

Massachusetts HIV/AIDS Data Fact Sheet

Who is most at risk of HIV infection?

Overview

Although new diagnoses of HIV infection is not a direct measure of HIV incidence, recent trends in the distribution of HIV infection diagnoses are the best available indicator for who is most at risk of HIV infection. While the distribution of HIV infection diagnoses across gender, race/ethnicity and place of birth has remained fairly unchanged in the past ten years, there has been a shift in place of birth distribution among females. From 2000 to 2009, the proportion of new diagnoses among females born outside the US has grown from 37% to 46%.

There has also been a shift in the distribution of HIV infection diagnoses by exposure mode. The proportion of all HIV infection diagnoses with male-to-male sex as an exposure mode increased from 30% in 2000 to 43% in 2009. Among males, the proportion of HIV infection diagnoses with male-to-male sex as the reported exposure mode increased from 42% in 2000 to 56% in 2009. The proportion of cases with injection drug use as the reported exposure mode decreased from 22% in 2000 to 6% in 2009.

The following analyses depict trends in HIV infection diagnosis and describe populations at risk of HIV infection in Massachusetts in greater detail. Trends in the distribution of HIV infection diagnoses from 2000 to 2009 are used to highlight populations at elevated risk of HIV infection. These trends, as well as the distribution of 1,822¹ people who were recently diagnosed with HIV infection within the three-year period 2007 to 2009, provide useful information for planning HIV prevention programs.

Trends in HIV Infection Diagnoses from 2000 to 2009

General Statistics:

- The number of annual HIV diagnoses reported decreased from 1,193 in 2000 to 619 in 2008.
- As of January 1, 2011, 567 HIV diagnoses were reported for 2009. As Massachusetts providers who report HIV diagnoses are still transitioning from code to name-based reporting requirements (effective January 1, 2007), the 2009 HIV infection diagnosis data may be incomplete.

The number of cases will continue to increase as additional cases are reported, lessening the apparent decline in the number of HIV infection diagnoses in recent years. Caution should be exercised when considering changes in trends for 2009 due to the potential for differential reporting by providers since the beginning of the new reporting system.

Gender:

- From 2000 to 2003, the proportion of HIV infections diagnosed among males decreased from 70% to 68% while the proportion among females increased from 30% to 32%. From 2004 to 2009 the distribution of people diagnosed with HIV infection by gender ranged from 71% to 75% male and 25% to 29% female.

Race/Ethnicity:

- From 2000 to 2009, the proportion of HIV diagnoses ranged from 38% to 43% among white (non-Hispanic) individuals; from 30% to 35% among black (non-Hispanic) individuals; and from 22% to 26% among Hispanic/Latino individuals.

Gender and Race/Ethnicity:

- In the years 2000 through 2009, among **males**, the largest proportion of HIV infection diagnoses were among white (non-Hispanic) males (range 46% to 51%), followed by black (non-Hispanic) males (range 21% to 28%) and Hispanic/Latino males (range 20% to 25%).
- Among **females** diagnosed with HIV infection from 2000 to 2009, the largest proportion was among black (non-Hispanic) females (range 47% to 54%, followed by Hispanic/Latina females (range 23% to 31%) and white (non-Hispanic) females (range 17% to 25%).

Place of Birth and Gender:

- From 2000 to 2002, the proportion of people born outside the US among those diagnosed with HIV infection increased from 26% to 32%. From 2003 to 2009, the proportion of people born outside the US among those diagnosed with HIV infection remained between 28% and 32%.

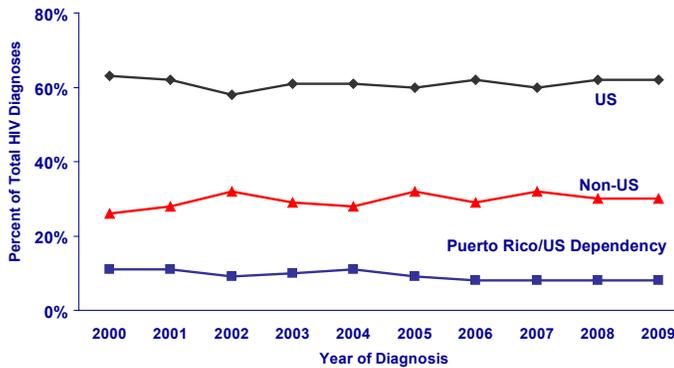




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Figure 1. Percentage Distribution of People Diagnosed with HIV Infection by Place of Birth and Year of Diagnosis: Massachusetts, 2000–2009



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/11

- From 2000 to 2009, the proportion of individuals born outside the US among **males** diagnosed with HIV infection ranged from 21% to 27%.
- During the same time period the proportion of individuals born outside the US among **females** increased from 37% to 46%.

Exposure Mode and Gender: ⁱⁱ

- Among **males** diagnosed with HIV infection, the proportion of HIV diagnoses with male-to-male sex as the primary reported exposure mode increased from 42% in 2000 to 56% in 2009.
- The proportion of HIV exposures among **males** attributed to injection drug use decreased from 22% in 2000 to 5% in 2009.
- From 2000 to 2009, the proportion of HIV diagnoses among **females** exposed to HIV through reported sex with males of unknown risk and HIV status (presumed heterosexual sex) increased from 34% to 44%.
- Among **females** diagnosed with HIV infection, the proportion with injection drug use as the reported exposure mode decreased from 22% in 2000 to 9% in 2009.

Age at HIV Infection Diagnosis:

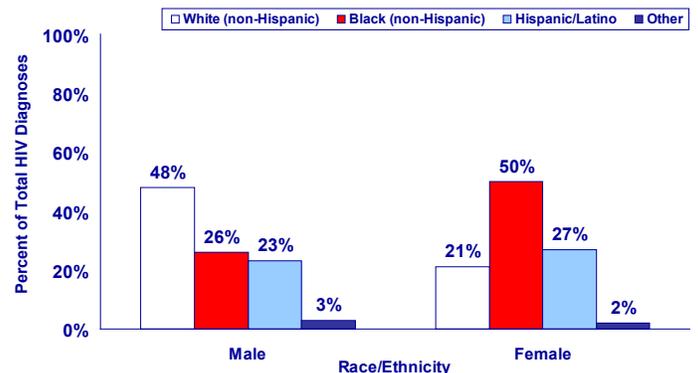
- In 2009, the majority (67%) of HIV infection diagnoses occurred in people between the ages of 30 and 49 years old.

A Profile of People Recently Diagnosed with HIV Infection

Race/Ethnicity and Gender:

- The distribution of race/ethnicity among persons diagnosed with HIV infection within the years 2007 to 2009 is different among males and females. While 48% of **males** diagnosed with HIV infection within the years 2007 to 2009 were white (non-Hispanic), 50% of **females** diagnosed during this time period were black (non-Hispanic).

Figure 2. People Diagnosed with HIV Infection Within the Years 2007–2009 by Gender and Race/Ethnicity: Massachusetts



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 1/1/11

Race/Ethnicity and Place of Birth:

- Fifty-four percent of black (non-Hispanic) individuals diagnosed with HIV infection within the three-year period 2007 to 2009 were born outside the US, compared to 34% of Hispanic/Latino individuals and 8% of white (non-Hispanic) individuals.
- The majority of non-US born black (non-Hispanic) individuals diagnosed with HIV infection within the three-year period 2007 to 2009 are from Sub-Saharan Africa and the Caribbean; the majority of non-US born Hispanic/Latino individuals are from Central and South America and the Caribbean. The majority of non-US born white (non-Hispanic) individuals are from Central and South America, North America and Europe.



For detailed data tables and technical notes see Appendix
 Massachusetts Department of Public Health Office of HIV/AIDS
 250 Washington St. 3rd Floor Boston, MA 02108
 617-624-5300 FAX 617-624-5399 www.mass.gov/dph/aids

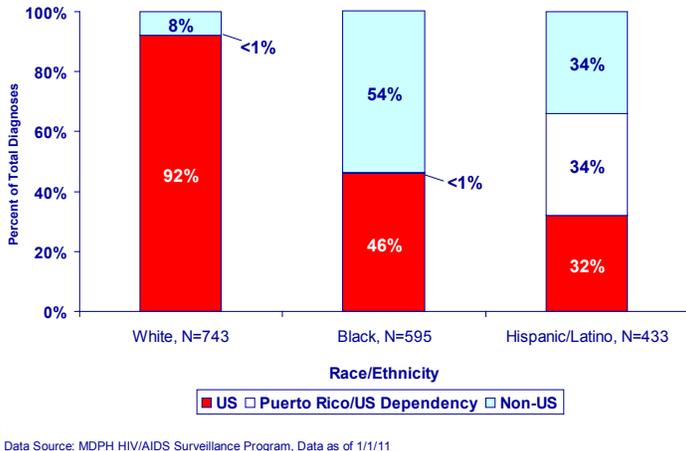




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Figure 3. People Diagnosed with HIV Infection Within the Years 2007–2009 by Race/Ethnicity and Place of Birth: Massachusetts



Data Source: MDPH HIV/AIDS Surveillance Program, Data as of 1/11/11

Race/Ethnicity, Place of Birth and Gender:

- Forty-six percent of females diagnosed with HIV infection within the three-year period 2007 to 2009 were born outside the US compared to 25% of males. Among black (non-Hispanic) females diagnosed with HIV infection, the proportion born outside the US is 70% compared to 29% of Hispanic/Latina females and 9% of white (non-Hispanic) females. Among black (non-Hispanic) males, the proportion is 42% compared to 36% of Hispanic/Latino males and 7% of white (non-Hispanic) males.

Race/Ethnicity and Exposure Mode:

- The predominant mode of exposure among white (non-Hispanic) individuals diagnosed with HIV infection within the years 2007 to 2009 is male-to-male sex (64%). Among black (non-Hispanic) individuals the most frequently reported exposure mode is female reporting sex with male of unknown risk and HIV status (presumed heterosexual exposure, 21%), followed by male-to-male sex (18%) and heterosexual sex with partners of known risk and/or HIV status. Among Hispanic/Latino individuals, male-to-male sex accounts for 31%, injection drug use 17%, and heterosexual exposure 16% of reported exposures to HIV infection.

Race/Ethnicity, Exposure Mode and Gender:

- Exposure mode among people diagnosed with HIV infection within the three-year period 2007 to 2009 varies by race/ethnicity among both males and females.
- Among **white (non-Hispanic) males**, male-to-male sex is the predominant exposure mode, accounting for 74% of reported exposures; for 12% exposure mode is undetermined.
- Exposure mode is undetermined in 51% of **black (non-Hispanic) males**. Among those with a reported risk, male-to-male sex is most frequently reported accounting for 31% of all exposures, followed by heterosexual sex at 10% and injection drug use at 6% of reported exposures.
- Among **Hispanic/Latino males**, male-to-male sex is the most frequently reported exposure mode accounting for 45% of exposures, followed by injection drug use at 16% and heterosexual sex at 8% of exposures. For 28% of Hispanic/Latino males, exposures mode is undetermined.
- Among **white (non-Hispanic) females** diagnosed with HIV infection, exposure mode is near evenly distributed among the three main modes reported by females: injection drug use accounts for 33%, heterosexual sex (with partners of known risk and/or HIV status) 29% and sex with males of unknown risk and HIV status (presumed heterosexual) 28% of exposures.
- The predominant exposure mode among **black (non-Hispanic) females** is sex with males of unknown risk and HIV status (presumed heterosexual exposure) (53%).
- Among **Hispanic/Latina females**, heterosexual sex (with partners of known risk and/or HIV status) is the most frequently reported exposure mode accounting for 36% of exposures, followed by sex with males of unknown risk and HIV status (presumed heterosexual exposure) at 29% and injection drug use at 19% of exposures.
- Distribution by Gender and Health Service Region (HSR):** ⁱⁱⁱ
- The Boston and Southeast regions have the highest proportion of males among those with HIV infection diagnosed within the three-year period 2007 to 2009 at 80% and 76%, respectively.



For detailed data tables and technical notes see Appendix
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- The Central and Northeast regions have the highest proportion of females among people diagnosed with HIV infection within the three-year period 2007 to 2009 at 38% and 35%, respectively.

Distribution by Race/Ethnicity and Health Service Region (HSR):

- White (non-Hispanic) individuals constitute the largest proportion of people recently diagnosed with HIV infection in the Southeast (54%) and Metro West (44%) regions.
- In the Boston region black (non-Hispanic) individuals and white (non-Hispanic) individuals constitute the largest proportions of recent diagnoses at 40% and 39%, respectively.
- In the Central region, white (non-Hispanic) individuals account for 39%, black (non-Hispanic) individuals 34% and Hispanic/Latino individuals 24% of recent diagnoses.
- In both the Western (39%, 38%) and Northeast (34%, 32%) regions Hispanic/Latino individuals, followed by white (non-Hispanic) individuals account for the largest proportions of people recently diagnosed with HIV infection.

Distribution by Exposure Mode and Health Service Region (HSR):

- Male-to-male sex is the most frequently reported exposure mode in all regions among people diagnosed with HIV infection within the years 2007 to 2009, accounting for 50% of exposures in the Boston HSR, 42% in the Southeast HSR, 41% in the Metro West HSR, 40% in the Western HSR, 34% in the Northeast HSR, and 32% in the Central HSR.
- The Central and Western HSR have the highest proportion of exposures attributed to injection drug use, both at 13%. Injection drug use accounts for 5% to 9% of exposures in the remaining regions.
- The largest proportion of exposures attributed to heterosexual sex (with partners of known risk and/or HIV status) is 15% in the Central HSR, while the smallest is 9% in the Boston HSR.
- The largest proportion of exposures attributed to female reporting sex with male of unknown risk and HIV status (presumed heterosexual exposure) is 15% in both the Northeast and Central HSR, while the smallest is 8% in the Boston HSR.

People at Risk of HIV Infection:

State-funded HIV Counseling, Testing and Referral:

- In 2009, 60,550 HIV tests were performed at publicly funded HIV Counseling, Testing and Referral (CTR) sites, of which 1.0% (N=615) were positive.
- In 2009, more HIV tests were performed on males (60%, N=36,227) than females (39%, N=23,394) at publicly funded sites.
- The largest proportion of HIV tests were performed on white (non-Hispanic) clients (35%, N=21,468) followed by Black (non-Hispanic) clients (28%, N=17,014) and Hispanic/Latino clients (27%, N=16,609).
- Black (non-Hispanic) clients accounted for 30% of positive HIV tests and 28% of all tests conducted.
- Hispanic/Latino clients accounted for 31% of positive HIV tests and 27% of all tests conducted.
- White (non-Hispanic) clients accounted for 31% of positive HIV tests and 35% of all tests conducted.
- By race/ethnicity, the highest percentage of positive HIV tests was among multi-race clients at 1.6%, followed by Hispanic/Latino clients at 1.2%, Black (non-Hispanic) clients at 1.1% and white (non-Hispanic) clients at 0.9%.
- While people ages 20–24 and 25–29 years old account for the largest proportions (19% and 18%) of total tests across age categories, the percent of positive tests in both age groups is low (0.5%), accounting for just 10% and 9% of the positive tests, respectively.

Behavioral Risk for HIV Infection:

Number of Sexual Partners:

- Among 7,327 18–64-year-old respondents to the 2008 and 2009 Massachusetts Behavioral Risk Factor Surveillance System (BRFSS) survey, 7% reported two or more sexual partners in the previous year, 76% reported one partner, and 17% reported no sexual partners.



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- Larger proportions of people reporting two or more partners in the previous year were men (10% of men reported two or more partners compared to 4% of women), and were black (non-Hispanic) or Hispanic (17% of black individuals and 10% of Hispanic individuals reported two or more partners compared to 6% of white [non-Hispanic] and 6% of Asian individuals).
- Eighteen percent of males who had sex with male partners reported two or more sexual partners in the previous year compared to 12% of males who had sex with opposite-sex partners.
- Twenty-six percent of males ages 18–24 years reported two or more sexual partners in the previous year compared to 17% of males ages 25–34, 6% of males ages 35–44 and 4% of males ages 45–64.
- Fourteen percent of females ages 18–24 years reported two or more sexual partners in the previous year compared to 5% of females ages 25–34, 2% of females ages 35–44 and 1% of females ages 45–64.

Condom Use:

- Of 5,568 18–64-year-old sexually active respondents to the 2008 and 2009 BRFSS, 23% reported using a condom at last sexual encounter (28% of male respondents and 19% of female respondents).
- Forty-five percent of black (non-Hispanic) and 28% of Hispanic respondents reported condom use at last sexual encounter, compared to 21% of white (non-Hispanic) individuals.
- Sixty-five percent of those reporting 3 or more sexual partners in the previous year also reported condom use at last sexual encounter, compared to 52% of those reporting 2 partners and 20% of those reporting 1 partner.
- There was no significant difference between condom use at last sex among men reporting a same-sex partner (29%) and among men with an opposite-sex partner (27%).

Data Sources

HIV/AIDS Case Data: Massachusetts Department of Public Health, HIV/AIDS Surveillance Program, all data as of 1/1/11

Counseling and Testing Data: Massachusetts Department of Public Health, Office of HIV/AIDS, Office of Research and Evaluation

BRFSS Data: Massachusetts Department of Public Health, Bureau of Health Statistics, Research and Evaluation, Behavioral Risk Factor Surveillance System

ⁱ Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH), Bureau of Infectious Diseases, HIV/AIDS fact sheets, epidemiologic reports and other HIV data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts. As of January 1, 2011, this resulted in the removal of 2,297 HIV/AIDS cases, of which 739 have died and 1,558 were living. These persons living with HIV/AIDS may still continue to reside and receive care in the Commonwealth. The total number of persons living with HIV/AIDS, irrespective of location of diagnosis, is the basis for MDPH service planning. This change is partially a result of increased activities required by the Centers for Disease Control and Prevention (CDC) for de-duplication among states in an effort to identify cases that are counted multiple times in the National HIV/AIDS surveillance system. The cases are assigned to the state that reports the earliest date of AIDS diagnosis if available. If the case has not progressed to AIDS, the case is assigned to the state with the earliest HIV diagnosis date. Please note that all previous HIV/AIDS fact sheets, data reports and presentations include cases that may have been first diagnosed in another state.

ⁱⁱ Effective January 1, 2011, the Massachusetts Department of Public Health (MDPH) HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to eliminate the presumed heterosexual exposure mode category for males; those cases have been reassigned to the no identified risk (NIR) exposure mode category. The presumed heterosexual exposure mode category was used with the intention of identifying HIV exposure mode for females when sex with males is the only reported risk factor, there is no evidence of current or past injection drug use (IDU), and behavioral risk and HIV status information about male sexual partners are unknown. Twenty-nine percent of females living with HIV/AIDS and 41% of recent female HIV diagnoses are reported in the presumed heterosexual exposure mode category. The application of the presumed heterosexual exposure mode category to males is overly inclusive in that female to male HIV transmission is biologically less probable, and there are alternate exposure modes that are possible for males, including sex with other men (MSM) or IDU. The CDC reports males diagnosed with HIV/AIDS who report sex with females as their only risk factor, without corresponding partner risk or HIV status information, in the NIR exposure mode category. This revision to report presumed heterosexual male HIV/AIDS cases as NIR will bring Massachusetts HIV/AIDS case reporting for males in alignment with CDC standards. The MDPH will maintain presumed heterosexual and heterosexual exposure mode categories for females.

ⁱⁱⁱ HSRs are regions defined geographically to facilitate targeted health service planning. See Epidemiologic Profile General Appendices, Health Service Region Maps, available at http://www.mass.gov/dph/aids/research/profile2005/app5_hrs_maps.pdf for configuration of health service regions. Reflects the health service region of a person's residence at the time of report (not necessarily current residence).



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