HIV | SURVEILLANCE REPORT

SPECIAL REPORT

Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection

Medical Monitoring Project, United States
2020 Cycle (June 2020–May 2021)

Centers for Disease Control and Prevention
National Center for HIV, Viral Hepatitis, STD, and TB Prevention

Contents

Commentary

At year-end 2019, an estimated 1,061,482 persons in the United States and 6 dependent areas were living with diagnosed HIV infection, and in 2019, the number of new HIV diagnoses was 36,801 [1]. Although the National HIV Surveillance System (NHSS) collects information about persons with diagnosed HIV infection [1], other surveillance systems provide more detailed information about care seeking, health care use, use of ancillary services, and key behaviors among people at risk for, and with, diagnosed HIV [2, 3]. In 2005, in response to an Institute of Medicine (IOM) report outlining the need for representative data on persons with HIV [4], the Centers for Disease Control and Prevention (CDC) implemented the Medical Monitoring Project (MMP), which from 2009 to 2014 collected data from a 3-stage probability sample of adults receiving HIV medical care [5]. In 2015, in response to recommendations stemming from an IOM review of national HIV data systems [6], MMP sampling and weighting methods were revised to include all adults with diagnosed HIV infection, regardless of HIV care status. MMP is a cross-sectional, nationally representative, complex sample survey that assesses the behavioral and clinical characteristics of adults with diagnosed HIV infection in the United States. MMP also provides information on behaviors and clinical outcomes affecting the risk of HIV transmission, morbidity, and mortality that are critical for achieving the goals of the National HIV/AIDS Strategy [7] and the Ending the HIV Epidemic in the U.S. (EHE) initiative [8], which seek to reduce new HIV infections in the United States by 90% by 2030.

The 2020 MMP data were collected from a 2-stage probability sample. During the first stage, 16 U.S. states and Puerto Rico were selected from all U.S. states, the District of Columbia, and Puerto Rico. A total of 23 project areas from 16 states, including 6 separately funded jurisdictions within these states, and Puerto Rico were funded to conduct data collection for the 2020 cycle (Table 1). In the second stage, simple random samples of persons aged ≥18 years with diagnosed HIV infection who were reported to NHSS as of December 31, 2019, were selected from each participating jurisdiction [9].

This report presents unweighted frequencies and weighted prevalence estimates with 95% confidence intervals for all characteristics. The estimates describe the characteristics of adults with diagnosed HIV infection who are living in the United States, hereafter referred to as *persons with diagnosed HIV* or *persons*. The period referenced for estimates is the 12 months before the participants' interviews and medical record abstractions unless otherwise noted. Statistical software (SAS, version 9.4) was used for analysis of weighted data [10]. Data are not reported for estimates derived from a denominator size <30 or for estimates with a coefficient of variation ≥0.30. Estimates with an absolute confidence interval width ≥30, estimates with an absolute confidence interval width between 5 and 30 and a relative confidence interval width >130%, and estimates of 0% or 100% are marked with an asterisk and should be interpreted with caution. No statistical tests were performed. Estimates presented in this report may have been affected by the COVID-19 pandemic. Additional information on MMP is available at https://www.cdc.gov/hiv/statistics/systems/mmp/.

Highlights of Analyses

Response Rates

All 16 states, including 6 separately funded jurisdictions within those states, and the 1 territory sampled for MMP participated (Figure 1). In total, 9,700 persons were sampled from NHSS and 3,710 participated (Table 1). Adjusted for eligibility, the response rate was 40% (shown in footnotes of Table 1).

Figure 1. Participating Medical Monitoring Project sites, including 16 states and 6 separately funded jurisdictions—United States, 2020
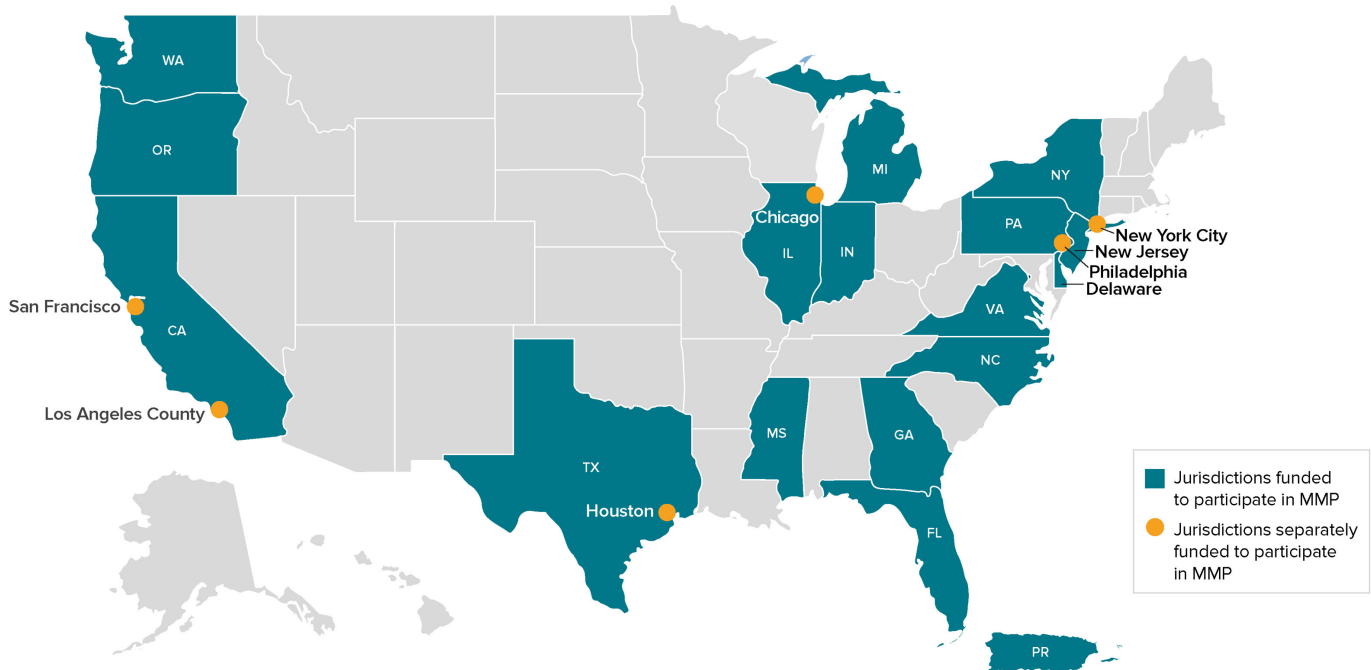
Selected Characteristics, Including Demographic Characteristics and Social Determinants of Health

An estimated 75% of persons were cisgender male, 23% were cisgender female, and 2% were transgender (Figure 2; Table 2). Nearly three-quarters (74%) were aged at least 40 years. An estimated 43% identified themselves as heterosexual or straight; 45% as lesbian or gay; 9% as bisexual; and 3% as another sexual orientation. An estimated 42% were Black or African American, 29% were White, and 24% were Hispanic or Latino.

Figure 2. Distribution of gender, age, sexual orientation, and race/ethnicity among adults with diagnosed HIV—Medical Monitoring Project, United States, 2020
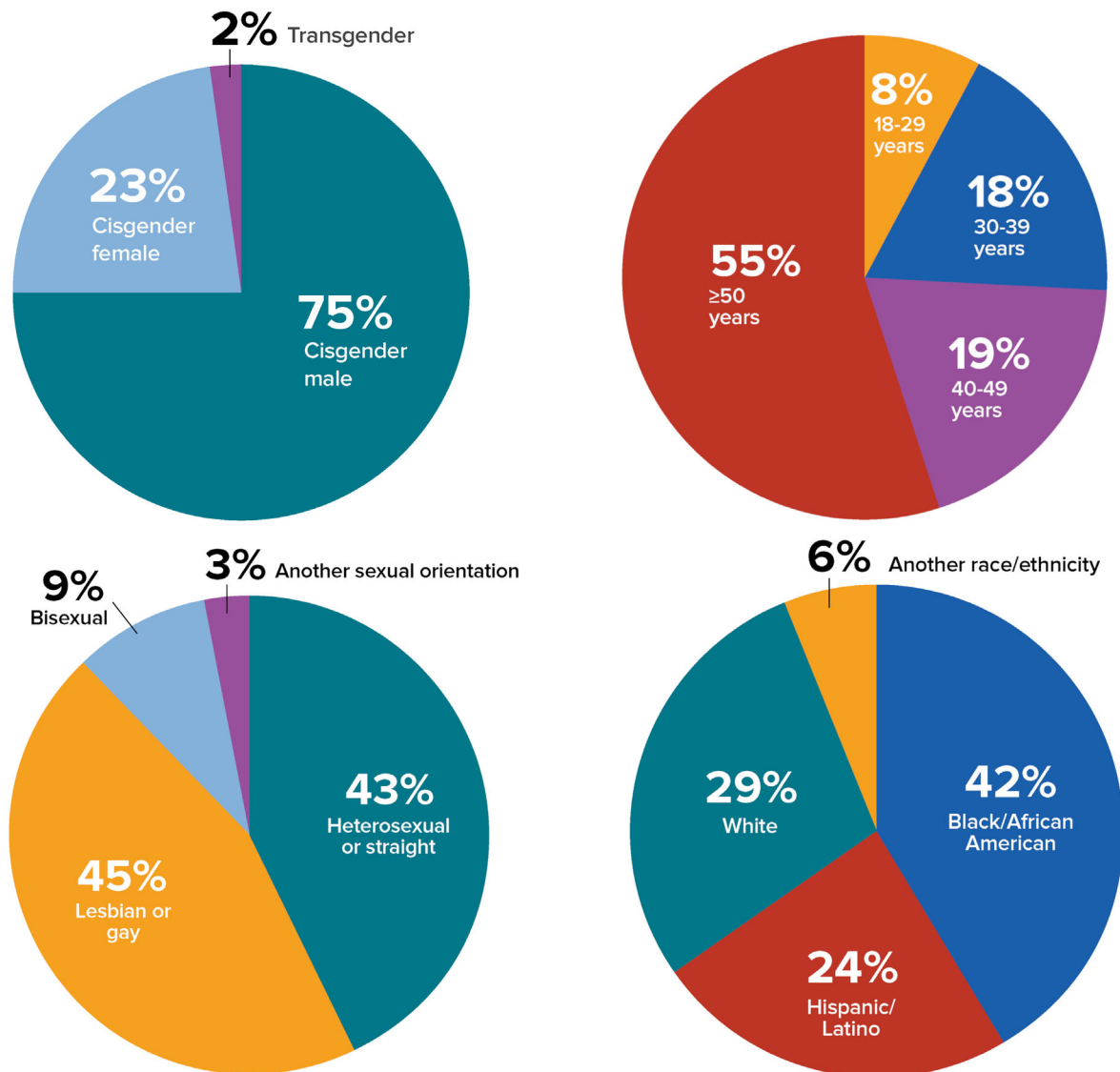
Note. Transgender persons defined as those who self-identified as transgender or who reported a gender identity different from sex assigned at birth. "Other" race/ethnicity defined as persons who were American Indian/Alaska Native, Asian, Native Hawaiian/other Pacific Islander, or multiracial. Hispanic or Latino persons can be of any race.

Over half (60%) had more than a high school education and 83% were born in a U.S. state or territory (Table 2). The estimated prevalence of homelessness or other forms of unstable housing among all persons with diagnosed HIV was 17% (data not shown in table). The estimated prevalence of homelessness was 8%. Many people experienced other forms of unstable housing: approximately 12% had moved in with other people because of financial problems, 8% moved 2 or more times, and 2% had been evicted from housing during the past 12 months. Nearly 4% were incarcerated >24 hours. Approximately 16% went without food due to lack of money, 41% were unemployed, and 36% had household incomes at or below the federal poverty threshold. An estimated 15% received Supplemental Security Income (SSI), and 19% received Social Security Disability Insurance (SSDI). An estimated 98% had health insurance or coverage for care or medications (including antiretroviral therapy [ART] medications): 47% had coverage through the Ryan White HIV/AIDS Program, 43% had Medicaid, 28% had Medicare, and 40% had private health insurance (Figure 3). An estimated 40% had a disability. Overall, 72% perceived their general health as good, very good, or excellent, and 68% had received an HIV diagnosis at least 10 years earlier.

Figure 3. Prevalence of selected social determinants of health among adults with diagnosed HIV—Medical Monitoring Project, United States, 2020
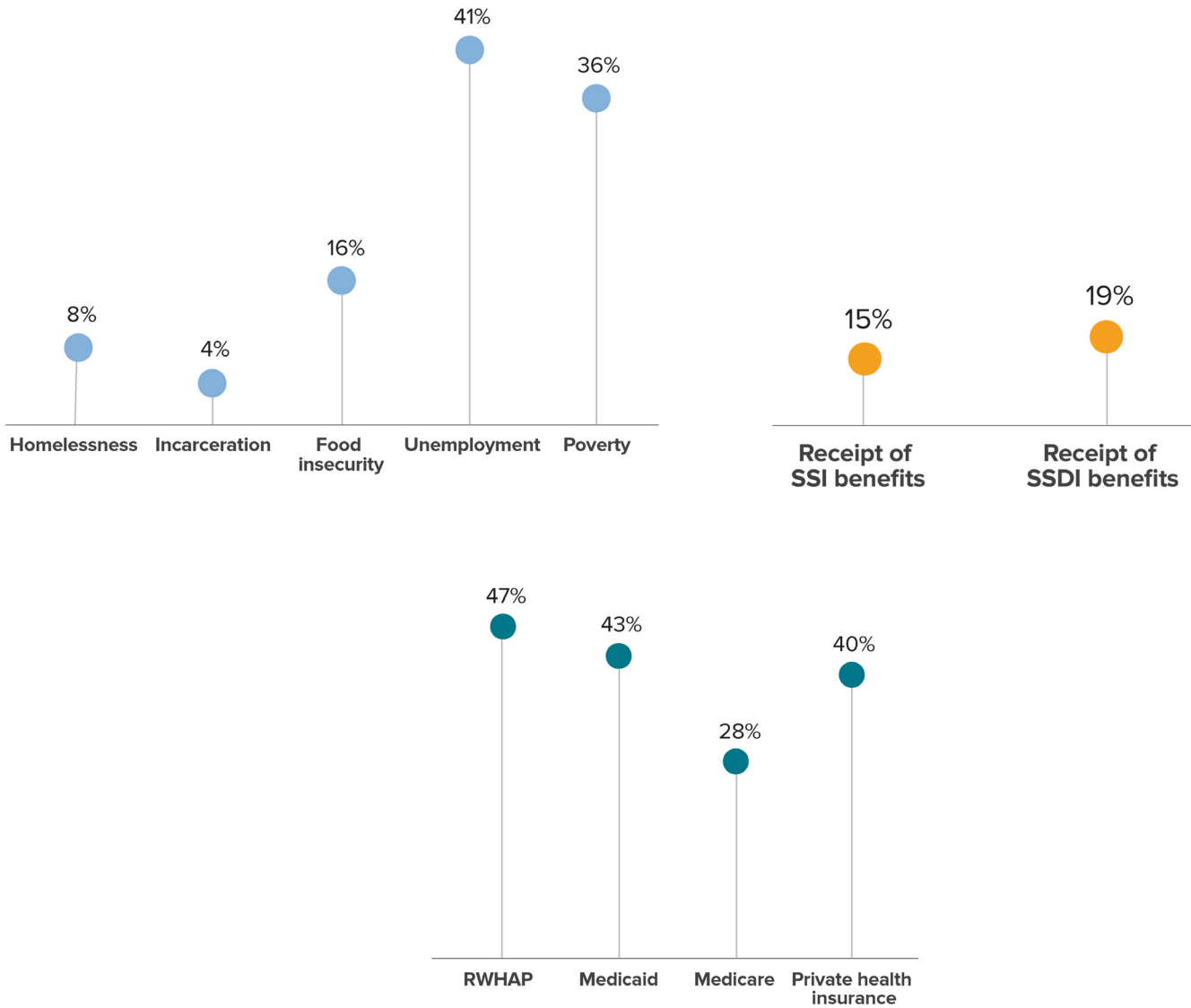
Abbreviations: SSI, Supplemental Security Income; SSDI, Social Security Disability Insurance; RWHAP, Ryan White HIV/AIDS Program.

Note. Healthcare insurance/coverage types not mutually exclusive; people could report >1 type of coverage.

Clinical Characteristics

According to the CDC stage of disease classification for HIV infection [11], an estimated 54% of persons ever had stage 3 (AIDS) disease (Table 3). An estimated 7% of persons had a geometric mean CD4 T-lymphocyte (CD4) count of 0–199 cells/μL. The estimated average geometric mean CD4 count among all persons was 659.3 cells/μL, and the median geometric mean CD4 count was 635.8 cells/μL (range, 0–2,920) (data not shown in table).

An estimated 63% of persons had a viral load that was undetectable or <200 copies/mL at the most recent measurement, while 59% had viral loads that were undetectable or <200 copies/mL at all measurements during the past 12 months (sustained viral suppression) (Figure 4; Table 3).

Figure 4.   Percentage of adults with diagnosed HIV who were virally suppressed during the 12 months before interview—Medical Monitoring Project, United States, 2020

63%

Viral suppression
at most recent test*

59%

Sustained viral
suppression†
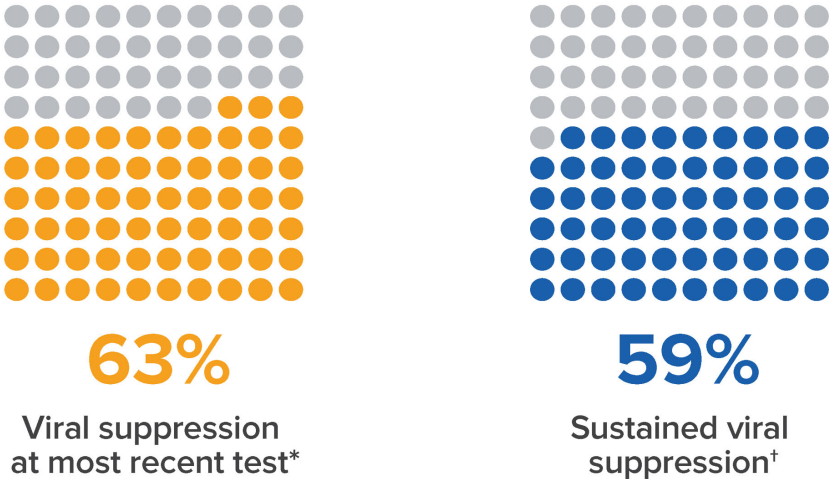
*Viral load <200 copies/mL or undetectable based on most recent test in the past 12 months.
†Sustained viral suppression defined as having all viral load tests in the past 12 months <200 copies/mL or undetectable.

Use of Health Care Services

Overall, 95% had received outpatient HIV care during the past 12 months (Figure 5; Table 4). An estimated 72% were retained in care during the past 12 months, while 56% were retained in care during the past 24 months. An estimated 79% of persons had an ART prescription documented in the medical record during the 12 months before interview. Of persons who met the clinical criteria for *Pneumocystis* pneumonia (PCP) prophylaxis, 42% had a prescription for PCP prophylaxis documented in the medical record.

Figure 5. Receipt of HIV care and antiretroviral therapy prescription during the 12 months before interview among adults with diagnosed HIV—Medical Monitoring Project, United States, 2020

95%
Received outpatient HIV care*

72%
Retained in HIV care†

79%
Prescribed antiretroviral therapy
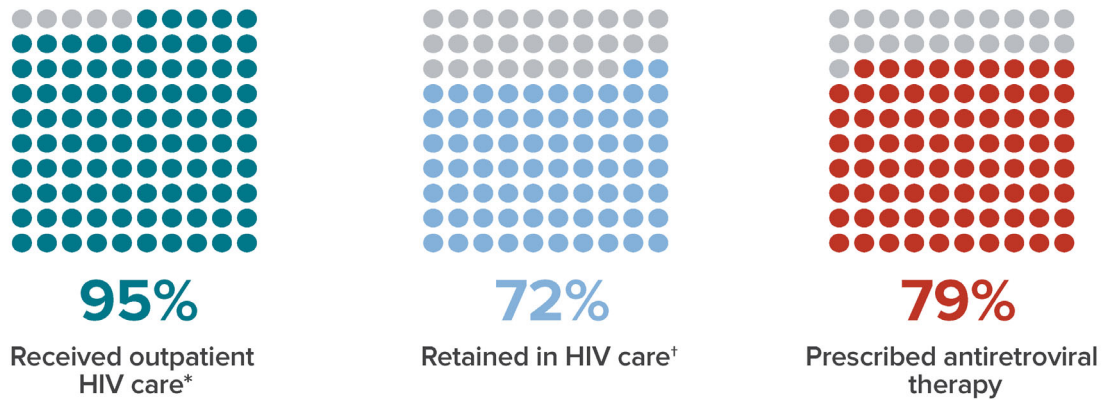
*Outpatient HIV care was defined as any documentation of the following at the most frequent source of HIV care: encounter with an HIV care provider (could be self-reported), viral load test result, CD4 test result, HIV resistance test or tropism assay, ART prescription, PCP prophylaxis, or MAC prophylaxis.
†Two elements of outpatient HIV care at least 90 days apart during the 12 months prior to interview.

Among sexually active persons, an estimated 47% were tested for gonorrhea, 48% for chlamydia, 61% for syphilis, and 41% for all 3 sexually transmitted infections (STIs) (Figure 6; Table 5).

Figure 6. Percentage of sexually active adults with diagnosed HIV who tested for gonorrhea, chlamydia, or syphilis during the 12 months before interview—Medical Monitoring Project, United States, 2020

47%
Gonorrhea

48%
Chlamydia

61%
Syphilis

41%
Gonorrhea, chlamydia, and syphilis
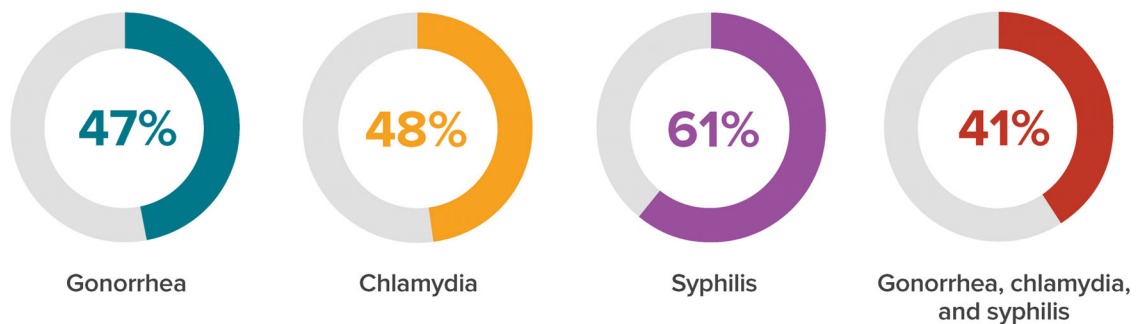
An estimated 38% of persons were seen in an emergency department at least once, and 4% were seen at least 5 times (Figure 7; Table 6). An estimated 16% of persons were admitted to a hospital for an illness at least once.

Figure 7. **Percentage of adults with diagnosed HIV who had at least one visit to the emergency room or at least one hospital admission during the 12 months before interview—Medical Monitoring Project, United States, 2020**

38%

≥1 visit to the
emergency department

16%

≥1 hospital admission
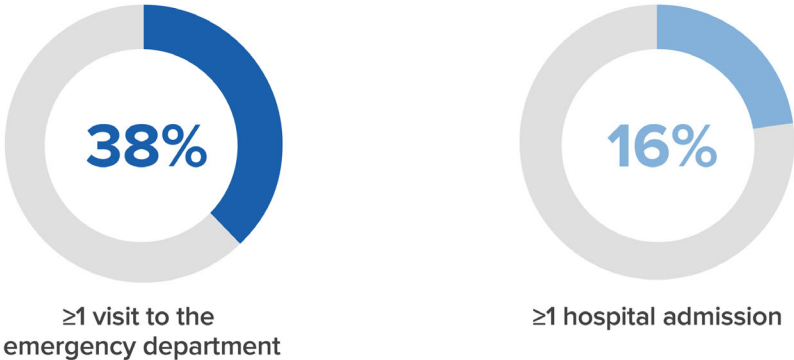
Self-reported ART Medication Use and Adherence

An estimated 99% of persons had ever taken ART and 95% of persons were currently taking ART, based on self-report (Table 7). Among those with a history of ART use but who were not currently taking ART, 37% were not taking ART due to money or insurance problems, 29% were not taking ART because the person's health care provider never discussed restarting ART with them, and 20% were not taking ART because the person thought ART would make them feel sick or harm them.

Among persons taking ART, 78% had never been troubled by ART side effects during the past 30 days; 12% had rarely been troubled (Table 8). Among persons taking ART, 62% took all of their ART doses in the past 30 days. Among persons who had ever missed a dose, the most common reasons given for not taking one's most recently missed ART dose were forgetting (65%), a change in one's daily routine or being out of town (39%), or falling asleep early or oversleeping (37%) (Figure 8).

Figure 8. **Reasons for missing last antiretroviral therapy dose among adults with diagnosed HIV who have ever missed a dose*—Medical Monitoring Project, United States, 2020**

65%	39%	37%	17%	16%
Forgot to take HIV medicines	Change in your daily routine or were out of town	Fell asleep early or overslept	Had a problem getting a prescription or a refill for HIV medicines	Felt depressed or overwhelmed
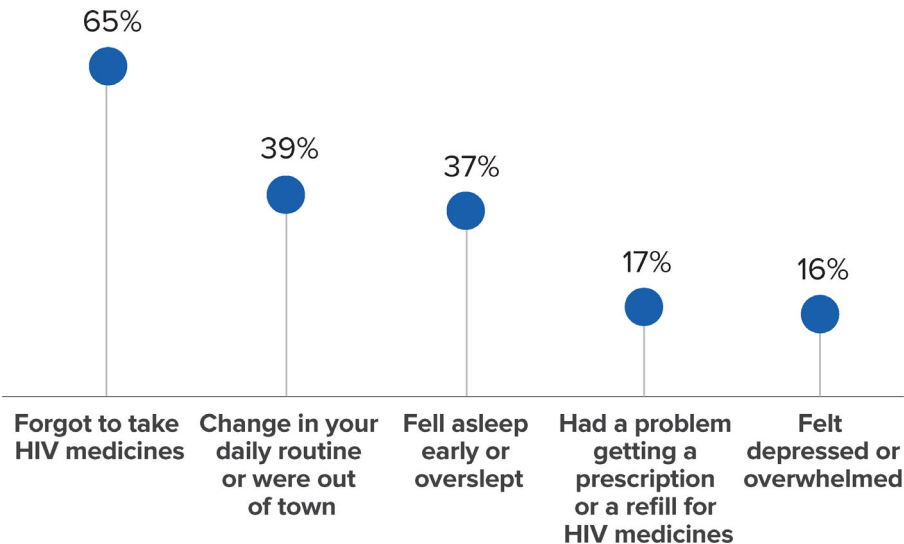
*Participants may report more than one reason for last missed dose.

Clinical Characteristics by Selected Populations

The estimated prevalence of ART prescription documented in a medical record was 79% among cisgender males and 79% among cisgender females (Table 9). Approximately 76% of bisexual persons and 79% of lesbian or gay persons were prescribed ART, compared with 80% of heterosexual or straight persons. An estimated 76% of Black or African American persons were prescribed ART, compared with 81% of Hispanic or Latino persons and 81% of White persons. The estimated prevalence of ART prescription was 74% among persons aged 18–29 years and 81% among those aged ≥50 years.

ART dose adherence in the past 30 days was 63% among both cisgender males and cisgender females. An estimated 57% of bisexual persons and 62% of lesbian or gay persons were ART dose adherent, compared with 64% of heterosexual or straight persons. Approximately 60% of Black or African American persons and Hispanic or Latino persons were ART adherent, compared with 66% of White persons. An estimated 37% of persons aged 18–29 years were ART adherent, compared with 69% of persons aged ≥50 years.

The estimated prevalence of sustained viral suppression was 58% among cisgender males and 59% among cisgender females. Approximately 58% of bisexual persons and 60% of lesbian or gay persons, compared with 57% of heterosexual or straight persons, had sustained viral suppression. An estimated 54% of Black or African American persons had sustained viral suppression, compared with 63% of Hispanic or Latino persons and 62% of White persons. The estimated prevalence of sustained viral suppression was 48% among persons aged 18–29 years and 62% among those aged ≥50 years.

Depression and Substance Use

The estimated prevalence of symptoms indicative of major or other depression in the past 2 weeks based on the Patient Health Questionnaire (PHQ-8) algorithm [12] was 14%, including 7% with major depression (Figure 9; Table 10). Based on the total PHQ-8 symptom score (see the appendix), an estimated 11% of persons had symptoms of moderate or severe depression. The estimated prevalence of mild, moderate, or severe symptoms of generalized anxiety disorder in the past 2 weeks based on the Generalized Anxiety Disorder Scale (GAD-7) [13] was 18%, including 6% with severe anxiety.

Figure 9. Percentage of adults with diagnosed HIV who experienced symptoms of major or other depression* and generalized anxiety disorder† during the two weeks before interview—Medical Monitoring Project, United States, 2020
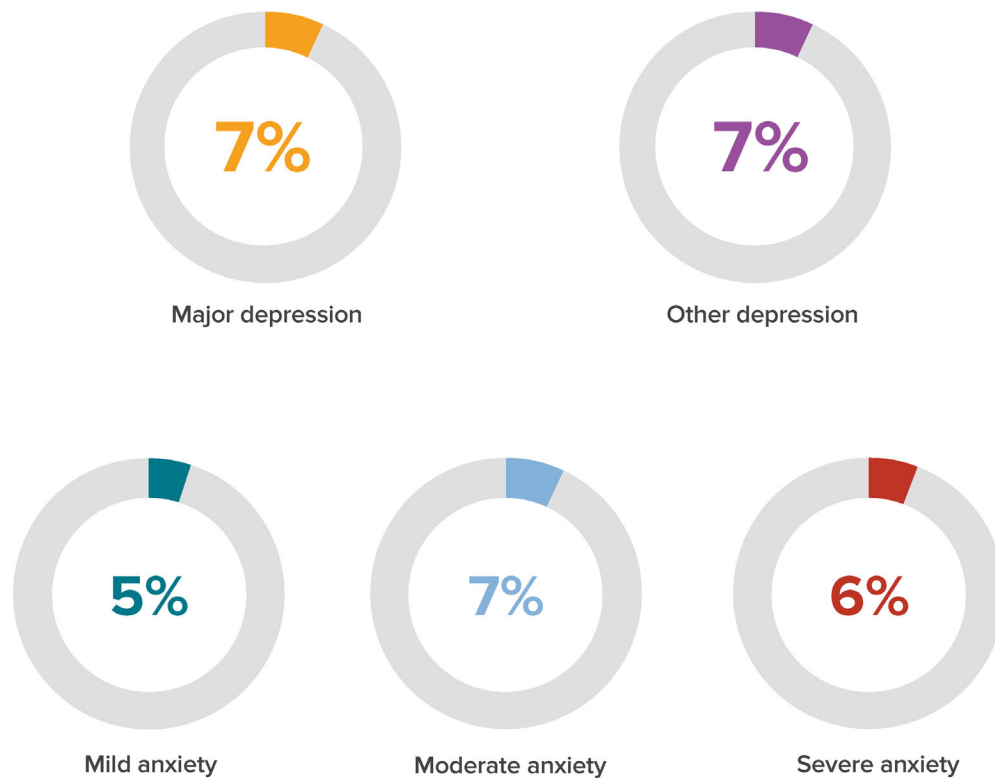
7% — Major depression

7% — Other depression

5% — Mild anxiety

7% — Moderate anxiety

6% — Severe anxiety

*Responses to the items on the PHQ-8 were used to define "major depression" and "other depression" according to criteria from the DSM-IV. "Major depression" was defined as having at least 5 symptoms of depression; "other depression" was defined as having 2–4 symptoms of depression. The PHQ-8 classification "other depression" comprises the DSM-IV categories of dysthymia and depressive disorder, not otherwise specified, which includes minor or subthreshold depression.

†Responses to the GAD-7 were used to define "mild anxiety," "moderate anxiety," and "severe anxiety," according to criteria from the DSM-IV. "Severe anxiety" was defined as having a score of ≥15; "moderate anxiety" was defined as having a score of 10–14; and "mild anxiety" was defined as having a score of 5–9.

The estimated prevalence of current smoking was 29%: 24% of persons smoked daily, 3% weekly, 1% monthly, and 2% less than monthly (Figure 10; Table 11). The estimated prevalence of alcohol use was 63%: 7% of persons drank alcohol daily, 19% weekly, 12% monthly, and 25% less than monthly (Figure 10; Table 12). An estimated 15% of persons engaged in binge drinking during the past 30 days.

Figure 10. Percentage of adults with diagnosed HIV who smoked cigarettes and drank alcohol during the 12 months before interview—Medical Monitoring Project, United States, 2020
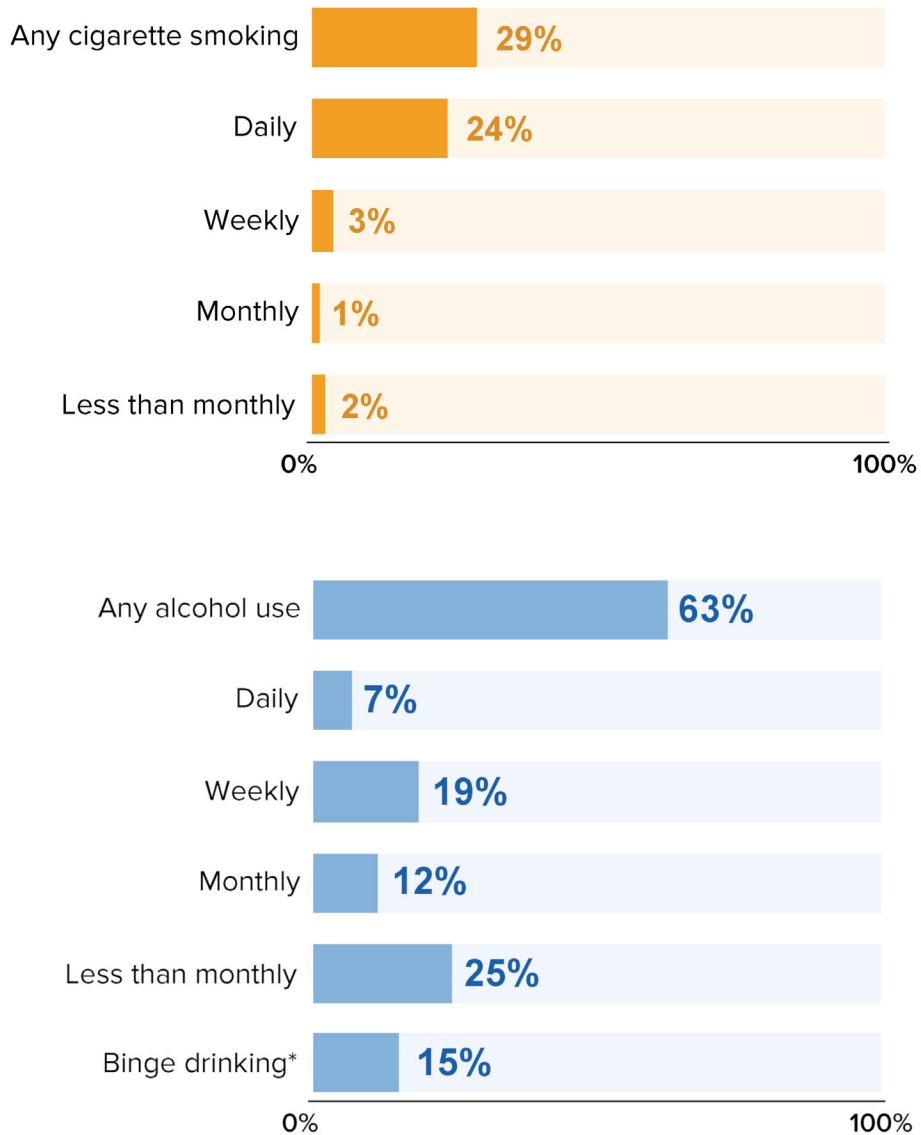
*Persons who drank ≥5 alcoholic beverages in a single sitting (≥4 for women) during the 30 days before interview.

An estimated 33% of persons used noninjection drugs for nonmedical purposes (Table 13). In total, an estimated 29% used marijuana, 8% used poppers (amyl nitrite), 6% used methamphetamines, 5% used cocaine, 4% used club drugs, 3% used crack, 3% used prescription tranquilizers, and 2% used prescription opioids. An estimated 3% of persons used injection drugs for nonmedical purposes (Table 14). In total, an estimated 2% injected methamphetamines and 1% injected heroin.

Characteristics Related to Gynecologic and Reproductive Health

Among females, 85% reported receiving a Papanicolaou (Pap) test in the past 3 years (Figure 11; Table 15). An estimated 28% of females reported being pregnant at least once since receiving an HIV diagnosis.

Figure 11. Percentage of cisgender female adults with diagnosed HIV who had a Papanicolaou test during the three years before interview or became pregnant since receiving an HIV diagnosis—Medical Monitoring Project, United States, 2020

85%
Papanicolaou (Pap) test
in the past 3 years

28%
Pregnant since
HIV diagnosis
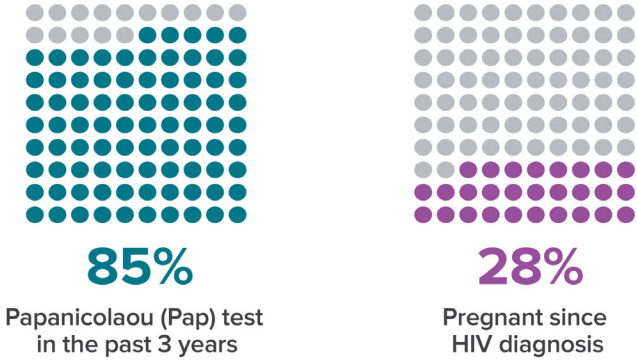
Sexual Behavior

An estimated 61% of cisgender men engaged in vaginal or anal sex; approximately 18% engaged in vaginal sex, 35% had receptive anal sex with cisgender men, and 32% had insertive anal sex with cisgender men (Table 16). An estimated 39% of cisgender men did not have vaginal or anal sex. Among cisgender women, an estimated 50% engaged in vaginal or anal sex. Approximately 50% had vaginal sex and 6% had receptive anal sex. An estimated 50% did not have vaginal or anal sex. Among transgender persons, 75% had vaginal or anal sex (Table 17).

Among cisgender men who had sex with cisgender men (MSM), an estimated 9% engaged in high-risk sex, compared with 8% of cisgender men who had sex only with cisgender women (MSW) and 7% of cisgender women who had sex with cisgender men (WSM) (Figure 12; Table 18).

Sexually active persons used a variety of HIV prevention strategies. For instance, an estimated 62% of MSM engaged in sex and had sustained viral suppression, 55% had condom-protected sex, 22% had condomless sex with a partner on preexposure prophylaxis (PrEP), and 54% had sex with a person with HIV (Figure 13; Table 18). Among sexually active MSW, 50% engaged in sex and had sustained viral suppression, 57% had condom-protected sex, 5% had condomless sex with a partner on PrEP, and 24% had sex with a person with HIV. Among sexually active WSM, 58% engaged in sex and had sustained viral suppression, 51% had condom-protected sex, 4% had condomless sex with a partner on PrEP, and 28% had sex with a person with HIV.

Figure 12. Percentage of adults with diagnosed HIV who engaged in sex without using an HIV prevention strategy* during the 12 months before interview, by sexual behavior/orientation—Medical Monitoring Project, United States, 2020
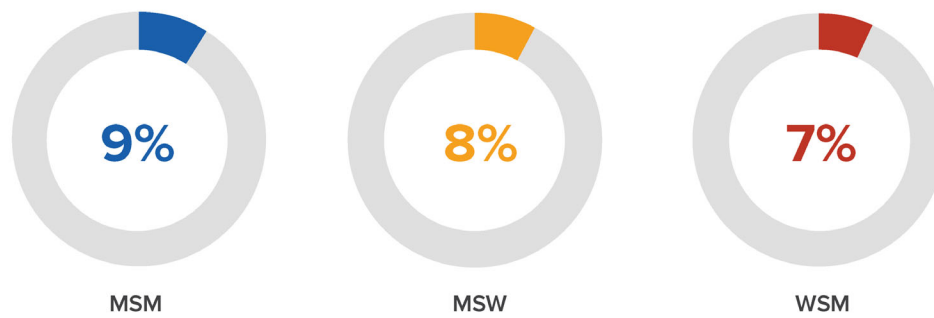
MSM	MSW	WSM
9%	8%	7%

Note. MSM, cisgender men who have sex with cisgender men; MSW, cisgender men who have sex only with cisgender women; WSM, cisgender women who have sex with cisgender men.

*Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not having sustained viral suppression (all viral load measurements in the past 12 months undetectable or <200 copies/mL), when a condom was not used, and the partner was not known to be taking preexposure prophylaxis (PrEP).

Figure 13. Prevention strategies used during the 12 months before interview among sexually active persons with diagnosed HIV, including men who have sex with men, men who have sex with only women, and women who have sex with men—Medical Monitoring Project, United States, 2020
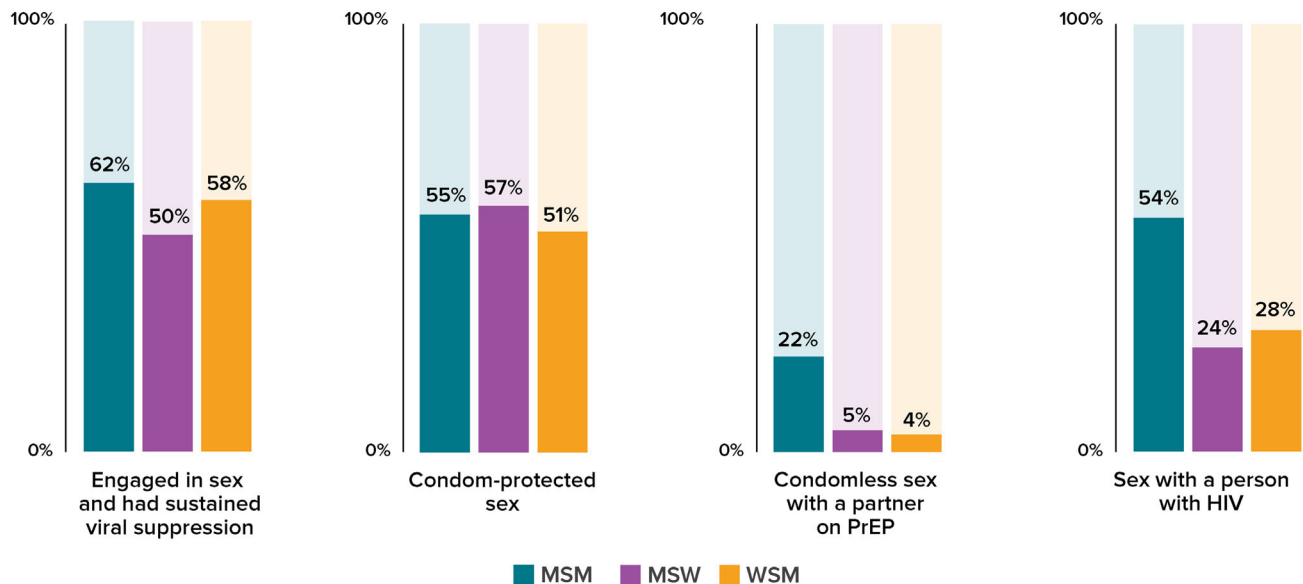
Note. MSM, cisgender men who have sex with cisgender men; MSW, cisgender men who have sex only with cisgender women; WSM, cisgender women who have sex with cisgender men.

Met and Unmet Need for Ancillary Services

Overall, 94% of people with diagnosed HIV received at least one ancillary service; 72% received at least one HIV support service, 68% received at least one non-HIV medical service, and 51% received at least one subsistence service. Overall, 41% had an unmet need for at least one ancillary service; 14% had an unmet need for at least one HIV support service, 27% had an unmet need for at least one non-HIV medical service, and 20% had an unmet need for at least one subsistence service (not shown in tables or figures).

Among all HIV support services, the most commonly reported service received in the 12 months before interview was HIV case management (52%); estimated unmet need for HIV case management services was 6% (Figure 14; Table 19). Of all non-HIV medical care services, the most commonly reported service received was dental care (56%); 21% reported an unmet need for dental care. Among all subsistence services, the most commonly reported services received were obtained through the Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (37%); unmet need for SNAP or WIC services was 10%.

Figure 14. Percentage of adults with diagnosed HIV who received, or who needed but did not receive, ancillary services related to (a) HIV support, (b) non-HIV medical services, and (c) subsistence during the 12 months before interview—Medical Monitoring Project, United States, 2020

(a)

	HIV case management services	Medicine through Ryan White/ADAP*	ART† adherence support services	Patient navigation services	HIV peer support
Received services	52%	48%	30%	14%	10%
Needed, but did not receive service	6%	3%	1%	4%	6%

■ Received services   ■ Needed, but did not receive service

(b)

	Dental care	Mental health services	Drug or alcohol counseling or treatment
Received services	56%	29%	6%
Needed, but did not receive service	21%	8%	2%

■ Received services   ■ Needed, but did not receive service

(c)

	SNAP or WIC‡	Meal or food services§	Transportation assistance	Shelter or housing services
Received services	37%	24%	20%	15%
Needed, but did not receive service	10%	5%	6%	8%

■ Received services   ■ Needed, but did not receive service

*AIDS Drug Assistance Program

†ART: Antiretroviral therapy

‡SNAP: Supplemental Nutrition Assistance Program; WIC: Special Supplemental Nutrition Program for Women, Infants, and Children

§Includes services such as soup kitchens, food pantries, food banks, church dinners, or food delivery services.

Physical Violence and Forced Sex

An estimated 26% of persons had ever been physically hurt by a romantic or sexual partner, including 4% who experienced this in the past 12 months (Figure 15; Table 20). An estimated 16% of persons had ever been threatened with harm or physically forced to have unwanted sex, including 1% who experienced this in the past 12 months.

Figure 15. Percentage of adults with diagnosed HIV who experienced physical violence by an intimate partner or forced sex during their lifetime or the 12 months before interview—Medical Monitoring Project, United States, 2020
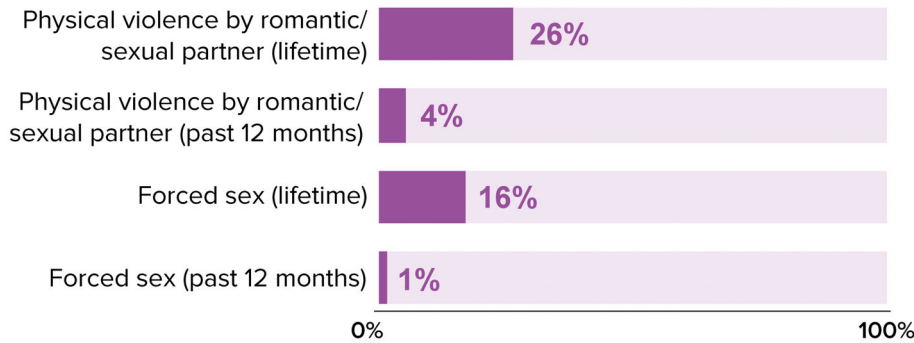
Prevention Activities

An estimated 56% of persons received counseling from a physician, nurse, or other health care worker about HIV and STD risk reduction; 27% had a one-on-one conversation with an outreach worker, a counselor, or a prevention program worker about prevention; and 10% participated in a small-group session (excluding discussions with friends) to discuss the prevention of HIV and other STDs (Figure 16; Table 21). An estimated 42% of persons received free condoms from various organizations.

Figure 16. Receipt of HIV and sexually transmitted disease prevention services during the 12 months before interview—Medical Monitoring Project, United States, 2020
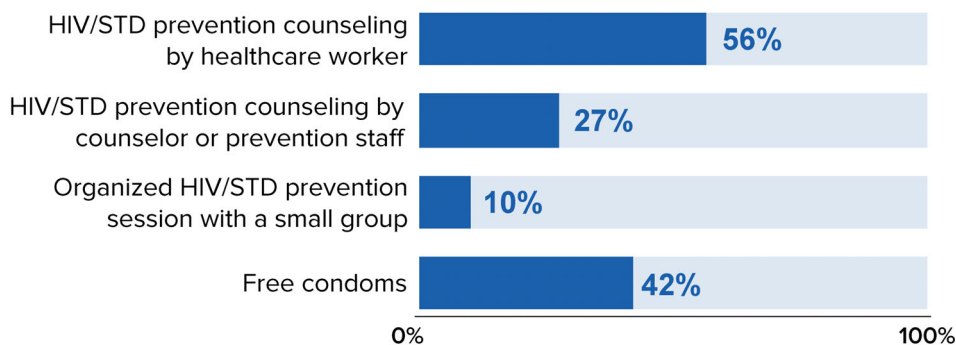
National Indicators

The estimated prevalence of homelessness was 8% among all persons with diagnosed HIV and persons who received outpatient HIV care in the past 12 months (Table 22). The median HIV stigma score (see the appendix for more details on how the score was derived and its validity) among all persons was 35. When the personalized stigma dimension was limited to the past 12 months, the median HIV stigma score was 28. An estimated 8% of persons engaged in sex without using an HIV prevention strategy.

REFERENCES

1. CDC. *HIV Surveillance Report, 2019*; vol. 32. https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html. Published May 2021. Accessed May 16, 2022.

2. CDC. Medical Monitoring Project (MMP). https://www.cdc.gov/hiv/statistics/systems/mmp/. Accessed May 16, 2022.

3. CDC. National HIV Behavioral Surveillance (NHBS). https://www.cdc.gov/hiv/statistics/systems/nhbs/. Accessed May 16, 2022.

4. Institute of Medicine. *Measuring What Matters: Allocation, Planning and Quality Assessment for the Ryan White CARE Act*. Washington, DC: National Academies Press; 2004. https://www.nap.edu/read/10855. Published November 7, 2003. Accessed May 16, 2022.

5. CDC. *Behavioral and Clinical Characteristics of Persons Receiving Medical Care for HIV Infection—Medical Monitoring Project, United States, 2010*. HIV Surveillance Special Report 9. https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html. Published October 2014. Accessed May 16, 2022.

6. Institute of Medicine. *Monitoring HIV Care in the United States: Indicators and Data Systems*. Washington, DC: National Academies Press; 2012. doi:10.17226/13225

7. The White House. *National HIV/AIDS Strategy for the United States 2022–2025*. Washington, DC. https://hivgov-prod-v3.s3.amazonaws.com/s3fs-public/NHAS-2022-2025.pdf. Published 2021. Accessed May 16, 2022.

8. Fauci AS, Redfield RR, Sigounas G, Weahkee MD, Giroir BP. Ending the HIV Epidemic: A Plan for the United States [editorial]. *JAMA* 2019;321(9):844–845. doi:10.1001/jama.2019.1343

9. Beer L, Johnson CH, Fagan JL, et al. A national behavioral and clinical surveillance system of adults with diagnosed HIV (the Medical Monitoring Project): Protocol for an annual cross-sectional interview and medical record abstraction survey. *JMIR Res Protoc* 2019; 8(11):e15453. doi: 10.2196/15453

10. SAS Institute Inc. SAS version 9.4. Cary, NC: SAS Institute; 2011.

11. CDC [Selik RM, Mokotoff ED, Branson B, Owen SM, Whitmore S, Hall HI]. Revised surveillance case definition for HIV infection—United States, 2014. *MMWR* 2014;63(RR-03):1–10. https://www.cdc.gov/mmwr/indrr_2014.html. Accessed May 16, 2022.

12. Kroenke K, Strine TW, Spitzer RL, et al. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord* 2009;114(1–3):163–173. doi:10.1016/j.jad.2008.06.026

13. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med* 2006;166(10):1092–1097. doi:10.1001/archinte.166.10.1092

Table 1. Distribution of participants across project areas—Medical Monitoring Project, United States, 2020

Project area	No. sampled	No. participating	% participating[a]	% of total
California (excluding Los Angeles County and San Francisco)	500	204	40.8	5.5
Chicago, IL	400	141	35.3	3.8
Delaware	400	194	48.5	5.2
Florida	800	171	21.4	4.6
Georgia	500	202	40.4	5.4
Houston, TX	400	157	39.3	4.2
Illinois (excluding Chicago)	200	62	31.0	1.7
Indiana	400	177	44.3	4.8
Los Angeles County, CA	400	177	44.3	4.8
Michigan	400	194	48.5	5.2
Mississippi	400	92	23.0	2.5
New Jersey	500	242	48.4	6.5
New York (excluding New York City)	200	85	42.5	2.3
New York City, NY	800	244	30.5	6.6
North Carolina	400	186	46.5	5.0
Oregon	400	181	45.3	4.9
Pennsylvania (excluding Philadelphia)	200	59	29.5	1.6
Philadelphia, PA	400	142	35.5	3.8
Puerto Rico	400	196	49.0	5.3
San Francisco, CA	400	158	39.5	4.3
Texas (excluding Houston)	400	167	41.8	4.5
Virginia	400	128	32.0	3.5
Washington	400	151	37.8	4.1
Total	**9,700**	**3,710**	**38.2[b]**	**100**

Note. Percentages might not sum to 100 because of rounding.

[a] Calculated by dividing number of participating respondents by the total number of persons sampled.

[b] The national response rate, which is calculated by dividing the total number of eligible respondents by the total sum of eligible and ineligible respondents, is 40.06%.

Table 2. Selected characteristics, including demographic characteristics and social determinants of health, among persons with diagnosed HIV infection—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Gender			
Cisgender male	2,750	74.9	71.9–77.8
Cisgender female	877	23.0	20.2–25.8
Transgender[d]	79	2.1	1.6–2.6
Sexual orientation			
Lesbian or gay	1,677	45.1	41.5–48.7
Heterosexual or straight	1,546	42.6	38.8–46.4
Bisexual	313	9.1	8.1–10.1
Other	111	3.2	2.6–3.9
Race/ethnicity			
American Indian/Alaska Native	21	0.7	0.3–1.0
Asian	46	1.4	0.9–1.8
Black/African American	1,477	41.7	33.5–49.8
Hispanic/Latino[e]	874	23.6	16.5–30.8
Native Hawaiian/other Pacific Islander	—	—	—
White	1,133	28.6	23.4–33.8
Multiple races	152	3.9	2.8–4.9
Age at time of interview (years)			
18–24	71	2.3	1.5–3.1
25–29	186	5.8	4.6–7.0
30–34	315	9.0	8.0–9.9
35–39	320	8.8	7.6–10.1
40–44	293	8.7	7.7–9.8
45–49	349	10.7	9.3–12.1
50–54	594	15.4	14.0–16.9
55–59	645	16.5	15.2–17.8
60–64	473	11.9	10.8–13.1
≥65	464	10.8	9.6–12.0
Education			
Less than high school	550	14.6	12.9–16.3
High school diploma or GED	899	25.0	22.8–27.3
More than high school	2,240	60.4	57.7–63.1
Country or territory of birth			
U.S. state or territory	3,138	83.4	81.2–85.7
Foreign born	556	16.6	14.3–18.8
Homeless at any time, past 12 months[f]			
Yes	298	8.1	6.6–9.6
No	3,396	91.9	90.4–93.4
Moved in with other people because of financial problems, past 12 months			
Yes	429	11.9	10.2–13.5
No	3,267	88.1	86.5–89.8
Number of times moved, past 12 months			
0	2,820	75.8	74.0–77.7
1	569	15.7	14.5–16.9
≥2	301	8.4	7.0–9.8
Evicted from housing, past 12 months			
Yes	73	1.9	1.3–2.5
No	3,621	98.1	97.5–98.7
Incarcerated >24 hours, past 12 months			
Yes	107	3.5	2.4–4.6
No	3,588	96.5	95.4–97.6

Table 2. Selected characteristics, including demographic characteristics and social determinants of health, among persons with diagnosed HIV infection—Medical Monitoring Project, United States, 2020 *(cont)*

	No.[a]	%[b]	95% CI[c]
Went without food due to lack of money, past 12 months			
Yes	592	16.4	15.2–17.6
No	3,101	83.6	82.4–84.8
Employment status[g]			
Employed	1,731	47.8	46.0–49.6
Unemployed	1,482	41.0	38.4–43.6
Student	41	1.2	0.9–1.5
Retired	429	10.0	8.6–11.5
Combined yearly household income (U.S.$)[h]			
0–19,999	1,562	46.4	43.0–49.8
20,000–39,999	808	23.8	22.2–25.5
40,000–74,999	547	15.9	14.6–17.2
≥75,000	460	13.8	11.7–16.0
Poverty guidelines[i]			
<100% FPL	1,189	35.6	31.9–39.2
100%–138% FPL	443	13.2	11.9–14.6
139%–399% FPL	1,218	35.8	33.5–38.0
≥400% FPL	526	15.4	13.4–17.4
Received Supplemental Security Income (SSI), past 12 months			
Yes	603	15.4	13.7–17.2
No	3,056	84.6	82.8–86.3
Received Social Security Disability Insurance (SSDI), past 12 months			
Yes	692	18.8	16.4–21.2
No	2,955	81.2	78.8–83.6
Health insurance or coverage for care or medications, past 12 months[j]			
Yes	3,633	98.3	97.6–99.0
No	37	1.7	1.0–2.4
Type of health insurance or coverage for care or medications, past 12 months[j]			
Ryan White HIV/AIDS Program			
Yes	1,796	47.2	44.6–49.8
No	1,791	52.8	50.2–55.4
Medicaid			
Yes	1,590	42.9	40.6–45.3
No	2,037	57.1	54.7–59.4
Medicare			
Yes	1,071	27.6	25.9–29.3
No	2,508	72.4	70.7–74.1
Private health insurance			
Yes	1,445	40.3	37.9–42.6
No	2,152	59.7	57.4–62.1
Other public insurance[k]			
Yes	—	—	—
No	—	—	—
Tricare/CHAMPUS or Veterans Administration			
Yes	104	4.6	3.5–5.8
No	3,458	95.4	94.2–96.5
Insurance type unknown[l]			
Yes	27	0.7	0.4–1.0
No	3,545	99.3	99.0–99.6

Table 2. Selected characteristics, including demographic characteristics and social determinants of health, among persons with diagnosed HIV infection—Medical Monitoring Project, United States, 2020 *(cont)*

	No.[a]	%[b]	95% CI[c]
Any disability[m]			
Yes	1,507	39.7	36.8–42.6
No	2,178	60.3	57.4–63.2
Perception of general health			
Poor	190	5.3	4.4–6.2
Fair	881	23.2	21.5–24.9
Good	1,289	35.1	33.2–37.1
Very good	849	22.9	20.6–25.2
Excellent	483	13.5	11.7–15.2
Time since HIV diagnosis (years)			
<5	518	14.9	13.5–16.3
5–9	624	17.6	16.3–18.9
≥10	2,562	67.5	66.0–69.0
Total	**3,710**	**100**	

Abbreviations: CI, confidence interval; GED, general educational development; FPL, federal poverty level; CHAMPUS, Civilian Health and Medical Program of the Uniformed Services; U.S.$, U.S. dollar; HHS, Department of Health and Human Services [footnotes only].

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose "transgender" in response to the question about self-identified gender.

[e] Hispanic or Latino persons can be of any race. Persons are classified in only 1 race/ethnicity category.

[f] Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

[g] Employed includes employed for wages, self-employed, or homemaker. Unemployed persons include those who reported being unemployed and those unable to work.

[h] Income from all sources, before taxes, in the last calendar year.

[i] Poverty guidelines as defined by HHS; the 2019 guidelines were used for persons interviewed in 2020 and the 2020 guidelines were used for persons interviewed in 2021. More information regarding HHS poverty guidelines can be found at https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty.

[j] Persons could select more than 1 response for health insurance or coverage for care or medications (including antiretroviral medications).

[k] Other public insurance included city, county, state, or other publicly funded insurance, not including Medicaid.

[l] Unknown insurance type means that the person had insurance or coverage for care or medications (including antiretroviral medications), but the type of insurance or coverage could not be determined.

[m] Includes physical, mental, and emotional disabilities.

Table 3. Stage of disease, CD4 counts, and viral suppression during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
HIV infection stage 3 (AIDS)[d]			
Yes	2,096	54.4	52.5–56.3
No	1,613	45.6	43.7–47.5
Geometric mean CD4 count (cells/µL)			
0–199	189	7.2	6.1–8.3
200–349	278	10.0	8.7–11.3
350–499	438	16.4	14.5–18.4
≥500	1,818	66.4	64.3–68.5
Lowest CD4 count (cells/µL), past 12 months			
0–49	45	1.8	1.3–2.4
50–199	191	7.1	6.1–8.1
200–349	325	11.7	10.5–12.9
350–499	484	17.8	16.0–19.5
≥500	1,679	61.6	59.7–63.5
Viral suppression			
Most recent viral load documented undetectable or <200 copies/mL	2,562	62.5	58.0–67.0
Most recent viral load documented detectable, ≥200 copies/mL, or missing/unknown	1,148	37.5	33.0–42.0
Sustained viral suppression			
All viral load measurements documented undetectable or <200 copies/mL	2,403	58.5	54.3–62.7
Any viral load ≥200 copies/mL or missing/unknown	1,307	41.5	37.3–45.7
Total	**3,710**	**100**	

Abbreviations: CD4, CD4 T-lymphocyte count (cells/µL); CI, confidence interval; CDC, Centers for Disease Control and Prevention [footnotes only].

Source of disease stage information: CDC. Revised surveillance case definition for HIV infection—United States, 2014. *MMWR* 2014;63(RR-03):1–10. https://www.cdc.gov/mmwr/indrr_2014.html. Accessed May 18, 2022.

Note. CD4 counts and viral load measurements are from medical record abstraction.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] HIV infection, stage 3 (AIDS): documentation of an AIDS-defining condition or either a CD4 count of <200 cells/µL or a CD4 percentage of total lymphocytes of <14. Documentation of an AIDS-defining condition supersedes a CD4 count or percentage that would not, by itself, be the basis for a stage 3 (AIDS) classification.

Table 4. Receipt of HIV care, ART prescription, PCP prophylaxis, and influenza vaccination among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Ever received outpatient HIV care[d]			
Yes	—	—	—
No	—	—	—
Received outpatient HIV care, past 12 months[d]			
Yes	3,624	94.9	93.6–96.2
No	85	5.1	3.8–6.4
Received outpatient HIV care, past 24 months[d]			
Yes	3,672	98.2	97.3–99.0
No	28	1.8	1.0–2.7
Retained in care, past 12 months[e]			
Yes	2,705	71.7	68.7–74.7
No	798	28.3	25.3–31.3
Retained in care, past 24 months[e]			
Yes	2,133	56.4	53.2–59.6
No	1,361	43.6	40.4–46.8
Missed ≥1 HIV care visits, past 12 months			
Yes	731	20.0	18.1–21.9
No	2,941	80.0	78.1–81.9
Prescribed ART, past 12 months[f]			
Yes	3,104	78.7	76.2–81.3
No	606	21.3	18.7–23.8
Prescribed PCP prophylaxis, past 12 months[g]			
Yes	79	41.7	30.0–53.5
No	136	58.3	46.5–70.0
Received influenza vaccination, past 12 months			
Yes	2,737	72.7	69.6–75.9
No	933	27.3	24.1–30.4
Total	**3,710**	**100**	

Abbreviations: CI, confidence interval; ART, antiretroviral therapy; PCP, *Pneumocystis* pneumonia; MAC, *Mycobacterium avium* complex [footnotes only]; CD4, CD4 T-lymphocyte count (cells/μL) [footnotes only].

Note. CD4 counts, viral load measurements, and prophylaxes are from medical record abstraction. Influenza vaccination was obtained through interview. Measurement period is the 12 months before interview unless otherwise noted.

Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30, "

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Outpatient HIV care was defined as any documentation of the following: encounter with an HIV care provider, viral load test result, CD4 test result, HIV resistance test or tropism assay, ART prescription, PCP prophylaxis, or MAC prophylaxis.

[e] Two elements of outpatient HIV care at least 90 days apart in each 12-month period.

[f] ART prescription documented in medical record; persons with no medical record abstraction were considered to have no documentation of ART prescription.

[g] Among persons with CD4 cell count <200 cells/μL.

Table 5. Sexually transmitted infection testing during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	Total population			Sexually active[a] persons only		
	No.[b]	%[c]	95% CI[d]	No.[b]	%[c]	95% CI[d]
Gonorrhea[e]						
Yes, received test	1,437	41.3	38.4–44.2	925	47.2	43.7–50.6
No test documented	1,930	58.7	55.8–61.6	975	52.8	49.4–56.3
Chlamydia[f]						
Yes, received test	1,444	41.4	38.5–44.4	935	47.6	44.2–51.1
No test documented	1,923	58.6	55.6–61.5	965	52.4	48.9–55.8
Syphilis[g]						
Yes, received test	1,939	56.0	53.7–58.3	1,199	60.9	58.3–63.6
No test documented	1,428	44.0	41.7–46.3	701	39.1	36.4–41.7
Gonorrhea, chlamydia, and syphilis						
Yes, received all 3 tests	1,234	35.3	32.7–37.9	815	41.2	38.0–44.3
Fewer than 3 tests documented	2,133	64.7	62.1–67.3	1,085	58.8	55.7–62.0
Total	**3,710**	**100**		**2,088**	**100**	

Abbreviations: CI, confidence interval; DFA, direct fluorescent antibody [footnotes only]; EIA, enzyme immunoassay [footnotes only]; ELISA, enzyme-linked immunoassay [footnotes only]; FTA-ABS, fluorescent treponemal antibody absorbed [footnotes only]; MHA-TP, microhemagglutination assay for antibody to *Treponema pallidum* [footnotes only]; NAAT, nucleic acid amplification test [footnotes only]; RPR, rapid plasma reagin [footnotes only]; TP-PA, *T. pallidum* particle agglutination [footnotes only]; TPHA, *T. pallidum* hemagglutination assay [footnotes only]; VDRL, Venereal Disease Research Laboratory [footnotes only].

Note. Information on laboratory testing for sexually transmitted infections was based on medical record abstraction.

Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Sexual activity was reported in the interview component of the Medical Monitoring Project and was defined as anal or vaginal intercourse during the 12 months prior to interview.

[b] Numbers are unweighted.

[c] Percentages are weighted percentages.

[d] CIs incorporate weighted percentages.

[e] Testing for *Neisseria gonorrhoeae* was defined as documentation of a result from culture, DFA, gram stain, EIA or ELISA, NAAT, or nucleic acid probe performed on a specimen from any anatomical site for screening or diagnostic purposes.

[f] *Chlamydia trachomatis* testing was defined as a result from DFA, EIA or ELISA, NAAT, or nucleic acid probe performed on a specimen from any anatomical site for screening or diagnostic purposes.

[g] Syphilis testing was defined as a result from nontreponemal syphilis tests (RPR or VDRL), treponemal syphilis tests (TPHA, TP-PA, MHA-TP, or FTA-ABS tests), or dark-field microscopy performed for screening or diagnostic purposes.

Table 6. Emergency department visits and hospital admissions during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Number of visits to emergency department			
0	2,295	62.5	60.9–64.1
1	656	17.9	16.6–19.1
2–4	605	15.9	14.8–17.0
≥5	130	3.7	3.1–4.4
Number of hospital admissions			
0	3,046	84.1	82.6–85.6
1	383	9.6	8.4–10.7
2–4	213	5.1	4.4–5.8
≥5	42	1.2	0.7–1.7
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 7. Antiretroviral therapy (ART) use and reasons for not taking ART among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Ever taken ART			
Yes	3,654	98.6	98.0–99.3
No	31	1.4	0.7–2.0
Currently taking ART			
Yes	3,584	95.0	93.8–96.1
No	101	5.0	3.9–6.2
Reasons for never taking ART[d]			
Health care provider never discussed taking ART with person			
Yes	—	—	—
No	—	—	—
Health care provider said person should not start taking ART			
Yes	—	—	—
No	—	—	—
Money or insurance problems			
Yes	—	—	—
No	—	—	—
Person did not believe they needed ART			
Yes	—	—	—
No	—	—	—
Person thinks ART would make them feel sick or harm them			
Yes	—	—	—
No	—	—	—
Person decided not to take ART for some other reason			
Yes	—	—	—
No	—	—	—
Reasons for not currently taking ART, among those persons with a history of ART use[d]			
Money or insurance problems			
Yes	27	36.9	23.0–50.8
No	42	63.1	49.2–77.0
Health care provider never discussed restarting ART with person			
Yes	20	28.5	16.8–40.2
No	48	71.5	59.8–83.2
Person thinks ART would make them feel sick or harm them			
Yes	13	20.4	10.8–30.1
No	56	79.6	69.9–89.2
Health care provider said person should not take ART			
Yes	8	16.3	6.8–25.8
No	39	83.7	74.2–93.2
Person did not believe they needed ART			
Yes	—	—	—
No	—	—	—
Person decided not to take ART for some other reason			
Yes	30	42.5*	23.3–61.7
No	39	57.5*	38.3–76.7
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30. Estimates with an absolute CI width ≥0.30, estimates with an absolute CI width between 5 and 30 and a relative CI width >130%, and estimates of 0% or 100% are marked with an asterisk (*) and should be interpreted with caution.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Persons could select more than 1 response for reasons not taking ART.

Table 8. Antiretroviral therapy (ART) adherence and reasons for missing ART doses among persons with diagnosed HIV taking ART—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
ART adherence in the past 30 days			
How many days did you miss at least 1 dose of any of your HIV medicines?			
0	2,247	62.1	60.0–64.1
1–2	869	24.8	23.1–26.6
3–5	306	8.6	7.5–9.7
6–10	95	2.9	2.2–3.5
≥11	56	1.6	1.1–2.1
How well did you do at taking your HIV medicines in the way you were supposed to?			
Very poor	25	0.7	0.4–0.9
Poor	54	1.7	1.3–2.2
Fair	147	3.9	3.0–4.8
Good	410	11.7	10.5–12.8
Very good	898	25.9	24.2–27.6
Excellent	2,047	56.1	54.4–57.9
How often did you take your HIV medicines in the way you were supposed to?			
Never	22	0.6	0.3–0.8
Rarely	—	—	—
Sometimes	66	1.9	1.3–2.4
Usually	155	4.5	3.8–5.2
Almost always	816	23.2	21.4–25.0
Always	2,505	69.5	67.5–71.5
How often were you troubled by ART side effects?			
Never	2,785	78.1	75.8–80.4
Rarely	436	12.2	10.4–13.9
About half the time	143	4.4	3.6–5.2
Most of the time	98	2.6	2.0–3.2
Always	90	2.8	2.0–3.5
Reasons for last missed ART dose among persons who ever missed a dose[d]			
Forgot to take HIV medicines			
Yes	1,673	64.5	62.5–66.6
No	934	35.5	33.4–37.5
Change in your daily routine or were out of town			
Yes	1,035	39.3	37.6–41.1
No	1,572	60.7	58.9–62.4
Fell asleep early or overslept			
Yes	961	37.2	34.9–39.5
No	1,645	62.8	60.5–65.1
Had a problem getting a prescription or a refill for HIV medicines			
Yes	430	16.6	14.7–18.6
No	2,178	83.4	81.4–85.3
Felt depressed or overwhelmed			
Yes	430	15.7	13.9–17.5
No	2,177	84.3	82.5–86.1
Did not feel like taking HIV medicines			
Yes	282	10.3	8.7–11.9
No	2,326	89.7	88.1–91.3
Was drinking or using drugs			
Yes	252	9.9	8.6–11.3
No	2,356	90.1	88.7–91.4
Had side effects from your HIV medicines			
Yes	247	9.3	7.9–10.8
No	2,360	90.7	89.2–92.1
In the hospital or too sick to take HIV medicines			
Yes	204	7.2	6.1–8.3
No	2,404	92.8	91.7–93.9
Had a problem paying for HIV medicines			
Yes	125	5.1	3.7–6.4
No	2,482	94.9	93.6–96.3
Total	**3,584**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Persons could report more than 1 reason for missed last dose.

Table 9. Antiretroviral therapy (ART) prescription, ART dose adherence, sustained viral suppression, and geometric mean CD4 count among persons with diagnosed HIV, by selected characteristics—Medical Monitoring Project, United States, 2020

	Prescription of ART[a]			ART dose adherence[b]			Sustained viral suppression[c]			Geometric mean CD4 count ≥200[d]		
	No.[e]	Row %[f]	95% CI[g]	No.[e]	Row %[f]	95% CI[g]	No.[e]	Row %[f]	95% CI[g]	No.[e]	Row %[f]	95% CI[g]
Gender												
Cisgender male	2,312	78.8	75.8–81.7	1,682	62.7	60.7–64.6	1,784	58.3	54.4–62.2	1,857	92.2	90.8–93.6
Cisgender female	725	79.0	76.2–81.7	534	62.7	58.2–67.2	563	58.8	52.2–65.4	615	94.5	92.9–96.0
Transgender[h]	65	75.5*	58.8–92.2	30	34.8	23.5–46.2	52	61.2*	44.3–78.0	58	96.1	91.5–100.0
Sexual orientation												
Lesbian or gay	1,403	78.7	75.5–81.8	1,011	61.9	59.0–64.7	1,120	60.4	56.4–64.3	1,147	94.0	92.9–95.2
Heterosexual or straight	1,311	79.8	76.3–83.4	980	64.2	61.3–67.1	978	56.7	51.5–62.0	1,068	91.7	89.6–93.7
Bisexual	247	75.6	70.2–81.0	175	56.9	49.2–64.5	192	57.9	49.7–66.1	205	94.5	90.9–98.1
Other	90	74.3	63.5–85.2	53	51.1	42.5–59.8	70	57.7	48.5–66.8	68	86.6	77.0–96.3
Race/ethnicity												
American Indian/Alaska Native	—	—	—	—	—	—	—	—	—	—	—	—
Asian	36	67.3*	48.4–86.3	33	72.6*	56.5–88.8	31	50.3*	31.7–68.9	29	94.4	83.7–100.0
Black/African American	1,191	76.2	72.4–80.0	845	60.1	55.8–64.4	868	53.6	48.5–58.6	977	92.2	90.4–93.9
Hispanic/Latino[i]	756	80.9	77.1–84.6	527	60.3	56.3–64.4	623	62.9	58.3–67.5	659	94.0	92.2–95.8
Native Hawaiian/other Pacific Islander	—	—	—	—	—	—	—	—	—	—	—	—
White	964	80.7	77.4–83.9	734	65.8	60.8–70.7	768	62.4	56.1–68.7	750	93.0	91.3–94.6
Multiple races	133	84.0	74.4–93.6	91	62.5	53.6–71.4	98	63.5	51.6–75.3	102	91.1	86.6–95.5
Age at time of interview (years)												
18–29	211	74.0	67.4–80.6	90	36.9	30.3–43.4	147	48.0	40.0–56.0	170	94.5	92.3–96.7
30–39	519	76.4	70.4–82.4	333	54.6	48.0–61.1	379	53.6	46.4–60.8	430	92.9	90.2–95.6
40–49	532	77.0	73.5–80.5	363	58.5	54.6–62.4	421	58.7	54.3–63.1	447	92.8	90.3–95.3
≥50	1,842	80.8	78.1–83.5	1,461	69.1	67.2–71.0	1,456	61.6	57.0–66.2	1,487	92.6	90.9–94.2
Total	**3,104**	**78.7**	**76.2–81.3**	**2,247**	**62.1**	**60.0–64.1**	**2,403**	**58.5**	**54.3–62.7**	**2,534**	**92.8**	**91.7–93.9**

Abbreviations: ART, antiretroviral therapy; CD4, CD4 T-lymphocyte count (cells/μL); CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30. Estimates with an absolute CI width ≥0.30, estimates with an absolute CI width between 5 and 30 and a relative CI width >130%, and estimates of 0% or 100% are marked with an asterisk (*) and should be interpreted with caution.

[a] Prescription of ART was based on documentation in the medical record in the 12 months before interview.

[b] During the 30 days before interview, 100% adherence to ART doses.

[c] Defined as having all HIV viral loads being undetectable or <200 copies/mL, as documented in the medical record in the past 12 months before interview.

[d] Geometric mean CD4 count was abstracted from medical records and based on the 12 months before interview.

[e] Numbers are unweighted.

[f] Percentages are weighted percentages.

[g] CIs incorporate weighted percentages.

[h] Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose "transgender" in response to the question about self-identified gender.

[i] Hispanic or Latino persons can be of any race. Persons are classified in only 1 race/ethnicity category.

Table 10. Symptoms of depression and generalized anxiety disorder during the 2 weeks before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Symptoms of depression, based on DSM-IV criteria[d]			
No depression	3,102	86.2	84.7–87.6
Major depression	278	7.4	6.2–8.6
Other depression	272	6.5	5.8–7.2
Symptoms of moderate or severe depression (PHQ-8 score ≥10)			
Yes	423	10.7	9.4–12.1
No	3,230	89.3	87.9–90.6
Symptoms of generalized anxiety disorder[e]			
No anxiety	2,997	82.5	80.7–84.3
Mild anxiety	178	4.7	4.0–5.5
Moderate anxiety	251	6.6	5.5–7.6
Severe anxiety	234	6.2	5.1–7.3
Total	**3,710**	**100**	

Abbreviations: CI, confidence interval; DSM-IV, *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition; GAD-7, Generalized Anxiety Disorder 7-item Scale [footnotes only]; PHQ-8, Patient Health Questionnaire.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Responses to the items on the PHQ-8 were used to define "major depression" and "other depression" according to criteria from the DSM-IV. "Major depression" was defined as having at least 5 symptoms of depression; "other depression" was defined as having 2–4 symptoms of depression. The PHQ-8 classification "other depression" comprises the DSM-IV categories of dysthymia and depressive disorder, not otherwise specified, which includes minor or subthreshold depression.

[e] Responses to the GAD-7 were used to define "mild anxiety," "moderate anxiety," and "severe anxiety" according to criteria from the DSM-IV. "Severe anxiety" was defined as having a score of ≥15; "moderate anxiety" was defined as having a score of 10–14; and "mild anxiety" was defined as having a score of 5–9.

Table 11. Tobacco and electronic cigarette use among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Smoked ≥100 cigarettes (lifetime)			
Yes	1,866	50.4	48.5–52.4
No	1,805	49.6	47.6–51.5
Cigarette smoking status			
Never smoked	1,805	49.6	47.6–51.5
Former smoker	806	21.1	19.0–23.2
Current smoker	1,060	29.4	27.1–31.7
Frequency of current cigarette smoking			
Never	2,611	70.6	68.3–72.9
Daily	861	23.9	21.7–26.1
Weekly	98	2.7	2.0–3.3
Monthly	29	0.7	0.5–1.0
Less than monthly	72	2.0	1.6–2.5
Smoked ≥50 cigars, cigarillos, or little filtered cigars (lifetime)			
Yes	539	15.5	13.8–17.2
No	3,135	84.5	82.8–86.2
Cigars, cigarillos, or little filtered cigars smoking status			
Never smoked	3,135	84.6	82.9–86.2
Former smoker	279	7.8	6.8–8.8
Current smoker	258	7.6	6.3–8.9
Frequency of current cigars, cigarillos, or little filtered cigars smoking			
Never	3,414	92.4	91.1–93.7
Daily	105	3.2	2.2–4.1
Some days	58	1.7	1.2–2.3
Rarely	95	2.8	2.2–3.3
Electronic cigarette smoking status			
Never used electronic cigarettes	2,719	73.3	71.5–75.0
Used electronic cigarettes, but not in the past 30 days	790	21.7	20.1–23.3
Used electronic cigarettes in the past 30 days	168	5.1	4.3–5.9
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 12. Alcohol use during the 12 months before interview among persons with diagnosed HIV—
Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Any alcohol use[d]			
Yes	2,292	62.9	59.4–66.3
No	1,376	37.1	33.7–40.6
Frequency of alcohol use			
Daily	268	7.1	5.9–8.3
Weekly	717	19.4	17.5–21.2
Monthly	445	11.9	10.6–13.2
Less than monthly	862	24.5	22.8–26.3
Never	1,376	37.1	33.7–40.6
Binge drinking, past 30 days[e]			
Yes	562	15.3	13.5–17.2
No	3,086	84.7	82.8–86.5
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) data. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Persons who drank at least 1 alcoholic beverage during the 12 months before interview. Alcoholic beverage was defined as a 12-ounce beer, 5-ounce glass of wine, or 1.5-ounce shot of liquor.

[e] Persons who drank ≥5 alcoholic beverages in a single sitting (≥4 for women) during the 30 days before interview.

Table 13. Noninjection drug use during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Use of any noninjection drugs[d]			
Yes	1,187	32.5	29.1–36.0
No	2,472	67.5	64.0–70.9
Noninjection drugs used[d]			
Marijuana			
Yes	1,061	29.4	26.1–32.8
No	2,598	70.6	67.2–73.9
Amyl nitrite (poppers)			
Yes	296	7.8	6.0–9.5
No	3,359	92.2	90.5–94.0
Methamphetamine (e.g., crystal meth, tina, crank, ice)			
Yes	218	6.0	4.5–7.5
No	3,437	94.0	92.5–95.5
Cocaine that is smoked or snorted			
Yes	198	5.2	4.4–6.0
No	3,458	94.8	94.0–95.6
Club drugs (e.g., Ecstasy or X, ketamine or Special K, GHB or Liquid Ecstasy)			
Yes	147	3.6	2.7–4.5
No	3,510	96.4	95.5–97.3
Crack			
Yes	104	2.7	2.0–3.4
No	3,553	97.3	96.6–98.0
Prescription tranquilizers (e.g., Valium, Ativan, Xanax, downers, nerve pills)[e]			
Yes	98	2.5	1.9–3.1
No	3,559	97.5	96.9–98.1
Prescription opioids (e.g., oxycodone, hydrocodone, Vicodin, Percocet)[e]			
Yes	67	1.7	1.3–2.2
No	3,590	98.3	97.8–98.7
Amphetamine (e.g., speed, bennies, uppers)			
Yes	57	1.3	0.9–1.6
No	3,598	98.7	98.4–99.1
Total	**3,710**	**100**	

Disclaimer: The use of trade names is for identification only and does not imply endorsement by the Department of Health and Human Services or the Centers for Disease Control and Prevention.

Abbreviations: CI, confidence interval; GHB, gamma hydroxybutyrate.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Persons could report taking more than 1 noninjection drug.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Includes all drugs that were not injected (i.e., administered by any route other than injection), including legal drugs that were not used for medical purposes.

[e] Not prescribed, or prescribed but taken more than directed.

Table 14. Injection drug use during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Use of any injection drugs			
Yes	104	2.8	2.1–3.6
No	3,564	97.2	96.4–97.9
Injection drugs used			
Methamphetamine (e.g., crystal meth, tina, crank, ice)			
Yes	84	2.3	1.6–3.0
No	3,584	97.7	97.0–98.4
Heroin			
Yes	26	0.6	0.4–0.8
No	3,642	99.4	99.2–99.6
Cocaine			
Yes	16	0.4	0.2–0.5
No	3,652	99.6	99.5–99.8
Heroin and cocaine (speedball)			
Yes	—	—	—
No	—	—	—
Amphetamine (e.g., speed, bennies, uppers)			
Yes	—	—	—
No	—	—	—
Prescription opioids (e.g., OxyContin, oxycodone, hydrocodone)			
Yes	—	—	—
No	—	—	—
Total	**3,710**	**100**	

Disclaimer: The use of trade names is for identification only and does not imply endorsement by the Department of Health and Human Services or the Centers for Disease Control and Prevention.

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30.

Persons could report taking more than 1 injection drug.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 15. Receipt of Papanicolaou testing and pregnancy since HIV diagnosis among cisgender women with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Papanicolaou (Pap) test, past 3 years[d]			
Yes	730	85.0	82.7–87.3
No	127	15.0	12.7–17.3
Pregnant since HIV diagnosis			
Yes	225	28.3	23.9–32.7
No	635	71.7	67.3–76.1
Total	**877**	**100**	

Abbreviation: CI, confidence interval.

Note. Measures are self-reported. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Or since HIV diagnosis for women with a diagnosis within the past 3 years.

Table 16. Sexual behavior during the 12 months before interview among cisgender men and women with diagnosed HIV—Medical Monitoring Project, United States, 2020

Behavior	Cisgender men			Cisgender women		
	No.[a]	%[b]	95% CI[c]	No.[a]	%[b]	95% CI[c]
Engaged in vaginal or anal sex						
Yes	1,626	61.3	59.0–63.6	410	49.7	45.4–54.1
No	1,042	38.7	36.4–41.0	450	50.3	45.9–54.6
Engaged in vaginal sex						
Yes	454	18.1	15.9–20.4	408	49.5	45.1–53.8
No	2,221	81.9	79.6–84.1	452	50.5	46.2–54.9
Engaged in anal sex with cisgender men						
Receptive						
Yes	958	35.3	32.6–37.9	43	5.6	3.3–7.9
No	1,689	64.7	62.1–67.4	814	94.4	92.1–96.7
Insertive						
Yes	850	31.9	29.6–34.2	N/A	N/A	N/A
No	1,795	68.1	65.8–70.4	N/A	N/A	N/A
Engaged in anal sex with cisgender women						
Yes	61	2.2	1.4–3.1	N/A	N/A	N/A
No	2,676	97.8	96.9–98.6	N/A	N/A	N/A
Number of vaginal or anal sex partners among						
MSM[d]						
Mean	7			N/A		
Median	2			N/A		
Range	1–311			N/A		
MSW[e]						
Mean	1			N/A		
Median	1			N/A		
Range	1–20			N/A		
WSM[f]						
Mean	N/A			1		
Median	N/A			1		
Range	N/A			1–10		
Total	**2,750**	**100**		**877**	**100**	

Abbreviations: CI, confidence interval; N/A, not applicable; MSM, cisgender men who had sex with cisgender men; MSW, cisgender men who had sex only with cisgender women; WSM, cisgender women who had sex with cisgender men.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Among cisgender men who had anal sex with cisgender men in the 12 months before interview.

[e] Among cisgender men who had vaginal or anal sex only with cisgender women in the 12 months before interview.

[f] Among cisgender women who had vaginal or anal sex with cisgender men in the 12 months before interview.

Table 17. Sexual behavior during the 12 months before interview among transgender persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

Behavior	Transgender[a]			Transgender women[b]			Transgender men[c]		
	No.[d]	%[e]	95% CI[f]	No.[d]	%[e]	95% CI[f]	No.[d]	%[e]	95% CI[f]
Engaged in vaginal or anal sex									
Yes	50	75.2	63.9–86.6	44	74.5	63.0–86.0	—	—	—
No	21	24.8	13.4–36.1	17	25.5	14.0–37.0	—	—	—
Engaged in vaginal or anal sex with cisgender men									
Yes	42	62.1	51.3–72.9	40	67.8	53.9–81.7	—	—	—
No	29	37.9	27.1–48.7	21	32.2	18.3–46.1	—	—	—
Engaged in vaginal or anal sex with cisgender women									
Yes	—	—	—	—	—	—	—	—	—
No	—	—	—	—	—	—	—	—	—
Engaged in vaginal or anal sex with transgender partners									
Yes	—	—	—	—	—	—	—	—	—
No	—	—	—	—	—	—	—	—	—
Reported any sex without using an HIV prevention strategy[g]									
Yes	—	—	—	—	—	—	—	—	—
No	—	—	—	—	—	—	—	—	—
Number of vaginal or anal sex partners[h]									
Mean	5			5			—		
Median	2			2			—		
Range	1–200			1–200			—		
Total	**79**	**100**		**68**	**100**		**11**	**100**	

Abbreviations: CI, confidence interval; PrEP, preexposure prophylaxis [footnotes only].

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30.

[a] Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose "transgender" in response to the question about self-identified gender.

[b] When reported sex at birth and gender were different, persons who reported that their sex assigned at birth was male, but identified as female or transgender, were classified as transgender women.

[c] When reported sex at birth and gender were different, persons who reported that their sex assigned at birth was female, but identified as male or transgender, were classified as transgender men.

[d] Numbers are unweighted.

[e] Percentages are weighted percentages.

[f] CIs incorporate weighted percentages.

[g] Vaginal or anal sex with at least 1 partner with an HIV-negative or unknown status while not having sustained viral suppression (defined as having all HIV viral loads being undetectable or <200 copies/mL, as documented in the medical record in the past 12 months before interview), a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

[h] Among persons who had vaginal or anal sex in the 12 months before interview.

Table 18. Sexual behavior during the 12 months before interview among men who had sex with men (MSM), men who had sex only with women (MSW), and women who had sex with men (WSM) with diagnosed HIV—Medical Monitoring Project, United States, 2020

Behavior	MSM			MSW			WSM		
	No.[a]	%[b]	95% CI[c]	No.[a]	%[b]	95% CI[c]	No.[a]	%[b]	95% CI[c]
Engaged in any sex without using an HIV prevention strategy, among all persons[d]									
Yes	139	8.5	6.4–10.6	43	8.2	5.5–10.9	54	6.8	3.6–10.0
No	1,792	91.5	89.4–93.6	639	91.8	89.1–94.5	789	93.2	90.0–96.4
Engaged in any sex without using an HIV prevention strategy, among sexually active persons[d]									
Yes	139	13.3	10.2–16.5	43	14.3	9.9–18.6	54	13.7	7.7–19.7
No	1,078	86.7	83.5–89.8	345	85.7	81.4–90.1	350	86.3	80.3–92.3
Percentages of sexually active persons who used an HIV prevention strategy with at least 1 partner									
Sex while having sustained viral suppression[e]									
Yes	831	61.7	56.1–67.3	235	50.3	44.7–55.9	256	57.9	49.6–66.3
No	396	38.3	32.7–43.9	160	49.7	44.1–55.3	154	42.1	33.7–50.4
Condom-protected sex[f]									
Yes	629	55.1	50.9–59.2	219	57.2	50.8–63.6	198	51.0	45.2–56.8
No	575	44.9	40.8–49.1	159	42.8	36.4–49.2	195	49.0	43.2–54.8
Condomless sex with a partner on PrEP[g]									
Yes	277	22.0	18.1–25.8	24	5.2	3.1–7.3	15	3.8	1.6–5.9
No	946	78.0	74.2–81.9	369	94.8	92.7–96.9	394	96.2	94.1–98.4
Sex with a partner with HIV[h]									
Yes	656	53.5	50.2–56.8	88	23.7	18.7–28.8	109	28.0	23.3–32.6
No	571	46.5	43.2–49.8	307	76.3	71.2–81.3	301	72.0	67.4–76.7
Total	**1,958**	**100**		**700**	**100**		**855**	**100**	

Abbreviations: CI, confidence interval; MSM, cisgender men who had sex with cisgender men; MSW, cisgender men who had sex only with cisgender women; WSM, cisgender women who had sex with cisgender men; PrEP, preexposure prophylaxis.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding. Persons who reported no anal, vaginal, or oral sex in the 12 months before interview were categorized according to self-reported sexual orientation. This table does not include information on cisgender women who had sex with cisgender women only, cisgender women who had sex with transgender persons only, or cisgender men who had sex with transgender persons only.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Vaginal or anal sex with at least 1 partner with an HIV-negative or unknown status while not having sustained viral suppression (defined as having all HIV viral loads being undetectable or <200 copies/mL, as documented in the medical record in the past 12 months before interview), a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

[e] Defined as having all HIV viral loads being undetectable or <200 copies/mL, as documented in the medical record in the past 12 months before interview.

[f] Condoms were consistently used with at least 1 vaginal or anal sex partner.

[g] At least 1 condomless-sex partner without HIV was on PrEP. PrEP use was only measured among the 5 most recent partners and was reported by the partner with HIV.

[h] Sex with at least 1 partner with HIV.

Table 19. Met and unmet needs for ancillary services during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	Persons who received services			Persons who needed but did not receive services by time of interview		
	No.[a]	%[b]	95% CI[c]	No.[a]	%[b]	95% CI[c]
HIV support services						
HIV case management services						
Yes	2,005	51.7	47.7–55.6	210	6.4	5.2–7.6
No	1,655	48.3	44.4–52.3	3,450	93.6	92.4–94.8
Medicine through ADAP						
Yes	1,795	47.5	44.9–50.1	89	3.0	2.2–3.8
No	1,770	52.5	49.9–55.1	3,476	97.0	96.2–97.8
Professional help remembering to take HIV medicines on time or correctly (adherence support services)						
Yes	1,176	30.1	25.9–34.3	25	0.6	0.3–0.9
No	2,482	69.9	65.7–74.1	3,633	99.4	99.1–99.7
Patient navigation services						
Yes	561	14.1	12.8–15.5	128	3.5	2.8–4.3
No	3,095	85.9	84.5–87.2	3,528	96.5	95.7–97.2
HIV peer group support						
Yes	420	10.2	8.8–11.7	213	6.0	5.0–6.9
No	3,243	89.8	88.3–91.2	3,450	94.0	93.1–95.0
Non-HIV medical services						
Dental care						
Yes	2,136	55.9	53.6–58.2	737	21.4	19.6–23.2
No	1,531	44.1	41.8–46.4	2,930	78.6	76.8–80.4
Mental health services						
Yes	1,124	28.6	25.5–31.7	275	7.6	6.5–8.7
No	2,540	71.4	68.3–74.5	3,389	92.4	91.3–93.5
Drug or alcohol counseling or treatment						
Yes	242	6.1	5.1–7.2	61	1.9	1.2–2.6
No	3,424	93.9	92.8–94.9	3,605	98.1	97.4–98.8
Domestic violence services						
Yes	42	0.8	0.4–1.3	29	0.9	0.4–1.3
No	3,627	99.2	98.7–99.6	3,640	99.1	98.7–99.6
Subsistence services						
SNAP or WIC						
Yes	1,394	37.3	35.3–39.3	329	9.6	8.4–10.7
No	2,275	62.7	60.7–64.7	3,340	90.4	89.3–91.6
Meal or food services[d]						
Yes	909	24.1	21.8–26.4	196	5.3	4.6–6.0
No	2,760	75.9	73.6–78.2	3,473	94.7	94.0–95.4
Transportation assistance						
Yes	786	20.4	18.7–22.1	213	5.7	4.7–6.7
No	2,888	79.6	77.9–81.3	3,461	94.3	93.3–95.3
Shelter or housing services						
Yes	551	15.0	13.1–16.8	295	8.2	6.5–9.9
No	3,114	85.0	83.2–86.9	3,370	91.8	90.1–93.5
Total	**3,710**	**100**		**3,710**	**100**	

Abbreviations: CI, confidence interval; ADAP, AIDS Drug Assistance Program; SNAP, Supplemental Nutrition Assistance Program; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.

Note. Persons could report receiving or needing more than 1 service. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Includes services such as soup kitchens, food pantries, food banks, church dinners, or food delivery services.

Table 20. Prevalence of physical violence by an intimate partner and forced sex among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
Was ever slapped, punched, shoved, kicked, choked, or otherwise physically hurt by a romantic or sexual partner			
Yes	898	25.5	22.5–28.5
No	2,739	74.5	71.5–77.5
Was slapped, punched, shoved, kicked, choked, or otherwise physically hurt by a romantic or sexual partner, past 12 months			
Yes	146	4.2	3.4–5.0
No	3,490	95.8	95.0–96.6
Was ever threatened with harm or physically forced to have unwanted vaginal, anal, or oral sex			
Yes	592	16.2	14.1–18.2
No	3,039	83.8	81.8–85.9
Was threatened with harm or physically forced to have unwanted vaginal, anal, or oral sex, past 12 months			
Yes	33	0.9	0.5–1.3
No	3,598	99.1	98.7–99.5
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 21. Prevention services received during the 12 months before interview among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	No.[a]	%[b]	95% CI[c]
One-on-one HIV/STD risk-reduction conversation with physician, nurse, or other health care worker			
Yes	2,077	55.9	52.7–59.0
No	1,598	44.1	41.0–47.3
One-on-one HIV/STD risk-reduction conversation with outreach worker, counselor, or prevention program worker			
Yes	1,052	27.3	24.1–30.5
No	2,620	72.7	69.5–75.9
Attended an organized HIV/STD risk-reduction session involving a small group of people			
Yes	371	9.8	8.7–10.9
No	3,303	90.2	89.1–91.3
Received free condoms			
Yes	1,525	41.6	38.6–44.5
No	2,150	58.4	55.5–61.4
Total	**3,710**	**100**	

Abbreviation: CI, confidence interval.

Note. Persons could report receiving more than 1 prevention service.

Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 22. National indicators: homelessness, HIV stigma, and sex without using an HIV prevention strategy among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020

	Homeless[a] in the 12 months before interview among persons receiving HIV care in the past 12 months			Homeless[a] in the 12 months before interview		
	No.[b]	Row %[c]	95% CI[d]	No.[b]	Row %[c]	95% CI[d]
Gender						
Cisgender male	209	7.6	6.2–9.0	221	8.1	6.5–9.6
Cisgender female	55	6.5	4.6–8.3	57	6.3	4.5–8.1
Transgender[e]	19	25.6	15.1–36.1	20	29.0	14.8–43.2
Sexual orientation						
Lesbian or gay	103	5.9	4.5–7.3	110	6.3	4.8–7.9
Heterosexual or straight	122	8.2	6.4–10.0	125	8.3	6.4–10.3
Bisexual	38	11.7	8.0–15.4	41	12.2	8.5–16.0
Other	17	16.4	9.5–23.4	18	16.8	10.3–23.3
Race/ethnicity						
American Indian/Alaska Native	—	—	—	—	—	—
Asian	—	—	—	—	—	—
Black/African American	145	10.0	7.8–12.1	153	10.4	8.0–12.7
Hispanic/Latino[f]	56	6.5	4.5–8.5	62	7.6	5.1–10.1
Native Hawaiian/other Pacific Islander	—	—	—	—	—	—
White	55	4.7	3.2–6.3	55	4.6	3.1–6.1
Multiple races	20	12.7	6.2–19.3	20	12.3	5.8–18.8
Age at time of interview (years)						
18–29	39	14.7	10.0–19.4	44	18.1	12.7–23.5
30–39	83	13.2	10.1–16.3	86	12.9	9.6–16.3
40–49	55	6.9	5.0–8.8	57	7.2	5.2–9.2
≥50	106	5.3	4.0–6.6	111	5.4	4.1–6.6
Total	**283**	**7.7**	**6.4–9.0**	**298**	**8.1**	**6.6–9.6**

Table 22. National indicators: homelessness, HIV stigma, and sex without using an HIV prevention strategy among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020 *(cont)*

	HIV stigma[g]			HIV stigma, past 12 months[h]		
	No.[b]	Row %[c]	95% CI[d]	No.[a]	Row %[b]	95% CI[c]
Gender						
Cisgender male	2,623	33.5	32.0–35.0	2,624	27.6	26.8–28.4
Cisgender female	816	39.6	37.7–41.5	817	30.5	28.1–32.8
Transgender[e]	73	44.3	34.2–54.4	74	34.3	23.5–45.1
Sexual orientation						
Lesbian or gay	1,615	32.3	30.6–34.0	1,613	26.4	25.1–27.7
Heterosexual or straight	1,454	36.7	34.9–38.4	1,460	29.5	28.4–30.6
Bisexual	297	38.5	35.1–41.8	297	31.2	27.7–34.6
Other	104	39.6	32.5–46.6	103	32.1	22.9–41.2
Race/ethnicity						
American Indian/Alaska Native	—	—	—	—	—	—
Asian	45	40.8	33.4–48.1	46	32.9	26.3–39.4
Black/African American	1,386	34.1	32.6–35.7	1,391	28.7	27.5–30.0
Hispanic/Latino[f]	828	35.4	33.0–37.8	825	29.9	28.3–31.5
Native Hawaiian/other Pacific Islander	—	—	—	—	—	—
White	1,089	35.3	31.9–38.6	1,089	25.6	23.4–27.8
Multiple races	144	38.7	32.5–45.0	144	29.4	26.0–32.7
Age at time of interview (years)						
18–29	248	38.1	32.8–43.4	248	33.5	28.7–38.3
30–39	607	38.7	35.9–41.4	605	31.8	29.0–34.5
40–49	599	37.5	34.9–40.0	599	29.7	27.8–31.6
≥50	2,061	32.5	30.8–34.2	2,066	26.4	25.2–27.5
Total	**3,515**	**35.2**	**33.8–36.6**	**3,518**	**28.4**	**27.7–29.2**

Table 22. National indicators: homelessness, HIV stigma, and sex without using an HIV prevention strategy among persons with diagnosed HIV—Medical Monitoring Project, United States, 2020 *(cont)*

	Engaged in any sex without using an HIV prevention strategy in the 12 months before interview[i]		
	No.[b]	Row %[c]	95% CI[d]
Gender			
Cisgender male	184	8.2	6.5–9.8
Cisgender female	54	6.7	3.5–9.8
Transgender[e]	—	—	—
Sexual orientation			
Lesbian or gay	115	8.2	6.0–10.4
Heterosexual or straight	93	7.2	4.5–9.9
Bisexual	33	12.6	8.4–16.7
Other	—	—	—
Race/ethnicity			
American Indian/Alaska Native	—	—	—
Asian	—	—	—
Black/African American	92	7.4	5.3–9.6
Hispanic/Latino[f]	47	7.5	5.0–10.0
Native Hawaiian/other Pacific Islander	—	—	—
White	84	8.5	5.0–12.0
Multiple races	17	10.1	5.2–14.9
Age at time of interview (years)			
18–29	30	15.5	9.5–21.5
30–39	74	15.0	10.8–19.1
40–49	51	7.2	5.1–9.3
≥50	91	4.9	3.0–6.7
Total	**246**	**8.0**	**6.1–9.9**

Abbreviations: CI, confidence interval; PrEP, preexposure prophylaxis [footnotes only].

Note. Numbers might not add to total because of "don't know" and skipped (missing) responses. Percentages might not sum to 100 because of rounding.

For weighted percentages: Excluded are estimates with a coefficient of variation ≥0.30 and those based on a denominator sample size <30.

For median scores: Excluded are estimates based on a denominator sample size <30.

[a] Living on the street, in a shelter, in a single-room–occupancy hotel, or in a car.

[b] Numbers are unweighted.

[c] Percentages are weighted percentages.

[d] CIs incorporate weighted percentages.

[e] Persons were classified as transgender if sex at birth and gender reported by the person were different, or if the person chose "transgender" in response to the question about self-identified gender.

[f] Hispanic or Latino persons can be of any race. Persons are classified in only 1 race/ethnicity category.

[g] Ten-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma: personalized stigma since HIV diagnosis, current disclosure concerns, current negative self-image, and current perceived public attitudes about people living with HIV.

[h] Ten-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma during the past 12 months: personalized stigma during the past 12 months, current disclosure concerns, current negative self-image, and current perceived public attitudes about people living with HIV.

[i] Vaginal or anal sex with at least 1 partner of HIV-negative or unknown status while not having sustained viral suppression (defined as having all HIV viral loads being undetectable or <200 copies/mL, as documented in the medical record in the past 12 months before interview), a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

Technical Notes and Appendix

POPULATION OF INFERENCE

For the 2020 Medical Monitoring Project (MMP) data collection cycle (data collected June 1, 2020–May 31, 2021), the population of inference was adults with diagnosed HIV (aged ≥18 years) living in the United States.

A total of 23 areas were funded to conduct data collection for the 2020 cycle: California (including the separately funded jurisdictions of Los Angeles County and San Francisco), Delaware, Florida, Georgia, Illinois (including the separately funded jurisdiction of Chicago), Indiana, Michigan, Mississippi, New Jersey, New York (including the separately funded jurisdiction of New York City), North Carolina, Oregon, Pennsylvania (including the separately funded jurisdiction of Philadelphia), Puerto Rico, Texas (including the separately funded jurisdiction of Houston), Virginia, and Washington.

DATA COLLECTION

Persons with diagnosed HIV were sampled for MMP using data from the National HIV Surveillance System (NHSS). Sampled persons were recruited to participate by mail, by telephone, or in person. To be eligible for MMP, the person had to be, as of December 31, 2019: living with diagnosed HIV infection, aged ≥18 years, and residing in an MMP project area. The participant eligibility criteria were the same in all participating project areas.

A trained interviewer conducted either a telephone interview or an in-person interview. English and Spanish versions of the questionnaire were used in the 2020 cycle (June 2020–May 2021). Persons who agreed to participate were interviewed over the telephone or in a private location (e.g., at home or in a clinic). The interview (approximately 45 minutes) included questions about demographics, health care use, met and unmet needs for ancillary services, sexual behavior, depression and anxiety, gynecologic and reproductive history (females only), drug and alcohol use, and use of prevention services. Participants were given a token of appreciation of no more than $50 in cash or the equivalent for participation; tokens differed by project area according to local considerations.

After the interview, MMP staff abstracted clinical data from the medical records of participants at the health care facility identified by the participant as their most frequent source of HIV care. Abstracted information included diagnoses of AIDS-defining conditions, prescription of antiretroviral therapy (ART) medications, laboratory results, and health care use in the 24 months before the interview.

For further technical details, please see the appendix.

METHODS

The Medical Monitoring Project (MMP) uses a stratified, 2-stage sampling design. States were sampled first, with probability proportional to size (PPS). All 50 states, the District of Columbia, and Puerto Rico (defined as primary sampling units [PSUs]) were eligible for selection.

From these 52 PSUs, 20 were selected by using PPS sampling based on AIDS prevalence at the end of 2002. According to the PPS sampling method, states with a higher AIDS prevalence had a higher probability of selection, and those with a lower AIDS prevalence had a lower probability of selection [1, 2]. Six municipal jurisdictions receive separate funding for HIV surveillance (Chicago, Illinois; Houston, Texas; Los Angeles County, California; New York City, New York; Philadelphia, Pennsylvania; and San Francisco, California); these areas were included with the state for first-stage sampling and constituted a city-state unit. If a state included a city with independent HIV surveillance authority (e.g., Texas, which includes Houston), selection of the state included selection of the city (i.e., city-state units were selected together).

In 2004, 19 states (including the 6 separately funded areas within those states) and Puerto Rico were selected from the 52 PSUs, resulting in 26 MMP project areas. Because of funding constraints for the 2009 data collection cycle, 3 project areas (Maryland, Massachusetts, and South Carolina) were randomly selected to discontinue participation in MMP, and the total number of MMP areas was reduced to 23.

Analyses carried out in 2014 and subsequently in 2021 found that the original measure of size with which states were originally sampled (i.e., AIDS prevalence in 2002) was still a reasonable proxy for the distribution of HIV prevalence in 2010 (the most recent year for which prevalence estimates were available at the time). The selected sample of states was still sufficiently representative of the population of persons with diagnosed HIV; consequently, selecting a new sample for the 2015 and subsequent data collection cycles was unwarranted. In addition, the change in the sampling frame and the availability of national totals from the National HIV Surveillance System (NHSS) presented new options for calibrating weights, further lessening the need for any adjustments to the sample of states.

At the second stage, persons with a reported diagnosis in NHSS were sampled after the selection of the states. The sampling frame was the national case surveillance data set containing records submitted to the Centers for Disease Control and Prevention (CDC) as of December 31, 2019. Using NHSS data, the initial national frame dataset was created for persons who were alive, had diagnosed HIV infection, were aged 18 years or older, and were living in the United States, the District of Columbia, or Puerto Rico on the sampling date (December 31, 2019). Each case was assigned to a surveillance jurisdiction based on the most recently reported residence in NHSS. These addresses primarily came from case report forms and HIV-related laboratory reports. From this initial national frame, CDC staff drew simple random samples for the 23 project areas; project area staff then linked their samples to local case surveillance systems and extracted contact information for use in locating sampled persons, whom they then attempted to recruit.

Eligibility and Response Classifications

Persons were eligible for participation if, as of the sampling date, they had received a diagnosis of HIV, were aged ≥18 years, were alive, and were a resident of an MMP project area. Sampled persons were presumed to be eligible based on their information in NHSS unless data from another source contradicted this status. Persons were classified into 4 categories: (1) eligible respondents, (2) contacted nonrespondents, (3) nonrespondents who were not contacted, and (4) ineligible persons. These categories were used in calculating final response rates and contact rates following standard formulas [3].

Weighting

Overview

For the 2020 MMP cycle, sets of weights were produced nationally, for the city-state combinations, and for each project area. This report presents national weighted data and, thus, represents all adults with diagnosed HIV infection living in the United States. Nationally, data were weighted based on known probabilities of selection at the state or jurisdiction level and person level and then adjusted for multiplicity and nonresponse. After adjusting for nonresponse, the weights were poststratified to population totals from the NHSS frame. Extreme weights, if present, were trimmed, and the weights were adjusted to the same population totals.

For the weighting process, an updated sampling frame was obtained from NHSS data approximately a year and a half after sampling, during which time additional information reported to NHSS may have become available for sampled persons and additional diagnoses may have been reported. This updated sampling frame added records that would have been eligible if their information had been reported to NHSS on the date the initial sample was drawn; primarily, these were diagnoses that occurred during the year prior to the MMP sampling date (for the 2020 cycle, December 31, 2019). Additionally, some persons were found to have had multiple records at the time of sampling that were later identified as duplicate records. In some cases, updated information indicated that a person originally judged eligible and included on the original frame was ineligible. The updated sampling frame data also provided descriptive information for all sampled persons regardless of response and were the source of data used for nonresponse analysis and weighting.

Adjustments for unequal selection probabilities

The first step in the computation of weights was the calculation of base weights that reflect the sampling design probabilities. The base weight for each sampled person incorporates both the probability of selecting a project area, and the probability of selecting a person within a project area. A person who was sampled from one jurisdiction but lived in another area at the time of sampling retained the original base weight. Prior to weighting, such cross-jurisdictional records were grouped with their project area of residence at the time of sampling. This moving of records did not affect the national weights, but did affect the project area weight totals, increasing some while decreasing others.

Adjustments for multiplicity

A multiplicity factor was applied to the person weight for persons with records found to be present more than once after the original frame was compared to the updated sampling frame. This factor, which accounts for some persons' multiple opportunities for being sampled, was capped at 2.0 and was applicable for only 23 persons.

Adjustments for nonresponse

A nonresponse adjustment factor was applied to the multiplicity-adjusted base weight based on an analysis of nonresponse. In 2020, updated sampling frame data provided descriptive information about all sampled persons, which was used to assess how these characteristics were associated with nonresponse. The potential predictors of nonresponse were: race/ethnicity, men who have sex with men (MSM) HIV transmission category, HIV/AIDS disease stage, disease progression measured by most recent viral load test reported to NHSS, time since HIV diagnosis, age of most recent contact information, the person's frequency of receipt of HIV care (as indicated by NHSS records), movement to a different MMP jurisdiction since the time of sampling, non-U.S. birthplace, sex at birth, and age at sampling date. The nonresponse analysis followed a 2-step process. First, a bivariate analysis was conducted to determine which characteristics were potential predictors of nonresponse; then, a multivariate analysis using the significant characteristics from the bivariate analysis was conducted to identify independent predictors of nonresponse. Three significant predictors from this multivariate analysis were used to create weighting classes for the national data. In 2020, the significant predictors of nonresponse were: the person's frequency of receipt of HIV care (as indicated by NHSS records), non-U.S. birthplace, and disease progression measured by the most recent viral load test reported to NHSS. Within weighting classes, the adjustment factor for nonresponse was the ratio of the sum of the multiplicity-adjusted base weights for eligible sampled cases to the sum of these weights for eligible respondents. The multiplicity adjusted weight within each nonresponse weighting class was then multiplied by the nonresponse adjustment factor to produce the nonresponse adjusted weights.

Poststratification and trimming

Poststratification methods ensure that weighted totals sum to known population totals and, therefore, minimize the potential for biases due to nonresponse and noncoverage. However, poststratification can also add additional variance to the weights. Thus, trimming procedures are used to control weight variability and reduce its impact on survey variances. MMP used an iterative approach that combines poststratification and

trimming so that trimmed weights retain their variance-reducing features after poststratification and ensures that poststratified weights add up to known population totals.

The nonresponse adjusted weights were first poststratified to population totals from the updated sampling frame. The poststratification cells were defined by crossing sex at birth, race/ethnicity, and age group. Nationally, there were 32 poststratification cells. Poststratification adjustments were performed within each poststratification cell so that the weighted sum was preserved in each cell. To reduce additional variance added to poststratified weights, cells were collapsed and the need for weight trimming was evaluated. Poststratified cells were collapsed when cells had 2 or fewer respondents or had an extreme adjustment factor (≥ 1.75). The need for trimming was then assessed. If the design effect due to weighting (measured as $1 + CV^2$, where CV is the coefficient of variation of the weights) had exceeded 1.75, we would have capped the weights at the median weight plus 4 times the interquartile range of the weights; where trimming occurred, the weights were redistributed and poststratified again to the population totals. However, no trimming was needed for the national weights.

Design variables

Nationally, design variables indicating strata and cluster membership for each participating person accounting for the sample design were created. Many project areas were sampled with certainty because of higher AIDS prevalence, and each of these was defined as its own stratum. Elsewhere, strata were created by grouping 2 to 3 project areas (PSUs in the stratified PPS design) that had similar selection probabilities. Among the 23 project areas, 14 were sampled with certainty. The 14 certainty project areas each represent a stratum, and each person within the stratum is a cluster. The remaining 9 noncertainty project areas were grouped to create strata, and each noncertainty project area was a cluster within the stratum. Multiple project areas within certainty states were effectively substrata, and each project area remained its own stratum. For local estimates, variance estimation was conditional on the initial sampling of states as PSUs, meaning that this stage of sampling was ignored. Participants were treated as having come from a simple random sample with replacement, although the various adjustment factors induced unequal weights.

DEFINITIONS

Demographic Characteristics and Social Determinants of Health

- **Gender:** Categories were cisgender male, cisgender female, and transgender. Participants were classified as transgender if reported sex at birth and current gender as reported by the participant were not the same or if the participant answered "transgender" to the interview question regarding self-identified gender. People whose sex assigned at birth was male, but who identified as female or transgender, were classified as transgender women. People whose sex assigned at birth was female, but who identified as male or transgender, were classified as transgender men.
- **Health insurance or coverage for care or medications:** Participants were asked whether they had health insurance or coverage for care or medications (including antiretroviral [ART] medications) during the 12 months before interview. Responses to these questions were combined and categorized as private health insurance, Medicaid, Medicare, Ryan White HIV/AIDS Program, Tricare/CHAMPUS and Veterans Administration coverage, insurance classified as other public health insurance, and unknown insurance. Participants could select more than 1 response for health insurance or coverage for care or medications.
- **Federal poverty guidelines:** Participants were asked about their combined monthly or yearly household income (in U.S.$) from all sources during the 12 months before interview. The number of persons meeting the current federal poverty threshold was determined by using the U.S. Department of Health and Human Services poverty guidelines that corresponded to the calendar year for which income was asked. These guidelines are issued yearly for the 48 contiguous states and Washington, D.C., and are an indicator used for determining eligibility for many federal and state programs. The 2019 guidelines [4] were used for

participants interviewed in 2020, and the 2020 guidelines [5] were used for persons interviewed in 2021. Because the poverty guidelines are not defined for the territory of Puerto Rico, the guidelines for the contiguous states and Washington, D.C. were used for this jurisdiction. Participants were asked to specify the range of their income, and household income was assumed to be the midpoint of the income range.

Clinical Characteristics

- **CDC stage of disease classification for HIV infection:** Defined according to CDC's 2014 revised surveillance case definition for HIV infection [6]. Information from NHSS was used to determine the most advanced HIV disease stage ever reached by participants.

Use of Health Care Services

- **Outpatient HIV medical care:** Defined as documentation of any of the following at the most frequent source of HIV care: encounter with an HIV care provider (could be self-reported), viral load test result, CD4 test result, HIV resistance test or tropism assay, ART prescription, *pneumocystis* pneumonia (PCP) prophylaxis, or *Mycobacterium avium* complex (MAC) prophylaxis. All were measured through documentation in the person's medical record; an encounter with an HIV care provider was also measured based on interview self-report. Persons were considered to be retained in care if they had 2 elements of outpatient HIV care at least 90 days apart in each 12-month period reviewed.

- **ART prescription:** Defined as a prescription in the medical record, during the 12 months before interview, of any of the following medications: abacavir, amprenavir, atazanavir, bictegravir, cabotegravir, cobicistat, darunavir, delavirdine, didanosine, dolutegravir, doravirine, efavirenz, elvitegravir, emtricitabine, enfuvirtide, etravirine, fosamprenavir, fostemsavir, ibalizumab, indinavir, lamivudine, lopinavir/ritonavir, maraviroc, nelfinavir, nevirapine, raltegravir, rilpivirine, ritonavir, saquinavir, stavudine, tenofovir alafenamide, tenofovir disoproxil fumarate, tipranavir, or zidovudine. Persons with no medical record abstraction were considered to have no documentation of ART prescription.

- **PCP prophylaxis:** Defined as documentation in the medical record that prophylaxis for PCP was pre-scribed among persons with a CD4 count of <200 cells/μL in the 12 months before interview [7]. Persons prescribed regimens typically given as PCP prophylaxis (trimethoprim-sulfamethoxazole, dapsone with or without pyrimethamine and leucovorin, aerosolized pentamidine, and atovaquone) were not presumptively categorized as having received PCP prophylaxis unless it was specifically stated in the medical record that prescription of these medications was for PCP prophylaxis or no length of time was specified for the course of treatment.

- **Influenza vaccination:** Participants were asked whether they had received seasonal influenza vaccine during the 12 months before interview.

- *Neisseria gonorrhoeae* **testing:** Defined as documentation in the medical record, during the 12 months before interview, of a result from culture, Gram stain, enzyme immunoassay (EIA), nucleic acid amplifica-tion test (NAAT), or nucleic acid probe performed on a specimen from any anatomical site for screening or diagnostic purposes.

- *Chlamydia trachomatis* **testing:** Defined as documentation in the medical record, during the 12 months before interview, of a result from culture, direct fluorescent antibody (DFA), EIA or enzyme-linked immunoassay (ELISA), NAAT, or nucleic acid probe performed on a specimen from any anatomical site for screening or diagnostic purposes.

- **Syphilis testing:** Defined as documentation in the medical record, during the 12 months before interview, of a result from nontreponemal serologic tests (rapid plasma reagin [RPR], Venereal Disease Research Laboratory [VDRL]), treponemal serologic tests (*Treponema pallidum* hemagglutination assay [TPHA], *T. pallidum* particle agglutination [TP-PA], microhemagglutination assay for antibodies to *T. pallidum* [MHA-TP], chemiluminescence immunoassay [CIA], fluorescent treponemal antibody absorption [FTA-ABS] tests), polymerase chain reactions (PCR), or dark-field microscopy performed for screening or diagnostic purposes.

Self-reported ART Medication Use and Adherence

- **ART adherence:** Participants were asked about their adherence to ART in the 30 days before interview using questions from a 3-item scale developed by Wilson and colleagues [8]. Participants were asked about how many days they missed at least 1 dose of their HIV medicines, how often they took their HIV medicines in the way they were supposed to, and how good a job they did at taking their HIV medicines in the way they were supposed to during the 30 days before interview.

Depression and Substance Use

- **Depression:** Participants were asked questions from the Patient Health Questionnaire (PHQ-8), an 8-item scale used to measure frequency of depressed mood in the preceding 2 weeks [9]. The PHQ-8 has the following question: "Over the last 2 weeks, how often have you been bothered by any of the following problems?" The respondent is then asked about the following problems: (1) little interest or pleasure in doing things (anhedonia); (2) feeling down, depressed, or hopeless; (3) trouble falling/staying asleep, or sleeping too much; (4) feeling tired or having little energy; (5) poor appetite or overeating; (6) feeling bad about yourself or that you are a failure or have let yourself or your family down; (7) trouble concentrating on things, such as reading the newspaper or watching television; and (8) moving or speaking so slowly that other people could have noticed, or being fidgety or restless or moving around a lot more than usual. Response categories were "not at all," "several days," "more than half the days," and "nearly every day" with points (0–3) assigned to each response category, respectively. The PHQ-8 responses were scored by using 2 methods. Method 1: an algorithm involving criteria from the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV-TR) [10], for diagnosing major depression was used to classify adults with diagnosed HIV as having major depression, other depression, or no depression. To meet the criteria for major depression, a participant must have experienced 5 or more symptoms at least "more than half the days," and one of the symptoms must be anhedonia or feelings of hopelessness. For other depression, a participant must have experienced 2 to 4 symptoms at least "more than half the days," and one of the symptoms must be anhedonia or feelings of hopelessness. The PHQ-8 classification "other depression" comprises the DSM-IV categories of dysthymia and depressive disorder, not otherwise specified, which includes minor or subthreshold depression. Method 2: scores for each response category were summed to produce a total score between 0 and 24 points. Current depression of moderate or severe intensity was defined as a total score of ≥10.

- **Anxiety:** Participants were asked questions from the Generalized Anxiety Disorder Scale (GAD-7), a 7-item scale used to screen for and measure the severity of generalized anxiety disorder [11]. The GAD-7 has the following question: "Over the last 2 weeks, how often have you been bothered by any of the following problems?" The respondent was then asked about the following problems: (1) feeling nervous, anxious, or on edge; (2) not being able to stop or control worrying; (3) worrying too much about different things; (4) trouble relaxing; (5) being so restless that it is hard to sit still; (6) becoming easily annoyed or irritable; and (7) feeling afraid as if something awful might happen. Responses were scored according to criteria from the DSM-IV-TR [10]. Response categories were "not at all," "several days," "more than half the days," and "nearly every day," with points (0–3) assigned to each response category, respectively. Scores for each response category were summed to produce a total score between 0 and 21 points. "Severe anxiety" was defined as having a score of ≥15; "moderate anxiety" was defined as having a score of 10–14; and "mild anxiety" was defined as having a score of 5–9.

- **Alcohol use:** Participants were asked about alcohol use during the 30 days and the 12 months before interview. A drink was defined as 12 ounces of beer, a 5-ounce glass of wine, or a 1.5-ounce shot of liquor.

- **Binge drinking:** Defined as ≥5 drinks in a single sitting (≥4 drinks for women) in the past 30 days [12].

Sexual Behavior

- **Sexual behavior/orientation:** Sexual behavior/orientation was categorized into three groups: MSM, MSW, and WSM. MSM represented cisgender men who had sex with cisgender men; MSW represented

cisgender men who had sex only with cisgender women; WSM represented cisgender women who had sex with cisgender men. Women who had sex with only women were not included in the sexual behavior/orientation variables. Whenever possible, categories were coded based on sexual behavior data based on the 12 months before interview. For those who reported not having sex during the 12 months before interview, people were categorized based on sexual orientation.

- **Prevention strategies:** Reported behaviors that decrease the likelihood of HIV transmission to a sexual partner, including:
  - Sex while having sustained viral suppression: Vaginal or anal sex and the person's HIV viral loads were documented in the medical record as undetectable or <200 copies/mL at every measure in the past 12 months before interview.
  - Condom-protected sex: Condoms were consistently used with at least 1 vaginal or anal sex partner.
  - Condomless sex with a partner on preexposure prophylaxis (PrEP): At least 1 condomless-sex partner with an HIV-negative status was on PrEP. PrEP use was only measured among the 5 most recent partners and was reported by the partner with HIV.
  - Sex with a partner with HIV: Vaginal or anal sex with at least 1 partner with HIV.
- **Sex without using an HIV prevention strategy:** Vaginal or anal sex with at least 1 partner with an HIV-negative or unknown status while not having sustained viral suppression, when a condom was not used, and the partner was not known to be taking PrEP.

Met and Unmet Needs for Ancillary Services

Ancillary services were defined as services that support retention in routine HIV medical care and viral suppression, such as HIV case management, dental care, and mental health services [13]. Ancillary services were grouped into three categories: HIV support services, non-HIV medical services, and subsistence services. HIV support services included: HIV case management, medicine through ADAP, adherence support services, HIV peer group support, and patient navigation services. Non-HIV medical services included: dental care, mental health services, drug or alcohol counseling or treatment, and domestic violence services. Subsistence services included: Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), transportation assistance, meal or food services, and shelter or housing services.

- **Met need:** Defined as an ancillary service received during the 12 months before interview.
- **Unmet need:** Defined as an ancillary service that the participant reported as needed, but not received, during the 12 months before interview.

Centers for Disease Control and Prevention National Indicators

Measures in this section are used by CDC for national monitoring and evaluation purposes.

- **Homelessness:** Defined as living on the street, in a shelter, in a single-room–occupancy hotel, or in a car at any time during the 12 months before interview. Estimates were reported among all persons as well as among persons who received any outpatient HIV medical care in the 12 months before interview.
- **HIV stigma:** *HIV stigma since HIV diagnosis* was defined as the median score on a 10-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma: personalized stigma since HIV diagnosis, current disclosure concerns, current negative self-image, and current perceived public attitudes about people living with HIV [14]. *HIV stigma during the past 12 months* was defined as the median score on a 10-item scale ranging from 0 (no stigma) to 100 (high stigma) that measures 4 dimensions of HIV stigma during the past 12 months: personalized stigma during the past 12 months, current disclosure concerns, current negative self-image, and current perceived public attitudes about people living with HIV.
- **Sex without using an HIV prevention strategy:** See "Sexual Behavior" section.

ETHICS STATEMENT

In accordance with guidelines for defining public health research [15], CDC has determined MMP is public health surveillance used for disease control, program, or policy purposes. Local institutional review board approval was obtained from participating areas when required. Informed consent was obtained from all interviewed participants.

REFERENCES

1. Frankel MR, McNaghten A, Shapiro MF, et al. A probability sample for monitoring the HIV-infected population in care in the U.S. and in selected states. *Open AIDS J* 2012;6:67–76. doi:10.2174/1874613601206010067

2. Beer L, Johnson CH, Fagan JL, et al. A national behavioral and clinical surveillance system of adults with diagnosed HIV (the Medical Monitoring Project): Protocol for an annual cross-sectional interview and medical record abstraction survey. *JMIR Res Protoc* 2019; 8(11):e15453. doi: 10.2196/15453

3. The American Association for Public Opinion Research. Standard Definitions: Final dispositions of case codes and outcome rates for surveys. 9th ed. https://www.aapor.org/Standards-Ethics/Standard-Definitions-(1).aspx. Revised 2016. Accessed May 16, 2022.

4. U.S. Department of Health and Human Services. Computations for the 2019 poverty guidelines. https://aspe.hhs.gov/computations-2019-annual-update-hhs-poverty-guidelines-48-contiguous-states-and-district-columbia. Published January 2019. Accessed May 16, 2022.

5. U.S. Department of Health and Human Services. Computations for the 2020 poverty guidelines. https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines/prior-hhs-poverty-guidelines-federal-register-references/2020-poverty-guidelines/2020-poverty-guidelines-computations. Published January 2020. Accessed May 16, 2022.

6. CDC [Selik RM, Mokotoff ED, Branson B, Owen SM, Whitmore S, Hall HI]. Revised surveillance case definition for HIV infection—United States, 2014. *MMWR* 2014;63(RR-03):1–10. https://www.cdc.gov/mmwr/indrr_2014.html. Accessed May 16, 2022.

7. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in adults and adolescents with HIV. https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv/. Updated January 20, 2022. Accessed May 16, 2022.

8. Wilson IB, Lee Y, Michaud J, Fowler FJ Jr, Rogers WH. Validation of a new three-item self-report measure for medication adherence. *AIDS Behav* 2016;20(11):2700–2708. doi:10.1007/s10461-016-1406-x

9. Kroenke K, Strine TW, Spitzer RL, et al. The PHQ-8 as a measure of current depression in the general population. *J Affect Disord* 2009;114(1–3):163–173. doi:10.1016/j.jad.2008.06.026

10. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR*. 4th ed. Washington, DC: American Psychiatric Association; 2000.

11. Spitzer RL, Kroenke K, Williams JB, Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med* 2006;166(10):1092–1097. doi:10.1001/archinte.166.10.1092

12. CDC. Binge drinking. https://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm. Published January 2022. Accessed May 16, 2022.

13. Dasgupta S, Tie Y, Beer L, et al. Unmet needs for ancillary care services are associated with HIV clinical outcomes among adults with diagnosed HIV. *AIDS Care* 2021;34(5):606–614. doi: 10.1080/09540121.2021.1946001.

14. Wright K, Naar-King S, Lam P, Templin T, Frey M. Stigma scale revised: reliability and validity of a brief measure of stigma for HIV+ youth. *J Adolesc Health* 2007;40(1):96–98. doi:10.1016/j.jadohealth.2006.08.001

15. CDC. Distinguishing public health research and public health nonresearch. https://www.cdc.gov/os/integrity/docs/cdc-policy-distinguishing-public-health-research-nonresearch.pdf. Published July 2010. Accessed May 16, 2022.