2021-2023

SPECIAL REPORT

EFFECTS OF THE COVID-19 PANDEMIC ON PERSONS LIVING WITH DIAGNOSED HIV

SAN FRANCISCO 2021-2023

MEDICAL MONITORING PROJECT

HIV Epidemiology Section
Applied Research, Community Health Epidemiology and Surveillance Branch (ARCHES)
San Francisco Department of Public Health
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01 EXECUTIVE SUMMARY

The COVID-19 pandemic disrupted routine access and initiation of HIV-related services among persons diagnosed with HIV in San Francisco (SF). As one of the first US cities to issue Shelter-In-Place directives, SF mandated the closing of non-essential businesses and introduced stay-at-home orders to halt disease transmission. City-wide social and economic lockdowns may have limited movement and availability of HIV services. Hesitancy in accessing HIV services and treatment interruptions may have also contributed to gaps in service delivery, hampering local efforts to improve quality of life for people living with HIV (PLWH). The impact of COVID-19 on HIV-related outcomes among persons diagnosed with HIV in SF during the pandemic is not fully known.

The SF Medical Monitoring Project (MMP), a population-based surveillance system of persons diagnosed with HIV, including those receiving and not receiving HIV care in SF, administered a limited set of questions on the impact of COVID-19 on behaviors, service utilization, and barriers related to HIV care and treatment. This special supplement to the SF MMP Biannual Report highlights gaps in care during the COVID-19 pandemic and lessons learned moving forward [1].

Survey participants reflected the city-wide population of PLWH in SF for years 2021 to 2023 [2]. The majority were White (>55%) and at least 50 years of age at the time of interview (>65%). Most also identified as cis-men (>90%) and either homosexual, gay, or lesbian (>75%). Black/African American and Latine/x participants in 2021 represented 12% and 15% of the sample, respectively. Overall participation in 2021 and 2022 was consistent with pre-pandemic levels (40%), followed by an uptick in 2023 (46%).

01 EXECUTIVE SUMMARY

Participants reported COVID-related disruptions in routine HIV-related care. Thirty percent of participants reported skipping routine HIV lab tests and/or doctor visits in 2021 and 37% reported delaying tests and/or doctor visits. By 2023, the percentage of participants who deferred HIV-related care declined more than two-fold, returning to pre-pandemic levels. Similarly, COVID-related loneliness or social isolation was highest at 63% in 2021 and dropped to 34% in 2023.

COVID-19 vaccine uptake was high with participants overwhelmingly reporting partial or full vaccination across all three years (over 95%). Nearly 75% reported no changes to their access to mental health services in 2021, though this percentage dropped to 64% as the pandemic persisted through 2022. By 2023, a modest uptick was observed with 67% reporting no change in access to mental health service. Use of telehealth services to conduct a virtual visit was reported by 74% of participants in 2021 and declined to 44% in 2023. Telehealth may have helped offset gaps in care, though less so for more vulnerable participants who tend to rely on drop-in services that meet basic and “higher-level” needs such as substance use, mental health, and HIV-related care and treatment programs. These safety net services operated at reduced capacity as many program staff were deployed to assist in the COVID-19 response efforts.

In summary, this descriptive analysis highlights the short-term impacts of COVID-19 on health, access to care and supportive services. These findings serve as initial benchmarks to monitor potential long-term impacts on PLWH prioritized for COVID-19 vaccination and inform public health emergency preparedness strategies to ensure continuity of HIV care [3].

02 BACKGROUND

The COVID-19 pandemic fueled excess deaths and illness, disrupting routine access and delivery of health and social services [4]. Shelter-in-place and social distancing mandates in the SF Bay area led to higher levels of social isolation, loneliness, and economic fallout for many, including persons belonging to marginalized communities and those with preexisting medical conditions like HIV [5-11].

The COVID-19 pandemic acted like an interlocking condition with the HIV syndemic, exacerbating mental health conditions and contributing to lower engagement in health care [12]. Increased stigma, fear and anxiety from COVID, combined with the consequences of an economic fallout (job loss, financial hardship, food insecurity, and housing instability) contributed to disruptions in routine HIV care and support services (e.g., case management, food and transportation assistance, mental health and substance use treatment, etc.). Previous reports found COVID-19 to negatively impact the ability to access care among PLWH, increasing their risk of severe illness and dropping out of HIV care [13].

This report highlights some of the impacts of the COVID-19 pandemic on PWH in SF. Data on demographic characteristics, HIV-related stigma, mental health and substance use were collected from one project cycle spanning three years. Survey questions covered a range of topics from access to care and vaccine uptake to employment and financial wellbeing. Clinical gaps along the HIV care continuum were measured. Findings observed in SF were consistent with trends observed in the state and nationally [14].

03 METHODS

Data on clinical and behavioral questions were obtained from MMP between June 2021 and May 2024. 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 [15]. 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 [16]. At the second stage, adults with a reported HIV diagnosis in the National HIV Surveillance System (NHSS) were sampled. As one of the 23 project areas participating in the CDC-funded MMP, the SF MMP team collected 2021 cycle data from June 2021 to May 2022. Similarly, the team collected data for the 2022 cycle from June 2022 to May 2023 and the 2023 cycle from June 2023 to May 2024. Study details for the 2021-2023 MMP cycles have been previously described [17].

ELIGIBILITY

Eligibility for inclusion was based on receiving a diagnosis of HIV, being ⩾18 years of age, alive, and a resident of SF on the sampling date. The sampling dates for the 2021, 2022, and 2023 cycles were December 31st of the prior year. The sampling date for the 2021 cycle was December 31, 2020, for example.

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 2021-2023 data collection cycles nationally and in SF [18]. All participants gave informed consent prior to the interview [19, 20].

03 METHODS

INTERVIEW

Trained interviewers conducted an approximately one-hour face-to-face or telephone standardized computer-assisted structured interview in either English or Spanish. Face-to-face interviews were conducted in a private location (such as at the SF Department of Public Health). Telephone interviews were conducted at the SF Department of Public Health or in a secure remote work environment. Participants received a token of appreciation of $50. 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 people assigned female at birth), met and unmet needs for ancillary services, use of HIV prevention services, and stigma.

The standard interview was supplemented with additional questions of local interest and SFDPH administered these local questions under 10 minutes of a participant's time. Project coordinators reviewed and redesigned local questions each cycle year. Rotating questions in and out of the survey to balance the needs to focus on emerging topics, reduce respondent burden, and preserve the ability to compare data (Appendix).

03 METHODS

About forty percent of eligible persons sampled in the 2021 and 2022 survey cycles participated and increased to 46% in the 2023 survey cycle (Table 3.1). Participation was similar, if not higher, to those observed in previous years of survey administration, prior to the COVID-19 pandemic, suggesting that the pandemic did not adversely affect participation.

TABLE 3.1: SAMPLE SIZE AND RESPONSE RATE

	Total Sample Size (N)	Ineligible Persons (N)	Total Final Eligible Sample (N)	Respondents (N)	Response Rate (%)
Cycle Year					
2021	400	12	388	162	41.8
2022	400	7	393	157	39.9
2023	400	20	380	173	45.5

04 DEMOGRAPHICS

Most participants in the 2021-2023 MMP cycles identified as cis men (>90%), homosexual, gay, or lesbian (>75%), were White (>55%), and/or were over the age of 50 at the time of interview (>65%) (Table 4.1).

TABLE 4.1: DEMOGRAPHIC CHARACTERISTICS, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Gender [a]			
Cis-men	145 (92.4)	146 (94.8)	154 (90.1)
Cis-Women	7 (4.5)	7 (4.6)	7 (4.1)
Trans-Men and Women	5 (3.2)	1 (0.7)	10 (5.8)
Sexual Orientation			
Gay or Lesbian	123 (79.4)	124 (80.5)	131 (76.6)
Straight	21 (13.6)	15 (9.7)	18 (10.5)
Bisexual	6 (3.9)	10 (6.5)	12 (7.0)
Other	5 (3.2)	5 (3.3)	10 (5.9)
Race/Ethnicity			
Asian or Pacific Islander	5 (3.3)	13 (8.4)	17 (9.9)
Black/African American	18 (11.8)	17 (11.0)	22 (12.9)
Hispanic/Latinx [b]	23 (15.1)	17 (11.0)	31 (18.1)
White	102 (67.1)	105 (68.2)	98 (57.3)
Multiracial or Other	<5 (<3.0)	<5 (<3.0)	<5 (<3.0)
Total	**157 (100)**	**156 (100)**	**173 (100)**

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

[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 questions about self identified gender.

[b] Latine/x can be of any race. Persons are classified in only 1 race/ethnicity category.

04 DEMOGRAPHICS

TABLE 4.1: DEMOGRAPHIC CHARACTERISTICS, MMP 2021-2023 CONT.

	2021	2022	2023
	N (%)	N (%)	N (%)
Age at Time of Interview			
18-39	19 (12.1)	21 (13.5)	28 (16.2)
40-49	23 (14.7)	24 (15.4)	33 (19.1)
50-59	40 (25.5)	41 (26.3)	42 (24.3)
60-64	24 (15.3)	26 (16.7)	27 (15.6)
65+	51 (32.5)	44 (28.2)	43 (24.8)
Total	**157 (100)**	**156 (100)**	**173 (100)**

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

05 ACCESS TO HIV CARE

In 2021, 9% of participants missed a dose of their HIV medicines due to reasons related to the pandemic since March 1, 2020 (Table 5.1). Thirty percent reported skipping or delaying HIV-related laboratory tests, and 37% reported skipping or delaying routine HIV-related doctor visits. Eleven percent of participants cited problems with getting new prescriptions or refills for their HIV medication. By 2022, 10% of participants missed a dose of their HIV medicines in the past 12 months due to reasons related to the pandemic, while 19% and 32% reported skipping or delaying HIV-related laboratory tests and doctor visits, respectively.

Disruptions in HIV medical care continued to improve in 2023, with only 5% of participants reporting missing HIV medicine doses, 12% skipping or delaying HIV-related laboratory tests, and 13% skipping or delaying HIV-related doctor visits. Compared to MMP participants residing outside of SF but in California, SF MMP participants were less likely to miss a dose of their HIV medicines (2% less) but more likely to delay routine HIV laboratory tests (6% more) due to reasons related to the pandemic in 2020 [14].

05 ACCESS TO HIV CARE

TABLE 5.1: CHANGES TO ROUTINE HIV-RELATED CARE, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Have you...			
Missed any dose of HIV medicines?			
Yes	15 (9.4)	15 (9.7)	9 (5.2)
No	143 (89.9)	140 (90.3)	162 (93.6)
Skipped or delayed routine HIV lab tests?			
Yes	47 (29.6)	30 (19.4)	20 (11.6)
No	112 (70.4)	125 (80.7)	153 (88.4)
Skipped or delayed routine HIV doctor visits?			
Yes	59 (37.1)	49 (31.6)	23 (13.3)
No	100 (62.9)	105 (67.7)	149 (86.1)
Had a problem getting a prescription/refill for HIV medications?			
Yes	18 (11.3)	-	-
No	141 (88.7)	-	-
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

06 MENTAL HEALTH

Thirteen percent of participants in the 2021 cycle reported being unable to receive mental health services since March 1, 2020 (Table 6.1). Additionally, eight percent of participants reported experiencing "moderate" or "severe" changes to their access to mental health care since March 1, 2020. By 2022 and 2023, only 14% and 11% of participants, respectively, reported significant changes to their access to mental health care due to the pandemic. Sixty-four percent of participants experienced an increase in loneliness or isolation in 2021 due to reasons related to the pandemic (Table 6.2). The proportion decreased in 2022 and 2023, with 59% and 34% of participants reporting loneliness or isolation, respectively.

TABLE 6.1: MENTAL HEALTH SERVICES, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Access to Mental Health Care			
No changes	117 (73.6)	99 (63.9)	115 (66.5)
Mild changes	7 (4.4)	16 (10.3)	16 (9.3)
Moderate changes	5 (3.1)	14 (9.0)	15 (8.7)
Severe changes	7 (4.4)	7 (4.5)	4 (2.3)
Started to access for a new condition	5 (3.1)	7 (4.5)	3 (1.7)
Needed, but was unable to access for a new condition	8 (5.0)	11 (7.1)	10 (5.8)
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

06 MENTAL HEALTH

TABLE 6.1: MENTAL HEALTH SERVICES, MMP 2021-2023 CONT.

	2021	2022	2023
	N (%)	N (%)	N (%)
Access to Group Therapy/Support Groups			
No changes	111 (69.8)	-	-
Mild changes	6 (3.8)	-	-
Moderate changes	9 (5.7)	-	-
Severe changes	12 (7.6)	-	-
Started to access for a new condition	1 (0.6)	-	-
Needed, but was unable to access for a new condition	2 (1.3)	-	-
Unable to receive mental health services?			
Yes	20 (12.6)	-	-
No	134 (84.3)	-	-
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

TABLE 6.2: LONELINESS AND ISOLATION, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Have you experienced an increase in loneliness or isolation?			
Yes	101 (63.5)	91 (58.7)	59 (34.1)
No	58 (36.5)	64 (41.3)	113 (65.3)
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

07 ACCESS TO OTHER SERVICES

Sixteen percent of participants reported "moderate" or "severe" changes to their access to medical care in the 2021 survey cycle (Table 7.1). Seventy-four percent of participants reported using a smartphone, tablet, or computer, to conduct a virtual visit with a healthcare provider in the past year. Use of telehealth services fell to 44% in 2023. Ten percent of participants reported being unable to access food assistance services due to reasons related to the pandemic in 2021 (Table 7.2).

TABLE 7.1: ACCESS TO MEDICAL CARE, MMP 2021, 2023

	2021	2023
	N (%)	N (%)
Access to Medical Health Care		
No changes	106 (66.7)	-
Mild changes	25 (15.7)	-
Moderate changes	19 (12.0)	-
Severe changes	6 (3.8)	-
Started to access for new condition	2 (1.3)	-
Needed, but was unable to access for a new condition	1 (0.6)	-
Have you used telehealth methods to conduct a virtual visit?		
Yes	118 (74.2)	76 (43.9)
No	41 (25.8)	96 (55.5)
Total	**159 (100)**	**173 (100)**

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

07 ACCESS TO OTHER SERVICES

TABLE 7.2: ACCESS TO FOOD ASSISTANCE SERVICES, MMP 2021

	No.	%
Unable to receive food pantry services due to COVID-19?		
Yes	16	10.1
No	137	86.2
Total	**159**	**100**

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

08 FINANCIAL BURDEN

Eleven percent of participants reported losing wages for one or more weeks and 18% reported working reduced hours or losing their job in 2021. Participants experiencing loss of wages or employment improved by 2022. Overall, fourteen percent reported loss of wages (Reduced hours involuntary, Reduced hours due to dependents, and Voluntarily reduced hours) or and employment (Lost job) in 2022 and 2023 (Table 8.1). Some participants also reported significant changes to their housing situations, including not being able to afford rent (2%), moving in with family to save money (1%), and experiencing unstable housing situations (2%) in 2021 (Table 8.2). Compared to MMP participants living outside of SF and in California during the 2020 cycle, SF MMP participants were less likely to report losing wages from their work due to the pandemic [14].

TABLE 8.1: CHANGES TO EMPLOYMENT, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Have you lost wages from your work for one week or more?			
Yes	18 (11.3)	-	-
No	141 (88.7)	-	-
How has the number of hours you work changed?			
Still working same number of hours as before	51 (32.1)	42 (27.1)	49 (28.3)
Working more hours than before	15 (9.4)	14 (9.0)	5 (2.9)
Working reduced hours because I cannot get the hours I want to work or used to work	13 (8.2)	7 (4.5)	19 (11.0)
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

08 FINANCIAL BURDEN

TABLE 8.1: CHANGES TO EMPLOYMENT, MMP 2021-2023 CONT.

	2021	2022	2023
	N (%)	N (%)	N (%)
Working reduced hours to take care of dependents	1 (0.6)	0 (0.0)	0 (0.0)
Voluntarily reduced my hours	5 (3.1)	8 (5.2)	1 (0.6)
Lost my job	10 (6.3)	6 (3.9)	5 (2.9)
Chose not to work	-	5 (3.2)	2 (1.2)
Total	**159 (100)**	**155 (100)**	**173 (100)**

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

TABLE 8.2: CHANGES TO HOUSING, MMP 2021

	No.	%
How has your housing situation changed?		
There have been no changes	141	88.7
I could not afford my rent and was forced to leave	3	1.9
I moved in with family members to save money	1	0.6
I became unstably housed	2	1.3
I was placed in a SIP hotel	1	0.6
Other	10	6.3
Total	**159**	**100**

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

09 LIFESTYLE CHANGES

The COVID-19 pandemic introduced changes to lifestyle routines and habits for many people. Many participants (44%) reported exercising less than usual in 2021 (Table 9.1). Alcohol consumption (48%) and recreation drug use (47%) remained about the same (Table 9.1).

TABLE 9.1: LIFESTYLE HABITS DURING THE PANDEMIC, MMP 2021

	No.	%
Exercise		
Less than usual	70	44.0
About the same	55	34.6
More than usual	29	18.2
Started to exercise	4	2.5
Alcohol		
Less than usual	29	18.2
About the same	77	48.4
More than usual	21	13.2
Engaged in recovery	4	2.5
Recreational Drugs		
Less than usual	19	12.0
About the same	75	47.2
More than usual	20	15.6
Engaged in recovery	5	3.1
Total	**159**	**100**

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

10 VACCINATION

Rates of COVID-19 vaccination were high among people living with HIV. From 2021-2023, most participants (98%) reported being partially or fully vaccinated (Table 10.1). Of those who did not receive nor plan on receiving the vaccine from 2021 to 2023, most (60%) reported having safety or trust concerns (i.e., vaccine made too quickly, don't trust or know what materials are in it) (Table 10.2).

TABLE 10.1: COVID-19 VACCINATION RATES, MMP 2021-2023

	2021	2022	2023
	N (%)	N (%)	N (%)
Vaccination Status			
Partially or fully vaccinated	158 (99.4)	151 (97.4)	167 (96.5)
Not vaccinated	1 (0.6)	4 (2.6)	5 (2.9)
Total	**159 (100)**	**155 (100)**	**173 (100)**

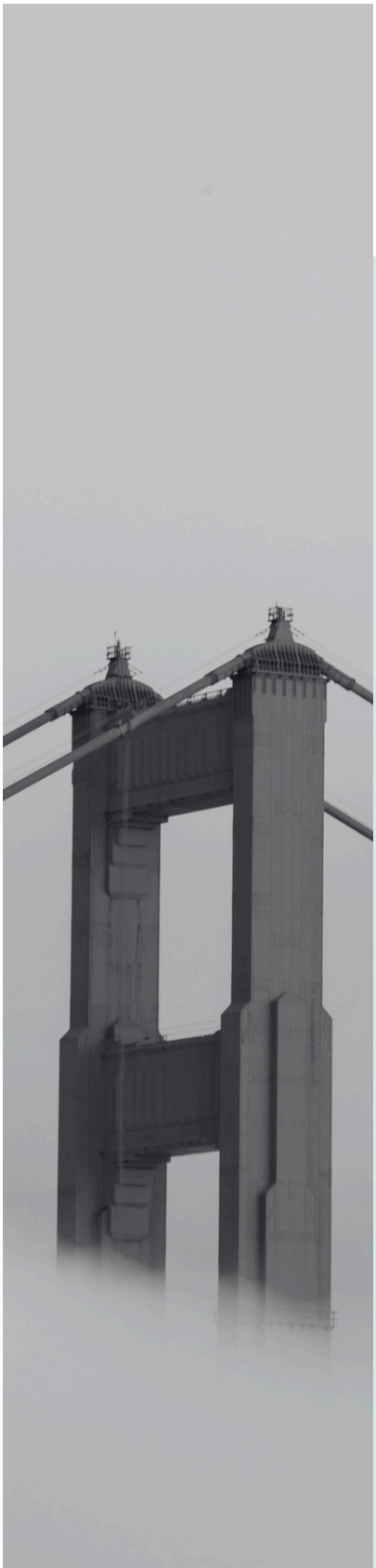
Note: Numbers may not sum to total because of "don't know" and skipped (missing) responses. Percentages may not sum to 100 because of rounding.

10 VACCINATION

TABLE 10.2: REASONS FOR REFUSING VACCINATION, MMP 2021-2023

	No.	%
Reason for not getting COVID-19 vaccine		
Safety or trust concerns	6	60.0
Side effects/allergic reaction concerns	1	10.0
I don't think I'm at risk of COVID-19/don't need the vaccine	1	10.0
I already had COVID-19	1	10.0
Other	1	10.0
Total	**10**	**100**

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



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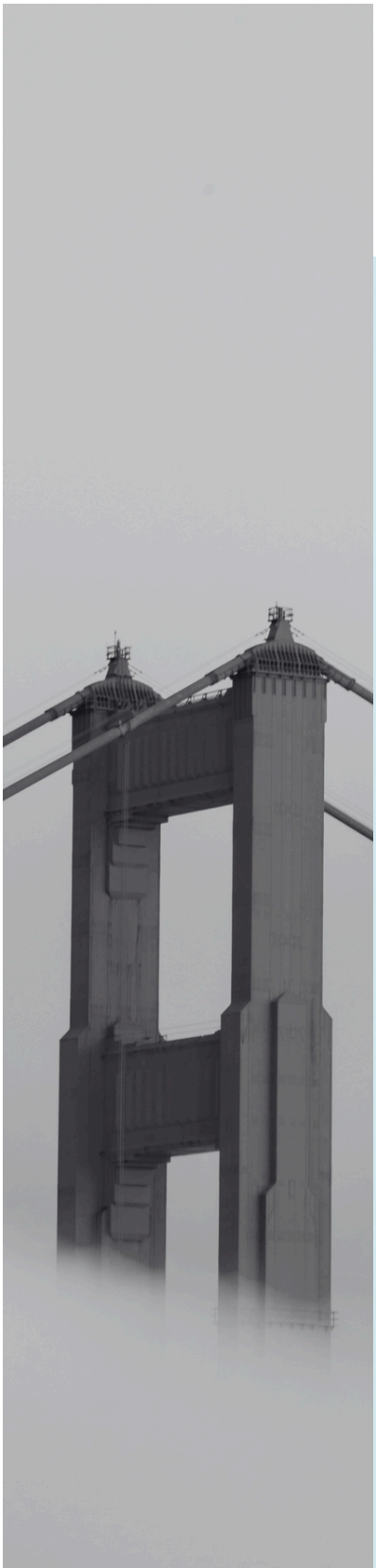

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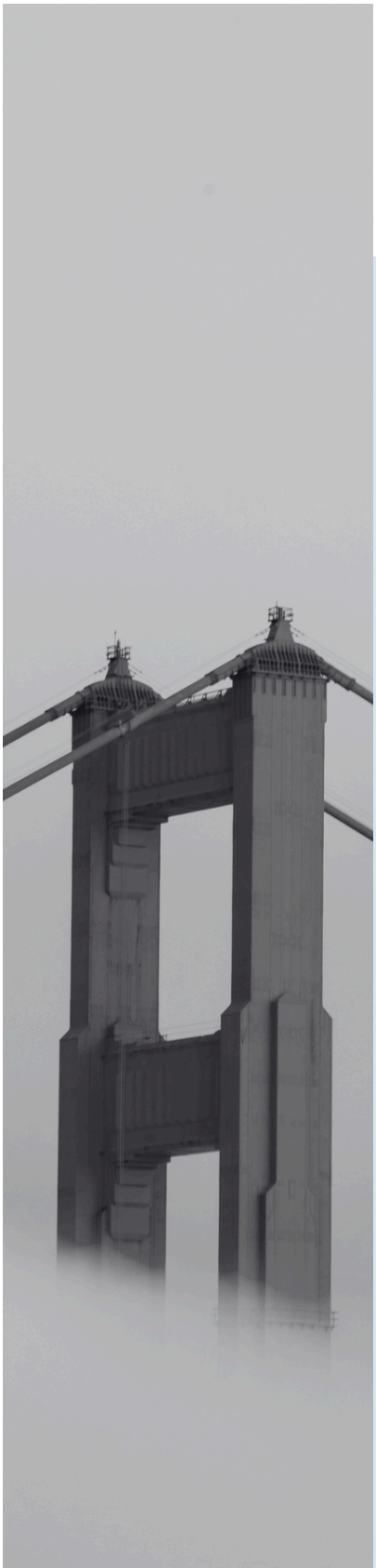

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APPENDIX

Table 1. Survey questions by cycle year, Medical Monitoring Project, San Francisco, Combined 2021-2023

Question	Cycle Year		
	2021[a]	2022[b]	2023[c]
Have you missed any dose of your HIV medicines?	✓	✓	✓
Have you skipped or delayed routine HIV-related laboratory tests, such as CD4 and viral load?	✓	✓	✓
Have you skipped or delayed routine HIV-related doctor visits?	✓	✓	✓
Have you had a problem getting a prescription or a refill for your HIV medications?	✓		
Have you lost wages from your work for one week or more?	✓		
Have you experienced an increase in loneliness or isolation?	✓	✓	✓
Have you used a smartphone, tablet, or computer to conduct a virtual visit with your doctor, nurse, pharmacist, or other healthcare provider?	✓		✓
Were you unable to receive mental health services?	✓		
Were you unable to receive food panty services due to COVID-19?	✓		
How has your housing situation changed?	✓		
How has the number of hours you work changed?	✓	✓	✓
Would you say that you exercise more, less, or about the same?	✓		
Would you say that you consume alcohol more, less, or about the same?	✓		
Would you say that you use recreational drugs more, less, or about the same?	✓		
Has your access to medical health care changed?	✓		
Has your access to mental health care changed?	✓	✓	✓
Has your access to group therapy and support groups changed?	✓		
Have you received a COVID-19 vaccine?	✓	✓	✓
What is the main reason you do not plan to get the vaccine?	✓	✓	✓

[a] 2021: Since March 1, 2020, because of the COVID pandemic.

[b] 2022: In the past 12 months, because of the COVID pandemic.

[c] 2023: In the past 12 months, because of the COVID pandemic.