



Improving Access to Essential Prevention Services: The Opportunities and Challenges of Expanding the Role of California's Pharmacists

Pharmacists are increasingly recognized for their critical role in accelerating the achievement of priority health initiatives. Given their availability in the community, pharmacists are well-positioned to offer expert advice and provide essential products and services in an accessible and potentially non-stigmatizing environment. As nearly 90% of Americans live within five miles of at least one pharmacy,¹ community pharmacies have become logical venues for preventative care services, including immunizations, blood sugar monitoring, blood pressure checks, smoking cessation, HIV prevention, birth control, and more.

In California, pharmacists' expanding role in HIV prevention and birth control access has been formalized through state legislation. For example, Senate Bill 159 (SB 159, 2019) allows California pharmacists to prescribeⁱ post-exposure prophylaxis (PEP) and 60 days of pre-exposure prophylaxis (PrEP) for HIV prevention to clients without an outside provider's prescription.² By removing some access barriers associated with clinic-based provision of HIV prevention, differentiated PrEP and PEP delivery through pharmacies has the potential to expand the reach of these highly effective yet underutilized HIV prevention tools to people who could benefit.

SB 159 extended an existing policy framework derived from SB 493 (2013), which granted California pharmacists the ability to directly prescribe hormonal contraceptive pills, patches, rings, and injections.³ These laws were built on a 2002 California law (SB 1169) that allowed emergency contraceptive (EC) pills to be prescribed by pharmacists at a time when they were still prescription-only.⁴ In 2013, the FDA made levonorgestrel EC available over-the-counter. Relatedly, in early January 2023, the FDA expanded access to medication abortion and mifepristone dispensing beyond mail-order pharmacies to include community pharmacies that become certified.⁵ It is hoped that through these initiatives, pharmacists can reach Californians who have been underserved by clinic-based provision of sexual and reproductive health (SRH) services and achieve the goals to end the HIV epidemic⁶ and ensure ready access to contraception and medication abortion.

Despite this enabling policy environment, implementation of these laws and associated regulations has been slow. Pharmacist prescription of hormonal contraception was adopted in 2016, but as of 2020, only about 30% of California pharmacies provided hormonal contraception without an outside provider's prescription.⁷

ⁱ In the context of this brief, "prescribe" and "pharmacist-prescribed" refer to pharmacists issuing prescriptions for medications, including PrEP, PEP, and hormonal contraception, under authority granted by a statewide protocol in most cases and collaborative practice agreement in some organizations, also known as "furnishing."

Summary of Findings

In 2022, 919 California pharmacists and pharmacy students completed an online survey about the provision of sexual and reproductive health services, including their viewpoints and experiences around SB 159, which permits pharmacists to prescribe oral PrEP and PEP.

Pharmacist Provision of PrEP and PEP

- Only 11% of participants indicated that pharmacists at their pharmacy initiate PrEP as authorized by SB 159; similarly, 13% reported providing PEP under SB 159.
- While 92% of participants had heard of PrEP and PEP, only 72% had heard of SB 159.
- Participants reported feeling that pharmacy-based PrEP and PEP provision is important (96%), yet significantly fewer participants reported being confident in their knowledge of PrEP (50%) and ability to prescribe PrEP (41%).
- Less than a third of currently practicing licensed pharmacists (29%) reported having training on PrEP and/or PEP, as required to prescribe medications under SB 159.
- Half of participants (53%) classified allocating staff time for PrEP services as difficult given that only the PrEP medication is covered by insurance and the service is not.
- Reported barriers were different between those practicing in chain community pharmacies and independent community pharmacies. For example, 53% of those at chain pharmacies selected insufficient staff/time as the main barrier to pharmacist-prescribed PrEP compared to only 17.5% of those at independent pharmacies.
- A significant number of participants (42%) believed that the 60-day limit is not enough to ensure successful referral to a primary care provider for PrEP continuation.

Pharmacist Provision of Contraception and Medication Abortion

- Half of participants (52%) reported that their pharmacy offers levonorgestrel emergency contraception without an outside provider's prescription.
- More than 90% of participants agreed that providing access to levonorgestrel emergency contraception and hormonal birth control is important, and 75% were willing to prescribe hormonal birth control to pharmacy clients regardless of age.
- A majority of participants were confident in their knowledge of hormonal birth control (72%) and their ability to prescribe birth control (61%).
- Half of participants (52%) agreed that pharmacists in California should be allowed to provide medication abortion without an outside provider's prescription.
- Most participants (75%) would be willing to prescribe abortion medication to pharmacy clients if allowed by law.

Likewise, SB 159 became California law in January 2020; however, a 2021 study conducted across 209 San Francisco Bay Area pharmacies found that only 2.9% prescribed PrEP under SB 159 after the first year.⁸ Notwithstanding general enthusiasm from pharmacists, numerous barriers have inhibited policy implementation, including staffing and workflow limitations, inadequate laboratory ordering and receiving systems, lack of training, insufficient time for screening and counseling, lack of private space, issues with standardization and scalability, and lack of payment for services.⁹ However, these qualitative data were collected in 2018 and were limited to a small sample of pharmacists, medical providers, and representatives of a large community pharmacy chain.⁹ **To evaluate the current status of policy adoption and implementation and understand pharmacists' viewpoints on their role in the provision of SRH services, we conducted a survey of California pharmacists in late 2022.**

Methods

Between October 11 and December 20, 2022, we conducted a cross-sectional, online survey of California pharmacists and pharmacy students (hereafter referred to collectively as ‘pharmacists’) to understand their attitudes, knowledge, and preferences about the provision of HIV prevention and other SRH services in pharmacies, including contraception and medication abortion. We also assessed the implementation of policies enabling pharmacist-prescribed PrEP, PEP, and hormonal contraception. The study was approved by the Office of the Human Research Protection Program Institutional Review Board at UCLA with partner organizations holding reliance agreements.

Study Population and Recruitment

Eligible participants in the survey were: 1) 18 years of age, 2) licensed pharmacists or pharmacy students, 3) currently residing in the state of California, and 4) willing to provide informed consent. Participants were excluded from the survey if they did not meet the inclusion criteria or were identified via security and quality control measures as being a duplicate or bot. There is a growing body of evidence demonstrating the vulnerability of online surveys to bot attacks, especially when recruitment is conducted through social media and incentives are offered.¹⁰⁻¹³ Thus, we implemented rigorous procedures to ensure high levels of data integrity.

A multi-stage recruitment plan included both online and in-person recruitment. In the first phase, we recruited participants through the California Society of Health-System Pharmacists and California Pharmacists Association membership email listservs and newsletters. We also distributed information about the study through flyers and presentations at two conferences: the annual meetings of the American College of Clinical Pharmacy and the California Society of Health-System Pharmacists. The second phase included participant recruitment through the social media channels (i.e., Facebook, LinkedIn, and Twitter) of partner organizations and a focused recruitment effort to include diverse representation of California pharmacists. We identified and promoted the survey to professional groups on social media representing BIPOCⁱⁱ pharmacists and pharmacists outside of major metropolitan areas in California (e.g., California’s rural Central Valley).

Data Collection

The self-administered survey was implemented via *Qualtrics* online survey software¹⁴ after an iterative survey development and piloting phase (which included input from practicing pharmacists). Survey development was informed by the *Consolidated Framework for Implementation Research* which describes contextual determinants that can influence the success of implementation of a program or policy.¹⁵ Survey modules included: demographic information; professional information (years of experience, training, whether currently practicing); pharmacy information; and knowledge, attitudes, and implementation of PrEP, PEP, hormonal contraception, emergency contraception, and medication abortion. Upon completing the survey, participants had the option to enter their email address to receive a \$20 Amazon gift card and/or enter weekly (\$250) or grand prize (\$500) raffles. Only participants verified as valid were eligible for gift cards and raffle prizes. Participants choosing not to share their email remained anonymous.

Data Analysis

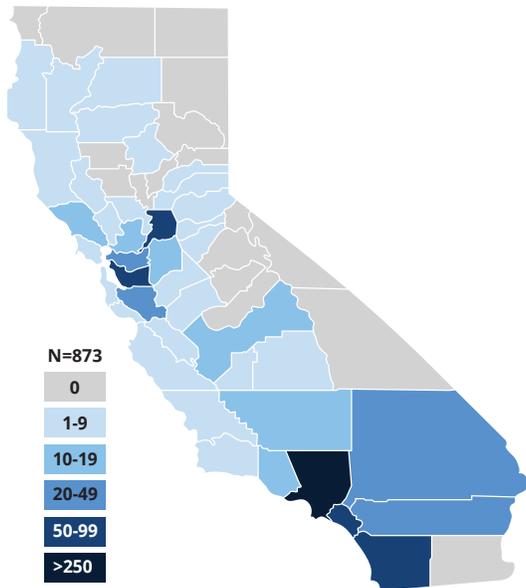
We present descriptive statistics for selected survey outcomes. Percentages were calculated excluding missing or “not applicable” responses from the denominators. When appropriate, results are limited to relevant subgroups (e.g., pharmacists working in community pharmacies). All analyses were conducted in R statistical computing software.¹⁶

ⁱⁱ BIPOC: Black, Indigenous, People of Color

Results

Of the 2,633 responses, 919 (35%) were deemed to be eligible and unique participants who provided informed consent.

Characteristics of the Study Population



The mean age of participants was 39 years, 64% were cisgender females and 64% were Asian American (Table 1). Most participants (84%) were currently practicing licensed pharmacists; 9% were pharmacy students and 7% were non-practicing pharmacists. Just over half of participants currently or most recently worked at pharmacies located in Los Angeles County (29%) or the San Francisco Bay Area (23%) (Figure 1).

Most participants reported working in community pharmacies (43%), hospitals (28%), or clinic or ambulatory care settings (16%). Among those who worked in community pharmacies, 55% worked at a national chain pharmacy and 38% worked at an independent pharmacy.

Figure 1. Locations of participants' pharmacies.

Table 1. Participant sociodemographic characteristics in the California Pharmacist Survey, 2022.

	N=919
Age, mean ± SD	39.1 ± 12.9
Gender, n (%)	
Cisgender female	518 (64.0%)
Cisgender male	289 (35.7%)
Transgender (of any gender identity)	3 (0.4%)
Race/ethnicity, n (%)	
American Indian or Alaska Native	4 (0.5%)
Asian	497 (64.3%)
Black	15 (1.9%)
Hispanic	36 (4.7%)
Native Hawaiian or Pacific Islander	1 (0.1%)
White	184 (23.8%)
Multiracial	17 (2.2%)
Other	19 (2.5%)

Missing values (excluded from %): n=76 age, n=109 gender, n=146 race/ethnicity.

Knowledge of and Attitudes about Pharmacist Provision of PrEP and PEP

Most participants had heard of PrEP and PEP (92% for each) and SB 159 (72%), the California state bill that permits pharmacists to prescribe oral PrEP and PEP medication. Although free online SB 159 trainings are available, few participants had training on PrEP and/or PEP provision in a pharmacy setting (27% in the full

sample, 29% among the subset who were currently practicing licensed pharmacists). Almost all agreed that pharmacy-based PrEP and PEP provision is important (96%), but fewer were confident in their knowledge of PrEP (50%) or ability to prescribe PrEP (41%). Participants rarely reported moral (8%) or religious (7%) objections to PrEP provision (Figure 2).

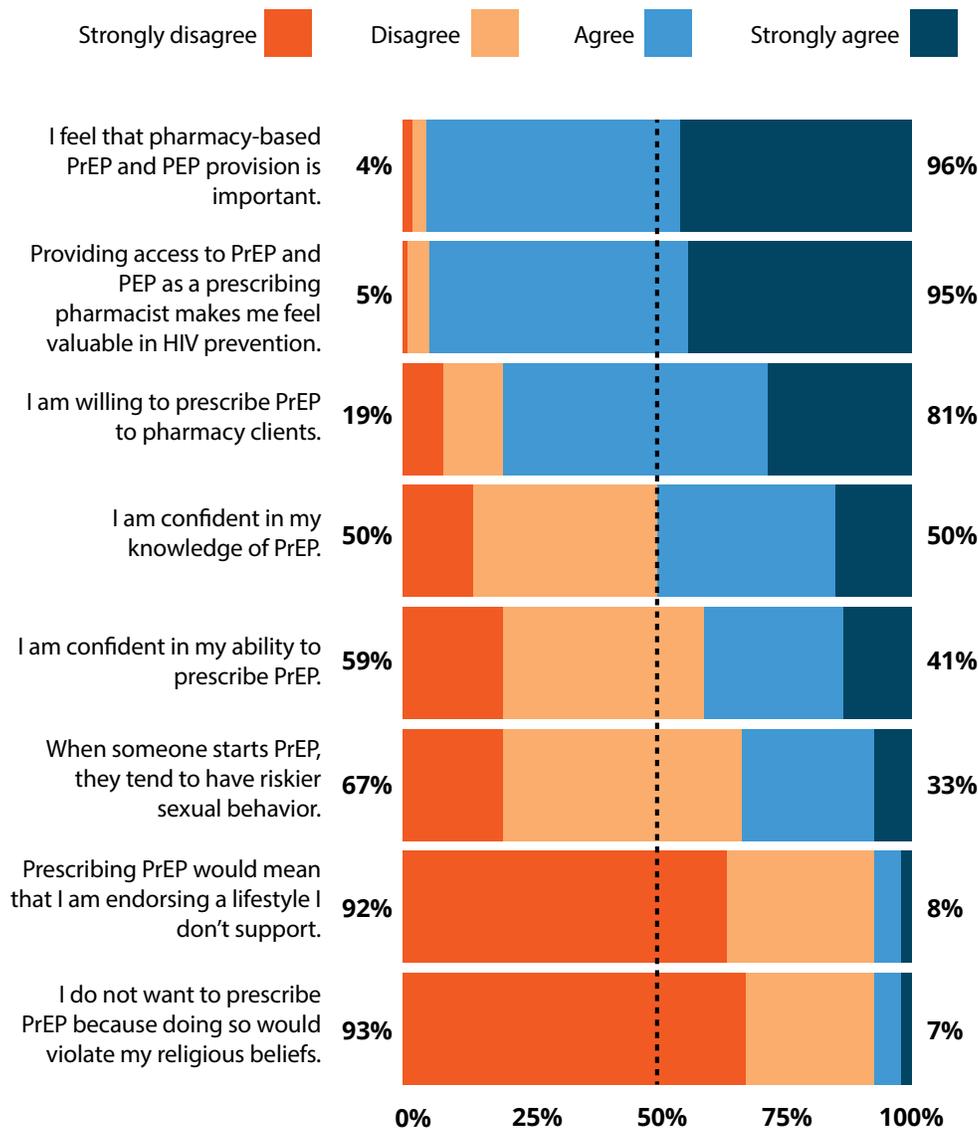


Figure 2. Participant attitudes about PrEP and PEP provision. (Percentages on the left-hand side are the sum of strongly disagree and disagree; percentages on the right-hand side are the sum of strongly agree and agree.)

Current SB 159 Implementation Status

Eleven percent of participants reported working in pharmacies where pharmacists initiate PrEP as authorized by SB 159; another 19% were unsure (Figure 3). This increased to 13% for PEP provision through SB 159. Findings were similar when restricting analyses to the subset of participants who worked in community settings; 11% and 12% of participants working in community pharmacies reported that pharmacists at their pharmacy could prescribe PrEP and PEP, respectively.

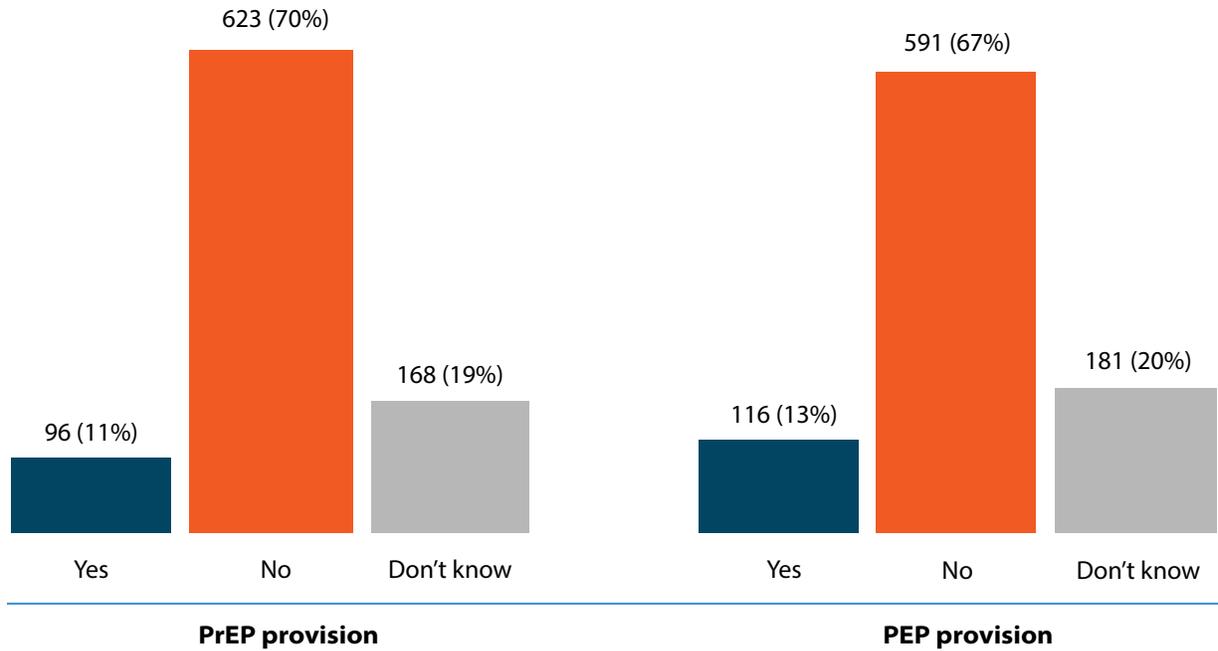


Figure 3. Implementation of PrEP and PEP services as authorized by SB 159 at participants' pharmacies.

PrEP and PEP Implementation Barriers and Facilitators

Less than half of participants (41%) agreed that their pharmacy had everything needed to successfully implement SB 159. When asked to evaluate the difficulty level of steps in the PrEP provision process, more than half (53%) rated allocating staff time for PrEP services as difficult (Figure 4).

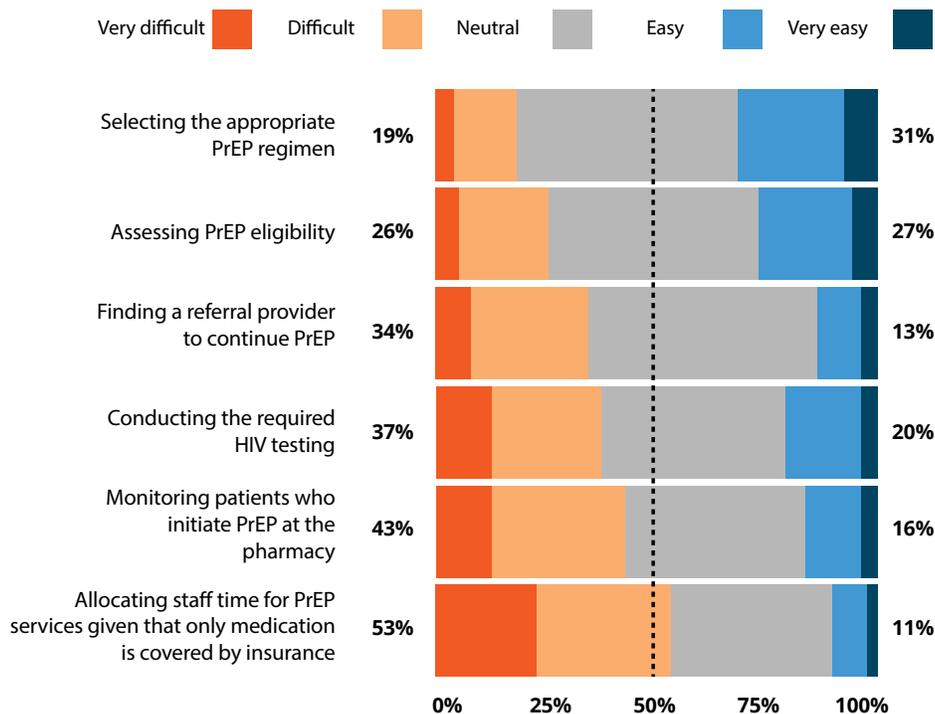


Figure 4. Participants' perceived difficulty level of steps in the PrEP provision process.

Participants working at pharmacies that did not provide pharmacist-prescribed PrEP and/or PEP were asked to select one main barrier to implementation for each (Figure 5). The most selected main barriers for PrEP provision were insufficient staff/time to add new services (37%), no insurance coverage for the service of prescribing PrEP (17%), and low demand for PrEP among clients (11%). Findings were similar for PEP. Notably, reported barriers were different between those practicing in chain community pharmacies and independent community pharmacies. For example, 53% of those at chain pharmacies selected insufficient staff/time as the main barrier to pharmacist-prescribed PrEP compared to only 17.5% of those at independent pharmacies. Independent pharmacies more often selected lack of insurance coverage for the service (32.5%) and low demand among clients (24%) as the main implementation barriers. Findings were similar for PEP.

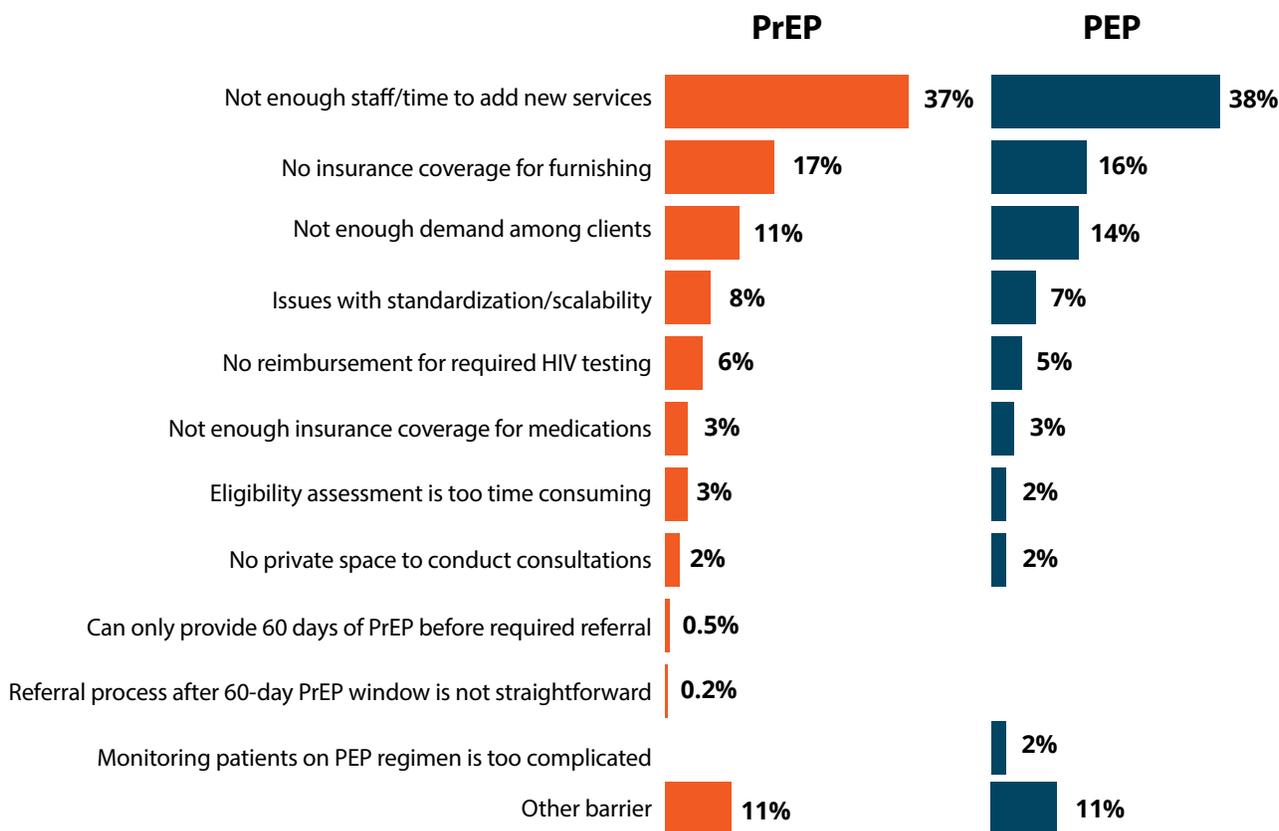


Figure 5. Main barriers to PrEP and PEP provision selected by participants from non-implementing pharmacies.

While it was not one of the most selected barriers to PrEP implementation in pharmacies, many participants (42%) agreed that providing 60 days of PrEP from the pharmacy was not enough to ensure referral to a primary care provider.

Current Contraceptive Provision

Although all pharmacies under current law could provide levonorgestrel emergency contraception (e.g., Plan B, One-Step) without an outside provider’s prescription (i.e., over-the-counter or pharmacist-prescribed), nearly half of participants (48%) either reported that their pharmacies did not do this or were unsure (Figure 6). Fewer than one-third reported working in pharmacies offering pharmacist-prescribed ulipristal acetate emergency contraception (e.g., Ella) or self-administered hormonal contraception (e.g., the pill, patch, ring, or injection) (13% and 30%, respectively).

Participants working in community pharmacies were more likely to report contraceptive provision without an outside provider’s prescription (79% levonorgestrel EC, 19% ulipristal acetate EC, 46% self-administered hormonal contraception) than pharmacists working in other practice settings.

Knowledge of and Attitudes about Pharmacist Provision of Hormonal Contraception

More than 90% of participants agreed that providing access to levonorgestrel emergency contraception and hormonal contraception is important, and 75% were willing to prescribe hormonal contraception to pharmacy clients regardless of age (Figure 7). A majority were confident in their knowledge of hormonal contraception (72%) and their ability to prescribe contraception (61%). Almost one-third (29%) of participants believed that emergency contraception should only be provided to minors with parental consent. Few reported religious (9%) or moral (7%) objections to prescribing hormonal birth control.

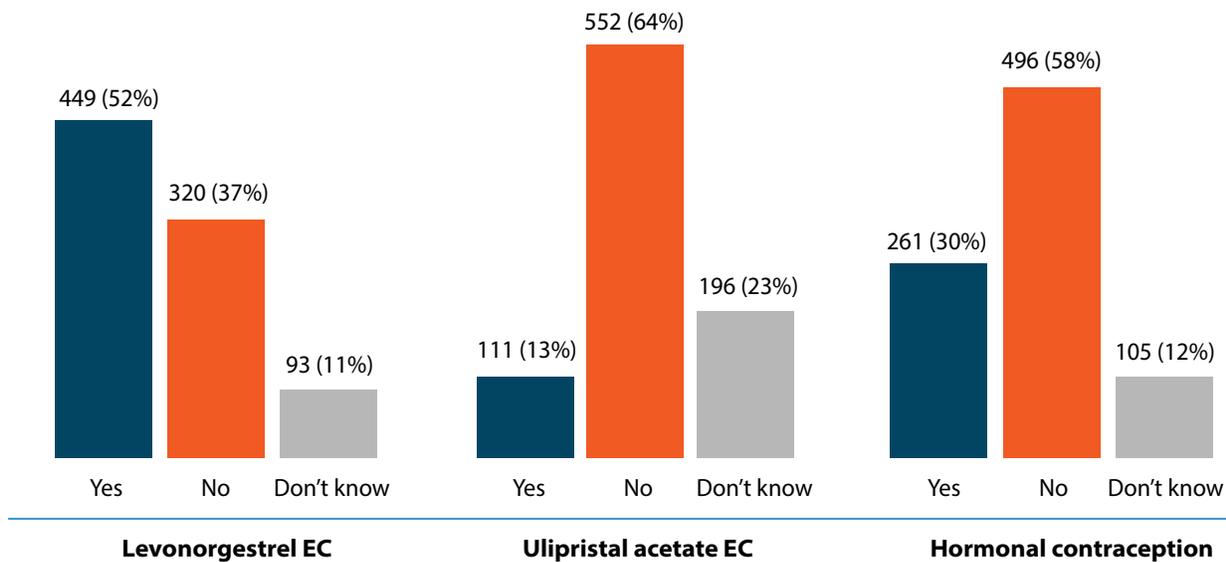


Figure 6. Provision of contraception without an outside provider’s prescription at participants’ pharmacies.

Hormonal Contraception Implementation Barriers and Facilitators

Participants working in pharmacies that did not offer pharmacist-prescribed self-administered hormonal contraception were asked to select all applicable barriers to provision from a list. The most selected barriers were inadequate staff or time to add new services (42%), lack of knowledge and/or training about hormonal contraception (32%), no coverage for the service even if the medication is covered (24%), liability concerns (20%), and low demand for hormonal contraception among clients (16%). The least commonly selected barrier was personal beliefs (4%).

Attitudes about Pharmacist Provision of Medication Abortion

Half of participants (52%) agreed that pharmacists in California should be allowed to provide medication abortion without an outside provider’s prescription. A majority (61%) reported being willing to fill a medication abortion prescription from a client who came to their pharmacy from outside of California. Most participants (75%) would be willing to prescribe abortion medication to pharmacy clients if allowed by law, but less than half were confident in their knowledge of medication abortion (44%) or their ability to prescribe abortion medications if allowed by law (41%) (Figure 8).

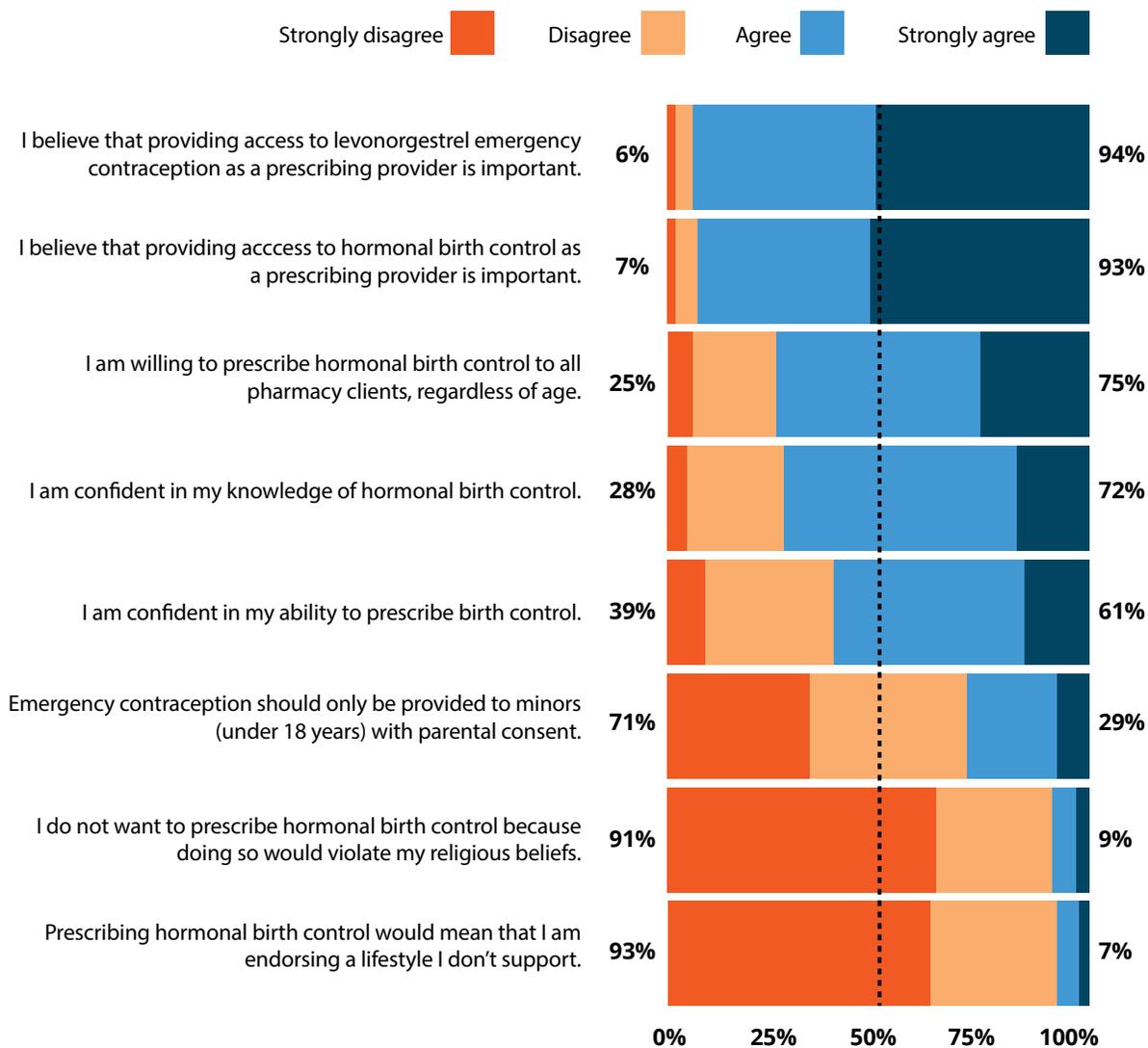


Figure 7. Participant attitudes about contraceptive provision.

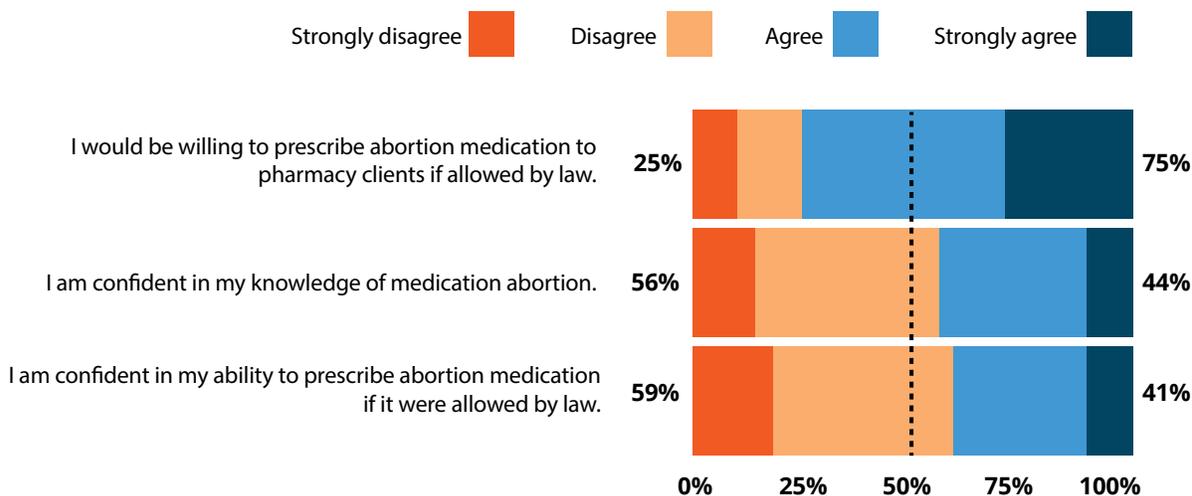


Figure 8. Participant attitudes about medication abortion provision.

Discussion

Despite California's concerted efforts to expand access to essential sexual and reproductive health products and services through pharmacies, implementation continues to lag, hindering efforts to prevent HIV and ensure access to contraception and medication abortion. In our survey of more than 900 California pharmacists, we find that pharmacists believe that HIV prevention and other SRH services are important and most are willing to provide these services. However, three years after legislation was adopted, only 11% of survey participants reported working in a pharmacy offering pharmacist-prescribed PrEP. Likewise, six years after the ability to prescribe hormonal contraception granted by SB 493, only 30% of survey participants reported working in a pharmacy where self-administered hormonal contraception (e.g., the pill, the patch, ring, or injection) is available and provided directly from the pharmacist.

Pharmacist Attitudes and Knowledge

It is increasingly recognized that pharmacists have significant potential to amplify high-priority health initiatives. As highly trained health professionals, pharmacists are often deeply embedded in their communities and provide high-quality expert advice, counseling, and services on a spectrum of prevention and care issues in a setting that could be more accessible than health clinics or hospitals. Pharmacists participating in this study generally expressed supportive attitudes about these preventative services, including high willingness to provide them. At the same time, participants indicated gaps in their training and knowledge of PrEP, PEP, hormonal contraception, and medication abortion which may be addressed with expansion and improved marketing of existing training programs for SRH services implementation.

Implementation Barriers

Pharmacists shared key implementation barriers that persist since policy adoption and span various implementation domains, from the design of the policy itself to organizational barriers related to training, reimbursement, and workflows. The most commonly reported barrier to PrEP and PEP provision was lack of staff time to perform the service, which is likely a direct result of the service provision (i.e., eligibility assessment, consultation) not being reimbursed by insurance even where the medication itself is covered.ⁱⁱⁱ The most commonly reported barrier to hormonal contraceptive provision was also lack of staff time, followed closely by insufficient knowledge/training or coverage for the services provided. Many of these challenges were previously documented in studies conducted in California in 2019,⁹ 2020,¹⁷ and 2022.¹⁸

Medication Abortion

Since the 2022 U.S. Supreme Court decision on *Dobbs vs. Jackson Women's Health Organization*, which overruled *Roe v. Wade* (1973) and shifted regulation of abortion to the state level, the provision of medication abortion by diverse providers including pharmacists has been identified as a possible channel to sustain access to this essential service.^{iv} With the FDA announcement in early 2023 expanding prescribing practices for medication abortion beyond specialty clinics and mail-order pharmacies, community pharmacies are well-positioned to significantly increase access in California. Most participants (61%) reported being willing to fill a medication abortion prescription from a client who came to their pharmacy from outside of California.

ⁱⁱⁱ At the time of writing, California Senate Bill 339 had recently been introduced. This proposed legislation would authorize pharmacists to prescribe up to 90 days of PrEP (or more if specific conditions are met). SB 339 would require health plans and insurers to cover PrEP prescribed by a pharmacist including payment for consultation and testing. These services would also be added to the Medi-Cal schedule of benefits, enabling Medi-Cal beneficiaries to access PEP and PrEP through pharmacies. Finally, the bill broadens the definition of PrEP to include any drug approved by the FDA to reduce the chance of contracting HIV. This would account for future formulations of PrEP.

^{iv} At the time of writing, a federal court ruling is pending which is anticipated to revoke the FDA's approval of mifepristone, one of two drugs used in medication abortion. Depending on the outcome of the case, mifepristone could be taken off the market across the U.S., and while medication abortion with the second medication, misoprostol, could continue, such a ruling would be serious barrier and limit the immediate ability to enable pharmacist-prescribing.

In addition, the majority agreed that pharmacists should be allowed to provide medication abortion without an outside provider's prescription. Furthermore, if codified by law, 75% agreed that they would be willing to prescribe medication abortion.

Strengths and Limitations

Like all survey research, this cross-sectional survey has important limitations and strengths. By virtue of its online delivery, the study sample was a convenience sample of California pharmacists; thus, we cannot conclude that these results are representative of all California pharmacists. Nevertheless, the age, racial and ethnic, and geographic distribution of the sample is similar to California pharmacists more broadly, strengthening confidence in the external validity of the sample.^{19,20} Given that the unit of analysis is the pharmacist, the results reflect the experiences of participating pharmacists. While these results are clearly correlated with the prevalence of services at the pharmacy level, they cannot reveal the exact proportion of pharmacies in California offering specific services. The survey also has important strengths, including the large sample size; rigorous, best practice procedures to ensure data integrity for internet research; and representation of a broad and heterogeneous group of pharmacists (e.g., community, hospital, ambulatory; practicing pharmacists and students). In addition, pharmacist researchers were involved in every step of the process, from survey design and piloting to recruitment and interpretation of results.

Conclusion

Pharmacists are a critical yet underutilized cadre of healthcare professionals who are enthusiastic about increasing access to essential preventative health services, including SRH services. California has made great strides to leverage pharmacists' potential to reach people with these essential services. Yet despite California's legislative efforts and pharmacists' enthusiasm, implementation of these services has been slow. Opportunities to reach underserved populations with prevention services may be lost every day. Thus, it is urgent that the barriers identified in this study be addressed. Actions to do so might include expanding reimbursement for services provided (beyond the cost of the medication), expanding training opportunities and uptake, and particularly for PrEP and PEP, streamlining guidance for assessing eligibility and facilitating referrals to primary care providers.

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