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Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection

Medical Monitoring Project, United States 2015 Cycle (June 2015–May 2016)

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

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Revision note: The June 2019 revision of *Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection—Medical Monitoring Project, United States, 2015 Cycle (June 2015–May 2016)*, HIV Surveillance Special Report 20, includes revised and corrected data on selected sexual behaviors. Errors in estimates of high-risk sex are corrected in Commentary and in Tables 18 and 22. Errors in estimates of condomless sex with a partner on preexposure prophylaxis (PrEP) are corrected in Commentary and in Table 18. Further information on the errors and corrections can be found at https://www.cdc.gov/hiv/pdf/statistics/systems/mmp/cdc-hiv-MMP-surveillance-report-changes-2019-06-17.pdf.

On the Web: https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html.

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CDC-INFO
1-800-232-4636 (in English, en Español)
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https://www.cdc.gov/hiv/pdf/statistics/systems/mmp/cdc-hiv-mmp-project-area-group-members-2015.pdf

Contents

At year-end 2015, an estimated 973,846 persons in the United States and 6 dependent areas were living with diagnosed HIV infection [1]. In 2015, the number of new HIV diagnoses was 39,876 [1]. Although the National HIV Surveillance System (NHSS) collects information about persons with diagnosed HIV infection [2], other surveillance systems provide more detailed information about care seeking, health care use, use of ancillary services, and other behaviors [3]. In 2005, in response to an Institute of Medicine report outlining the need for representative data on persons living 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 persons receiving HIV medical care [5]. In 2015, in response to recommendations stemming from an Institute of Medicine review of national HIV data systems [6], MMP sampling and weighting methods were revised to include all persons with diagnosed HIV infection regardless of HIV care status. This report is the first to publish MMP data collected by using these revised methods.

MMP is a cross-sectional, nationally representative, complex sample survey that assesses the clinical and behavioral characteristics of adults with diagnosed HIV infection in the United States and Puerto Rico. The 2015 MMP sample was selected in 2 consecutive stages: (1) United States and dependent areas and (2) adults with diagnosed HIV infection aged ≥18 years reported to NHSS as of December 31, 2014. A total of 23 project areas from 16 states and Puerto Rico were funded to conduct data collection for the 2015 cycle (Table 1).

This report presents unweighted frequencies and weighted prevalence estimates with 95% confidence intervals for selected characteristics. The estimates describe the characteristics of adults with diagnosed HIV infection who are living in the United States or Puerto Rico, hereafter referred to as *persons with diagnosed HIV* or *persons*. The period referenced is the 12 months before the participants' behavioral interviews and medical record abstractions unless otherwise noted. Statistical software (SAS, version 9.4) was used for analysis of weighted data [7]. Data are not reported for estimates with a coefficient of variation ≥0.30. Values with a denominator sample size <30, values with an absolute confidence interval width ≥0.30, and values with an absolute confidence interval width of between 0.05 and 0.30 and a relative confidence interval width >130% are marked with an asterisk and should be interpreted with caution. No statistical tests were performed. Additional information on MMP is available at https://www.cdc.gov/hiv/statistics/systems/mmp/.

Highlights of Analyses

Response Rates

All states and the 1 territory sampled for MMP participated. In total, 9,700 persons were sampled from NHSS and 3,654 participated (Table 1). Adjusted for eligibility, the response rate was 40% (data not shown in table).

Sociodemographic Characteristics

An estimated 75% of persons were male, 24% were female, and 1% were transgender (Table 2). Nearly half (48%) identified themselves as heterosexual or straight; 42% as lesbian or gay; 8% as bisexual; and 2% as another sexual orientation. An estimated 41% were black or African American, 30% were white, and 23% were Hispanic or Latino. Three-quarters (75%) were aged at least 40 years, and 62% had received an HIV diagnosis at least 10 years earlier. More than half (56%) had more than a high school education and 86% were born in a U.S. state or territory. The estimated prevalence of homelessness among all persons with diagnosed HIV was 9%. An estimated 98% had health insurance or coverage for antiretroviral therapy (ART) medications: 45% had coverage through the Ryan White HIV/AIDS Program, 45% had Medicaid, 35% had private health insurance, and 28% had Medicare. An estimated 45% had a disability, 45% were unemployed, and 46% had household incomes at or below the federal poverty threshold. An estimated 20% received Supplemental Security Income (SSI) and 26% received Social Security Disability Insurance (SSDI).

Clinical Characteristics

According to the CDC stage of disease classification for HIV infection [8], an estimated 57% of persons had ever had stage 3 (AIDS) disease (Table 3). An estimated 9% 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 606 cells/μL, and the median geometric mean CD4 count was 579 cells/μL (range, 3–2,215) (data not shown in table).

An estimated 70% of persons had an undetectable (<200 copies/mL) viral load at the most recent measurement, while 63% had undetectable viral loads at all measurements during the past 12 months (sustained viral suppression).

Use of Health Care Services

Overall, 97% had received outpatient HIV care during the past 12 months, and 99% had received outpatient HIV care during the past 24 months (Table 4). An estimated 80% were retained in care during the past 12 months, while 64% were retained in care during the past 24 months. An estimated 85% of persons had an ART prescription documented in the medical record during the 12 months before the interview. Of persons who met the clinical criteria for *Pneumocystis* pneumonia (PCP) prophylaxis, 51% had a prescription for PCP prophylaxis documented in the medical record. Of persons who met the clinical criteria for *Mycobacterium avium* complex (MAC) prophylaxis, 46% had a prescription for MAC prophylaxis documented in the medical record.

Among sexually active persons, an estimated 45% were tested for gonorrhea, 44% for chlamydia, 63% for syphilis, and 39% for all 3 sexually transmitted diseases (STDs) (Table 5).

An estimated 36% of persons were seen in an emergency department at least 1 time, and 3% were seen at least 5 times (Table 6). An estimated 16% of persons were admitted to a hospital for an illness at least 1 time.

Self-reported ART Use and Adherence

An estimated 91% of persons were currently taking ART based on self-report (Table 7). Among the estimated 4% of persons without a history of ART use, 43% had never taken ART because a health care provider advised a delay in treatment. Among the estimated 5% of persons with a history of ART use but were not taking ART, 30% were not taking ART because they felt it would make them feel sick or harm them.

Among persons taking ART, 60% took all of their ART doses in the past 30 days (Table 8). Among persons taking ART, 69% had never been troubled by ART side effects during the past 30 days; 17% had rarely been troubled. The most common reasons given for not taking one's most recently missed ART dose were forgetting (37%) and a change in one's daily routine or being out of town (25%).

Clinical Characteristics by Subgroups

The estimated prevalence of ART prescription documented in a medical record was 87% among males and 82% among females (Table 9). An estimated 82% of blacks or African Americans were prescribed ART, compared with 87% of Hispanics or Latinos and 88% of whites. The estimated prevalence of ART prescription was 71% among persons aged 18 to 29 years and 87% among those aged 50 years or older. The estimated prevalence of sustained viral suppression was 63% among males and 60% among females. An estimated 55% of blacks or African Americans had sustained viral suppression, compared with 67% of Hispanics or Latinos and 70% of whites. The estimated prevalence of sustained viral suppression was 40% among persons aged 18 to 29 years and 69% among those aged 50 years or older.

Depression and Substance Use

The estimated prevalence of major or other depression in the past 2 weeks based on the Patient Health Questionnaire (PHQ-8) algorithm [9] was 23%, including 12% with major depression (Table 10). Based on the total PHQ-8 symptom score (see the appendix), an estimated 18% of persons had moderate or severe depression. The estimated prevalence of anxiety in the past 2 weeks based on the Generalized Anxiety Disorder Scale (GAD-7) [10] was 25%, including 10% with severe anxiety.

The estimated prevalence of smoking was 36%: 29% of persons smoked daily, 3% weekly, 1% monthly, and 2% less than monthly (Table 11). The estimated prevalence of alcohol use was 63%: 6% of persons drank alcohol daily, 18% weekly, 12% monthly, and 27% less than monthly (Table 12). An estimated 15% of persons engaged in binge drinking during the past 30 days.

This page of the revised edition of HIV Surveillance Special Report 20 includes corrected data for estimates of high-risk sex and condomless sex with a partner on PrEP (see also Tables 18 and 22).

An estimated 29% of persons used noninjection drugs for nonmedical purposes (Table 13). In total, an estimated 25% used marijuana, 5% used poppers (amyl nitrite), 5% used methamphetamines, 5% used cocaine, and 4% 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.

Gynecologic and Reproductive Health

Among females, 70% reported receiving a Papanicolaou (Pap) test (Table 15). An estimated 28% of females reported being pregnant at least once since testing positive for HIV infection.

Sexual Behavior

An estimated 34% of men had receptive anal sex with men, 32% had insertive anal sex with men, and 20% had vaginal sex (Table 16). An estimated 39% of men did not have vaginal or anal sex. Among women, 55% had vaginal sex, and 45% did not have vaginal or anal sex. Among transgender persons, 63% had vaginal or anal sex (Table 17). An estimated 62% of transgender women had vaginal or anal sex with men.

Among men who had sex with men, an estimated 7% engaged in high-risk sex, compared with 5% of men who had sex only with women, and 7% of women who had sex with men (Table 18). In terms of prevention strategies among sexually active persons, an estimated 65% of men who had sex with men had condom-protected sex, 64% engaged in sex while sustainably virally suppressed, 60% had sex with an HIV-positive partner, and 9% had condomless sex with a partner on preexposure prophylaxis (PrEP). Among sexually active men who had sex only with women, 75% had condom-protected sex, 60% engaged in sex while sustainably virally suppressed, and 21% had sex with an HIV-positive partner. Among sexually active women who had sex with men, 60% engaged in sex while sustainably virally suppressed, 60% had condom-protected sex, and 29% had sex with an HIV-positive partner.

Met and Unmet Need for Ancillary Services

An estimated 56% of persons received dental care; 54% received HIV case management services; 45% received medicine through the AIDS Drug Assistance Program (ADAP); and 41% received services through the Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Table 19). An estimated 26% of persons had unmet needs for dental care; 12% for shelter or housing services; 12% for SNAP or WIC; 10% for mental health services; 10% for meal or food services; 9% for transportation assistance; 8% for HIV peer group support; 7% for HIV case management services; and 7% for patient navigation services.

Intimate Partner Violence and Sexual Violence

An estimated 27% of persons had ever been physically hurt by a romantic or sexual partner, including 5% who experienced this in the past 12 months (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.

Prevention Activities

An estimated 54% of persons received counseling from a physician, nurse, or other health care worker about HIV and STD prevention; 34% had a one-on-one conversation with an outreach worker, a counselor, or a prevention program worker about prevention; and 14% participated in a small-group session (excluding discussions with friends) to discuss the prevention of HIV and other STDs (Table 21). An estimated 55% of persons received free condoms from various organizations.

Division of HIV/AIDS Prevention National Indicators

The estimated prevalence of homelessness among persons who received outpatient HIV care in the past 12 months was 8% (Table 22). The median HIV stigma score (see the appendix) among all persons was 38%. An estimated 7% of persons engaged in high-risk sex.

Technical Notes

Population of Inference

For the 2015 Medical Monitoring Project (MMP) data collection cycle (data collected June 1, 2015–May 31, 2016), the population of inference was adults with diagnosed HIV (aged ≥18 years) living in the United States and Puerto Rico as of December 31, 2014.

A total of 23 areas were funded to conduct data collection for the 2015 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 in person, by telephone, or by mail. To be eligible for MMP, the person had to be, as of December 31, 2014: diagnosed with HIV infection, aged ≥18 years, and living in an MMP project area. The participant eligibility criteria were the same in all participating project areas.

A trained interviewer conducted either a computer-assisted telephone interview or an in-person interview. English and Spanish versions of the questionnaire were used in the 2015 cycle (June 2015–May 2016). Persons who agreed to participate were interviewed in a private location (e.g., at home or in a clinic) or over the telephone. 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 approximately $50 in cash or the equivalent for participation; reimbursement amounts 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 his or her usual place 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.

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Table 1. Participants, by project area—Medical Monitoring Project, United States, 2015

Project area	No. sampled	No. participating	% participating[a]	% of total
California (excluding Los Angeles County and San Francisco)	500	176	35.2	4.8
Chicago, IL	400	152	38.0	4.2
Delaware	400	164	41.0	4.5
Florida	800	299	37.4	8.2
Georgia	500	164	32.8	4.5
Houston, TX	400	135	33.8	3.7
Illinois (excluding Chicago)	200	67	33.5	1.8
Indiana	400	136	34.0	3.7
Los Angeles County, CA	400	162	40.5	4.4
Michigan	400	169	42.3	4.6
Mississippi	400	156	39.0	4.3
New Jersey	500	163	32.6	4.5
New York (excluding New York City)	200	55	27.5	1.5
New York City, NY	800	326	40.8	8.9
North Carolina	400	153	38.3	4.2
Oregon	400	187	46.8	5.1
Pennsylvania (excluding Philadelphia)	200	59	29.5	1.6
Philadelphia, PA	400	153	38.3	4.2
Puerto Rico	400	164	41.0	4.5
San Francisco, CA	400	165	41.3	4.5
Texas (excluding Houston)	400	166	41.5	4.5
Virginia	400	111	27.8	3.0
Washington	400	172	43.0	4.7
Total	**9,700**	**3,654**	**37.7**	**100**

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

[a] Not adjusted for eligibility.

Table 2. Characteristics of participants and estimated percentages of persons living with diagnosed HIV infection by selected characteristics—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Gender			
Male	2,640	74.7	72.1–77.4
Female	967	23.9	21.2–26.6
Transgender[d]	42	1.4	0.8–1.9
Sexual orientation			
Lesbian or gay	1,495	42.4	38.7–46.2
Heterosexual or straight	1,773	47.7	44.1–51.3
Bisexual	280	7.8	6.6–8.9
Other	74	2.2	1.6–2.8
Race/ethnicity			
American Indian/Alaska Native	—	—	—
Asian	33	0.7	0.3–1.2
Black/African American	1,534	41.2	31.0–51.4
Hispanic/Latino[e]	807	22.8	14.7–30.9
Native Hawaiian/Other Pacific Islander	—	—	—
White	1,110	30.2	23.2–37.1
Multiple races	152	4.3	3.0–5.6
Age at time of interview (yr)			
18–24	88	2.8	2.1–3.6
25–29	222	6.4	5.4–7.5
30–34	281	7.7	6.6–8.8
35–39	318	8.2	7.1–9.3
40–44	379	11.0	9.8–12.1
45–49	567	15.6	14.1–17.0
50–54	677	18.6	16.9–20.3
55–59	562	15.0	13.7–16.4
60–64	327	8.7	7.6–9.8
≥65	233	5.9	4.9–6.9
Education			
Less than high school	721	19.9	17.4–22.3
High school diploma or GED	916	24.2	22.3–26.0
More than high school	1,995	55.9	52.7–59.2
Country or territory of birth			
United States or U.S. territory	3,105	86.3	84.3–88.4
Foreign born	514	13.7	11.6–15.7
Time since HIV diagnosis (yr)			
<5	608	16.5	15.2–17.8
5–9	759	21.6	18.9–24.4
≥10	2,278	61.9	58.8–64.9
Homeless at any time, past 12 months[f]			
Yes	316	8.5	7.1–9.8
No	3,319	91.5	90.2–92.9
Incarcerated >24 hours, past 12 months			
Yes	188	5.1	3.9–6.2
No	3,447	94.9	93.8–96.1
Health insurance or coverage for antiretroviral medications, past 12 months[g]			
Yes	3,582	98.1	96.8–99.4
No	36	1.9*	0.6–3.2
Type of health insurance or coverage for antiretroviral medications, past 12 months			
Ryan White			
Yes	1,683	44.9	42.6–47.1
No	1,854	55.1	52.9–57.4
Medicaid			
Yes	1,685	44.8	42.2–47.4
No	1,894	55.2	52.6–57.8
Private health insurance			
Yes	1,224	34.9	32.0–37.9
No	2,326	65.1	62.1–68.0

Table 2. Characteristics of participants and estimated percentages of persons living with diagnosed HIV infection by selected characteristics—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Medicare			
Yes	1,010	27.5	25.6–29.4
No	2,540	72.5	70.6–74.4
Other public insurance			
Yes	464	12.5*	4.3–20.7
No	3,101	87.5	79.3–95.7
Tricare/CHAMPUS or Veterans Administration			
Yes	114	4.8	3.6–5.9
No	3,416	95.2	94.1–96.4
Insurance type unknown[h]			
Yes	40	1.5	0.7–2.3
No	3,496	98.5	97.7–99.3
Any disability[i]			
Yes	1,633	45.3	42.4–48.3
No	1,994	54.7	51.7–57.6
Received Supplemental Security Income (SSI), past 12 months			
Yes	788	19.8	17.1–22.6
No	2,820	80.2	77.4–82.9
Received Social Security Disability Insurance (SSDI), past 12 months			
Yes	904	25.5	23.5–27.5
No	2,681	74.5	72.5–76.5
Went without food due to lack of money, past 12 months			
Yes	771	21.5	19.6–23.3
No	2,862	78.5	76.7–80.4
Employment status[j]			
Employed	1,629	44.6	42.2–47.1
Unemployed	1,644	44.9	42.3–47.5
Student	63	1.9	1.4–2.5
Retired	299	8.5	7.0–10.1
Combined yearly household income (US$)[k]			
0–19,999	1,956	56.3	52.1–60.5
20,000–39,999	705	21.4	19.2–23.6
40,000–74,999	458	14.1	12.2–16.0
≥75,000	309	8.2	6.6–9.8
Poverty guidelines[l]			
Above poverty threshold	1,819	53.6	49.6–57.6
At or below poverty threshold	1,608	46.4	42.4–50.4
Total	**3,654**	**100**	

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

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses. Values with an absolute confidence interval width ≥0.30 and values with an absolute confidence interval width of between 0.05 and 0.30 and a relative confidence interval width >130% 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 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] Hispanics or Latinos might 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] Persons could select more than 1 response for health insurance or coverage for antiretroviral medications.

[h] Unknown insurance type means that the person had insurance or coverage for antiretroviral medications, but the type of insurance or coverage could not be determined.

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

[j] Employed includes employed for wages, self-employed, or homemaker.

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

[l] Poverty guidelines as defined by HHS; the 2014 guidelines were used for persons interviewed in 2015 and the 2015 guidelines were used for persons interviewed in 2016. More information regarding HHS poverty guidelines can be found at https://aspe.hhs.gov/frequently-asked-questions-related-poverty-guidelines-and-poverty.

Table 3. Stage of disease, CD4 counts, and viral suppression during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
HIV infection stage 3 (AIDS)[d]			
Yes	2,154	56.9	54.1–59.7
No	1,500	43.1	40.3–45.9
Geometric mean CD4 count (cells/μL)			
0–199	282	9.0	7.0–11.0
200–349	404	11.9	10.6–13.1
350–499	593	18.4	16.6–20.2
≥500	1,894	60.7	57.9–63.6
Lowest CD4 count (cells/μL), past 12 months			
0–49	96	2.8	2.1–3.5
50–199	300	9.3	7.3–11.4
200–349	505	14.6	13.3–15.8
350–499	655	21.2	19.0–23.4
≥500	1,633	52.1	48.8–55.4
Viral suppression			
Most recent viral load documented undetectable or <200 copies/mL	2,738	70.1	67.6–72.6
Most recent viral load documented detectable, ≥200 copies/mL, or missing/unknown	916	29.9	27.4–32.4
Sustained viral suppression			
All viral load measurements documented undetectable or <200 copies/mL	2,415	62.5	59.6–65.4
Any viral load ≥200 copies/mL or missing/unknown	1,239	37.5	34.6–40.4
Total	**3,654**	**100**	

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

Source of disease stage information: CDC. Revised surveillance case definitions for HIV infection among adults, adolescents, and children aged <18 months and for HIV infection and AIDS among children aged 18 months to <13 years—United States, 2008. *MMWR* 2008;57(RR-10):1–12.

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

Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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. Access to, and quality of, care—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Ever received outpatient HIV care[d]			
Yes	—	—	—
No	—	—	—
Received outpatient HIV care, past 12 months[d]			
Yes	3,600	96.6	95.6–97.6
No	48	3.4	2.4–4.4
Received outpatient HIV care, past 24 months[d]			
Yes	3,629	98.6	97.9–99.3
No	19	1.4	0.7–2.1
Retained in care, past 12 months[e]			
Yes	3,083	80.0	77.4–82.6
No	472	20.0	17.4–22.6
Retained in care, past 24 months[e]			
Yes	2,471	64.0	60.2–67.7
No	1,080	36.0	32.3–39.8
Prescribed ART, past 12 months[f]			
Yes	3,244	85.3	83.6–87.0
No	410	14.7	13.0–16.4
Prescribed PCP prophylaxis, past 12 months[g]			
Yes	164	50.8	39.9–61.6
No	162	49.2	38.4–60.1
Prescribed MAC prophylaxis, past 12 months[h]			
Yes	33	45.6	33.4–57.9
No	45	54.4	42.1–66.6
Received influenza vaccination, past 12 months			
Yes	2,898	77.8	74.9–80.6
No	710	22.2	19.4–25.1
Total	**3,654**	**100**	

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

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

Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, “don’t know” responses, and skipped (missing) responses.

[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.

[h] Among persons with CD4 cell count <50 cells/μL.

Table 5. Sexually transmitted disease testing during the 12 months before the interview, by sexual activity—Medical Monitoring Project, United States, 2015

	Total population			Sexually active[a] persons only		
	No.[b]	%[c]	95% CI[d]	No.[b]	%[c]	95% CI[d]
Gonorrhea[e]						
Yes, received test	1,516	40.0	36.0–43.9	991	44.5	39.9–49.1
No test documented	1,959	60.0	56.1–64.0	1,052	55.5	50.9–60.1
Chlamydia[f]						
Yes, received test	1,515	39.9	36.0–43.9	990	44.4	39.8–49.0
No test documented	1,960	60.1	56.1–64.0	1,053	55.6	51.0–60.2
Syphilis[g]						
Yes, received test	2,221	59.6	57.0–62.3	1,370	62.7	59.6–65.8
No test documented	1,254	40.4	37.7–43.0	673	37.3	34.2–40.4
Gonorrhea, chlamydia, and syphilis						
Yes, received all 3 tests	1,316	34.6	31.1–38.0	870	39.3	35.2–43.4
All 3 tests not documented	2,159	65.4	62.0–68.9	1,173	60.7	56.6–64.8
Total	**3,654**	**100**		**2,145**	**100**	

Abbreviations: CI, confidence interval; EIA, enzyme immunoassay [footnotes only]; NAAT, nucleic acid amplification test [footnotes only].

Note. Information on laboratory testing for sexually transmitted diseases was based on medical records abstraction.

Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

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

[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, gram stain, enzyme immunoassay (EIA), the nucleic acid amplification test (NAAT), or the nucleic acid probe.

[f] *Chlamydia trachomatis* testing was defined as a result from culture, direct fluorescent antibody (DFA), EIA or enzyme-linked immunoassay (ELISA), NAAT, or nucleic acid probe.

[g] Syphilis testing was defined as a result from nontreponemal syphilis tests (rapid plasma reagin [RPR], Venereal Disease Research Laboratory [VDRL]), treponemal syphilis tests (*Treponema pallidum* hemagglutination assay [TPHA], *T. pallidum* particle agglutination [TP-PA], microhemagglutination assay for antibody to *T. pallidum* [MHA-TP], fluorescent treponemal antibody absorbed [FTA-ABS] tests), or dark-field microscopy.

Table 6. Emergency department and hospital admission during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Number of visits to emergency department			
0	2,312	63.9	60.4–67.3
1	644	17.5	15.9–19.1
2–4	550	15.6	13.3–17.8
≥5	116	3.1	2.3–3.8
Number of hospital admissions			
0	3,021	84.3	82.9–85.6
1	344	9.1	7.8–10.3
2–4	212	5.3	4.1–6.5
≥5	47	1.3	0.8–1.8
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 7. Antiretroviral therapy (ART) use—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Ever taken ART			
Yes	3,536	96.2	95.2–97.3
No	96	3.8	2.7–4.8
Currently taking ART			
Yes	3,411	91.2	89.7–92.7
No	221	8.8	7.3–10.3
Reasons for never taking ART[d]			
Health care provider never discussed taking ART with person			
Yes	19	20.7	8.7–32.6
No	71	79.3	67.4–91.3
Health care provider said person should not start taking ART			
Yes	48	42.7	30.8–54.5
No	42	57.3	45.5–69.2
Money or insurance problems			
Yes	—	—	—
No	—	—	—
Person doesn't believe he/she needs ART			
Yes	26	25.3	16.8–33.8
No	62	74.7	66.2–83.2
Person thinks ART would make him/her feel sick or harm him/her			
Yes	23	25.5	13.0–38.0
No	65	74.5	62.0–87.0
Person decided not to take ART for some other reason			
Yes	23	26.4	14.7–38.2
No	66	73.6	61.8–85.3
Reasons for not currently taking ART, among those persons with a history of ART use[d]			
Health care provider never discussed restarting ART with person			
Yes	16	11.0	4.6–17.4
No	109	89.0	82.6–95.4
Health care provider said person should not take ART			
Yes	17	8.7	4.4–13.0
No	108	91.3	87.0–95.6
Money or insurance problems			
Yes	35	26.6	15.6–37.5
No	90	73.4	62.5–84.4
Person doesn't believe he/she needs ART			
Yes	28	23.8	13.7–34.0
No	95	76.2	66.0–86.3
Person thinks ART would make him/her feel sick or harm him/her			
Yes	37	30.4	19.4–41.4
No	87	69.6	58.6–80.6
Person decided not to take ART for some other reason			
Yes	45	40.5	28.4–52.7
No	80	59.5	47.3–71.6
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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 among persons taking ART—Medical Monitoring Project, United States, 2015

	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	2,018	59.5	57.1–61.9
1–2	861	25.0	23.0–27.0
3–5	335	10.0	8.5–11.5
6–10	112	3.4	2.7–4.2
11+	75	2.0	1.4–2.7
How well did you do at taking your HIV medicines in the way you were supposed to?			
Very poor	46	1.2	0.7–1.8
Poor	59	1.6	1.1–2.1
Fair	168	5.2	4.2–6.3
Good	413	12.1	10.9–13.4
Very good	914	26.0	24.3–27.7
Excellent	1,805	53.8	51.4–56.1
How often did you take your HIV medicines in the way you were supposed to?			
Never	42	1.2	0.6–1.8
Rarely	25	0.8	0.4–1.2
Sometimes	74	1.9	1.4–2.3
Usually	162	4.7	3.7–5.7
Almost always	805	22.9	21.4–24.5
Always	2,298	68.5	66.6–70.4
How often were you troubled by ART side effects?			
Never	2,354	68.5	66.0–71.0
Rarely	535	16.6	14.7–18.5
About half the time	234	7.1	6.1–8.1
Most of the time	125	3.7	3.0–4.4
Always	141	4.1	3.2–5.0
Reasons for last missed ART dose[d]			
Had a problem getting a prescription, a refill, insurance coverage, or paying for HIV medicines			
Yes	506	14.9	13.4–16.5
No	2,857	85.1	83.5–86.6
In the hospital or too sick to take HIV medicine			
Yes	195	6.6	5.3–7.8
No	3,169	93.4	92.2–94.7
Fell asleep early or overslept			
Yes	663	20.4	18.4–22.3
No	2,700	79.6	77.7–81.6
Change in your daily routine or were out of town			
Yes	835	25.2	22.9–27.5
No	2,525	74.8	72.5–77.1
Had side effects from your HIV medicines			
Yes	212	6.8	5.5–8.1
No	3,147	93.2	91.9–94.5
Felt depressed or overwhelmed			
Yes	340	10.4	9.3–11.5
No	3,020	89.6	88.5–90.7
Was drinking or using drugs			
Yes	193	5.8	4.1–7.5
No	3,169	94.2	92.5–95.9
Forgot to take HIV medicines			
Yes	1,218	36.6	34.1–39.0
No	2,143	63.4	61.0–65.9
Did not feel like taking HIV medicines			
Yes	259	7.5	6.7–8.3
No	3,102	92.5	91.7–93.3
Total	**3,411**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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 by subgroups—Medical Monitoring Project, United States, 2015

	Prescription of ART			ART dose adherence[a]			Sustained viral suppression[b]			Geometric mean CD4 count ≥200		
	No.[c]	Row %[d]	95% CI[e]	No.[c]	Row %[d]	95% CI[e]	No.[c]	Row %[d]	95% CI[e]	No.[c]	Row %[d]	95% CI[e]
Gender												
Male	2,369	86.6	84.9–88.4	1,483	59.8	57.5–62.0	1,773	63.2	60.1–66.3	2,081	90.7	88.4–93.0
Female	835	81.5	78.1–84.8	516	59.4	54.7–64.1	610	60.1	56.4–63.8	775	92.0	89.5–94.5
Transgender[f]	37	83.7*	66.4–100.0	19	55.0*	36.5–73.4	29	67.3*	47.6–87.0	32	88.2	79.4–97.0
Sexual orientation												
Lesbian or gay	1,352	87.0	84.4–89.6	834	59.3	56.2–62.3	1,049	65.1	61.4–68.8	1,183	92.8	91.3–94.3
Heterosexual or straight	1,558	84.3	82.0–86.5	1,006	61.0	57.5–64.6	1,121	60.5	56.9–64.1	1,413	89.9	87.2–92.6
Bisexual	243	82.6	76.5–88.8	140	56.5	49.2–63.8	180	61.8	55.5–68.2	219	91.3	87.9–94.7
Other	63	84.1	73.0–95.2	32	43.2	28.7–57.8	50	67.5	57.2–77.7	55	87.2	73.3–100.0
Race/ethnicity												
American Indian/Alaska Native	10	100*		—	—	—	8	75.2*	37.1–100.0	9	100*	
Asian	32	96.7	90.2–100.0	19	69.4*	54.0–84.8	22	71.5	57.8–85.2	27	95.0	89.7–100.0
Black/African American	1,326	81.9	79.2–84.6	764	54.7	50.3–59.0	917	54.6	50.9–58.3	1,183	88.1	85.1–91.1
Hispanic/Latino[g]	731	87.0	82.4–91.5	453	60.2	56.1–64.3	556	66.8	60.8–72.8	670	93.6	91.7–95.5
Native Hawaiian/Other Pacific Islander	8	100*		—	—	—	7	85.8*	57.6–100.0	6	85.4*	56.2–100.0
White	1,007	88.2	84.8–91.6	690	64.6	61.0–68.2	811	69.7	66.2–73.1	882	92.5	90.2–94.8
Multiple races	130	83.5	74.0–92.9	82	59.2	51.4–66.9	94	60.7	47.7–73.7	114	91.1	82.9–99.2
Age at time of interview (yr)												
18–29	251	70.7	64.3–77.2	120	46.0	38.5–53.5	142	40.0	33.3–46.7	223	90.8	86.2–95.3
30–39	524	82.3	77.7–86.8	264	51.1	45.7–56.5	344	53.9	48.3–59.4	457	90.0	87.6–92.5
40–49	854	88.7	86.2–91.1	532	61.5	58.0–64.9	637	63.6	59.0–68.2	744	91.6	87.8–95.3
≥50	1,615	87.2	84.8–89.7	1,102	63.2	60.4–66.1	1,292	69.1	66.1–72.0	1,467	91.0	89.1–93.0
Total	**3,244**	**85.3**	**83.6–87.0**	**2,018**	**59.5**	**57.1–61.9**	**2,415**	**62.5**	**59.6–65.4**	**2,891**	**91.0**	**89.0–93.0**

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

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width ≥0.30, and values with an absolute confidence interval width of between 0.05 and 0.30 and a relative confidence interval width >130% are marked with an asterisk and should be interpreted with caution.

[a] In past 30 days, 100% adherence to ART doses.

[b] All viral load measurements in the 12 months preceding the interview documented undetectable or <200 copies/mL.

[c] Numbers are unweighted.

[d] Percentages are weighted percentages.

[e] CIs incorporate weighted percentages.

[f] 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.

[g] Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

Table 10. Depression and anxiety during the 2 weeks before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Depression based on DSM-IV criteria[d]			
No depression	2,842	77.2	74.9–79.5
Other depression	385	11.4	10.0–12.7
Major depression	385	11.5	9.7–13.3
Moderate or severe depression (PHQ-8 score ≥10)			
Yes	611	18.1	15.9–20.2
No	3,001	81.9	79.8–84.1
Anxiety[e]			
No anxiety	2,744	75.1	72.9–77.2
Mild anxiety	217	5.8	4.9–6.6
Moderate anxiety	324	9.3	8.1–10.4
Severe anxiety	330	9.9	8.3–11.6
Total	**3,654**	**100**	

Abbreviations: CI, confidence interval; DSM-IV, *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition; PHQ-8, Patient Health Questionnaire.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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.

[e] Responses to the Generalized Anxiety Disorder Scale (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 <15 and ≥10; and "mild anxiety" was defined as having a score of <10 and ≥5.

Table 11. Tobacco and electronic cigarette use—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Smoked ≥100 cigarettes (lifetime)			
Yes	2,044	57.3	54.6–60.0
No	1,580	42.7	40.0–45.4
Cigarette smoking status			
Never smoked	1,580	42.7	40.0–45.4
Former smoker	805	21.6	19.4–23.8
Current smoker	1,239	35.7	33.4–38.0
Frequency of current cigarette smoking			
Never	2,385	64.3	62.0–66.6
Daily	1,020	29.4	27.4–31.3
Weekly	115	3.3	2.6–4.1
Monthly	30	0.9	0.4–1.3
Less than monthly	74	2.2	1.6–2.8
Smoked ≥50 cigars, cigarillos, or little filtered cigars (lifetime)			
Yes	517	14.7	12.9–16.5
No	3,109	85.3	83.5–87.1
Cigars, cigarillos, or little filtered cigars smoking status			
Never smoked	3,109	85.3	83.5–87.1
Former smoker	246	6.7	5.4–8.0
Current smoker	271	8.1	6.5–9.7
Frequency of current cigars, cigarillos, or little filtered cigars smoking			
Never	3,355	91.9	90.3–93.5
Daily	90	2.8	2.0–3.5
Some days	73	2.2	1.4–2.9
Rarely	108	3.1	2.3–3.9
Electronic cigarette smoking status			
Never used electronic cigarettes	2,799	76.0	72.1–80.0
Used electronic cigarettes, but not in the past 30 days	619	17.8	14.6–21.1
Used electronic cigarettes in the past 30 days	209	6.1	4.9–7.4
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, “don’t know” responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 12. Alcohol use during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Any alcohol use[d]			
Yes	2,232	62.5	59.7–65.3
No	1,395	37.5	34.7–40.3
Frequency of alcohol use			
Daily	209	5.8	4.7–6.9
Weekly	671	17.6	15.6–19.5
Monthly	440	11.7	10.4–13.1
Less than monthly	912	27.4	24.8–30.0
Never	1,395	37.5	34.7–40.3
Binge drinking, past 30 days[e]			
Yes	541	15.3	13.8–16.7
No	3,066	84.7	83.3–86.2
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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 the 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 the interview.

Table 13. Noninjection drug use during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Use of any noninjection drugs[d]			
Yes	1,054	29.4	27.0–31.8
No	2,571	70.6	68.2–73.0
Noninjection drugs used[d]			
Marijuana			
Yes	894	25.3	22.9–27.8
No	2,731	74.7	72.2–77.1
Crack			
Yes	111	2.7	2.2–3.3
No	3,512	97.3	96.7–97.8
Cocaine that is smoked or snorted			
Yes	180	4.5	3.6–5.3
No	3,445	95.5	94.7–96.4
Methamphetamine (e.g., crystal meth, tina, crank, ice)			
Yes	189	5.1	2.9–7.3
No	3,434	94.9	92.7–97.1
Amphetamine (e.g., speed, bennies, uppers)			
Yes	47	1.0	0.6–1.3
No	3,577	99.0	98.7–99.4
Club drugs (e.g., Ecstasy or X, ketamine or Special K, GHB or Liquid Ecstasy)			
Yes	122	3.0	2.2–3.7
No	3,502	97.0	96.3–97.8
Amyl nitrite (poppers)			
Yes	180	4.6	3.1–6.0
No	3,443	95.4	94.0–96.9
Prescription opioids (e.g., oxycodone, hydrocodone, Vicodin, Percocet)[e]			
Yes	126	3.7	3.0–4.4
No	3,498	96.3	95.6–97.0
Prescription tranquilizers (e.g., Valium, Ativan, Xanax, downers, nerve pills)[e]			
Yes	76	2.2	1.4–3.0
No	3,548	97.8	97.0–98.6
Total	**3,654**	**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 missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[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] That was not prescribed or was prescribed but taken more than directed.

Table 14. Injection drug use during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Use of any injection drugs			
Yes	113	2.9	1.8–4.1
No	3,511	97.1	95.9–98.2
Injection drugs used			
Cocaine			
Yes	—	—	—
No	—	—	—
Heroin			
Yes	30	0.7	0.4–1.0
No	3,594	99.3	99.0–99.6
Heroin and cocaine (speedball)			
Yes	—	—	—
No	—	—	—
Methamphetamine (e.g., crystal meth, tina, crank, ice)			
Yes	88	2.4	1.2–3.6
No	3,536	97.6	96.4–98.8
Amphetamine (e.g., speed, bennies, uppers)			
Yes	—	—	—
No	—	—	—
Prescription opioids (e.g., OxyContin, oxycodone, hydrocodone)			
Yes	—	—	—
No	—	—	—
Total	**3,654**	**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 missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, “don’t know” responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 15. Gynecological care and reproductive health among women—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Papanicolaou (Pap) test, past 12 months			
Yes	711	70.3	66.4–74.1
No	240	29.7	25.9–33.6
Pregnant since HIV diagnosis			
Yes	257	27.7	24.8–30.6
No	699	72.3	69.4–75.2
Total	**967**	**100**	

Abbreviation: CI, confidence interval.

Note. Measures are self-reported. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding. Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 16. Sexual behavior during the 12 months before the interview among cisgender men and women—Medical Monitoring Project, United States, 2015

	Men			Women		
Behavior	**No.[a]**	**%[b]**	**95% CI[c]**	**No.[a]**	**%[b]**	**95% CI[c]**
Engaged in anal sex with men						
Receptive						
Yes	887	33.8	30.4–37.2	33	3.5	2.0–5.0
No	1,675	66.2	62.8–69.6	921	96.5	95.0–98.0
Insertive						
Yes	816	31.6	29.0–34.1	—	—	—
No	1,746	68.4	65.9–71.0	—	—	—
Engaged in anal sex with women						
Yes	77	2.7	2.2–3.3	—	—	—
No	2,558	97.3	96.7–97.8	—	—	—
Engaged in vaginal sex						
Yes	528	19.8	17.2–22.4	513	54.5	50.5–58.5
No	2,051	80.2	77.6–82.8	442	45.5	41.5–49.5
Engaged in vaginal or anal sex						
Yes	1,607	61.3	59.3–63.3	514	54.6	50.5–58.7
No	968	38.7	36.7–40.7	441	45.4	41.3–49.5
Number of vaginal or anal sex partners among						
MSM[d]						
Mean	7			—		
Median	2			—		
Range	1–960			—		
MSW[e]						
Mean	2			—		
Median	1			—		
Range	1–40			—		
WSM[f]						
Mean	—			1		
Median	—			1		
Range	—			1–50		
Total	**2,640**	**100**		**967**	**100**	

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

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

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

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

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

Table 17. Sexual behavior during the 12 months before the interview among transgender persons—Medical Monitoring Project, United States, 2015

	Transgender[a,b]			Transgender women[a]			Transgender men[b]		
Behavior	**No.[c]**	**%[d]**	**95% CI[e]**	**No.[c]**	**%[d]**	**95% CI[e]**	**No.[c]**	**%[d]**	**95% CI[e]**
Engaged in vaginal or anal sex									
Yes	24	63.1*	44.8–81.3	22	66.4*	48.2–84.7	—	—	—
No	17	36.9*	18.7–55.2	14	33.6*	15.3–51.8	—	—	—
Engaged in vaginal or anal sex with men									
Yes	22	58.6*	40.1–77.1	20	61.5*	42.6–80.3	—	—	—
No	19	41.4*	22.9–59.9	16	38.5*	19.7–57.4	—	—	—
Engaged in vaginal or anal sex with women									
Yes	4	16.7*	0.0–35.3	—	—	—	0	0.0*	
No	37	83.3*	64.7–100.0	—	—	—	4	100*	
Engaged in vaginal or anal sex with transgender partners									
Yes	—	—	—	—	—	—	0	0.0*	
No	—	—	—	—	—	—	4	100*	
Reported any high-risk sex[f]									
Yes	—	—	—	—	—	—	0	0.0*	
No	—	—	—	—	—	—	4	100*	
Number of vaginal or anal sex partners[g]									
Mean	6			7			1		
Median	2			3			1		
Range	1–20			1–20			1–1		
Total	**42**	**100**		**37**	**100**		**4**	**100**	

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

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30, values with an absolute confidence interval width ≥0.30, and values with an absolute confidence interval width of between 0.05 and 0.30 and a relative confidence interval width >130% are marked with an asterisk and should be interpreted with caution.

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

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

[c] Numbers are unweighted.

[d] Percentages are weighted percentages.

[e] CIs incorporate weighted percentages.

[f] Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not sustainably virally suppressed, a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

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

Corrected data on estimates of high-risk sex and condomless sex with a partner on PrEP—May 2, 2019.

Table 18. Sexual behavior during the 12 months before the 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)—Medical Monitoring Project, United States, 2015

	MSM			MSW			WSM		
Behavior	**No.[a]**	**%[b]**	**95% CI[c]**	**No.[a]**	**%[b]**	**95% CI[c]**	**No.[a]**	**%[b]**	**95% CI[c]**
Engaged in any high-risk sex[d]									
Yes	112	7.1	5.5–8.7	39	5.2	3.3–7.2	63	7.0	3.5–10.5
No	1,622	92.9	91.3–94.5	783	94.8	92.8–96.7	863	93.0	89.5–96.5
Engaged in any high-risk sex among sexually active persons[d]									
Yes	112	11.1	8.7–13.4	39	9.4	6.0–12.7	63	12.6	7.0–18.2
No	998	88.9	86.6–91.3	444	90.6	87.3–94.0	445	87.4	81.8–93.0
Percentages of sexually active persons who used a prevention strategy with at least 1 partner									
Sex while sustainably virally suppressed[e]									
Yes	748	63.7	59.0–68.4	304	59.9	54.6–65.2	326	60.4	54.6–66.2
No	369	36.3	31.6–41.0	184	40.1	34.8–45.4	188	39.6	33.8–45.4
Condom-protected sex[f]									
Yes	692	64.8	59.3–70.2	368	74.5	68.9–80.1	303	59.6	54.1–65.0
No	408	35.2	29.8–40.7	111	25.5	19.9–31.1	194	40.4	35.0–45.9
Condomless sex with a partner on PrEP[g]									
Yes	108	9.4	6.0–12.8	—	—	—	—	—	—
No	1,005	90.6	87.2–94.0	—	—	—	—	—	—
Sex with an HIV-positive partner[h]									
Yes	700	59.6	54.6–64.6	101	20.5	17.0–23.9	133	28.7	24.3–33.1
No	417	40.4	35.4–45.4	387	79.5	76.1–83.0	381	71.3	66.9–75.7
Total	**1,753**	**100**		**834**	**100**		**936**	**100**	

Abbreviations: CI, confidence interval; PrEP, preexposure prophylaxis.

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

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

[d] Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not sustainably virally suppressed, a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

[e] HIV viral load <200 copies/mL documented in the medical record at every measure in the past 12 months before the interview.

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

[g] At least 1 HIV-negative condomless-sex partner was on PrEP. PrEP use was only measured among the 5 most recent partners and was reported by the HIV-positive partner.

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

Table 19. Met and unmet needs for ancillary services during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	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]
Dental care						
Yes	2,143	56.2	52.4–60.0	868	25.6	22.8–28.5
No	1,484	43.8	40.0–47.6	2,759	74.4	71.5–77.2
HIV case management services						
Yes	2,074	54.3	49.4–59.3	210	6.8	5.3–8.3
No	1,541	45.7	40.7–50.6	3,405	93.2	91.7–94.7
Medicine through ADAP						
Yes	1,692	45.4	43.0–47.7	116	4.5	3.4–5.5
No	1,832	54.6	52.3–57.0	3,408	95.5	94.5–96.6
Supplemental Nutrition Assistance Program (SNAP) or Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)						
Yes	1,510	41.1	37.8–44.3	436	11.7	10.3–13.2
No	2,113	58.9	55.7–62.2	3,187	88.3	86.8–89.7
Mental health services						
Yes	1,206	31.3	28.4–34.3	347	9.9	8.8–11.1
No	2,410	68.7	65.7–71.6	3,269	90.1	88.9–91.2
Professional help remembering to take HIV medicines on time or correctly (adherence support services)						
Yes	1,128	29.2	25.3–33.0	33	1.1	0.6–1.7
No	2,493	70.8	67.0–74.7	3,588	98.9	98.3–99.4
Transportation assistance						
Yes	897	22.9	20.9–24.8	325	9.2	8.0–10.4
No	2,731	77.1	75.2–79.1	3,303	90.8	89.6–92.0
Meal or food services[d]						
Yes	794	20.9	18.7–23.1	344	9.7	8.0–11.4
No	2,831	79.1	76.9–81.3	3,281	90.3	88.6–92.0
Shelter or housing services						
Yes	649	16.7	14.8–18.7	411	11.8	9.4–14.1
No	2,974	83.3	81.3–85.2	3,212	88.2	85.9–90.6
HIV peer group support						
Yes	477	12.2	10.7–13.6	275	8.0	6.8–9.2
No	3,132	87.8	86.4–89.3	3,334	92.0	90.8–93.2
Patient navigation services						
Yes	442	12.2	10.3–14.0	202	6.8	4.6–9.0
No	3,168	87.8	86.0–89.7	3,408	93.2	91.0–95.4
Drug or alcohol counseling or treatment						
Yes	307	7.7	6.7–8.8	80	2.3	1.7–2.9
No	3,319	92.3	91.2–93.3	3,546	97.7	97.1–98.3
Interpreter services						
Yes	139	3.8	2.8–4.7	13	0.3*	0.1–0.5
No	3,496	96.2	95.3–97.2	3,622	99.7	99.5–99.9
Domestic violence services						
Yes	48	1.3	0.8–1.9	29	0.9	0.5–1.4
No	3,575	98.7	98.1–99.2	3,594	99.1	98.6–99.5
Total	**3,654**	**100**		**3,654**	**100**	

Abbreviations: CI, confidence interval; ADAP, AIDS Drug Assistance Program.

Note. Persons could report receiving or needing more than 1 service. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses. Values with an absolute confidence interval width ≥0.30 and values with an absolute confidence interval width of between 0.05 and 0.30 and a relative confidence interval width >130% 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] Includes services such as soup kitchens, food pantries, food banks, church dinners, or food delivery services.

Table 20. Intimate partner violence and sexual violence—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
Was ever slapped, punched, shoved, kicked, choked, or otherwise physically hurt by a romantic or sexual partner			
Yes	1,000	27.4	25.4–29.4
No	2,615	72.6	70.6–74.6
Was slapped, punched, shoved, kicked, choked, or otherwise physically hurt by a romantic or sexual partner, past 12 months			
Yes	171	5.1	4.2–5.9
No	3,443	94.9	94.1–95.8
Was ever threatened with harm or physically forced to have unwanted vaginal, anal, or oral sex			
Yes	617	16.3	13.9–18.6
No	2,983	83.7	81.4–86.1
Was threatened with harm or physically forced to have unwanted vaginal, anal, or oral sex, past 12 months			
Yes	47	1.4	0.9–2.0
No	3,553	98.6	98.0–99.1
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, “don’t know” responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Table 21. Prevention services received during the 12 months before the interview—Medical Monitoring Project, United States, 2015

	No.[a]	%[b]	95% CI[c]
One-on-one HIV/STD risk-reduction conversation with physician, nurse, or other health care worker			
Yes	2,021	54.0	49.8–58.2
No	1,606	46.0	41.8–50.2
One-on-one HIV/STD risk-reduction conversation with outreach worker, counselor, or prevention program worker			
Yes	1,267	33.7	28.6–38.7
No	2,362	66.3	61.3–71.4
Attended an organized HIV/STD risk-reduction session involving a small group of people			
Yes	551	14.3	11.7–16.9
No	3,078	85.7	83.1–88.3
Received free condoms			
Yes	2,011	54.6	51.8–57.5
No	1,615	45.4	42.5–48.2
Total	**3,654**	**100**	

Abbreviation: CI, confidence interval.

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

Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, “don’t know” responses, and skipped (missing) responses.

[a] Numbers are unweighted.

[b] Percentages are weighted percentages.

[c] CIs incorporate weighted percentages.

Corrected data on estimates of high-risk sex—May 2, 2019.

Table 22. National indicators: homelessness, HIV stigma, and high-risk sex—Medical Monitoring Project, United States, 2015

	Homeless in the 12 months preceding the interview among persons receiving HIV care in the past 12 months[a]			HIV stigma[b]			Engaged in any high-risk sex[c]		
	No.[d]	Row %[e]	95% CI[f]	No.[d]	Row median score	Interquartile range	No.[d]	Row %[e]	95% CI[f]
Gender									
Male	231	8.5	7.2–9.8	2,507	37.1	21.7–54.5	151	6.3	5.2–7.5
Female	71	7.3	5.6–9.1	907	43.7	28.0–61.6	63	6.8	3.4–10.2
Transgender[g]	—	—	—	42	27.3	17.6–55.9	—	—	—
Sexual orientation									
Lesbian or gay	102	5.9	4.1–7.6	1,442	36.7	21.0–53.3	90	7.2	5.4–8.9
Heterosexual or straight	165	9.8	8.0–11.7	1,670	39.3	24.5–59.2	101	6.1	4.4–7.8
Bisexual	31	10.6	5.5–15.6	266	38.7	22.9–59.6	20	7.0	4.3–9.8
Other	14	20.9	7.9–34.0	71	44.7	29.6–60.9	—	—	—
Race/ethnicity									
American Indian/Alaska Native	—	—	—	10	29.2*	22.0–61.1	0		
Asian	—	—	—	31	56.6	33.1–66.1	—	—	—
Black/African American	158	11.0	9.1–13.0	1,435	38.0	22.8–57.6	90	6.6	4.4–8.8
Hispanic/Latino[h]	63	7.6	4.5–10.8	769	38.9	25.0–57.6	37	5.1	3.0–7.1
Native Hawaiian/Other Pacific Islander	0			8	42.1*	18.5–56.4	0		
White	68	5.0	3.7–6.4	1,061	37.1	21.6–54.0	77	7.5	5.2–9.8
Multiple races	21	13.5	6.1–20.8	145	43.6	22.8–59.5	—	—	—
Age at time of interview (yr)									
18–29	37	14.6	9.0–20.1	296	40.5	28.4–59.4	44	18.6	13.1–24.2
30–39	81	13.3	9.5–17.1	577	42.6	27.7–61.6	68	10.5	7.3–13.7
40–49	76	7.1	4.9–9.3	886	38.0	22.7–58.2	45	5.2	3.1–7.4
≥50	118	6.4	5.1–7.8	1,700	35.6	20.0–52.8	60	3.7	2.6–4.9
Total	**312**	**8.4**	**7.2–9.6**	**3,459**	**38.3**	**22.9–56.8**	**217**	**6.6**	**5.5–7.6**

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

Note. Numbers might not add to total because of missing data. Percentages might not sum to 100 because of rounding.

Excluded are values with a coefficient of variation ≥0.30, "don't know" responses, and skipped (missing) responses. Values with a denominator sample size <30 are marked with an asterisk and should be interpreted with caution.

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

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

[c] Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not sustainably virally suppressed, a condom was not used, and the partner was not on PrEP. PrEP use was only measured among the 5 most recent partners.

[d] Numbers are unweighted.

[e] Percentages are weighted percentages.

[f] CIs incorporate weighted percentages.

[g] 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.

[h] Hispanics or Latinos might be of any race. Persons are classified in only 1 race/ethnicity category.

Appendix: Methods and Definitions

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]. 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. An analysis carried out in 2014 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). Consequently, we concluded that the selected sample of states was still sufficiently representative of the population of persons with diagnosed HIV and selecting a new sample for the 2015 data collection cycle 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 needs 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 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, 2014. This national data set was divided into 24 separate frame files according to the most recently reported residence information, with 1 frame for each of the 23 project areas and 1 residual file for all non-MMP project areas. Individuals were eligible for sampling if their vital status was alive, they were aged ≥18 years, and they were residents of the United States. Records in the NHSS are deidentified (under provisions of CDC's Assurance of Confidentiality) and include only limited information about where the person currently resides, lacking the more exact address information contained in local case surveillance systems. CDC staff drew simple random samples from the 23 separate frame files, and 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.

Nonresponse Analysis and Weighting

Data used to generate national estimates were weighted for the probability of selection based upon known probabilities of selection of states and individuals within states. In addition, data were weighted to adjust for nonresponse by using predictors of response, including sex, race/ethnicity, age of most recent contact information, transmission category, and the person's receipt of care as documented by laboratory test results in NHSS records. In 2015, frame data extracted from NHSS provided information for all sampled persons in MMP, regardless of response to the interview or from the medical record abstraction. These data provided descriptive information about all sampled persons for assessing how person characteristics were associated with nonresponse and were the source of data used for nonresponse analysis and weighting.

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, alive, and 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 in accordance with standard formulas [2].

Weighting

Overview

For the 2015 MMP cycle, sets of weights at the national level of analysis were produced independently of the local levels of analysis. Base weights were applied, and statistical adjustments were then made for multiplicity and nonresponse at the person level. These nonresponse adjustments distributed the base weights of nonresponding persons to responding persons, so that the sum of the adjusted weights equaled the sum of the base weights. After adjusting for nonresponse, the weights were then poststratified to population totals from the NHSS frame. Extreme weights were trimmed and the weights adjusted to the same population totals.

For the weighting process, an updated sampling frame was created by returning to the source of surveillance records approximately a year later, during which time additional information may have become available for persons reported to NHSS and additional diagnoses may have been reported. This updated frame added to the frame all records that would have been eligible if their information had met the inclusion criteria; primarily, these were diagnoses that occurred during the year prior to the MMP sampling date (for the 2015 cycle, December 31, 2014), but had not yet been reported on the date the initial sample was drawn. Additionally, some persons were found to have had multiple records pertaining to them at the time of sampling, which 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.

Adjustments for unequal selection probabilities

The base weight was the inverse probability of selection for the person, which varied by 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 had no effect on the national weights, but did affect the project area weight totals, increasing some slightly, 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 when the original frame was compared to the updated frame. This factor, which accounts for some persons' multiple opportunities for being sampled, was capped at 2.0 and was applicable for only 31 persons.

Adjustments for nonresponse

A nonresponse adjustment factor was then applied to the base weight. This factor makes use of information available for every sampled case from the NHSS frame data: personal demographics, HIV exposure category, laboratory data, and diagnosis data. Definitions of weighting classes were based on variables that were determined in bivariate analyses to be significantly related to response at the national or project area level. For the national adjustment factor, weighting classes were based on variables related to response: sex at birth, HIV exposure category, and the person's frequency of receipt of care (as indicated by NHSS records). For local project area data, the factors used for this adjustment varied, depending on the results of bivariate analyses. Within weighting classes, the adjustment 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.

Poststratification

The updated sampling frame provided information on the size and characteristics of the population with diagnosed HIV, which was used for poststratification to known distributions. A count of records on this updated frame provided an updated total population size estimate. Poststratifying to this total forced the sample-based estimate of population size to conform and corrected for late reports. This adjustment was

performed within classes defined by key demographics (age, race/ethnicity, and gender), so that the weight sum was preserved in each class.

Trimming

After poststratification, the need for trimming the adjusted weights, so as not to inflate variance, was assessed. Where the design effect due to weighting (measured as $1 + CV^2$, where CV is the coefficient of variation of the weights) exceeded 1.75, we capped the weights at the median weight plus 4 times the interquartile range of the weights, then redistributed the excess to preserve the weight total. This was implemented in 4 project areas, but was not needed for national weights. The effect of other weighting adjustments, however, reduced weight totals through the exclusion of sampled persons found to be ineligible, while approximately maintaining the proportional distributions of the factors used in the poststratification.

Design variables and variance estimation

Nationally, design variables indicating strata and cluster membership for each participating person accounted for the sample design. Many states were sampled with certainty, because of their higher AIDS prevalence, and each of these was defined as its own stratum. Elsewhere, strata were created by grouping 2 to 3 states (PSUs in the stratified PPS design) that had similar selection probabilities. Multiple project areas within certainty states were effectively substrata, and each project area remained its own stratum. For certainty PSUs, the participant was the cluster. For the strata composed of noncertainty states, the state was the cluster. 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

Sociodemographic Characteristics

- **Gender:** Categories were male, 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.
- **Health insurance, including coverage for antiretroviral therapy (ART) medications:** Participants were asked whether they had health insurance or coverage for ART medications during the 12 months before the 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, including coverage for ART medications.
- **Federal poverty guidelines:** Participants were asked about their combined monthly or yearly household income (in US$) from all sources during the 12 months before the 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 2014 guidelines [3] were used for participants interviewed in 2015, and the 2015 guidelines [4] were used for persons interviewed in 2016. 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 [5]. 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: 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. All were measured though 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 the interview, of any of the following medications: abacavir, amprenavir, atazanavir, cobicistat, darunavir, delavirdine, didanosine, dolutegravir, efavirenz, elvitagravir, emtricitabine, enfuvirtide, etravirine, fosamprenavir, indinavir, lamivudine, lopinavir/ritonavir, maraviroc, nelfinavir, nevirapine, raltegravir, rilpivarine, 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.
- ***Pneumocystis*** **pneumonia (PCP) prophylaxis:** Defined as documentation in the medical record, during the 12 months before the interview, that prophylaxis for PCP was prescribed among persons with a CD4 count of <200 cells/μL in the 12 months before the interview [6]. 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 this was specifically stated in the medical record or no length of time was specified for the course of treatment.
- ***Mycobacterium avium*** **complex (MAC) prophylaxis:** Defined as documentation in the medical record, during the 12 months before the interview, that prophylaxis for MAC disease was prescribed among persons with a CD4 count of <50 cells/μL in the 12 months before the interview [6]. Persons prescribed regimens typically given as MAC prophylaxis (azithromycin with or without ethambutol and/or rifabutin, clarithromycin with or without ethambutol and/or rifabutin, and rifabutin with or without azithromycin or azithromycin along with ethambutol) were not presumptively categorized as having received MAC prophylaxis unless this was specifically stated in the medical record 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 the interview.
- ***Neisseria gonorrhoeae*** **testing:** Defined as documentation in the medical record, during the 12 months before the interview, of a result from culture, Gram stain, enzyme immunoassay (EIA), nucleic acid amplification test (NAAT), or nucleic acid probe.
- ***Chlamydia trachomatis*** **testing:** Defined as documentation in the medical record, during the 12 months before the interview, of a result from culture, direct fluorescent antibody (DFA), EIA or enzyme-linked immunoassay (ELISA), NAAT, or nucleic acid probe.
- **Syphilis testing:** Defined as documentation in the medical record, during the 12 months before the 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 darkfield microscopy.

Self-reported ART Use and Adherence

- **ART adherence:** Participants were asked about their adherence to ART in the 30 days before the interview using questions from a 3-item scale developed by Wilson and colleagues [7]. 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 the 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 [8]. 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; (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) [9], for diagnosing major depression was used to classify adults receiving medical care for HIV infection 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. 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 [10].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 is 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; (7) feeling afraid as if something awful might happen. Responses were scored according to criteria from the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV-TR) [9]. 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 <15 and ≥10; and "mild anxiety" was defined as having a score of <10 and ≥5.
- **Alcohol use:** Participants were asked about alcohol use during the 12 months and 30 days before the 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 for men and ≥4 drinks in a single sitting for women in the past 30 days.

Sexual Behavior

- **Prevention modalities:** Reported behaviors that decrease the likelihood of HIV transmission to a sexual partner, including
  - Sex while sustainably virally suppressed: Vaginal or anal sex and the person's HIV viral load was documented in the medical record as <200 copies/mL at every measure in the past 12 months before the 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 HIV-negative condomless-sex partner was on PrEP. PrEP use was only measured among the 5 most

recent partners and was reported by the HIV-positive partner.
  - Sex with an HIV-positive partner: Vaginal or anal sex with at least 1 HIV-positive partner.
- **High-risk sex:** Vaginal or anal sex with at least 1 HIV-negative or unknown status partner while not sustainably virally suppressed, when a condom was not used, and the partner was not on PrEP.

Met and Unmet Needs for Ancillary Services

- **Met need:** Defined as an ancillary service (e.g., HIV case management services, dental care, mental health services) received during the 12 months before the interview.
- **Unmet need:** Defined as an ancillary service that the participant reported as needed but not received during the 12 months before the interview.

Division of HIV/AIDS Prevention National Indicators

Measures in this section are used by CDC's Division of HIV/AIDS Prevention for national monitoring and evaluation purposes.

- **Homelessness among persons receiving HIV care:** 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 the interview among person who received any outpatient HIV medical care in the 12 months before the interview.
- **HIV stigma:** 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, disclosure concerns, negative self-image, and perceived public attitudes about people with HIV [11].
- **High-risk sex:** See "Sexual Behavior" section above.

Ethics Statement

In accordance with guidelines for defining public health research [12], CDC determined MMP was public health surveillance used for disease control, program, or policy purposes. Local institutional review board approval was obtained at participating states and territories when required. Informed consent was obtained from all interviewed participants.

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