

# State of Wyoming



## Department of Health

### 2018 Wyoming HIV Surveillance Report

**Michael A. Ceballos**  
Director

April 17, 2019

---

**State of Wyoming  
Department of Health**

**2018 Wyoming HIV Surveillance Report**

2018 Wyoming HIV Surveillance Report is published by the  
Public Health Division  
Alexia Harrist, MD, PhD

Additional information and copies may be obtained from:  
Courtney Smith, MPH  
Communicable Disease Surveillance Program  
6101 Yellowstone Road, Suite 510, Cheyenne, Wyoming 82002  
Telephone: 307-777-2434  
Facsimile: 307-777-5279  
courtney.smith@wyo.gov

This document is available in alternative format upon request.

# **2018 Wyoming HIV Surveillance Report**

## **Executive Summary**

Through 2018, 475 cases of HIV have been diagnosed and reported in Wyoming. Over the past five years, an average of 15 cases have been reported each year, with a slight increase in reported cases from 2017 to 2018. Most cases are male, white, and aged 25-34 years. The most frequently noted transmission categories included men who have sex with men, injection drug use, and heterosexual sex. The highest rate of new diagnoses occurred in Goshen County. The intake facility for Wyoming Department of Corrections is located in Goshen County and screens all new inmates for HIV upon entry which contributes to the high rate of infection noted in this report.

Prevalence is concentrated in Laramie County which contains approximately 30% of the epidemic in Wyoming. Most people living in Wyoming with HIV are male and white. Like new diagnoses, transmission among people living with HIV is dominated by sexual behavior including having sex with males for men and heterosexual sex for females. Injection drug use accounts for the next highest transmission category among males and females.

## **Data Quality and Limitations**

Wyoming law requires all providers, laboratories, and local health departments/public health nursing offices to report all HIV-related information including positive or reactive diagnostic tests, CD4 counts, and viral loads within seven (7) days of result to the Wyoming Department of Health (WDH), Public Health Division, Communicable Disease Unit. The law also requires the reporting of any previous HIV test information, regardless of result, for people newly diagnosed with HIV. Identifying and reporting cases of HIV helps WDH develop prevention and intervention strategies to reduce the spread of disease. HIV reporting also allows those diagnosed to be linked to care and enables contact tracing and testing for any exposed partners.

For this report, HIV and HIV Stage 3 (AIDS) cases are combined and called HIV disease unless otherwise noted. Geographical representation of newly diagnosed HIV cases is based on residence at diagnosis. Prevalence of HIV is based on the most recent address. All rates displayed in this report are per 100,000 population.

HIV diagnoses data are reported as date of diagnosis and not date of report to the Wyoming Department of Health. HIV diagnosis date may not be indicative of HIV infection date. HIV diagnosis data may not accurately reflect those infected with HIV because not all persons

with HIV have been tested or reported.

### **Acronyms and Definitions**

**AIDS:** Acquired Immune Deficiency Syndrome. An advanced stage of HIV infection which occurs when the immune system of a person infected with HIV becomes severely compromised or a person infected with HIV acquires an opportunistic infection

**Case Rate:** The number of reported cases divided by the number of people in the same area at risk for the disease

**CD4 Count:** The number of CD4 white blood cells in a specific volume (1 microliter) of a person's blood

**Exposure Category:** The risk behavior(s) that most likely lead to transmission of HIV

**Gender:** A person's self-reported gender at the time of HIV diagnosis

**HIV:** Human Immunodeficiency Virus

**HIV Prevalence:** The total number of people living with HIV disease during a specific time period in Wyoming

**HIV Stage 3:** see AIDS

**HIV Surveillance:** The systematic collection, evaluation, interpretation, and dissemination of HIV-related information

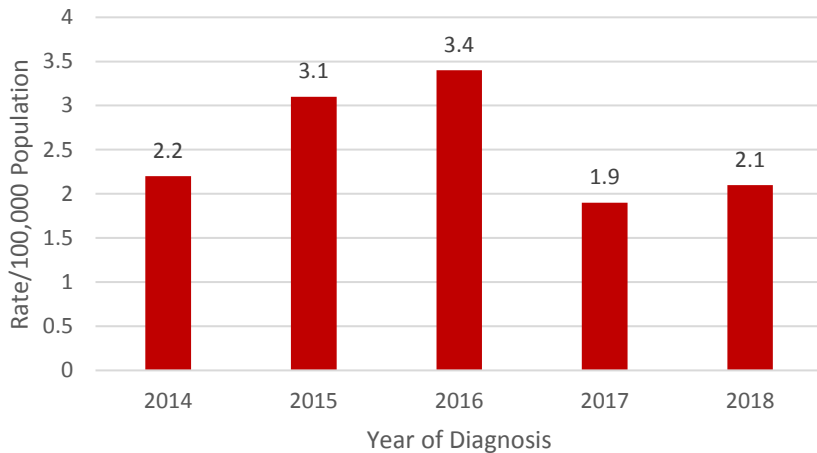
**Viral Load:** The number of HIV viral copies in a person's body measured as HIV RNA copies per milliliter of blood.

### **Epidemiology of HIV in Wyoming**

#### **New Diagnoses**

From 2014-2018, 74 cases of HIV were reported in Wyoming. Figure 1 displays the case rate by year of diagnosis from 2014 through 2018. The rate of newly diagnosed infection increased from 2017 to 2018. Of the 74 cases reported, 22 (30%) were reported as HIV Stage 3 (AIDS). This suggests that almost one third of the new diagnoses during this time were late testers. Late testing results in missed opportunities for HIV prevention and treatment.

**Figure 1. Newly diagnosed HIV disease case rates by year, Wyoming, 2014-2018**



Most cases were white, male, and between the ages of 25 and 34 years in 2018 (Table 1). Males accounted for 88% of all cases diagnosed between 2014 and 2018. Most newly diagnosed HIV infections were among non-Hispanic Whites (91%) in 2018. The average rate of infection from 2014-2018 among non-Hispanic Blacks (27.6) was notably higher than that of any other race/ethnicity, though there have been no incident cases among non-Hispanic Blacks during 2016-2018.

In 2018, the highest rate of infection was among those aged 25-34 years followed by those aged 35-44 years. From 2014 to 2018, the rate of infection among those aged less than 15, 35-44, and 45-54 years decreased. The rate among those aged 25-34 years increased.

**Table 1. Newly diagnosed HIV cases and rates by demographic factors, Wyoming, 2014-2018**

Year of HIV Diagnosis	2014		2015		2016		2017		2018	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
<b>Total</b>	<b>13</b>	<b>2.2</b>	<b>18</b>	<b>3.1</b>	<b>20</b>	<b>3.4</b>	<b>11</b>	<b>1.9</b>	<b>12</b>	<b>2.1</b>
<b>Gender</b>										
Male	10	3.4	16	5.4	18	6.0	10	3.4	11	3.7
Female	3	1.1	2	0.7	2	0.7	1	0.4	1	0.4
<b>Age at HIV Diagnosis</b>										
<15	2	1.7	0	0.0	0	0.0	0	0.0	0	0.0
15-24	0	0.0	2	2.6	2	2.6	0	0.0	0	0.0
25-34	5	6.1	5	6.1	12	14.7	3	3.7	9	11.1
35-44	3	4.2	5	7.0	1	1.4	4	5.6	2	2.8
45-54	3	4.2	2	2.8	2	2.8	4	5.6	1	1.4
55+	0	0.0	1	0.6	3	1.8	0	0.0	0	0.0
<b>Race/Ethnicity</b>										
White	6	1.2	12	2.4	15	3.1	10	2.0	10	2.0
Black	5	86.3	3	51.8	0	0.0	0	0.0	0	0.0
Hispanic (all races)	2	3.5	3	5.3	3	5.3	1	1.8	0	0.0
Asian	0	0.0	0	0.0	0	0.0	0	0.0	1	20.3
Native Hawaiian/Pacific Islander	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
American	0	0.0	0	0.0	1	8.4	0	0.0	1	8.4

Indian/Alaska Native										
Multiple Race	0	0.0	0	0.0	1	8.6	0	0.0	0	0.0

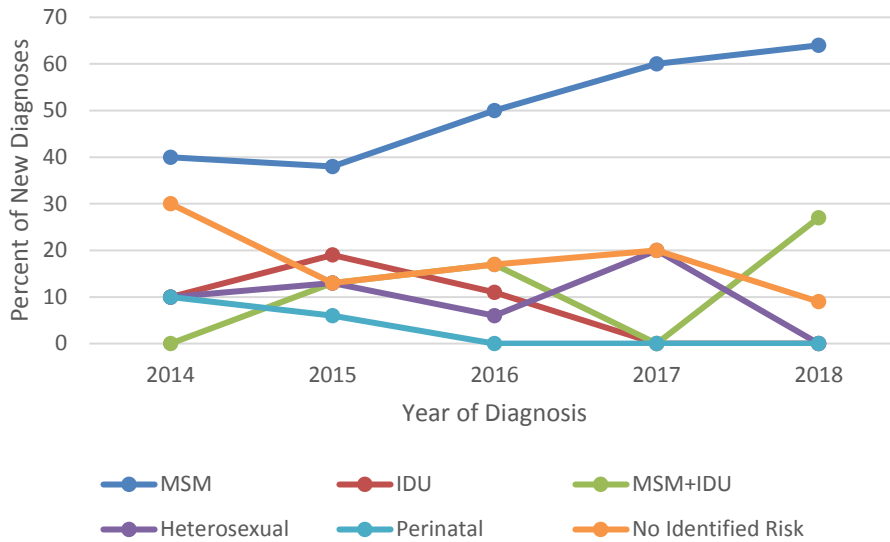
Men who have sex with men accounted for the highest percentage of cases among males from 2014-2018 (48%), whereas heterosexual contact was the highest reported risk among females (67%) (Table 2). Two cases of pediatric HIV infection were reported due to perinatal transmission.

**Table 2. Newly diagnosed HIV disease cases by gender and exposure category, Wyoming, 2014-2018**

Gender and Exposure Category	No. (%)
<b>Male</b>	<b>65 (100%)</b>
Men who have sex with men (MSM)	32 (49%)
Injection Drug Use (IDU)	6 (9%)
MSM and IDU	8 (12%)
Heterosexual Contact	6 (9%)
No Identified Risk (NIR)/Other	11 (17%)
Perinatal exposure	2 (3%)
<b>Female</b>	<b>9 (100%)</b>
IDU	0 (0%)
Heterosexual Contact	6 (67%)
No Identified Risk (NIR)	3 (33%)

The percentage of male cases attributed to sex with men increased from 2014 to 2018. Men who have sex with men and inject drugs accounted for the second highest percentage of diagnoses in 2018 among men. Cases attributed to injection drug use alone decreased from 2014 to 2018.

**Figure 2. Percent of newly diagnosed HIV cases by exposure category, Males, Wyoming, 2014-2018**



Natrona County accounted for the highest number of newly diagnosed infections from 2014 to 2018 (23%), followed by Laramie County (21%), and Campbell County (10%). Nine counties did not report any newly diagnosed cases of HIV during this time period. (Table 3).

**Table 3. Newly diagnosed HIV cases by county, Wyoming, 2014-2018**

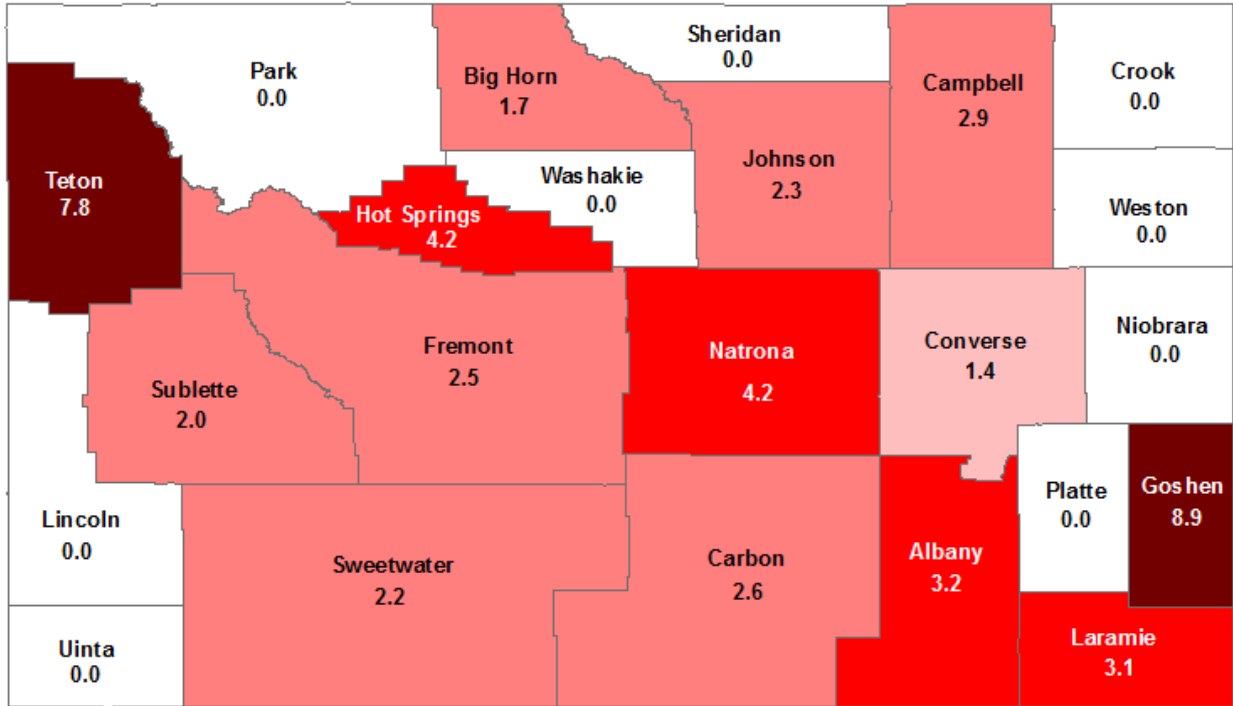
County	No. (%)
Albany	6 (8%)
Big Horn	1 (1%)
Campbell	7 (10%)
Carbon	2 (3%)
Converse	1 (1%)
Crook	0 (0%)
Fremont	5 (7%)
Goshen	6 (8%)
Hot Springs	1 (1%)
Johnson	1 (1%)
Laramie	15 (20%)
Lincoln	0 (0%)
Natrona	17 (23%)
Niobrara	0 (0%)
Park	0 (0%)
Platte	0 (0%)
Sheridan	0 (0%)

Sublette	1 (1%)
Sweetwater	5 (7%)
Teton	6 (8%)
Uinta	0 (0%)
Washakie	0 (0%)
Weston	0 (0%)
<b>Total</b>	<b>74 (100%)</b>

Goshen County had the highest rate of infection from 2014-2018 (8.9 cases/100,000 population). This high rate reflects the fact that Goshen County houses the Wyoming Department of Corrections intake facility which conducts testing on all new inmates. Teton County had the second highest rate of infection (7.8 cases/100,000 population) followed by Natrona and Hot Springs counties (4.2 cases/100,000 population).

**Figure 3. Average newly diagnosed HIV case rate by county, Wyoming, 2014-2018**





**Prevalence**

As of December 31, 2018, 332 people with HIV disease lived in Wyoming. Of those, males accounted for the majority of cases (80%). Over half of people living with HIV in Wyoming were classified as HIV Stage 3 (52%) (Table 4).

**Table 4. HIV prevalence, Wyoming, by status and demographic factors as of**

**December 31, 2018**

Status	HIV No. (%)	HIV Stage 3 (AIDS) No. (%)
<b>Total</b>	<b>159 (100%)</b>	<b>173 (100%)</b>
<b>Gender</b>		
Male	125 (79%)	141 (82%)
Female	34 (21%)	32 (18%)
<b>Current Age</b>		
<15	6 (4%)	0 (0%)
15-24	4 (3%)	2 (1%)
25-34	41 (26%)	11 (6%)
35-44	38 (24%)	33 (19%)
45-54	42 (26%)	50 (29%)
55+	28 (18%)	77(45%)
<b>Race/Ethnicity</b>		
White	111 (70%)	119 (69%)
Black	16 (10%)	10 (6%)
Hispanic (all races)	20 (13%)	32 (18%)
Asian	2 (1%)	0 (0%)
Native Hawaiian/Pacific Islander	1 (1%)	0 (0%)
American Indian/Alaska Native	7 (4%)	8 (5%)
Multiple Race	2 (1%)	4 (2%)

Men who have sex with men (63%) followed by those who were MSM and injected drugs (15%) accounted for the most cases among males in Wyoming. Heterosexual sex was the most common risk reported among females (48%)(Table 5).

**Table 5. HIV prevalence, Wyoming, aged 15 years and older by status and reported exposure category as of December 31, 2018**

Status	HIV No. (%)	HIV Stage 3 (AIDS) No. (%)
<b>Male</b>	<b>121 (100%)</b>	<b>141 (100%)</b>
MSM	78 (64%)	88 (62%)
Injection Drug Use (IDU)	12(10%)	8 (6%)
MSM and IDU	18 (15%)	21 (15%)
Heterosexual Contact	1 (1%)	7 (5%)
No Identified Risk	11 (9%)	16 (11%)
Other	1 (1%)	1 (1%)
<b>Female</b>	<b>32 (100%)</b>	<b>32 (100%)</b>
IDU	6 (19%)	11 (34%)
Heterosexual Contact	17 (53%)	14 (44%)
No Identified Risk	6 (19%)	5 (16%)
Other	3 (9%)	2 (6%)

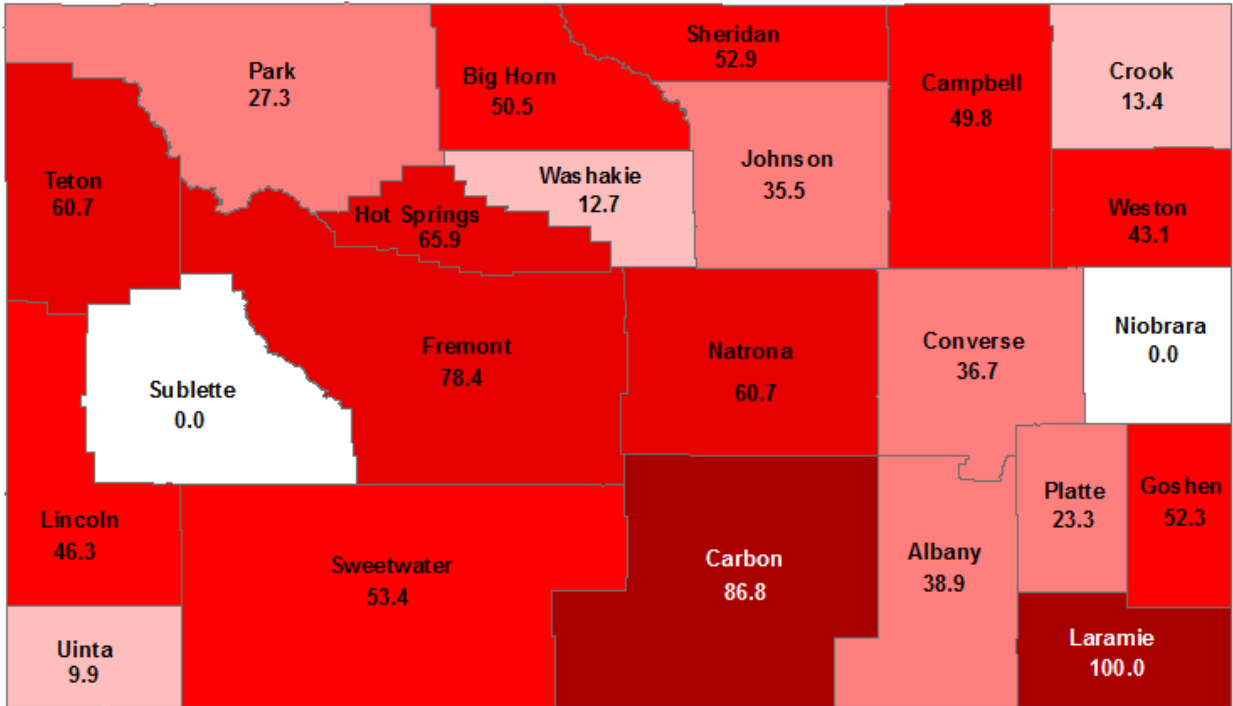
The majority of cases resided in Laramie County (30%), Natrona County (14%), and Fremont County (9%) in 2018 (Table 6).

**Table 6. HIV prevalence, Wyoming, by status and county as of December 31, 2018**

County	HIV No. (%)	HIV Stage 3 (AIDS) No. (%)	Total No. (%)
Albany	8 (5%)	7 (4%)	15 (5%)
Big Horn	2 (1%)	4 (2%)	6 (2%)
Campbell	11 (7%)	12 (7%)	23 (7%)
Carbon	8 (5%)	5 (3%)	13 (4%)
Converse	0 (0%)	5 (3%)	5 (2%)
Crook	1 (1%)	0 (0%)	1 (0%)
Fremont	14 (9%)	17 (10%)	31 (9%)
Goshen	2 (1%)	5 (3%)	7 (2%)
Hot Springs	1 (1%)	2 (1%)	3 (1%)
Johnson	2 (1%)	1 (0%)	3 (1%)
Laramie	50 (31%)	49 (28%)	99 (30%)
Lincoln	3 (2%)	6 (3%)	9 (3%)
Natrona	25 (16%)	23 (13%)	48 (14%)
Niobrara	0 (0%)	0 (0%)	0 (0%)
Park	4 (3%)	4 (2%)	8 (2%)
Platte	1 (1%)	1 (1%)	2 (1%)
Sheridan	7 (4%)	9 (5%)	16 (5%)
Sublette	0 (0%)	0 (0%)	0 (0%)
Sweetwater	10 (6%)	13 (8%)	23 (7%)
Teton	9 (6%)	5 (3%)	14 (4%)
Uinta	1 (1%)	1 (1%)	2 (1%)
Washakie	0 (0%)	1 (1%)	1 (0%)
Weston	0 (0%)	3 (2%)	3 (1%)
<b>Total</b>	<b>159 (100%)</b>	<b>173 (100%)</b>	<b>332 (100%)</b>

Prevalence rates were highest in Laramie, Carbon, and Fremont counties. No cases of HIV lived in Niobrara or Sublette counties in 2018 (Figure 4).

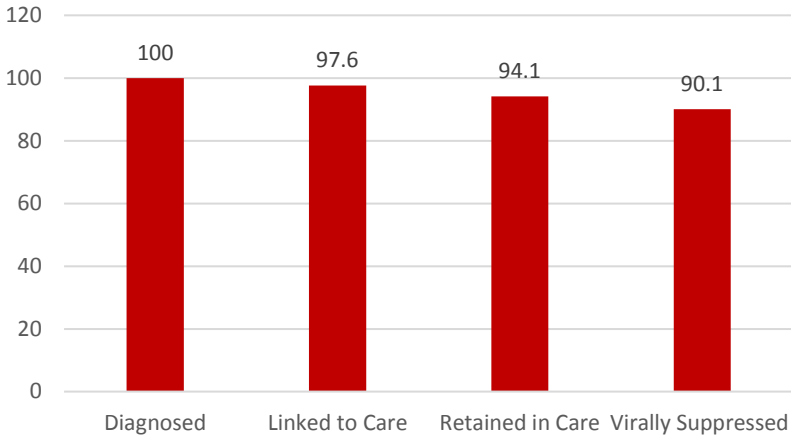
**Figure 4. HIV prevalence rate by county, Wyoming, 2018**



**HIV Care Continuum**

The HIV Care Continuum includes the steps a person with HIV goes through from initial diagnosis to successful treatment. The continuum includes cases reported, those who were linked to care after diagnosis, those who remained in care in 2018, and those in care who had a suppressed viral load. Retained in care is defined as having at least one CD4 test or viral load test conducted within the year. Annually, the Communicable Disease Unit assesses and investigates cases that are presumed to be out of care in order to re-engage those who need assistance. The HIV Care Continuum shown in Figure 5 was created after 2018 out of care investigations were completed. Wyoming has a high percentage of cases linked and retained in care. Most of those retained in care (90.1%) had a suppressed viral load in 2018. National estimates of 2014 data indicate approximately 49% of people with HIV have a suppressed viral load.<sup>1</sup>

**Figure 5. HIV Care Continuum, Wyoming, 2018**



Since the beginning of the epidemic, 181 cases of HIV cases residing in Wyoming have died corresponding to a case fatality rate of 38%.

**Table 7. Number of cases, deaths, and case fatality rates by time of diagnosis, Wyoming, 1989-2018.**

Year	Number of Cases	Deaths	Case Fatality Rate %
1989-2018	475	181	38

## References

1. The Centers for Disease Control and Prevention. HIV Continuum of Care, U.S. 2014, Overall and by Age, Race/Ethnicity, Transmission Route and Sex. <https://www.cdc.gov/nchstp/newsroom/2017/HIV-Continuum-of-Care.html>.