



# Massachusetts HIV/AIDS Data Fact Sheet

## Who is most at risk of HIV infection?

### Overview

Although newly diagnosed 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 are most at risk for HIV infection. While the relative frequencies of diagnosis of HIV infection by gender, race/ethnicity and place of birth have remained fairly stable over the past ten years, there has been a shift in the distribution of HIV infection diagnoses by exposure mode. The proportion of cases with injection drug use as the reported exposure mode decreased from 18% in 2002 to 8% in 2011. During the same time period, the proportion of all HIV infection diagnoses with male-to-male sex as an exposure mode increased from 30% to 38%. Among males, the proportion of HIV infection diagnoses with male-to-male sex as the reported exposure mode increased from 45% in 2002 to 52% in 2011. There was also an increase in the proportion of cases with undetermined exposure mode: from 19% in 2002 to 27% in 2011.

The following analyses depict trends in HIV infection diagnosis and describe populations at risk for HIV infection in Massachusetts. Trends in the distribution of HIV infection diagnoses from 2002 to 2011 are used to highlight populations at elevated risk for HIV infection. These trends, as well as the characteristics of the 1,979 i people who were recently diagnosed with HIV infection within the three-year period 2009 to 2011, provide useful information for planning HIV prevention programs.

### Trends in HIV Infection Diagnoses from 2002 to 2011

- The number of annual HIV diagnoses reported decreased by 37% from 1,043 in 2002 to 657 in 2011.

### Gender:

- From 2002 to 2011, the distribution of people diagnosed with HIV infection by gender ranged from 67% to 75% male and 25% to 33% female.
- From 2002 to 2011, the number of males diagnosed with HIV infection decreased by 33% (from 706 to 473) while the number of females diagnosed with HIV infection decreased by 45% (from 337 to 184).

### Race/Ethnicity:

- From 2002 to 2011, among reported cases, the proportion of HIV diagnoses ranged from 35% to 42% in white (non-Hispanic) individuals; from 31% to 35% in black (non-Hispanic) individuals; from 23% to 26% in Hispanic/Latino individuals; and from 1% to 4% in Asian/Pacific Islanders.
- From 2002 to 2011, the number of white (non-Hispanic) individuals diagnosed with HIV infection decreased by 43% (from 402 to 231); the number of black (non-Hispanic) individuals decreased by 37% from (368 to 231); the number of Hispanic/Latino individuals decreased by 44% (from 246 to 162); and the number Asian/Pacific Islanders increased by 14% (from 21 to 24).

### Gender and Race/Ethnicity:

- In the years 2002 through 2011, among males, the largest proportion of HIV infection diagnoses was white (non-Hispanic) males (range 41% to 50%), followed by black (non-Hispanic) males (range 22% to 28%) and Hispanic/Latino males (range 21% to 25%).
- From 2002 to 2011, the number of white (non-Hispanic) males diagnosed with HIV infection decreased by 41% (from 330 to 194); the number of black (non-Hispanic) males decreased by 31% (from 195 to 134); and the number of Hispanic/Latino males decreased by 26% from (163 to 120).
- Among females diagnosed with HIV infection from 2002 to 2011, the largest proportion was black (non-Hispanic) females (range 46% to 55%), followed by Hispanic/Latina females (range 23% to 31%) and white (non-Hispanic) females (range 15% to 27%).
- From 2002 to 2011, the number of white (non-Hispanic) females diagnosed with HIV infection decreased by 49% (from 72 to 37); the number of black (non-Hispanic) females decreased by 44% (from 173 to 97); and the number of Hispanic/Latina females decreased by 49% (from 83 to 42).

### Place of Birth and Gender:

- From 2002 to 2011, the proportion of people born outside the US among those diagnosed with HIV infection remained between 29% and 33%.

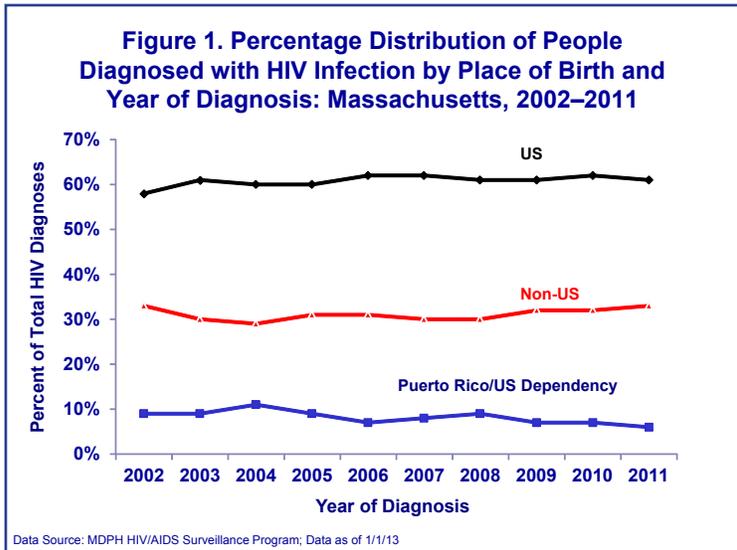




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- From 2002 to 2011, the total number of people diagnosed with HIV infection born outside the US decreased by 38% (from 346 to 214). The number of non-US born males decreased by 37% (from 199 to 125); and the number of non-US born females decreased by 39% (from 147 to 89).



- From 2002 to 2011, the proportion of individuals born outside the US among males diagnosed with HIV infection ranged from 22% to 28%.
- During the same time period, the proportion of individuals born outside the US among females increased from 44% to 48%.

### Exposure Mode:

- From 2002 to 2011, male-to-male sex remained the predominant exposure mode, accounting for the largest proportion of HIV infection diagnoses each year, which ranged from a low of 30% in 2002 to a high of 44% in 2009.
- The proportion of cases with injection drug use as the reported exposure mode decreased from 18% in 2002 to 8% in 2011.
- The proportion of cases with undetermined exposure mode increased from 19% in 2002 to 27% in 2011.

- From 2002 to 2011, the number of individuals diagnosed with HIV infection with:
  - injection drug use (IDU) exposure mode decreased by 71% (from 189 to 55);
  - heterosexual sex exposure mode decreased by 54% (from 180 to 83);
  - MSM/IDU exposure mode decreased by 44% (from 32 to 18);
  - presumed heterosexual exposure mode decreased by 42% (from 123 to 71);
  - male-to-male sex exposure mode decreased by 22% (from 316 to 247); and
  - undetermined exposure mode decreased by 8% (from 196 to 180).

### Exposure Mode and Gender: <sup>ii</sup>

- Among males, the proportion of HIV diagnoses with male-to-male sex as the primary reported exposure mode increased from 45% in 2002 to 52% in 2011.
- The proportion of HIV exposures among males attributed to injection drug use decreased from 18% in 2002 to 7% in 2011.
- Among females diagnosed with HIV infection, the proportion with injection drug use as the reported exposure mode decreased from 18% in 2002 to 11% in 2011.

### Age at HIV Infection Diagnosis:

- The proportion of HIV diagnoses reported in people age 24 years or younger at the time of diagnosis increased from 9% in 2002 to 13% in 2011.
- During the same time period, the proportion of HIV diagnoses reported in people age 50 years or older increased from 12% to 20%.
- In 2011, the majority (56%) of HIV infection diagnoses were reported in people between the ages of 30 and 49 years old.



For detailed data tables and technical notes see Appendix  
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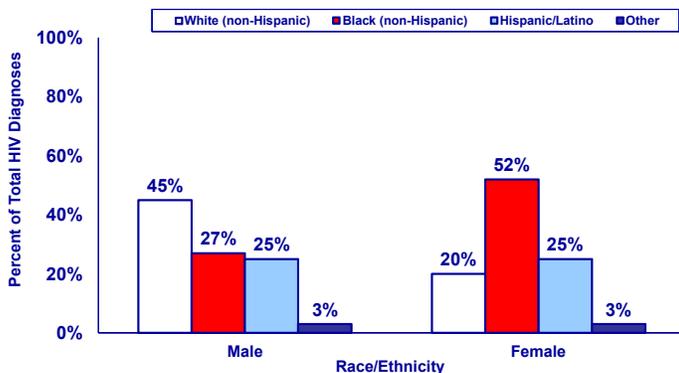
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### A Profile of People Recently Diagnosed with HIV Infection: Race/Ethnicity and Gender

- The distribution of race/ethnicity among persons diagnosed with HIV infection within the years 2009 to 2011 was different among males and females. While 45% of males diagnosed with HIV infection within the years 2009 to 2011 were white (non-Hispanic), 52% of females diagnosed during this time period were black (non-Hispanic).

**Figure 2. People Diagnosed with HIV Infection Within the Years 2009–2011 by Gender and Race/Ethnicity: Massachusetts**

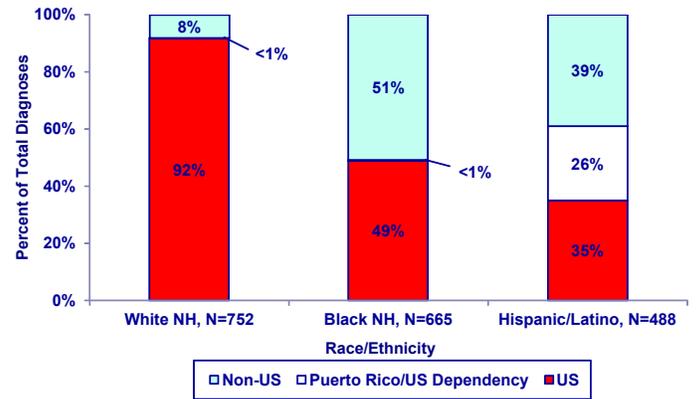


Data Source: MDPH HIV/AIDS Surveillance Program, Data as of 1/1/13

### Race/Ethnicity and Place of Birth:

- Ninety-two percent of white (non-Hispanic) individuals diagnosed with HIV infection within the three-year period 2009 to 2011, were born in the US, compared to 49% of black (non-Hispanic) individuals and 35% of Hispanic/Latino individuals.
- During the same time period, 51% of black (non-Hispanic) individuals diagnosed with HIV infection within the three-year period 2009 to 2011, were born outside the US, compared to 39% of Hispanic/Latino individuals and 8% of white (non-Hispanic) individuals. An additional 26% percent of Hispanic/Latino individuals diagnosed with HIV infection during this time period were born in Puerto Rico or another US Dependency, compared to less than one percent of both black (non-Hispanic) and white (non-Hispanic) individuals.

**Figure 3. People Diagnosed with HIV Infection Within the Years 2009–2011 by Race/Ethnicity and Place of Birth: Massachusetts**



Data Source: MDPH HIV/AIDS Surveillance Program, Data as of 1/1/13, NH = Non-Hispanic

- The majority of non-US born black (non-Hispanic) individuals diagnosed with HIV infection within the three-year period 2009 to 2011 were from sub-Saharan Africa, and the Caribbean; the majority of non-US born Hispanic/Latino individuals were from Central and South America, and the Caribbean. The majority of non-US born white (non-Hispanic) individuals were from Central and South America, North America, and Europe.

### Race/Ethnicity, Place of Birth and Gender:

- Fifty percent of females diagnosed with HIV infection within the three-year period 2009 to 2011 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 was 71% compared to 41% of Hispanic/Latina females and 4% of white (non-Hispanic) females. Among black (non-Hispanic) males, the proportion born outside the US was 36% compared to 38% of Hispanic/Latino males and 9% 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 2009 to 2011, was male-to-male sex (64%); for 15% exposure mode was undetermined.



For detailed data tables and technical notes see Appendix  
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- Exposure mode was undetermined in 33% of black (non-Hispanic) individuals recently diagnosed with HIV infection. Female reporting sex with male of unknown risk and HIV status (presumed heterosexual exposure) was the reported exposure mode for 21%, male-to-male sex for 20% and heterosexual sex with partners of known risk and/or HIV status for 19%.
- Among Hispanic/Latino individuals, male-to-male sex was the most frequently reported HIV exposure within the years 2009 to 2011 (31%) followed by heterosexual exposure (18%) and injection drug use (13%); for 26% exposure mode was undetermined.

### Race/Ethnicity, Exposure Mode and Gender:

- Exposure mode among people diagnosed with HIV infection within the three-year period 2009 to 2011 varies by race/ethnicity among both males and females.
- Among white (non-Hispanic) males, male-to-male sex was the predominant exposure mode, accounting for 74% of reported exposures; for 15% exposure mode was undetermined.
- Exposure mode was undetermined in 46% of black (non-Hispanic) males and male-to-male sex was the most frequently reported risk accounting for 35% of all exposures, followed by heterosexual sex at 9%, and injection drug use at 7% of reported exposures.
- Among Hispanic/Latino males, male-to-male sex was the most frequently reported exposure mode accounting for 43% of exposures, followed by injection drug use at 13% and heterosexual sex at 9% of exposures. For 32% of Hispanic/Latino males, exposures mode was undetermined.
- Among white (non-Hispanic) females diagnosed with HIV infection, injection drug use was the most frequently reported exposure mode accounting for 35% of exposures, followed by heterosexual sex (with partners of known risk and/or HIV status) at 25% and sex with males of unknown risk and HIV status (presumed heterosexual) at 22% of exposures.
- The predominant exposure mode among black (non-Hispanic) females was sex with males of unknown risk and HIV status (presumed heterosexual exposure) (49%).

- Among Hispanic/Latina females, heterosexual sex (with partners of known risk and/or HIV status) was the most frequently reported exposure mode accounting for 43% of exposures, followed by sex with males of unknown risk and HIV status (presumed heterosexual exposure) at 34% and injection drug use at 11% of exposures.

### Distribution by Gender and Health Service Region (HSR): <sup>iii</sup>

- The Metro West and Boston HSRs have the highest proportion of males among those with HIV infection diagnosed within the three-year period 2009 to 2011, at 77% and 76%, respectively.
- The Central HSR has the highest proportion of females among people diagnosed with HIV infection within the three-year period 2009 to 2011 at 36%.

### Distribution by Race/Ethnicity and HSR:

- White (non-Hispanic) individuals constitute the largest proportion of people recently diagnosed with HIV infection in the Southeast (54%) and Metro West (44%) HSRs.
- In the Boston HSR, black (non-Hispanic) individuals constitute the largest proportion of recent diagnoses at 43%.
- In the Central HSR, black (non-Hispanic) individuals account for 39%, white (non-Hispanic) individuals 36% and Hispanic/Latino individuals 23% of recent diagnoses.
- In the Western HSR, Hispanic/Latino individuals followed by white (non-Hispanic) individuals (42% and 37%, respectively) account for the largest proportions of people recently diagnosed with HIV infection.
- In the Northeast HSR, white (non-Hispanic) individuals constitute 34% of people recently diagnosed with HIV infection, Hispanic/Latino individuals constitute 32%, and black (non-Hispanic) individuals constitute 29%.

### Distribution by Exposure Mode and HSR:

- Male-to-male sex was the most frequently reported exposure mode in all regions among people diagnosed with HIV infection within the years 2009 to 2011, accounting for 47% of exposures in the Boston HSR, 31% in the Central HSR, 47% in the Metro West HSR, 33% in the Northeast HSR, 42% in the Southeast HSR, and 39% in the Western HSR.



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- The Western HSR had the highest proportion of exposures attributed to injection drug use, at 13%. Injection drug use accounted for 4% to 8% of exposures in the remaining regions.
- The largest proportion of exposures attributed to heterosexual sex (with partners of known risk and/or HIV status) was 20% in the Central HSR. Heterosexual sex accounted for 10% to 12% of exposures in the remaining regions.
- The largest proportion of exposures attributed to female reporting sex with male of unknown risk and HIV status (presumed heterosexual exposure) was 13% in the Central HSR, while the smallest was 9% in the Metro West and Western HSRs.
- The Northeast HSR had the highest proportion of recent HIV infection diagnoses with undetermined exposure mode, at 33%. In the remaining regions, exposure mode was undetermined for 21% to 25% of recent diagnoses.

### People at Risk for HIV Infection

#### State-funded HIV Counseling, Testing and Referral:

- In 2011, 65,404 HIV tests were performed on 60,043 unique clients at publicly funded HIV Counseling, Testing and Referral (CTR) sites. Of the 65,404 HIV tests a total of 566 (0.9%) were positive, of which 289 were newly identified. The 289 new positive tests were performed on 289 unique clients, representing 44% of individuals newly diagnosed with HIV infection (N=657) in the state.
- In 2011, more HIV tests were performed on males (57%, N=37,148) than females (42%, N=27,607) at publicly funded sites.
- The largest proportions of HIV tests were performed on white (non-Hispanic) (33%, N=21,398) and black (non-Hispanic) clients (31%, N=20,492), followed by Hispanic/Latino clients (29%, N=18,894).
- Two percent (N=1,550) of HIV tests were performed on Asian/Native Hawaiian/Pacific Islander clients, 1% (N=563) on multi-race clients, and <1% (N=153) on American Indian/Alaska Native.

- Black (non-Hispanic) clients accounted for 31% of both positive HIV tests and all tests conducted.
- Hispanic/Latino clients accounted for 29% of positive HIV tests and 26% of all tests conducted.
- White (non-Hispanic) clients accounted for 33% of positive HIV tests and 39% of all tests conducted.
- Asian/Native Hawaiian/Pacific Islander clients accounted for 2% of positive HIV tests and 1% of all tests conducted.
- By race/ethnicity, the highest percentage of positive HIV tests was among American Indian/Alaska Native clients, at 1.3%, followed by multi-race clients at 1.1% and white (non-Hispanic) clients at 1.0%.
- By age category, the highest percentage of positive HIV tests was among clients under age 13 years at 2.9%, followed by clients between the ages of 45 and 49 years and 50 and 54 years, both at 1.9%.

### Behavioral Risk for HIV Infection

#### Number of Sexual Partners:

- Among 3,598 respondents to the 2011 Massachusetts Behavioral Risk Factor Surveillance System (BRFSS) survey, 18–64 years of age, 11% reported two or more sexual partners in the previous year, 69% reported one partner, and 21% reported no sexual partners.
- Larger proportions of people reporting two or more partners in the previous year were men (15% of men reported two or more partners compared to 6% of women), and were 18 to 24 years old (30% of 18 to 24 year olds reported two or more partners compared to 12% of 25 to 34 year olds, 9% of 35 to 44 year olds, and 3% of 45 to 64 year olds).
- Forty-eight percent of males who had sex with male partners reported two or more sexual partners in the previous year, compared to 17% of males who had sex with opposite-sex partners.

#### Male-to-Male Sex:

- Among 1,124 male respondents to the 2011 BRFSS 18–64 years of age, 5.4% reported having sex with other males.



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### Condom Use:

- Of 2,659 18–64 year old sexually active respondents to the 2011 BRFSS, 25% reported using a condom at last sexual encounter (26% of male respondents and 24% of female respondents).
- Thirty-one percent of black (non-Hispanic) respondents reported condom use at last sexual encounter, compared to 25% of white (non-Hispanic) individuals and 21% of Hispanic/Latino individuals.
- Thirty-three percent of those reporting two sexual partners in the previous year also reported condom use at last sexual encounter, compared to 20% of those reporting one partner.

### Data Sources

HIV/AIDS Case Data: Massachusetts Department of Public Health, HIV/AIDS Surveillance Program, all data as of 1/1/13

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

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<sup>i</sup> Effective January 1, 2011, the Massachusetts Department of Public Health, HIV/AIDS fact sheets, epidemiologic reports, and other data presentations have been updated to remove all HIV/AIDS cases that were first diagnosed in another state before being reported in Massachusetts.

<sup>ii</sup> The category of presumed heterosexual is used exclusively for females, to define HIV exposure mode in cases when sex with males is the only reported risk factor for HIV infection

<sup>iii</sup> Reflects the health service region of a person's residence at the time of report (not necessarily current residence). 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/eohhs/docs/dph/aids/2006-profiles/app-hrs-maps.pdf> for configuration of health service regions.



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