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## RESEARCH

## Assessment of PrEP and PEP furnishing in San Francisco Bay Area pharmacies: An observational cross-sectional study



Grace Herron, Ashley Leong, Keya Patel, Keanna Rasekhi, Dorie E. Apollonio\*

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## ABSTRACT

**Background:** Over 1 million people in the United States are infected with human immunodeficiency virus (HIV). As of 2021, pharmacists in California can prescribe PrEP and PEP without establishing a collaborative practice agreement in an effort to reduce HIV transmission. However, in 2021 less than 3% of independent pharmacies in the San Francisco Bay Area did so. To our knowledge, there has been no follow-up research assessing potential changes in pre-exposure prophylaxis/postexposure prophylaxis (PrEP/PEP) furnishing rates in the region.

**Objective:** Assess the extent of PrEP/PEP furnishing in San Francisco Bay Area pharmacies 3 years after policy implementation.

**Methods:** We conducted an observational, cross-sectional study to identify independent community and mail-order pharmacies furnishing PrEP/PEP in the nine-county San Francisco Bay Area in 2024. Furnishing pharmacies were identified via phone calls and the findings were validated with in-person visits. We also identified the number of retail chain pharmacies furnishing PrEP/PEP in San Francisco County.

**Results:** We contacted 202 independent community and mail order pharmacies in the nine-county San Francisco Bay Area by telephone; of these, 16 reported furnishing PEP/PrEP and all confirmed their ability to furnish when visited in person. We contacted 67 retail chain pharmacies in San Francisco County; of these, 11 pharmacies reported furnishing PrEP/PEP (10 Safeway; 1 Walgreens).

**Conclusions:** More pharmacies furnished PrEP/PEP in the 9-county San Francisco Bay Area in 2024 (8%) than in 2021 (3%); in addition, one retail chain pharmacy had instituted a furnishing protocol. However, furnishing rates remained low. Past research suggests that advertising and the development of furnishing protocols may help increase furnishing and increase medication access.

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Over 1 million people in the US were infected with human immunodeficiency virus (HIV) as of 2023.<sup>1</sup> HIV prevalence is higher in urban areas than in rural communities, with cases concentrated in the largest metropolitan areas and among minority groups (African-Americans, Latinx, LGBTQ+).<sup>2,3</sup> At the end

of 2022, the California HIV Surveillance Report indicated there were 30,545 individuals living with HIV in the 9-county San Francisco Bay Area.<sup>4</sup> Beginning in 2020, the COVID-19 pandemic worsened disparities in HIV outcomes in the San Francisco Bay Area and other large US metropolitan areas.<sup>5</sup> In 2022, reported HIV infections in San Francisco increased for the first time in 10 years.<sup>6</sup>

Pre-exposure prophylaxis (PrEP) is a medication that individuals at risk for HIV can take to prevent transmission of HIV.<sup>7</sup> PrEP medications include Truvada (oral), Descovy (oral), and Apretude (injection).<sup>7</sup> Postexposure prophylaxis (PEP) consists of antiretroviral medications that can be taken after HIV exposure to decrease the risk of transmission.<sup>7</sup> Both PrEP and PEP can reduce HIV morbidity and mortality. The U.S. national government has invested roughly \$100 billion into HIV/AIDS prevention and treatment.<sup>8</sup> The U.S. Department of

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\* **Correspondence:** Dorie E. Apollonio, PhD, MPP, Department of Clinical Pharmacy, University of California, San Francisco, 530 Parnassus Ave Suite 366, Box 1390, San Francisco, CA 94143.

E-mail address: [dorie.apollonio@ucsf.edu](mailto:dorie.apollonio@ucsf.edu) (D.E. Apollonio).

## ORCID

Dorie E. Apollonio: <http://orcid.org/0000-003-4694-0826>

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Health and Human Services has attempted to increase access to PrEP through programs such as Ready, Set, PrEP, a program that provides free HIV prevention for those who enroll and qualify.<sup>9</sup>

Since 2014, states have sought to increase access to medications by expanding pharmacists' licenses to practice, including the opportunity to prescribe and administer medications,<sup>10</sup> referred to as "furnishing" in California.<sup>11</sup> Community pharmacists are well-positioned to offer medication services given that approximately 95% of the population in the US lives within 10 miles of a pharmacy;<sup>3,12</sup> for example, pharmacist provision of immunizations increases vaccination rates.<sup>13</sup> Past research on furnishing has found that it improved access to hormonal contraception and naloxone, although this increased access lagged behind policy changes.<sup>14–19</sup> Furnishing also has the potential to increase access to and use of PrEP/PEP.<sup>20</sup> In California, pharmacists gained the ability to furnish PrEP/PEP without supervision or establishment of a collaborative practice agreement, or prior authorization from insurance companies, in 2021, following the passage of SB159 in 2019.<sup>21</sup> Although California pharmacists were given increased authority for furnishing PrEP/PEP, research conducted shortly after implementation identified barriers to uptake including need for COVID-19 services, perceived lack of demand for services, cost, and limited resources.<sup>20</sup> As a result, in 2021, less than 3% of pharmacies in the San Francisco Bay Area, which contains multiple urban areas where needs for these medications are high, furnished PrEP and PEP.<sup>20</sup>

Since the publication of the 2021 study, there have been multiple shifts that may have affected PrEP and PEP furnishing rates. These include an increase in reported HIV prevalence in the San Francisco Bay Area in 2022, the elimination of shelter-in-place policies associated with the COVID-19 pandemic, and the general trend of increased furnishing rates in the years following policy changes that allow pharmacists to prescribe medications. In particular, respondents in the 2021 study noted that demand for services related to COVID-19 had delayed implementation of PrEP and PEP prescribing by pharmacists; they also believed social distancing was associated with reduced sexual activity that decreased demand for services.<sup>20</sup> We were unable to identify any other follow-up studies of furnishing and medication access in the region; as a result, it is unclear whether access to medications may have changed over time. This study sought to assess the number of independent community and mail-order pharmacies that furnished PrEP/PEP in the San Francisco Bay Area 3 years after policy implementation and after the relaxing of restrictions associated with the COVID-19 pandemic, including a statewide shelter-in-place order. Expanding on the 2021 research, we also assessed whether retail chain pharmacies in San Francisco County had begun furnishing PrEP and PEP. The findings have implications for understanding the effects of policies intended to improve access to HIV medications and potentially decrease HIV infection rates, and how these policies might be modified to increase medication access.

## Methods

### Design

We conducted an observational cross-sectional study to identify pharmacies that furnished PrEP/PEP in the nine-

county San Francisco Bay Area (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma) in 2024. In addition to replicating the 2021 study that identified furnishing rates in the San Francisco Bay Area among independent-community and mail-order pharmacies, we expanded on its methods by assessing furnishing rates at retail chain pharmacies in San Francisco County. The University of California San Francisco Institutional Review Board approved this study as exempt on December 9, 2020 (#20-32968) on the grounds that data were anonymized and there was minimal risk to participants (Category 2). All research activities described below were conducted in January–April 2024.

### Data collection

We identified pharmacies to include in the study by downloading California Department of Consumer Affairs active license data. To replicate the 2021 study, we first identified independent community and mail-order pharmacies located within the 9-county San Francisco Bay Area. The 2021 study excluded retail chain pharmacies based on previous research suggesting that chain locations were unlikely to pioneer implementation of new medication furnishing, due to challenges inherent in developing system-wide protocols relevant to multiple locations. Given that 3 years had passed since implementation, we expanded on the previous study by identifying retail chain pharmacies, defined as pharmacies with 4 or more retail locations, in San Francisco County.<sup>20</sup> Given that retail chain pharmacies have standardized protocols by ownership, we anticipated that we findings from a single county would be generalizable. We excluded pharmacies that focused on patient populations that would not use PrEP/PEP; these included veterinary pharmacies, infusion centers, pediatric pharmacies, long-term care pharmacies, nuclear pharmacies, and compounding pharmacies.

### Measures

In March–April 2024, 4 of the authors (G.H., A.L., K.P., K.R.) contacted each of the identified pharmacies via telephone to determine whether they furnished PrEP/PEP using methods identified in previous research.<sup>13,16</sup> Pharmacies were asked whether they furnish PrEP/PEP using the script, "I heard that you can get PrEP and PEP from a pharmacy without a prescription from your doctor. Can I do that at your pharmacy?" If necessary, the caller listed Truvada and Descovy as examples. We attempted to contact each pharmacy at least three times by phone at different times of day, and when requested by the pharmacy, also sent up to 3 emails to specific pharmacists named by the person answering the call to verify that these pharmacists were able to furnish PrEP or PEP. In April 2024, the 4 authors made up to 3 drop-in, in-person visits at different times and days of the week during operating hours, to each independent and mail-order pharmacy in the nine-county San Francisco Bay Area that indicated that they furnished PrEP/PEP and asked respondents with employee nametags who verbally verified their employment on-site whether a pharmacist at that location had the ability to furnish. Potential identifying information, including the names of the pharmacists and

pharmacies, were then removed from the dataset to retain confidentiality.

Our primary outcome measure was whether pharmacies furnished PrEP/PEP, coded by self-report in response to a telephone call. Any additional information about furnishing practices, facilitators, or barriers volunteered by respondents was summarized in call notes.

Obtaining PrEP, and especially PEP, may be time-sensitive, and most pharmacies in the San Francisco Bay Area, as in the United States overall, are owned by retail chains. The time involved in reaching a pharmacy, typically meaning a retail chain pharmacy, to determine whether they furnish PrEP/PEP also serves as a potential measure of access. To assess whether individuals could reach pharmacies quickly, we also calculated wait times to reach a pharmacist at the 3 retail chains with the largest number of stores in San Francisco County.

### Analytical strategy

Our analysis relied on descriptive statistics and summaries of call notes.

## Results

Our 2023 download of California Department of Consumer Affairs active license data identified 6091 pharmacies in California. Of those, 948 were in the nine-county San Francisco Bay Area. After excluding pharmacies serving patient populations that would not use PrEP or PEP (e.g., pediatric pharmacies), 861 pharmacies remained in the sample. Of these, 199 were independent community pharmacies, 3 were mail-order pharmacies, and 659 were retail chain pharmacies. For the assessment of furnishing by independent community and mail-order pharmacies, 4 of the authors (G.H., A.L., K.P., K.R.) attempted to contact a total of 202 pharmacies.

To assess furnishing by retail chain pharmacies, we contacted all 67 pharmacies in this category located in San Francisco County; these pharmacies represented 10.2% of retail chain pharmacies in the nine-county San Francisco Bay Area.

PrEP/PEP furnishing by independent community and mail-order pharmacies in the San Francisco Bay Area

The population of independent community and mail-order pharmacies in the San Francisco Bay Area consisted of 202 locations. By county, 20.3% were in Alameda (41 pharmacies), 9.4% in Contra Costa (19), 1.5% in Marin (3), 2% in Napa (4), 17.3% in San Francisco (35), 8.9% in San Mateo (18), 30.2% in Santa Clara (61), 2.5% Solano (5), and 7.9% in Sonoma (16).

After calling all 202 pharmacies, we successfully reached a person at 181 locations, after up to 3 call attempts. Of these, 165 pharmacies reported that they did not furnish PEP/PrEP and 16 reported furnishing PEP/PrEP. The results are summarized in [Figure 1](#) and [Table 1](#).

### PrEP/PEP furnishing by retail chain pharmacies in San Francisco County

The 2021 study we replicated excluded retail chain pharmacies based on previous research suggesting that chain locations were unlikely to pioneer the implementation of new medication furnishing. Given that it had been 3 years since

policy implementation, we also assessed whether retail chain pharmacies in San Francisco, a consolidated city-county located within the nine-county Bay Area, had implemented furnishing of PrEP/PEP.

We contacted all 67 retail chain pharmacy stores in San Francisco ([Figure 2](#)). There are 4 retail chains present; by ownership, these were Costco (1 store, 1.5%), CVS (12 stores, 17.9%), Safeway (10 stores, 14.9%), and Walgreens (44 stores, 65.7%). After making up to 3 call attempts per location, we successfully contacted 63 pharmacies willing to indicate over the phone whether they furnished PrEP/PEP. Of those 63 pharmacies, 11 stated that they furnished PrEP/PEP, while 52 pharmacies reported they did not. Of the 11 pharmacies that stated that they furnish PrEP/PEP, 10 were operated by Safeway and 1 was operated by Walgreens.

### Wait times when contacting retail chain pharmacies to request information about PrEP/PEP furnishing

As a secondary outcome, we calculated wait times to reach a pharmacist at the 3 retail chains with the largest number of stores in San Francisco County: CVS, Safeway, and Walgreens. Costco had only a single location in San Francisco; we did report results given that findings would have limited generalizability.

### CVS

We called 12 CVS Pharmacy stores and were able to contact 10 locations. The wait time to speak with a pharmacist averaged 5–6 minutes. Nine of the pharmacies stated they did not furnish PrEP/PEP; one store refused to answer questions about furnishing. When speaking with CVS pharmacies, a few pharmacists requested clarification on the definition of “furnishing.” Although respondents reported they were aware of SB159 (which made it possible for pharmacists to prescribe PrEP/PEP), respondents at CVS stores indicated that the company had not yet implemented a protocol or training. One pharmacist indicated that there were barriers that would make implementation difficult, specifically following up with labs and gaining access to patient medical records.

### Safeway

We called 10 Safeway pharmacies and were able to contact 10 locations. All 10 Safeway pharmacies confirmed they could furnish PrEP/PEP medications. The wait time to speak with a pharmacist averaged 3 minutes, with the shortest wait time being less than 2 minutes and the longest 5 minutes. Three stores were initially unsure of their furnishing status and checked their protocol to confirm their store could furnish. Of the stores that were able to furnish, 9 of 10 stated they had not yet done so. The one pharmacy location that indicated they had furnished stated the store had done so only once; the pharmacist who took the call reported they had been employed at that Safeway location for 2 years. Two stores indicated that they would charge a \$35 service fee to patients who requested PrEP/PEP. One store reported that although 3 people had asked for PrEP/PEP furnishing in the past, after checking their insurance

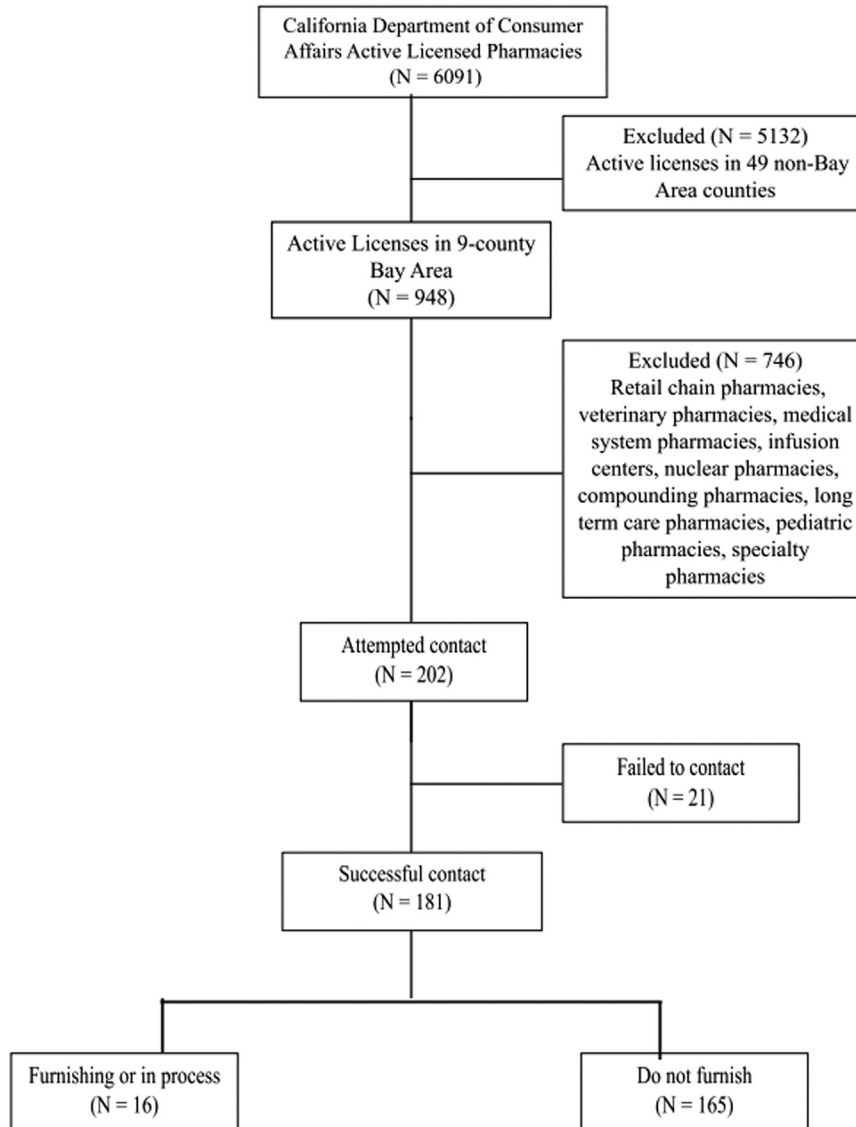


Figure 1. Study flow chart – Independent and mail order pharmacies in San Francisco/Bay Area.

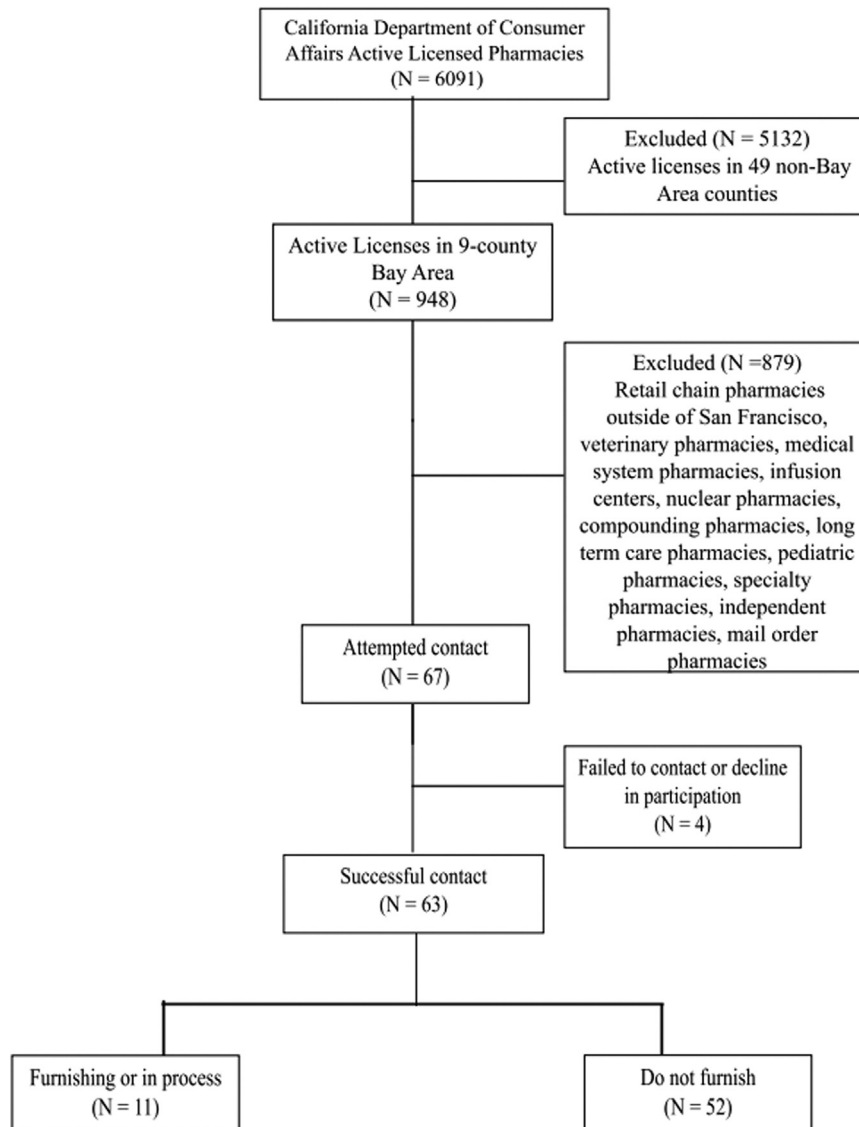
**Table 1**  
Summary of total number of pharmacies contacted and number of furnishing pharmacies per county

Independent and mail order pharmacies furnishing by county		
County	# Of furnishing pharmacies	Total # of pharmacies
Alameda	2	41
Contra Costa	0	19
Marin	0	3
Napa	0	4
San Francisco	6	35
San Mateo	1	18
Santa Clara	4	61
Solano	2	5
Sonoma	1	16
Total	16	202

and the out-of-pocket cost for furnishing at Safeway, the pharmacist determined it would be less expensive for them to seek care from their primary care provider and advised them to do that instead.

*Walgreens*

We called 44 Walgreens pharmacies and were able to contact 42 locations. Of the 42 pharmacies reached, 40 stated they did not furnish PrEP/PEP, 1 pharmacy indicated that it did furnish, and 1 pharmacy declined to answer. The average wait time to speak to a pharmacist was 6 minutes; the shortest was 1 minute and the longest was 32 minutes. Respondents at Walgreens stores reported that the company did not have any protocol or training in place to



**Figure 2.** Study flow chart – Retail chain pharmacies in San Francisco.

furnish; one pharmacist indicated that people seeking PrEP/PEP care should go to urgent care services or a clinic specializing in HIV care.

## Discussion

Overall, our findings suggest that PrEP/PEP furnishing in the San Francisco Bay Area independent-community and mail-order pharmacies increased in the 3 years following the implementation of SB159. In 2021, 3% of pharmacies reported that they furnished PrEP, PEP, or both, while in 2024, 8% (16 locations) reported that they could furnish. Our study also expanded on prior research by contacting retail chain pharmacies in San Francisco County regarding their furnishing status. Three years after the implementation of SB159, 16.4% (11 locations) of those retail chain pharmacies reported that they were able to furnish PrEP, PEP, or both.

Our findings are consistent with prior research on the furnishing of other medications, which has found that once pharmacists are given the ability to prescribe medications, the rates at which they do so increase over time.<sup>14-19</sup> For example, California SB493 gave pharmacists the ability to furnish hormonal contraception in 2013; 7 years later, in 2020, 19% of operational community pharmacies in San Francisco furnished hormonal contraceptives.<sup>14</sup> Taken together, our research and prior studies suggest that policies expanding pharmacist prescribing may require both time and policy refinement to substantially increase access to medications.

Our study had limitations. Our replication study only included independent-community and mail-order pharmacies in the San Francisco Bay Area, and only included retail chain pharmacies for 1 of 9 San Francisco Bay Area counties (San Francisco, a consolidated city-county). However, the largely consistent practices across retail chains by ownership

suggest our findings may be generalizable. Our focus on areas with higher HIV infection rates meant that our study was limited to a metropolitan area containing multiple cities, the San Francisco Bay Area. The number of pharmacies, as well as the motivation to furnish in these counties, may not be generalizable to the rest of California or other states. Given that we were only able to include pharmacies that agreed to report their furnishing status, our findings may reflect some selection bias toward locations that were able to furnish. However given our high response rate, this bias was likely to have been minimal. All the data we initially collected was self-reported by pharmacy staff and pharmacists. We attempted to resolve this limitation by visiting sites in person to confirm the ability to furnish. However, this validation strategy also relied on self-reported data. We relied primarily on open-ended and factual questions to try to limit this potential bias. Despite these limitations, this study offers updated information regarding the implementation of SB159 and its impact on PrEP and PEP furnishing since 2021, as well as an additional understanding of how pharmacist prescribing may change over time. The increase in access to PrEP and PEP is particularly relevant for public health given the reported increase in HIV infection rates in the region as of 2022. Future research could expand on these findings by considering PrEP and PEP furnishing protocols in retail chain pharmacies outside of San Francisco and in pharmacies outside of the 9-county San Francisco Bay Area to better understand the extent to which people in other areas have access to these medications. In addition, an in-depth study of barriers to furnishing in a sample of furnishing and nonfurnishing pharmacies may be useful to pharmacies that seek to expand services.

## Conclusions

Although the implementation of SB159 in 2021 made it possible for California pharmacists to prescribe PrEP and PEP medications without supervision or authorization from physicians and insurance companies, its impact on medication access in the San Francisco Bay Area has been limited due to slow implementation. Past research suggests that pharmacies could increase interest in furnishing by advertising their services. They may also expand access by developing furnishing protocols that can be applied at multiple locations owned by retail chains. Pharmacists are accessible and trusted members of the healthcare team who are well-positioned to furnish medications to patients. However, our findings suggest that prescribing PrEP and PEP in the pharmacy represents largely untapped potential as a strategy to decrease HIV transmission and its associated health harms.

## Disclosure

The authors declare no relevant conflicts of interest or financial relationships.

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**Grace Herron, BS**, 3rd year PharmD student, School of Pharmacy, University of California San Francisco, San Francisco, CA

**Ashley Leong, BS**, 3rd year PharmD student, School of Pharmacy, University of California San Francisco, San Francisco, CA

**Keya Patel, BS**, 3rd year PharmD student, School of Pharmacy, University of California San Francisco, San Francisco, CA

**Keanna Rasekhi, BS**, 3rd year PharmD student, School of Pharmacy, University of California San Francisco, San Francisco, CA

**Dorie E. Apollonio, PhD, MPP**, Professor, School of Pharmacy, University of California San Francisco, San Francisco, CA