HIV in Wisconsin

Wisconsin HIV Surveillance Annual Report, 2018

Diagnosis trends, new diagnoses, and prevalence through December 31, 2018

Wisconsin Department of Health Services | Division of Public Health | HIV Program
P-00484 (07/2019)

Table of Contents

Summary

This report describes HIV diagnosis trends, people newly diagnosed with HIV infection during 2018, and the population living with HIV in Wisconsin as of December 31, 2018.

HIV surveillance data provide important information for planning HIV prevention and care services. Prevention services focus primarily on new diagnosis trends and the geographic and demographic distribution of new cases. Care and treatment services consider the total population of people living with HIV in the state (that is, prevalent cases), regardless of when or where they were first diagnosed.

HIV Diagnosis Trends

Over the past 10 years, the number and rate of new HIV diagnoses have declined. Wisconsin has a relatively low diagnosis rate compared to neighboring states. During 2013-2018:

- Young men and people of color were disproportionately affected by HIV.
- Male-male sexual contact was the most commonly reported risk factor for HIV exposure.

New Diagnoses, 2018

During 2018, 216 people were newly diagnosed with HIV infection in Wisconsin.

- Over half of new cases were diagnosed in Milwaukee or Dane counties.
- A disproportionate number of new HIV diagnoses were young men of color.
- Male-male sexual contact was the most commonly reported risk factor.
- Nearly 90% of cases were linked to care services within three months of diagnosis.

Prevalence

A total of 7,185 people known to be living with HIV resided in Wisconsin at the end of 2018. An estimated 1,300 additional people may be living with HIV in Wisconsin but are not currently aware of their diagnosis. The estimated HIV prevalence was 8,500 people when those who were not aware of their diagnosis were taken into account.

- Ninety-five people living with HIV died during 2018, primarily from causes other than HIV.
- More people living with HIV moved out of Wisconsin (405) compared to people moving into the state (231).
- Over half of people living with HIV in Wisconsin live in Milwaukee or Dane counties.
- Prevalent cases tend to be older than new diagnoses.
- Two out of three people living with HIV were virally suppressed during 2018.

HIV Diagnosis Trends

Number and Rate of New Diagnoses

Number of New Diagnoses

Since 1982, 10,292 Wisconsin residents were diagnosed with HIV infection. HIV diagnoses rose rapidly during the 1980s, peaking during 1990 at 589 new diagnoses, and then declining steeply until the early 2000s (Figure 1).

During 2009-2018, the number of diagnoses ranged from a low of 216 (2018) to a high of 282 (2009), with an average of 240 new HIV diagnoses per year.

FIGURE 1

Over the past 10 years, the number of new HIV diagnoses reported each year in Wisconsin has slowly declined.

Number of new HIV diagnoses by year, Wisconsin, 1982-2018

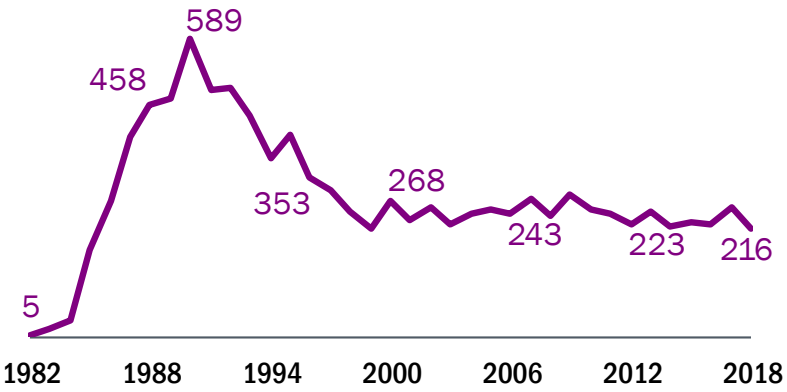
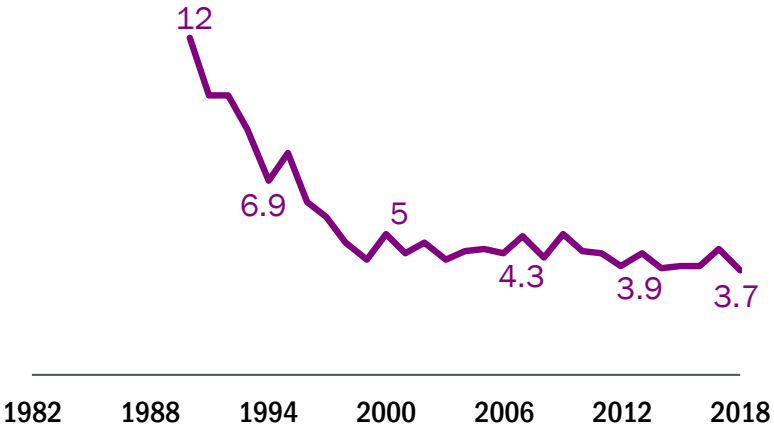


FIGURE 2

The HIV diagnoses rate in Wisconsin has slowly declined over the past 10 years.

Rate of new HIV diagnoses per 100,000 people by year, Wisconsin, 1989-2018



New Diagnosis Rate

During 1990, 12 new HIV cases were diagnosed per 100,000 Wisconsin residents (Figure 2). The new diagnosis rate declined to 3.7 per 100,000 people by 2018.

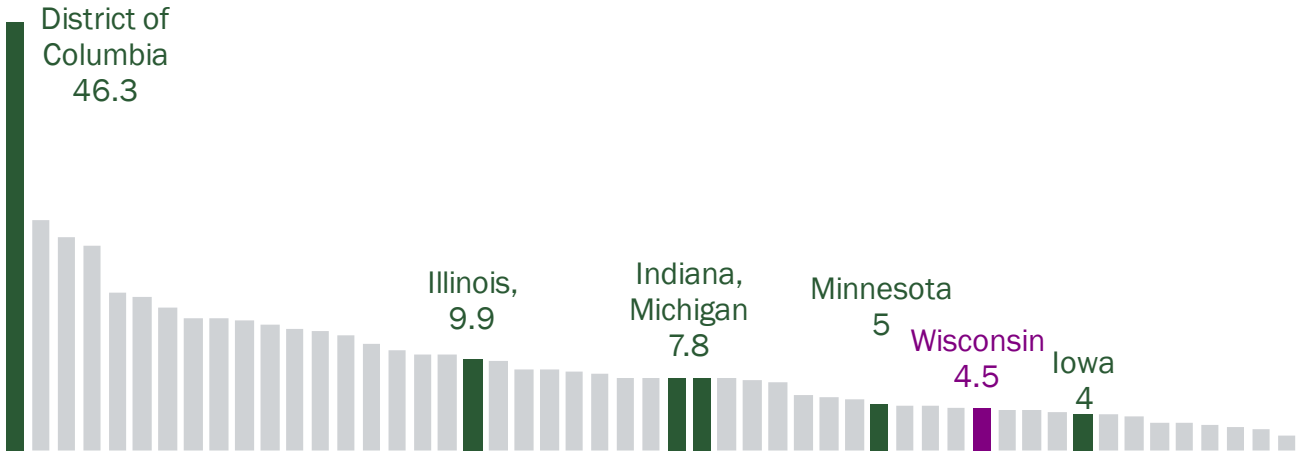
During 2009-2018, the annual diagnosis rate ranged from a low of 3.7 per 100,000 people (2018) to a high of 5 per 100,000 people (2009), with an average of 4.2 new HIV diagnoses per 100,000 people.

Wisconsin's HIV diagnosis rate is low by national standards (Figure 3).

FIGURE 3

Wisconsin has a lower HIV diagnosis rate than most neighboring states.

Estimated number of HIV diagnoses per 100,000 people by state, 2017



Demographics

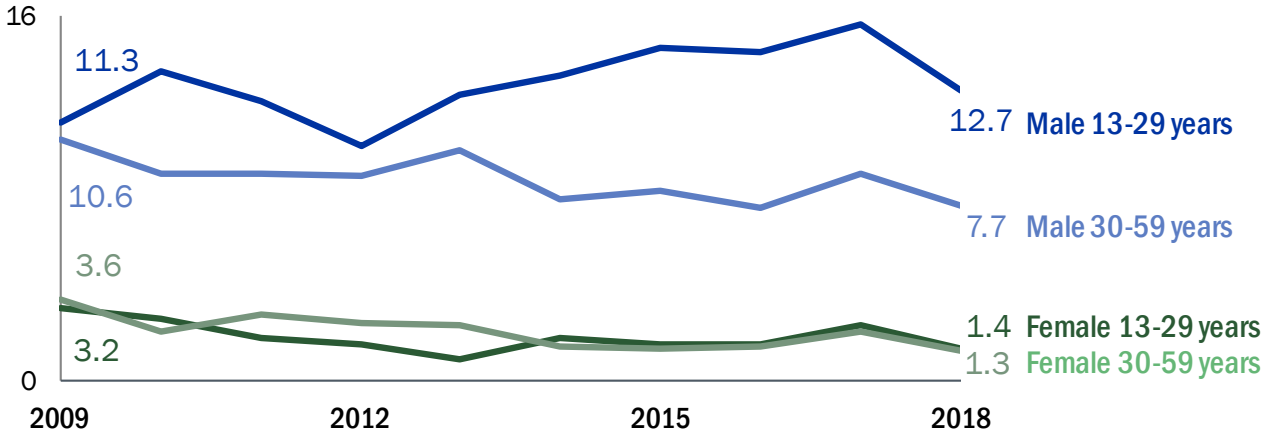
Age and Gender at Diagnosis

During 2009-2018, the HIV diagnosis rate increased from 11.3 to 12.7 per 100,000 people among young men, and declined among older men and among women in both age groups (Figure 4).

FIGURE 4

Young men have the highest HIV diagnosis rate in Wisconsin.

Number of HIV diagnoses per 100,000 people by gender and age* at diagnosis, Wisconsin, 2009-2018



* Diagnosis rates among males and females ages 60 and older are unreliable due to small numbers.

Race and Ethnicity

HIV **disproportionately** affects people of color in Wisconsin. The percentage of new HIV diagnoses affecting people of color rose from 20% in 1982 to 66% in 2018 (Figure 5). During 2018, racial and ethnic minorities made up just 18% of Wisconsin's population, but consisted of 66% of new HIV diagnoses.

This health inequity is **not** due to innate biologic factors—race or ethnicity alone does not make someone more or less susceptible to HIV. Many social and economic factors—the social determinants of health—affect populations of color to a larger extent than white populations in Wisconsin, putting people of color at greater risk for acquiring HIV.

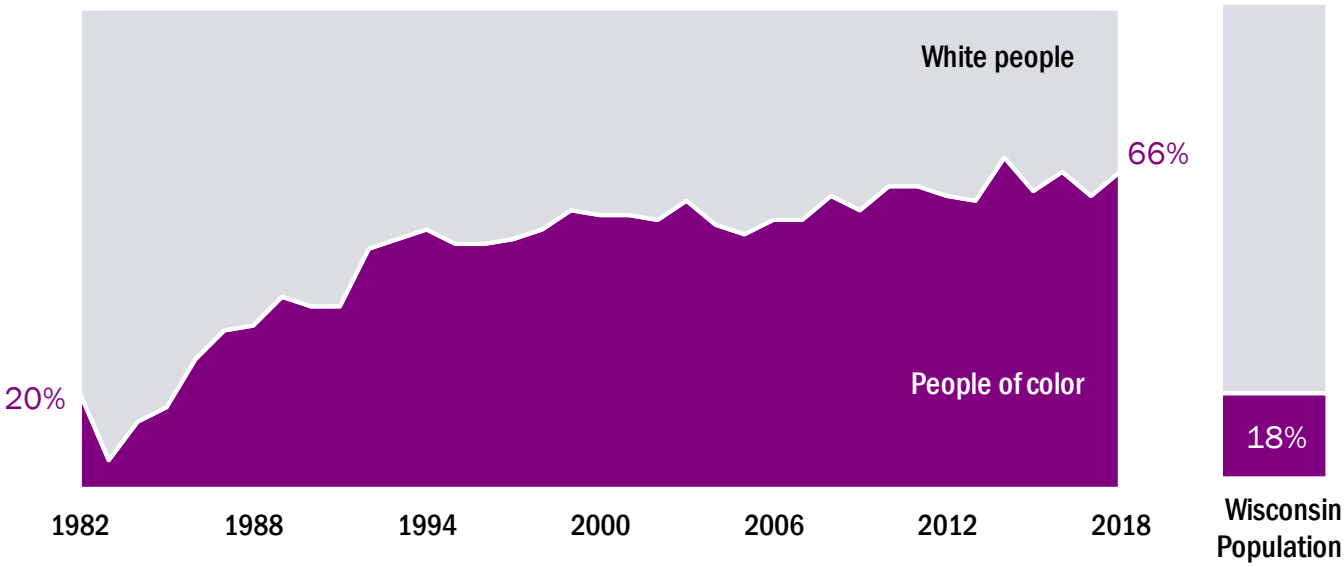
People can be at increased risk of acquiring HIV due to social determinants of health that increase chance of exposure and reduce access to prevention services, such as:

- Poverty
- Limited access to health care
- Lack of education
- Stigma
- Homelessness
- Racism

FIGURE 5

The percentage of new HIV diagnoses among people of color is disproportionate to Wisconsin's racial and ethnic composition.

Percentage of new HIV diagnoses among white people and people of color, Wisconsin, 1982-2018



This disparity is more pronounced among men (Figure 6, Appendix-Table A1). During 2009-2018, women of all racial or ethnic groups have had lower annual HIV diagnosis rates compared to men.

Black women have the highest rate among women but have also experienced the steepest decline in new diagnosis rate over the past 10 years. In contrast, HIV diagnosis rates have diverged by racial or ethnic groups for men, widening the disparity between black men and men of other racial or ethnic groups.

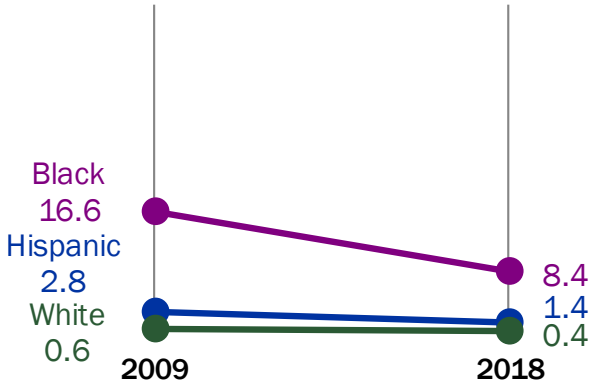
FIGURE 6

HIV Diagnosis Rates

The number of new HIV diagnoses per 100,000 people by gender and race or ethnicity, Wisconsin, 2009-2018

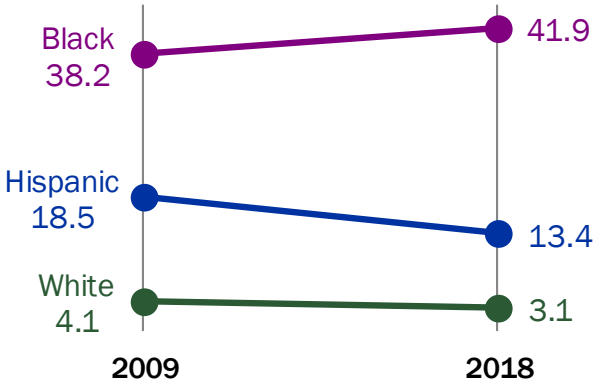
Female

The number of new HIV diagnoses per 100,000 people has **declined for women**.



Male

The number of new HIV diagnoses per 100,000 people has declined for **White** men, has fluctuated for **Hispanic** men, and has increased for **Black** men.



American Indian and Asian People

Due to the small number of American Indian and Asian people diagnosed in Wisconsin each year, these populations are excluded from many sections of this report. A brief summary is provided below.

American Indian People

During 2009-2018, 13 American Indian people were diagnosed with HIV infection in Wisconsin (Figure 7).

- Three out of four of these recent diagnoses were male.
- Fifty-four percent were under 30 at the time of diagnosis.
- All but one was diagnosed in either the southeastern (54%) or northeastern (38%) regions.
- Eight diagnoses were attributed to male-male sexual contact (62%), one was attributed to injection drug use (8%), and four had an unknown transmission category (31%).

Asian People

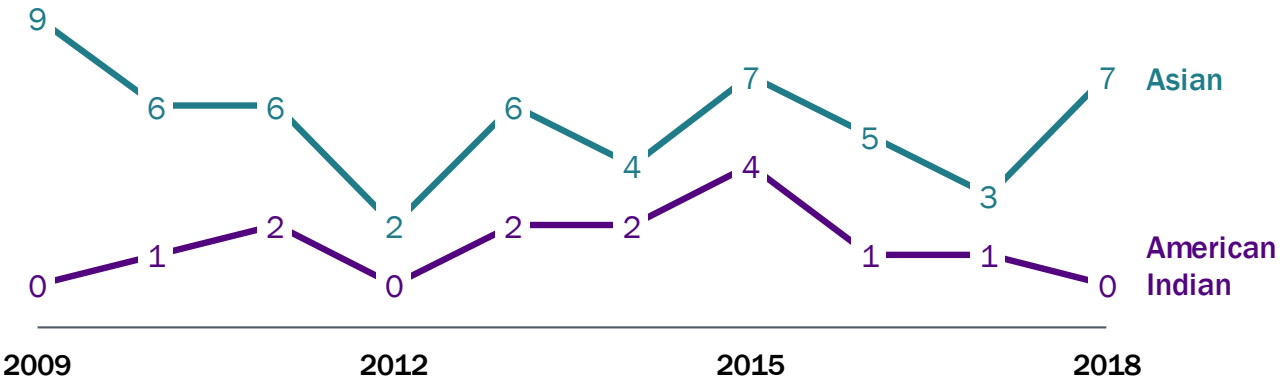
During 2009-2018, 55 Asian people were diagnosed with HIV infection in Wisconsin (Figure 7).

- Four out of five of these recent diagnoses were male.
- Thirty-eight percent were under 30 at the time of diagnosis.
- The majority were diagnosed in the southeastern (54%), southern (20%), or northeastern (13%) regions.
- Thirty-two of these diagnoses were attributed to male-male sexual contact (58%), 10 were attributed to heterosexual contact (18%), and 13 had an unknown transmission category (24%).

FIGURE 7

The number of new HIV diagnoses among American Indian and Asian people has fluctuated but remained low over the past 10 years.

Number of new HIV diagnoses among American Indians and Asians, Wisconsin, 2009-2018



People who are Transgender

People who are transgender have a gender identity that does not conform to their sex assigned at birth. This includes people who self-identify as transgender women, transgender men, and other gender nonconforming identities. A person who is transgender may have the anatomy of their sex at birth, the other sex, or a combination.

Gender identity and sexual orientation are separate, distinct concepts, with gender identity referring to an individual's sense of themselves and sexual orientation referring to an individual's attractions and partnering.

Transgender people are at high risk of HIV infection due to stigma, discrimination, social rejection and exclusion, violence, and barriers faced in health care settings, such as lack of provider training on transgender people's unique needs.[1]

Since 1982, 71 transgender individuals have been diagnosed with HIV in Wisconsin (eight transgender men and 63 transgender women). While collection of self-reported gender identity has improved over time, the number of diagnoses among transgender individuals in Wisconsin may be underreported.

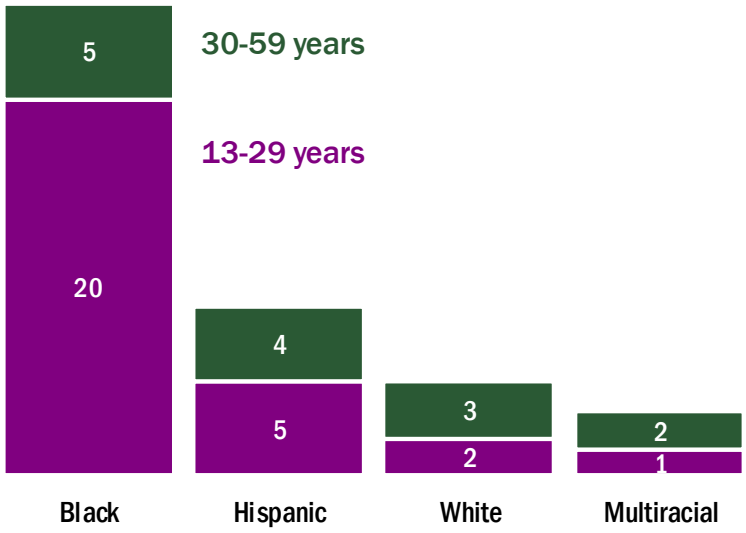
Of 71 HIV diagnoses among transgender individuals, 42 occurred between 2009 and 2018 (Figure 8).

- The majority were from a racial or ethnic minority group (88%).
- Two out of three individuals were under age 30 (67%).
- Nearly 90% of recent diagnoses were attributed to sexual contact (36 of 42) or both sexual contact and injection drug use (1 of 42).

FIGURE 8

Over half of transgender people diagnosed with HIV in the last 10 years were young people of color.

Number of HIV diagnoses among transgender people by age at diagnosis and race and ethnicity, Wisconsin, 2009-2018



Transmission Category

Adult Transmission Risks

Some people newly diagnosed with HIV do not know for certain how they were exposed or do not choose to share their risk factors for HIV exposure with their doctor. A statistical method called imputation is used to estimate the probable transmission category for people with an unknown transmission category (see Technical Notes).

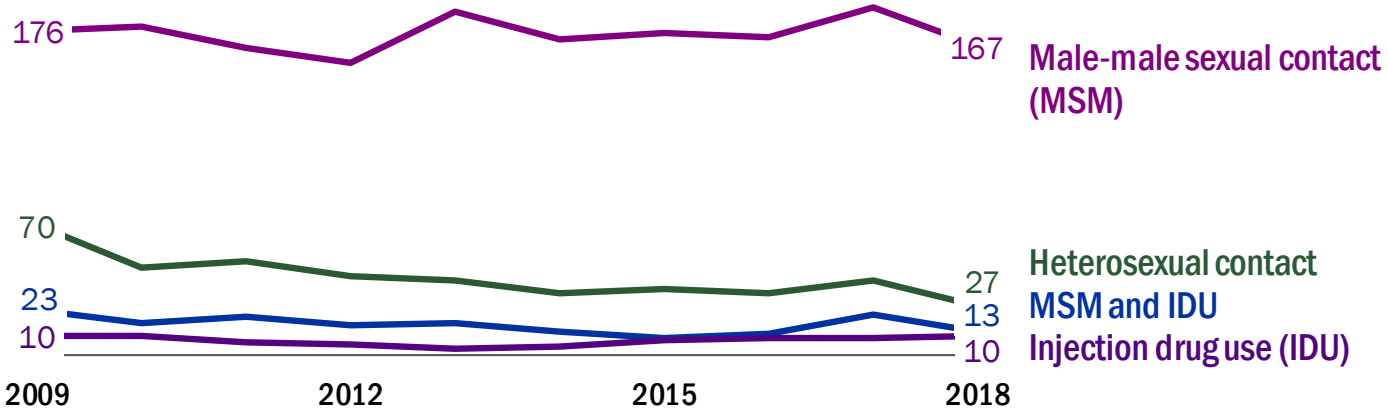
[1] Centers for Disease Control and Prevention. HIV Among Transgender People. https://www.cdc.gov/hiv/group/gender/transgender/. Published April 2017.

During 2009-2018, the estimated number of diagnoses attributed to male-male sexual contact and injection drug use were stable and the number attributed to heterosexual contact declined (Figure 9).

FIGURE 9

Male-male sexual contact is the most common HIV transmission risk.

New HIV diagnoses by estimated transmission category*, Wisconsin, 2009-2018



*Data have been statistically adjusted to account for those with unknown transmission category.

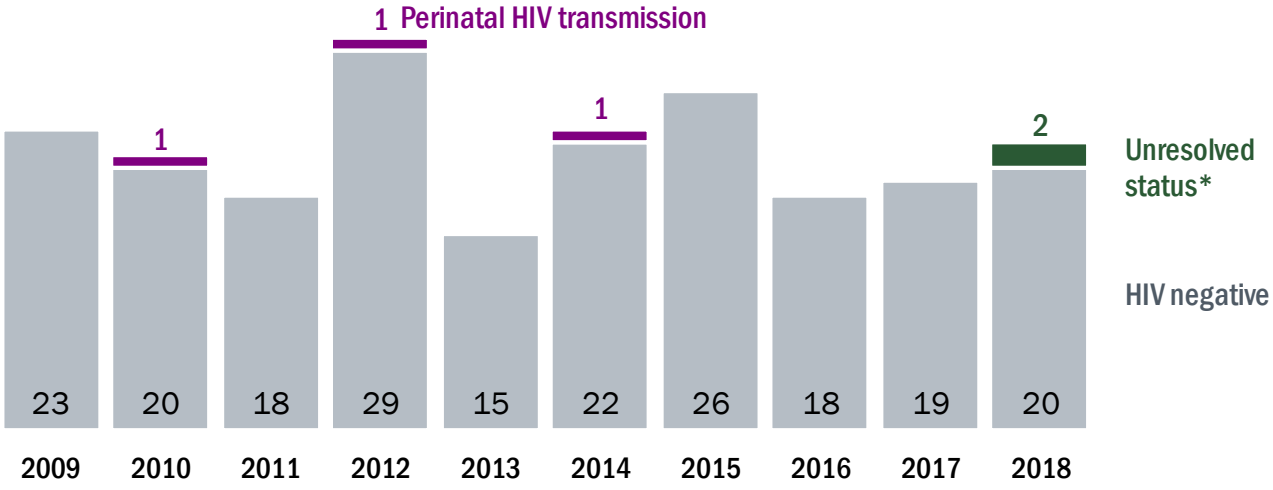
Perinatal Transmission

During 2009-2018, 215 infants were born to mothers living with HIV in Wisconsin. Of these infants, 210 (98%) are HIV negative, three are living with HIV (2%), and two have an unresolved diagnostic status as of this writing due to being born too recently to have completed testing to confirm a negative status (Figure 10).

FIGURE 10

Perinatal transmission of HIV to babies is rare in Wisconsin due to strong parterships for providing care to pregnant women living with HIV.

Diagnostic status of children born to mothers living with HIV, Wisconsin, 2009-2018



* These babies were born too recently to have resolved their infection status at the time this report was made.

Late Diagnosis

A late diagnosis occurs when a person living with HIV progresses to Stage 3 (AIDS) within one year of receiving their initial diagnosis. Without treatment, progression to Stage 3 typically occurs eight to 10 years after HIV was acquired. Stage 3 status is clinically defined by having a very low CD4 white blood cell count or a Stage 3-defining opportunistic infection. Early diagnosis and access to HIV care can prevent progression to Stage 3 so that people living with HIV have longer and healthier lives.

The percentage of new HIV diagnoses who had progressed to Stage 3 by the time they were first identified declined from 29% in 2013 to 17% in 2017 (Figure 11). This decline may be partially due to a change in the case definition for Stage 3 diagnosis during 2014. The new Stage 3 case definition excludes people who have evidence of recent HIV infection, such as a negative HIV test within six months prior to diagnosis.

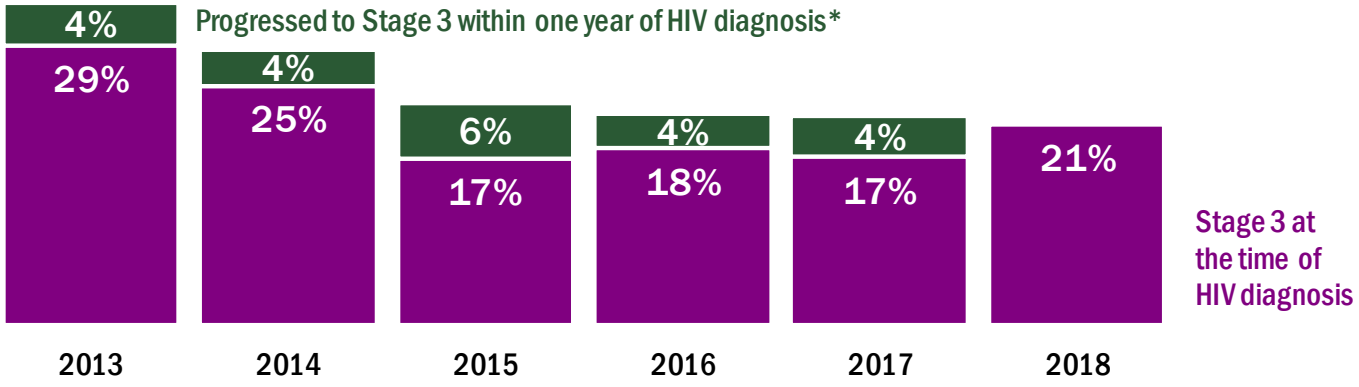
Late diagnoses were no longer in decline when 2018 data on late diagnoses (21%) were included.

The total percentage of people that had progressed to Stage 3 within one year of HIV diagnosis (including being first diagnosed during Stage 3) declined from 33% in 2013 to 21% in 2017.

FIGURE 11

The percentage of people who had progressed to Stage 3 at the time of diagnosis fluctuated during 2015-2018.

Percentage of new diagnoses who progressed to Stage 3 within one year of diagnosis, Wisconsin, 2013-2018



*Those diagnosed with HIV during 2018 have not had one full year to evaluate progression to Stage 3 and have been excluded.

Of people who received a late HIV diagnosis during 2013-2017:

- The majority (83%) were male.
- Half (51%) were over 30 at the time of diagnosis.
- Just under half (43%) were black, 37% were white, and 15% were Hispanic.
- Approximately two out of three (66%) had a transmission category of male-male sexual contact and 4% had a transmission category of injection drug use.

New Diagnoses, 2018

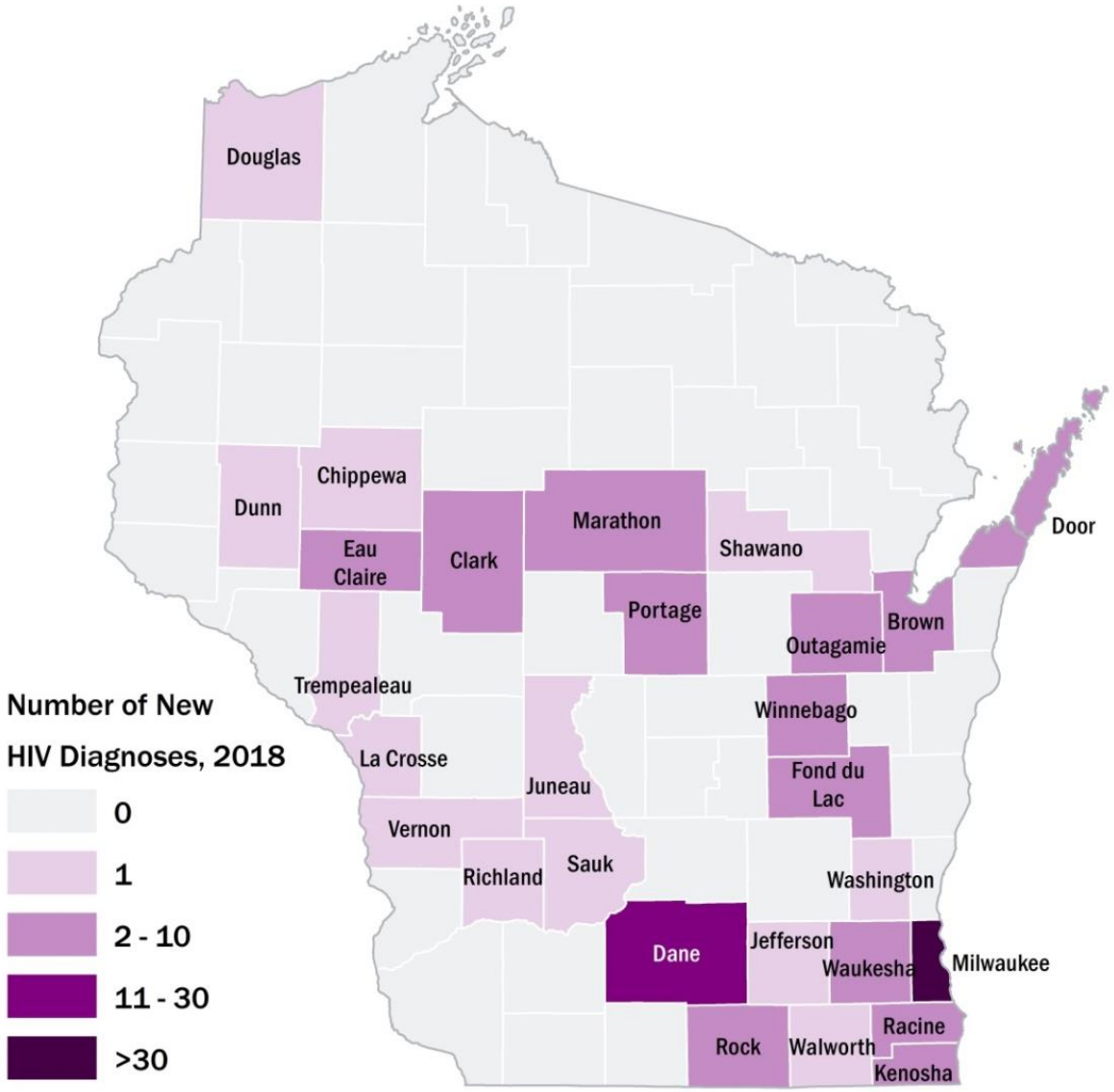
Number of New HIV Diagnoses

New HIV diagnoses are Wisconsin residents who received their first HIV diagnosis during the current reporting period. During 2018, 216 Wisconsin residents were newly diagnosed with HIV infection, or 3.7 new diagnoses per 100,000 Wisconsin residents. The majority of new HIV cases were diagnosed in Milwaukee County (117, 54%) and Dane County (29, 13%; Figure 12, Appendix-Table A2).

FIGURE 12

The majority of new HIV cases were identified in Milwaukee and Dane counties.

Geographic distribution of new HIV diagnoses, Wisconsin, 2018



Recent and Acute Infections

Recent HIV infections are those diagnosed during the six months after HIV was acquired as evidenced by a documented or self-reported negative HIV test during this period (see Technical Notes). Acute HIV infections are those diagnosed during the two to four weeks after HIV exposure.

People in the acute stage of infection have a high viral load (that is, a large number of viruses in the blood) and are more able to transmit HIV to others due to high virus concentrations in the body. Rapid linkage of people with acute infections to partner services ensures that exposed partners receive timely HIV testing.

During 2018, 41 people received a recent or acute HIV diagnosis. Of these, 12 people were considered acute diagnoses based on laboratory testing algorithms or presence of acute symptoms.

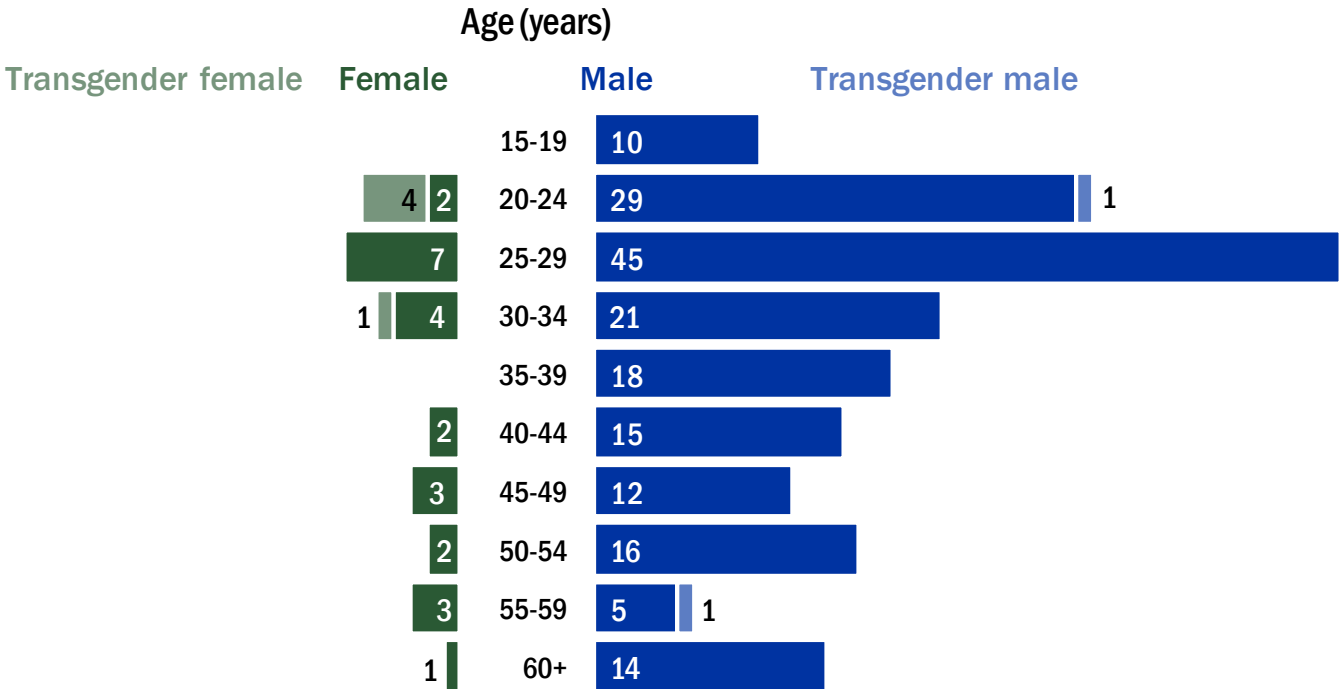
Demographics

During 2018, 185 men, 24 women, and seven transgender individuals were diagnosed with HIV in Wisconsin (Figure 13, Appendix-Table A3).

FIGURE 13

Approximately 1 out of 3 new HIV diagnoses during 2018 were among young men under 30.

Number of HIV diagnoses by age and gender, Wisconsin, 2018



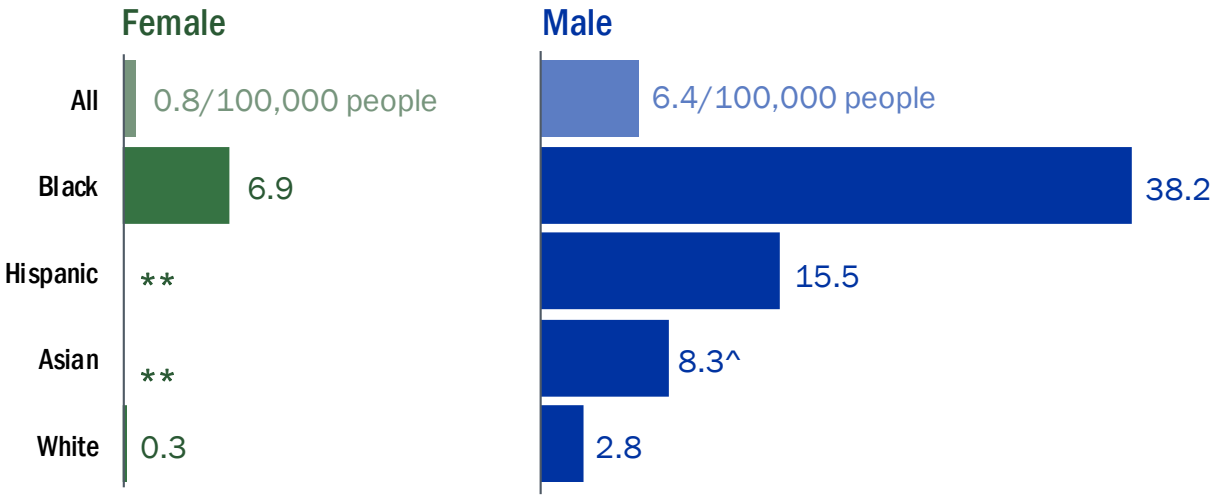
The average (median) age at diagnosis was 31, with a range of 16-84. During 2018, newly diagnosed men and women had a similar average age at diagnosis (men, 31; women, 32).

During 2018, the new HIV diagnosis rate was higher for men and was higher among black and Hispanic people compared to other race or ethnicity groups (Figure 14).

FIGURE 14

Black men were diagnosed with HIV at higher rate than other groups.

Number of new HIV diagnoses per 100,000 people by gender* and race or ethnicity, Wisconsin, 2018



* Seven transgender persons diagnosed during 2018 are excluded from these rates as population denominators are not available to calculate rates.
** Rates based on counts less than five have been suppressed.
^ Rate is unreliable due to a count less than 12.

Transmission Category

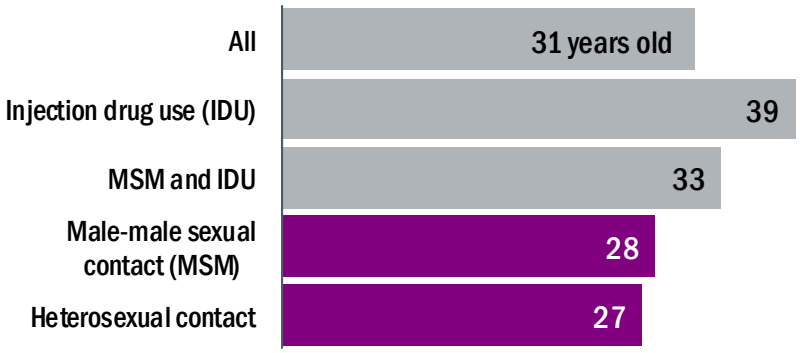
Age

Transmission categories are determined by what people tell their doctor about behaviors that might lead to HIV exposure. People who reported sexual contact as a possible route of exposure to HIV tended to be younger on average (Figure 15).

FIGURE 15

People at risk of HIV exposure through sexual contact tended to be younger at diagnosis than those at risk from injection drug use.

Median age at HIV diagnosis by transmission category, Wisconsin, 2018



Within the male-male sexual contact transmission category, black and Hispanic men tended to be younger at diagnosis compared to white men (Figure 16).

Gender

Three out of four new diagnoses were attributed to an estimated transmission category of male-male sexual contact (Figure 17). The remainder was attributed to heterosexual contact (12%), injection drug use (6%), or both male-male sexual contact and injection drug use (4%).

Among transgender individuals, six out of seven diagnoses were attributed to sexual contact and one to injection drug use.

FIGURE 16

Of men who have sex with men, black and Hispanic men were younger at diagnosis than white men.

Median age at HIV diagnosis by race and ethnicity for those reporting male-male sexual contact, Wisconsin, 2018

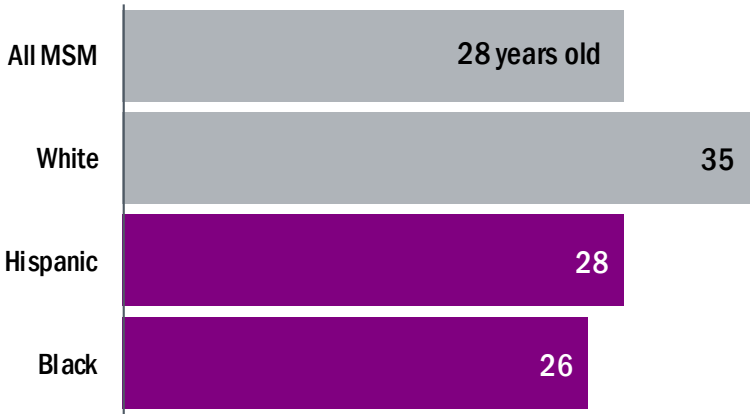
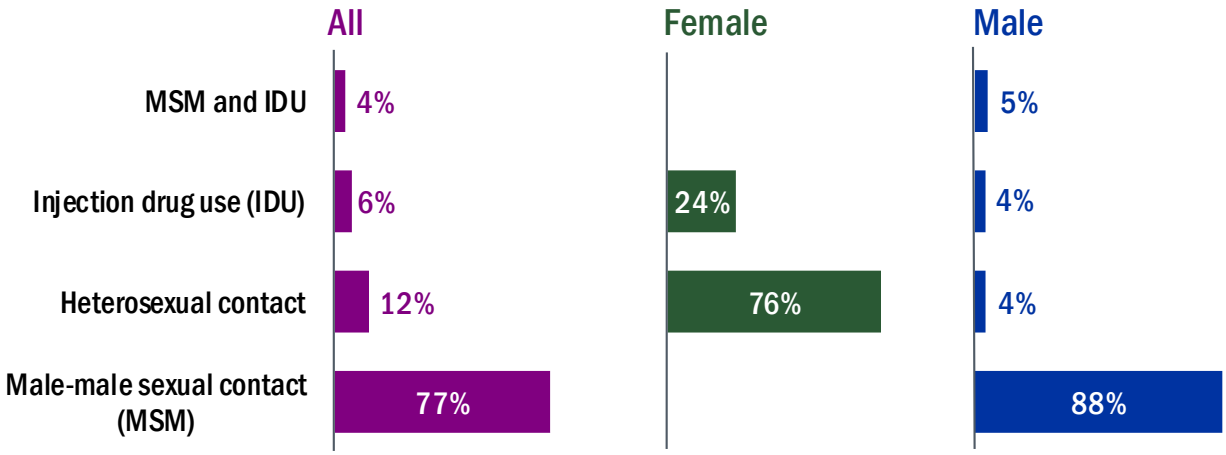


FIGURE 17

9 out of 10 new HIV diagnoses were attributed to male-male sexual contact.

Percentage of HIV diagnoses by gender and estimated trasmission category*, Wisconsin, 2018



*Data have been statistically adjusted to account for those with unknown transmission category.

During 2018, there were four diagnoses with a reported transmission category of injection drug use and eight with a reported transmission category of male-male sexual contact and injection drug use. The number of diagnoses attributed to injection drug use was lower during 2018 compared to the previous year (17 injection drug use, seven male-male sexual contact and injection drug use).

Facility at Diagnosis

During 2018, the most common settings for HIV diagnoses were outpatient clinics (47%); counseling, testing, and referral (CTR) sites (14%); and inpatient hospitals (11%; Figure 18).

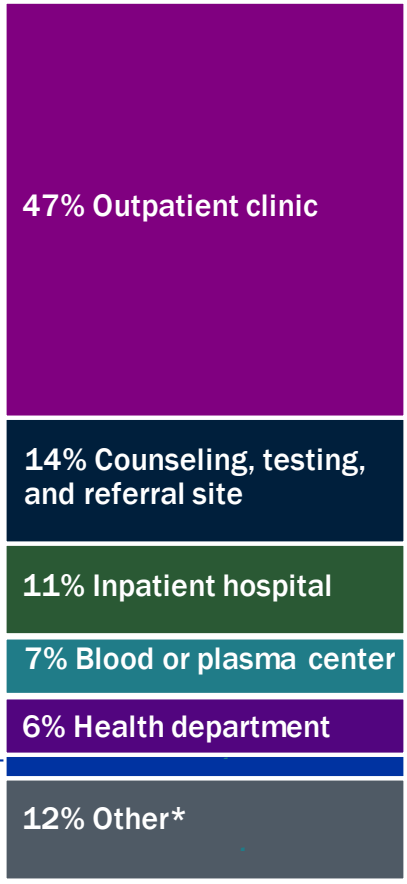
Of the 12 people with evidence of acute HIV, over half were diagnosed at an inpatient facility (4) or emergency room (3).

FIGURE 18

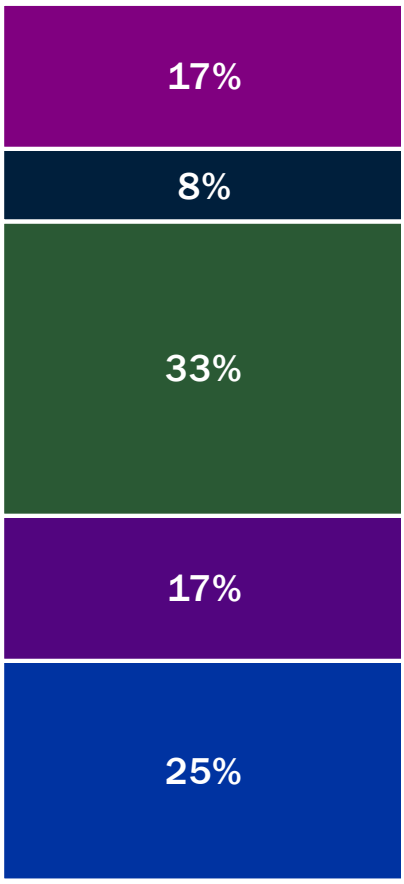
Facility at Diagnosis

Percent of new HIV diagnoses by facility and percent of acute HIV diagnoses by facility, Wisconsin, 2018

All new HIV diagnoses (216 people)
Nearly half of people were newly diagnosed with HIV infection at outpatient clinics during 2018.



Acute HIV diagnoses (12 people)
Acute HIV cases were most commonly diagnosed at inpatient hospitals and emergency rooms.



* Other includes diagnosis at a family planning clinic (4%), jail or prison (3%), HIV care clinic (1%), or other facility types including a student health center, through life insurance, or at a mail order or direct access testing facility (4%).

Linkage to Care

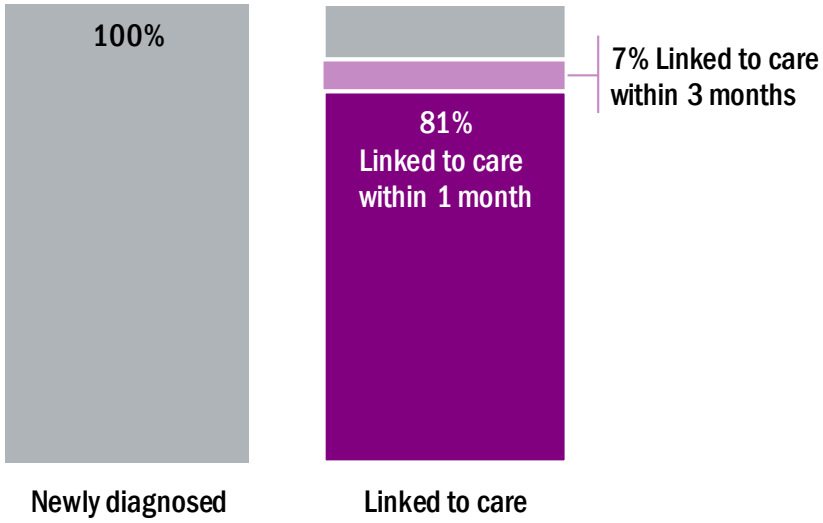
Timely linkage to care can help people living with HIV have healthier lives and prevent further HIV transmission. Access to medications that reduce the amount of virus in the body can lower the risk of transmitting HIV by sexual contact.

The HIV care continuum is used at the state, regional, and local levels to measure and monitor engagement in care and health outcomes for people living with HIV (Appendix-Figure A1). A portion of the care continuum specifically measures timely linkage to care (Figure 19).

FIGURE 19

Most people newly diagnosed with HIV are linked to care services within one month of diagnosis.

HIV Care Continuum* - Linkage to Care, Wisconsin, 2018



*Reflects laboratory data received through April 25, 2019

Prevalence

Number of People Living with HIV

Observed Prevalence

Prevalence is the total number of people living with HIV in Wisconsin at the end of the reporting period. Prevalent HIV cases are defined as people living with HIV who:

- Currently live in Wisconsin according to surveillance and address records.
- Are alive at the time end of the reporting period.

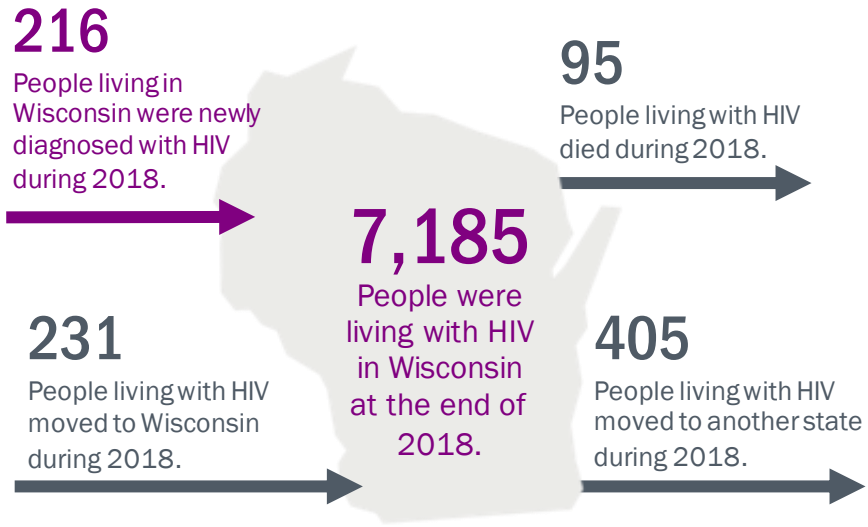
Prevalence fluctuates due to new diagnoses, migration, and deaths (Figure 20).

At the end of 2018, 7,185 people living with HIV resided in Wisconsin.

FIGURE 20

Approximately the same number of people living with HIV moved into and out of Wisconsin during 2018.

Flow of people living with HIV into and out of Wisconsin, 2018



People who are Unaware of HIV Diagnosis

Not everyone living with HIV is aware of their diagnosis. The estimated prevalence of HIV in Wisconsin that includes those unaware of their status is approximately 8,500 people.

The most recent CDC estimate[2] suggests that nationally, 15% of people (about one out of six) living with HIV are unaware of their status. Given CDC's estimate, the observed prevalence likely underestimates the total population of people living with HIV in the state by approximately 1,300 people who are not aware of their HIV diagnosis.

[2] Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas—2015. *HIV Surveillance Supplemental Report* 2017;22 (No. 2). https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-22-2.pdf. Published July 2017. Accessed February 2018.

According to the CDC, awareness of HIV infection status may be substantially lower for younger people and slightly lower for some racial and ethnic minorities due to barriers to getting tested (Appendix-Table A4). This understanding can guide prioritization of services to populations with the highest need for HIV testing.

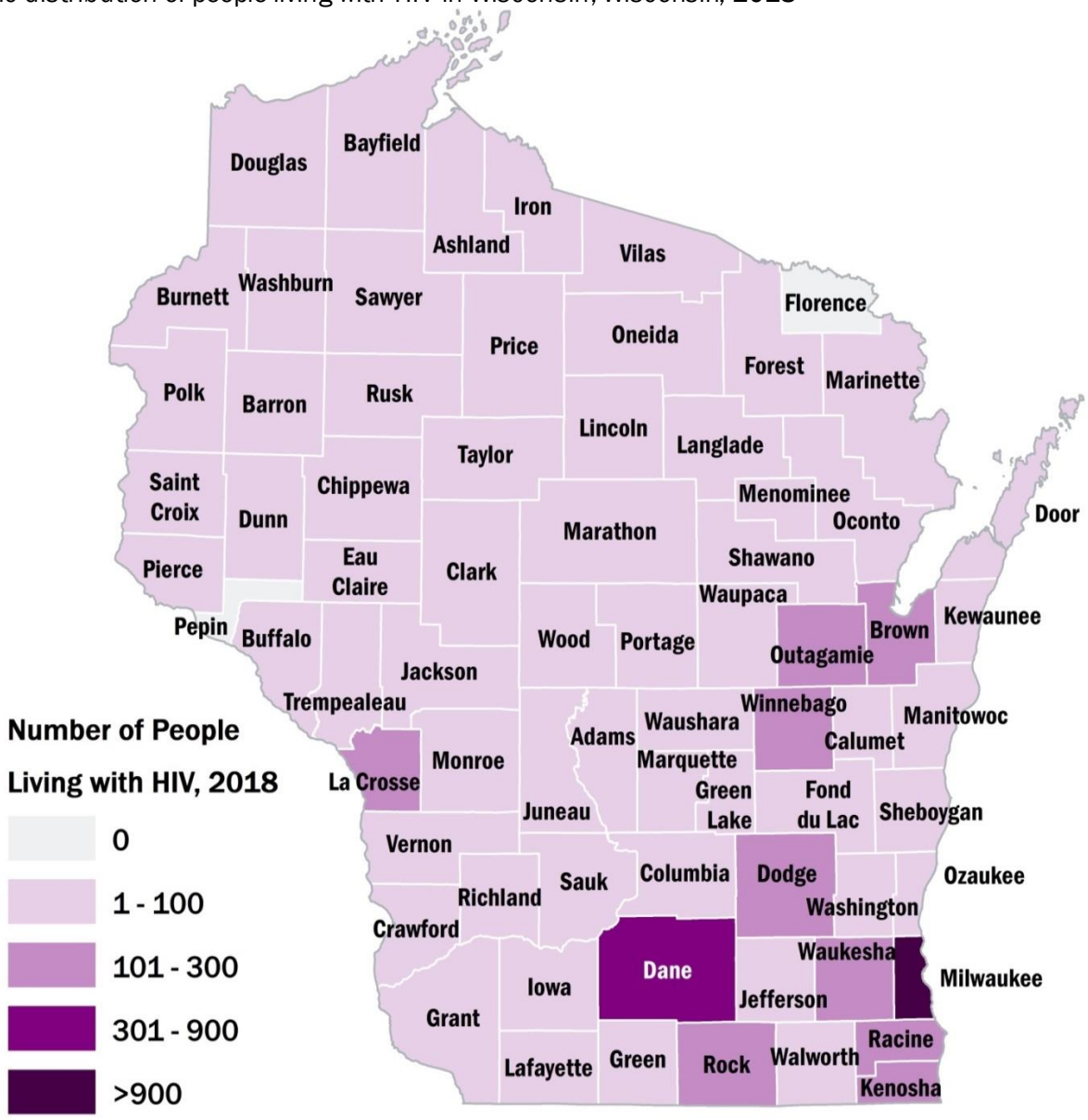
Geographic Distribution of People Living with HIV

Nearly half (48%) of all individuals living with HIV in Wisconsin currently reside in Milwaukee County, 12% live in Dane County, and 4% each live in Racine, Kenosha, and Brown counties (Figure 21).

FIGURE 21

The majority of people living with HIV live in the southern and southeastern part of the state.

Geographic distribution of people living with HIV in Wisconsin, Wisconsin, 2018



Deaths

Deaths due to any cause among people living with HIV in Wisconsin have declined since the early- to mid-1990s and the percentage of deaths specifically attributed to HIV-associated causes has also declined (Figure 22).

FIGURE 22

Deaths attributed to HIV continue to decrease due to access to medications that allow people living with HIV to have longer, healthier lives.

Percentage of deaths attributed to HIV as primary cause of death, Wisconsin, 1987-2017

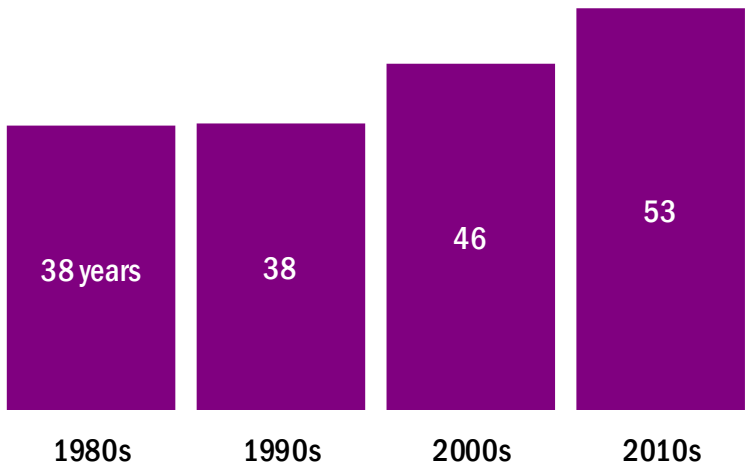
During 2017, 95 deaths occurred in Wisconsin among people living with HIV. Approximately one out of four deaths (28%) had HIV listed as the primary cause of death, while the remainder (72%) were attributed to another cause.

The median age at death of people living with HIV in Wisconsin has increased substantially since 1982 (Figure 23).

FIGURE 23

People living with HIV are living longer and healthier lives.

Median age at death of people living with HIV in Wisconsin by decade, 1982-2018



Migration

New HIV reports are Wisconsin residents living with HIV who were identified to public health for the first time during the reporting period. These include both new diagnoses and people who were diagnosed in another state prior to moving to Wisconsin.

Of the 447 new HIV reports received during 2018, 231 (52%) were previously diagnosed in another state prior to moving to Wisconsin. People living with HIV who moved to Wisconsin during 2018 tended to be older and a slightly higher percentage were Hispanic compared to new HIV diagnoses in Wisconsin (Appendix-Table A3).

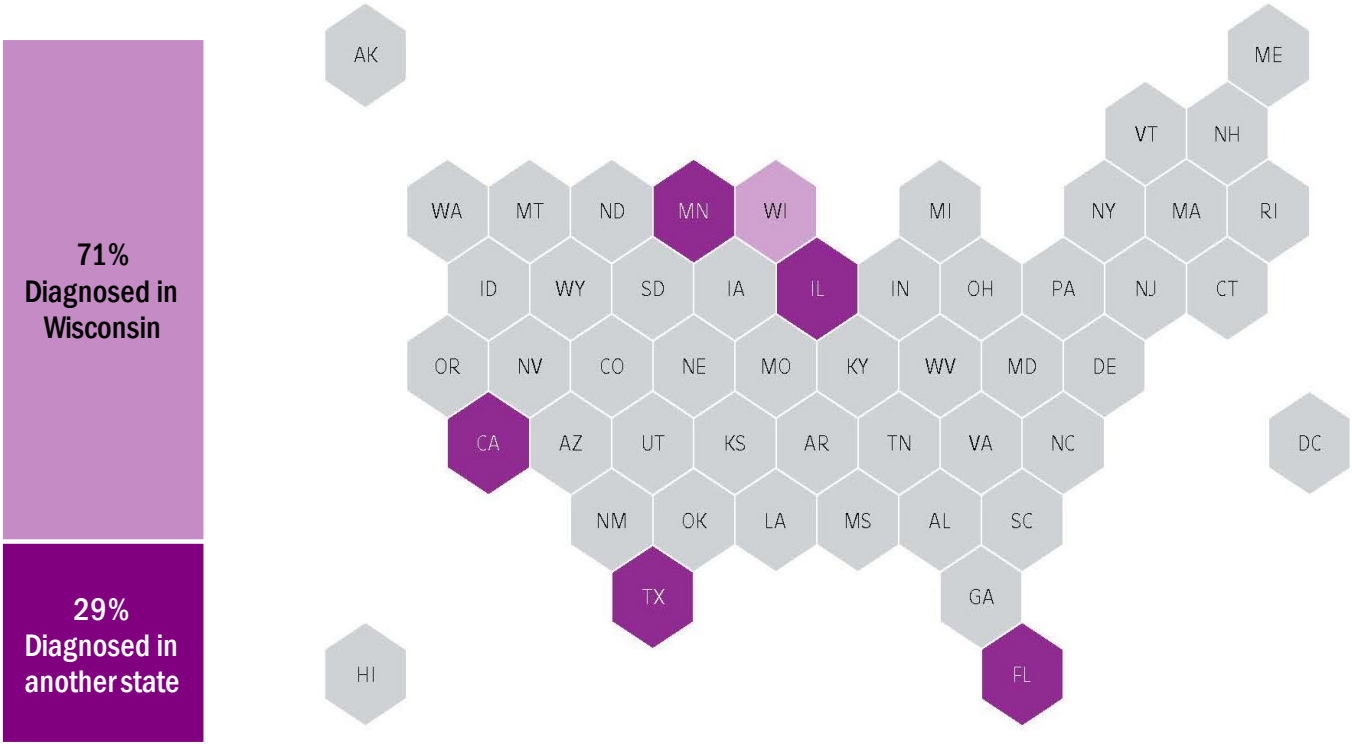
Approximately three out of four (71%) of the 7,185 people living with HIV in Wisconsin during 2018 were diagnosed in the state (Figure 24). The remaining 2,061 people (29%) were diagnosed in:

- Illinois (499)
- California (170)
- Florida (140)
- Minnesota (138)
- Texas (115)
- Another state (842)
- A foreign country (157)

FIGURE 24

Most people living with HIV in Wisconsin were diagnosed in Wisconsin or in Illinois, California, Florida, Minnesota, or Texas.

Diagnosis location of people living with HIV in Wisconsin during 2018



Demographics

Of people living with HIV in Wisconsin during 2018:

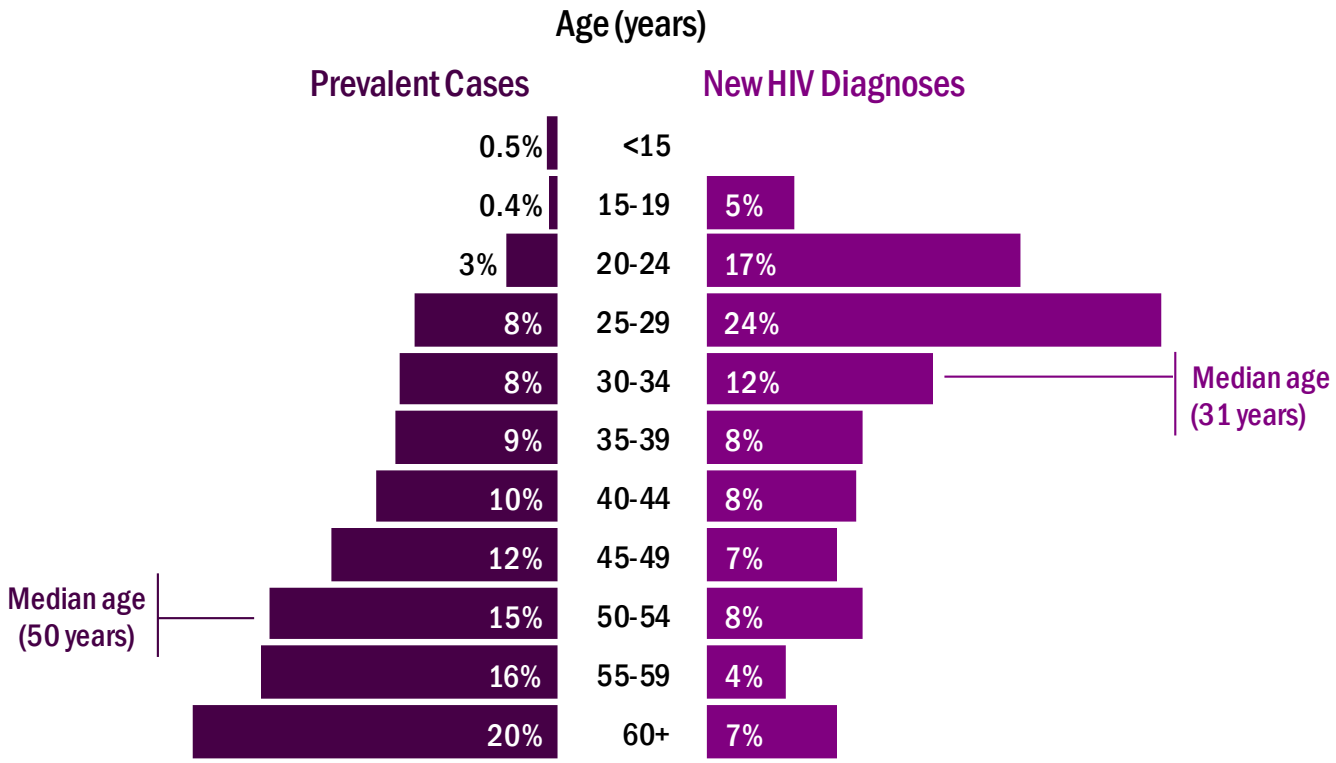
- The majority (79%) are male.
- The majority are over age 30 (89%) and half (50%) are over age 50.
- Just under half (44%) are black, 38% are white, and 14% are Hispanic.
- Approximately two out of three (63%) had a transmission category of male-male sexual contact, 19% had a transmission category of heterosexual contact, and 2% had a transmission category of injection drug use or both injection drug use and male-male sexual contact.

People living with HIV are living longer and healthier lives. This has resulted in a shift in the average age of prevalent cases compared to those being newly diagnosed (Figure 25). Services for people living with HIV need to address health conditions associated with aging in addition to HIV, while prevention efforts need to target younger age groups.

FIGURE 25

The population of all people living with HIV in Wisconsin tends to be older than people newly diagnosed with HIV infection during 2018.

Age distribution of people currently living with HIV in Wisconsin (prevalent cases) compared to age at diagnosis for people newly diagnosed during 2018



Retention in Care

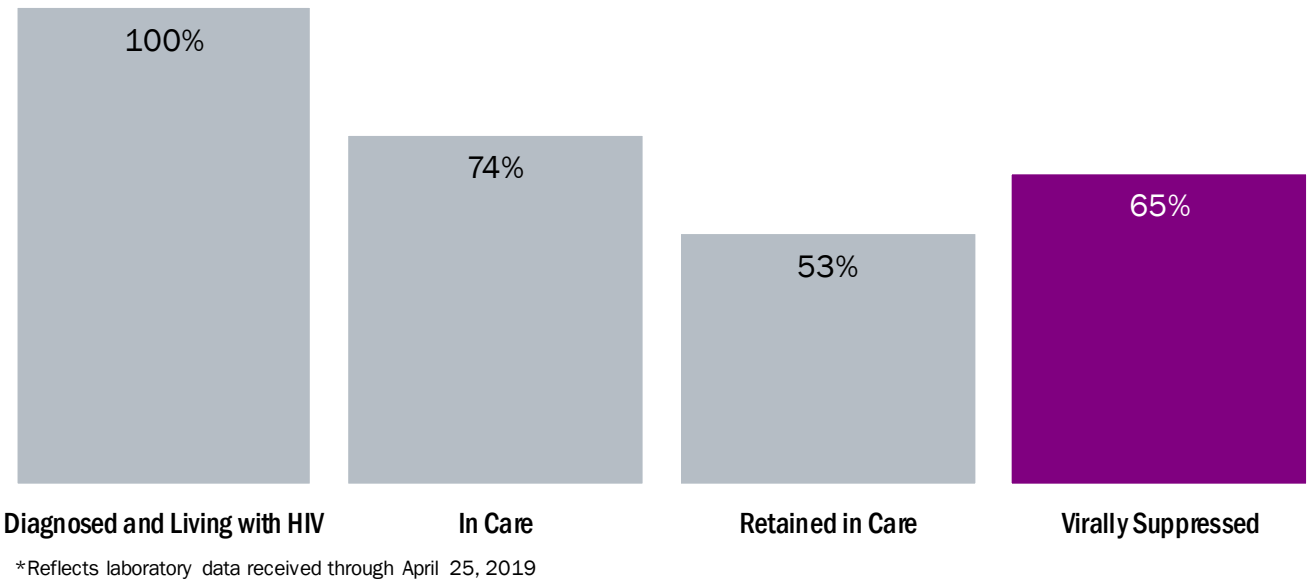
Access to HIV care and medications that reduce the amount of virus in the body (that is, the viral load) benefit both the health of people living with HIV and HIV prevention efforts. Individuals with a viral load that cannot be detected by standard laboratory diagnostic testing (that is, are virally suppressed) have a negligible risk of transmitting HIV through sexual contact.

The HIV care continuum is used at the state, regional, and local levels to measure and monitor HIV engagement in care and health outcomes (Figure A1). A portion of the care continuum specifically measures engagement in care and successful attainment of viral suppression (Figure 26).

FIGURE 26

Two out of three people living with HIV in Wisconsin were virally suppressed during 2018.

HIV Care Continuum* - Retention and Care Outcomes, Wisconsin, 2018



*Reflects laboratory data received through April 25, 2019

Technical Notes

Background

This report was prepared by the Wisconsin HIV Program. Wisconsin statutes require health care providers and laboratories to report confirmed or suspected HIV cases. Data in this report are compiled from laboratory results and report forms completed by health care providers. Risk information is self-reported by patients.

HIV reporting in Wisconsin is estimated to capture 99% of diagnosed individuals, but completeness of reporting may vary by geographic region, transmission category, and demographic group. Data reported here are based on the information available as of April 25, 2019. Results are provisional and subject to change as additional information becomes available.

New Diagnoses

New HIV diagnoses are included in the annual report if they meet all of the following criteria:

- The person was diagnosed with HIV during the year of analysis.
- The person was a resident of Wisconsin at the time of diagnosis.
- Wisconsin is the earliest state of verifiable report. People who report being first diagnosed with HIV in another country, but whose diagnosis cannot be definitively documented, are included as new diagnoses. These practices conform to CDC's guidelines for residency assignment.

Prevalence

Observed Prevalence

People living with HIV are included in the observed prevalence if they meet the following criteria:

- The person was confirmed to be living with HIV.
- The person was presumed to be alive at the end of the analysis year.
- The last known address available for the person is a Wisconsin address.

Because of delays in reporting deaths to local and national databases, the number of people presumed alive should be considered provisional. Due to periodic data cleaning, prevalence may decrease as individuals thought to be living with HIV in Wisconsin are found to be deceased or living out of state.

Estimated Prevalence

The estimated prevalence is a measure that takes into account that a proportion of individuals who are living with HIV are not aware of their diagnosis. The calculation consists of:

- Number of people known to be living with HIV
- Estimated proportion of people living with HIV who are unaware

The estimated prevalence is calculated as:

$$\frac{Number\ known\ to\ be\ living\ with\ HIV}{Proportion\ unaware}$$

Rates

In this report, rates are defined as the number of cases per 100,000 people, except if noted otherwise. Population denominators used to calculate rates are from the Wisconsin Interactive Statistics on Health website (https://www.dhs.wisconsin.gov/wish/index.htm).

Rates published by the CDC for Wisconsin, Milwaukee, and Madison cannot be compared to those prepared by the Wisconsin Division of Public Health and local health departments because they may use different data sources.

Demographic Variables

Age

For new diagnoses, age refers to the age at the time of HIV diagnosis. For people living with HIV, age refers to the age on December 31 of the year of analysis.

Gender

Consistent with the Council of State and Territorial Epidemiologists' position statement on transgender HIV surveillance,[3] this report uses gender identity rather than sex at birth.

[3] Council of State and Territorial Epidemiologists. Transgender HIV Surveillance. 17-ID-06. http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/2017PS/2017PSFinal/17-ID-06.pdf. Accessed May 10, 2019.

Gender is determined based on information in surveillance records. Individuals are counted as transgender for this report if they identified as transgender on an HIV report or laboratory document, or if there was a mismatch in birth sex and the sex or gender reported on any of the previously mentioned documents.

During 2018, transgender gender identity was not further verified; therefore, some individuals may be mistakenly counted as a transgender person in this report if sex or gender was incorrectly reported on any document or if data entry errors occurred. When information is available, surveillance staff may confirm gender identity when collecting report information from medical providers and public health officials.

Residency

People who meet the definition of newly diagnosed (see *New Diagnoses* section above) are assigned to the county of residence listed on the HIV report form when first diagnosed and reported with HIV.

People who meet the prevalence definition (see *Prevalence* section above) are assigned to the county of their last known address.

Vital Status

Information about deaths is obtained from the Wisconsin Vital Records Office, the National Death Index, and the Social Security Death Master File. Deaths described in this report include only those that occurred in Wisconsin among people living with HIV. Deaths are described as being due to HIV, or caused by HIV, if HIV was listed as the underlying cause of death on the death certificate. Deaths are described as being due to other causes if HIV was not listed as the underlying cause of death. However, HIV may have been listed as one of the 19 possible contributing causes of death.

Transmission Category

Observed Transmission Category

Transmission category is the term that summarizes a person's possible HIV risk factors; the summary category results from selecting, from a hierarchical order of probability, the single risk factor most likely to have been responsible for transmission. For surveillance purposes, a diagnosis of HIV is counted only once in the hierarchy of transmission categories. Persons with more than one reported risk factor for HIV are classified in the transmission category listed first in the hierarchy. The exception is men who had sexual contact with other men and injected drugs; this group makes up a separate transmission category. Transmission categories are defined as follows:

- Male-male sexual contact includes men who have ever had sexual contact with other men and men who have ever had sexual contact with both men and women.
- Heterosexual contact includes persons who have ever had heterosexual contact with a person known to have, or to be at high risk for, HIV (for example, someone who injects drugs). The heterosexual contact category excludes men who have ever had sexual contact with both men and women.

- Injection drug use includes persons who have ever reported injecting drugs.
- Unknown includes people without a risk factor listed in the hierarchy of transmission categories. People may have an unknown transmission category because they did not identify risk behaviors, identified risk behaviors not part of the transmission hierarchy, died before they could be interviewed, or were lost to follow-up and could not be interviewed.
- The category "Other" is used to group less common transmission categories, including people with hemophilia, people who were exposed to HIV through a blood transfusion or tissue/organ transplant, and other pediatric transmission categories.
- Perinatal transmission refers to HIV transmitted during the perinatal period, which spans from 22–28 weeks of gestation to seven days after birth. This category is also used for children presumed to be exposed during breastfeeding.
- Sexual contact includes transgender persons exposed to HIV through sexual contact.

Imputed Transmission Category

Some people diagnosed with HIV are reported in Wisconsin with insufficient risk information to assign a transmission category. Multiple imputation is a statistical method in which the known transmission categories of individuals with similar demographic characteristics are used to estimate the most plausible values for those with unknown transmission category (See Box 1).

Counts estimated by imputed transmission category are reported rounded to the nearest whole number of people but are still considered to be estimates, not counts. Imputed transmission categories may change as new information becomes available. This method conforms to the CDC's method of addressing people with unknown transmission category.

Box 1: Multiple Imputation Example

Assume 30 women ages 45-64 were diagnosed with HIV. Eighteen of these women had diagnoses attributed to heterosexual contact, nine of them had diagnoses attributed to injection drug use, and three had unknown transmission categories. The 27 known transmission categories will be applied to the three people with unknown transmission category. Each person with an unknown transmission category would be assigned 67% heterosexual contact and 33% injection drug use. When summed, a total of two people with unknown transmission risk are estimated to have heterosexual contact risk and one person an injection drug use risk.

HIV Stage at Diagnosis

Recent and Acute HIV Diagnosis

Recent HIV is defined as having been diagnosed during the six months after HIV was acquired. Recent HIV is suspected when a newly diagnosed individual reports a negative test within the previous six months, or when the initial viral load test is high.

Acute HIV is defined as having been diagnosed with HIV in the two to four weeks after HIV was acquired. This time period immediately after acquiring HIV is characterized by high viral load, undetectable HIV-1 antibodies, and presence of viral nucleic acids (that is, RNA) or p24 antigen.

Late (Stage 3) HIV Diagnosis

In this report, an HIV case is any person with laboratory-confirmed HIV infection. This includes HIV and Stage 3 HIV (AIDS) diagnosis. People diagnosed with Stage 3 HIV infection include only those that meet the CDC's Stage 3 HIV surveillance definition.

According to the CDC, late diagnosis occurs among individuals who progress to Stage 3 HIV (AIDS) within one year of receiving their initial HIV diagnosis, including those progressed to Stage 3 by the time they are first diagnosed with HIV. Stage 3 HIV typically occurs eight to 10 years after acquiring HIV in the absence of treatment, and is clinically defined by a very low CD4 count or a Stage 3-defining opportunistic infection.

During 2014, the Stage 3 surveillance definition changed to exclude individuals with a Stage 3-defining CD4 count (<200 cells/mL) if a negative HIV test in the previous six months has been documented. Instead, the low CD4 count may reflect recently acquired HIV. Individuals may be incorrectly classified as having progressed to Stage 3 if recent negative tests are not documented. Collection of recent negative tests has improved over time.

Statistical Significance

Statements about statistical significance are sometimes made when looking at a change over time or when comparing groups. Tests of statistical significance determine whether the observed trend or difference is due to chance or is a true pattern. Linear regression on rolling three-year averages was used to assess trends over time and chi-squared analysis was used to assess differences between groups. Statements about increasing or decreasing trends or differences between groups are only made if the pattern is statistically significant.

Appendix

TABLE A1

Number of new HIV diagnoses per 100,000 people by year of diagnosis, gender, and race or ethnicity, Wisconsin, 2009-2018

	Male			Female		
Year	Black	White	Hispanic	Black	White	Hispanic
2009	37.8	4.3	16.9	18.6	0.7	3.9**
2010	45.4	3.6	13.6	14.6	0.4**	*
2011	40.6	3.2	16.6	11.4	0.5	5.5**
2012	36.1	3.1	16.2	12.3	0.6	3.0**
2013	40.5	3.8	16.9	10.2	0.3**	3.4**
2014	40.6	2.5	19.7	8.6	0.3**	2.8**
2015	39.8	3.2	14.2	7	0.4	*
2016	44.7	2.9	10	8.5	0.4**	*
2017	43.2	3.6	15.1	9.9	0.6	*
2018	38.2	2.8	15.5	6.9	0.3**	*

* Rates based on counts less than five have been suppressed.

** Rates are statistically unreliable due to counts less than 12.

TABLE A2

Geographic distribution of new HIV diagnoses by county of diagnosis, Wisconsin, 2018

County of Residence	Number	Percent of Cases	Rate/100,000 people *
Brown	7	3.0%	2.7 **
Chippewa	1	0.0%	-
Clark	2	1.0%	-
Dane	29	13.0%	5.6
Door	4	2.0%	-
Douglas	1	0.0%	-
Dunn	1	0.0%	-
Eau Claire	2	1.0%	-
Fond du Lac	2	1.0%	-
Jefferson	1	0.0%	-
Juneau	1	0.0%	-
Kenosha	8	4.0%	4.8 **
La Crosse	1	0.0%	-
Marathon	2	1.0%	-
Milwaukee	117	54.0%	12.3
Outagamie	6	3.0%	3.3 **
Portage	2	1.0%	-
Racine	7	3.0%	3.6 **
Richland	1	0.0%	-
Rock	2	1.0%	-
Sauk	1	0.0%	-
Shawano	1	0.0%	-
Trempealeau	1	0.0%	-
Vernon	1	0.0%	-
Walworth	1	0.0%	-
Washington	1	0.0%	-
Waukesha	5	2.0%	1.3 **
Winnebago	2	1.0%	-
Department of Corrections	6	3.0%	-
TOTAL	**216**	**100%**	**3.7**

* Rates based on counts less than five have been suppressed.

** Rates are statistically unreliable due to counts less than 12.

TABLE A3

Comparison of new HIV reports by location of diagnosis, Wisconsin, 2018

	Diagnosis Location	
	Wisconsin	Outside of Wisconsin
	Number (%)	Number (%)
Total	216 (100%)	231 (100%)
Current Gender		
Male	185 (86%)	184 (80%)
Female	24 (11%)	42 (18%)
Transgender	7 (3%)	5 (2%)
Median Age (Range)	31 (16-84)	38 (3-78)
Race/Ethnicity		
Asian	7 (3%)	5 (2%)
Black	94 (44%)	78 (34%)
Hispanic	36 (17%)	49 (21%)
White	74 (34%)	84 (36%)
Multi-Racial	5 (2%)	15 (6%)
Transmission Category		
Male-Male Sexual Contact (MSM)	128 (59%)	141 (61%)
Injection Drug Use (IDU)	4 (2%)	13 (6%)
MSM and IDU	8 (4%)	18 (8%)
Heterosexual Contact	6 (3%)	24 (10%)
Perinatal Exposure	0 (0%)	6 (3%)
Unknown	70 (32%)	29 (13%)

TABLE A4

Observed and Estimated Prevalence of People Living with HIV in Wisconsin, 2018

	United States	Wisconsin		
	Estimated % Unaware*	Observed Prevalence	Estimated # Unaware**	Estimated Prevalence
Total	15.0%	7,185	1,268	8,453
Age				
13-24 years	44.4%	236	188	424
25-34 years	29.1%	1,132	465	1,597
35-44 years	15.5%	1,304	239	1,543
45-54 years	9.0%	1,962	194	2,156
55-64 years	7.1%	1,990	152	2,142
65 years	6.3%	536	36	572
Race and Ethnicity				
White	12.3%	3,156	443	3,599
Black	15.7%	2,758	514	3,272
Hispanic or Latino	16.9%	969	197	1,166
Multiracial	15.6%	171	32	203
Asian	19.6%	87	21	108
American Indian	18.5%	34	8	42
Transmission Category				
Male-Male Sexual Contact (MSM)	17.3%	4,513	944	5,457
Heterosexual Contact	15.7%	1,398	260	1,658
Injection Drug Use (IDU)	6.4%	714	49	763
MSM and IDU	7.4%	429	34	463

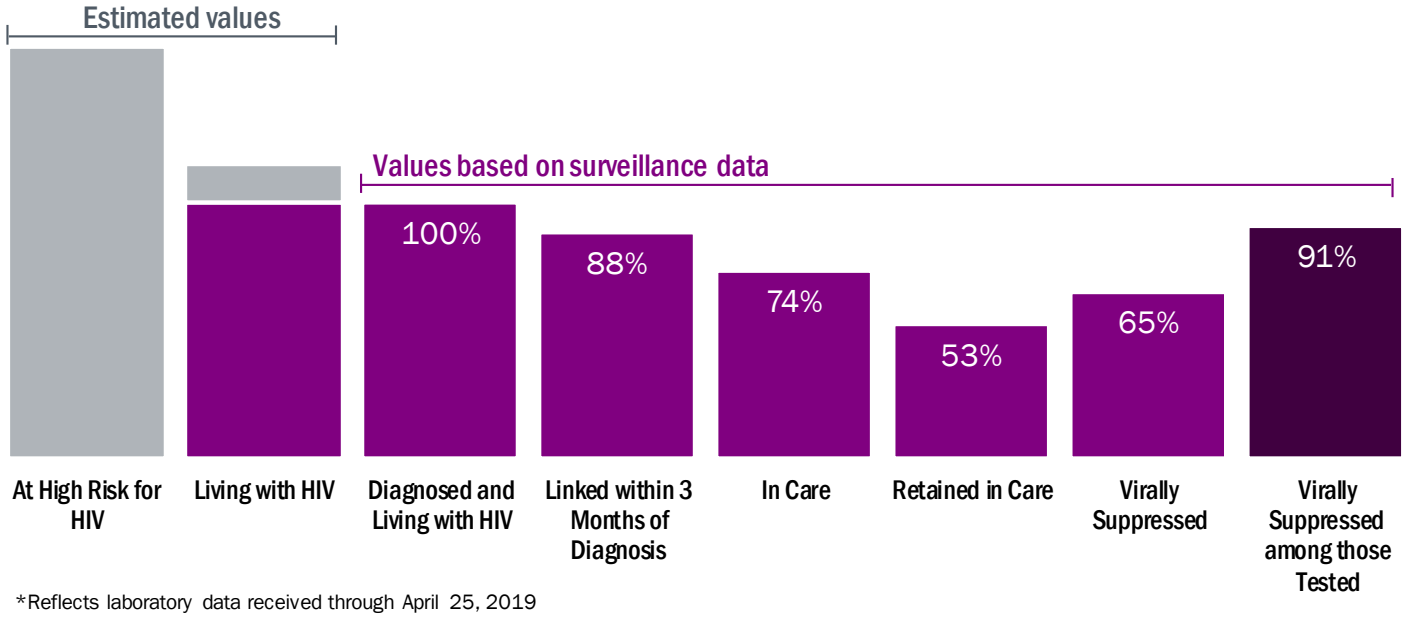
* Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas—2015. HIV Surveillance Supplemental Report 2017;22 (No. 2). https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-supplemental-report-vol-22-2.pdf. Published July 2017. Accessed February 2018.

** Details about calculation of estimated unaware and estimated prevalence can be found in the Technical Notes.

FIGURE A1

The majority of people living with HIV who are engaged in care are virally suppressed.

HIV Care Continuum*, Wisconsin, 2018



*Reflects laboratory data received through April 25, 2019

Estimated Values

At High Risk for HIV: People at higher risk for HIV include those with factors such as condomless male-to-male sex without pre-exposure prophylaxis (PrEP), sharing injection drug-use equipment, and heterosexual sexual contact with a person living with HIV or at risk of acquiring HIV. The size of this population is not known. These risk behaviors occur in the context of social determinants of health, such as poverty, unequal access to health care, lack of education, stigma, homelessness, and racism.

Living with HIV: CDC estimates that 15% of individuals living with HIV in the U.S. are unaware of their status. This bar shows both those aware and diagnosed and those unaware of their HIV diagnosis.

Values Based on Surveillance Data

Diagnosed and Living with HIV: All individuals reported living with HIV in Wisconsin by the end of 2017 who were still alive and living in Wisconsin by the end of 2018 (6,667 people).

Linked within Three Months of Diagnosis: Of 216 people diagnosed with HIV in Wisconsin during 2018, 88% (191 people) were linked to care within three months of diagnosis. Four out of five (175/216 people or 81%) newly diagnosed individuals were linked to care within the one month target described in the most recent National HIV/AIDS Strategy[4].

[4]White House Office of National AIDS Policy. National HIV/AIDS Strategy for the United States: Updated to 2020. https://files.hiv.gov/s3fs-public/nhas-update.pdf. Published July 2015. Accessed May 2019.

In Care: Of 6,667 individuals diagnosed and living with HIV in Wisconsin during 2018, 72% had at least one medical visit that included one or more laboratory test that was available in the HIV surveillance system as evidence of receiving care.

Retained in Care: Of 6,667 individuals diagnosed and living with HIV in Wisconsin during 2018, 53% had laboratory test results that suggested two or more medical visits occurred at least three months apart during the reporting period. This criterion for retention in care may underestimate the number of people who are routinely receiving HIV care, as people who have been treated for many years or who are uninsured may receive care once a year or less and may still be adherent to care and attaining viral suppression.

Virally Suppressed: Of 6,667 people living with HIV in Wisconsin, 65% had viral loads (a test that documents the number of virus copies in the blood) that were less than 200 copies/mL, indicating attainment of viral suppression. Individuals whose last viral load test was prior to 2018 or who did not have a viral load test recorded were considered to have unsuppressed viral loads.

Virally Suppressed among those Tested: Of 4,797 people who had a viral load test during 2018, 92% were virally suppressed at their last measurement. This suggests that most individuals receiving some medical care are achieving viral suppression. Viral suppression improves the health of the person living with HIV and also prevents them from transmitting HIV sexually to partners.

For more information, contact:

Wisconsin HIV Program
Surveillance Unit
Phone: 608-266-2664
Email: dhshivsurveillance@dhs.wisconsin.gov

Room 265
1 West Wilson Street,
Madison, WI 53703
https://www.dhs.wisconsin.gov/aids-hiv/index.htm