Behavioral and Clinical Characteristics of Persons Living with Diagnosed HIV San Francisco 2015-2016

MEDICAL MONITORING PROJECT

HIV Epidemiology Section
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1 Background

In 2005, in response to an Institute of Medicine report outlining the need for representative data on persons living with HIV, 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 [1,2]. In 2015, MMP sampling and weighting methods were revised to include all persons with diagnosed HIV regardless of HIV care status and a 2-stage sampling approach was implemented [3]. This is the first San Francisco report using data collected from these revised methods.

The National HIV/AIDS Strategy (NHAS) was released in 2010 to monitor progress towards achieving three primary goals: reducing HIV incidence, increasing access to care and optimizing health outcomes, and reducing HIV-related health disparities [4]. MMP data is used to measure three of the seventeen key NHAS indicators including the percentage of persons in HIV medical care who are homeless, the percentage of HIV diagnosed adults engaging in high-risk sex, and HIV-related stigma [4].

In San Francisco there were 233 persons newly diagnosed with HIV in 2016, down from 272 persons diagnosed in 2015 [5] and deaths among persons with HIV in San Francisco also declined from 256 in 2015 to 236 in 2016 [5], a reduction of 14.3% in new HIV diagnoses and 7.8% in deaths. These declines reflect an increase in the number of persons receiving antiretroviral therapy, which has resulted in sustained viral suppression. The increased survival of persons with HIV has led to an increasing number of persons living with HIV. As of December 31, 2016, there were 15,975 San Francisco residents living with HIV [5].

2 Methods

MMP is a cross-sectional, nationally representative, complex sample survey that assesses the clinical and behavioral characteristics of adults living with diagnosed HIV in the United States. Since 2015, the Medical Monitoring Project has used a stratified 2-stage sampling design. For the first stage, probability-proportion-to-size sampling based on AIDS prevalence was used to sample from all 50 United States and dependent areas, resulting in a sample of 16 states and Puerto Rico [6]. At the second stage, living adults with a reported HIV diagnosis in the National HIV Surveillance System (NHSS) were sampled [3]. The sampling date was December 31, 2014 for the 2015 MMP cycle and December 31, 2015 for the 2016 MMP cycle.

San Francisco is one of the 23 project areas participating in the MMP. In order to have a sufficiently large sample for data analysis, this report summarizes findings from two cycles of the MMP (2015 and 2016). The 2015 MMP cycle data was collected from June 2015 to May 2016, and the 2016 MMP cycle data was collected from June 2016 to May 2017.

Eligibility

Persons were eligible for participation if, as of the sampling date, they had received a diagnosis of HIV, were age ≥18 years, alive, and a resident of San Francisco on the sampling date.

Recruitment and Consent

MMP staff contacted sampled persons by telephone or letter. MMP was conducted as a supplemental HIV surveillance activity with a non-research determination during the 2015 and 2016 data collection cycles nationally and in San Francisco [7]. All participants gave informed consent [8] prior to the interview and signed a release of information (ROI) for a medical record abstraction.

Interview

Trained interviewers conducted an approximately one hour face-to-face standardized computer-assisted structured interview in either English or Spanish with sampled persons. Interviews were conducted in a private location (such as at the San Francisco Department of Public

Health, the person's home or at their medical care facility). The standard interview collected information on participant demographic and clinical characteristics, use of health care services and medications, substance use, sexual behavior, depression, gynecologic and reproductive history (for females), met and unmet needs for ancillary services, use of HIV prevention services, and stigma. Participants were given a token of appreciation of $50 in 2015 and $75 in 2016. Interviews were conducted from August 2015 through April 2016 for persons in the 2015 sample and from July 2016 through April 2015 for persons in the 2016 sample.

Medical Record Abstraction

Trained MMP staff reviewed and abstracted medical records for participants after the interview was conducted. Information collected during the medical record abstraction included demographics, HIV diagnosis, history of opportunistic infections, co-morbidities, prescription of antiretroviral therapy and other medications, HIV laboratory test results, and health care visits in the 24 months before the interview.

Data Weighting, Management and Statistical Analyses

Data were weighted and adjustments were made for unequal probability of selection, multiplicity and nonresponse [3].

Prevalence estimates (weighted percentages) and associated 95% confidence intervals (CI) were calculated using information from persons who completed the standard questionnaire or had their medical record abstracted. Confidence intervals are not reported for variables with a coefficient of variation >30% due to unstable estimates. The numbers in the tables represent unweighted frequencies and might not add up to the total N because of missing data. Percentages are weighted percentages and might not sum to 100 because of rounding. Additional information on MMP is available at https://www.cdc.gov/hiv/statistics/systems/mmp/.

After collection, data were encrypted and transmitted to CDC through a secure data portal. Statistical weighting and cleaning procedures were conducted at CDC before data were returned to the San Francisco Department of Public Health via a secure data portal for data analysis. SAS v9.4 statistical software was used for analysis of weighted data.

The estimates describe the characteristics of adults with diagnosed HIV who were living in San Francisco on the sampling date. The period referenced is the 12 months before interview and medical record abstraction unless otherwise noted.

Participant Response Rates

In 2015 there were 371 eligible persons in the MMP sample, of which 165 (44.5%) participated (Table 2.1). In 2016 there were 362 eligible persons in the MMP sample, of which 195 (53.9%) participated. For the 2015 and 2016 combined MMP data presented in this report, there were 360 respondents out of 733 eligible, resulting in a combined response rate of 49.2%.

Table 2.1: Sample size and response rate – Medical Monitoring Project, San Francisco, 2015–2016.

Year	Total Final Sample	Ineligible	Total Final Eligible Sample	Respondent	Response Rate
	n	n	n	n	%
2015 Cycle	387	16	371	165	44.5%
2016 Cycle	379	17	362	195	53.9%
2015 & 2016	**766**	**33**	**733**	**360**	**49.2%**

3 Demographic Characteristics

The majority were men (93%), six percent were female, and a little over one percent were trans women (Table 3.1). Persons were classified as a trans woman if sex at birth was reported as male and the self-identified gender was woman or trans woman. No trans men were sampled in 2015 or 2016. Seventy-five percent of the sample self-identified as homosexual, gay, or lesbian, and eight percent identified as bisexual.

The majority of persons were White (58%), 21% were Latinx and 12% were African American. Persons were classified in only one race/ethnicity category, so Hispanics or Latinx could be of any race. Fifty-eight percent of persons were aged 40 to 59 years. The majority of persons had some college or greater education (82%) and had been born in the United States (83%). A large proportion had been diagnosed with HIV for 10 or more years (74%) (Table 3.1).

Ninety-seven percent lived in San Francisco at the time of the interview (Table 3.2). Eighteen percent were homeless and two percent had been incarcerated for more than 24 hours in the 12 months prior to the interview. Almost 100% had some type of health insurance and/or coverage, and 43% had private insurance. One or more insurance or coverage type could be selected and persons were considered uninsured if they reported having health costs paid only by Ryan White–funded programs.

Forty percent were employed at the time of the interview. Twenty-four percent had a combined household income of $75,000 or greater in the previous year, while 32% had incomes at or below the federal poverty level (Table 3.2).

The federal poverty level was defined using the Department of Health and Human Services (HHS) poverty guidelines; the 2014 guidelines were used for persons interviewed in 2015 and the 2015 guidelines were used for persons interviewed in 2016. More information regarding the HHS poverty guidelines can be found at http://aspe.hhs.gov/poverty/faq.cfm.

Table 3.1: Demographics – Medical Monitoring Project, San Francisco, 2015–2016.

Demographics	No.	%	(95% CI)
Gender			
Male	333	92.6	(89.6–95.5)
Female	21	6.0	(3.3–8.7)
Trans woman[a]	6	1.4	-
Sexual Orientation			
Homosexual, gay or lesbian	267	74.8	(69.4–80.2)
Heterosexual or straight	52	12.7	(9.2–16.2)
Bisexual	26	8.2	(4.3–12.2)
Other sexual orientation	14	4.3	-
Race / Ethnicity			
White	200	57.5	(51.3–63.6)
Hispanic or Latinx[b]	79	21.4	(16.0–26.8)
Black or African American	49	12.0	(8.6–15.3)
Asian or Pacific Islander	17	4.0	(2.1–5.9)
Multiracial or Other	15	5.2	-
Age at time of interview			
18–39 years	56	15.3	(10.7–19.9)
40–49 years	79	23.0	(17.7–28.3)
50–59 years	127	35.0	(29.0–41.0)
60–65 years	48	12.4	(8.7–16.1)
≥ 65 years	50	14.3	(9.7–18.9)
Education			
< High School	24	5.7	(3.4–8.1)
High School diploma or equivalent	56	12.7	(9.4–16.1)
≥ High School	279	81.5	(77.5–85.6)
Country or territory of birth			
United States	288	82.8	(78.4–87.2)
Other	69	17.2	(12.8–21.6)
Time since HIV diagnosis			
< 5 years	41	11.1	(7.0–15.1)
5–9 years	55	14.9	(10.6–19.2)
≥ 10 years	264	74.0	(68.6–79.5)
Total	**360**		

[a] Persons were classified as a trans woman if sex at birth was male and self-reported gender identity was woman or trans woman. No trans men participated in San Francisco MMP 2015-2016.

[b] Hispanics or Latinx might be of any race. Persons are classified in only one race/ethnicity category.

Table 3.2: Characteristics in the past 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

Characteristic	No.	%	(95% CI)
Current San Francisco resident	328	96.7	(94.8–98.6)
Homeless at any time in the past 12 months[a]	64	17.8	(12.9–22.8)
Incarcerated for longer than 24 hours	6	1.5	-
Had health insurance coverage	357	99.7	(99.2-100.0)
Type of health insurance[b]			
Private insurance	151	42.9	(36.6–49.2)
Ryan White	168	49.1	(42.7–55.4)
Medicaid	175	49.9	(436.6–56.3)
Medicare	129	36.7	(30.6–42.8)
Other public insurance	38	11.1	(6.9–15.4)
Tricare/CHAMPUS or VA	15	4.8	-
Currently employed[c]	149	40.4	(34.2–46.5)
Any Disability	149	41.2	(35.1–47.4)
Combined yearly household income (dollars)[d]			
$0 to $9,999	49	9.8	(6.7–13.0
$10,000 to $19,999	152	30.9	(26.5–34.5)
$20,000 to $39,999	67	21.0	(15.4–26.6)
$40,000 to $74,999	52	13.3	(9.5–17.1)
$75,000 or more	85	24.1	(18.7–29.5)
Poverty level			
Above poverty level	238	67.8	(62.0–73.6)
At or below poverty level	117	32.2	(26.4–38.0)
Total	**360**		

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

[b] Persons could select more than one response for health insurance.

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

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

Abbreviations: CHAMPUS: Civilian Health and Medical Program of the Uniformed Services, VA: Veterans Administration, SSI: Supplemental Security Income; SSDI: Social Security Disability Insurance.

4 Clinical Characteristics

Sixty-one percent of persons met the CDC clinical criteria for HIV Stage 3 (AIDS) [9], although only eight percent had a geometric mean CD4 count less than 200 cells/μL in the prior 12 months (Table 4.1). Note that CD4 counts are from medical record abstraction. A large proportion of persons (76%) were virally suppressed on their most recent test and 70% were virally suppressed throughout the entire previous 12 months.

Table 4.1: Stage of disease, CD4+ lymphocyte counts, and viral suppression during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
HIV infection stage 3 (AIDS)[a]	215	60.5	(63.0–72.1)
Geometric mean CD4+ lymphocyte count			
0–199 cells/μL	25	8.1	(4.7–11.4)
200–349 cells/μL	48	15.4	(10.7–20.7)
350–499 cells/μL	54	18.3	(13.3–23.2)
≥500 cells/μL	172	58.3	(51.9–64.6)
Lowest CD4+ lymphocyte count			
0–49 cells/μL	5	1.5	-
50–199 cells/μL	23	7.4	(4.2–10.6)
200–349 cells/μL	60	19.5	(14.4–24.6)
350–499 cells/μL	53	17.7	(12.8–22.6)
≥ 500 cells/μL	161	53.9	(47.4–60.3)
Viral suppression			
Most recent HIV viral load undetectable or <200 copies/mL	289	76.1	(69.8–82.3)
≥200 copies/mL or missing/unknown	71	23.9	(17.7–30.2)
Durable viral suppression			
All HIV viral load measurements undetectable or <200 copies/mL	263	69.7	(63.4–76.1)
Any HIV viral load measurement ≥200 copies/mL or missing/unknown	97	30.3	(23.9–36.6)
Total	**360**		

[a]HIV stage 3 (AIDS): Documentation of an AIDS–defining condition or either a CD4 count of <200 cells/μL or 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.
Abbreviations: CD4: CD4 T–lymphocyte count (cells/μL). AIDS: acquired immunodeficiency syndrome.

5 Use of Health Care Services

ART is recommended for all persons living with HIV regardless of clinical stage or immunostatus and prophylaxis against *Pneumocystis jiroveci pneumonia* (PCP) and *Mycobacterium avium complex* (MAC) is recommended for persons with CD4+ lymphocyte cell counts below 200 cells/μL and below 50 cells/μL, respectively [10, 11]. Ninety-three percent of persons had been prescribed ART (Table 5.1). Sixty percent of clinically eligible persons were prescribed PCP prophylaxis and 50% of clinically eligible persons were prescribed MAC prophylaxis. All persons received outpatient HIV care in the last 24 months. 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. Seventy-six percent of persons had been vaccinated against influenza in the past year (Table 5.1).

Among persons who were sexually active in the previous 12 months, forty-four percent were tested for gonorrhea, chlamydia, and syphilis, with syphilis testing conducted most frequently (73% of persons, Table 5.2)

Use of the emergency department (ED) was frequent; 18% percent of persons were seen in the ED two or more times in the prior 12 months (Table 5.3). Sixty-seven percent did not have any illnesses or injuries requiring care in the ED and sixteen percent were hospitalized at least once.

Table 5.1: Access and quality of HIV care – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Ever received outpatient HIV care[a]			
Yes	360	100.0	(100.0–100.0)
Received outpatient HIV care, past 12 months			
Yes	359	99.7	(99.0–100.0)
Received outpatient HIV care, past 24 months			
Yes	360	100.0	(100.0–100.0)
Retained in care[b], past 12 months			
Yes	312	85.0	(79.5–90.5)
No	46	15.0	(9.5–20.5)
Retained in care[b], past 24 months			
Yes	262	70.8	(79.5–90.5)
No	96	29.2	(23.0–35.4)
Prescribed ART, past 12 months			
Yes	333	92.9	(89.3–96.5)
No	21	7.1	(3.5–10.7)
Prescribed PCP prophylaxis[c], past 12 months			
Yes	14	59.8	(39.4–80.1)
No	11	40.2	(19.9–60.6)
Prescribed MAC prophylaxis[d], past 12 months			
Yes	2	49.9	-
No	2	50.1	-
Received influenza vaccination, past 12 months			
Yes	274	76.4	(70.9–81.9)
No	83	23.6	(18.1–29.1)
Total	**360**		

[a] 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.

[b] Retained in care was defined as having at least two elements of outpatient HIV care as described in [a] at least 90 days apart in each 12-month period.

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

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

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

Abbreviations: CD4: CD4 T–lymphocyte count (cells/μL) or percentage; ART, antiretroviral therapy; PCP, *Pneumocystis pneumonia*; MAC, *Mycobacterium avium complex*.

Table 5.2: Sexually transmitted infection testing during the prior 12 months among the total population and among those who reported sexual activity – Medical Monitoring Project, San Francisco, 2015–2016.

	Total population			Sexually active		
	N	%	**(95% CI)**	**N**	%	**(95% CI)**
Syphilis testing						
Yes, received testing	239	65.7	(59.4–71.9)	148	72.6	(64.8–80.3)
No testing documented	115	34.3	(28.1–40.6)	56	27.4	(19.7–35.2)
Gonorrhea testing						
Yes, received testing	141	39.3	(33.2–45.4)	106	50.7	(42.4–59.0)
No testing documented	213	60.7	(54.6–66.8)	98	49.3	(41.0–57.6)
Chlamydia testing						
Yes, received testing	143	39.8	(33.7–45.9)	107	51.1	(42.8–59.4)
No testing documented	211	60.2	(54.1–66.3)	97	48.9	(40.6–57.2)
Syphilis, gonorrhea and chlamydia testing						
Yes, received all tests	119	33.0	(27.2–38.8)	90	44.1	(35.9–52.3)
No, did not receive all tests	235	67.0	(61.2–72.8)	114	55.9	(47.7–64.1)
Total	**360**			**208**		

Table 5.3: Emergency department or urgent care clinic use and hospital admission during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Number of visits to emergency department or urgent care clinic			
0	225	67.2	(61.7–72.6)
1	64	15.2	(11.5–18.9)
2–4	55	13.5	(9.9–17.2)
≥5	14	4.2	(1.2–7.0)
Number of hospital admissions			
0	301	84.5	(80.1–88.9))
1	22	5.4	(3.1–7.6)
2–4	31	9.0	(5.2–12.8)
≥5	5	1.1	-
Total	**360**		

6 Self-reported Antiretroviral Medication Use and Adherence

Ninety-five percent self-reported current ART use and 98% reported ever taken ART (Table 6.1). Among the 2% without a history of ART use, 74% had never taken ART because a health care provider advised a delay in treatment. Among those who had a history of ART use but were not currently taking ART, 56% were not currently taking ART because they felt it would make them feel sick or harm them. The most common reasons for last missed ART dose were forgetting (53%) and a change in one's daily routine or travel (38%) (Table 6.1).

Among persons taking ART, 52% had perfect 30 day dose adherence (i.e. did not miss an ART dose in the past 30 days) (Table 6.2). Sixty percent had never been troubled by ART side effects during the past 30 days; 21% had rarely been troubled. Eighty-two percent reported they were either very good or excellent at taking their HIV medicines in the way they were supposed to (Table 6.2).

While 91% of men had a prescription of ART, only 52% were ART adherent and 71% had sustained viral suppression. Among women, 79% had been prescribed ART and 51% were ART adherent and 59% had sustained viral suppression (Table 6.3).

Eighty-three percent of Latinx persons were prescribed ART, compared with 89% of Black/African Americans and 95% of Whites. The prevalence of ART prescription was 87% among persons aged 18 to 39 years and 96% among those aged 60 years or older. The prevalence of sustained viral suppression was 47% among persons aged 18 to 39 years and 78% among those aged 65 and older (Table 6.3).

While ART prescription was high for persons in all housing statuses, it was lowest for housed persons (89%). However, ART adherence was highest for housed persons (55%) and lowest for persons living in shelters or on the street (22%). Likewise, sustained viral suppression was highest for those who were housed (74%) and lower for those living in shelters or on the street (46%) (Table 6.3).

Table 6.1: Antiretroviral therapy use – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Ever taken antiretroviral medications (ART)	353	98.2	(96.8–99.6)
Main reason for never taking ART[a]			
HIV provider delayed treatment	5	74.0	-
Currently taking ART	337	94.5	(92.2–96.8)
Main reason for currently not taking ART[b]			
Thought it would make them feel sick or harm them	8	55.5	-
Main reason for last missed ART dose[c]			
Forgot to take HIV medicines	179	52.8	(46.2–59.3)
Change in daily routine/traveling	129	38.4	(32.1–44.7)
Fell asleep early or overslept	92	28.0	(21.9–34.0)
Felt depressed or overwhelmed	56	16.8	(11.8–21.7)
Was drinking or using drugs	44	13.2	(8.7–17.7)
Had problems with prescription/refills/payment	41	11.7	(7.6–15.7)
Did not feel like taking HIV medication	30	8.8	(5.1–12.4)
Experienced side effects	24	7.2	(3.7–10.7)
In the hospital or too sick for medication	13	5.6	(1.6–9.7)
Total	**360**		

Abbreviations: ART, antiretroviral therapy.

[a] Among those reporting never taking ART.

[b] Among those with a history of taking ART but no current use.

[c] Among those currently taking ART.

Table 6.2: Antiretroviral therapy (ART) adherence among persons taking ART – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
How many days did you miss at least one dose of any of your HIV medicines?			
0	178	51.9	(45.4–58.4)
1–2	90	29.5	(23.3–35.7)
3–5	42	11.0	(7.4–14.6)
6–10	17	5.1	(1.9–8.3)
≥ 10	10	2.5	(0.9–4.0)
How well did you do at taking your HIV medicines in the way you were supposed to?			
Very poor	8	3.1	-
Poor	6	1.6	-
Fair	19	4.7	(2.6–6.8)
Good	33	8.6	(5.3–11.9)
Very good	100	29.3	(23.5–35.0)
Excellent	171	52.8	(46.3–59.3)
How often did you take your HIV medicines in the way you were supposed to?			
Never	4	1.0	-
Rarely	5	1.4	-
Sometimes	9	2.2	-
Usually	15	4.4	-
Almost always	103	30.9	(24.9–36.9)
Always	201	60.1	(53.7–66.5)
Troubled by ART side effects			
Never	198	60.0	(53.5–66.6)
Rarely	73	20.8	(15.5–23.1)
About half the time	31	7.8	(5.0–10.6)
Most of the time	13	4.5	-
Always	17	6.8	-
Total	**360**		

Table 6.3: Antiretroviral therapy (ART) prescription, ART dose adherence, durable viral suppression, and geometric mean CD4 count by subgroups – Medical Monitoring Project, San Francisco, 2015–2016.

	Prescription of ART			ART dose adherence[a]			Sustained viral suppression[b]			Mean CD4 count >200[c]		
Subgroups	**No.**	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Gender												
Male	310	91.1	(86.5–95.7)	167	51.9	(45.1–58.7)	246	70.5	(63.8–77.1)	256	91.8	(88.3–95.3)
Female	17	79.1	(60.5–97.7)	8	51.0	(25.9–76.1)	13	59.1	(36.1–82.2)	14	97.8	(93.5–100.0)
Trans woman	6	100.0	-	3	52.9	-	4	67.7	-	4	80.1	-
Sexual Orientation												
Lesbian or gay	247	90.0	(84.5–95.6)	136	53.2	(45.8–60.7)	202	72.8	(65.64–79.9)	208	92.7	(88.8–96.5)
Heterosexual or straight	46	86.2	(75.8–96.6)	24	55.5	(40.6–70.4)	31	59.5	(45.4–73.6)	36	89.9	(81.1–98.7)
Bisexual	25	96.8	(90.4–100.0)	9	36.6	-	20	69.4	(42.6–96.2)	19	92.5	(82.1–100.0)
Other	14	100.0	-	9	48.2	-	10	52.7	(16.4–89.0)	11	90.4	(72.5–100.0)
Race/Ethnicity												
White	191	94.6	(90.4–98.8)	102	52.7	(44.1–61.3)	155	74.1	(65.9–82.4)	155	93.5	(89.9–97.0)
Hispanic or Latinix	69	83.3	(70.2–96.4)	41	54.0	(38.7–69.3)	53	61.8	(46.6–77.1)	60	94.9	(85.4–100.0)
Black/African American	44	88.8	(79.2–98.3)	18	41.9	(26.7–57.0)	29	59.7	(45.7–73.7)	34	83.3	(71.8–94.8)
Asian or Pacific Islander	15	89.4	(75.4–100.0)	10	62.3	(38.0–86.4)	14	81.5	(62.4–100.0)	13	80.0	(59.6–100.0)
Multiracial or other	14	80.1	(47.2–100.0)	7	46.9	-	12	67.7	(36.4–99.0)	12	95.4	-
Age at time of interview												
18-39	52	86.6	(69.6–100.0)	21	42.0	(24.7–59.3)	30	47.3	(36.7–68.8)	41	96.0	(90.5–100.0)
40–49	70	87.0	(77.2–96.8)	36	50.9	(36.7–65.1)	53	65.9	(21.1–47.0)	63	89.6	(80.5–98.6)
50–59	117	90.4	(83.6–97.3)	62	49.9	(39.0–60.8)	96	73.7	(16.0–36.4)	100	92.4	(87.7–97.2)
60–64	46	95.5	(89.2–100.0)	25	53.5	(36.9–70.1)	39	83.1	(72.6–93.6)	34	88.1	(78.0–98.2)
≥65	48	96.3	(91.2–100.0)	34	66.7	(49.4–84.4)	45	78.4	(58.8–98.0)	36	94.5	(87.0–100.0)
Housing Status												
Housed	269	89.2	(83.9–94.5)	152	54.8	(38.1–52.3)	221	73.5	(66.8–80.1)	223	93.5	(90.4–96.5)
SRO	39	100.0	(100.0–100.0)	20	45.9	(33.7–74.6)	30	58.6	(36.2–81.0)	29	81.8	(63.6–100.0)
Jail	5	91.5	(94.7–100.0)	2	41.0	-	2	41.3	-	3	61.8	-
Shelter/Street/Car	20	98.2	(79.9–100.0)	4	22.3	-	10	45.5	(22.9–68.2)	19	95.6	(87.0–100.0)
Total	333	90.5	(86.1–94.9)	178	51.9	(45.4–58.4)	263	69.7	(63.4–76.1)	274	91.9	(88.6–95.3)

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

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

[c] Persons with a geometric mean CD4 count of more than 200 cells/μL in the prior 12 months in the medical chart.

7 Depression and Anxiety

Depression was measured by asking persons to complete the eight-item Patient Health Questionnaire (PHQ-8). The interpretation is based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria [12]. Twelve percent of persons met the criteria for major depression and twelve percent met the criteria for other, less severe depression (Table 7.1). 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. Nine percent reported severe anxiety and 72% reported having no anxiety (Table 7.1).

Table 7.1: Depression and anxiety during the prior 2 weeks – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Depression based on DSM–IV criteria			
No depression	275	76.6	(71.0–82.2)
Other depression[a]	44	11.8	(7.8–15.8)
Major depression[b]	36	11.6	(7.1–16.1)
Moderate or severe depression (PHQ–8 score >10)			
Yes	60	18.9	(13.5–24.3)
No	295	81.1	(75.7–86.5)
Anxiety (GAD-7)			
No anxiety	263	72.3	(66.4–78.2)
Mild anxiety	28	7.7	(4.2–11.2)
Moderate anxiety	32	10.6	(6.2–15.1)
Severe anxiety	33	9.4	(5.7–13.0)
Total	**360**		

[a] Other depression was defined as having 2-4 symptoms of depression.

[b] Major depression was defined as having at least 5 symptoms of depression.

8 Substance Use

The proportion reporting lifetime cigarette smoking was high (62%). Thirty-two percent reported current use and 24% reported smoking daily (Table 8.1). Alcohol use was reported by 75% and 41% reported daily or weekly drinking (Table 8.2). Of those who used alcohol in the prior 12 months, 39% reported drinking alcohol before or during sex.

Non-injection drug use was reported by 50% (Table 8.3). Among those who reported using non-injection drugs, the most common drugs were: marijuana (69%), crystal methamphetamine (43%), and amyl nitrite (36%). Thirty-four percent reported use of club drugs like Ecstasy, GHB or ketamine. Injection drug use in the 12 months before the interview was reported by 10% and among these, 73% injected before or during sex. The most common injection drug was crystal methamphetamine and was reported by 92% of those using injection drugs (Table 8.4).

Table 8.1: Cigarette smoking – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Smoked ≥100 cigarettes (lifetime)			
Yes	225	62.4	(56.2–68.6)
No	134	37.6	(31.4–43.8)
Smoking status			
Never smoker	134	37.6	(31.4–43.8)
Former smoker	105	30.1	(24.3–35.9)
Current smoker	120	32.3	(26.6–38.0)
Frequency of cigarette smoking (during past 12 months)			
Never	239	67.7	(62.0–73.4)
Daily	91	24.3	(19.2–29.5)
Weekly	10	3.0	(0.7–5.4)
Monthly	3	1.2	(0.0–2.8)
Less than monthly	16	3.7	(1.9–5.6)
Electronic cigarette smoking status			
Never used electronic cigarette	234	65.9	(60.0–71.7)
Used electronic cigarettes, but not in the past 30 days	98	25.3	(20.2–30.3)
Used electronic cigarettes in the past 30 days	27	8.9	(4.8–12.9)
Total	**360**		

Table 8.2: Alcohol use during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Any alcohol used			
Yes	265	74.7	(68.7–79.7)
No	94	25.8	(20.3–31.3)
Frequency of alcohol use			
Daily	44	11.5	(7.8–15.2)
Weekly	108	29.2	(23.6–34.9)
Monthly	51	14.4	(10.1–18.8)
Less than monthly	62	19.0	(13.8–24.3)
Never	94	25.8	(20.3–31.3)
Alcohol use before or during sex[a]			
Yes	103	39.2	(31.9–46.4)
No	161	60.8	(53.6–68.0)
Binge drinking[b] (during past 30 days)[a]			
Yes	79	28.7	(22.1–35.3)
No	185	71.3	(64.7–77.9)
Total	**360**		

[a] Among those who used alcohol in the prior 12 months.

[b] Persons who had at least 1 binge drinking episode during 30 days before the interview. An alcoholic beverage was defined as a 12oz beer, 5oz glass of wine, or 1.5oz of liquor. A binge drinking episode was defined as having more than 5 drinks for men and more than 4 drinks for women.

Table 8.3: Non–injection drug use during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	Among All Persons			Among Non-Injection Drug Users		
	No.	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Use of any noninjection drugs[a]	173	49.9	(43.5–56.2)	173	100	
Use of any noninjection drugs before or during sex	104	28.1	(22.6–33.5)	104	56.3	(46.8–65.7)
Non–injection drugs used						
Marijuana	115	34.2	(28.0–40.5)	115	68.6	(60.7–76.6)
Crystal methamphetamine ("Tina, Crank, Ice")	85	21.6	(16.9–26.3)	85	43.3	(34.4–52.2)
Amyl nitrate ("Poppers")	62	17.9	(13.0–22.8)	62	35.9	(27.1–44.7)
Club drugs (X or Ecstasy, GHB or ketamine)	59	17.0	(12.2–21.9)	59	34.2	(25.4–42.9)
Cocaine that is smoked or snorted	56	16.7	(11.7–21.7)	56	33.4	(24.5–42.3)
Painkillers (e.g. Oxycontin, Vicodin, or Percocet)	27	9.0	(4.9–13.2)	27	18.1	(10.4–25.9)
Downers (e.g. Valium, Ativan, or Xanax)	27	8.8	(4.8–12.8)	27	17.6	(10.0–25.2)
Amphetamines ("speed")	31	8.6	(5.3–11.9)	31	17.2	(10.8-23.6)
Crack	23	6.9	(3.6–10.1)	23	13.8	(7.5–20.0)
Total	**360**			**173**		

[a]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.

Abbreviation: GHB: gamma hydroxybutyrate.

Table 8.4: Injection drug use during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	Among All Persons			Among Injection Drug Users		
	No.	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Use of any injection drugs	39	10.3	(6.7–14.0)	39	100	
Use of any injection drugs before or during sex	26	7.3	(4.0–10.5)	26	72.8	(58.2–87.3)
Injection drugs used						
Crystal methamphetamine ("Tina, Crank, Ice")	36	9.5	(6.0–13.0)	36	92.0	(83.1–100.0)
Heroin	8	2.4	-	8	23.4	-
Amphetamines ("Speed")	8	2.4	-	8	22.7	-
Heroin and cocaine ("Speedball")	4	1.5	-	4	14.1	-
Painkillers (e.g. Oxycontin, Vicodin, or Percocet)	4	1.5	-	4	14.4	-
Cocaine	5	1.1	-	5	11.0	-
Shared needle after using	2	1.2	-	2	12.1	-
Shared works after using	5	1.1	-	5	11.0	-
Total	**360**			**39**		

9 Gynecologic and Reproductive Health

Twenty-one women were interviewed during the 2015 and 2016 MMP cycles. Sixty-nine percent reported receiving HIV care at a gynecological clinic in the past 12 months (Table 9.1). Sixty-nine percent reported a Papanicolaou smear in the past 12 months. Seven percent had been pregnant since time of HIV diagnosis.

Table 9.1: Gynecological history and reproductive health among women during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Received HIV care at a gynecological clinic			
Yes	15	68.6	(46.3–91.0)
No	6	31.4	(9.0–53.7)
Papanicolaou (Pap) smear			
Yes	15	68.6	(46.3–91.0)
No	6	31.4	(9.0–53.7)
Pregnant since HIV diagnosis			
Yes	2	7.2	(0.0–18.5)
No	19	92.8	(81.5–100.0)
Total	**21**		

10 Sexual Behavior

Forty-six percent of men had receptive anal sex with men, 46% had insertive anal sex with men, and 5% had vaginal sex (Table 10.1). Forty percent of men had neither vaginal nor anal sex. Among women, 39% had vaginal sex, and 62% did not have vaginal or anal sex. Among trans women, 31.5% had vaginal or anal sex (data not shown).

Nine percent of men who have sex with men (MSM) engaged in high-risk sex, as well as 9% of men who have sex only with women (MSW), compared to 6% of women who have sex with men (WSM) (Table 10.2). High-risk sex was defined as vaginal or anal sex with at least one 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 five most recent partners. In terms of prevention strategies utilized by those who were sexually active in the last 12 months, 45% of MSM had condom-protected sex, 68% engaged in sex while sustainably virally suppressed, 74% had sex with an HIV-positive partner, and 16% had condomless sex with a partner on preexposure prophylaxis (PrEP). Among sexually active MSW, 72% had condom-protected sex, 46% engaged in sex while sustainably virally suppressed, 6% had sex with an HIV-positive partner and 6% had condomless sex with a partner on PrEP. Among sexually active WSM, 62% engaged in sex while sustainably virally suppressed, 69% had condom-protected sex and 12% had sex with an HIV-positive partner.

The median number of partners in the previous 12 months was one for MSW and trans women who have sex with men, while the median number of partners for MSM was three (data not shown).

Among all persons, 46% reported that they strongly disagreed with the statement "I can worry less about having to use a condom" when having an undetectable viral load, compared to 20% for those who reported condomless sex with partners of unknown or negative serostatus (Table 10.3). Forty-seven percent of all persons strongly disagreed that they can worry less about using condoms when their partner is taking PrEP. In contrast, among persons who reported condomless sex, only 21% strongly disagreed that they can worry less about using condoms when their partner is taking PrEP (Table 10.3).

Forty-five percent of all persons strongly disagreed with the statement "if I have an undetectable viral load I am more likely to have condomless sex", compared to 14% of persons who reported condomless sex with partners of negative or unknown serostatus. Twenty-one of all persons strongly agreed with being more likely to have condomless sex when their partner is taking PrEP, while 42% of persons who had condomless sex with HIV negative or unknown serostatus partners strongly agreed (Table 10.4).

Table 10.1: Sexual behavior during the prior 12 months among cisgender men and women – Medical Monitoring Project, San Francisco, 2015–2016.

	Men			Women		
Behavior	**N**	%	**(95% CI)**	**N**	%	**(95% CI)**
Engaged in anal sex with men						
Receptive						
Yes	143	46.0	(39.2–52.7)	2	5.0	(0.0–12.6)
No	183	54.0	(47.3–60.8)	19	95.0	(87.4–100.0)
Insertive						
Yes	151	45.5	(38.9–52.2)	-		
No	175	54.5	(47.8–61.1)	-		
Anal sex with women						
Yes	2	0.5	(0.0–1.2)	-		
No	331	99.5	(98.8–100.0)	-		
Vaginal sex						
Yes	21	5.1	(2.9–7.3)	9	38.5	(16.7–60.2)
No	307	94.9	(92.7–97.1)	12	61.5	(39.8–83.3)
Vaginal or anal sex						
Yes	197	59.6	(53.1–66.1)	9	38.5	(16.7–60.2)
No	131	40.4	(33.9–46.9)	12	61.5	(39.8–83.3)
Total	**333**			**21**		

Table 10.2: Sexual behavior during the prior 12 months among men who have sex with men (MSM), men who have sex only with women (MSW), and women who have sex with men (WSM) – Medical Monitoring Project, San Francisco, 2015–2016.

	MSM			MSW			WSM		
	No.	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Engaged in any high-risk sex[a]									
Yes	26	9.3	(5.4–13.2)	3	8.9	(0.0–18.7)	2	6.2	(0.0–15.4)
No	263	90.7	(86.8–94.6)	31	91.1	(81.3–100.0)	16	93.8	(84.6–100.0)
Engaged in any high-risk sex among sexually active persons[b]									
Yes	26	14.9	(8.7–21.0)	3	21.3	(0.0–42.7)	2	14.9	(0.0–36.7)
No	155	85.1	(79.0–91.3)	12	78.7	(57.3–100.0)	6	85.1	(63.3–100.0)
Sexually-active persons who used a prevention strategy with at least one partner									
Sex while sustainably virally suppressed[c]	129	68.0	(58.8–77.2)	7	46.3	(20.8–71.8)	5	62.2	(29.4–95.0)
Condom-protected sex[d]	78	44.8	(35.6–54.0)	11	72.1	(48.9–95.4)	9	69.2	(38.7–99.6)
Condomless sex with a partner on PrEP[e]	31	15.7	(10.0–21.4)	1	6.6	(0.0–19.3)	-		
Sex with an HIV positive partner	133	73.5	(65.6–81.3)	1	6.4	(0.0–18.6)	1	11.9	(0.0–33.8)
Total	**290**			**35**			**21**		

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

[b] Sexually active is defined as having vaginal or anal intercourse, excluding oral sex in the past 12 months.

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

[d] Condoms were consistently used with at least one vaginal or anal sex partner.

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

Table 10.3: Attitudes about using condoms among all persons and among those who reported condomless sex with partners of unknown or negative serostatus during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	All persons			Condomless sex with partners of neg./unknown serostatus		
	No.	%	(95% CI)	No.	%	(95% CI)
I can worry less about using a condom ...						
When I have an undetectable viral load						
Strongly disagree	162	46.4	(40.0–52.8)	23	19.9	(11.8–28.0)
Disagree	52	17.3	(12.1–22.6)	19	17.8	(9.9–25.6)
Neutral	32	8.7	(5.3–12.0)	13	14.9	(6.0–23.8)
Agree	55	14.7	(10.5–18.9)	25	22.7	(13.7–31.8)
Strongly agree	53	12.9	(9.4–16.3)	29	24.7	(16.4–33.0)
If my partner tells me he/she is HIV positive						
Strongly disagree	150	39.3	(33.4–45.3)	22	19.4	(11.3–27.5)
Disagree	55	15.7	(10.9–20.5)	19	15.7	(8.9–22.5)
Neutral	37	9.9	(6.3–13.6)	15	12.3	(6.3–18.4)
Agree	59	19.9	(14.1–25.7)	29	29.8	(19.5–40.2)
Strongly agree	57	15.1	(10.9–19.3)	24	22.7	(13.6–31.9)
If my partner tells me he or she is taking PrEP						
Strongly disagree	156	46.9	(40.9–52.9)	22	21.3	(13.2–29.4)
Disagree	56	15.5	(11.6–19.4)	16	15.5	(8.4–22.7)
Neutral	36	11.2	(6.7–15.8)	17	16.1	(9.0–23.3)
Agree	47	13.2	(9.6–16.9)	25	26.0	(17.1–34.8)
Strongly agree	37	10.6	(7.3–14.0)	22	21.1	(13.1–29.0)
Total	**360**			**109**		

Table 10.4: Attitudes towards condomless sex among all persons and among those who reported condomless sex with partners of unknown or negative serostatus during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	All persons			Condomless sex with partners of neg./unknown serostatus		
	No.	%	(95% CI)	No.	%	(95% CI)
I am more likely to have condomless sex ...						
If I have an undetectable viral load						
Strongly disagree	153	44.7	(38.3–51.1)	16	14.0	(6.7–21.3)
Disagree	34	11.1	(6.6–15.7)	8	6.9	-
Neutral	42	11.6	(7.8–15.4)	18	17.2	(9.3–25.1)
Agree	64	17.5	(12.9–22.0)	32	31.2	(21.1–41.4)
Strongly agree	60	15.1	(11.2–19.1)	34	28.8	(20.9–40.3)
If my partner tells me he/she is HIV positive						
Strongly disagree	151	41.4	(35.2–47.5)	23	19.4	(11.4–27.4)
Disagree	21	5.5	(2.9–8.0)	5	4.2	-
Neutral	48	11.8	(8.2–15.4)	18	14.8	(8.3–21.3)
Agree	50	18.5	(12.5–24.5)	24	24.0	(14.3–33.6)
Strongly agree	86	22.9	(17.9–27.8)	39	37.6	(27.2–48.0)
If my partner tells me he or she is taking PrEP						
Strongly disagree	119	36.8	(30.9–42.8)	15	14.6	-
Disagree	29	8.2	(5.3–11.1)	5	4.8	-
Neutral	40	12.2	(7.5–16.8)	14	13.5	(6.8–20.2)
Agree	67	19.0	(14.7–23.2)	25	24.8	(16.1–33.4)
Strongly agree	76	21.0	(16.5–25.4)	43	42.3	(32.6–52.1)
Total	**360**			**109**		

11 Intimate Partner Violence and Sexual Violence

Thirty-one percent had ever been physically hurt by a romantic or sexual partner, including 6% who experienced this in the past 12 months (Table 11.1). Nineteen percent had ever been threatened with harm or physically forced to have unwanted sex, including 2% who experienced this in the past 12 months.

Table 11.1: Intimate partner violence and sexual violence – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Was *ever* physically hurt by a romantic or sexual partner			
Yes	110	30.6	(25.0–36.2)
No	247	69.4	(63.8–75.0)
Was physically hurt by a romantic or sexual partner in the past 12 months			
Yes	18	5.9	(2.6–9.2)
No	339	94.1	(90.8–97.4)
Was *ever* threatened/forced to have unwanted sex			
Yes	64	19.1	(13.8–24.3)
No	290	80.9	(75.7–86.2)
Was threatened/forced to have unwanted sex in the past 12 months			
Yes	4	2.0	(0.0–4.6)
No	350	98.0	(95.4–100.0)
Total	**360**		

12 Met and Unmet Need for Ancillary Services

About two-thirds (64%) reported that HIV was their main health concern. The other top health concerns reported were: cardiovascular disease (5%), mental health (5%), aging (4%), diabetes (2%), drug use (2%) and hepatitis (2%) (Table 12.1).

The most frequent ancillary services received were dental care (62%), AIDS Drug Assistance Program (ADAP) (49%) and eye or vision services (48%) (Table 12.2). Twenty-six percent of persons reported needing but not receiving dental care, while 23% reported needing but not receiving eye or vision services. Nineteen percent also needed but did not receive Supplemental Nutrition Assistance Program (SNAP) or special supplemental nutrition program for Woman Infants, and Children (WIC), and 13% also needed but did not receive mental health services.

Table 12.1: Self-reported health concerns in the last 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Is HIV the main health concern?			
Yes	210	63.6	(58.1–69.0)
No	131	36.4	(30.7–41.6)
If not, what is the main health concern?			
Cardiovascular	22	5.3	(3.0–7.5)
Mental Health	19	4.5	(2.4–6.5)
Aging	15	3.6	(1.7–5.4)
Diabetes	9	2.2	-
Drug use	8	1.9	-
Hepatitis	7	1.7	-
Total	**360**		

Table 12.2: Met and unmet needs for ancillary services during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	Received services			Persons who needed but did not receive service		
Service[a]	**No.**	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Dental care	216	62.0	(56.0–68.0)	94	25.9	(20.4–31.4)
ADAP[b]	168	48.9	(42.6–55.2)	9	2.8	(0.8–4.8)
Eye or vision services	163	47.6	(41.6–53.5)	83	23.1	(18.5–27.8)
HIV case management	149	41.5	(35.3–47.7)	26	7.4	(3.9–10.8)
Mental health services	123	35.6	(29.4–41.7)	45	12.8	(8.5–17.1)
Transportation assistance	98	27.0	(21.4–32.5)	42	11.6	(7.9–15.4)
Meal or food services[c]	85	21.8	(16.9–26.6)	36	8.5	(5.7–11.3)
Nutrition service	79	21.5	(17.1–26.0)	42	11.6	(8.2–15.1)
Drug adherence support	78	21.2	(16.0–26.4)	7	2.7	(0.0–5.5)
HIV peer group support	57	17.4	(12.2–22.7)	33	8.7	(5.1–12.4)
Shelter or housing services	61	17.0	(12.2–21.8)	26	6.5	(3.8–9.2)
SNAP or WIC[d]	55	15.0	(10.7–19.3)	68	18.9	(14.0–23.8)
Drug or alcohol counseling	54	14.9	(10.4–19.5)	25	7.1	(3.9–10.4)
Participant navigation	50	14.8	(9.8–19.8)	26	7.1	(3.7–10.5)
Home health services	43	13.0	(8.6–17.3)	22	6.2	(3.7–8.8)
Domestic violence services	7	2.5	(0.2–4.8)	7	1.6	(0.4–2.8)
Interpreter services	5	1.2	(0.1–2.3)	2	0.4	(0.0–1.0)
Total	**360**					

[a]Persons could report receiving or needing more than one service.

[b]Medicine through the AIDS Drug Assistance Program.

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

[d] SNAP - Supplemental Nutrition Assistance Program. WIC - Special supplemental nutrition program for Woman Infants, and Children.

13 Prevention Activities

A one-on-one prevention-related conversation with a health care provider in the 12 months prior to the interview was reported by 41% and 24% reported one-on-one prevention-related conversations with an outreach worker (Table 13.1). Small group prevention counseling was reported by 14%. Half received free condoms from someone other than a friend, relative or sex partner.

Table 13.1: Prevention services received during the prior 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
One–on–one conversation with a physician, nurse, or other health care worker			
Yes	140	41.2	(34.8–47.6)
No	217	58.8	(52.4–65.2)
One–on–one conversation with an outreach worker, counselor, or prevention program worker			
Yes	84	24.1	(18.4–29.9)
No	273	75.9	(70.1–81.6)
Organized session involving a small group of people			
Yes	46	14.3	(9.3–19.3)
No	311	85.7	(80.7–90.7)
Free condoms			
Yes	182	50.4	(44.1–56.7)
No	176	49.6	(43.3–55.9)
Source of free condoms[a]			
General health clinic	101	40.0	(34.0–46.0)
Social venue	97	42.6	(35.7–49.5)
Community–based organization	76	31.7	(25.9–37.5)
Special event	56	25.3	(19.4–31.2)
Sexually transmitted disease clinic	17	7.8	(4.1–11.5)
Outreach organization for persons who inject drugs	10	3.9	
Family Planning Clinic	2	0.8	
Total	**360**		

[a]Among persons who received free condoms.

14 National HIV/AIDS Strategy Indicators

The prevalence of homelessness among persons in HIV care in the past 12 months was 18%. Homelessness among trans women in care was 31%. Thirty percent of Hispanics or Latinx in HIV care reported homelessness in the last 12 months and 22% of African American/Blacks in HIV care were homeless (Table 14.1).

HIV stigma was measured by the median score on a 10-item scale ranging from 0 (no stigma) to 100 (high stigma) [3]. The median HIV stigma score among all persons was 32 and was higher for trans women, Hispanics or Latinx, Asian or Pacific Islanders, multiracial persons and those under the age of 50 years (Table 14.1).

High-risk sex is defined as vaginal or anal sex with at least one HIV-negative or unknown status partner while not sustainably virally suppressed, when a condom was not used, or the partner was not on PrEP. PrEP use was only measured among the five most recent partners. Nine percent of persons overall engaged in high-risk sex and 26% of those between the age of 18 and 39 years engaged in high-risk sex.

Table 14.1: National indicators: homelessness, HIV stigma, and high risk sex by demographics – Medical Monitoring Project, San Francisco, 2015–2016.

	Homeless and in care[a]			Median HIV Stigma score[b]			Engaged in high-risk sex[c]		
Subgroups	**No.**	**Row %**	**(95% CI)**	**No.**	**Median**	**(95% CI)**	**No.**	**Row %**	**(95% CI)**
Gender									
Male	59	18.1	(12.9–23.4)	316	31.3	(27.1–35.6)	29	9.0	(5.4–12.6)
Female	3	11.2	-	19	33.9	(19.9–47.9)	2	5.4	-
Trans woman	2	31.0	-	5	39.6	-	0		-
Sexual Orientation									
Lesbian or gay	36	12.5	(8.1–16.8)	257	29.5	(26.1–32.9)	25	9.9	(5.6–14.1)
Heterosexual	14	25.9	(13.7–38.2)	44	36.0	(23.7–8.3)	4	6.1	-
Bisexual	7	33.0	-	25	36.3	(21.9–50.7)	1	2.6	-
Other sexual orientation	7	62.1	(32.0–92.2)	14	55.1	(29.0–81.1)	1	6.1	-
Race/ethnicity									
White	26	12.7	(7.1–18.4)	193	28.5	(24.2–32.8)	20	9.3	(5.0–13.6)
Black/African American	12	22.4	(10.9–33.9)	40	28.4	(17.8–39.0)	3	6.0	-
Hispanic or Latinix	21	29.9	(15.8–43.9)	76	35.2	(28.4–41.9)	5	4.2	-
Asian or Pacific Islander	2	12.0	-	17	41.6	(28.4–41.9)	0		-
Multiracial or Other	3	21.2	-	14	58.5	(31.1–85.8)	3	32.3	-
Age									
18–39	14	22.7	(10.1–35.4)	56	41.5	(32.5–50.5)	11	26.4	(11.0–41.8)
40–49	21	28.4	(15.6–41.2)	72	35.0	(26.2–43.7)	8	8.4	-
50–59	18	12.2	(6.6–17.8)	123	28.1	(20.8–35.5)	9	5.8	-
60–64	5	9.5	-	45	29.9	(19.5–40.3)	3	5.3	-
≥65	6	17.5	-	44	26.5	(15.7–37.4)	0		-
Total	64	17.8	(12.9–22.8)	340	31.9	(27.8–35.9)	31	8.7	(5.3–12.0)

[a]Persons receiving care and reported living in a single-room-occupancy hotel (SRO), shelter, car or the street in the past 12 months.

[b]HIV stigma was defined as the median score on a 10-item scale ranging from 0 (no stigma) to 100 (high stigma).

[c]Sexually active persons with a viral load above 200 copies/mL, who had condomless vaginal or anal sex with at least one unknown status partner, or at least one HIV negative partner who was not known to be on PrEP - in the past 12 months.

15 Internalized Stigma and Discrimination

The MMP survey includes a scale that measures five dimensions of HIV stigma and discrimination: personalized stigma, disclosure concerns, negative self-image, perceived public attitudes about people with HIV, and discrimination experienced in the health care setting.

Forty-two percent reported that they have been hurt by how people reacted to their HIV status and 28% reported they had stopped socializing because of people's reaction to their HIV status (Table 15.1). Seventy percent indicated that they are very careful about who they disclose their HIV status to (Table 15.2). The statements "I feel unclean" and "like a bad person" because of HIV was agreed with by 20% and 13%, and strongly rejected by 60% and 71% respectively (Table 15.3). Thirty-six percent agreed or strongly agreed to the statement "Most people with HIV are rejected when others find out" (Table 15.4).

Twenty percent reported that someone in the health care system had been hostile or disrespectful toward them since their HIV diagnosis. Among the 21% who experienced any discrimination, 77% reported that the discrimination occurred because of their HIV status (Table 15.5). Almost all (92%) were completely or mostly comfortable discussing their health concerns with their medical provider (Table 15.5).

Table 15.1: Personalized HIV stigma – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
I have been hurt by how people reacted to learning I have HIV			
Strongly disagree	118	29.6	(24.4–34.8)
Somewhat disagree	44	14.0	(8.9–19.1)
Neutral	44	14.2	(9.2–19.2)
Somewhat agree	81	23.6	(18.2–29.0)
Strongly agree	66	18.6	(13.8–23.4)
I have stopped socializing with some people because of their reaction to my HIV status			
Strongly disagree	169	43.3	(37.4–49.4)
Somewhat disagree	49	15.7	(10.7–20.7)
Neutral	31	12.9	(7.3–18.6)
Somewhat agree	53	14.7	(10.4–19.0)
Strongly agree	52	13.4	(9.4–17.4)
I have lost friends by telling them I have HIV			
Strongly disagree	212	57.7	(51.3–64.1)
Somewhat disagree	39	13.1	(8.1–18.0)
Neutral	28	9.4	(5.2–13.6)
Somewhat agree	33	10.0	(6.0–14.1)
Strongly agree	41	9.8	(6.8–12.8)
Total	**360**		

Table 15.2: Disclosure concerns – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
I am very careful who I tell that I have HIV			
Strongly disagree	51	12.8	(8.9–16.8)
Somewhat disagree	34	8.5	(5.6–11.3)
Neutral	29	8.8	(4.8–12.9)
Somewhat agree	75	21.7	(16.5–27.0)
Strongly agree	168	48.1	(41.8–54.4)
I worry that people who know I have HIV will tell others			
Strongly disagree	120	32.2	(26.4–37.9)
Somewhat disagree	47	14.4	(9.8–19.1)
Neutral	56	15.7	(11.1–20.3)
Somewhat agree	55	16.8	(11.7–21.9)
Strongly agree	76	20.9	(15.8–26.0)
Total	**360**		

Table 15.3: Negative self-image from HIV stigma – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
I feel that I am not as good a person as others because I have HIV			
Strongly disagree	247	65.2	(59.0–71.5)
Somewhat disagree	33	9.4	(5.8–13.0)
Neutral	16	7.0	(2.5–11.4)
Somewhat agree	40	13.2	(8.6–17.8)
Strongly agree	21	5.2	(3.0–7.5)
Having HIV makes me feel unclean			
Strongly disagree	218	59.8	(53.5–66.0)
Somewhat disagree	40	10.9	(7.2–14.6)
Neutral	23	9.1	(4.5–13.7)
Somewhat agree	59	15.9	(11.6–20.3)
Strongly agree	17	4.3	(2.2–6.4)
Having HIV makes me feel that I'm a bad person			
Strongly disagree	268	71.3	(65.2–77.3)
Somewhat disagree	36	10.3	(6.5–14.0)
Neutral	15	5.2	-
Somewhat agree	31	11.1	(6.4–15.8)
Strongly agree	8	2.1	-
Total	**360**		

Table 15.4: Perceived public attitudes about HIV – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Most people think that a person with HIV is disgusting			
Strongly disagree	127	33.2	(27.4–39.0)
Somewhat disagree	80	23.3	(17.9–28.7)
Neutral	51	15.7	(10.8–20.7)
Somewhat agree	67	22.5	(16.7–28.4)
Strongly agree	22	5.2	(3.0–7.4)
Most people with HIV are rejected when others find out			
Strongly disagree	76	19.8	(15.2–24.5)
Somewhat disagree	88	26.9	(21.0–32.7)
Neutral	57	17.4	(12.4–22.3)
Somewhat agree	91	26.4	(20.7–32.0)
Strongly agree	35	9.6	(5.7–13.4)
Total	**360**		

Table 15.5: Discrimination experienced in the health care setting – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Has anyone in the health care system done any of the following to you since testing positive for HIV?			
Exhibited hostility or a lack of respect toward you?	73	20.4	(15.3–25.5)
Given you less attention than other persons?	55	15.9	(11.0–20.7
Refused you service?	36	12.1	(7.3–16.9)
Experienced any discrimination since testing positive for HIV	79	21.4	(16.3–26.5)
Did the discrimination occur because of [a]...			
Your HIV status?	62	77.3	(63.7–90.8)
Your sexual orientation or practices?	33	53.4	(39.8–67.1)
Your drug injecting habit?	9	37.1	(13.4–60.8)
Your race or ethnicity?	12	20.0	-
Your gender?	9	13.8	-
How comfortable are you discussing your health concerns with your medical provider?			
Completely	286	83.8	(79.2–88.4)
Mostly	30	8.3	(5.4–11.3)
Moderately	9	2.4	-
A little	9	3.5	-
Not at all	6	1.6	-
Total	**360**		

[a]Among those that had experienced any discrimination since testing positive for HIV.

16 Housing

Stable housing is associated with better health outcomes for persons living with HIV. MMP defines homelessness as living in a single-room-occupany hotel (SRO), on the street, in a shelter, or in a car at any point during the prior 12 months. Types of housing are not mutually exclusive and participants could select more than one type. Eighteen percent were classified as being homeless in the last 12 months (Table 16.1). Fifteen percent lived in an SRO at any point in the last 12 months, 4% lived on the street, 3% lived in a shelter, and 1% lived in a car (Table 16.1).

An additional set of questions was asked during the 2016 cycle about where the person lived for most of the past year. Seven percent lived in an SRO for most of the past year. Eighteen percent had no access to laundry, and 11% had no access to a full size kitchen stove in the last place they lived (Table 16.2).

Table 16.1: Housing type in the past 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Housed	296	82.2	(77.2–87.1)
Homeless[a]	64	17.8	(12.9–22.8)
Single-room-occupany hotel	52	14.6	(9.9–19.3)
Street	15	3.9	(1.7–6.0)
Car	4	1.0	-
Shelter	10	2.6	-
Total	**360**		

[a]Homeless defined as lived in an SRO, on the street, in a car, or in a shelter at any point in the last 12 months.

Table 16.2: Housing and access to amenities – Medical Monitoring Project, San Francisco, 2016.

	No.	%	(95% CI)
Housing Type lived in for most of the past 12 months			
Your own place	159	85.3	(80.2–90.3)
In an SRO	14	6.5	(3.1–9.8)
In transitional housing	4	1.7	-
In a hospital	3	1.4	-
Temporarily with others not paying rent	2	0.9	-
In a shelter	2	0.9	-
On the street	2	0.9	-
Someplace else	4	2.0	-
In the last place you lived did you have access to:			
Refrigerator			
Yes	182	95.8	(1.4–6.9)
No	9	4.2	(93.1–98.6)
Full-size kitchen stove			
Yes	168	88.7	(84.2–93.2)
No	23	11.3	(6.8–15.8)
Private toilet			
Yes	178	94.0	(90.7–97.2)
No	13	6.0	(2.8–9.3)
Private shower			
Yes	178	94.0	(90.7–97.2)
No	13	6.0	(2.8–9.3)
Laundry			
Yes	153	81.8	(76.1–87.5)
No	38	18.2	(12.5–23.9)
Working heating system			
Yes	175	92.6	(89.0–96.3)
No	16	7.4	(3.7–11.0)
Total	**191**		

17 Food Insecurity

The Household Food Insecurity Access Scale (HFIAS) has been adapted from USAID's Food and Nutrition Technical Assistance (FANTA) project to estimate the prevalence of food insecurity. Among those who reported any food insecurities in the four weeks before the interview, those most affected were women (49%), Black or African Americans (44%), and people living at or below poverty threshold (56%) (Table 17.1).

Ten percent reported that there was a time during the prior four weeks where there was no food to eat of any kind and 7% reported going a whole day and night without eating (Table 17.2).

Table 17.1: Food Insecurity during the four weeks before the interview by gender, ethnicity and poverty status – Medical Monitoring Project, San Francisco, 2015–2016.

	Food secure			Any food insecurity		
	No.	**%**	**(95% CI)**	**No.**	**%**	**(95% CI)**
Gender						
Male	217	70.5	(65.2–75.8)	97	29.5	(24.2–34.8)
Female	11	51.0	(29.1–73)	12	49.0	(27–70.9)
Trans woman	3	76.6	-	1	23.4	-
Race/Ethnicity						
White	140	74.5	(68.1–81)	49	25.5	(19–31.9)
Hispanic or Latinx	44	63.4	(50.7–76.2)	30	36.6	(23.8–49.3)
Black or African American	28	55.7	(41.5–70)	21	44.3	(30–58.5)
Multiracial or Other	5	45.6	-	7	54.4	(25.6–83.1)
Asian or Pacific Islander	14	85.6	(70.1–100)	3	14.4	-
Poverty						
Above poverty threshold	179	79.9	(74.5–85.3)	48	20.1	(14.7–25.5)
At or below poverty threshold	48	44.0	(34.4–53.7)	61	56.0	(46.3–65.6)
Total	**232**	100		**109**	26.1	

Table 17.2: Household food insecurities during the prior four weeks – Medical Monitoring Project, San Francisco, 2015–2016.

Because of a lack of resources ...	No.	%	(95% CI)
Did you worry about not having enough food?			
Yes	61	16.8	(12.8–20.9)
No	279	83.2	(79.1–87.2)
Were you unable to eat preferred foods?			
Yes	66	18.3	(14.0–22.5)
No	274	81.7	(77.5–86.0)
Did you limit variety of foods?			
Yes	81	23.0	(18.3–27.6)
No	258	77.0	(72.4–81.7)
Did you eat foods you really did not want eat?			
Yes	59	16.4	(12.4–20.5)
No	281	83.6	(79.5–87.6)
Did you eat smaller meals?			
Yes	61	16.8	(12.8–20.9)
No	279	83.2	(79.1–87.2)
Did you eat fewer meals a day?			
Yes	62	17.1	(13.0–21.2)
No	278	82.9	(78.8–87.0)
Was there ever no food to eat of any kind?			
Yes	37	10.4	(7.1–13.7)
No	303	89.6	(86.3–92.9)
Did you go to sleep at night hungry?			
Yes	40	10.8	(7.5–14.0)
No	299	89.2	(86.0–92.5)
Did you go a whole day and night without eating?			
Yes	26	7.0	(4.3–9.7)
No	314	93.0	(90.3–95.7)
Total	**341**		

18 Social Support

Participants were asked about who provides social support and what kind of support their primary support person gave them. Eighty-six percent disclosed their HIV status to their primary support person (Table 18.1). Forty-one percent of those who disclosed felt that their support person usually or always provided HIV related support (Table 18.1). Partners and friends were most important for support with 30% and 28% reporting that was their main source of support, respectively (Table 18.2). Eighty-four percent were usually or always satisfied with the support provided by this support person.

Table 18.1: HIV disclosure to primary support person in the past 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Have you disclosed your HIV status to this person?			
Yes	290	85.8	(80.6–92.0)
No	37	14.2	(8.0–20.4)
Among those who disclosed their HIV status to their support person			
How often have they:			
Provided HIV-related support?			
Never	72	20.7	(16.2–25.2)
Rarely	31	10.0	(5.8–14.0)
Sometimes	44	12.1	(8.5–15.7)
Usually	26	8.8	(4.7–12.9)
Always	109	32.2	(26.5–37.8)
Supported you to get HIV care?			
Never	160	45.8	(39.9–51.7)
Rarely	31	9.8	(5.6–14.0)
Sometimes	24	6.7	(4.0–9.3)
Usually	16	5.6	(1.9–9.2)
Always	56	17.1	(12.1–22.1)
Total	**341**		

Table 18.2: Social support in the past 12 months – Medical Monitoring Project, San Francisco, 2015–2016.

	No.	%	(95% CI)
Who is the most important person for support?			
Partner/spouse	109	30.2	(25.0–35.3)
Friend	90	28.2	(22.3–34.0)
Parent	46	13.9	(9.4–18.5)
Brother/sister	29	8.5	(5.5–11.6)
Daughter/son	25	7.5	(4.6–10.4)
How often are you satisfied with their support?			
Never	2	0.6	-
Rarely	5	1.3	(0.1–2.4)
Sometimes	35	9.7	(6.6–12.9)
Usually	82	25.7	(19.9–31.5)
Always	202	58.4	(52.4–64.3)
How often have they:			
Given you useful information?			
Never	25	7.1	(4.3–9.9)
Rarely	18	5.3	(2.8–7.7)
Sometimes	77	22.5	(17.5–27.6)
Usually	72	21.5	(16.2–26.7)
Always	133	39.0	(33.3–44.9)
Listened to you when you need to talk?			
Never	3	0.9	-
Rarely	8	2.3	-
Sometimes	30	8.0	(5.1–10.8)
Usually	72	22.5	(16.8–28.1)
Always	211	61.4	(55.5–67.4)
Shown you that they care?			
Never	1	0.3	-
Rarely	3	0.8	-
Sometimes	28	7.6	(4.8–10.4)
Usually	55	18.6	(13.0–24.2)
Always	240	68.6	(62.8–74.5)
Helped with specific problems?			
Never	15	4.5	(2.2–6.7)
Rarely	12	3.5	(1.5–5.4)
Sometimes	62	17.4	(13.2–21.5)
Usually	64	19.9	(14.7–25.1)
Always	172	50.4	(44.4–56.4)
Total	**341**		

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