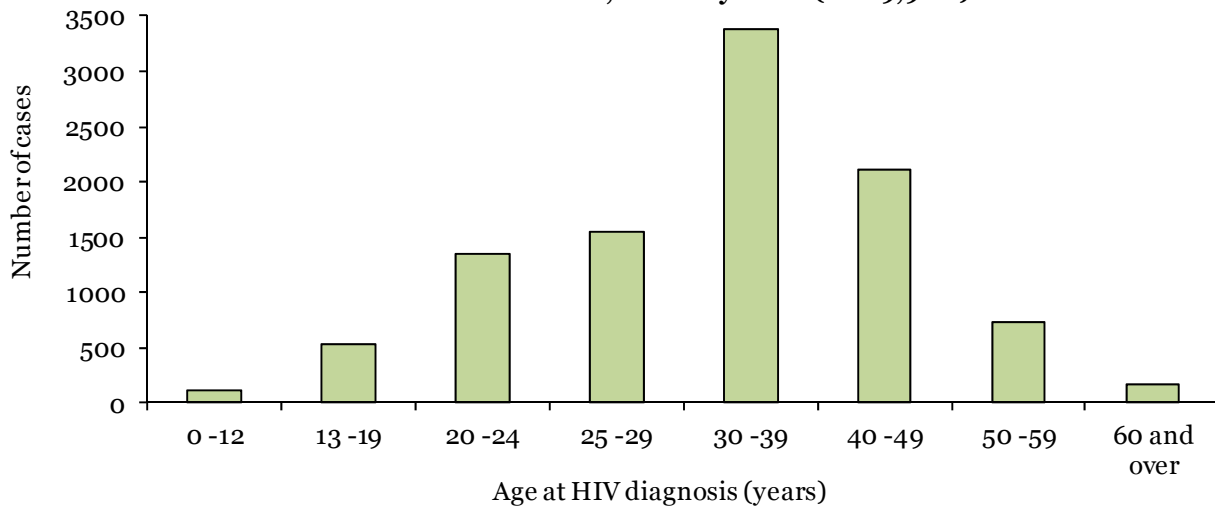
*Not included are 3 HIV infection cases with missing date of birth/age information.

Figure 21: Age at stage 3 diagnosis for persons living with HIV infection in the Detroit Metro Area, January 2012 (N = 5,466)
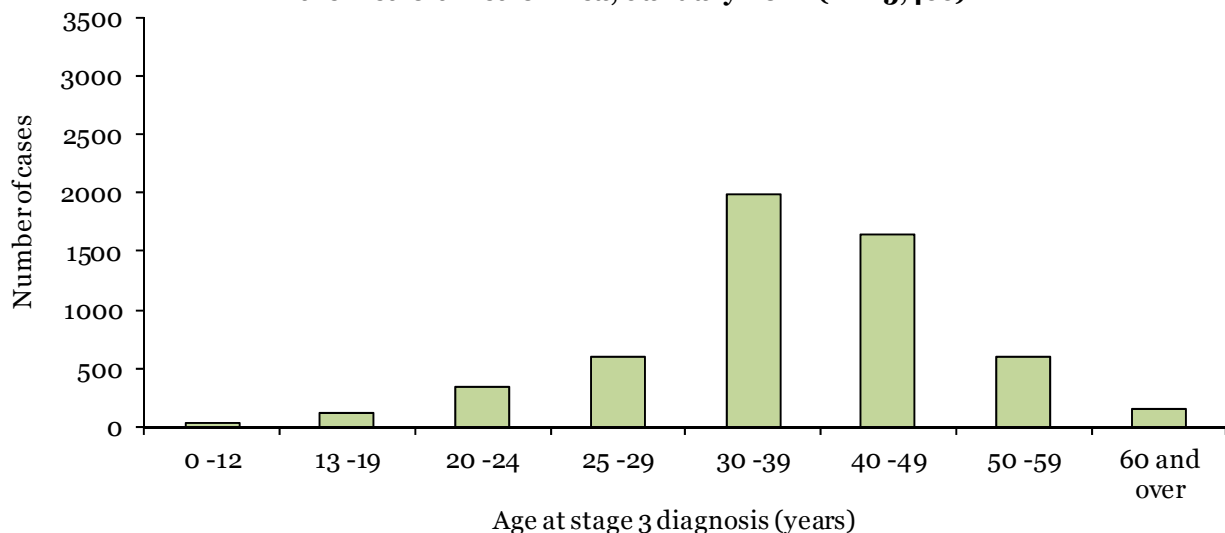
2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Age

Figure 22: Current age of persons living with HIV infection in the Detroit Metro Area, January 2012 (N = 9,916*)
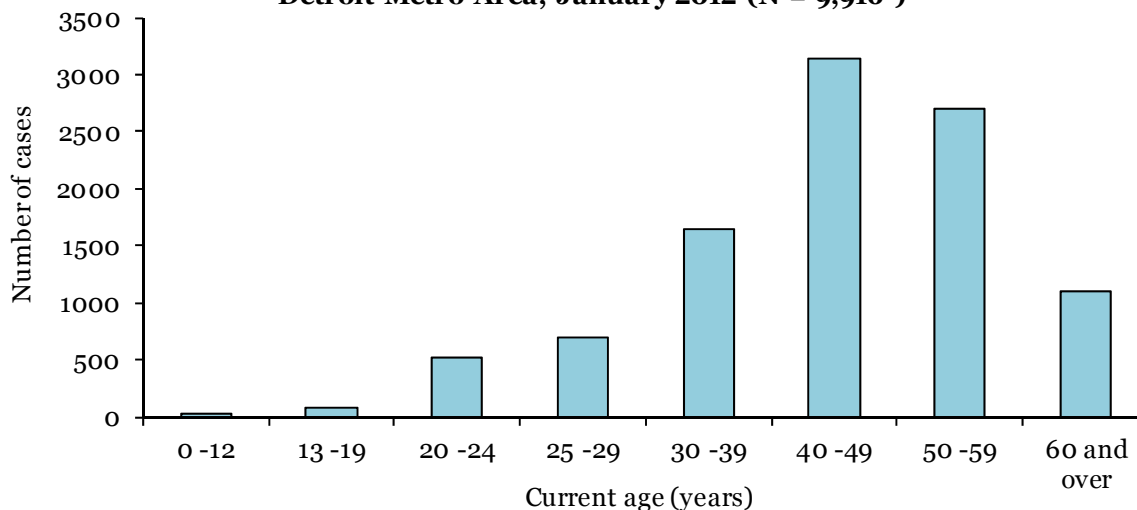
*Not included are 3 HIV infection cases with missing date of birth/age information.

Current age:

Since use of Highly Active Anti-Retroviral Therapy (HAART) became widespread in 1996, HIV-positive persons have been living longer. This is evident in figure 22, which shows the current age of persons living with HIV in the Detroit Metro Area (DMA) as of January 1, 2012. Those currently in their forties make up the largest proportion of persons living with HIV (32 percent). While persons who were 50 years and older at the time of HIV diagnosis represent only nine percent of newly diagnosed cases, they make up over one third (38 percent) of persons living with HIV when considering current age (data on current age not shown in tables).

Late diagnoses:

Of the 9,919 persons living with HIV infection in the DMA, 55 percent (5,466 cases) have progressed to stage 3 infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). When examining persons living with stage 3 infection by age at HIV diagnosis, the proportion of cases with late diagnoses increases as age increases. Among persons 60 years and older at stage 3 diagnosis, 69 percent had late diagnoses (table 3, page 163).

Trends and conclusions:

For the first time in seven annual trend reports, the rate of new diagnoses among 13-19 year olds in the DMA did not increase. The rate did increase, however, among persons 20-24 and 25-29 years (11 percent and 8 percent per year, respectively). This is the second consecutive report showing increases among 20-24 year olds. Rates among 35-39 year olds and 40-44 year olds decreased by an average six percent per year and 10 percent per year, respectively. Twenty to twenty-four year olds now have the highest *rate* of new diagnoses of any age group (figure 10, page 136). The largest *number* of new diagnoses and highest prevalence, however, remains among persons 30-39 years old at the time of diagnosis (Trends, table 3). When considering current age, persons 40-49 years, followed by persons 50-59 years, make up the largest proportion of persons living with HIV infection.

2012 Profile of HIV in the Detroit Metro Area

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

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 119 individuals living with HIV in the DMA who were 0-12 years old at diagnosis. They comprise one percent of all reported HIV infection cases (table 3, page 163). Most 0-12 year olds (89 percent) were infected perinatally, i.e., before, during, or shortly after birth. Those infected after birth were infected via breastfeeding. Five percent were infected through exposures to HIV-infected blood products before 1985, and the remaining six percent were infected through sexual assault or had unknown risk. Many with unknown risk had suspected perinatal exposures but were born outside of the U.S., and risk information could not be confirmed (table 7, page 167).

Race/ethnicity and sex:

Of the 119 individuals living in the DMA who were ages 0-12 when diagnosed with HIV, 59 percent are male and 41 percent are female. Three quarters are black (76 percent), 14 percent are white, and the remaining 10 percent are of other or unknown race/ethnicity (including Hispanic) (table 6, page 166).

Of the 106 individuals with confirmed perinatal exposures, 57 percent are male and 43 percent are female. Eighty-one percent are black, nine percent are white, and 10 percent are Hispanic or other/unknown race (table 5, page 165). For all but one of these perinatally infected cases, whose mother was a documented injection drug user (IDU), the only information about the mother is that she was HIV-positive; no additional maternal risk information was available (data not shown in tables).

Late diagnoses:

Of the 9,919 persons living with HIV infection in the DMA, 55 percent (5,466 cases) have progressed to stage 3 infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Children make up one percent of persons living with stage 3, of whom 29 percent (14 cases) had late HIV diagnoses (table 3, page 163).

Geographic distribution:

Almost all (97 percent) of the 119 children diagnosed with HIV between the ages of 0-12 years are currently residents of high prevalence counties in the DMA (see figure 3, page 18 of the statewide chapter for high/low prevalence county classification). Sixty-three percent (75 cases) currently live in the City of Detroit, while 13 percent reside in Macomb County and 13 percent in Oakland County. The remaining 10 percent live in Monroe, St. Clair, and Wayne Counties (data not shown in tables).

Trends and conclusions:

Among the best measurable successes in reducing HIV transmission has been prevention of mother to child (perinatal) transmission. Without Zidovudine (ZDV) prophylaxis, about 25 percent of children born to HIV-positive females could expect to become HIV-positive themselves. In the DMA, the proportion of children who become infected perinatally has dropped precipitously, from 28 percent prior to 1997 to five percent between 1997-2009. As of January 1, 2012, one of the 28 children born in the DMA in 2008 and two of the 23 children born in the DMA in 2009 to HIV-positive females were diagnosed with HIV infection. None of the 51 children born in the DMA in 2010-2011 to HIV-positive females have been diagnosed with HIV, although data are not complete at this time (data not shown in tables). NOTE: numbers in this paragraph are based on residence at *birth*, NOT current residence.

2012 Profile of HIV in the Detroit Metro Area

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

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 1,874 persons living in the Detroit Metro Area (DMA) who were ages 13-24 years old at HIV diagnosis. They comprise 19 percent of all persons reported with HIV infection in the DMA (5 percent ages 13-19 years; 14 percent ages 20-24 years). The number of prevalent cases among persons ages 13-24 years at diagnosis is now higher than the number of prevalent cases among persons ages 25-29 years at diagnosis (table 3, page 163).

Risk-teens (13-19 years):

In the 1980s, most HIV-positive 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. Among the 527 persons living with HIV in the DMA who were ages 13-19 at the time of HIV diagnosis, 402 (76 percent) are male (table 6, page 166). Among these male cases, over three quarters are males who have sex with males (MSM) (79 percent), including those who also inject drugs (MSM/IDU) (figure 23). Two percent were recipients of HIV-infected blood products before 1985, and another two percent are injection drug users (including MSM/IDU). One percent had heterosexual contact with females of known risk (HCFR). Fifteen percent of 13-19 year old males had undetermined risk.

Figure 23: Males ages 13-19 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 402)

Perinatal 1%
Undetermined 15%
Hetero (HCFR) 1%
Blood recipient 2%
MSM/IDU 2%
IDU 1%
MSM 78%
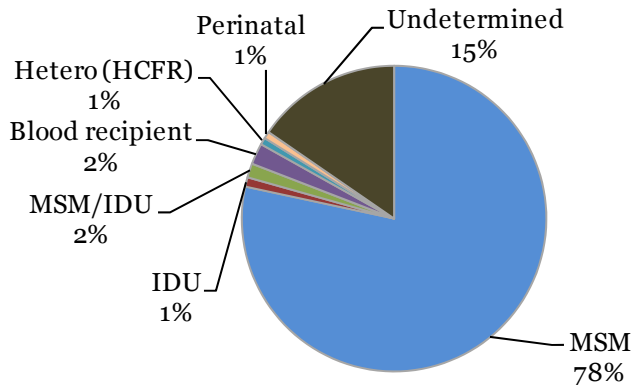
Figure 24: Females ages 13-19 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 125)
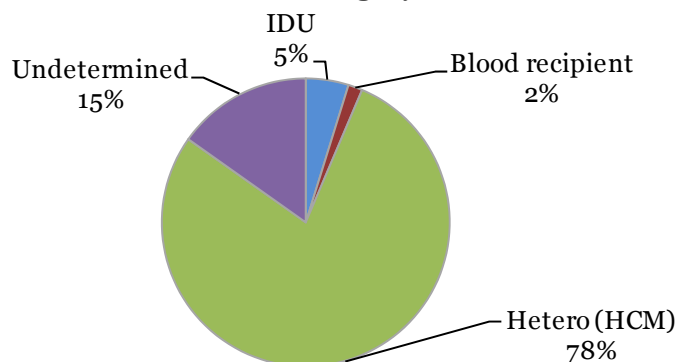
IDU 5%
Blood recipient 2%
Undetermined 15%
Hetero (HCM) 78%

2012 Profile of HIV in the Detroit Metro Area

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

Data from enhanced HIV/AIDS Reporting System (eHARS)

Females make up the remaining 125 persons living with HIV in the DMA who were ages 13-19 at the time of diagnosis (24 percent) (table 6). Of females who were 13-19 years at the time of diagnosis, over three quarters (78 percent) have a risk of heterosexual contact (HCM) (figure 24). Five percent are injection drug users (IDU), and 15 percent have undetermined risk. Two percent were recipients of HIV-infected blood products before 1985.

Risk-young adults:

Among the 1,347 persons living with HIV in the DMA who were ages 20-24 at the time of HIV diagnosis, over three quarters (80 percent) are male (table 6, page 166). Eighty-four percent of male young adults reported sex with other males (including MSM/IDU); 13 percent had undetermined risk; and four percent reported IDU (including MSM/IDU). One percent had heterosexual risk (HCFR), and less than one percent received HIV-infected blood products (figure 25).

Figure 25: Males ages 20-24 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 1,072)

Hetero (HCFR) 1%
Undetermined 13%
Blood Recipient <1%
MSM/IDU 3%
IDU 2%
MSM 81%
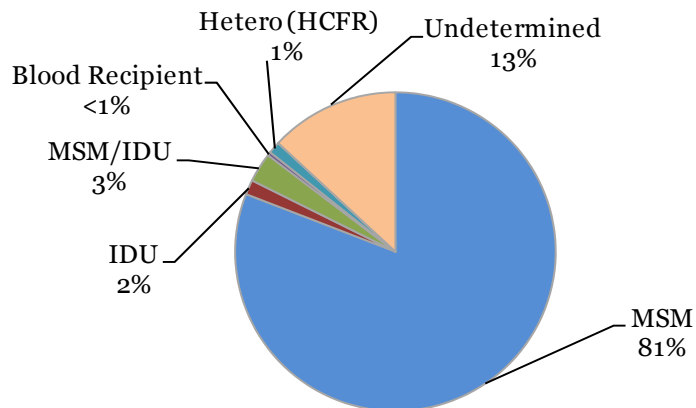
Figure 26: Females ages 20-24 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 275)
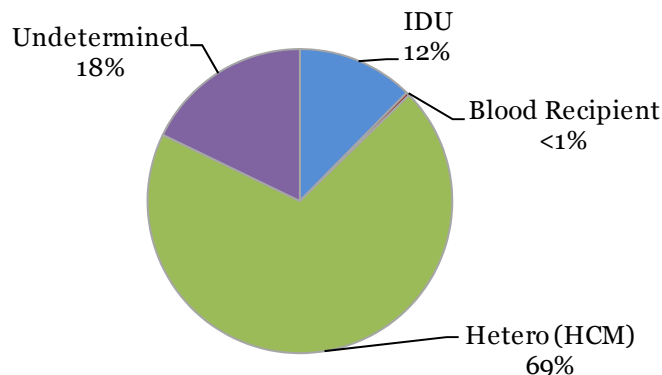
Undetermined 18%
IDU 12%
Blood Recipient <1%
Hetero (HCM) 69%

2012 Profile of HIV in the Detroit Metro Area

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

Figure 26 shows that, among the 275 females living with HIV who were ages 20-24 at the time of diagnosis, 69 percent had heterosexual risk (HCM). Eighteen percent of HIV-positive females in this age group had undetermined risk, and 12 percent were IDU. Less than one percent received HIV-infected blood products.

Race/ethnicity:
Eighty-five percent of persons currently living in the Detroit Metro Area (DMA) and were 13-19 at the time of HIV diagnosis are black, 10 percent are white, four percent are Hispanic, and two percent are of other or unknown race. Seventy-eight percent of persons ages 20-24 at the time of HIV diagnosis are black, 17 percent are white, three percent are Hispanic, and two percent are of other or unknown race. Comparing these proportions with the racial/ethnic breakdown of those over 24 years at diagnosis (65 percent black, 29 percent white, four percent Hispanic, and three percent other or unknown race) shows that HIV-positive youth are disproportionately black (table 6, page 166).

STDs:
STD rates are highest in teens and young adults (15-24 year olds) (table 8, page 168). Among persons ages 20-24 years, the rate of chlamydia is six times higher and the rate of gonorrhea is nearly six times higher than the rate among the general DMA population. Although those 15-24 years make up only 13 percent of the population, they represent 67 percent of gonorrhea cases and 77 percent of chlamydia cases. In 2011, 29 percent of DMA primary and secondary syphilis cases were under the age of 25, representing a younger at risk-group than in previous years.

Teen pregnancy:
In the DMA, the 2010 teen pregnancy rate ranged from 30 pregnancies per 1,000 females ages 15-19 in Oakland County to 76 pregnancies per 1,000 females ages 15-19 in Wayne County, which was the highest rate of all counties in Michigan (data not shown in tables).

Geographic distribution:
Almost all (98 percent) of persons 13-24 years old at diagnosis currently living in the DMA live in high prevalence counties (see figure 3, page 18 of the statewide chapter for high/low prevalence county classification), which is the same as the distribution for all HIV-positive persons. Sixty-two percent of HIV-positive persons diagnosed as teens or young adults live in the City of Detroit, followed by 15 percent in Oakland County and 13 percent in Wayne County (excluding Detroit) (data not shown in tables).

Trends and conclusions:
The rate of new diagnoses remained stable among persons 13-19 years of age in the DMA between 2006 and 2010. This is the first time in seven consecutive annual trend analyses that there was not a significant increase in the rate of new diagnoses in this group. However, the rate of new diagnoses among 20-24 year olds increased for the second consecutive trend report. Decreasing rates among 35-39 year and 40-44 year olds have resulted in 13-24 year olds representing a larger proportion of new diagnoses and prevalent cases (Trends). The most frequently reported risk among male teen and young adult cases is male-male sex (MSM), while the most frequently reported risk among female teen and young adult cases is heterosexual contact (HCM) (table 7, page 167). The majority of HIV-positive persons diagnosed in these age groups are black and live in the City of Detroit (data not shown in tables).

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Age: 50 years and older

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 894 persons living with HIV infection in the Detroit Metro Area (DMA) who were 50 years and older at the time of diagnosis. They comprise nine percent of all reported HIV-positive persons, and three quarters (75 percent) are male. Sixty-six percent are black, 27 percent are white, and seven percent are Hispanic or other/unknown race (table 6, page 166).

Risk-males:

When examining risk, those who were in their fifties at the time of HIV diagnosis have a different risk profile than those who were ages 60 and older. Therefore, the risks of these two populations are discussed separately.

As of January 2012, there were 541 males currently living with HIV in the DMA who were diagnosed in their 50s (74 percent of all persons 50-59 years at diagnosis) (table 7, page 167). Of all persons 60 and over at HIV diagnosis, 126 are males (75 percent). Figures 27 and 28 show the risk profiles of males diagnosed in their 50s and at 60 and older, respectively.

Figure 27: Males ages 50-59 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 541)

Undetermined 31%
MSM 45%
Hetero (HCFR) 6%
MSM/IDU 4%
IDU 14%
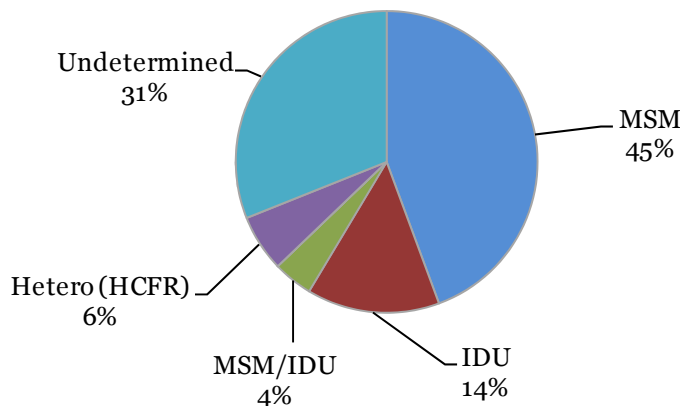
Figure 28: Males ages 60 and older at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 126)
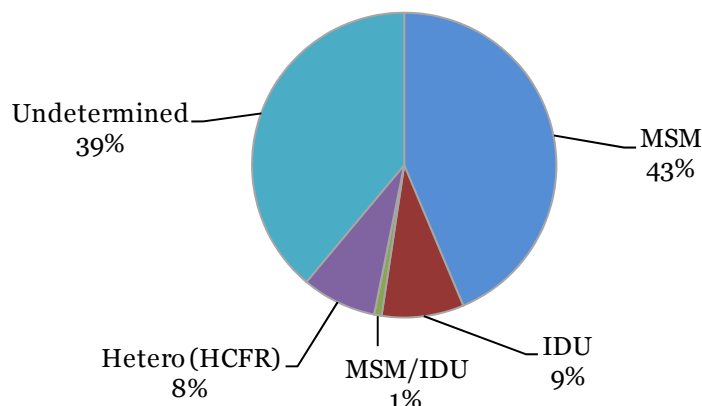
Undetermined 39%
MSM 43%
Hetero (HCFR) 8%
MSM/IDU 1%
IDU 9%

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Age: 50 years and older

As with males in all other age groups (excluding 0-12 year olds), male-male sex (MSM) is the most common risk (including those who also inject drugs, or MSM/IDU). However, the proportion who are MSM decreases with increasing age. Both males 50-59 years old and 60 years and older at HIV diagnosis have higher proportions of undetermined risk than males diagnosed at younger ages (31 and 39 percent, respectively). Males who were in their 50s at HIV diagnosis are more likely to be injection drug users (IDU) compared to males 60 years and older (18 percent vs. 10 percent, respectively). This includes males with a dual risk of male-male sex and IDU (MSM/IDU). The proportion of males reporting heterosexual risk (HCFR) increases with age, representing six percent of males who were 50-59 years old at HIV diagnosis and eight percent of males 60 and older at diagnosis.

Risk-females:

Overall, females who were in their 50s at HIV diagnosis have similar risks to females who were 60 years and older at diagnosis (figures 29 and 30). As with HIV-positive females in other age groups, the most common risk is heterosexual contact (HC) (61 percent and 58 percent, respectively). Five percent of females 60 years and older at diagnosis were recipients of HIV-infected blood products (compared to none in those 50-59 years at diagnosis), and females in their 50s at diagnosis are more likely to be injection drug users (17 percent vs. 15 percent, respectively).

Figure 29: Females ages 50-59 at diagnosis currently living with HIV infection in the Detroit Metro Area, by risk transmission category (n = 186)
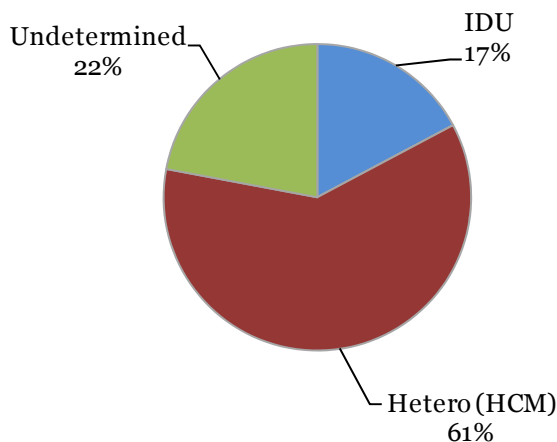
Undetermined 22%

IDU 17%

Hetero (HCM) 61%

2012 Profile of HIV in the Detroit Metro Area

Description of the Epidemic by Age: 50 years and older

**Figure 30: Females ages 60 and older at diagnosis currently
living with HIV infection in the Detroit Metro Area, by risk
transmission category (n = 41)**
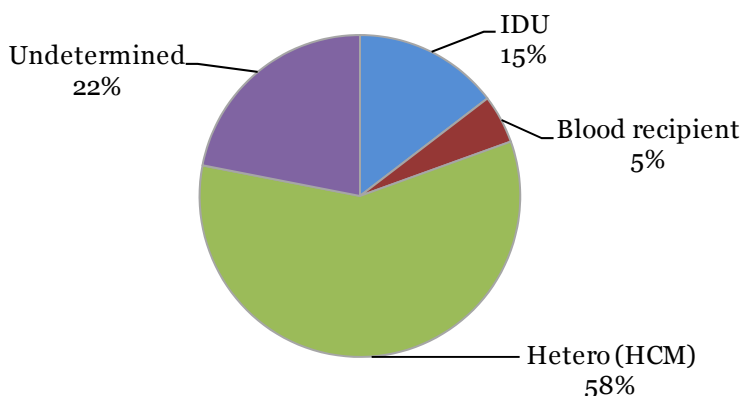
STDs:

Gonorrhea and chlamydia are epidemics that largely affect young people in the Detroit Metro Area (DMA), with less than one percent of chlamydia cases and just over two percent of gonorrhea cases occurring among persons over 50 years of age at diagnosis. In contrast, seven percent of primary and secondary syphilis cases are over the age of 50 at diagnosis. These individuals are more likely to be male (100 percent vs. 90 percent, respectively) and more likely to be white than black (43 percent vs. 20 percent, respectively) than the rest of persons diagnosed with syphilis in the DMA (age/race/sex breakdown not shown in tables).

Late diagnoses:

Of the 9,919 persons living with HIV infection in the Detroit Metro Area (DMA), 55 percent (5,466 cases) have progressed to stage 3 infection. Of these, 2,325 (43 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Persons who were in their fifties at HIV diagnosis make up eight percent (420 cases) of persons living with stage 3 infection, of whom 60 percent had late HIV diagnoses. Those who were 60 years and older at diagnosis make up two percent of persons living with stage 3 infection (101 cases), of whom 69 percent had late diagnoses. These two age groups have the highest proportion of late diagnoses of all age groups (table 3, page 163).

Trends and conclusions:

In the DMA, the rate of persons who were 50 years and older at the time of HIV diagnosis remained level between 2006 and 2010 (Trends). Although persons 50 years and older have the lowest rates of new diagnoses (except for those 0-12 years), it is important to understand the specific challenges faced by older Michiganders and to ensure that they receive information and services to help protect them from infection.

Although it is still low, males who were 50-55 years and 65 years and older at HIV diagnosis have the highest proportion of heterosexual risk of males in any age group (6 percent and 8 percent, respectively) (table 7, page 167). This is an important distinction when preparing targeting prevention and interventions.

2012 Profile of HIV in the Detroit Metro Area

Service Utilization of HIV-Positive Persons in Care

Table 1: Characteristics of Ryan White clients who received services in 2011 compared to all HIV infection cases living in the Detroit Metro Area, January 2012

Characteristic	RY clients	Cases
White	21%	26%
Black	69%	68%
Hispanic	4%	4%
Other	1%	3%
Unknown*	3%	N/A
Male	75%	77%
White male	*18%*	*23%*
Black male	*49%*	*49%*
Hispanic male	*3%*	*3%*
Other male	*4%*	*2%*
Unknown male	*1%*	*N/A*
Female	25%	23%
White female	*3%*	*3%*
Black female	*21%*	*19%*
Hispanic female	*1%*	*1%*
Other female	*1%*	*1%*
Unknown female	*<1%*	*N/A*
0-12 years[†]	1%	<1%
13-19 years[†]	3%	1%
20-24 years[†]	7%	5%
25-44 years[†]	43%	38%
45+ years[†]	46%	56%
Unknown age[†]	N/A	<1%
Infants: 0-1 years[†]	<1%	0%
Children: 2-12 years[†]	1%	<1%
Youth: 13-24 years[†]	10%	6%
Women 25+ years[†]	18%	22%
Total	**100%** **(N = 3,495)**	**100%** **(N = 9,919)**

*"Unknown" race is included in "Other" category for surveillance.

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

Overview:

The Uniform Reporting System (URS) is a statewide client-level data standard designed to uniformly document the quantity and types of services provided by agencies receiving Ryan White funds and to describe the populations receiving the services. A wide range of clinical and supportive services are reported in the URS, including outpatient medical care, dental care, mental health services, case management, and the AIDS Drug Assistance Program (ADAP). URS data may include HIV services that are not directly funded by Ryan White as long as the reported service is eligible to be funded. However, most services reported in the URS are at least partially funded by Ryan White resources.

There are four client-level CAREWare data systems in Michigan that collect URS data. Demographic and service data from all these systems were extracted into a standard format, and these data were then combined and de-duplicated to produce a URS dataset for analysis. The Detroit Metro Area (DMA) dataset is a subset of the de-duplicated statewide dataset from all Ryan White funded programs, including ADAP. Clients are included in this dataset if they reside in the DMA and received at least one service from a Ryan White-funded provider between January 1, 2011 and December 31, 2011. DMA clients may receive services from providers that are not located in the DMA.

Comparing services to cases:

Table 1 compares the demographic distribution of the 3,495 HIV-positive residents of the DMA who were served by Ryan White-funded programs in 2011 to that of the 9,919 persons known to be living with HIV in that same area at the end of 2011. The comparison shows that persons receiving Ryan White services were less likely than the reported HIV-positive population to be white (particularly white males) and less likely to be over 45 years old. Persons receiving Ryan White services were more

2012 Profile of HIV in the Detroit Metro Area

Service Utilization of HIV-Positive Persons in Care

likely than the reported HIV-positive population to be females and 13-44 years of age.

Core services:

Table 2 gives additional detail about the core services of outpatient medical care, oral health care, mental health care, medical case management, and ADAP utilization among HIV-positive DMA residents by Ryan White programs in 2011. The service counts in the table are visits, not units of time. Only one "visit" per day is counted for any service category in this URS summary data.

Outpatient medical care services in this table are for outpatient ambulatory medical care visits ranging from a complete physical with a physician to a brief or repeat visit with a physician or nurse practitioner. They may include medication adherence counseling with a medical practitioner. The average of four visits per client, with a median of three, is consistent with HIV care standards that recommend monitoring of health status every three to four months. A total of 89 percent of the DMA clients received outpatient ambulatory medical care in 2011 (table 2).

Oral health care services reported in the URS are provided primarily through the statewide Michigan Dental Program, administered by the Division of Health, Wellness and Disease Control of MDCH. The University of Detroit-Mercy Dental School delivers many of these oral health care services in the Detroit area. Dental services for clients may be extensive and require multiple visits, but they may also be for annual or more frequent prophylaxis. The annual average of three visits per client is consistent with an initial exam to plan the care needed and one or more treatment visits following approval of the care plan (table 2).

Mental health care services encompass mental health assessments, individual counseling, and group sessions for HIV-positive clients with a mental health diagnosis and must be conducted by a licensed mental health professional. Mental health services do not include substance abuse treatment. In 2011, 12 percent of DMA clients received mental health services at an average of 5.3 visits a year (table 2).

Table 2: Core services received by Ryan White clients in the Detroit Metro Area in 2011 (N=3,495)

	Outpatient medical care	Oral health care	Mental health care	Medical case management	ADAP (medication assistance)
No. of unduplicated clients served[*]	3,119	437	412	1,278	2,139
Percent receiving service	89%	13%	12%	36%	61%
Total days of service (visits)[†]	13,433	2,498	2,184	30,170	39,083
Average no. of visits per client	4.3	4.4	5.3	23.6	30.2
Median no. of visits per client	3	3	3	13	23
Range of visits per client	1-47	1-45	1-51	1-286	1-195

[*]Clients are de-duplicated for a particular service across all providers but may be counted in more than one service category.

[†]The Drug Assistance service unit is a prescription filled rather than a visit or day of service.

2012 Profile of HIV in the Detroit Metro Area

Service Utilization of HIV-Positive Persons in Care

Data from Uniform Reporting System (URS)

Medical case management visits include intake, assessments, care planning, medication adherence counseling, and monitoring of medical status and may be conducted in person, by phone, or by mail, with the goal of linking HIV-positive clients to health care services and assisting them to remain in care. In 2011, 36 percent of DMA clients received medical case management services at an average of 23 visits each (table 2).

The AIDS Drug Assistance Program (ADAP), administered by the Division of Health, Wellness and Disease Control of MDCH, pays for medications dispensed to eligible HIV-positive clients throughout Michigan. ADAP covers all HIV medications and many other medications, in addition to CD4 and viral load tests. The unit of service reported in table 2 for ADAP is each prescription filled rather than a day of service. DMA residents were 61 percent of the total number of ADAP clients served in 2011. Sixty-one percent of all DMA Ryan White clients utilized ADAP in 2011 at an average of 30.2 prescriptions filled for the year (table 2).

2012 Profile of HIV in the Detroit Metro Area

Sexually Transmitted Diseases

Data from Michigan Disease Surveillance System (MDSS)

Overview:

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 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.

Gonorrhea and chlamydia:

During 2011 alone, there were over 26,000 cases of chlamydia and over 9,000 cases of gonorrhea reported in the Detroit Metro Area (table 8, page 168). For gonorrhea and chlamydia, the highest rates of infection were among persons ages 20-24. This age group accounted for six percent of the DMA population but 34 percent of gonorrhea and 36 percent of chlamydia cases. The rates of chlamydia and gonorrhea among black persons were much higher than among white persons. Even though 45 percent of gonorrhea cases and 48 percent of chlamydia cases were missing race information, the rates among black persons remain higher even if all unknown cases were white. The rate for gonorrhea in the DMA among black persons is 26 times the rate for white persons, and the rate for chlamydia is 10 times the white rate. Forty-two percent of gonorrhea cases were male; however, approximately 73 percent of reported chlamydia cases were female. This is because chlamydia screening targets females.

Syphilis:

Reported primary and secondary syphilis cases increased each year in Michigan from 1997 to a high of 486 cases in 2002. 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 in 2003 compared to 2002. However, syphilis cases have increased slightly since 2005 due to increases in syphilis among MSM, many of whom are HIV-positive. The DMA reported 71 percent of the state's primary and secondary syphilis cases in 2011 and 69 percent of total syphilis cases to date (data not shown in tables). Approximately 29 percent of cases were reported in those younger than 25 years, representing a trend towards younger syphilis cases. However, 45 percent are between the ages of 25 and 39 and 26 percent are 40 and over, representing an older at-risk population than gonorrhea or chlamydia. Primary and secondary syphilis cases reported in 2011 in the DMA were 76 percent black and 90 percent male. The rate among black persons was almost eleven times higher than the rate among white persons.

Sexual orientation:

Nationwide, there have been increases in STD cases among self-identified men who have sex with men (MSM). Michigan does not collect data on sexual orientation or sexual risk behaviors for all gonorrhea or chlamydia cases. Sexual orientation and risk behavior data are collected for syphilis cases. Of male primary and secondary syphilis cases in 2011, 78 percent of males were MSM. The male to female syphilis ratio in 2011 in the DMA was nearly 9:1. Fifty-five percent of males with syphilis are co-infected with HIV, compared to five percent of the 20 females (data not shown in tables).

2012 Profile of HIV in the Detroit Metro Area

Hepatitis C

Acute hepatitis C:

In 2011, eight cases of acute hepatitis C were reported in the Detroit Metro Area (DMA) (table 9, page 169). Sixty-three percent of acute cases were among males, while 38 percent were among females. Ethnicity is not consistently collected for hepatitis C cases; therefore, we cannot provide a measure of infection among Hispanic or non-Hispanic persons. Three quarters (75 percent) of acute hepatitis C cases reported in 2011 are white, and the other 25 percent are black. Due to small numbers, rates are unavailable for cases of acute hepatitis C in 2011.

Chronic hepatitis C:

In 2011, 3,452 cases of chronic hepatitis C were reported in the DMA (table 9), a rate of 81 cases of chronic hepatitis C per 100,000 DMA residents. Sixty-two percent of chronic cases were among males while 37 percent were among females. The rate of chronic hepatitis C in the DMA was highest among persons of other race (101 cases per 100,000 population) and black persons (89 cases per 100,000), compared to 32 per 100,000 in white persons. However, these rates must be viewed with caution as the race/ethnicity of the client was unknown in 44 percent of reported chronic cases. The highest rate of chronic hepatitis C was found among persons 55-59 years of age (306 cases per 100,000). The lowest rates, excluding those with insufficient numbers to calculate rates, were among persons 15-19 years and 35-39 years.

Please note that chronic hepatitis C data must be interpreted with caution. These data do not represent the incidence or prevalence of chronic hepatitis C in the DMA; rather, the data represent an aggregate of newly diagnosed cases reported to local health departments by laboratories and healthcare providers. Although these cases were newly diagnosed in 2011, the patient may have been chronically infected with hepatitis C for years but remained undiagnosed until 2011.

Limitations of the data:

Since acute and chronic hepatitis C infections are often asymptomatic and can remain undetected and unreported for years, the official number of reported cases is much lower than the actual number of cases. An estimated 3.2 million persons in the United States have chronic hepatitis C virus infection. Most people do not know they are infected because they don't look or feel sick.

Table 3: Demographic information on HIV infection cases currently living in the Detroit Metro Area, 2012

REPORTED HIV INFECTION PREVALENCE

	EST PREV*	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL			Late HIV diagnosis		CENSUS 2010[¶]	
	Num	Num	Percent	Num	Percent	Num	Percent	Rate per 100,000	Num	Percent of stage 3 cases	Num	Percent
RACE/ ETHNICITY[§]												
White	3,410	1,154	26%	1,443	26%	2,597	26%	90	683	47%	2,884,240	68%
Black	8,840	3,033	68%	3,688	67%	6,721	68%	689	1,506	41%	975,057	23%
Hispanic	460	158	4%	191	3%	349	4%	206	87	46%	169,272	4%
Asian/NH/OPI	60	21	<1%	27	<1%	48	<1%	34	17	63%	140,727	3%
AI/AN	20	11	<1%	5	<1%	16	<1%	131	1	20%	12,250	<1%
Multi/other/unk	250	76	2%	112	2%	188	2%	N/A	31	28%	85,758	2%
SEX & RACE												
Male	9,980	3,352	75%	4,241	78%	7,593	77%	367	1,858	44%	2,066,529	48%
White male	*3,020*	*998*	*22%*	*1,300*	*24%*	*2,298*	*23%*	*162*	*631*	*49%*	*1,415,046*	*33%*
Black male	*6,360*	*2,152*	*48%*	*2,686*	*49%*	*4,838*	*49%*	*1076*	*1,120*	*42%*	*449,599*	*11%*
Hispanic male	*350*	*124*	*3%*	*142*	*3%*	*266*	*3%*	*311*	*66*	*46%*	*85,575*	*2%*
Other male	*250*	*78*	*2%*	*113*	*2%*	*191*	*2%*	*164*	*41*	*36%*	*116,309*	*3%*
Female	3,060	1,101	25%	1,225	22%	2,326	23%	106	467	38%	2,200,775	52%
White female	*390*	*156*	*4%*	*143*	*3%*	*299*	*3%*	*20*	*52*	*36%*	*1,469,194*	*34%*
Black female	*2,480*	*881*	*20%*	*1,002*	*18%*	*1,883*	*19%*	*358*	*386*	*39%*	*525,458*	*12%*
Hispanic female	*110*	*34*	*1%*	*49*	*1%*	*83*	*1%*	*99*	*21*	*43%*	*83,697*	*2%*
Other female	*80*	*30*	*1%*	*31*	*1%*	*61*	*1%*	*50*	*8*	*26%*	*122,426*	*3%*
RISK[†]												
Male-male Sex (MSM)	6,360	2,132	48%	2,707	50%	4,839	49%	--	1,162	43%	--	--
Injection drug use (IDU)	1,380	386	9%	661	12%	1,047	11%	--	225	34%	--	--
MSM/IDU	480	139	3%	229	4%	368	4%	--	76	33%	--	--
Blood products	60	15	<1%	31	1%	46	<1%	--	11	35%	--	--
Heterosexual contact (HC)	2,270	788	18%	939	17%	1,727	17%	--	356	38%	--	--
HCFR (male)	*420*	*134*	*3%*	*184*	*3%*	*318*	*3%*	*--*	*70*	*38%*	*--*	*--*
HCM (female)	*1,850*	*654*	*15%*	*755*	*14%*	*1,409*	*14%*	*--*	*286*	*38%*	*--*	*--*
Perinatal	140	65	1%	44	1%	109	1%	--	16	36%	--	--
Undetermined	2,340	928	21%	855	16%	1,783	18%	--	479	56%	--	--
AGE AT HIV DIAGNOSIS												
0 - 12 years	160	70	2%	49	1%	119	1%	--	14	29%	--	--
13 - 19 years	690	318	7%	209	4%	527	5%	--	45	22%	--	--
20 - 24 years	1,770	781	18%	566	10%	1,347	14%	--	133	23%	--	--
25 - 29 years	2,040	753	17%	799	15%	1,552	16%	--	242	30%	--	--
30 - 39 years	4,440	1,347	30%	2,027	37%	3,374	34%	--	850	42%	--	--
40 - 49 years	2,760	808	18%	1,295	24%	2,103	21%	--	717	55%	--	--
50 - 59 years	960	307	7%	420	8%	727	7%	--	254	60%	--	--
60 years and over	220	66	1%	101	2%	167	2%	--	70	69%	--	--
Unspecified	10	3	<1%	0	0%	3	<1%	--	0	0%	--	--
CURRENT RESIDENCE												
Lapeer Co.	50	17	<1%	24	<1%	41	<1%	46	10	42%	88,319	2%
Macomb Co.	990	365	8%	391	(7%)	756	8%	90	189	48%	840,978	20%
Monroe Co.	100	37	1%	42	(1%)	79	1%	52	22	52%	152,021	4%
Oakland Co.	2,400	865	19%	958	(18%)	1,823	18%	152	402	42%	1,202,362	28%
St Clair Co.	150	51	1%	61	(1%)	112	1%	69	29	48%	163,040	4%
Wayne Co. Total	9,340	3,118	70%	3,990	(73%)	7,108	72%	390	1,673	42%	1,820,584	43%
Wayne Co. (excl. Detroit)	*2,040*	*672*	*15%*	*882*	*(16%)*	*1,554*	*16%*	*140*	*385*	*44%*	*1,106,807*	*26%*
City of Detroit	*7,300*	*2,446*	*55%*	*3,108*	*(57%)*	*5,554*	*56%*	*778*	*1,288*	*41%*	*713,777*	*17%*
Detroit Metro Area Total	**13,040**	**4,453**	**100%**	**5,466**	**100%**	**9,919**	**100%**	**232**	**2,325**	**43%**	**4,267,304**	**100%**

*See pages iv-v fo r descriptions of prevalence estimate calculations. NOTE: prevalence estimates throughout this document are based on the number of people currently living with HIV in Michigan as of January 2012. Prevalence estimates in other MDCH documents are based on the number of people living with HIV who were diagnosed in MI.

[†] See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

[§] In this report, persons described as white, black, Asian/Native Hawaiian or Other Pacific Islander (Asian/NH/OPI), or American Indian/Alaskan Native (AI/AN) are all non-Hispanic; persons described as Hispanic may be of any race.

[¶] Rates are not reported for risk categories and age at diagnosis because no reliable denominator data exist for these groups.

TABLE 4: Risk transmission and exposure categories for HIV infection cases currently living in the Detroit Metro Area by sex, 2012

REPORTED HIV INFECTION PREVALENCE

	Male		Female		Overall	
	Num	Percent	Num	Percent	Num	Percent
RISK TRANSMISSION CATEGORIES (CDC Hierarchy) [*§]						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-male sex (MSM)	4,839	64%	N/A	--	4,839	49%
Injection drug use (IDU)	589	8%	458	20%	1,047	11%
MSM/IDU	368	5%	N/A	--	368	4%
Blood products	37	<1%	9	<1%	46	<1%
Heterosexual contact (HC)	318	4%	1,409	61%	1,727	17%
HCFR (male)	*318*	*4%*	*N/A*	*--*	*318*	*3%*
HCM (female)	*N/A*	*--*	*1,409*	*61%*	*1,409*	*14%*
Perinatal	62	1%	47	2%	109	1%
Undetermined	1,380	18%	403	17%	1,783	18%
EXPOSURE CATEGORIES [*†]						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-male sex only	3,154	42%	N/A	--	3,154	32%
MSM & HC	1,663	22%	N/A	--	1,663	17%
MSM & IDU	150	2%	N/A	--	150	2%
MSM & blood products	12	<1%	N/A	--	12	<1%
MSM & HC & IDU	210	3%	N/A	--	210	2%
MSM & HC & blood products	10	<1%	N/A	--	10	<1%
MSM & IDU & blood products	3	<1%	N/A	--	3	<1%
MSM & HC & IDU & blood products	5	<1%	N/A	--	5	<1%
Heterosexual contact only	1,192	16%	1,631	70%	2,823	28%
HC & IDU	431	6%	394	17%	825	8%
HC & blood products	21	<1%	23	1%	44	<1%
HC & IDU & blood products	11	<1%	13	1%	24	<1%
Injection drug use only	147	2%	51	2%	198	2%
IDU & blood products	0	0%	0	0%	0	0%
Perinatal exposure	62	1%	47	2%	109	1%
Exposure to blood products only	21	<1%	3	<1%	24	<1%
Undetermined	501	7%	164	7%	665	7%
TOTAL	**7,593**	**100%**	**2,326**	**100%**	**9,919**	**100%**
SUMMARIZED EXPOSURE CATEGORIES [*¥]						
(NOT Mutually Exclusive: one case may be represented in multiple categories)						
Any MSM	5,207	69%	N/A	--	5,207	52%
Behaviorally bisexual men	1,888	25%	N/A	--	1,888	19%
Any heterosexual contact	3,543	47%	2,061	89%	5,604	56%
Any IDU	957	13%	458	20%	1,415	14%

*See page ii for descriptions of risk transmission and exposure categories.

[§] Risk transmission categories are grouped based on hierarchical categories determined by the CDC. Any one person with multiple risks is only represented in the highest category, with the exception of MSM/IDU (based on the hierarchical algorithm).

[†] Exposure categories are mutually exclusive and grouped to allow all possible combinations of exposures that any one person may have. NOTE: Heterosexual contact (HC) in exposure categories includes males and females who had heterosexual contact, regardless of what is known about their partners' risk or HIV status.

[¥] Summarized exposure categories are NOT mutually exclusive, i.e. a case may be represented in multiple categories. These summarized categories are meant to give a broader picture of exposure and will NOT add up to the total number of persons living with HIV infection.

Table 5: Sex, race, and risk among HIV infection cases currently living in the Detroit Metro Area, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1,743	76%	2,836	59%	149	56%	111	58%	4,839	64%
Injection drug use (IDU)	79	3%	465	10%	30	11%	15	8%	589	8%
MSM/IDU	121	5%	226	5%	7	3%	14	7%	368	5%
Blood products	27	1%	6	<1%	2	1%	2	1%	37	<1%
Heterosexual contact (HCFR)	47	2%	252	5%	14	5%	5	3%	318	4%
Perinatal	8	<1%	48	1%	2	1%	4	2%	62	1%
Undetermined	273	12%	1,005	21%	62	23%	40	21%	1,380	18%
Male Subtotal	**2,298**	**30%**	**4,838**	**64%**	**266**	**4%**	**191**	**3%**	**7,593**	**100%**

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	68	23%	361	19%	18	22%	11	18%	458	20%
Blood products	5	2%	3	<1%	1	1%	0	0%	9	<1%
Heterosexual contact (HCM)	173	58%	1,144	61%	55	66%	37	61%	1,409	61%
Perinatal	2	1%	40	2%	2	2%	3	5%	47	2%
Undetermined	51	17%	335	18%	7	8%	10	16%	403	17%
Female Subtotal	**299**	**13%**	**1,883**	**81%**	**83**	**4%**	**61**	**3%**	**2,326**	**100%**

ALL

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1,743	67%	2,836	42%	149	43%	111	44%	4,839	49%
Injection drug use (IDU)	147	6%	826	12%	48	14%	26	10%	1,047	11%
MSM/IDU	121	5%	226	3%	7	2%	14	6%	368	4%
Blood products	32	1%	9	<1%	3	1%	2	1%	46	<1%
Heterosexual contact (HC)	220	8%	1,396	21%	69	20%	42	17%	1,727	17%
HCFR (male)	*47*	*2%*	*252*	*4%*	*14*	*4%*	*5*	*2%*	*318*	*3%*
HCM (female)	*173*	*7%*	*1,144*	*17%*	*55*	*16%*	*37*	*15%*	*1,409*	*14%*
Perinatal	10	<1%	88	1%	4	1%	7	3%	109	1%
Undetermined	324	12%	1,340	20%	69	20%	50	20%	1,783	18%
RACE ALL	**2,597**	**26%**	**6,721**	**68%**	**349**	**4%**	**252**	**3%**	**9,919**	**100%**

Table 6: Sex, race, and age at HIV infection cases currently living in the Detroit Metro Area, 2012

MALE

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	All male Num	All male Percent
0 - 12 years	14	1%	49	1%	2	1%	5	3%	70	1%
13 - 19 years	36	2%	346	7%	13	5%	7	4%	402	5%
20 - 24 years	188	8%	825	17%	35	13%	24	13%	1,072	14%
25 - 29 years	365	16%	737	15%	48	18%	37	19%	1,187	16%
30 - 39 years	904	39%	1,507	31%	93	35%	65	34%	2,569	34%
40 - 49 years	575	25%	966	20%	46	17%	37	19%	1,624	21%
50 - 59 years	172	7%	340	7%	16	6%	13	7%	541	7%
60 years and over	44	2%	66	1%	13	5%	3	2%	126	2%
Unknown	0	0%	2	<1%	0	0%	0	0%	2	<1%
Male Subtotal	2,298	30%	4,838	64%	266	4%	191	3%	7,593	100%

FEMALE

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	All female Num	All female Percent
0 - 12 years	3	1%	41	2%	2	2%	3	5%	49	2%
13 - 19 years	16	5%	101	5%	7	8%	1	2%	125	5%
20 - 24 years	38	13%	221	12%	11	13%	5	8%	275	12%
25 - 29 years	59	20%	288	15%	9	11%	9	15%	365	16%
30 - 39 years	96	32%	649	34%	33	40%	27	44%	805	35%
40 - 49 years	59	20%	397	21%	12	14%	11	18%	479	21%
50 - 59 years	22	7%	153	8%	6	7%	5	8%	186	8%
60 years and over	5	2%	33	2%	3	4%	0	0%	41	2%
Unknown	1	<1%	0	0%	0	0%	0	0%	1	<1%
Female Subtotal	299	13%	1,883	81%	83	4%	61	3%	2,326	100%

ALL

	White Num	White Percent	Black Num	Black Percent	Hispanic Num	Hispanic Percent	Other or unknown Num	Other or unknown Percent	Age all Num	Age all Percent
0 - 12 years	17	1%	90	1%	4	1%	8	3%	119	1%
13 - 19 years	52	2%	447	7%	20	6%	8	3%	527	5%
20 - 24 years	226	9%	1,046	16%	46	13%	29	12%	1,347	14%
25 - 29 years	424	16%	1,025	15%	57	16%	46	18%	1,552	16%
30 - 39 years	1,000	39%	2,156	32%	126	36%	92	37%	3,374	34%
40 - 49 years	634	24%	1,363	20%	58	17%	48	19%	2,103	21%
50 - 59 years	194	7%	493	7%	22	6%	18	7%	727	7%
60 years and over	49	2%	99	1%	16	5%	3	1%	167	2%
Unknown	1	<1%	2	<1%	0	0%	0	0%	3	<1%
RACE ALL	2,597	26%	6,721	68%	349	4%	252	3%	9,919	100%

Table 7: Sex, risk, and age at HIV dDiagnosis among HIV infection cases currently living in the Detroit Metro Area, 2012

MALE

MALE	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	315	78%	867	81%	868	73%	1,660	65%	834	51%	240	44%	55	44%	4,839	64%
Injection drug use	0	0%	4	1%	16	1%	36	3%	203	8%	241	15%	77	14%	11	9%	588	8%
MSM/IDU	0	0%	6	1%	32	3%	56	5%	159	6%	91	6%	23	4%	1	1%	368	5%
Blood products	6	9%	9	2%	4	<1%	5	<1%	10	<1%	3	<1%	0	0%	0	0%	37	<1%
Heterosexual contact (HCFR)	0	0%	3	1%	13	1%	46	4%	133	5%	80	5%	33	6%	10	8%	318	4%
Perinatal	59	84%	3	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	62	1%
Undetermined	5	7%	62	15%	140	13%	176	15%	404	16%	375	23%	168	31%	49	39%	1,379	18%
Male Subtotal*	70	1%	402	5%	1,072	14%	1,187	16%	2,569	34%	1,624	21%	541	7%	126	2%	7,591	100%

FEMALE

FEMALE	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use	0	0%	6	5%	34	12%	56	15%	187	23%	137	29%	32	17%	6	15%	458	20%
Blood products	0	0%	2	2%	1	<1%	0	0%	2	<1%	2	<1%	0	0%	2	5%	9	<1%
Heterosexual contact (HCM)	0	0%	98	78%	191	69%	242	66%	478	59%	263	55%	113	61%	24	59%	1,409	61%
Perinatal	47	96%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	47	2%
Undetermined	2	4%	19	15%	49	18%	67	18%	138	17%	77	16%	41	22%	9	22%	402	17%
Female Subtotal*	49	2%	125	5%	275	12%	365	16%	805	35%	479	21%	186	8%	41	2%	2,325	100%

ALL

ALL	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	315	60%	867	64%	868	56%	1,660	49%	834	40%	240	33%	55	33%	4,839	49%
Injection drug use	0	0%	10	2%	50	4%	92	6%	390	12%	378	18%	109	15%	17	10%	1,046	11%
MSM/IDU	0	0%	6	1%	32	2%	56	4%	159	5%	91	4%	23	3%	1	1%	368	4%
Blood products	6	5%	11	2%	5	<1%	5	<1%	12	<1%	5	<1%	0	0%	2	1%	46	<1%
Heterosexual contact (HC)	0	0%	101	19%	204	15%	288	19%	611	18%	343	16%	146	20%	34	20%	1,727	17%
HCFR (male)	0	0%	3	1%	13	1%	46	3%	133	4%	80	4%	33	5%	10	6%	318	3%
HCM (female)	0	0%	98	19%	191	14%	242	16%	478	14%	263	13%	113	16%	24	14%	1,409	14%
Perinatal	106	89%	3	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	109	1%
Undetermined	7	6%	81	15%	189	14%	243	16%	542	16%	452	21%	209	29%	58	35%	1,781	18%
AGE TOTAL*	119	1%	527	5%	1,347	14%	1,552	16%	3,374	34%	2,103	21%	727	7%	167	2%	9,916	100%

*Not included in this table are the following cases with unknown age at diagnosis: one male IDU, one male with unknown risk, and one female with unknown risk.

Table 8: Gonorrhea, syphilis, and chlamydia cases by sex, race, and age group, Detroit Metro Area, 2011

	Gonorrhea			P&S syphilis*			Chlamydia			Census 2010	
	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent
RACE/ ETHNICITY											
White	506	6%	17.5	39	20%	1.4	2,978	11%	103.3	2,884,240	68%
Black	4,414	48%	452.7	148	76%	15.2	10,319	39%	1058.3	975,057	23%
Hispanic	56	1%	33.1	3	2%	1.8	281	1%	166.0	169,272	4%
Other/multi	61	1%	25.6	1	1%	0.4	299	1%	125.2	238,735	6%
Unknown race	4,095	45%	N/A	4	2%	N/A	12,861	48%	N/A	N/A	N/A
SEX & RACE											
Male	3,869	42%	187.2	175	90%	8.5	7,116	27%	344.3	2,066,529	48%
White male	167	2%	11.8	38	19%	2.7	775	3%	54.8	1,415,046	33%
Black male	2,154	24%	479.1	130	67%	28.9	3,209	12%	713.7	449,599	11%
Hispanic male	17	<1%	19.9	3	2%	3.5	80	<1%	93.5	85,575	2%
Other male	32	<1%	27.5	1	1%	0.9	77	<1%	66.2	116,309	3%
Unknown male	1,499	16%	N/A	3	2%	N/A	2,975	11%	N/A	N/A	N/A
Female	5,247	57%	238.4	20	10%	0.9	19,552	73%	888.4	2,200,775	52%
White female	339	4%	23.1	1	1%	0.1	2,198	8%	149.6	1,469,194	34%
Black female	2,260	25%	430.1	18	9%	3.4	7,105	27%	1352.2	525,458	12%
Hispanic female	39	<1%	46.6	0	0%	0.0	200	1%	239.0	83,697	2%
Other female	29	<1%	23.7	0	0%	0.0	221	1%	180.5	122,426	3%
Unknown female	2,580	28%	N/A	1	1%	N/A	9,828	37%	N/A	N/A	N/A
Unknown sex - all races	16	<1%	N/A	0	0%	N/A	70	<1%	N/A	N/A	N/A
Age											
0-4 years	8	<1%	3.1	0	0%	0.0	8	<1%	3.1	258,378	6%
5-9 years	3	<1%	1.1	0	0%	0.0	7	<1%	2.5	280,044	7%
10-14 years	113	1%	37.7	0	0%	0.0	412	2%	137.4	299,859	7%
15-19 years	3,069	34%	981.7	9	5%	2.9	11,030	41%	3528.3	312,619	7%
20-24 years	3,080	34%	1209.6	48	25%	18.9	9,678	36%	3800.9	254,622	6%
25-29 years	1,199	13%	477.2	31	16%	12.3	2,933	11%	1167.4	251,236	6%
30-34 years	607	7%	238.9	24	12%	9.4	1,259	5%	495.5	254,112	6%
35-39 years	400	4%	141.4	33	17%	11.7	648	2%	229.0	282,959	7%
40-44 years	243	3%	79.8	23	12%	7.6	333	1%	109.4	304,354	7%
45-54 years	273	3%	40.9	20	10%	3.0	253	1%	37.9	668,027	16%
55-64 years	75	1%	14.0	6	3%	1.1	58	<1%	10.8	535,245	13%
65 and over	17	<1%	3.0	1	1%	0.2	16	<1%	2.8	565,849	13%
Unknown age	46	1%	N/A	0	0%	N/A	103	<1%	N/A	N/A	N/A
Total	**9,132**	**100%**	**214.0**	**195**	**100%**	**4.6**	**26,738**	**100%**	**626.6**	**4,267,304**	**100%**

* P&S: Primary and secondary syphilis.
^ Rate per 100,000 population.

Table 9: Reported cases of acute and chronic hepatitis C by sex, race, and age group, Detroit Metro Area, 2011

	Acute hepatitis C		Chronic hepatitis C			Census 2010
	Num	Percent	Num	Percent	Rate*	Num
SEX						
Male	5	63%	2,145	62%	104	2,066,529
Female	3	38%	1,293	37%	59	2,200,775
Unknown	0	0%	14	<1%	N/A	N/A
RACE †						
White	6	75%	952	28%	32	2,979,700
Black	2	25%	872	25%	89	982,879
Asian	0	0%	9	<1%	--	140,734
Native Hawaiian/Other Pacific Islander	0	0%	3	<1%	--	901
American Indian/Alaska Native	0	0%	4	<1%	--	14,612
Other	0	0%	54	2%	101	53,428
Unknown race	0	0%	1,535	44%	N/A	N/A
Multiracial	0	0%	23	1%	24	95,050
AGE						
0-4 years	0	0%	2	<1%	--	258,378
5-9 years	0	0%	1	<1%	--	280,044
10-14 years	0	0%	1	<1%	--	299,859
15-19 years	0	0%	34	1%	11	312,619
20-24 years	2	25%	175	5%	69	254,622
25-29 years	1	13%	174	5%	69	251,236
30-34 years	3	38%	123	4%	48	254,112
35-39 years	0	0%	95	3%	34	282,959
40-44 years	0	0%	152	4%	50	304,354
45-54 years	2	25%	904	26%	135	668,027
55-59 years	0	0%	899	26%	306	293,490
60-64 years	0	0%	539	16%	223	241,755
65 and over	0	0%	338	10%	60	565,849
Unknown age	0	0%	15	<1%	N/A	N/A
TOTAL	**8**	**100%**	**3,452**	**99%**	**81**	**4,267,304**

* Rates are not displayed for <10 cases.

† Hispanic ethnicity is not categorized due to incomplete data. Each race category includes both Hispanic and non-Hispanic persons.

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2012 Profile of HIV in Out-State Michigan

Summary of HIV Epidemic in Out-State Michigan

Data from enhanced HIV/AIDS Reporting System (eHARS)

How many cases?

The Michigan Department of Community Health (MDCH) estimates that there are 7,080 persons currently living with HIV in Out-State Michigan, of whom 5,389 were reported as of January 1, 2012 (table 3, page 211). Out-State Michigan is composed of the 77 counties outside of the six Detroit Metro Area (DMA) counties. The reported number of persons living with HIV infection in Out-State Michigan is increasing, because there are more new HIV diagnoses than deaths each year.

How are the cases geographically distributed?

HIV infections are distributed disproportionately in Michigan. Thirty-four percent of those living with HIV reside in Out-State Michigan, but Out-State Michigan has 57 percent of the general population (figure 1). Thus, Out-State Michigan has fewer cases than would be expected based on its population. Kent County has the highest number and proportion of reported cases in Out-State Michigan (1,011 cases, 19 percent; table 4, pages 212-213). The 83 counties of Michigan are divided into 45 local health departments (LHDs), which are classified as high- or low-prevalence (please see page 17 of the statewide chapter for more information). In Out-State Michigan, Washtenaw, Kent, Ingham, Berrien, Kalamazoo, Genesee, Saginaw, Calhoun, Jackson, and Allegan counties are considered high-prevalence. Please see the last section of this chapter, "Focus on High-Prevalence Counties" (pages 207-210) for more information on the four highest-prevalence counties.

Out-State Trends: In the statewide and DMA chapters of this document, trends in new HIV diagnoses over time were evaluated by estimating the number of persons newly diagnosed with HIV each year and determining if there were statistically significant changes. Number of newly diagnosed cases in Out-State Michigan were insufficient to apply the estimation methodology used to evaluate trends. Therefore, figures in this chapter that present trends in new HIV diagnoses are created using unadjusted numbers. **Trends in the statewide and DMA chapters should not be compared with the numbers in the Out-State chapter.**

Figure 1: Michigan living HIV infection cases and population by area, January 2012
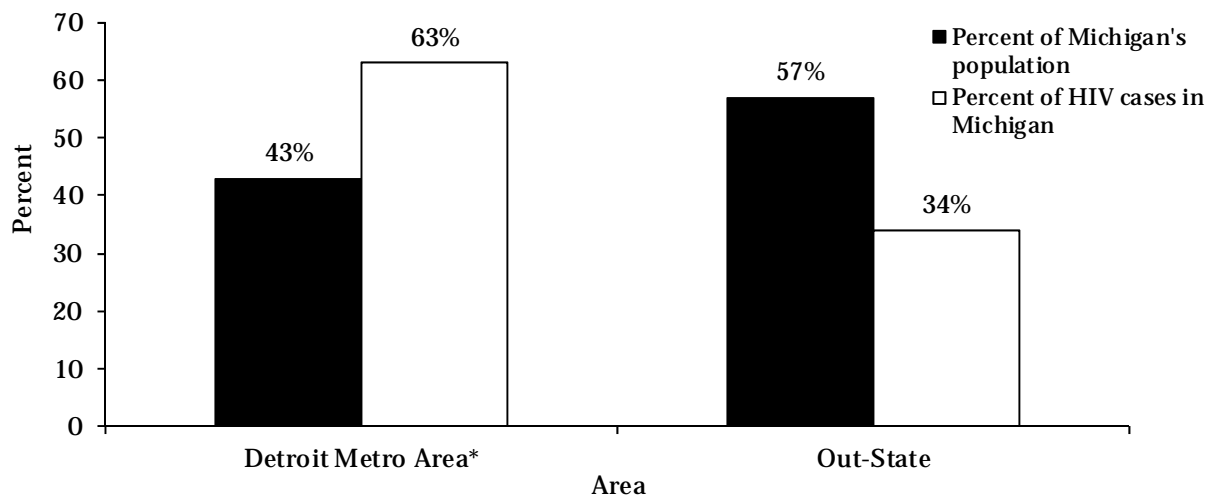
*Detroit Metro Area includes the City of Detroit, Lapeer County, Macomb County, Monroe County, Oakland County, St. Clair County, and Wayne County.

2012 Profile of HIV in Out-State Michigan

Recommendations: Ranking of Behavioral Groups

Data from enhanced HIV/AIDS Reporting System (eHARS)

To assist in prioritizing prevention activities, the MDCH HIV/STD/VH/TB Epidemiology Section ranks the three behavioral groups most at risk for HIV infection in Out-State 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 on the overall epidemic. The percentage of cases for each behavioral group were used to determine the ranked order of the following three behavioral groups: MSM, heterosexuals, and IDU.

- **Men who have sex with men (MSM)*:** MSM make up 57 percent of all reported cases of HIV currently living in Out-State Michigan (3,071 out of 5,389 cases; table 3, page 211). The MSM behavioral group continues to be the most affected behavioral group in this area.

- **Heterosexuals**: Heterosexual cases constitute 18 percent of the total number of reported cases (975 out of 5,389 cases) currently living in Out-State Michigan (table 3). This behavioral group is comprised of males who had sex with females known to be at risk for HIV (heterosexual contact with female with known risk, HCFR) and females who had sex with males, regardless of what is known about the male partners' risk behaviors (heterosexual contact with male, HCM). HCFR is more completely defined as males who had sex with females known to be IDU, recipients of HIV-infected blood products, or HIV-positive persons. See the glossary in appendix A, page 223, for further description of the heterosexual risk transmission category. Eighty percent of all heterosexual cases in Out-State Michigan are among females.

- **Injection drug users (IDU)*:** Of all reported cases of HIV currently living in Out-State Michigan, 12 percent are IDU (670 out of 5,389 cases; table 3).

*Both MSM and IDU numbers and percentages include persons with a dual risk of MSM/IDU.

2012 Profile of HIV in Out-State Michigan

Distribution of Living HIV Cases by Risk Transmission Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

Although case reporting includes ascertainment of multiple behaviors associated with HIV transmission, current surveillance methods cannot determine the specific route of HIV transmission in persons who have engaged in more than one risk behavior. For the purposes of analysis and interpretation, the Centers for Disease Control and Prevention created a risk hierarchy in the 1980s to classify people into risk transmission categories. The hierarchy is intended to account for the efficiency of HIV transmission associated with each behavior, along with the probability of exposure to a HIV-positive person within the population. The adult/adolescent categories, in order, are as follows: (1) men who have sex with men (MSM); (2) injection drug users (IDU); (3) men who have sex with men and inject drugs (MSM/IDU); (4) hemophilia/coagulation disorders; (5) heterosexual contact (HC); (6) receipt of HIV-infected blood or blood components; and (7) no identified risk (NIR). Figure 2 shows the distribution of risk for all persons currently living with HIV in Out-State Michigan as of January 2012 (also see tables 3 and 5, pages 211 and 214).

Figure 2: HIV infection cases currently living in Out-State Michigan by risk transmission category, January 2012 (N = 5,389)
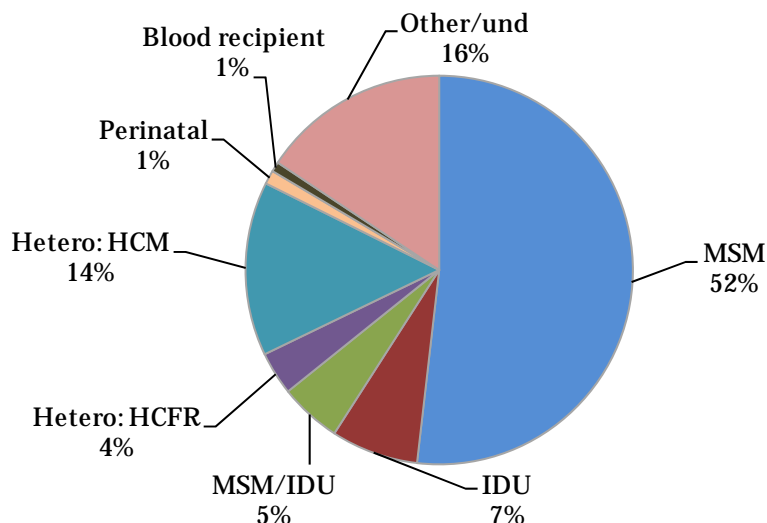
- Over half (57 percent) of persons currently living with HIV in Out-State Michigan are men who have sex with men (MSM), including five percent who also inject drugs (MSM/IDU).

- Eighteen percent have a risk of heterosexual sex; 14 percent are females who had sex with males (HCM), and four percent of whom are males who had sex with females with known risk (HCFR).

- Twelve percent are injection drug users (IDU), including five percent who are also MSM (MSM/IDU).

- Two percent are other known risk, including perinatal transmission and receipt of HIV-infected blood products.

- Sixteen percent have other or undetermined risk, which includes males who had sex with females with unknown risk.

2012 Profile of HIV in Out-State Michigan

Distribution of Living HIV Cases by Exposure Category

Data from enhanced HIV/AIDS Reporting System (eHARS)

When the risk transmission categories were created, the hierarchy was based on what was known at the beginning of the epidemic about how HIV was transmitted, when almost all cases were among males and there was little documented heterosexual transmission. Since then, the hierarchy has not changed, even though our understanding of the most efficient HIV transmission routes has. Additionally, concerns have been raised that use of hierarchical categories masks the identification of multiple risks that a person may have. For this reason, Michigan also presents exposure categories, which convey all known modes of HIV exposure. Like the traditional risk transmission categories, the exposure categories are mutually exclusive, meaning that each case is included in only one category. Exposure categories, however, allow readers to see all the reported ways in which a person may have been exposed to HIV without stating definitively how the individual was infected. Please see the glossary in appendix A (page 223) for more detailed definitions of exposure categories.

It is important to note that, unlike the risk transmission categories, the exposure categories count males in the heterosexual contact (HC) category regardless of what is known about their female partners' risk behaviors or HIV status. This results in an increased proportion of heterosexual cases.

Figure 3 shows the distribution of exposures among HIV-positive persons currently living in Out-State Michigan as of January 2012 (also see table 5, page 214).

Figure 3: HIV infection cases currently living in Out-State Michigan by exposure category, January 2012 (N = 5,389)
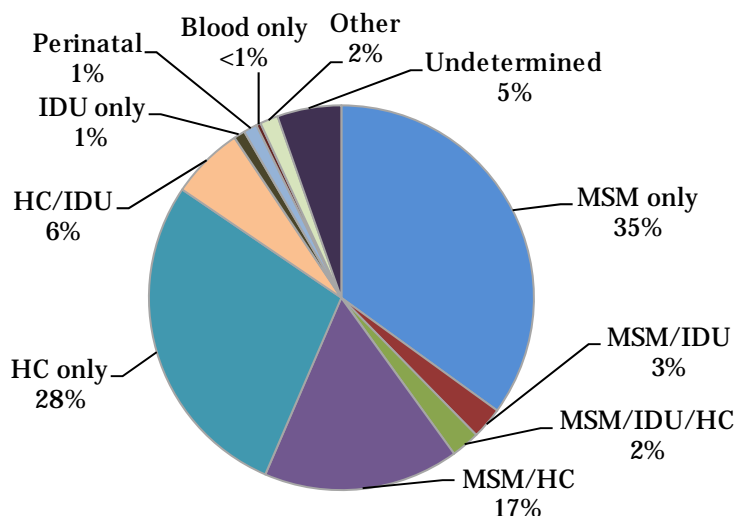
- While over half of all prevalent HIV cases are classified as men who have sex with men (MSM) in the risk transmission hierarchy, 22 percent reported additional exposures. Nineteen percent were behaviorally bisexual, reporting sex with a female (MSM/HC and MSM/HC/IDU).

- Almost all injection drug users (IDU) reported additional risk behaviors, including six percent reporting heterosexual contact (HC/IDU) and two percent reporting both heterosexual contact and male-male sex (MSM/IDU/HC).

- 'Other' are other combinations of risk too numerous to be displayed (HC/Blood, HC/IDU/Blood, MSM/Blood, MSM/HC/Blood, MSM/IDU/HC/Blood, MSM/IDU/Blood, and IDU/Blood).

2012 Profile of HIV in Out-State Michigan

Distribution of Living HIV Cases by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figures 4 and 5 show the impact of the HIV epidemic on six race/sex groups in Out-State Michigan.

Figure 4: Estimated prevalence of persons living with HIV in Out-State Michigan by race and sex, January 2012
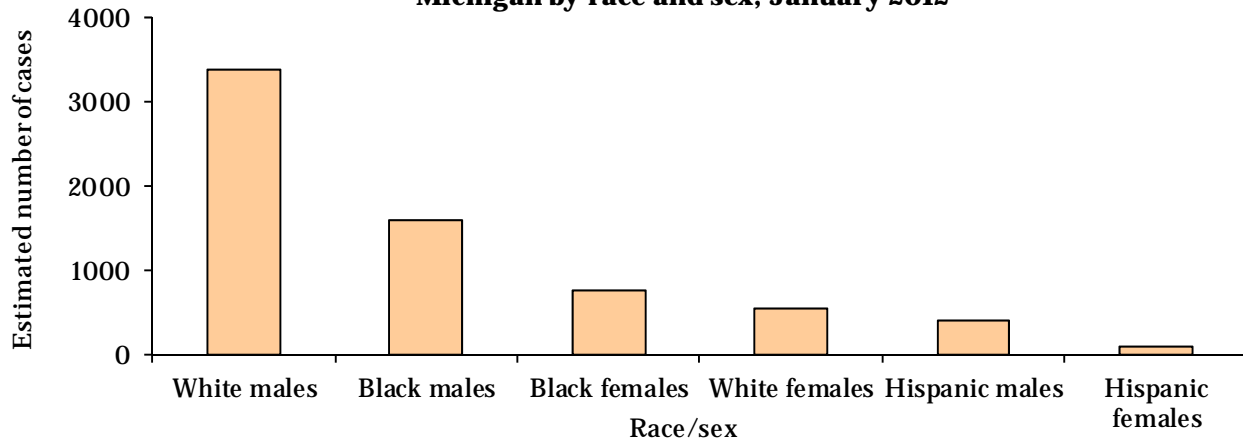
Figure 5: Reported prevalence rate of persons living with HIV in Out-State Michigan by race and sex, January 2012
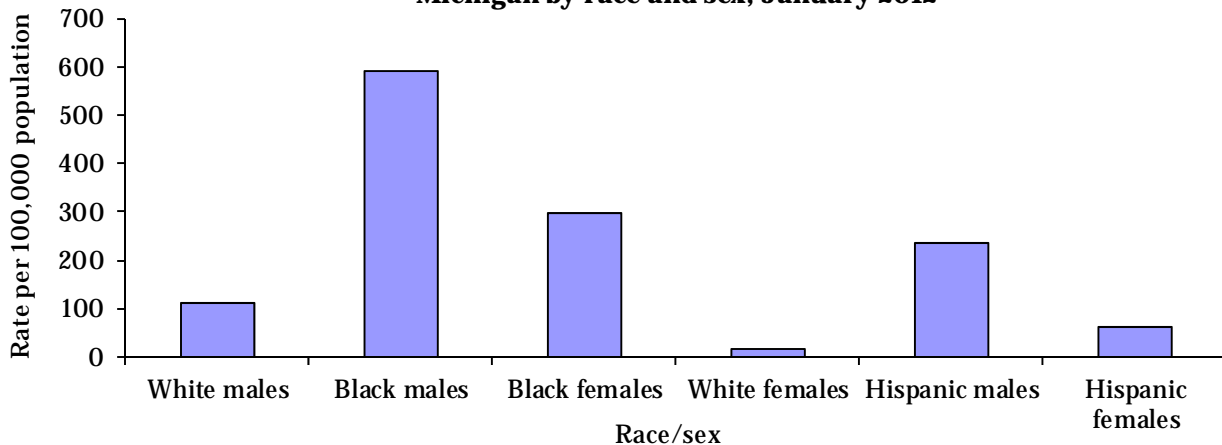
- Black males have the highest rate of HIV per 100,000 (591) and the second highest estimated number (1,610) of cases. This high rate - over five times higher than the rate among white males - means the impact of the epidemic is greatest on this demographic group.

- Black females have the second highest rate (297 per 100,000) and the third highest estimated number (780) of cases of HIV. The rate is 17 times that of white females.

- Hispanic males have the third highest rate (237) and the fifth highest estimated number (420) of cases. This indicates the impact of the epidemic is high on a relatively small demographic group.

- White males have the fourth highest rate (111) but the highest estimated number (3,390) of cases.

- Hispanic females have the fifth highest rate (62) and the lowest estimated number (110) of HIV cases.

- White females have the lowest rate (17) and the fourth highest estimated number (550) of HIV cases.

- These data can also be found on table 3, page 211.

2012 Profile of HIV in Out-State Michigan

Distribution of Living HIV Cases by Age at HIV Diagnosis

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 6 shows the breakdown of prevalent cases in Out-State Michigan by age at HIV diagnosis.

Figure 6: Estimated prevalence of persons living with HIV in Out-State Michigan by age at diagnosis, January 2012
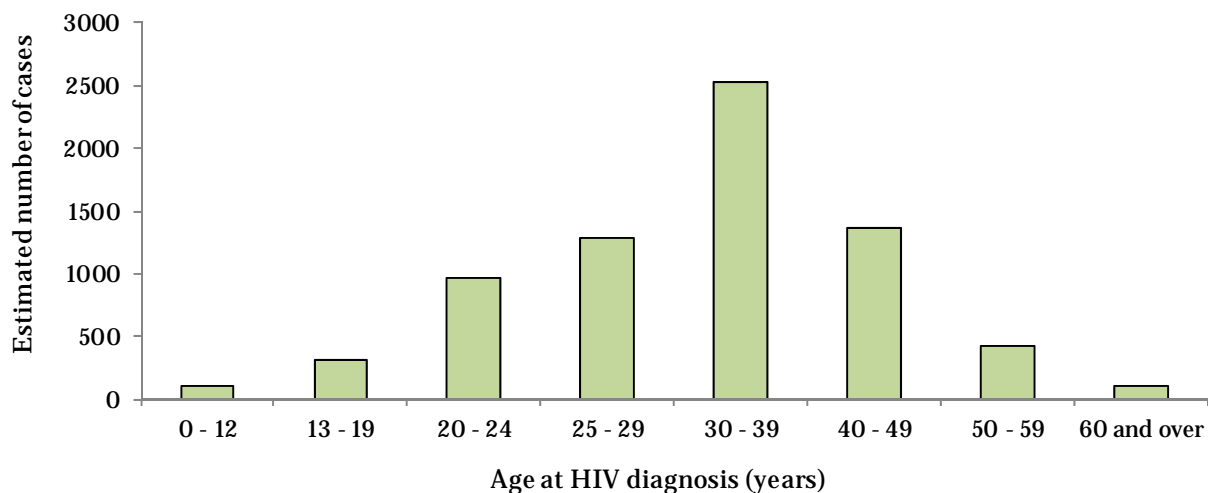
- The majority of all persons living with HIV (an estimated 2,530) were 30-39 years old at the time of diagnosis.

- The next highest number of estimated cases is among persons 40-49 years at diagnosis, followed closely by 25-29 year olds (1,360 vs. 1,280, respectively).

- The smallest number of estimated cases is among persons diagnosed at 60 years and older and those diagnosed between the ages of 0 and 12 years 110 estimated cases each).

- There were an estimated 10 cases with unknown age at diagnosis not included in this figure.

- Data can also be found on table 3, page 211.

2012 Profile of HIV in Out-State Michigan

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

New diagnoses, deaths and prevalence of HIV by year:
The unadjusted number of new HIV diagnoses, number of deaths among HIV-positive persons, and HIV prevalence in Out-State Michigan are presented in figure 7. The number of HIV diagnoses reflects reported cases. These data were not adjusted for reporting delay as they were in the statewide and Detroit Metro Area (DMA) chapters of this document, so the numbers should not be compared. The decreases in new diagnoses seen in the most recent years (3 percent between 2006 and 2010) will likely level out as more cases diagnosed during those years are reported. As new diagnoses of HIV remain relatively stable and the number of deaths among HIV-positive persons decrease, HIV prevalence continues to rise.

Figure 7: New diagnoses, deaths, and prevalence of HIV in Out-State Michigan by year, January 2012
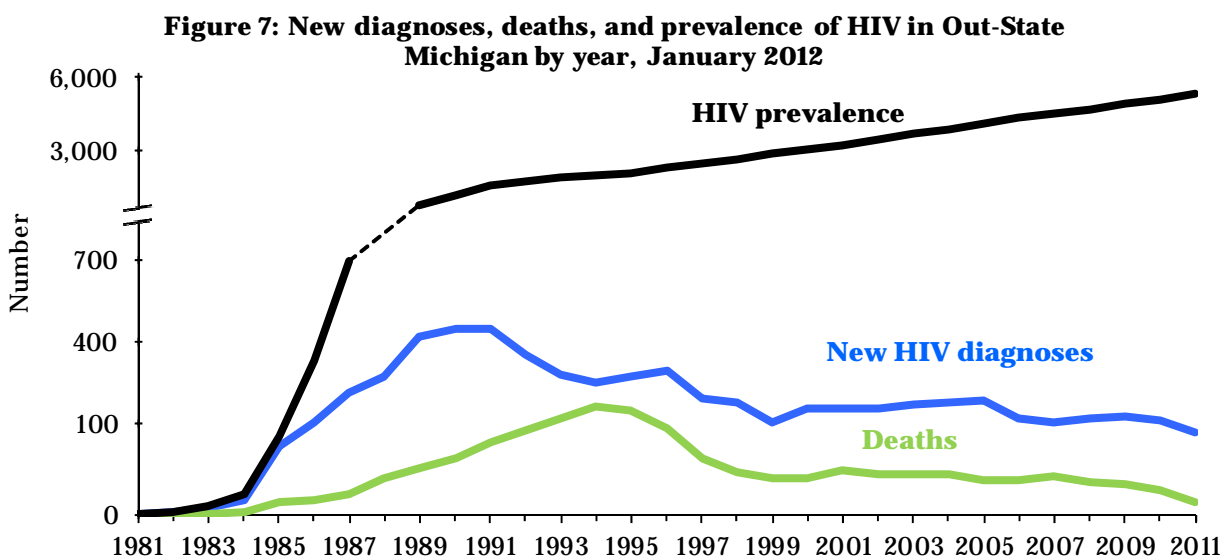
New diagnoses by risk, 2006-2010:
Figure 8 shows the number of persons newly diagnosed in Out-State Michigan by risk for 2006-2010. Men who have sex with men (MSM) make up the largest number of new diagnoses, and the number did not change appreciably between 2006 and 2010 (133 cases vs. 138 cases, respectively). During this same time period, cases among heterosexuals decreased from 48 to 36 cases (a 25 percent decrease). The number of injection drug users (IDU) and MSM/IDU are low in Out-State Michigan, but cases among these groups also decreased between 2006 and 2010. The other/undetermined risk category is mostly composed of persons for whom risk was not reported or has not yet been determined. This number is always highest for more recent years, as it takes time to gather complete information on risk behaviors.

It is important to note that, due to small numbers, these data could not be adjusted to account for reporting delay. Therefore, it is not possible to know if these decreases were statistically significant.

2012 Profile of HIV in Out-State Michigan

Trends in HIV Data

Figure 8: Number of new HIV diagnoses 2006-2010 in Out-State Michigan by risk transmission category, January 2012
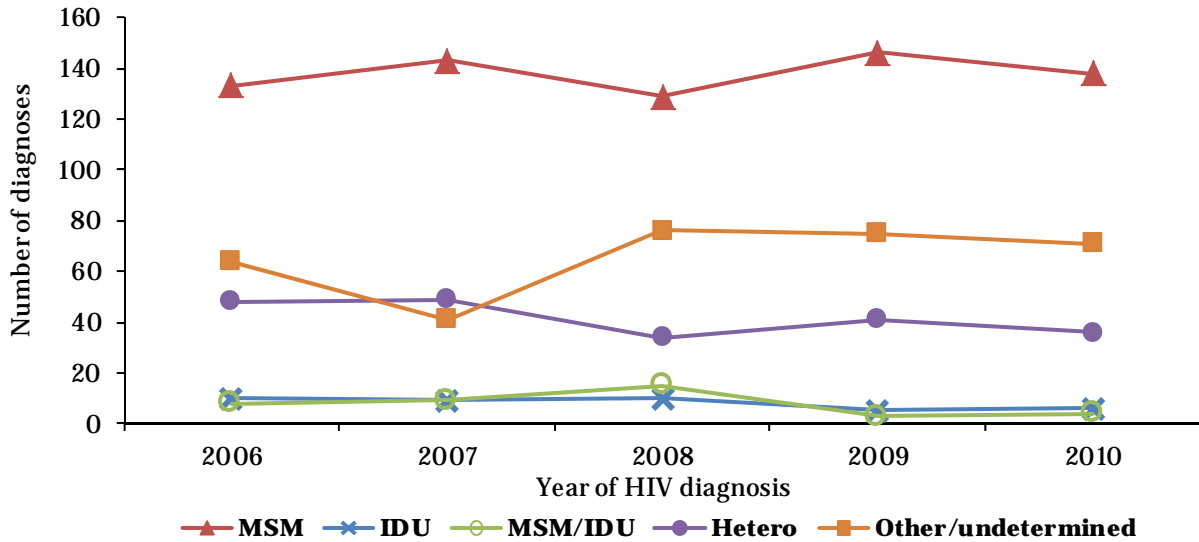
New diagnoses by race and sex, 2006-2010:

Figures 9 and 10 show the number of new HIV diagnoses between 2006-2010 by race for males and females, respectively. The greatest number of new diagnoses are among white males (107 in 2010), followed by black males (76 in 2010). The number of diagnoses among black males has had the most variation of any male racial group, dropping from 72 new diagnoses in 2006 to 52 in 2007 (a 28 percent decrease) before rising to a high of 95 in 2009 (an increase of 45 percent). The number of new cases among Hispanic males and males of other race has had little variation, remaining below 20 new diagnoses a year.

Figure 9: Number of new HIV diagnoses 2006-2010 in Out-State Michigan by race/sex (males), January 2012
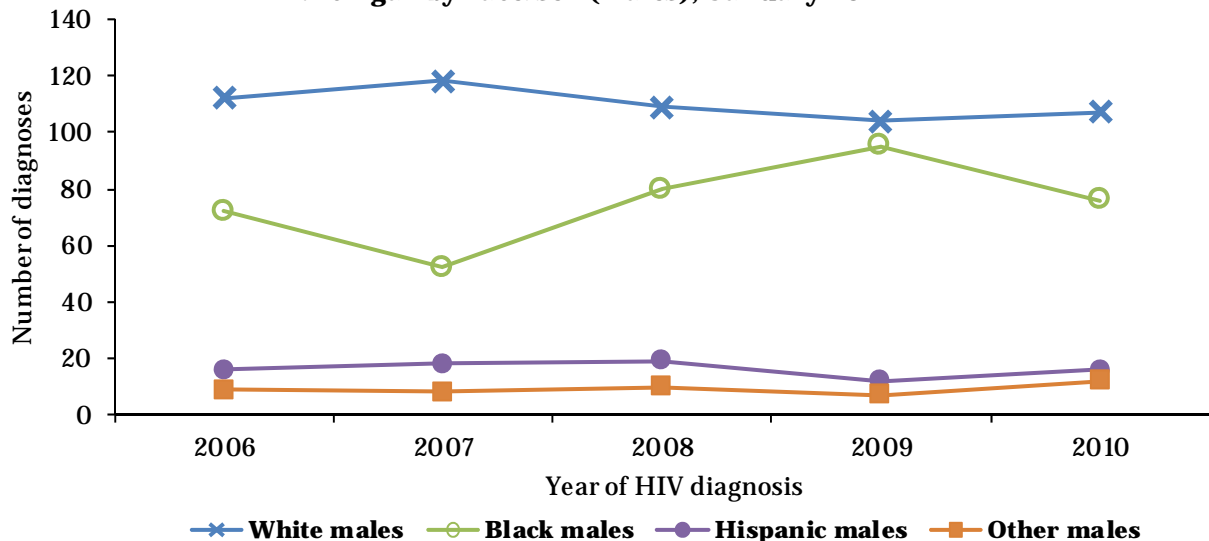
2012 Profile of HIV in Out-State Michigan

Trends in HIV Data

Similar to males, the largest variation in the number of new diagnoses for females is among black females (figure 10). The number of diagnoses among this group dropped from 31 in 2006 to 18 in 2008, a decrease of 42 percent. The number then increased to 36, a 50 percent increase, in 2009 before coming back down to 27 in 2010. There was also some variability among white females, with the number decreasing 50 percent between 2008 and 2009 (20 vs. 10 diagnoses, respectively) before increasing slightly in 2010 (13 new diagnoses). The number of diagnoses among Hispanic females and females of other race are consistently five or less.

Figure 10: Number of new HIV diagnoses 2006-2010 in Out-State Michigan by race/sex (females), January 2012
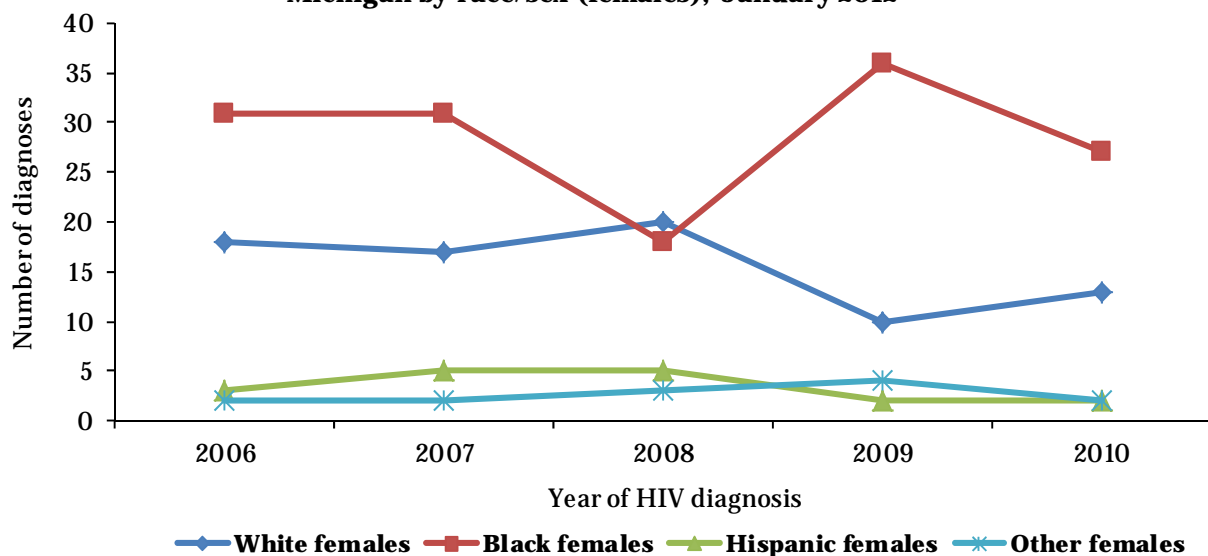
Deaths among HIV-positive persons by race and sex:
Figure 11 shows the number of HIV-positive Out-State Michigan residents reported as deceased by a local health department, the department of vital records (via a data match, death transcript, or death certificate), the National Death Index, or an alternate source. The number of deaths increased in all race/sex groups from the beginning of the epidemic through approximately 1994-1995 except among black females, who had zero percent change during that time period. The number of deaths then decreased markedly between 1995 and 1998 among all groups (except for black females) and then were relatively stable until 2001. It should be noted that the percent decrease in deaths among white males (74 percent) between 1995 and 2001 was more pronounced than the percent decrease among black males (38 percent). Additionally, there was a 38 percent decrease in deaths among white females compared to a 83 percent increase among black females. Number of deaths among HIV-positive females in Out-State Michigan are low, so these changes may be exaggerated. Between 2001 and 2009, the number of deaths fell among all groups. The percent decrease among black males (50 percent) was larger than the change among white males (6 percent). The change among black females (27 percent) was lower than the change among white females (38 percent; data not shown in tables).

2012 Profile of HIV in Out-State Michigan

Trends in HIV Data

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 11: HIV deaths by race/sex in Out-State Michigan, January 2012
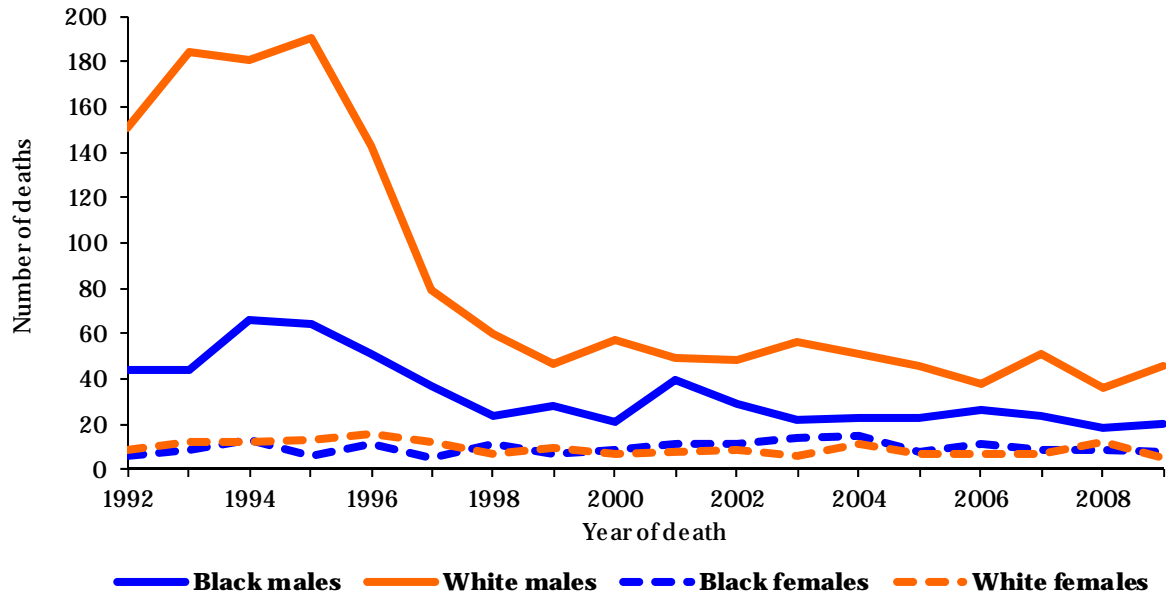
2012 Profile of HIV in Out-State Michigan

Ranked Behavioral Group: MSM

Overview:

Men who have sex with men (MSM) are the number one ranked behavioral group in Out-State Michigan for HIV infection. MSM remain the single largest behavioral group affected by the epidemic and account for over half (57 percent) of all reported HIV-positive persons, including MSM/IDU. MDCH estimates that there are approximately 4,040 MSM living with HIV infection in Out-State Michigan. This includes an estimated 370 HIV-positive males whose risk is a combination of having sex with other males and injecting drugs (table 3, page 211).

Race/ethnicity:

MSM account for most HIV infections among males in Out-State Michigan for all racial and ethnic groups. When considering reported cases for MSM and MSM/IDU of all races (3,071 reported cases), white males comprise 69 percent of males in this combined category (2,115 cases); black males account for 22 percent (675 cases); and Hispanic males account for seven percent (208 cases; table 6, page 215).

Age at HIV diagnosis:

Among those reporting male-male sex (including MSM/IDU), the highest proportion of all living HIV infection cases were 30-39 years old at diagnosis (37 percent). MSM is the predominant mode of transmission for males ages 13 and up; male-male sex accounts for 71 percent and 75 percent of infections among males ages 13-19 years and 20-24 years at diagnosis, respectively (table 8, page 217).

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 HIV infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). MSM and MSM/IDU make up 59 percent (1,689 cases) of persons living with stage 3 infection, of whom 41 percent (695 cases) had late diagnoses (table 3). MSM are more likely than IDU to have late diagnoses. This suggests that MSM get tested for HIV later in the course of their infection.

Geographic distribution:

Just over one third (36 percent) of HIV-positive MSM statewide reside in Out-State Michigan, which is similar to the proportion of all cases that reside in Out-State Michigan. Within high prevalence counties (Allegan, Berrien, Calhoun, Genesee, Ingham, Jackson, Kalamazoo, Kent, Saginaw, and Washtenaw), MSM comprise 57 percent of persons living with HIV infection (including MSM/IDU). In low prevalence counties, MSM comprise 58 percent of all cases (data not shown in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

Conclusions:

MSM continue to make up the majority of new diagnoses and prevalent HIV infection cases in Out-State Michigan. The average number of new HIV diagnoses among MSM between 2006 and 2010 was 138, and there was little change during this time period (figure 8). Data on new diagnoses was not adjusted for reporting delay.

2012 Profile of HIV in Out-State Michigan

Ranked Behavioral Group: Heterosexuals

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

Heterosexual risk is the second highest ranked behavioral group in Out-State Michigan. Persons with heterosexual risk account for 18 percent of reported HIV infection cases. MDCH estimates that 2,270 persons living with HIV infection in Out-State Michigan have a risk factor of heterosexual contact (HC). Heterosexual contact is comprised of heterosexual contact with female with known risk (HCFR) and heterosexual contact with male (HCM). HCFR is only applicable to males and constitutes persons who had sex with females with known risk factors for HIV, including IDU, recipients of HIV-infected blood products, and/or HIV-positive individuals with unknown risk. HCM is composed of all females whose only reported risk is sex with males, regardless of what is known about the male partners' risk factors. Currently there are an estimated 250 HIV-positive persons who are HCFR (males) and 1,030 persons who are HCM (females) (table 3, page 211).

Race/ethnicity and sex:

Among the 975 persons currently living with HIV infection in Out-State Michigan with a risk of heterosexual contact, 80 percent are females and 20 percent are males. While females account for 21 percent of all reported HIV infection cases in Out-State Michigan, they have consistently accounted for over three quarters of cases with heterosexual risk. The overall proportion of males with heterosexual risk is five percent (table 5). However, many males report heterosexual contact in addition to other risk factors, such as male-male sex (MSM) or injection drug use (IDU). See table 5, page 214 for data on exposure categories, which represent all reported modes of HIV exposure.

Over half of all heterosexual cases of HIV infection in Out-State Michigan are among black persons (52 percent), largely driven by the high number of black females with heterosexual risk. Sixty-seven percent of black female cases report heterosexual risk. Seventy percent of white female cases, 73 percent of Hispanic female cases, and 76 percent of female cases of other or unknown race have heterosexual risk. Although the proportion of HIV-positive males with heterosexual risk is low, eight percent of black and Hispanic males have heterosexual risk compared to two percent of white males (table 6, page 215).

Expanded risk:

Of the 975 reported HIV-positive persons with heterosexual risk currently living in Out-State Michigan, 16 percent report their heterosexual partners are injection drug users (81 percent female, 19 percent male); six percent have partners who are behaviorally bisexual males (this applies to females only); and two percent have partners who are persons infected with HIV through blood products (83 percent female, 17 percent male). Forty-nine percent of HIV-positive persons with heterosexual risk report having sex with HIV-positive persons (67 percent female, 33 percent male; expanded risk data not shown in tables). As the majority of cases with heterosexual risk are female, it is useful to examine this expanded risk among different female subgroups. Figures 12 and 13 show detailed risk information for black females and white females, respectively. While the risk distribution between black females and white females is similar, of note is that white females more frequently report having partners with known risks (such as IDU or HIV-positive persons). Black females have a higher proportion of heterosexual contact without specific risk factors indicated. They also have a higher proportion of undetermined risk (16 percent vs. 11 percent in white females).

2012 Profile of HIV in Out-State Michigan

Ranked Behavioral Group: Heterosexuals

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 12: Black females living with HIV infection in Out-State Michigan by expanded risk transmission category, January 2012 (N = 597)

- Hetero-partner IDU 8%
- Hetero-partner bisexual 5%
- Hetero-partner blood recip 1%
- Hetero-partner HIV+ 26%
- Other hetero contact 28%
- IDU 14%
- Blood recipient <1 %
- Perinatal 2%
- Unk/other 16%
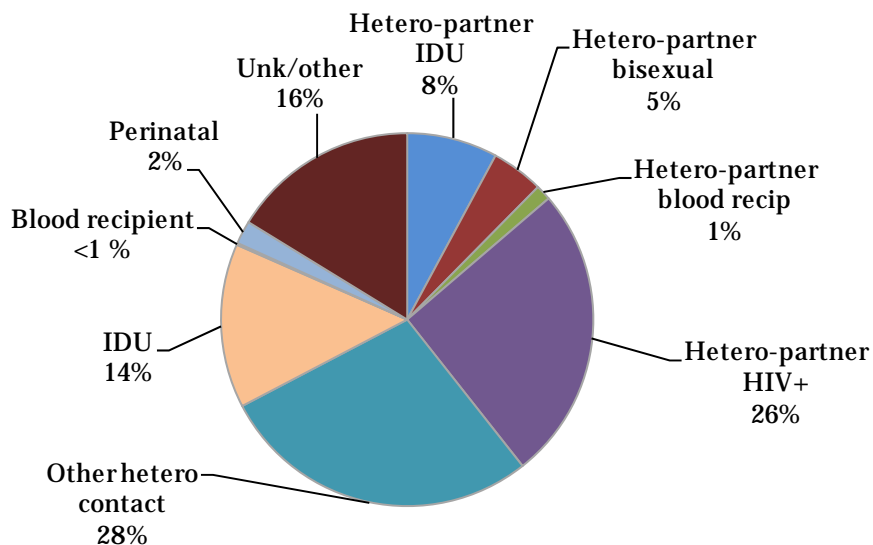
Figure 13: White females living with HIV infection in Out-State Michigan by expanded risk transmission category, January 2012 (N = 415)
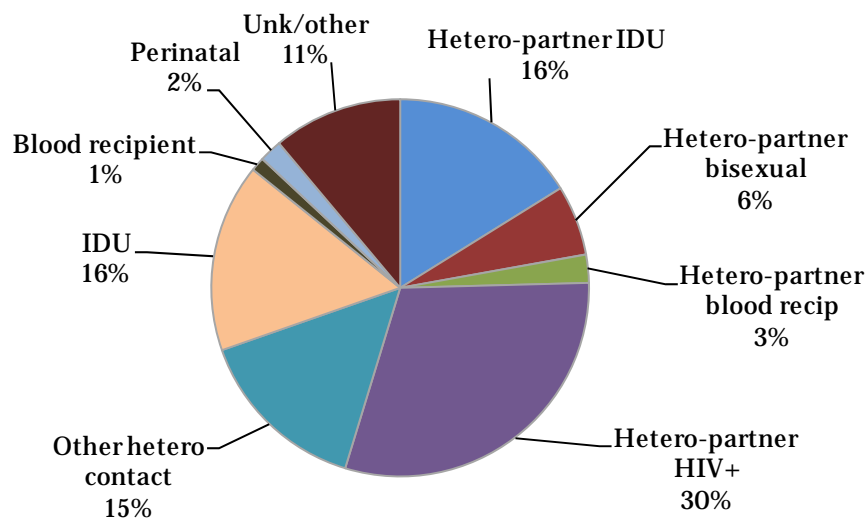
- Hetero-partner IDU 16%
- Hetero-partner bisexual 6%
- Hetero-partner blood recip 3%
- Hetero-partner HIV+ 30%
- Other hetero contact 15%
- IDU 16%
- Blood recipient 1%
- Perinatal 2%
- Unk/other 11%

2012 Profile of HIV in Out-State Michigan

Ranked Behavioral Group: Heterosexuals

Age at HIV diagnosis:

Heterosexual contact is the predominant reported risk factor for females who were 13 years of age and older at the time of HIV diagnosis in Out-State Michigan. Over three-quarters (78 percent) of those 13-19 years at the time of diagnosis report heterosexual sex. As age increases, the proportion of HIV-positive females with heterosexual risk decreases, but it remains over four times as high as injection drug use (IDU) for all females 13 years and older at diagnosis (table 8, page 217).

Among HIV-positive males, the proportion with a risk factor of heterosexual sex is low overall (5 percent). This ranges from three percent among males 13-19 and 20-24 years at diagnosis to five percent among those 25-29, 30-39, and 50-59 years at diagnosis (table 8). It is important to note that for males to be classified as heterosexual risk, they must report female partners with known HIV risk factors (such as IDU) or who are known to be HIV-positive. When considering exposure categories, which represent all reported HIV exposures, 44 percent of HIV-positive males report heterosexual contact (with or without partners with known risk) (table 5, page 214).

Late diagnoses:

Of the 5,389 persons living with HIV in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 HIV infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Persons with a risk of heterosexual sex make up 16 percent (474 cases) of persons living with stage 3 infection, of whom 37 percent (175 cases) had late diagnoses. Overall, heterosexuals (including HCFR and HCM) are more likely than IDU and less likely than MSM to have late diagnoses (table 3, page 211).

Geographic distribution:

Heterosexual contact accounts for 19 percent of HIV infection cases in high prevalence counties and 17 percent in low prevalence counties (data not included in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

Conclusions:

The majority of HIV-positive females in Out-State Michigan, regardless of race or age, have heterosexual risk. A small proportion of males have heterosexual risk, but a large proportion (44 percent) of males who have other risks, such as MSM, also had heterosexual contact (table 5, page 214). Cases with heterosexual risk have surpassed the proportion of cases attributed to IDU (table 3), and although decreasing, the number of new diagnoses each year among persons with heterosexual risk is almost three times that of IDU (figure 8). Data on new diagnoses was not adjusted for reporting delay.

2012 Profile of HIV in Out-State Michigan

Ranked Behavioral Group: IDU

Overview:

Injection drug users (IDU) are the third ranked behavioral group in Out-State Michigan and account for 12 percent (670 cases) of reported HIV-positive persons, including HIV-positive males who reported male-male sex and injecting drugs (MSM/IDU). MDCH estimates that there are 890 IDU currently living with HIV in Out-State Michigan, including 370 MSM/IDU (table 3, page 211).

Race/ethnicity and sex:

Of the 670 IDU and MSM/IDU living with HIV in Out-State Michigan, 75 percent are male (504 cases). White males make up the largest proportion of all IDU and MSM/IDU currently living with HIV in Out-State Michigan (41 percent), followed by black males (24 percent), black females (13 percent), white females (10 percent), and Hispanic males (7 percent). Over half of all IDU cases in Out-State Michigan (51 percent, 345 cases) are among white persons, and more than half of these are MSM/IDU (table 6, page 215).

Age at HIV diagnosis:

Among males diagnosed between the ages of 25 and 49 in Out-State Michigan, 13 to 14 percent are IDU (including MSM/IDU). As age at diagnosis increases, the proportion with a risk of IDU increases (as opposed to MSM, where the proportion decreases with age). This proportion peaks, however, with males 40-49 years at diagnosis and then begins to decrease (table 8, page 217).

Overall, IDU is the second most common risk for HIV-positive females. However, this is true only for females who were diagnosed at 20-24 years, 30-39 years, and 40-49 years. For females in all other age groups, IDU falls behind undetermined risk and becomes the third most common risk. When considering males and females together, there are few HIV infection cases with a risk of IDU or MSM/IDU among persons who were teens (13-19 years) at the time of HIV diagnosis (5 percent).

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). IDU make up 13 percent (372 cases, including MSM/IDU) of persons living with stage 3 infection, of whom 32 percent (119 cases) had late diagnoses. These data indicate that IDU are less likely then either heterosexuals or MSM to get tested later in the progression of HIV infection (table 3).

Geographic distribution:

Within high prevalence counties of Out-State Michigan, 12 percent of reported cases are IDU (including MSM/IDU), while in the lower prevalence counties 13 percent of persons living with HIV infection are IDU (data not included in tables; see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

Conclusions:

The majority of IDU and MSM/IDU cases in Out-State Michigan are among males, particularly white males. Over half of these white male cases are MSM/IDU. As age at diagnosis increases, IDU becomes a larger proportion of the risk for HIV-positive males. For females, however, the pattern is less clear, and IDU is the second most common risk for 20-24 and 30-49 year old HIV-positive females.

The number of new diagnoses that are IDU and MSM/IDU has remained low in recent years (figure 8), representing an average six percent of new diagnoses each year (data not adjusted for reporting delay).

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Race and Sex

Overview:

The majority (56 percent) of persons living with HIV infection in Out-State Michigan are white. In contrast, 83 percent of the general population living in Out-State Michigan is white, indicating that the burden of HIV is lower than would be expected among this group. MDCH estimates that 3,930 white persons are living with HIV in Out-State Michigan. The reported prevalence rate among white persons is 64 cases per 100,000. The rate among white males is 111 per 100,000, and the rate among white females is 17 cases per 100,000. One out of 900 white males and one out of 5,720 white females are living with HIV in Out-State Michigan (table 3, page 211).

Black persons comprise 34 percent of persons living with HIV infection but just seven percent of the general population. MDCH estimates that 2,400 black persons are living with HIV in Out-State Michigan. Since these cases occur among a smaller overall population, they have a higher reported prevalence rate (446 cases per 100,000 persons) than white persons. One out of every 170 black males and one out of every 340 black females are known to be living with HIV in Out-State Michigan (table 3).

Hispanic persons comprise seven percent of HIV cases and five percent of the population in Out-State Michigan. MDCH estimates that 530 Hispanic persons are living with HIV infection in Out-State Michigan. The prevalence rate (151 per 100,000 persons) is higher than the rate among white persons, indicating a greater burden of HIV on a smaller overall population. One out of every 420 Hispanic males and one out of 1,610 Hispanic females are known to be living with HIV (table 3). See page 44 in the statewide chapter for a more in-depth analysis of Hispanic persons.

Other racial/ethnic minorities, including Asians/Native Hawaiians or Other Pacific Islanders, American Indians/Alaska Natives, and multiracial persons or persons of other race represent three percent of persons living with HIV in Out-State Michigan (169 reported cases; table 3). Data on minority groups living with HIV are discussed in-depth on pages 86-89 of the statewide chapter. Additionally, foreign-born persons are discussed on page 90 of the statewide chapter.

Most persons living with HIV infection in Out-State Michigan are male (79 percent). The majority of the 4,255 reported male cases are white (61 percent), 29 percent are black, eight percent are Hispanic, and three percent are other or unknown race. Conversely, the majority of the 1,134 females living with HIV infection in Out-State Michigan are black (53 percent), 37 percent are white, seven percent are Hispanic, and four percent are other or unknown race (table 6, page 215).

Racial and ethnic health disparities:

Despite the fact that the majorities of both the general and HIV-positive populations in Out-State Michigan are white, black persons are disproportionately affected by the epidemic. The HIV prevalence rate among black persons in Out-State Michigan is 446 cases per 100,000 persons, almost seven times higher than the rate among white persons (64 per 100,000). The prevalence rate of black males is over five times that of white males. This disparity is even greater among females. The rate among black females is 17 times higher than the rate among white females. Additionally, more black females were newly diagnosed with HIV between 2006 and 2010 than white females (143 vs. 78).

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

In addition to the black community, the Hispanic population of Out-State Michigan is also disproportionately impacted by HIV. While seven percent of reported cases occur among this group, they make up five percent of the Out-State population. Additionally, the prevalence rate among Hispanics is almost two-and-a-half times greater than white persons (151 vs. 64 cases per 100,000, respectively).

Racial and ethnic minorities represent a small proportion of the overall population of Out-State Michigan (17 percent), but they represent almost half of all prevalent HIV infection cases. Given the disproportionate impact on these groups, it is important to focus attention on these disparities.

Exposure:

Since the majority of HIV-positive males have a risk of male-male sex (MSM), it is useful to examine exposure categories, which represent all risk behaviors among males. Figures 14 and 15 show black and white male cases living in Out-State Michigan by exposure category. A smaller proportion of HIV-positive black males have an exposure of MSM only compared to white males (27 percent vs. 54 percent, respectively). Twenty-six percent of black male cases are behaviorally bisexual with risks of male-male sex as well as heterosexual contact (HC), including three percent who have risks of male-male sex, injection drug use, and heterosexual contact (MSM/IDU/HC). Twenty-seven percent of HIV-positive black males have heterosexual contact as their only exposure compared to eight percent of white male cases. A larger proportion of HIV-positive black males have a dual risk of injection drug use and heterosexual contact compared to white males (7 percent vs. 3 percent, respectively).

Figure 14: Black male HIV infection cases currently living in Out-State Michigan by exposure category, January 2012 (N = 1,227)
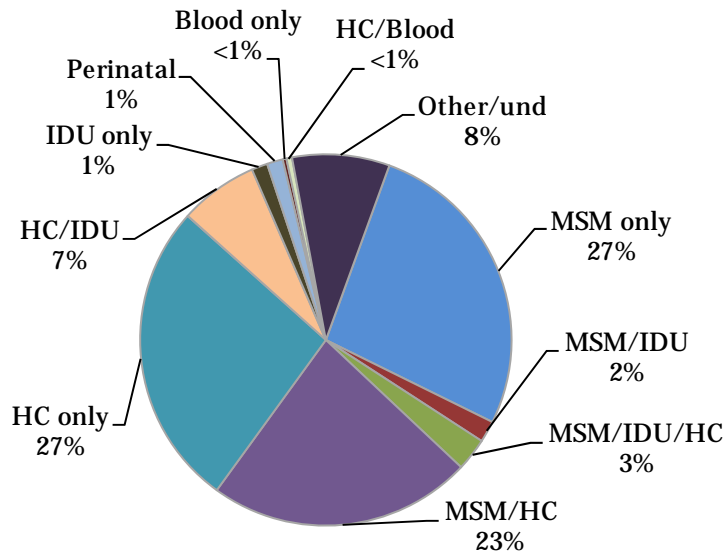
Pie chart segments:
- Blood only <1%
- HC/Blood <1%
- Other/und 8%
- MSM only 27%
- MSM/IDU 2%
- MSM/IDU/HC 3%
- MSM/HC 23%
- HC only 27%
- HC/IDU 7%
- IDU only 1%
- Perinatal 1%

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Figure 15: White male HIV infection cases currently living in Out-State Michigan by exposure category, January 2012 (N = 2,577)
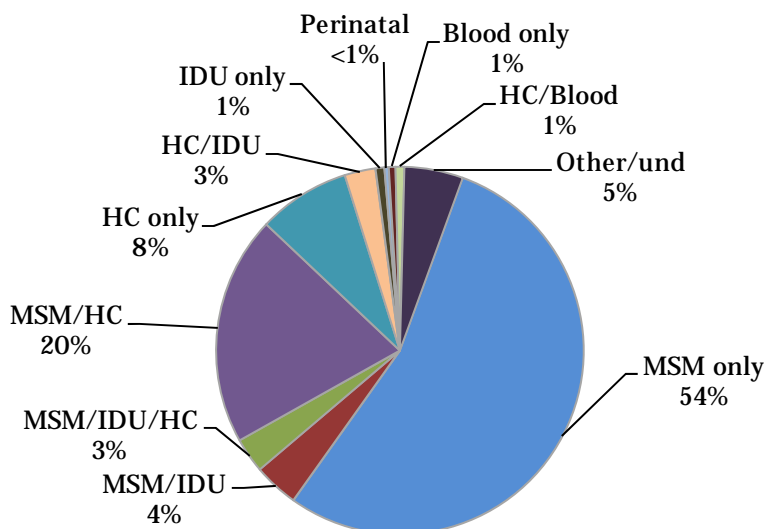
See figures 12 and 13 on page 187 for expanded risk among black and white HIV-positive females in Out-State Michigan. For females, expanded risk transmission categories are examined as the majority of female cases have heterosexual risk. When examining exposure categories, an even larger proportion of females have heterosexual risk, since IDU masks this in the risk transmission categories (table 5, page 114). The large number of male cases who have both male-male sex and heterosexual contact is interesting, given that just five percent of females report sex with behaviorally bisexual males. This is likely an underestimate due to lack of completion of risk factor questions on the case report form or females being unaware of their male partners' risks (data not shown in tables).

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Males make up 82 percent of stage 3 cases, of whom 44 percent had late diagnoses. Females make up the remaining 18 percent of stage 3 cases, of whom 34 percent had late diagnoses.

Fifty-seven percent of stage 3 cases are among white persons, and 44 percent were diagnosed late in the course of their infection. Black persons make up 32 percent of stage 3 cases, and a smaller proportion had late diagnoses than among white persons (37 percent). Hispanic persons make up eight percent of stage 3 cases, of whom 51 percent had late diagnoses. Hispanics have the highest proportion of late diagnoses of any racial/ethnic group. Other minorities make up roughly three percent of stage 3 cases, and between 33 and 41 percent had late diagnoses (table 3, page 211). This suggests that Hispanics are tested later in the course of their infection than other racial/ethnic groups.

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Race and Sex

Data from enhanced HIV/AIDS Reporting System (eHARS)

Geographic distribution:

The distribution of various racial/ethnic groups differs throughout Out-State Michigan. Figure 16 shows that HIV prevalence rates in high prevalence counties in Out-State Michigan are at least one and a half times higher than those in low-prevalence areas for all racial/ethnic groups (see figure 3 on page 18 of the statewide chapter for high/low prevalence county classification).

The HIV infection prevalence rate among black persons is five times higher than white persons in high prevalence areas (476 vs. 95 cases per 100,000) and almost eight times higher than the rate among white persons in low prevalence areas (312 vs. 40 cases per 100,000). This disparity exists despite the fact that there are fewer cases among black persons in low prevalence areas. The HIV infection prevalence rates among persons of other races/ethnicities (including Hispanics, Asians/Native Hawaiians or Other Pacific Islanders, American Indians/Alaska Natives, and persons of other, multi-, or unknown race) are almost one and a half times higher than the rate among white persons in high prevalence areas (130 cases per 100,000) and twice as high as the rate among whites in low prevalence areas (81 cases per 100,000). This suggests that, in low prevalence areas of the state, racial and ethnic minorities are more impacted by HIV despite the actual number of cases being lower.

Conclusions:

The majority of HIV-positive persons living in Out-State Michigan are white males, but HIV prevalence rates remain highest among black persons of both sexes. Black females are particularly impacted, with the prevalence rate 17 times that of white females and a greater number of new diagnoses between 2006 and 2010 (table 3, page 211).

Figure 16: Rates of persons living with HIV infection in high and low prevalence areas in Out-State Michigan by race, January 2012
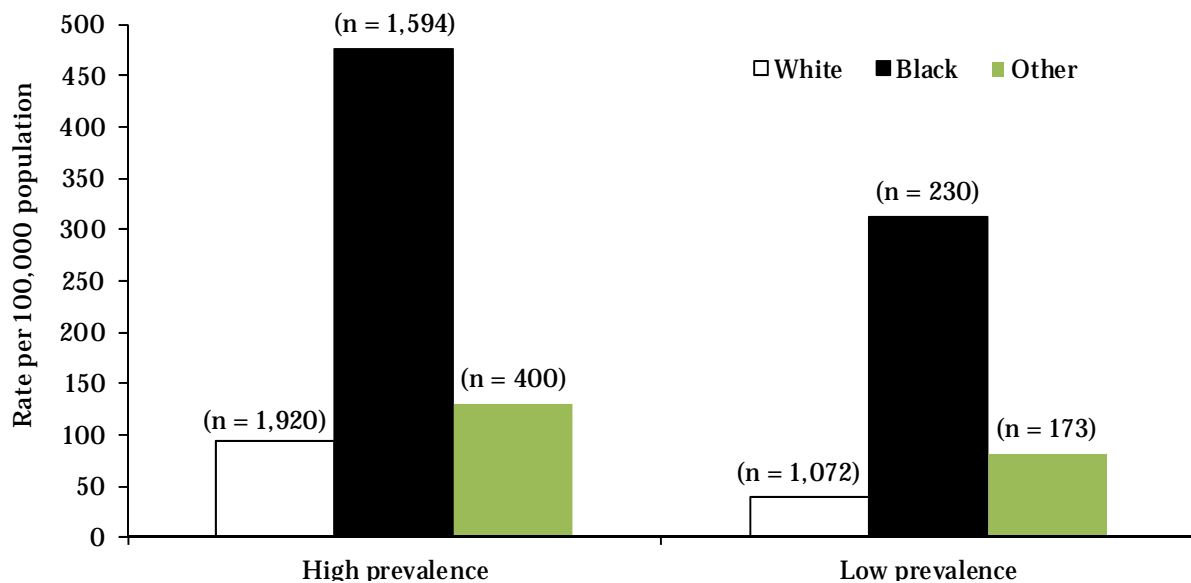
2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Age

Age at diagnosis:

The majority of persons newly diagnosed with HIV in Out-State Michigan are between 30 and 39 years old, followed by persons 40-49 years of age (figure 17). The pattern changes when looking at age at stage 3 diagnosis in figure 18, where 40-49 year olds make up a higher proportion of new stage 3 diagnoses than all new HIV diagnoses (27 percent vs. 19 percent, respectively), and 20-24 and 25-29 year olds make up smaller proportions of stage 3 diagnoses than all new HIV diagnoses (19 percent vs. 32 percent, respectively). This is because many years may pass between HIV diagnosis and progression to stage 3 infection (data on age at HIV diagnosis found in table 3, page 211; data on age at stage 3 diagnoses not shown in tables).

Figure 17: Age at HIV diagnosis for persons living with HIV infection in Out-State Michigan, January 2012
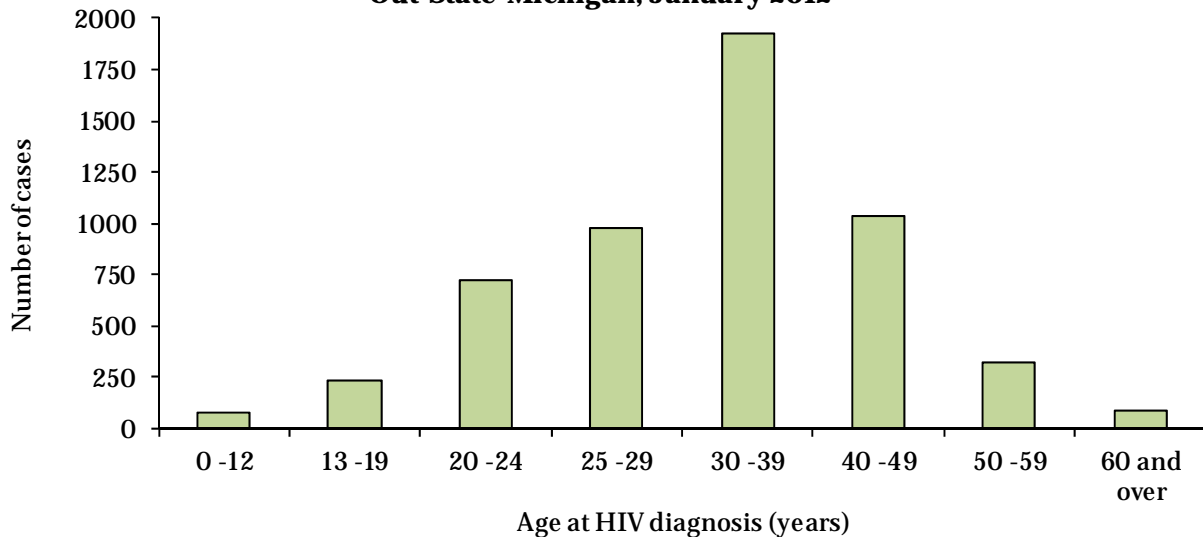
Figure 18: Age at stage 3 diagnosis for persons living with HIV infection in Out-State Michigan, January 2012
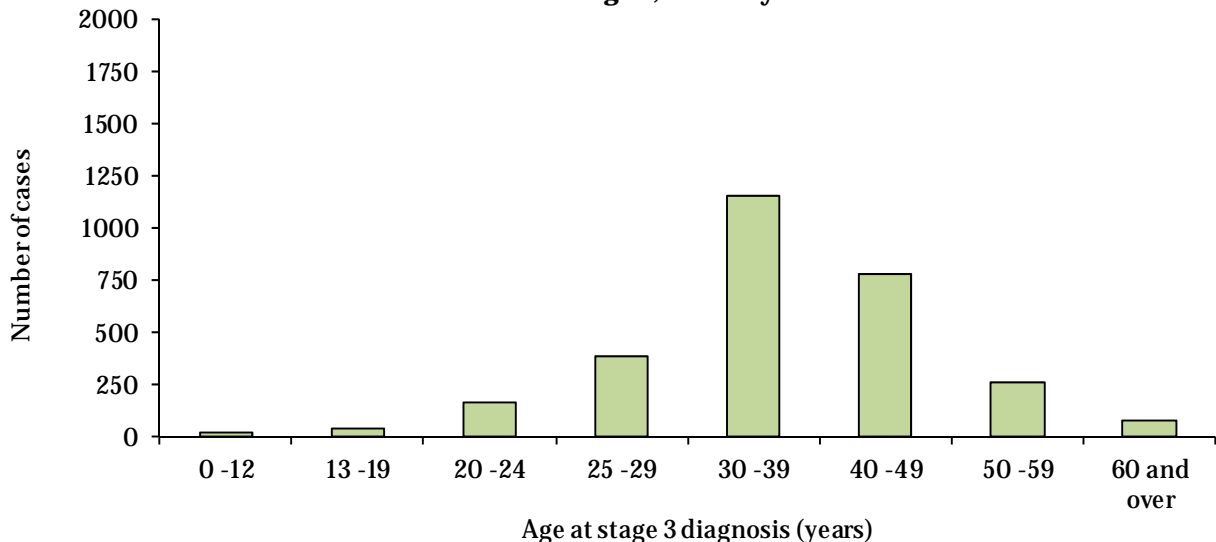
2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Age

Figure 19: Current age of persons living with HIV infection in Out-State Michigan, January 2012
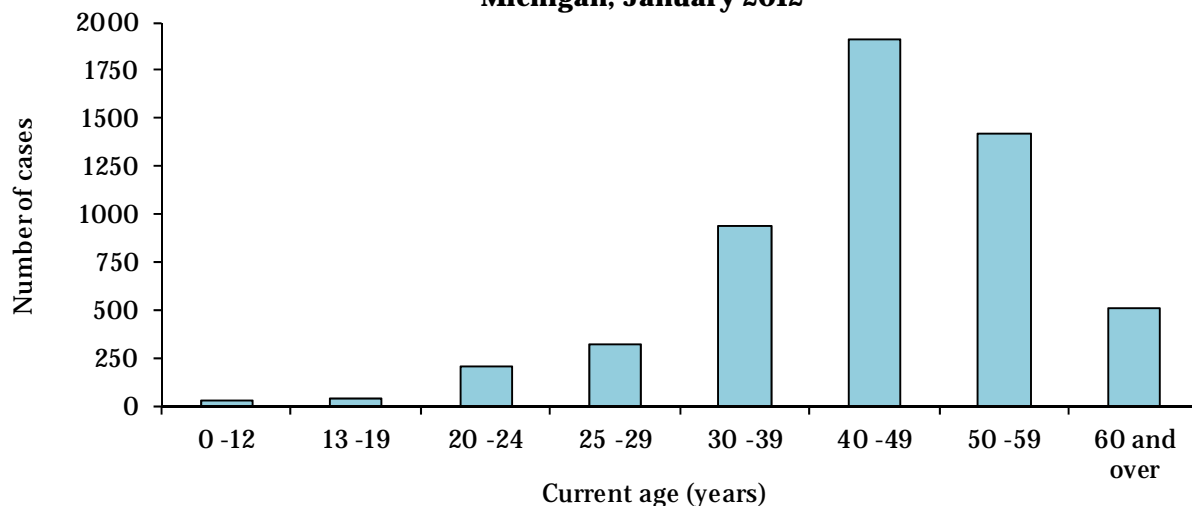
Current age:

Since use of Highly Active Anti-Retroviral Therapy (HAART) became widespread in 1996, HIV-positive persons have been living longer. This is evident in figure 19, which shows the current age of persons living with HIV in Out-State Michigan as of January 1, 2012. Those currently in their forties make up the largest proportion of persons living with HIV (35 percent). While persons who were 50 years and older at the time of HIV diagnosis represent only eight percent of newly diagnosed cases, they make up over one third (36 percent) of persons living with HIV when considering current age (data on current age not shown in tables).

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). When examining persons living with stage 3 infection by age at HIV diagnosis, the proportion of cases with late diagnoses increases as age increases (except for persons 0-12 years at diagnosis, 35 percent of whom had late diagnoses). Among persons 60 years and older at stage 3 diagnosis, 73 percent were diagnosed late in the course of their infection (table 3, page 211).

Conclusions:

The majority of all prevalent cases were 30-39 years old at the time of diagnosis, followed by those 40-49 years old at diagnosis (table 3). When considering current age, however, persons 40-49 years, followed by persons 50-59 years, make up the largest proportion of persons living with HIV infection. This aging HIV-positive population raises new issues surrounding prevention and care.

2012 Profile of HIV in Out-State Michigan

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

Overview:

As of January 2012, there were 82 persons living with HIV in Out-State Michigan who were 0-12 years old at diagnosis. They comprise two percent of all reported HIV infection cases (table 3, page 211). Most 0-12 year olds (74 percent) were infected perinatally, i.e., before, during, or shortly after birth. Those infected after birth were infected via breastfeeding. Of the remaining individuals**,** 10 percent were infected via exposures to HIV-infected blood products before 1985 (table 8, page 217). The remaining 16 percent have unknown or other risk (including one child infected via sexual assault). Many of those with unknown risk are suspected perinatal transmission cases but were born outside the United States (data not included in tables).

Race/ethnicity and sex:

Of the 82 persons living in Out-State Michigan who were ages 0-12 at HIV diagnosis, 56 percent are male and 44 percent are female. Forty-nine percent are black, 33 percent are white, 11 percent are Hispanic, and the remaining seven percent are of other or unknown race/ethnicity (table 7, page 216).

Of the 62 persons with confirmed perinatal exposures, 53 percent are male and 47 percent are female. Forty-seven percent are black, 29 percent are white, 15 percent are Hispanic, and 10 percent are other/unknown race (table 6, page 215). For all of these perinatally-infected cases, the only information about the mother is that she was HIV-positive; no additional maternal risk information was available.

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Children (0-12 year olds) make up one percent of persons living with stage 3, of whom 35 percent (9 cases) had late diagnoses (table 3).

Geographic distribution:

Slightly over half (55 percent) of the 82 persons diagnosed with HIV between the ages of 0-12 years are currently residents of high prevalence counties in Out-State Michigan (see figure 3, page 18 of the statewide chapter for high/low prevalence county classification). This group makes up a larger proportion of cases in low prevalence counties, however (2.5 percent vs. 1 percent; data not shown in tables).

Trends and conclusions:

Among the best measurable successes in reducing HIV transmission has been prevention of mother to child (perinatal) transmission. Without Zidovudine (ZDV) prophylaxis, about 25 percent of children born to HIV-positive females could expect to become HIV-positive themselves. In Out-State Michigan, the proportion of children who become infected perinatally has dropped precipitously, from 31 percent prior to 1997 to seven percent from 1997-2009. As of January 1, 2012, none of the 11 children born in Out-State Michigan in 2008 and one of the 16 children born in 2009 to HIV-positive females were diagnosed with HIV infection. None of the 19 children born in Out-State Michigan in 2010 and 2011 to HIV-positive females have been diagnosed with HIV, although data are not complete at this time (data not shown in tables). NOTE: numbers in this paragraph are based on residence at *birth*, NOT current residence.

2012 Profile of HIV in Out-State Michigan

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

Data from enhanced HIV/AIDS Reporting System (eHARS)

Overview:

As of January 2012, there were 966 persons living in Out-State Michigan who were 13-24 years old at HIV diagnosis. They comprise 18 percent of all persons reported with HIV infection in Out-State (4 percent ages 13-19 years; 14 percent ages 20-24 years; table 3, page 211).

Risk-teens (13-19 years):

In the 1980s, most HIV-positive teenagers were recipients of HIV-infected blood or blood products. Since screening of all blood products began in 1985, however, this proportion has steadily declined. Figures 20 and 21 show risk for males and females who were 13-19 years at diagnosis, respectively. Among the 238 persons living with HIV in Out-State Michigan who were 13-19 at the time of HIV diagnosis, 157 (66 percent) are male (figure 20). Among these male cases, 74 percent are males who have sex with males (MSM), including three percent who also inject drugs (MSM/IDU). Seven percent were recipients of HIV-infected blood products before 1985, and four percent are injection drug users (including MSM/IDU). Three percent had heterosexual contact with females with known risk (HCFR). Fifteen percent of 13-19 year old HIV-positive males had undetermined risk.

Figure 20: Males ages 13-19 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 157)
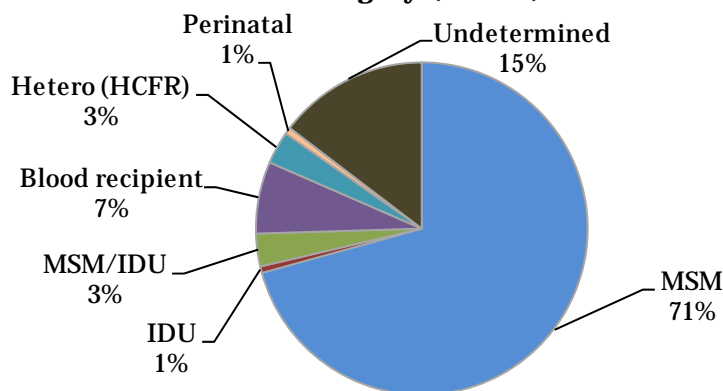
Figure 21: Females ages 13-19 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 81)
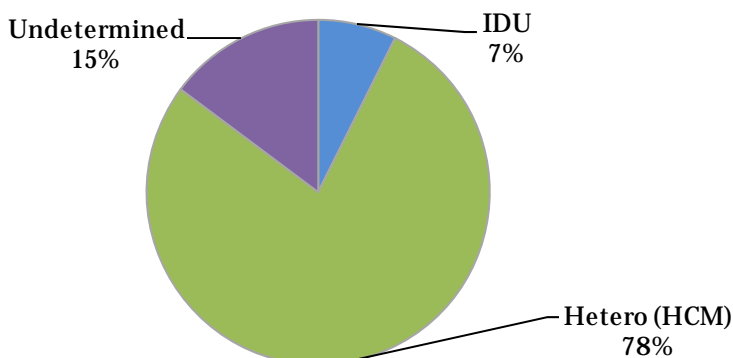
Out-State Michigan, page 197

2012 Profile of HIV in Out-State Michigan

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

Females make up the remaining 81 persons in this age group (34 percent; figure 21). Seventy-eight percent have a risk of heterosexual contact (HCM). Seven percent are injection drug users (IDU), and 15 percent have undetermined risk.

Risk-young adults (20-24 years):

Figures 22 and 23 show risks among persons who were 20-24 years at the time of HIV diagnosis. Among the 728 persons living with HIV in Out-State Michigan in this age group, 72 percent are male. Eighty-three percent of male young adults reported sex with other males, including eight percent who are MSM/IDU. Eleven percent had undetermined risk, and 10 percent reported IDU (including MSM/IDU). Three percent had heterosexual risk (HCFR), one percent received HIV-infected blood products.

Figure 23 shows that, among the 203 females living with HIV who were ages 20-24 at the time of diagnosis, 76 percent had heterosexual risk (HCM). Thirteen percent were IDU, and 10 percent had undetermined risk. Less than one percent were recipients of HIV-infected blood products.

Figure 22: Males ages 20-24 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 525)

Hetero (HCFR) 3%
Undetermined 11%
Blood recipient 1%
MSM/IDU 8%
IDU 2%
MSM 75%
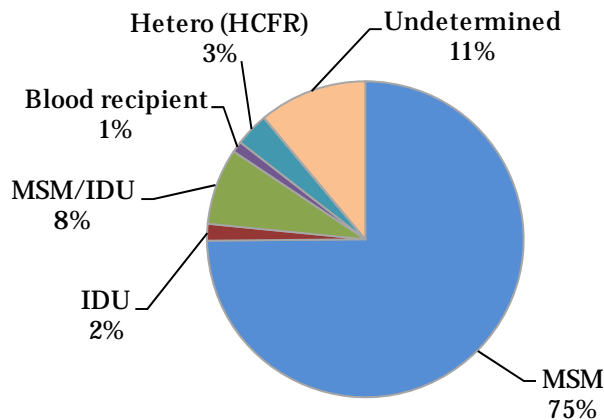
Figure 23: Females ages 20-24 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 203)
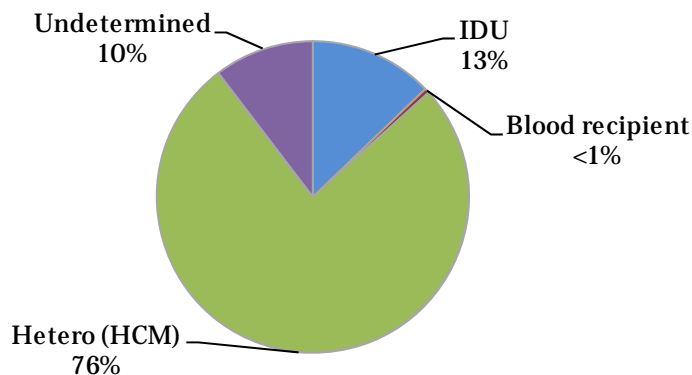
Undetermined 10%
IDU 13%
Blood recipient <1%
Hetero (HCM) 76%

2012 Profile of HIV in Out-State Michigan

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

Race/ethnicity:

Fifty-seven percent of persons currently living in Out-State Michigan who were 13-19 years old at the time of HIV diagnosis are black, 33 percent are white, five percent are Hispanic, and five percent are of other or unknown race. Conversely, the majority of persons 20-24 years old at HIV diagnosis are white (49 percent), 40 percent are black, seven percent are Hispanic, and four percent are of other or un-known race.

STDs:

STD rates are highest in teens and young adults (15-24 year olds; table 9, page 218). In persons 20-24 years, the rate of chlamydia is over five times higher and the rate of gonorrhea is nearly five times high-er than the rate among the general population. Although those ages 15-24 make up only 15 percent of the population, they represent 65 percent of gonorrhea cases and 75 percent of chlamydia cases.

Teen pregnancy:

Aside from Wayne County, which is in the Detroit Metro Area (DMA), Out-State Michigan counties have the highest rates of teen (ages 15-19) pregnancies in the state. Clare, followed by Oceana, have the second and third highest rates (69 and 68 pregnancies per 1,000 females, respectively). Lake, Genesee, and Calhoun counties also have rates above the statewide average of 63.5 pregnancies per 1,000 fe-males (data not shown in tables).

Geographic distribution:

Over three quarters (76 percent) of persons 13-24 years old at diagnosis currently living in Out-State Michigan live in high prevalence counties (see figure 3 on page 17 of the statewide chapter for high/low prevalence county classification). Teens and young adults make up 19 percent of all HIV-positive per-sons in high prevalence counties and 16 percent of cases in low prevalence counties (data not shown in tables).

Conclusions:

Teens and young adults (persons who were 13-24 years at HIV diagnosis) represent 18 percent of all prevalent HIV infection cases in Out-State Michigan). Teens are one of only two age groups who are more likely to be black than white, suggesting racial disparities in persons diagnosed at a young age (table 7). The most frequently reported risk among male teen and young adult cases is male-male sex (MSM), while the most frequently reported risk among female teen and young adult cases is heterosex-ual contact (HCM) (table 8, page 217).

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Age: 50 years and older

Overview:

As of January 2012, there were 405 persons living with HIV infection in Out-State Michigan who were 50 years and older at the time of diagnosis (table 3, page 211). They comprise eight percent of all reported HIV-positive persons, and 81 percent are male. Sixty-five percent are white, 27 percent are black, six percent are Hispanic, and one percent are other/unknown race (table 7, page 216).

Risk-males:

When examining risk, those who were in their fifties at the time of HIV diagnosis have a different risk profile than those who were ages 60 and older. Therefore, the risks of these two populations are discussed separately.

As of January 2012, there were 256 males currently living with HIV in Out-State Michigan who were diagnosed in their 50s (80 percent of all persons 50-59 years at diagnosis; table 7). Of all persons 60 and over at HIV diagnosis, 71 are male (83 percent). Figures 24 and 25 show the risk profiles of males diagnosed in their 50s and at 60 and older, respectively.

Figure 24: Males ages 50-59 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 256)

Undetermined 25%
Hetero (HCFR) 5%
Blood recipient <1%
MSM/IDU 3%
IDU 7%
MSM 59%
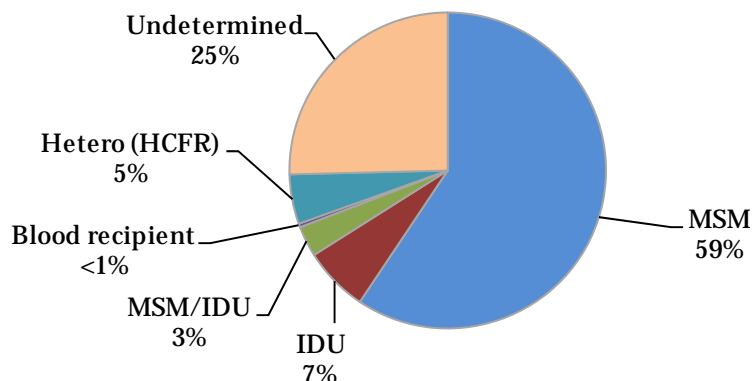
Figure 25: Males ages 60 and older at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 71)
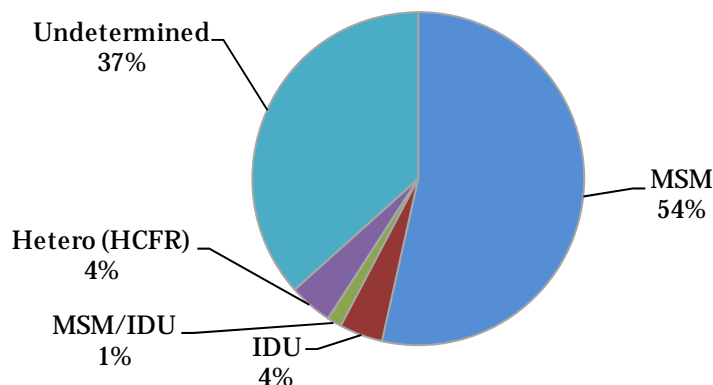
Undetermined 37%
Hetero (HCFR) 4%
MSM/IDU 1%
IDU 4%
MSM 54%

2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Age: 50 years and older

As with males in all other age groups (excluding 0-12 year olds), male-male sex (MSM) is the most common risk (including those who also inject drugs, or MSM/IDU). However, the proportion who are MSM decreases with increasing age. Both males 50-59 years old and 60 years and older at HIV diagnosis have higher proportions of undetermined risk than males diagnosed at younger ages (25 and 37 percent, respectively). Males who were in their 50s at HIV diagnosis are more likely to be injection drug users (IDU) compared to males 60 years and older (10 percent vs. 5 percent, respectively). This includes males with a dual risk of male-male sex and IDU (MSM/IDU). Five percent of 50-59 year old HIV-positive males and four percent of males 60 and older have heterosexual risk (HCFR)

Risk-females:

Overall, females who were in their 50s at HIV diagnosis have similar risks to females who were 60 years and older at diagnosis (figures 26 and 27). As with HIV-positive females in other age groups, the most common risk is heterosexual contact (HC) (68 percent and 53 percent, respectively). Seven percent of females 60 years and older at diagnosis were recipients of HIV-infected blood products (compared to three in those 50-59 years at diagnosis), and females in their 50s at diagnosis are more likely to be injection drug users (IDU) (19 percent vs. 13 percent, respectively).

Figure 26: Females ages 50-59 at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 63)
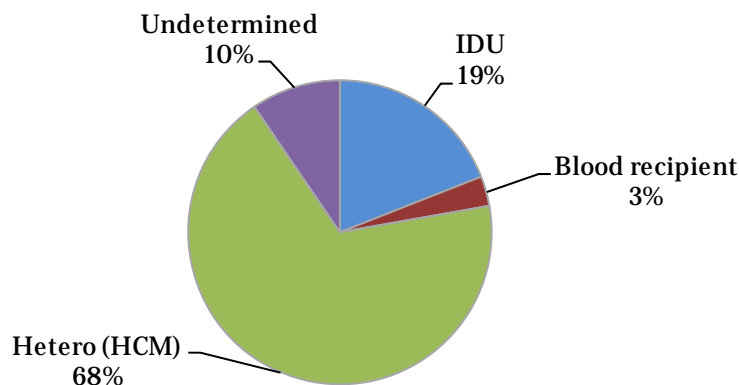
Figure 27: Females ages 60 and older at diagnosis currently living with HIV infection in Out-State Michigan, by risk transmission category (n = 15)
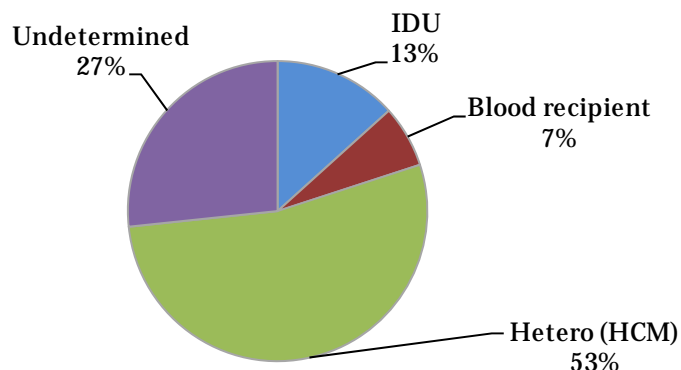
2012 Profile of HIV in Out-State Michigan

Description of the Epidemic by Age: 50 years and older

STDs:

Gonorrhea and chlamydia are epidemics largely affecting young people in Out-State Michigan, with less than one percent of chlamydia cases and not quite three percent of gonorrhea cases being over 50 years old. Of the gonorrhea cases in this age group, 68 percent are male. In contrast, 18 percent of primary and secondary syphilis cases are over the age of 50. These individuals are more likely to be male (100 percent versus 92 percent) and more likely to be white (93 percent vs. 68 percent) than other syphilis cases (age/sex/race breakdown not shown in tables).

Late diagnoses:

Of the 5,389 persons living with HIV infection in Out-State Michigan, 53 percent (2,877 cases) have progressed to stage 3 infection. Of these, 1,213 (42 percent) were diagnosed with stage 3 infection at the time of their initial HIV diagnoses (late HIV diagnoses). Persons who were in their fifties at HIV diagnosis make up seven percent (195 cases) of persons living with stage 3 infection, of whom 66 percent had late diagnoses. Those who were 60 years and older at diagnosis make up two percent of persons living with stage 3 infection (56 cases), of whom 73 percent had late diagnoses. These two age groups have the highest proportion of late diagnoses of all age groups, suggesting later or less frequent testing in this group (table 3, page 211).

Conclusions:

Although persons 50 years and older represent just eight percent of all prevalent cases, it is important to understand the specific challenges faced by older Michiganders and to ensure that they receive information and services to help protect them from infection. Their advanced age also may mean they face unique health challenges not encountered by HIV-positive persons in younger age groups.

2012 Profile of HIV in Out-State Michigan

Service Utilization of HIV-Positive Persons in Care

Table 1: Characteristics of Ryan White clients who received services in 2011 compared to all HIV infection cases living in Out-State Michigan, January 2012

Characteristic	RY clients	Cases
White	48%	56%
Black	35%	34%
Hispanic	8%	7%
Other	8%	3%
Unknown*	1%	N/A
Male	76%	79%
White male	*40%*	*48%*
Black male	*24%*	*23%*
Hispanic male	*6%*	*6%*
Other male	*6%*	*2%*
Unknown male	*1%*	*N/A*
Female	24%	21%
White female	*7%*	*8%*
Black female	*11%*	*11%*
Hispanic female	*1%*	*2%*
Other female	*2%*	*1%*
Unknown female	*<1%*	*N/A*
0-12 years[†]	<1%	1%
13-19 years[†]	1%	1%
20-24 years[†]	6%	4%
25-44 years[†]	47%	39%
45+ years[†]	46%	56%
Infants: 0-1 years[†]	<1%	0%
Children: 2-12 years[†]	<1%	1%
Youth: 13-24 years[†]	5%	5%
Women 25+ years[†]	18%	20%
Total	**100%** **(N = 3,194)**	**100%** **(N = 5,389)**

*"Unknown" included in "Other" category for surveillance.

[†]"Years" within this table refers to current age, not age at diagnosis.

Overview:

The Uniform Reporting System (URS) is a statewide client-level data standard designed to uniformly document the quantity and types of services provided by agencies receiving Ryan White funds and to describe the populations receiving the services. A wide range of clinical and supportive services are reported in the URS, including outpatient medical care, dental care, mental health services, case management, and medication assistance through the AIDS Drug Assistance Program (ADAP). URS data may include HIV services that are not directly funded by Ryan White as long as the reported service is eligible to be funded. However, most services reported in the URS are at least partially funded by Ryan White resources.

There are several client-level data systems in Michigan that collect URS data. Demographic and service data from all these systems were extracted into a standard format, and these data were then combined and unduplicated to produce a URS dataset for analysis. The Out-State Michigan dataset is a subset of the unduplicated statewide dataset from all Ryan White funded programs, including ADAP. Clients are included in this dataset if they reside in any of the counties outside of the Detroit Metropolitan Area (DMA) and received at least one service from a Ryan White funded provider between January 1, 2011 and December 31, 2011.

Comparing services to cases:

Table 1 compares the demographic distribution of the 3,194 HIV-positive residents of Out-State Michigan who were served by Ryan White-funded programs in 2011 to that of the 5,389 persons known to be living with HIV in the same area at the end of 2011. The comparison shows that persons receiving Ryan White services were similar to the reported population, but they were less likely to be white and more likely to be of "other" race/ethnicity than the prevalent cases. They were also more likely to be between 25 and 44 years old and less likely to be 45 years and older.

2012 Profile of HIV in Out-State Michigan

Service Utilization of HIV-Positive Persons in Care

Core services:

Table 2 gives additional details about core services delivered to HIV-positive Out-State Michigan residents by Ryan White programs in 2011, which include outpatient medical care, oral health care, mental health care, medical case management, and medication assistance. The service counts in the table are visits, not units of time. Only one "visit" per day is counted for any service category in this URS summary data.

Outpatient medical care services in this table are for outpatient ambulatory medical care visits, which range from a complete physical with a physician to a brief or repeat visit with a physician or nurse practitioner. They include adherence counseling with a medical practitioner. The annual average of 5.7 visits per client, with a median of four, is consistent with HIV care standards that recommend monitoring of health status every three to four months. The total number of Ryan White clients who lived in Out-State Michigan and received outpatient medical care in 2011 was 54 percent (table 2). These clients received services within the Ryan White CAREWare Network.

Table 2: Core services received by Ryan White clients in Out-State Michigan, 2011 (N=3,194)

	Outpatient medical care	Oral health care	Mental health care	Medical case management	ADAP (medication assistance)
No. of unduplicated clients served[*]	1,724	265	387	1,572	1,373
Percent receiving service	54%	8%	12%	49%	43%
Total days of service[†]	9,788	1,276	1,467	22,265	38,252
Average no. of visits per client	5.7	3.1	3.5	13.5	35.6
Median no. of visits per client	4	3	2	9	29
Range of visits per client	1-47	1-13	1-26	1-109	231

[*]Clients are unduplicated for a particular service across all providers but may be counted in more than one service category.
[†]The Drug Assistance service unit is a prescription filled rather than a visit or day of service.

Dental care services reported in the URS are primarily provided through the statewide Michigan Dental Program, administered by the Division of Health, Wellness and Disease Control of MDCH. Dental services for clients may be extensive and require multiple visits or may simply be for biannual or more frequent prophylaxis. The annual average of 3.1 visits per client is consistent with an initial exam to plan the care needed and one or more treatment visits following approval of the care plan. Oral health care was provided to eight percent of Out-State clients in 2011 (table 2).

Mental health services encompass mental health assessments, individual counseling, and group sessions for HIV-positive clients with a mental health diagnosis and must be conducted by a licensed mental health professional. Mental health services do not include substance abuse treatment. In 2011, 12 percent of Out-State clients received mental health services at an average of 3.5 visits per year (table 2).

2012 Profile of HIV in Out-State Michigan

Service Utilization of HIV-Positive Persons in Care

Data from Uniform Reporting System (URS)

Medical case management visits include intake, assessments, care planning, medication adherence counseling, and monitoring of medical status and may be conducted in person, by phone, or by mail. The goal is to link HIV-positive clients to health care services and assist them with remaining in care. In 2011, 49 percent of Out-State clients received medical case management services at an average of 13.5 visits each (table 2).

The AIDS Drug Assistance Program (ADAP), administered by the Division of Health, Wellness and Disease Control of MDCH, pays for medications dispensed to eligible HIV-positive clients throughout Michigan. ADAP covers all HIV medications and many other medications, in addition to CD4 and viral load tests. The unit of service reported in table 2 for ADAP is each prescription filled rather than a day of service. In 2011, 43 percent of Out-State clients received ADAP services at an average of 35.6 prescriptions filled per year (table 2).

2012 Profile of HIV in Out-State Michigan

Sexually Transmitted Diseases

Data from Michigan Disease Surveillance System (MDSS)

Overview:

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 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.

Gonorrhea and chlamydia:

During 2011 alone, there were over 23,000 cases of chlamydia and nearly 4,000 cases of gonorrhea reported in Out-State Michigan (table 9, page 218). For both gonorrhea and chlamydia, the highest rates of infection are among persons ages 20-24. This age group comprises seven percent of the Out-State population but accounted for 35 percent of gonorrhea and 39 percent of chlamydia cases. The rates of chlamydia and gonorrhea among black persons were much higher than among white persons. Even though 23 percent of gonorrhea cases and 28 percent of chlamydia cases were missing race information, the rates among black among remain higher even if all unknown cases were white. The rate for gonorrhea among black persons is 25 times the rate among white persons, and the chlamydia rate is 11 times the rate among white persons. Sixty-two percent of gonorrhea cases were female and approximately 74 percent of reported chlamydia cases were female. This is because chlamydia screening targets females.

Syphilis:

In 2011, Out-State Michigan contributed 29 percent of primary and secondary syphilis cases statewide. Since 2006, primary and secondary syphilis cases in Out-State Michigan have increased substantially (from 35 in 2006 to 79 to 2011). Twenty-five percent of Out-State Michigan primary and secondary cases were under the age of 25. Thirty-eight percent of cases were 25-39, and 34 percent were over the age of 40, representing an older at-risk population than gonorrhea or chlamydia (table 9). Syphilis cases reported in 2011 were more likely to be white (68 percent) and male (92 percent); however the rate of syphilis was still higher among black persons.

Sexual orientation:

Nationwide, there have been increases in STD cases among self-identified men who have sex with men (MSM). Michigan collects data on sexual orientation for syphilis cases but not all gonorrhea or chlamydia cases. Of male primary and secondary syphilis cases in 2011, 75 percent of males were MSM. The male to female syphilis ratio in 2009 in Out-State Michigan was 4.5:1, but it increased to 12:1 in 2011. Forty-one percent of males with syphilis are co-infected with HIV (data not shown in tables).

2012 Profile of HIV in Out-State Michigan

Focus on High-Prevalence Counties: Washtenaw

Overview and risk:

Washtenaw County has the highest HIV infection prevalence rate in Out-State Michigan at 181 cases per 100,000 population. This is an increase from 157 cases per 100,000 in 2010, when it had the third highest rate in Out-State Michigan.Statewide, this is the second highest rate after the City of Detroit (778 cases per 100,000). An estimated 820 persons are living with HIV in Washtenaw County as of January 1, 2012 (table 4, pages 212-213).

Of the 623 persons reported to be living with HIV in Washtenaw County, 64 percent are men who have sex with men (MSM), including MSM who also inject drugs (MSM/IDU). This is compared to 53 percent statewide. Twelve percent of persons living with HIV in Washtenaw County are IDU (including MSM/IDU) compared to 14 percent statewide. However, a higher proportion of females in Washtenaw County have a risk of IDU compared to the proportion statewide (21 percent vs. 18 percent, respectively). Fifteen percent of those living with HIV in Washtenaw County have heterosexual risk (12 percent female, 3 percent male) compared to 17 percent statewide (14 percent female, 4 percent male; see table 10, page 219 for Washtenaw County data and table 3, page 101 of the statewide chapter for statewide data). MSM therefore make up a greater proportion of the risk among HIV-positive persons in Washtenaw County than they do statewide, and IDU and heterosexual contact are less prominent.

Race/ethnicity and sex:

Persons living with HIV in Washtenaw County are 49 percent white and 42 percent black (table 10). However, the rate among black persons is almost five times higher than the rate among white persons (605 cases per 100,000 vs. 124 cases per 100,000, respectively; data not shown in tables). Statewide, a larger proportion of cases are black than are white (56 percent vs. 36 percent, respectively). The rate among black persons for the entire state is 8.5 times the rate among white persons (642 per 100,000 vs. 75 per 100,000, respectively; table 3 of statewide chapter). Six percent of persons living with HIV in Washtenaw County are Hispanic compared to five percent statewide (table 10). The prevalence rate among Hispanics in Washtenaw is twice that of white persons (253 vs. 124 per 100,000, respectively; data not shown in tables). The statewide rate among Hispanics is comparable at 207 cases per 100,000 population (table 3 of statewide chapter).

Of the 623 persons living with HIV in Washtenaw County, 82 percent are male and 18 percent are female (table 10). This is a slightly higher proportion of males when compared to the entire state (78 percent male and 22 percent female; table 3 of statewide chapter).

Foreign-born persons:

Statewide, there are 880 persons living with HIV who were born in a country other than the US (figure 87, page 90). Of these, 56 persons (6 percent) are currently living in Washtenaw County. Forty-one percent were born in Africa, the same as the statewide distribution. Thirty-nine percent were born in South and Central America (including Mexico), compared to 35 percent statewide. Nine percent of the foreign-born individuals living with HIV in Washtenaw County were born in Asia, compared to 11 percent statewide. Eleven percent were born in countries outside of Africa, South and Central America, or Asia compared to 13 percent statewide (see figure 87 on page 90 for statewide foreign-born distribution; Washtenaw County data not shown in tables).

2012 Profile of HIV in Out-State Michigan

Focus on High-Prevalence Counties: Kent

Overview and risk:

Kent County has the second highest HIV infection prevalence rate in Out-State Michigan at 168 cases per 100,000 population. Statewide, this is the third highest rate. Kent has the highest estimated number of cases in Out-State Michigan at 1,330 persons as of January 1, 2012 (table 4, pages 212-213).

Of the 1,011 persons reported to be living with HIV in Kent County, 57 percent are men who have sex with men (MSM), including MSM who also inject drugs (MSM/IDU). This is compared to 53 percent statewide. The proportion who are MSM differs by race, however, with 89 percent of white males reporting MSM or MSM/IDU compared to just 52 percent among black males. Twelve percent of persons living with HIV in Kent County are IDU (including MSM/IDU) compared to 14 percent statewide. Twenty-two percent of those living with HIV in Kent County have heterosexual risk (18 percent female, 4 percent male) compared to 17 percent statewide (14 percent female, 4 percent male; see table 11, page 220 for Kent County data and table 3, page 101 of the statewide chapter for statewide data). Heterosexuals and MSM therefore make up a greater proportion of the risk among HIV-positive persons in Kent County than they do statewide, and IDU are less prominent.

Race/ethnicity and sex:

Persons living with HIV in Kent County are 48 percent white and 36 percent black (table 11). However, the rate among black persons is six times higher than the rate among white persons (644 cases per 100,000 vs. 106 cases per 100,000, respectively; data not shown in tables). Statewide, a larger proportion of cases are black than are white (56 percent vs. 36 percent, respectively). The rate among black persons for the entire state is 8.5 times the rate among white persons (642 per 100,000 vs. 75 per 100,000, respectively; table 3 of statewide chapter). Thirteen percent of persons living with HIV in Kent County are Hispanic compared to five percent statewide (table 11). The prevalence rate among Hispanics in Kent is over twice that of white persons (228 vs. 107 per 100,000, respectively; data not shown in tables). The statewide rate among Hispanics is comparable at 207 cases per 100,000 population (table 3 of statewide chapter).

Of the 1,011 persons living with HIV in Kent County, 77 percent are male and 23 percent are female (table 11). This is similar to the distribution statewide (78 percent male and 22 percent female; table 3 of statewide chapter).

Foreign-born persons:

Statewide, there are 880 persons living with HIV who were born in a country other than the US (figure 87, page 90). Of these, 191 persons (22 percent) are currently living in Kent County. This is the highest proportion of foreign-born persons in any county of the state, including the City of Detroit. Forty-nine percent were born in Africa compared to 41 percent of the foreign-born persons statewide. Forty percent were born in South and Central America (including Mexico), compared to 35 percent statewide. Three percent of the foreign-born individuals living with HIV in Kent County were born in Asia compared to 11 percent statewide. Eight percent were born in countries outside of Africa, South and Central America, or Asia compared to 13 percent statewide (see figure 87 on page 90 for statewide foreign-born distribution; Kent County data not shown in tables).

2012 Profile of HIV in Out-State Michigan

Focus on High-Prevalence Counties: Ingham

Overview and risk:

Ingham County has the third highest HIV infection prevalence rate in Out-State Michigan at 163 cases per 100,000 population. Statewide, this is the fourth highest rate. An estimated 600 persons were living with HIV in Ingham county as of January 1, 2012 (table 4, pages 212-213).

Of the 458 persons reported to be living with HIV in Ingham County, 60 percent are men who have sex with men (MSM), including MSM who also inject drugs (MSM/IDU). This is compared to 53 percent statewide. Ingham County has a higher proportion of MSM/IDU cases than statewide (8 percent vs. 4 percent, respectively). Fifteen percent of persons living with HIV in Ingham County are IDU (including MSM/IDU) compared to 14 percent statewide. Eighteen percent have heterosexual risk (16 percent female, 3 percent male) compared to 17 percent statewide (14 percent female, 4 percent male; see table 12, page 221 for Ingham County data and table 3, page 101 of the statewide chapter for statewide data). MSM, particularly MSM/IDU therefore make up a greater proportion of the risk among HIV-positive persons in Ingham County than they do statewide.

Race/ethnicity and sex:

Persons living with HIV in Ingham County are 53 percent white and 35 percent black (table 12). However, the rate among black persons is over four times higher than the rate among white persons (504 cases per 100,000 vs. 119 cases per 100,000, respectively; data not shown in tables). Statewide, a larger proportion of cases are black than are white (56 percent vs. 36 percent, respectively). The rate among black persons for the entire state is 8.5 times the rate among white persons (642 per 100,000 vs. 75 per 100,000, respectively; table 3 of statewide chapter). Seven percent of persons living with HIV in Ingham County are Hispanic compared to five percent statewide (table 12). The prevalence rate among Hispanics in Ingham is 151 cases per 100,000 (data not shown in tables). This is lower than the statewide rate among Hispanics of 207 cases per 100,000 population (table 3 of statewide chapter).

Of the 458 persons living with HIV in Ingham County, 79 percent are male and 21 percent are female (table 12). This is similar to the distribution statewide (78 percent male and 22 percent female; table 3 of statewide chapter).

Foreign-born persons:

Statewide, there are 880 persons living with HIV who were born in a country other than the US (figure 87, page 90). Of these, 48 persons (5 percent) are currently living in Ingham County. Fifty-eight percent of the foreign-born persons living in Ingham County were born in Africa compared to 41 percent of the foreign-born persons statewide. Fifteen percent were born in South and Central America (including Mexico), compared to 35 percent statewide. Another 15 percent of the foreign-born individuals living with HIV in Ingham County were born in Asia compared to 11 percent statewide. Thirteen percent were born in countries outside of Africa, South and Central America, or Asia compared to 13 percent statewide (see figure 87 on page 90 for statewide foreign-born distribution; Ingham County data not shown in tables).

2012 Profile of HIV in Out-State Michigan

Focus on High-Prevalence Counties: Berrien

Overview and risk:

Berrien County has the fourth highest HIV infection prevalence rate in Out-State Michigan at 161 cases per 100,000 population. Statewide, this is the fifth highest rate. An estimated 330 persons were living with HIV in Berrien county as of January 1, 2012 (table 4, pages 212-213).

Of the 253 persons reported to be living with HIV in Berrien County, 40 percent are men who have sex with men (MSM), including MSM who also inject drugs (MSM/IDU). This is lower than the statewide prevalence of 53 percent and is largely attributable to the differing proportions of MSM and MSM/IDU by race. While 86 percent of white males are MSM or MSM/IDU, only 44 percent of black males and 40 percent of Hispanic males report MSM or MSM/IDU. Black and Hispanic males have higher pro-portions of undetermined risk (32 percent and 47 percent, respectively). Twelve percent of persons liv-ing with HIV in Berrien County are IDU (including MSM/IDU) compared to 14 percent statewide. Twenty-eight percent of those living with HIV in Berrien County have heterosexual risk (22 percent female, 7 percent male) compared to 17 percent statewide (14 percent female, 4 percent male; see table 13, page 222 for Berrien County data and table 3, page 101 of the statewide chapter for statewide data). Heterosexuals therefore make up a greater proportion of the risk among HIV-positive persons in Ber-rien County than they do statewide, and MSM and MSM/IDU are less prominent.

Race/ethnicity and sex:

Persons living with HIV in Berrien County are 34 percent white and 58 percent black (table 13). The rate among black persons is almost nine times higher than the rate among white persons (623 cases per 100,000 vs. 71 cases per 100,000, respectively; data not shown in tables). This racial distribution is more similar to that found statewide than to other Out-State counties (56 percent black and 36 percent white statewide). The rate among black persons for the entire state is 8.5 times the rate among white persons (642 per 100,000 vs. 75 per 100,000, respectively; table 3 of statewide chapter). Seven percent of persons living with HIV in Berrien County are Hispanic compared to five percent statewide (table 13). The prevalence rate among Hispanics in Berrien is over three times that of white persons (241 vs. 71 per 100,000, respectively; data not shown in tables). The statewide rate among Hispanics is slightly lower at 207 cases per 100,000 population (table 3 of statewide chapter).

Of the 253 persons living with HIV in Berrien County, 68 percent are male and 32 percent are female (table 13). This is a larger proportion of females than is seen statewide (78 percent male and 22 percent female; table 3 of statewide chapter).

Foreign-born persons:

Statewide, there are 880 persons living with HIV who were born in a country other than the US (figure 87, page 90). Of these, 59 persons (7 percent) are currently living in Berrien County. Seventy-five per-cent were born in Africa compared to 41 percent of the foreign-born persons statewide. Seventeen per-cent were born in South and Central America (including Mexico), compared to 35 percent statewide. None of the foreign-born individuals living with HIV in Berrien County were born in Asia compared to 11 percent statewide. Eight percent were born in countries outside of Africa, South and Central Ameri-ca, or Asia compared to 13 percent statewide (see figure 87 on page 90 for statewide foreign-born dis-tribution; Berrien County data not shown in tables).

Table 3: Demographic information on HIV infection cases currently living in Out-State Michigan, 2012

REPORTED HIV INFECTION PREVALENCE

	EST PREV*	HIV, non-stage 3		HIV, stage 3 (AIDS)		TOTAL			Late HIV diagnosis		CENSUS 2010¶	
	Num	Num	Percent	Num	Percent	Num	Percent	Rate per 100,000	Num	Percent of stage 3 cases	Num	Percent
RACE/ ETHNICITY §												
White	3,930	1,352	54%	1,640	57%	2,992	56%	64	718	44%	4,685,699	83%
Black	2,400	903	36%	921	32%	1,824	34%	446	345	37%	408,699	7%
Hispanic	530	173	7%	231	8%	404	7%	151	118	51%	267,086	5%
Asian/NH/OPI	60	24	1%	22	1%	46	1%	47	9	41%	97,933	2%
AI/AN	30	15	1%	9	<1%	24	<1%	57	3	33%	42,415	1%
Multi/other/unk	130	45	2%	54	2%	99	2%	N/A	20	37%	114,504	2%
SEX & RACE												
Male	5,590	1,886	75%	2,369	82%	4,255	79%	153	1,040	44%	2,781,585	50%
White male	*3,390*	*1,126*	*45%*	*1,451*	*50%*	*2,577*	*48%*	*111*	*654*	*45%*	*2,313,461*	*41%*
Black male	*1,610*	*573*	*23%*	*654*	*23%*	*1,227*	*23%*	*591*	*252*	*39%*	*207,582*	*4%*
Hispanic male	*420*	*128*	*5%*	*195*	*7%*	*323*	*6%*	*237*	*107*	*55%*	*136,338*	*2%*
Other male	*170*	*59*	*2%*	*69*	*2%*	*128*	*2%*	*103*	*27*	*39%*	*124,204*	*2%*
Female	1,490	626	25%	508	18%	1,134	21%	40	173	34%	2,834,751	50%
White female	*550*	*226*	*9%*	*189*	*7%*	*415*	*8%*	*17*	*64*	*34%*	*2,372,238*	*42%*
Black female	*780*	*330*	*13%*	*267*	*9%*	*597*	*11%*	*297*	*93*	*35%*	*201,117*	*4%*
Hispanic female	*110*	*45*	*2%*	*36*	*1%*	*81*	*2%*	*62*	*11*	*31%*	*130,748*	*2%*
Other female	*50*	*25*	*1%*	*16*	*1%*	*41*	*1%*	*31*	*5*	*31%*	*130,648*	*2%*
RISK†												
Male-male sex (MSM)	3,670	1,249	50%	1,544	54%	2,793	52%	--	655	42%	--	--
Injection drug use (IDU)	520	165	7%	227	8%	392	7%	--	79	35%	--	--
MSM/IDU	370	133	5%	145	5%	278	5%	--	40	28%	--	--
Blood products	60	15	1%	29	1%	44	1%	--	5	17%	--	--
Heterosexual contact (HC)	1,280	501	20%	474	16%	975	18%	--	175	37%	--	--
HCRF (male)	*250*	*82*	*3%*	*112*	*4%*	*194*	*4%*	*--*	*51*	*46%*	*--*	*--*
HCM (female)	*1,030*	*419*	*17%*	*362*	*13%*	*781*	*14%*	*--*	*124*	*34%*	*--*	*--*
Perinatal	80	42	2%	20	1%	62	1%	--	9	45%	--	--
Undetermined	1,110	407	16%	438	15%	845	16%	--	250	57%	--	--
AGE AT HIV DIAGNOSIS												
0 - 12 years	110	56	2%	26	1%	82	2%	--	9	35%	--	--
13 - 19 years	310	147	6%	91	3%	238	4%	--	12	13%	--	--
20 - 24 years	960	389	15%	339	12%	728	14%	--	60	18%	--	--
25 - 29 years	1,280	466	19%	510	18%	976	18%	--	150	29%	--	--
30 - 39 years	2,530	836	33%	1,086	38%	1,922	36%	--	467	43%	--	--
40 - 49 years	1,360	464	18%	574	20%	1,038	19%	--	346	60%	--	--
50 - 59 years	420	124	5%	195	7%	319	6%	--	128	66%	--	--
60 years and over	110	30	1%	56	2%	86	2%	--	41	73%	--	--
Unspecified	10	0	0%	0	0%	0	0%	--	--	--	--	--
Out-State Total	**7,080**	**2,512**	**100%**	**2,877**	**100%**	**5,389**	**100%**	**96**	**1,213**	**42%**	**5,616,336**	**100%**

*See pages iv-v fo r descriptions of prevalence estimate calculations. NOTE: prevalence estimates throughout this document are based on the number of people currently living with HIV in Michigan as of January 2012. Prevalence estimates in other MDCH documents are based on the number of people living with HIV who were diagnosed in MI.

† See page vi of the Forward and Appendix 2 for risk category groupings. Risk categories used in Michigan are redefined as of January 2012. NOTE: Heterosexual contact for males includes only males whose sexual partners are known to be HIV infected or at high risk for HIV (HCFR). Heterosexual contact for females includes all females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (HCM).

§ In this report, persons described as white, black, Asian/Native Hawaiian or Other Pacific Islander (Asian/NH/OPI), or American Indian/Alaskan Native (AI/AN) are all non-Hispanic; persons described as Hispanic may be of any race.

¶ Rates are not reported for risk categories and age at diagnosis because no reliable denominator data exist for these groups.

Table 4: HIV infection cases currently living in Out-State Michigan by local health department jurisdiction, 2012

REPORTED HIV INFECTION PREVALENCE

CURRENT RESIDENCE (by LHD jurisdiction)	EST PREV* Num	HIV, non-stage 3 Num	Percent	HIV, stage 3 (AIDS) Num	Percent	TOTAL Num	Percent	Rate per 100,000	Late HIV diagnosis Num	Percent of stage 3 cases	CENSUS 2010 Num	Percent
Allegan Co.	140	38	2%	72	3%	110	2%	99	27	38%	111,408	2%
Barry/Eaton Co.	160	53	2%	69	2%	122	2%	73	21	30%	166,932	3%
Barry Co.	30	6	<1%	18	1%	24	<1%	41	10	56%	59,173	1%
Eaton Co.	130	47	2%	51	2%	98	2%	91	11	22%	107,759	2%
Bay Co.	100	36	1%	39	1%	75	1%	70	15	38%	107,771	2%
Benzie/Leelanau	20	6	<1%	10	<1%	16	<1%	41	5	50%	39,233	1%
Benzie Co.	10	3	<1%	4	<1%	7	<1%	40	1	25%	17,525	<1%
Leelanau Co.	10	3	<1%	6	<1%	9	<1%	41	4	67%	21,708	<1%
Berrien Co.	330	105	4%	148	5%	253	5%	161	61	41%	156,813	3%
Branch/Hillsdale/St. Joseph	70	23	1%	31	1%	54	1%	35	15	48%	153,231	3%
Branch Co.	20	8	<1%	4	<1%	12	<1%	27	2	50%	45,248	1%
Hillsdale Co.	10	2	<1%	7	<1%	9	<1%	19	4	57%	46,688	1%
St. Joseph Co.	40	13	1%	20	1%	33	1%	54	9	45%	61,295	1%
Calhoun Co.	220	80	3%	84	3%	164	3%	120	21	25%	136,146	2%
Cass-Van Buren	140	51	2%	51	2%	102	2%	79	19	37%	128,551	2%
Cass Co.	40	15	1%	18	1%	33	1%	63	7	39%	52,293	1%
Van Buren Co.	90	36	1%	33	1%	69	1%	90	12	36%	76,258	1%
Central Michigan District	150	44	2%	68	2%	112	2%	59	30	44%	190,805	3%
Arenac Co.	10	3	<1%	4	<1%	7	<1%	44	2	50%	15,899	<1%
Clare Co.	40	10	<1%	17	1%	27	1%	87	7	41%	30,926	1%
Gladwin Co.	10	2	<1%	2	<1%	4	<1%	16	2	100%	25,692	<1%
Isabella Co.	70	22	1%	28	1%	50	1%	71	10	36%	70,311	1%
Osceola Co.	10	2	<1%	5	<1%	7	<1%	30	2	40%	23,528	<1%
Roscommon Co.	20	5	<1%	12	<1%	17	<1%	70	7	58%	24,449	<1%
Chippewa Co.	20	11	<1%	8	<1%	19	<1%	49	3	38%	38,520	1%
Delta-Menominee	30	14	1%	9	<1%	23	<1%	38	3	33%	61,098	1%
Delta Co.	20	10	<1%	8	<1%	18	<1%	49	2	25%	37,069	1%
Menominee Co.	10	4	<1%	1	<1%	5	<1%	21	1	100%	24,029	<1%
Dickinson-Iron	10	2	<1%	6	<1%	8	<1%	21	4	67%	37,985	1%
Dickson Co.	10	1	<1%	5	<1%	6	<1%	23	3	60%	26168	<1%
Iron Co.	10	1	<1%	1	<1%	2	<1%	17	1	100%	11,817	<1%
District #2	20	8	<1%	6	<1%	14	<1%	21	2	33%	67,168	1%
Alcona Co.	10	0	0%	1	<1%	1	<1%	9	1	100%	10,942	<1%
Iosco Co.	10	5	<1%	2	<1%	7	<1%	27	0	0%	25,887	<1%
Ogemaw Co.	10	1	<1%	2	<1%	3	<1%	14	1	50%	21,699	<1%
Oscoda Co.	10	2	<1%	1	<1%	3	<1%	35	0	0%	8,640	<1%
District #10	140	46	2%	58	2%	104	2%	40	26	45%	261,616	5%
Crawford Co.	10	3	<1%	4	<1%	7	<1%	50	3	75%	14,074	<1%
Kalkaska Co.	10	3	<1%	0	0%	3	<1%	17	--	--	17,153	<1%
Lake Co.	20	5	<1%	7	<1%	12	<1%	104	4	57%	11,539	<1%
Manistee Co.	10	4	<1%	7	<1%	11	<1%	44	3	43%	24,733	<1%
Mason Co.	20	6	<1%	10	<1%	16	<1%	56	6	60%	28,705	1%
Mecosta Co.	20	7	<1%	8	<1%	15	<1%	35	4	50%	42,798	1%
Missaukee Co.	10	4	<1%	3	<1%	7	<1%	47	2	67%	14,849	<1%
Newaygo Co.	20	5	<1%	9	<1%	14	<1%	29	1	11%	48,460	1%
Oceana Co.	10	5	<1%	2	<1%	7	<1%	26	1	50%	26,570	<1%
Wexford Co.	20	4	<1%	8	<1%	12	<1%	37	2	25%	32,735	1%

Table 4: HIV infection cases currently living in Out-State Michigan by local health department jurisdiction, 2012

REPORTED HIV INFECTION PREVALENCE

CURRENT RESIDENCE (by LHD Jurisdiction)	EST PREV* Num	HIV, non-stage 3 Num	Percent	HIV, stage 3 (AIDS) Num	Percent	TOTAL Num	Percent	Rate per 100,000	Late HIV diagnosis Num	Percent of stage 3 cases	CENSUS 2010 Num	Percent
District #4	30	5	<1%	20	1%	25	<1%	32	7	35%	78,891	1%
Alpena Co.	10	1	<1%	9	<1%	10	<1%	34	2	22%	29,598	1%
Cheboygan Co.	10	4	<1%	6	<1%	10	<1%	38	1	17%	26,152	<1%
Montmorency Co.	10	0	0%	3	<1%	3	<1%	31	3	100%	9,765	<1%
Presque Isle Co.	10	0	0%	2	<1%	2	<1%	15	1	50%	13,376	<1%
Genesee Co.	720	261	10%	286	10%	547	10%	128	113	40%	425,790	8%
Grand Traverse Co.	100	35	1%	39	1%	74	1%	85	20	51%	86,986	2%
Huron Co.	10	3	<1%	2	<1%	5	<1%	15	1	50%	33,118	1%
Ingham Co.	600	227	9%	231	8%	458	8%	163	95	41%	280,895	5%
Ionia Co.	50	21	1%	18	1%	39	1%	61	7	39%	63,905	1%
Jackson Co.	230	82	3%	96	3%	178	3%	111	35	36%	160,248	3%
Kalamazoo Co.	430	161	6%	169	6%	330	6%	132	57	34%	250,331	4%
Kent Co.	1,330	452	18%	559	19%	1,011	19%	168	250	45%	602,622	11%
Lenawee Co.	90	35	1%	30	1%	65	1%	65	16	53%	99,892	2%
Livingston Co.	90	28	1%	39	1%	67	1%	37	17	44%	180,967	3%
LMAS District	20	6	<1%	6	0%	12	<1%	33	0	0%	35,830	1%
Alger Co.	10	1	<1%	4	<1%	5	<1%	52	0	0%	9,601	<1%
Luce Co.	10	1	<1%	1	<1%	2	<1%	30	0	0%	6,631	<1%
Mackinac Co.	10	3	<1%	1	<1%	4	<1%	36	0	0%	11,113	<1%
Schoolcraft Co.	10	1	<1%	0	0%	1	<1%	12	--	--	8,485	<1%
Marquette Co.	50	11	<1%	24	1%	35	1%	52	14	58%	67,077	1%
Mid-Michigan District	130	45	2%	51	2%	96	2%	53	25	49%	181,200	3%
Clinton Co.	70	26	1%	29	1%	55	1%	73	13	45%	75,382	1%
Gratiot Co.	20	10	<1%	9	<1%	19	<1%	45	5	56%	42,476	1%
Montcalm Co.	30	9	<1%	13	<1%	22	<1%	35	7	54%	63,342	1%
Midland Co.	30	12	<1%	14	<1%	26	<1%	31	9	64%	83,629	1%
Muskegon Co.	200	79	3%	72	3%	151	3%	88	34	47%	172,188	3%
Northwest Michigan Dist.	60	19	1%	28	1%	47	1%	44	15	54%	106,387	2%
Antrim Co.	10	6	<1%	5	<1%	11	<1%	47	3	60%	23,580	<1%
Charlevoix Co.	10	4	<1%	7	<1%	11	<1%	42	3	43%	25,949	<1%
Emmet Co.	20	5	<1%	7	<1%	12	<1%	37	4	57%	32,694	1%
Otsego Co.	20	4	<1%	9	<1%	13	<1%	54	5	56%	24,164	<1%
Ottawa Co.	140	45	2%	62	2%	107	2%	41	34	55%	263,801	5%
Saginaw Co.	320	119	5%	121	4%	240	4%	120	47	39%	200,169	4%
Sanilac Co.	20	10	<1%	8	<1%	18	<1%	42	6	75%	43,114	1%
Shiawassee Co.	40	11	<1%	16	1%	27	1%	38	9	56%	70,648	1%
Tuscola Co.	10	5	<1%	4	<1%	9	<1%	16	3	75%	55,729	1%
Washtenaw Co.	820	313	12%	310	11%	623	12%	181	139	45%	344,791	6%
Western Upper Pen. Dist.	30	10	<1%	13	<1%	23	<1%	32	8	62%	70,851	1%
Baraga Co.	10	1	<1%	4	<1%	5	<1%	56	3	75%	8,860	<1%
Gogebic Co.	10	2	<1%	2	<1%	4	<1%	24	1	50%	16,427	<1%
Houghton Co.	10	7	<1%	4	<1%	11	<1%	30	2	50%	36,628	1%
Keweenaw Co.	10	0	0%	0	0%	0	0%	0	--	--	2,156	<1%
Ontonagon Co.	10	0	0%	3	<1%	3	<1%	44	2	67%	6,780	<1%
Out-State Total	7,080	2,512	100%	2,877	100%	5,389	100%	96	1,213	42%	5,616,336	100%

TABLE 5. Risk transmission and exposure categories for HIV infection cases currently living in Out-State Michigan by sex, 2012

REPORTED HIV INFECTION PREVALENCE

	Male		Female		Overall	
	Num	Percent	Num	Percent	Num	Percent
RISK TRANSMISSION CATEGORIES (CDC Hierarchy) [*§]						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-male sex (MSM)	2,793	66%	N/A	--	2,793	52%
Injection drug use (IDU)	226	5%	166	15%	392	7%
MSM/IDU	278	7%	N/A	--	278	5%
Blood products	38	1%	6	1%	44	1%
Heterosexual contact (HC)	194	5%	781	69%	975	18%
HCFR (male)	*194*	*5%*	*N/A*	*--*	*194*	*4%*
HCM (female)	*N/A*	*--*	*781*	*69%*	*781*	*14%*
Perinatal	33	1%	29	3%	62	1%
Undetermined	693	16%	152	13%	845	16%
EXPOSURE CATEGORIES [*†]						
(Mutually Exclusive: one case is represented in ONLY one category)						
Male-male sex only	1,885	44%	N/A	--	1,885	35%
MSM & HC	885	21%	N/A	--	885	16%
MSM & IDU	143	3%	N/A	--	143	3%
MSM & blood products	12	<1%	N/A	--	12	<1%
MSM & HC & IDU	130	3%	N/A	--	130	2%
MSM & HC & blood products	11	<1%	N/A	--	11	<1%
MSM & IDU & blood products	1	<1%	N/A	--	1	<1%
MSM & HC & IDU & blood products	4	<1%	N/A	--	4	<1%
Heterosexual contact only	648	15%	863	76%	1,511	28%
HC & IDU	179	4%	151	13%	330	6%
HC & blood products	26	1%	17	1%	43	1%
HC & IDU & blood products	6	<1%	4	<1%	10	<1%
Injection drug use only	40	1%	11	1%	51	1%
IDU & blood products	1	<1%	0	0%	1	<1%
Perinatal exposure	33	1%	29	3%	62	1%
Exposure to blood products only	19	<1%	1	<1%	20	<1%
Undetermined	232	5%	58	5%	290	5%
TOTAL	**4,255**	**100%**	**1,134**	**100%**	**5,389**	**100%**
SUMMARIZED EXPOSURE CATEGORIES [¥]						
(NOT Mutually Exclusive: one case may be represented in multiple categories)						
Any MSM	3,071	72%	N/A	--	3,071	57%
Behaviorally bisexual men	1,030	24%	N/A	--	1,030	19%
Any heterosexual contact	1,889	44%	1,035	91%	2,924	54%
Any IDU	504	12%	166	15%	670	12%

*See page ii for descriptions of risk transmission and exposure categories.

[§] Risk transmission categories are grouped based on hierarchical categories determined by the CDC. Any one person with multiple risks is only represented in the highest category, with the exception of MSM/IDU (based on the hierarchical algorithm).

[†] Exposure categories are mutually exclusive and grouped to allow all possible combinations of exposures that any one person may have. NOTE: Heterosexual contact (HC) in exposure categories includes males and females who had heterosexual contact, regardless of what is known about their partners' risk or HIV status.

[¥] Summarized exposure categories are NOT mutually exclusive, i.e. a case may be represented in multiple categories. These summarized categories are meant to give a broader picture of exposure and will NOT add up to the total number of persons living with HIV infection.

Table 6: Sex, race, and risk among HIV infection cases currently living in Out-State Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1,931	75%	616	50%	181	56%	65	51%	2,793	66%
Injection drug use (IDU)	94	4%	104	8%	22	7%	6	5%	226	5%
MSM/IDU	184	7%	59	5%	27	8%	8	6%	278	7%
Blood products	30	1%	8	1%	0	0%	0	0%	38	1%
Heterosexual contact (HCFR)	58	2%	102	8%	25	8%	9	7%	194	5%
Perinatal	10	<1%	17	1%	2	1%	4	3%	33	1%
Undetermined	270	10%	321	26%	66	20%	36	28%	693	16%
Male Subtotal	**2,577**	**61%**	**1,227**	**29%**	**323**	**8%**	**128**	**3%**	**4,255**	**100%**

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	67	16%	85	14%	11	14%	3	7%	166	15%
Blood products	5	1%	1	<1%	0	0%	0	0%	6	1%
Heterosexual contact (HCM)	289	70%	402	67%	59	73%	31	76%	781	69%
Perinatal	8	2%	12	2%	7	9%	2	5%	29	3%
Undetermined	46	11%	97	16%	4	5%	5	12%	152	13%
Female Subtotal	**415**	**37%**	**597**	**53%**	**81**	**7%**	**41**	**4%**	**1,134**	**100%**

ALL

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	1,931	65%	616	34%	181	45%	65	38%	2,793	52%
Injection drug use (IDU)	161	5%	189	10%	33	8%	9	5%	392	7%
MSM/IDU	184	6%	59	3%	27	7%	8	5%	278	5%
Blood products	35	1%	9	<1%	0	0%	0	0%	44	1%
Heterosexual contact (HC)	347	12%	504	28%	84	21%	40	24%	975	18%
HCFR (male)	*58*	*2%*	*102*	*6%*	*25*	*6%*	*9*	*5%*	*194*	*4%*
HCM (female)	*289*	*10%*	*402*	*22%*	*59*	*15%*	*31*	*18%*	*781*	*14%*
Perinatal	18	1%	29	2%	9	2%	6	4%	62	1%
Undetermined	316	11%	418	23%	70	17%	41	24%	845	16%
RACE ALL	**2,992**	**56%**	**1,824**	**34%**	**404**	**7%**	**169**	**3%**	**5,389**	**100%**

Table 7: Sex, race, and age at HIV diagnosis among HIV infection cases Ccurrently living in Out-State Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	18	1%	22	2%	2	1%	4	3%	46	1%
13 - 19 years	48	2%	92	7%	8	2%	9	7%	157	4%
20 - 24 years	268	10%	199	16%	39	12%	19	15%	525	12%
25 - 29 years	444	17%	217	18%	72	22%	28	22%	761	18%
30 - 39 years	997	39%	409	33%	121	37%	47	37%	1,574	37%
40 - 49 years	568	22%	221	18%	58	18%	18	14%	865	20%
50 - 59 years	180	7%	56	5%	17	5%	3	2%	256	6%
60 years and over	54	2%	11	1%	6	2%	0	0%	71	2%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
Male Subtotal	2,577	61%	1,227	29%	323	8%	128	3%	4,255	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	9	2%	18	3%	7	9%	2	5%	36	3%
13 - 19 years	31	7%	43	7%	5	6%	2	5%	81	7%
20 - 24 years	91	22%	91	15%	13	16%	8	20%	203	18%
25 - 29 years	78	19%	109	18%	21	26%	7	17%	215	19%
30 - 39 years	128	31%	182	30%	22	27%	16	39%	348	31%
40 - 49 years	49	12%	111	19%	10	12%	3	7%	173	15%
50 - 59 years	25	6%	32	5%	3	4%	3	7%	63	6%
60 years and over	4	1%	11	2%	0	0%	0	0%	15	1%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
Female Subtotal	415	37%	597	53%	81	7%	41	4%	1,134	100%

ALL

	White		Black		Hispanic		Other or unknown		Age all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
0 - 12 years	27	1%	40	2%	9	2%	6	4%	82	2%
13 - 19 years	79	3%	135	7%	13	3%	11	7%	238	4%
20 - 24 years	359	12%	290	16%	52	13%	27	16%	728	14%
25 - 29 years	522	17%	326	18%	93	23%	35	21%	976	18%
30 - 39 years	1,125	38%	591	32%	143	35%	63	37%	1,922	36%
40 - 49 years	617	21%	332	18%	68	17%	21	12%	1,038	19%
50 - 59 years	205	7%	88	5%	20	5%	6	4%	319	6%
60 years and over	58	2%	22	1%	6	1%	0	0%	86	2%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
RACE ALL	2,992	56%	1,824	34%	404	7%	169	3%	5,389	100%

Table 8: Sex, Risk and Age at HIV Diagnosis Among HIV Infection Cases Currently Living in Out-State Michigan, 2012

MALE

	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	111	71%	393	75%	535	70%	1,035	66%	529	61%	152	59%	38	54%	2,793	66%
Injection drug use	0	0%	1	1%	9	2%	40	5%	87	6%	69	8%	17	7%	3	4%	226	5%
MSM/IDU	0	0%	5	3%	41	8%	59	8%	115	7%	49	6%	8	3%	1	1%	278	7%
Blood products	8	17%	11	7%	6	1%	6	1%	5	<1%	1	<1%	1	<1%	0	0%	38	1%
Heterosexual contact (HCFR)	0	0%	5	3%	18	3%	38	5%	79	5%	38	4%	13	5%	3	4%	194	5%
Perinatal	32	70%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	33	1%
Undetermined	6	13%	23	15%	58	11%	83	11%	253	16%	179	21%	65	25%	26	37%	693	16%
Male Subtotal	**46**	**1%**	**157**	**4%**	**525**	**12%**	**761**	**18%**	**1,574**	**37%**	**865**	**20%**	**256**	**6%**	**71**	**2%**	**4,255**	**100%**

FEMALE

	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use	0	0%	6	7%	26	13%	30	14%	62	18%	28	16%	12	19%	2	13%	166	15%
Blood products	0	0%	0	0%	1	<1%	0	0%	2	1%	0	0%	2	3%	1	7%	6	1%
Heterosexual contact (HCM)	0	0%	63	78%	155	76%	151	70%	237	68%	124	72%	43	68%	8	53%	781	69%
Perinatal	29	81%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	29	3%
Undetermined	7	19%	12	15%	21	10%	34	16%	47	14%	21	12%	6	10%	4	27%	152	13%
Female Subtotal	**36**	**3%**	**81**	**7%**	**203**	**18%**	**215**	**19%**	**348**	**31%**	**173**	**15%**	**63**	**6%**	**15**	**1%**	**1,134**	**100%**

TOTAL

	0 - 12 years		13 - 19 years		20 - 24 years		25 - 29 years		30 - 39 years		40 - 49 years		50 - 59 years		60 years and over		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex	0	0%	111	47%	393	54%	535	55%	1,035	54%	529	51%	152	48%	38	44%	2,793	52%
Injection drug use	0	0%	7	3%	35	5%	70	7%	149	8%	97	9%	29	9%	5	6%	392	7%
MSM/IDU	0	0%	5	2%	41	6%	59	6%	115	6%	49	5%	8	3%	1	1%	278	5%
Blood products	8	10%	11	5%	7	1%	6	1%	7	<1%	1	<1%	3	1%	1	1%	44	1%
Heterosexual contact (HC)	0	0%	68	29%	173	24%	189	19%	316	16%	162	16%	56	18%	11	13%	975	18%
HCFR (male)	*0*	*0%*	*5*	*2%*	*18*	*2%*	*38*	*4%*	*79*	*4%*	*38*	*4%*	*13*	*4%*	*3*	*3%*	*194*	*4%*
HCM (female)	*0*	*0%*	*63*	*26%*	*155*	*21%*	*151*	*15%*	*237*	*12%*	*124*	*12%*	*43*	*13%*	*8*	*9%*	*781*	*14%*
Perinatal	61	74%	1	<1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	62	1%
Undetermined	13	16%	35	15%	79	11%	117	12%	300	16%	200	19%	71	22%	30	35%	845	16%
AGE TOTAL	**82**	**2%**	**238**	**4%**	**728**	**14%**	**976**	**18%**	**1,922**	**36%**	**1,038**	**19%**	**319**	**6%**	**86**	**2%**	**5,389**	**100%**

Table 9: Gonorrhea, syphilis, and chlamydia cases by sex, race and age group, Out-State Michigan, 2011

	Gonorrhea			P&S syphilis*			Chlamydia			Census 2010	
	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent	Rate^	Num	Percent
RACE/ ETHNICITY											
White	887	23%	18.9	54	68%	1.2	7,889	34%	168.4	4,685,699	83%
Black	1,968	50%	481.5	22	28%	5.4	7,593	33%	1857.8	408,699	7%
Hispanic	90	2%	33.7	1	1%	0.4	788	3%	295.0	267,086	5%
Other/multi	99	3%	38.8	2	3%	0.8	594	3%	233.1	254,852	5%
Unknown race	893	23%	N/A	0	0%	N/A	6,461	28%	N/A	N/A	N/A
SEX & RACE											
Male	1,473	37%	53.0	73	92%	2.6	6,105	26%	219.5	2,781,585	50%
White male	245	6%	10.6	50	63%	2.2	1,716	7%	74.2	2,313,461	41%
Black male	821	21%	395.5	20	25%	9.6	2,288	10%	1102.2	207,582	4%
Hispanic male	22	1%	16.1	1	1%	0.7	207	1%	151.8	136,338	2%
Other male	27	1%	21.7	2	3%	1.6	147	1%	118.4	124,204	2%
Unknown male	358	9%	N/A	0	0%	N/A	1,747	7%	N/A	N/A	N/A
Female	2,459	62%	86.7	6	8%	0.2	17,180	74%	606.0	2,834,751	50%
White female	642	16%	27.1	4	5%	0.2	6,166	26%	259.9	2,372,238	42%
Black female	1,146	29%	569.8	2	3%	1.0	5,302	23%	2636.3	201,117	4%
Hispanic female	68	2%	52.0	0	0%	0.0	579	2%	442.8	130,748	2%
Other female	72	2%	55.1	0	0%	0.0	446	2%	341.4	130,648	2%
Unknown female	531	13%	N/A	0	0%	N/A	4,687	20%	N/A	N/A	N/A
Unknown sex - all races	5	<1%	N/A	0	0%	N/A	40	<1%	N/A	N/A	N/A
Age											
0-4 years	2	<1%	0.6	0	0%	0.0	3	<1%	0.9	337,908	6%
5-9 years	0	0%	0.0	0	0%	0.0	3	<1%	0.8	357,740	6%
10-14 years	35	1%	9.3	0	0%	0.0	250	1%	66.6	375,357	7%
15-19 years	1,180	30%	276.4	5	6%	1.2	8,396	36%	1966.4	426,980	8%
20-24 years	1,393	35%	336.1	15	19%	3.6	9,199	39%	2219.6	414,450	7%
25-29 years	607	15%	179.4	13	16%	3.8	3,093	13%	914.2	338,347	6%
30-34 years	318	8%	99.2	10	13%	3.1	1,297	6%	404.7	320,454	6%
35-39 years	150	4%	45.5	7	9%	2.1	537	2%	163.0	329,534	6%
40-44 years	105	3%	29.1	5	6%	1.4	250	1%	69.2	361,127	6%
45-54 years	95	2%	11.3	15	19%	1.8	197	1%	23.4	842,006	15%
55-64 years	38	1%	5.3	7	9%	1.0	49	<1%	6.8	716,752	13%
65 and over	8	<1%	1.0	0	0%	0.0	14	<1%	1.8	795,681	14%
Unknown age	6	<1%	N/A	0	0%	N/A	37	<1%	N/A	N/A	N/A
Total	**3,937**	**100%**	**70.1**	**79**	**100%**	**1.4**	**23,325**	**100%**	**415.3**	**5,616,336**	**100%**

* P&S: Primary and secondary syphilis.
^ Rate per 100,000 population.

Table 10: Sex, race, and risk among HIV infection cases currently living in Washtenaw County, Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	221	80%	116	61%	23	77%	11	85%	371	73%
Injection drug use (IDU)	11	4%	15	8%	<5	**	0	0%	27	5%
MSM/IDU	18	6%	7	4%	<5	**	0	0%	26	5%
Blood Products	<5	**	0	0%	0	0%	0	0%	<5	**
Heterosexual contact (HCFR)	<5	**	12	6%	<5	**	0	0%	18	4%
Perinatal	0	0%	<5	**	<5	**	0	0%	<5	**
Undetermined	20	7%	39	21%	<5	**	<5	**	63	12%
Male Subtotal	277	54%	190	37%	30	6%	13	3%	510	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	9	29%	15	21%	0	0%	0	0%	24	21%
Blood products	<5	**	0	0%	0	0%	0	0%	<5	**
Heterosexual contact (HCM)	18	58%	48	68%	<5	**	6	100%	76	67%
Perinatal	0	0%	<5	**	<5	**	0	0%	<5	**
Undetermined	<5	**	7	10%	0	0%	0	0%	10	9%
Female Subtotal	31	27%	71	63%	5	4%	6	5%	113	100%

ALL

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	221	72%	116	44%	23	66%	11	58%	371	60%
Injection drug use (IDU)	20	6%	30	11%	<5	**	0	0%	51	8%
MSM/IDU	18	6%	7	3%	<5	**	0	0%	26	4%
Blood products	<5	**	0	0%	0	0%	0	0%	<5	**
Heterosexual contact (HC)	22	7%	60	23%	6	17%	6	32%	94	15%
HCFR (male)	<5	**	12	5%	<5	**	0	0%	18	3%
HCM (female)	18	6%	48	18%	<5	**	6	32%	76	12%
Perinatal	0	0%	<5	**	<5	**	0	0%	<5	**
Undetermined	23	7%	46	18%	<5	**	<5	**	73	12%
RACE ALL	308	49%	261	42%	35	6%	19	3%	623	100%

*<5 and '**' = 1, 2, 3, or 4 cases.*

Table 11: Sex, race, and risk among HIV infection cases currently living in Kent County, Michigan, 2012

MALE

	White Num	Percent	Black Num	Percent	Hispanic Num	Percent	Other or unknown Num	Percent	All male Num	Percent
Male-male sex (MSM)	358	82%	97	45%	54	50%	13	59%	522	67%
Injection drug use (IDU)	7	2%	23	11%	8	7%	0	0%	38	5%
MSM/IDU	30	7%	15	7%	9	8%	<5	**	56	7%
Blood products	<5	**	0	0%	0	0%	0	0%	<5	**
Heterosexual contact (HCFR)	9	2%	22	10%	8	7%	<5	**	42	5%
Perinatal	<5	**	5	2%	0	0%	0	0%	7	1%
Undetermined	30	7%	53	25%	28	26%	<5	**	115	15%
Male Subtotal	**438**	**56%**	**215**	**27%**	**107**	**14%**	**22**	**3%**	**782**	**100%**

FEMALE

	White Num	Percent	Black Num	Percent	Hispanic Num	Percent	Other or unknown Num	Percent	All female Num	Percent
Injection drug use (IDU)	5	10%	14	9%	<5	**	0	0%	23	10%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	38	79%	113	76%	19	73%	7	100%	177	77%
Perinatal	0	0%	<5	**	<5	**	0	0%	6	3%
Undetermined	5	10%	18	12%	0	0%	0	0%	23	10%
Female Subtotal	**48**	**21%**	**148**	**65%**	**26**	**11%**	**7**	**3%**	**229**	**100%**

ALL

	White Num	Percent	Black Num	Percent	Hispanic Num	Percent	Other or unknown Num	Percent	Risk all Num	Percent
Male-Male sex (MSM)	358	74%	97	27%	54	41%	13	45%	522	52%
Injection drug use (IDU)	12	2%	37	10%	12	9%	0	0%	61	6%
MSM/IDU	30	6%	15	4%	9	7%	<5	**	56	6%
Blood products	<5	**	0	0%	0	0%	0	0%	<5	**
Heterosexual contact (HC)	47	10%	135	37%	27	20%	10	34%	219	22%
HCFR (male)	9	2%	22	6%	8	6%	<5	**	42	4%
HCM (female)	38	8%	113	31%	19	14%	7	24%	177	18%
Perinatal	<5	**	8	2%	<5	**	0	0%	13	1%
Undetermined	35	7%	71	20%	28	21%	<5	**	138	14%
RACE ALL	**486**	**48%**	**363**	**36%**	**133**	**13%**	**29**	**3%**	**1011**	**100%**

*<5 and '**' = 1, 2, 3, or 4 cases.

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Table 12: Sex, race, and risk among HIV infection cases currently living in Ingham County, Michigan, 2012

MALE

MALE	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	168	78%	50	52%	18	67%	9	43%	245	68%
Injection drug use (IDU)	7	3%	7	7%	<5	**	<5	**	20	6%
MSM/IDU	20	9%	8	8%	<5	**	<5	**	31	9%
Blood products	<5	**	<5	**	0	0%	0	0%	6	2%
Heterosexual contact (HCFR)	<5	**	9	9%	0	0%	<5	**	12	3%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	15	7%	21	22%	<5	**	6	29%	46	13%
Male Subtotal	215	60%	97	27%	27	8%	21	6%	360	100%

FEMALE

FEMALE	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	<5	**	9	14%	<5	**	0	0%	15	15%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	21	78%	46	72%	<5	**	<5	**	71	72%
Perinatal	0	0%	<5	**	0	0%	0	0%	<5	**
Undetermined	<5	**	8	13%	0	0%	<5	**	11	11%
Female Subtotal	27	28%	64	65%	<5	**	<5	**	98	100%

ALL

ALL	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	168	69%	50	31%	18	58%	9	38%	245	53%
Injection drug use (IDU)	11	5%	16	10%	6	19%	<5	**	35	8%
MSM/IDU	20	8%	8	5%	<5	**	<5	**	31	7%
Blood products	<5	**	<5	**	0	0%	0	0%	6	1%
Heterosexual contact (HC)	22	9%	55	34%	<5	**	<5	**	83	18%
HCFR (male)	<5	**	9	6%	0	0%	<5	**	12	3%
HCM (female)	21	9%	46	29%	<5	**	<5	**	71	16%
Perinatal	0	0%	<5	**	0	0%	0	0%	<5	**
Undetermined	17	7%	29	18%	<5	**	7	29%	57	12%
RACE ALL	242	53%	161	35%	31	7%	24	5%	458	100%

*<5 and '**' = 1, 2, 3, or 4 cases.

Table 13: Sex, race, and risk among HIV infection cases currently living in Berrien County, Michigan, 2012

MALE

	White		Black		Hispanic		Other or unknown		All male	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	53	77%	34	39%	5	33%	0	0%	92	53%
Injection drug use (IDU)	<5	**	7	8%	<5	**	0	0%	11	6%
MSM/IDU	6	9%	<5	**	<5	**	0	0%	11	6%
Blood products	<5	**	<5	**	0	0%	0	0%	<5	**
Heterosexual contact (HCFR)	<5	**	12	14%	<5	**	<5	**	17	10%
Perinatal	0	0%	<5	**	0	0%	0	0%	<5	**
Undetermined	<5	**	28	32%	7	47%	0	0%	38	22%
Male Subtotal	69	40%	87	51%	15	9%	<5	**	172	100%

FEMALE

	White		Black		Hispanic		Other or unknown		All female	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Injection drug use (IDU)	<5	**	6	10%	<5	**	<5	**	10	12%
Blood products	0	0%	0	0%	0	0%	0	0%	0	0%
Heterosexual contact (HCM)	11	69%	42	69%	<5	**	<5	**	55	68%
Perinatal	0	0%	0	0%	0	0%	0	0%	0	0%
Undetermined	<5	**	13	21%	0	0%	0	0%	16	20%
Female Subtotal	16	20%	61	75%	<5	**	<5	**	81	100%

ALL

	White		Black		Hispanic		Other or unknown		Risk all	
	Num	Percent	Num	Percent	Num	Percent	Num	Percent	Num	Percent
Male-male sex (MSM)	53	62%	34	23%	5	29%	0	0%	92	36%
Injection drug use (IDU)	5	6%	13	9%	<5	**	<5	**	21	8%
MSM/IDU	6	7%	<5	**	<5	**	0	0%	11	4%
Blood products	<5	**	<5	**	0	0%	0	0%	<5	**
Heterosexual contact (HC)	14	16%	54	36%	<5	**	<5	**	72	28%
HCFR (male)	<5	**	12	8%	<5	**	<5	**	17	7%
HCM (female)	11	13%	42	28%	<5	**	<5	**	55	22%
Perinatal	0	0%	<5	**	0	0%	0	0%	<5	**
Undetermined	6	7%	41	28%	7	41%	0	0%	54	21%
RACE ALL	85	34%	148	58%	17	7%	<5	**	253	100%

*<5 and '**' = 1, 2, 3, or 4 cases.

APPENDIX A: GLOSSARY OF COMMONLY USED TERMS

Anonymous HIV test: A person tests for HIV without providing his/her name or other identifying information. These cases are not included in the reported number of persons living with HIV in Michigan, as there is no way to de-duplicate cases.

Behaviorally bisexual male: Men who have sex with men (MSM) who also have a history of sexual contact with females. Also referred to as "MSM and Sex with Female".

Blood recipient: All hemophiliacs, blood transfusion recipients, and organ recipients who received blood products prior to 1985 and all persons documented to have ever received a HIV-infected organ or unit of blood.

Case: A person who is reported to the Michigan Department of Community Health as being HIV-positive.

Confidential HIV test: A person testing for HIV provides his/her name and other identifying information, and this information is reported to the health department. Patient information remains confidential.

Currently living with HIV infection: This population is obtained by calculating the number of persons currently alive and residing in Michigan as of January 1, 2012, using the most recent address information available. It is impossible to track all residence changes among HIV-positive persons; thus, numbers should be viewed as minimum estimates of persons currently living with HIV in Michigan.

eHARS: The enhanced HIV/AIDS Reporting System, a standardized database developed by the CDC for national reporting of HIV.

Epidemiology: The study of the distribution, determinates, and frequency of diseases in humans.

GIS (Geographic Information System): The display and analysis of geographic data in map format.

HAART: Highly Active Antiretroviral Therapy.

Heterosexual contact (HC):

Heterosexual contact w/ female w/ risk (HCFR): Males whose female sexual partners are known to be HIV-infected or at high risk for HIV. These partners meet one of the following criteria: IDU, hemophiliac, HIV infected transfusion recipient, or other HIV infected person of unknown risk (applies to risk transmission categories).

Heterosexual contact w/ female (HCF): Males who have had sex with a female regardless of what is known about the female's HIV status or behaviors (applies to exposure categories).

Heterosexual contact w/ male (HCM): Females who have had sex with a male regardless of what is known about the male's HIV status or behaviors (applies to both risk transmission and exposure categories).

The language and presentation of the heterosexual categories recently changed. Formerly, females with heterosexual contact were divided into high-risk heterosexuals (HRH, where male partners' risk factors were known) and presumed heterosexual contact (PH-Fem, sex with males of unknown risk). This distinction is no longer drawn for females, although males must still have partners with known risks in order to be classified as heterosexual.

HIV (Human Immunodeficiency Virus): Diagnosis with HIV requires both a positive HIV screening and positive supplemental antibody test or detectable quantity on a virologic test. A standard case definition for HIV infection is used by all states for surveillance. Specific information is required in order to count a case of HIV infection, including a method to uniquely identify an individual. Each case is classified in a HIV infection stage (see below). Once a case reaches stage 3 (AIDS), the case is always considered stage 3 for surveillance purposes, even if his/her health improves (MMWR; December 5, 2008 / Vol. 57 / No. RR--10 / Pg. 1 - 12).

HIV infection stages:

Stage 1: A case does not have any of the conditions associated with severe HIV infection (called an AIDS-defining condition) and has >= 500 CD4 cells/μl.

Stage 2: A case has no AIDS-defining condition, but the level of CD4 cells has fallen to 200-499 cells/μl.

Stage 3: Diagnosis with any one of 26 AIDS-defining conditions which are indicative of a severe immune deficiency, or a laboratory test demonstrating severe immune deficiency: CD4 count <200 cells/μl or CD4 percent <14%. Previously referred to as AIDS.

Stage unknown: A case of HIV without information available on CD4 levels or AIDS-defining conditions.

Incidence: The number of persons who develop a disease or infection in a certain period of time, usually a year.

Incident case: A person who has been diagnosed with a disease or is newly infected (in this case, with HIV), regardless of his/her vital status (living or deceased).

Injection drug user (IDU): Persons who have a history of injecting non-prescription drugs.

Late diagnosis: A diagnosis of stage 3 HIV infection within 30 days of initial HIV diagnosis (formerly called "concurrent diagnosis"). This is indicative of someone testing late in the course of the infection.

Men who have sex with men (MSM): Males who have a history of sexual contact with other males.

MSM/IDU: MSM who also have a history of injecting non-prescription drugs.

New diagnoses: Number of cases newly diagnosed over a given period of time, usually a year. In HIV surveillance, new diagnoses do not necessarily represent new infections, as newly diagnosed cases may have been infected for many years; thus, only some newly diagnosed cases are also incident cases.

Pediatric case: Children who are 12 years or younger at the time of diagnosis.

Perinatal risk: HIV transmission from mother to child during birth or after birth through breastfeeding.

Prevalence: The total number of persons living with HIV infection at one point in time. The prevalence estimate for all of Michigan as of January 1, 2012 is 20,600. This estimate includes: 1) persons who have stage 3 HIV infection (AIDS); 2) persons diagnosed with HIV infection but who have not progressed to stage 3 infection; 3) an estimate of those who have tested positive for HIV but have not yet been reported; and 4) an estimate of persons with HIV infection who have not yet been diagnosed.

Prevalent case: A person who is currently living with a disease or infection (in this case, HIV).

Primary and secondary syphilis: Infectious stages of syphilis. Primary syphilis presents approximately 10-90 days after the initial exposure and is characterized by a skin lesion (chancre) appearing at the point of contact, which is usually the genitalia but can be anywhere on the body. Secondary syphilis occurs 1-6 months (commonly 6-8 weeks) after the primary infection. The most common presentation is a reddish-pink non-itchy rash on the trunk and extremities. The rash can involve the palms of the hands and the soles of the feet.

Public health surveillance: The ongoing collection, analysis, interpretation, dissemination, and evaluation of population-based information about persons with a condition or risk factor of public health concern.

Rate: The number of cases divided by the number of persons in the general population (both infected and uninfected). The resulting number is standardized by multiplying by a multiple of 10, usually 1,000 or 100,000. This number allows one to compare the impact of disease between groups.

Syphilis: All cases of primary and secondary syphilis and all stages of latent syphilis. Later stages of syphilis are defined as having serologic proof of infection without signs or symptoms of disease. Those diagnosed as having latent stages of syphilis may be infected for just over a year up to decades. These stages of syphilis are not as reflective of recent epidemiology and are significantly less infectious than primary and secondary stages.

Undetermined risk: Males and females with no identified risk for HIV. This includes males whose only documented risk is sex with a female, and their female partner's risk and HIV status is unknown (note: these males meet the definition of heterosexual contact w/ female (HCF) in the exposure categories, but they remain "undetermined" risk in the transmission categories).

APPENDIX B: RURAL AND URBAN COUNTY CLASSIFICATION

Data Source: United States Census Bureau, 2010 Census Urban and Rural Classification and Urban Area Critera, http://www.census.gov/geo/www/ua/2010urbanruralclass.html

Urbanized Area (UA): A statistical geographic entity consisting of a densely settled core created from census tracts or blocks and contiguous qualifying territory that together have a minimum population of at least 50,000 persons.

Core Based Statistical Area (CBSA): A statistical geographic entity defined by the U.S. Office of Management and Budget (OMB), consisting of the county or counties associated with at least one core (urban area) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core. Metropolitan and micropolitan statistical areas are the two types of CBSAs.

> **Metropolitan Statistical Area (MSA):** A core based statistical area (CBSA) associated with at least one urbanized area that has a population of at least 50,000. A metropolitan statistical area comprises a central county or counties containing the urbanized area, plus adjacent outlying counties having a high degree of social and economic integration with the central county as measured by commuting.

Urban county: Any county containing a Urbanized Area (UA) of at least 50,000 people or an area adjacent to an Urbanized Area (UA) that has a substantial commuting interchange with a city of greater than 50,000 people.

Using these US Census Bureau definitions, MDCH classified counties as urban or rural. A county is considered urban if any part of a city or area as explained above is part of that county (i.e., the city of Kalamazoo is in Kalamazoo County) or if a county is adjacent to an Urbanized Area (UA) and has a high degree of social and economic integration with the central county as measured by commuting.

<u>Urban counties grouped by MSA:</u>
-Washtenaw
-Calhoun
-Bay
-Berrien
-Detroit Metro Area (Lapeer, Macomb, Monroe, Oakland, St. Clair, and Wayne counties and the City of Detroit)
-Genesee
-Kent
-Ottawa
-Jackson
-Kalamazoo
-Clinton, Eaton, and Ingham
-Midland
-Muskegon
-Saginaw
-Livingston

<u>Rural counties:</u>

Alcona	Branch	Emmet	Iosco
Alger	Cass	Gladwin	Iron
Allegan	Charlevoix	Gogebic	Isabella
Alpena	Cheboygan	Grand Traverse	Kalkaska
Antrim	Chippewa	Gratiot	Keweenaw
Arenac	Clare	Hillsdale	Lake
Baraga	Crawford	Houghton	Leelanau
Barry	Delta	Huron	Lenawee
Benzie	Dickinson	Ionia	Livingston

Luce
Mackinac
Manistee
Marquette
Mason
Mecosta
Menominee
Missaukee
Montcalm
Montmorency

Newaygo
Oceana
Ogemaw
Ontonagon
Osceola
Oscoda
Otsego
Presque Isle
Roscommon
Sanilac

Schoolcraft
Shiawassee
St Joseph
Tuscola
Van Buren
Wexford

Michigan Department of Community Health

MDCH

Rick Snyder, Governor
James K. Haveman, Director