

## **Companion Text for the Slide Set:** ***Minnesota HIV Surveillance Report, 2015***

### **Overview**

The *Minnesota HIV Surveillance Report, 2015* describes the occurrence of newly reported HIV diagnoses in Minnesota by person, place, and time through December 31, 2015. Such data provide information about where and among whom HIV transmission is likely occurring. This knowledge can in turn be used to help educate, target prevention efforts, plan for services, and develop policy.

### **Data Source**

In Minnesota, laboratory-confirmed infections of human immunodeficiency virus (HIV) are monitored by the Minnesota Department of Health (MDH) through an active and passive surveillance system. State rules (Minnesota Rule 4605.7040) require both physicians and laboratories to report all cases of HIV infection (HIV or AIDS) directly to MDH (passive surveillance). Additionally, regular contact is maintained with several clinical sites to ensure completeness of reporting (active surveillance). In June 2011, an amendment to the communicable disease reporting rule was passed, requiring the report of all CD4 and viral load test results.

Data in this report include cases diagnosed with HIV infection<sup>1</sup> as of December 31, 2014 and reported to the MDH as of April 6, 2016. All data are displayed by earliest date of HIV diagnosis. Refer to the *HIV Surveillance Technical Notes* for a more detailed description of data inclusion and exclusion criteria.

### **Data Limitations**

Factors that impact the completeness and accuracy of the available surveillance data on HIV/AIDS include the level of screening and compliance with case reporting. Thus, any changes in numbers of infection diagnoses may be due to one of these factors, or due to actual changes in HIV/AIDS occurrence.

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<sup>1</sup> HIV (non-AIDS) or AIDS at first report.

The data presented in this report are not adjusted for reporting delays. Thus, the case number presented may change from year to year. However, the number of cases diagnosed within a calendar year changes relatively little after two years have passed.

### **National Context**

Compared with the rest of the nation, Minnesota is considered to be a low to moderate HIV/AIDS incidence state. In 2014, state-specific HIV infection diagnosis rates ranged from 1.9 per 100,000 persons in Montana to 36.6 per 100,000 persons in Louisiana with an overall national rate of 16.6 per 100,000 persons. Minnesota had the 16<sup>th</sup> lowest HIV infection diagnosis rate (7.0 HIV infections reported per 100,000 persons<sup>2</sup>). Compared with other states in the Midwest, Minnesota has a moderate rate of HIV diagnosis. In 2014, state-specific AIDS diagnosis rates ranged from 0.7 per 100,000 persons in Montana and Wyoming to 13.7 per 100,000 persons in Louisiana. Minnesota had the 12<sup>th</sup> lowest AIDS rate (3.0 AIDS cases reported per 100,000 persons<sup>3</sup>). Compared with states in the Midwest region, Minnesota has a moderate AIDS rate.

### **MDH HIV/AIDS Surveillance, Cumulative cases**

AIDS has been tracked in Minnesota since 1982. In 1985, AIDS officially became a reportable disease to state and territorial health departments nationwide. Also in 1985, when the Food and Drug Administration approved the first diagnostic test for HIV, Minnesota became the first state to make HIV infection a reportable condition. As of December 31, 2015, a cumulative total of 11,009 cases of HIV infection have been reported among Minnesota residents.<sup>4</sup> Of these 11,009 cases, 3,737 (34%) are known to be deceased through correspondence with the reporting source, other health departments, review of death certificates, active surveillance, and matches with the National Death Index and Social Security Death Master File.

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<sup>2</sup> Centers for Disease Control and Prevention. HIV/AIDS Statistics and Surveillance Slide Sets <http://www.cdc.gov/hiv/topics/surveillance/resources/slides/general/index.htm> accessed April 20, 2016, Slide 15

<sup>3</sup> Centers for Disease Control and Prevention. HIV/AIDS Statistics and Surveillance Slide Sets <http://www.cdc.gov/hiv/topics/surveillance/resources/slides/general/index.htm> accessed April 20, 2016, Slide 31

<sup>4</sup> This number includes persons who reported Minnesota as their state of residence at the time of their HIV and/or AIDS diagnosis. It also includes persons who may have been diagnosed in a state that does not have HIV reporting and who subsequently moved to Minnesota and were reported here. HIV-infected persons currently residing in Minnesota, but who resided in another HIV-reporting state at the time of diagnosis are excluded.

## **Overview of HIV/AIDS in Minnesota, 1990s-2014**

The annual number of new HIV and AIDS cases increased steadily from the beginning of the epidemic to the early 1990s. Beginning in 1996, both the number of newly diagnosed AIDS cases and the number of deaths among AIDS cases declined sharply, primarily due to the success of new antiretroviral therapies including protease inhibitors. These treatments do not cure, but can delay progression to AIDS among persons with HIV (non-AIDS) infection and improve survival among those with AIDS. These treatments have been shown to be effective at preventing transmission of HIV. Over the past decade, the number of HIV/AIDS cases diagnosed has remained relatively stable with an average of 318 cases diagnosed each year. By the end of 2015, an estimated 8,215 persons with HIV/AIDS were assumed to be living in Minnesota.<sup>5</sup>

### **New HIV Diagnoses in Minnesota**

In this report, the term “new HIV diagnoses” refers to HIV-infected Minnesota residents who were diagnosed in a particular calendar year and reported to MDH. This includes persons whose first diagnosis of HIV infection is AIDS (AIDS at first diagnosis). HIV diagnoses data are displayed by earliest known date of HIV diagnosis.

In 2015, 294 new HIV diagnoses were reported in Minnesota. This represents a 4% decrease from 2014 when 307 diagnoses were reported.

### **New HIV Diagnoses by Geography**

Historically, about 90% of new HIV infections diagnosed in Minnesota have occurred in Minneapolis, St. Paul and the surrounding seven-county metropolitan area. This has changed slightly over time, and currently about 87% of new diagnoses occur in the metropolitan area surrounding Minneapolis/St. Paul. Additionally, although HIV infection is more common in communities with higher population densities and greater poverty, HIV or AIDS was diagnosed in 28 counties in Minnesota in 2015.

Overall, of the 307 HIV diagnoses in Minnesota in 2014, 40% were among residents of suburban seven-county metro area, 32% were residents of Minneapolis and

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<sup>5</sup> This number includes persons whose most recently reported state of residence was Minnesota, regardless of residence at time of diagnosis. This estimate does not include persons with undiagnosed HIV infection.

14% were residents of St. Paul and Greater Minnesota at the time of diagnosis. However, the geographic distribution of cases differs by gender. For example, 52% of female cases resided in the suburban seven-county metro area compared to only 36% of male cases. Whereas 35% of male cases resided in Minneapolis at the time of diagnosis, compared to only 23% of females.

### **New HIV Diagnoses by Gender & Race/Ethnicity<sup>6</sup>**

Since the beginning of the epidemic, males have accounted for a majority of new HIV diagnoses per year. In 2015 numbers of new cases among males decreased by nine diagnoses from 2014, while the number of newly infected female cases decreased by four diagnoses compared to 2014, which is a 6% decrease for both males and females compared to 2014.

The most recent data illustrate that men and women of color continue to be disproportionately affected by HIV/AIDS. People of color account for 15% of Minnesota's population, yet account for 55% (163/294) of the cases diagnosed in 2015. Men of color make up approximately 17% of the male population and 49% of the infections diagnosed among men in 2015. White, non-Hispanic men make up approximately 83% of the male population in Minnesota and 49% of the new HIV infections diagnosed among men in 2015. Similarly for females, women of color make up approximately 13% of the female population and 81% of the new infections among women. White, non-Hispanic women make up approximately 83% of the female population and 16% of new infections among women in 2015.<sup>7</sup>

Note that race is not considered a biological reason for disparities in the occurrence of HIV experienced by persons of color. Race, however, can be considered a marker for other personal and social characteristics that put a person at greater risk for HIV exposure. These characteristics may include, but are not limited to, lower socioeconomic status, less education, and greater prevalence of drug use.

Trends in the annual number of new HIV infections diagnosed among males differ by racial/ethnic group. White males account for the largest number of new

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<sup>6</sup> Black race was broken down into African-born and African American (Black, not African-born). The numbers exclude persons arriving through the HIV-Positive Refugee Resettlement Program and other refugee/immigrants with an HIV diagnosis prior to arrival.

<sup>7</sup> Population estimates based on U.S. Census 2010 data.

infections, but the proportion of cases that white males account for has decreased over time. In 2015, white males accounted for 49% of the new HIV diagnoses among men, with 109 diagnoses. During the past decade, the number of cases among African-American males has fluctuated from year to year, with 57 new HIV diagnoses in 2015. This represents a 27% increase among African-American males from 2014 to 2015.

The annual number of HIV infections diagnosed among Hispanic and African-born males has remained relatively stable, with fluctuation from year to year. A decrease in Hispanic males was observed in 2015, from 28 cases in 2014 to 21 in 2015, representing an decrease of 25%. Twenty three African-born males were diagnosed with HIV in 2015; this is an increase of 15% from 2014 when 20 cases were diagnosed.

Similarly, trends in the annual number of HIV infections diagnosed among females differ by racial/ethnic group. In 2015 women of color women accounted for 81% of the new diagnoses in Minnesota, with 56 new cases while white women accounted for 16% of new diagnoses (11 cases)

Since 2005, the annual number of new infections diagnosed among African American females has decreased overall. In 2015 there were 15 cases diagnosed among African American women, compared to 16 in 2014. The number of diagnoses among African-born women has been increasing over the past decade. In 2015 the number of new cases among African-born women was 36, accounting for 52% of all new diagnoses among women. The annual number of new infections diagnosed among Hispanic, American Indian, Asian, and multi-racial females continues to be quite small (10 cases or fewer per year for each of these groups).

Beginning in 2012, MDH began estimating the number of MSM living in Minnesota. Men who have sex with Men have the highest rate of HIV infection than any other sub-category. In 2015, the estimated rate of HIV infection among MSM was 168.1 per 100,000 population. This is more than 60 times higher than the rate among non-MSM men (2.7 per 100,000 population). It's important to note that MSM contains cases from all racial/ethnic categories and therefore cannot be directly compared to the rates by race/ethnicity. For more information on how this was estimated, see the *HIV Surveillance Technical Notes*.

### **Age at Diagnosis**

In 2015, 44% of all male cases diagnosed with HIV were under the age of 30, compared to 32% of females diagnosed in this age group. The average age at diagnosis among males in 2015 decreased to 35 years compared to an average of 36 years old in 2014. The average age at diagnosis among women was 39 years in 2015.

### **New HIV Diagnoses by Mode of Exposure**

Starting in 2004, MDH has used a risk re-distribution method to estimate mode of exposure among those cases with unknown risk. For additional details on how this was done please read the *HIV Surveillance Technical Notes*. All mode of exposure numbers referred to in the text are based on the risk re-distribution.

Since the beginning, men have driven the HIV/AIDS epidemic in Minnesota and male-to-male sex has been the predominant mode of exposure reported. In 2015, MSM accounted for 52% of all new infections (69% among males) with 152 cases diagnosed. On a much smaller scale, the numbers of male cases attributed to IDU and MSM/IDU as well as heterosexual contact have remained somewhat stable over the past decade. The number of cases without a specified risk has increased overall for the past decade, accounting for 26% of male cases in 2015.

Throughout the epidemic, heterosexual contact has been the predominant mode of HIV exposure reported among females accounting for 76% of female cases in 2015. IDU was not reported among females in 2015. Unspecified risk represented 24% of female cases in 2015.

The proportion of cases attributable to a certain mode of exposure differs not only by gender, but also by race. Of the new HIV infections diagnosed among males between 2013 and 2015, MSM or MSM/IDU accounted for an estimated 97% of cases among white males, 94% of cases among Hispanic males, 86% of cases among African American males, and 12% of cases among African-born males. IDU was estimated as a risk in 2% of white male, Hispanic male, and African American male cases diagnosed during 2013-2015. The number of cases among Asian and American Indian men during the years 2013-2015 was insufficient to make generalizations regarding risk (less than 20

cases in each group). There were no cases attributed to IDU alone among African-born males during this same time period.

Heterosexual contact accounted for an estimated 98% of cases among African-born females, 94% of African American females, and 92% of white females between 2013 and 2015.

IDU was estimated as a risk for 8% of cases among white women. No cases were attributed to IDU among African American and African-born females during this same time period. The small number of cases in 2013-2015 among Hispanic, Asian, and American Indian women (less than 20 cases in each group) is insufficient to make generalizations regarding risk.

### **Mother-to-Child HIV Transmission**

The ability to interrupt the transmission of HIV from mother to child via antiretroviral therapy and appropriate perinatal care is an important accomplishment in the history of the HIV/AIDS epidemic. Newborn HIV infection rates range from 25-30% without antiretroviral therapy, but decrease to 1-2% with appropriate medical intervention.

For the past decade the number of births to HIV-infected women increased steadily from 41 in 2005 to 59 births in 2015. The rate of transmission has decreased from 15% between 1994 and 1996 to 1.6% in the past three years, with 2 HIV+ babies born to HIV+ mothers in Minnesota in 2015.

The rate of transmission in Minnesota between 1982 and 1994 (before widespread use of zidovudine<sup>8</sup> to prevent mother-to-child HIV transmission) was 25%. Proper prenatal care, including HIV screening for all pregnant women and appropriate medical intervention for those infected, is a vital element in preventing the spread of HIV.

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<sup>8</sup> A common antiretroviral drug.

## **POPULATIONS OF INTEREST**

### **New HIV Diagnoses among Adolescents and Young Adults<sup>9</sup>, 1990-2015**

Many people are infected with HIV for years before they actually seek testing and become aware of their HIV status as seen in the number of new cases diagnosed as AIDS at first report. This phenomenon especially affects the observed case counts for younger age groups. As a result, the reported number of HIV infections among youth<sup>8</sup> (with few or no reports of AIDS at first diagnosis) is likely to underestimate the *true* number of new infections occurring in the population more than the reported number of cases in older age groups does.

In 2015 22% (65/294) of new HIV infection diagnoses were among adolescents and young adults. Just like overall trends, trends among youth differ by gender and race. Since 2005, the number of new cases among young males has been increasing steadily, a few cases per year. However, in 2009 the number of cases increased dramatically by 82% compared to 2008, to 80 cases, the highest seen since 1986. In 2015, the number increased from 49 in 2014 to 53. Of these 53 new cases among adolescent and young adult men, 28 (53%) were known MSM of color. Since 2005, the number of cases among young males has increased by about 77%.

Unlike young men, the annual number of new HIV infections diagnosed among young women has remained relatively consistent over time. In 2015 there were 12 cases diagnosed among young women, this accounts for a 50% increase from the eight cases diagnosed in 2014. Females accounted for 18% (12/65) of new HIV infections diagnosed among adolescents and young adults in 2015.

Overall, young women accounted for 17% (12/69) of new infections among females and young males accounted for 24% (53/225) of new infections among males in 2015.

Similar to the overall HIV/AIDS epidemic, persons of color account for a disproportionate number of new HIV infections among adolescents and young adults. Among young men, white accounted for 42% of new HIV infections diagnosed between

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<sup>9</sup> In this report, adolescents are defined as 13-19 year-olds and young adults as 20-24 year-olds; these two groups are jointly referred to as “youth.” Analyses are performed for adolescents and young adults combined because case numbers are too small to present meaningful data separately for each.



2013 and 2015, African American accounted for 35%, and Hispanic 1%. African-born, Asian/Pacific Islander and American Indian made up 4%, 3%, and 1% of the remaining cases, respectively. Among young women, white accounted for 20%, African American 23%, African-born 40%, Hispanic 10%, and persons with multiple or unknown race accounted 4% of the new infections diagnosed during the same time period.

Men having sex with men (MSM) was the predominant mode of HIV exposure among adolescent and young adult males, accounting for an estimated 90% of the new HIV infections diagnosed between 2013 and 2015, while the joint risk of MSM and injecting drug use (IDU) accounted for an estimated 7% of the cases in the same time period. Heterosexual sex accounted for an estimated 1% of cases. Heterosexual contact accounted for an estimated 91% of new HIV infections diagnosed among adolescent and young adult females between 2013 and 2015 while IDU accounted for an estimated 5%.

### **New HIV Infections among Foreign-born Persons**

The number of new HIV infections diagnosed among foreign-born persons in Minnesota has steadily increased from 20 cases in 1990 to 86 cases in 2015. This increase has been largely driven by the increase of cases among African-born persons from 8 cases in 1990 to 61 cases in 2015, as well as, persons from Mexico, Central and South America from 6 cases in 1990 to 16 cases in 2015. Among new HIV infections diagnosed in 2015, 29% were among foreign-born persons. Based on 2010-2012 American Community Survey data, foreign-born persons make up 7% of the total Minnesota population and are, therefore, disproportionately affected by HIV<sup>10</sup>. Among African-born this disparity is even more evident, while African-born persons make up just over 1% of the Minnesota population they accounted for 21% of new HIV infections in 2015.

In 2015, the number of foreign-born males increased from 37 cases in 2014 to 46 cases in 2015 (23% increase). The number of foreign-born females diagnosed with HIV also increased from 35 in 2014 to 40 in 2015. Females made up 47% of all foreign-born cases newly diagnosed with HIV in Minnesota. Foreign-born females accounted for a

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<sup>10</sup> Based on 2010-2012 American Community Survey 3-year estimates, the Minnesota State Demographic Center estimates that there are 390,110 foreign-born persons, including 77,557 African-born persons are living in Minnesota out of a total population of 5,303,925. Because there are many reasons foreign-born persons may not be included in the census count (e.g. difficulties with verbal or written English), these numbers are likely an underestimate of the actual size of the foreign-born population living in Minnesota.

much greater percentage of all females diagnosed cases (58%) than did foreign-born cases among males (20%).

Four countries (Liberia, Ethiopia, Mexico and Cameroon) accounted for a majority (62%) of new infections among foreign-born persons, however there are 28 countries represented among the 86 new infections in 2015.

**Late Testers: Progression to AIDS within one year of HIV diagnosis**

Since 2005, approximately one third of all new HIV infection cases diagnosed in Minnesota have either been AIDS at first diagnosis, or have progressed to an AIDS diagnosis within one year of initial diagnosis with HIV (non-AIDS) infection. As with other characteristics of the HIV epidemic in Minnesota, the proportion of late testers varies by demographic characteristics. The most significant differences occur by race/ethnicity, with the proportion of late testers in 2015 among African-born (40.32%) and whites (29%) and Hispanic (29%) being higher than that among African Americans (15%). Similar data for American Indians and Asian/Pacific Islanders in a single year had fewer than 10 cases and are considered not stable. Differences by age are as expected with the percentage of late testers increasing with age at time of diagnosis. In 2015<sup>11</sup>, 8% of those diagnosed between the ages of 13 and 24 were late testers compared to 36% of those 45 years and older. Finally, the percentage of late testers is also higher among foreign-born cases compared to other cases. In 2015, 38% of foreign-born cases were late testers compared to 21% of US-born cases.

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<sup>11</sup> Percentage of late testers for 2015 includes only those progressing to AIDS through January 2015. As such, this percentage is likely to increase as additional reports are made to the MDH.