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Considering Stigma in the Provision of HIV Pre-Exposure Prophylaxis: Reflections from Current Prescribers

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Abstract

Efforts to identify and address social inequities in HIV pre-exposure prophylaxis (PrEP) access are urgently needed. We investigated early-adopting PrEP prescribers' beliefs about how stigma contributes to PrEP access disparities in health care and explored potential intervention strategies within the context of PrEP service delivery. US-based PrEP prescribers were recruited through professional networks and participant referrals. Qualitative interviews were conducted, transcribed, and thematically analyzed. Participants ($n = 18$) were primarily male (72%); white (39%) or Asian (33%); and heterosexual (56%). Most practiced in the Northeastern (67%) or Southern (22%) United States; were physicians (94%); and specialized in HIV/infectious disease (89%). Participants described multiple forms of structural and interpersonal stigma impeding PrEP access. The requirement that PrEP be prescribed was a perceived deterrent for populations with medical mistrust and/or low health literacy. Practice norms such as discussing PrEP only in response to patient requests were seen as favoring more privileged groups. When probed about personally held biases, age-related stereotypes were the most readily acknowledged, including assumptions about older adults being sexually inactive and uncomfortable discussing sex. Participants criticized providers who chose not to prescribe PrEP within their clinical practice, particularly those whose decision reflected personal values related to condomless sex or discomfort communicating about sex with their patients. Suggested solutions included standardizing PrEP service delivery across patients and increasing cultural competence training. These early insights from a select sample of early-adopting providers illuminate mechanisms through which stigma could compromise PrEP access for key populations and corresponding points of intervention within the health care system.

Keywords: HIV, pre-exposure prophylaxis, health care disparities, prejudice, clinical decision making, patient care

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Introduction

HIV pre-exposure prophylaxis (PrEP) is a highly effective biomedical method of HIV prevention.[1] Despite the potential for PrEP to significantly curtail the HIV epidemic, there is a significant gap between the number of people who could benefit from PrEP and the number who actually use PrEP, particularly within key populations disproportionately affected by HIV.[2–4] US pharmacy records indicate that only 8% of an estimated 1.1 million Americans with PrEP indications were prescribed PrEP in 2015–2016, including only 1% of >500,000 black Americans indicated for PrEP.[4] Emerging disparities in PrEP uptake[2–4] are likely to exacerbate the existing inequities in the HIV epidemic.[5] Thus, immediate efforts to identify and address factors contributing to disparities in PrEP access are needed.

Because PrEP use requires a prescription and follow-up medical care, health care providers and the larger health care system are central determinants of PrEP access. Manifestations of stigma within health care may contribute to access disparities. Stigma refers to the social devaluation of a group and its members based on one or more distinguishing characteristics, such as race.[6] Stigma can be enacted at both structural and interpersonal levels. Structural stigma involves policies, norms, and conditions within society and social institutions that create social disadvantage.[7] Interpersonal stigma (bias) occurs within the context of social interactions, and involves negative evaluation and discriminatory treatment of individuals based on their group membership.[6,8] To date, much of the research on stigma as it relates to PrEP use has concentrated on interpersonal stigma operating outside of the health care system, describing stereotypes of PrEP and PrEP users and the implications of these stereotypes for PrEP utilization.[9–15]

Limited attention has been devoted to understanding how stigma involving the health care system may contribute to disparities in PrEP access. Structural stigma may manifest in institutional access. Groups with lower health care access, as indicated, for example, by a lack of insurance coverage or established source of primary care, are less likely to utilize PrEP.[16,17] Systematic disparities in health care access have been documented among racial and ethnic minority men who have sex with men (MSM) and other socially disadvantaged groups,[16,18] implicating structural stigma as a barrier to PrEP access. Medical mistrust stemming from a long history of group-based mistreatment is also likely to deter racial minorities and other social groups from seeking health care in general and PrEP in particular.[19,20]

Interpersonal stigma contributing to PrEP access disparities may manifest in patient–provider interactions. Survey studies among medical students suggest that provider biases related to race and sexual orientation as well as personal values surrounding condom use and monogamy have the potential to compromise providers' willingness to prescribe PrEP for key populations.[21–23] Qualitative research has also captured expressions of bias in some health service providers' reported attitudes around prescribing PrEP, including stereotypes of gay men as promiscuous and substance users as medically noncompliant.[24,25] Likewise, providers have reported variable levels of willingness to prescribe PrEP across risk groups, indicating lower willingness to prescribe PrEP for patients who inject drugs and higher willingness to prescribe PrEP for patients in serodiscordant partnerships, particularly when partners are untreated or the couple is heterosexual and planning to conceive.[26–31] Patients have also reported encountering stigmatizing reactions from some providers when requesting a prescription for PrEP,[32] which may correspond to denial of such requests.[32,33]

Collectively, findings to date offer compelling indications that stigma operating within or in connection with the health care system may contribute to PrEP access inequities. However, direct exploration of this issue with early-adopting PrEP providers, who are uniquely positioned to recognize and address PrEP access inequities within health care and to influence policies and norms surrounding PrEP service provision,[34] could strengthen present understanding and inform future interventions.

The purpose of this qualitative study was to examine early-adopting PrEP prescribers' beliefs about stigma in the provision of PrEP, including perceptions of structural and interpersonal stigma that may operate as barriers to PrEP access for key populations. In addition, we explored potential solutions, including participants' reported efforts to address stigma in their own practice and suggested systemic changes.

Methods

Interview and analytical methods employed in this study have been reported previously.[35,36]

Participants

Recruitment was initiated in August of 2014, 2 years after the US Food and Drug Administration initially approved PrEP and at a time when PrEP prescription was still in its infancy, with retail pharmacy records suggesting <15,000 unique individuals had initiated PrEP in the preceding year.[3] Consequently, a purposeful sampling strategy was employed, whereby members of the research team conducted direct outreach to PrEP experts and prescribers within their professional networks and solicited additional referrals to known prescribers from study participants.

Altogether, 28 English-speaking, US-based health care providers with PrEP prescribing experience and/or expertise were invited to participate in the study through direct outreach (e-mail or in person) or through e-mail referral from previous participants. Six providers were unresponsive to the original invitation, and 2 of the 22 providers who expressed initial interest canceled their interview appointments and did not respond to follow-up inquiries. Of the 20 providers ultimately interviewed, 2 who had been invited based on their expert knowledge of PrEP implementation within the health care system were excluded from the current analysis because they had no direct experience prescribing PrEP at the time of the interviews. The final sample included 18 providers who had previously prescribed PrEP to one or more patients. Recruitment of new participants was halted when data saturation was reached for main themes.

Procedure

Qualitative interviews were conducted in accordance with established research guidelines.[37,38] Interviews took place in person or by phone from September 2014 through February 2015, and lasted ~60–90 min [M (SD) = 81 (10.4)]. Verbal

informed consent was obtained at the outset of all interviews. Interviews were semi-structured, following a thematically organized guide that included lead questions and follow-up prompts. Primary themes included the following: PrEP experience, personal and peer attitudes toward PrEP, patient/provider communication about sex, PrEP provision and access equity, and training experiences and recommendations. Specific prompts were used to generate discussion about interpersonal and structural forms of stigma related to PrEP provision and access in the health care system. For example, to investigate PrEP prescription biases, participants were asked to describe qualities of an ideal PrEP patient; factors that would motivate or dissuade PrEP prescription; patient characteristics perceived to influence providers' comfort discussing sex; and perceptions of fairness in current PrEP prescription practices. Discussion of racial biases was also prompted by asking participants to respond to findings from a survey study of medical students that indicated that the race of a hypothetical patient indirectly affected the students' willingness to prescribe PrEP to the patient.[22] In addition to the interview, participants completed a brief questionnaire assessing their sociodemographic characteristics, medical background, and prior clinical experience with PrEP. Participants were offered a US $100 gift card as compensation for participation. All study procedures were approved by Yale University's institutional review board before inception.

Analysis

All participant interviews were audio-recorded and transcribed verbatim. Transcripts and field notes were subsequently imported into NVivo 11 for analysis. The Framework Method was employed to organize, summarize, and systematically identify prominent themes within the textual data.[39] This method included the following steps: transcription, data familiarization, coding, development of a working analytical framework, framework application, data charting, and interpretation. The interviewer (S.K.C.) drafted an initial analytical framework containing codes, or descriptive labels used to define concepts (e.g., ''other providers' bias''), which were organized into broader conceptual categories (e.g., ''bias/discrimination''). The framework was subsequently refined through an iterative process, during which the interviewer and two other researchers (A.I.E. and L.A.G.H.) independently coded transcripts (i.e., applied codes to textual data), and then reconvened to discuss, revise, and add new codes to the framework. This process allowed for identification and documentation of newly emergent themes. The final multi-level framework was used by A.I.E. and L.A.G.H. to code all transcripts, with 20% overlap (double coding) of transcripts to ensure consistency in code application.

For this analysis, an additional researcher (M.T.) read all transcribed interviews, reviewed coded text using NVivo's matrix coding/query functions, charted textual data in an Excel spreadsheet, and then reread all transcripts to ensure all relevant data were captured in the chart. The interviewer and M.T. utilized the chart to guide data interpretation and select illustrative quotes, which are presented below with the corresponding participant identification numbers in brackets.

Reflexivity was sought at every stage of the research process. The research team entered into the research with background knowledge about PrEP and a shared belief that it should be accessible to people at risk for HIV. At the beginning of all interviews, the interviewer informed participants of her academic position, that she was not a medical provider, and that she had no ties to Gilead, the pharmaceutical manufacturer of Truvada®. The interviewer sought to pose questions in a neutral manner. To monitor for this, coders flagged any interview questions in the transcripts that they perceived to have been worded in a non-neutral manner and to have potentially influenced participant responses. In the rare instances that questions were flagged, responses were reviewed and excluded as appropriate.

Results

Sample characteristics

Members of this unique sample of early-adopting PrEP prescribers were predominately male (72%) and non-Hispanic (88%). They ranged in age from 31 to 53 years [M (SD) = 43 (8.3)]. The sample was primarily white (39%) or Asian (33%); and almost half (44%) identified as sexual minorities. Nearly all (94%) of the providers were physicians, all but one of whom specialized in HIV and infectious disease. The majority (67%) practiced in the Northeastern United States. The most commonly reported practice settings were university-affiliated medical centers (50%) and hospitals (33%). All participants reported clinical experience with key populations disproportionately affected by HIV (e.g., MSM, people who inject drugs), and nearly all (94%) had HIV treatment experience. Ninety-four percent of the sample had prescribed PrEP as part of clinical practice, and 39% had prescribed PrEP as part of a research study. The number of PrEP patients reported by participants ranged from 2 to 325 (median = 14). All providers reported being ''comfortable'' or ''very comfortable'' prescribing PrEP. Additional descriptive information is presented in Table 1.

Recognition of stigma

Collectively, providers perceived stigma to be a problem. They described how structural stigma—including required interactions with the health care system and current PrEP implementation strategies—as well as interpersonal stigma related to sexual values and patient sociodemographic characteristics may operate as barriers to PrEP access. They expressed concern that ''PrEP will be something that will be available to and uptaken by privileged individuals who are mostly white'' and, thus, ''disparately beneficial to the already haves as opposed to the have-nots. [P9]''

Structural stigma. The requirement that PrEP be accessed through a medical provider was identified as a deterrent for key populations who had been mistreated in health care or were otherwise unaccustomed to receiving care:

> African Americans have not had a great relationship with the health care system, and that's specifically true for African American men… So, all this negative experience—not to mention Tuskegee and the perception that African Americans have of people experimenting with them—has passed from one generation to the other. [P7]

Table 1. Characteristics of Pre-Exposure Prophylaxis Provider Sample ($N=18$)

	n *(%)*
Age (years)	
30–39	7 (38.9)
40–49	5 (27.8)
50–59	6 (33.3)
Ethnicity[a]	
Non-Latino/Hispanic	15 (88.2)
Latino/Hispanic	2 (11.8)
Race	
White	7 (38.9)
Asian	6 (33.3)
Black/African American	2 (11.1)
Other	3 (16.7)
Gender	
Male	13 (72.2)
Female	4 (22.2)
Nonbinary	1 (5.6)
Sexual orientation	
Heterosexual	10 (55.6)
Gay/lesbian	8 (44.4)
Education (highest degree)	
Medical doctor (MD or MD/PhD)	17 (94.4)
Other	1 (5.6)
Practice setting[b]	
University/academic	9 (50.0)
Hospital	6 (33.3)
Community Health Center	3 (16.7)
Private practice	1 (5.6)
Geographic location	
Northeast	12 (66.7)
South	4 (22.2)
Midwest	1 (5.6)
West	1 (5.6)
Medical role (MDs only)[a]	
HIV/ID specialist only	13 (76.5)
Both HIV/ID specialist and primary care provider	3 (17.6)
Primary care provider only	1 (5.9)
Clinical experience with high-incidence groups[b]	
Men who have sex with men	18 (100.0)
People who inject drugs	18 (100.0)
Transgender women	18 (100.0)
People who exchange sex for $, drugs, etc.	17 (94.4)
HIV treatment experience	
≥1 HIV+ patients	17 (94.4)
0 HIV+ patients	1 (5.6)
Context of prior PrEP prescription[b]	
Clinical practice	17 (94.4)
Research	7 (38.9)
Comfort prescribing PrEP	
Very comfortable	14 (77.7)
Comfortable	4 (22.2)

[a]$n=17$ for these variables.

[b]Categories not mutually exclusive.

ID, infectious disease; PrEP, pre-exposure prophylaxis.

This provider and others discussed the absence of routine medical care for young men as reinforcing this mistrust:

> After 12 years old… [when] they saw their pediatrician, until age 50, in our health care system, we have nothing for men. So most men don't have actually any kind of a meaningful interaction with the health care system; only if they're really, really sick … there are no opportunities to actually change their prejudiced perceptions. [P7]

They perceived women to be more accustomed to medical care and discussions about sexual health because of routine reproductive health care: ''OB-GYN doctors have sexual conversations with their patients, and females have been sort of assimilated to a system and culture that you have a conversation with anyone, especially your doctor. [P1]''

Providers perceived current PrEP implementation strategies within the health care system to also favor access for more privileged groups. One dimension of this was the referral process, which often relied on patient-initiated requests. Such requests required pre-existing awareness of PrEP, which was observed to be more common among white MSM than among black MSM, thus resulting in greater referral of white MSM. This imbalance carried over in referrals from primary care to infectious disease specialists: In characterizing his PrEP patients, one specialist explained, ''Most of them have been white… and they basically were referred by their primary care providers, most of them because they asked their primary care provider and then their primary care provider referred for that indication. [P11]'' Disparate levels of health literacy and provider access were also identified as sources of PrEP disparities: ''A high proportion of white patients can navigate the health care system easier, that should they want PrEP, they get it from a broader variety of providers than an African American person would. [P7]''

Interpersonal stigma.

Participants were aware of provider bias being a pervasive problem in medicine. Many reported observing biases among peers and colleagues firsthand, and some acknowledged being attuned to personal biases as well.

Other providers' biases.

Participants reported biases related to sexual values (e.g., condoms, monogamy) and patient sociodemographic characteristics (e.g., sexual orientation, gender, race) in the clinical decision making of other providers.

Biases related to sexual values. Participants readily criticized other providers who refused to prescribe PrEP to patients, particularly those whose decision not to prescribe PrEP reflected their personal values related to sex or discomfort discussing sex with patients. Many participants relayed stories shared by their current PrEP patients about earlier encounters with other providers whose responses to their requests for PrEP were dismissive, judgmental, and medically unjustified. For example, one participant described his patient's earlier experience as follows:

> [He] had a partner who was actually sick of AIDS and had a very low CD4 count, and so he actually perceived his risk to be really high of acquiring HIV. But… his provider was biased, didn't take him seriously… he actually left the provider and

> was glad to literally switch doctors and come to us, where he felt there was a more friendly, understanding environment for him. [P15]

Another provider recounted a patient ''who transferred his care to us because when he went to his previous provider and asked about PrEP, the response was, 'I'm not prescribing you that. Use a condom.' [P8]''

Multiple participants perceived other providers to be most comfortable prescribing PrEP to patients in serodiscordant relationships, reporting that their own patients had been ''turned away [from previous providers] because they were told they had to be in a serodiscordant relationship, and … they're single. [P3]'' Several participants believed that such preferential prescription practices were misaligned with patients' actual prevention needs: ''I find that it is sort of an interesting double standard because, you know, if there's a serodiscordant couple and the positive person is on treatment, the risk of them getting infected from that partner is really low. [P9]''

Biases related to patient sociodemographic characteristics. Beyond general discomfort surrounding sexual health conversations with patients, several participants perceived their peers to be particularly uncomfortable with sexual minority patients: ''There's a lotta providers who are not comfortable about talking about sex and especially when you're talking to persons whose sexual orientation is different than your own. [P8]'' Consequently, questions about sexual history—when asked at all—were not consistently asked in a sensitive, inclusive manner. According to one participant, providers ''never ask the question, 'Do you have sex with men, women, or both?' No one ever asks that question, especially where I am. And then, on top of that, 'Do you practice anal sex?' [P13].''

Participant perspectives on racial bias in particular were solicited by the interviewer briefly describing the findings of a vignette-based study showing patient race indirectly impacted medical students' willingness to prescribe PrEP,[22] and then asking participants for their reactions. Most participants were disappointed but not surprised by these findings. The majority of participants believed that the racial bias demonstrated in the study could transpire in real-world clinical practice, with several referencing racial inequality observed or documented in other facets of health care:

> I mean, absolutely. I think mostly in the inpatient service—I see this a lot—where, even by nursing staff and physicians, the African American patient may be treated a little differently than others, or at least be suspected to be the drug-seeking kind of person. [P15]

Several participants expressed concern about the study implications in the context of existing HIV disparities:

> What's so scary about it is, if anything, what you really want them to do is respond the other way around… you want it to be equal, but, if anything, you'd want them to overprescribe to black MSM because there's such a high rate of HIV in that community. [P8]

Personal biases. In general, providers regarded themselves as having a high level of cultural competence in their clinical practice with respect to working with MSM and other key populations disproportionately affected by HIV, particularly relative to the broader health care workforce. They were also cognizant of professional ideals and expectations around providing culturally competent care:

> I think that if you asked someone [about disparities in health care quality], they would say, ''Oh yeah, there probably are. But not in my clinic,'' or ''I don't do that.''… No one thinks that they're the ones that are contributing to the disparity, so regardless of where you go around the country, no one is gonna admit to actually—to being culturally incompetent, but there are so many people who probably are, or that could be doing a better job of providing care across different cultures and races. [P4]

Despite recognizing taboos around having personal biases and allowing them to affect patient care, multiple providers described specific patient interactions that made them self-aware of the values and assumptions they carried into their practice based on their own lived experiences. For example, one provider [P17], a married, heterosexually identified infectious disease specialist, recognized her heteronormative assumptions when she learned that a patient she believed to be heterosexual and monogamous because of his marital status had multiple same-sex partners outside of his marriage.

When probed about personal biases related to patients' sociodemographic characteristics, age-related biases were the most readily acknowledged or expressed. This included personal discomfort discussing sex with an older versus younger patient, and assumptions about older patients being less comfortable discussing sex and less sexually active or at risk. Invoking the latter stereotype, one participant reported deliberately discussing sexual health on an annual basis with all but his older patients: ''I kind of make it a point of at least discussing it at least once a year with all of my patients, unless they're, like, very old. [P14]'' One provider described an encounter in which the patient's age, particularly in combination with her gender, race, and physical appearance, activated assumptions that dissuaded him from providing needed care:

> I had a 76-year-old white lady came to the STD clinic and I thought, first of all, everyone thought she was in the wrong place… She said, ''Well, I'm having this itching in my parts.'' I said, ''Oh jeez, I mean, it's probably, you know, atrophic vaginitis''…''Oh, that's probably hemorrhoids''…every time I give her a solution, I'm…grabbing her arm and taking her out of the room because I wasn't really about to examine her…She's a [76]-year-old lady just like everyone's grandma, very well dressed, I mean, and totally out of place… And then the third time that I was going to put her out of the room… I examined her and she actually had pus coming out of her butt, she actually had rectal gonorrhea. [P7]

Disclosure of personal biases related to gender, race, or sexual orientation was rare; however, a few providers described perceptions that patients who differed from themselves on these characteristics would be less comfortable receiving care as a result of this difference. For example, a white, heterosexual female provider stated the following in reference to her black MSM patients:

> I worry about that I'm not the best person to be doing this for them, that if I were African American, if I were male, that they

> just might assume that I would be less judgmental, that I would care more, that I would understand better. [P17]

When informed about the medical student study findings that suggested patient race could influence PrEP prescribing decisions, although most participants perceived the study findings to be potentially relevant to real-world practice, a few were quick to distance themselves from the study sample and implications:

> Maybe there—we are still subconsciously biased against certain races, and I—in this city, that would be difficult to do given that the majority of the patients who walk through my door are African American. And so, I think to work in the city, you have to be unbiased and you have to be color blind as well… I'm sure there are some subconscious biases that go on that maybe influence how people perceive or how people offer PrEP. I don't do it and I don't know—I don't think any of my colleagues would do it. [P2]

Thus, consistent with Participant 4's perception that ''no one thinks that they're the ones that are contributing to the disparity,'' several participants were unwilling to accept their own vulnerability to bias.

In the context of PrEP provision specifically, some providers described a selective approach to educating and offering PrEP primarily or exclusively to certain social groups and not others. Specifically, MSM were prioritized over women, heterosexual men, and people who inject drugs. A common justification proffered for this selectivity was risk inferred based on HIV epidemiology. One provider explained,

> Here in our state, about 70% of the epidemic are gay and bisexual men, MSM, so we put a lot of focus on that population in general… Regardless of risk factors, we made the decision just to educate all MSM, regardless, one partner in the last year, no partners in the last year, we educate everyone just to spread the word about PrEP. [P5]

This provider was willing to educate and prescribe PrEP to women and other groups, but the onus was on members of these other groups to be aware of PrEP and initiate the conversation. In addition to epidemiology, the lower per-act HIV transmission risk associated with the reported (or assumed) sexual behavior of heterosexuals versus MSM was referenced as a reason to deprioritize the former:

> There are two or three [patients] that I have declined PrEP to, and those are mostly heterosexual serodiscordant couples where the man… it's insertive. It's the lowest risk. It's insertive vaginal sex. And the man is using condoms consistently and the female is undetectable. [P13]

Several providers expressed reluctance to prescribe to people who use drugs because of their assumed inability to adhere to the daily medication regimen and required medical follow-up. Espousing this stereotype, one provider [P11] stated, ''They're not good PrEP candidates 'cause they're not reliable in any way. They have a terrible addiction that needs to have treatment.'' Stereotypes about people who use drugs coincided with the belief that prescribing PrEP to poorly adherent patients could be more harmful than helpful: ''Someone with heavy substance use, who may not be able to stick to a regimen. I might think twice about giving someone like that PrEP. Only because they might become acutely infected and they could be on less-than-adequate therapy. [P16]''

Views on addressing stigma

Participants universally reported receiving minimal cultural competence training as part of their formal medical education. Several referenced the number of years since they completed medical school when recounting this lack of training, expressing hope that ''things have changed a little bit [P5]'' in contemporary medical school curricula. Participants explained that their learning in this domain had primarily occurred through hands-on experience caring for diverse patients over the course of their clinical careers.

Participants regarded cultural competence training as an ongoing process: ''I think it has to be a continuation, it has to be a journey. [P1]'' One provider [P9] explained, ''I think we all can always get better at issues of cultural competence. I think being open to knowing what you don't know and not purporting to know things you can't know is critical.'' Participants regarded cultural awareness as an avenue to communicate more effectively with their patients (e.g., ''Being able to talk to people in the way that they express themselves is very helpful [P4]'') but also expressed humility in approaching patients of different backgrounds: ''I don't always know the terminology. Sometimes I ask, like, 'How do you talk about this?' or 'What are the terms that you use?' because it can be referred to so many different ways by different people [P17].''

Participants valued a standardized approach to patient care as a strategy for minimizing the impact of provider bias on clinical judgment:

> You have biases and judgments, your patient's gonna have biases and judgments. If you removed yours and treated every individual with a blank slate no matter color, gender, sexual orientation, sexual practices, what they choose not to say or to say, you can provide a higher level of care to that individual, especially when it comes to PrEP. [P1]

This standardized approach was sometimes driven by specific patient interactions. For example, the participant who recounted his decision not to examine the 76-year-old patient with rectal gonorrhea during her first two visits based on misassumptions about her sexual behavior [P7] considered his experience a wakeup call; he changed his subsequent practice to make physical examinations routine rather than discretionary in an effort to prevent stereotypes from interfering with future patient care. Endorsing a routinized approach with respect to sexual history taking, another participant [P3] stated, ''Unless you ask, you just don't know… And if you can honestly start every conversation by saying, 'I ask all my patients these questions', and you do ask every patient those questions, then you're never gonna run into trouble.''

Participants reported a need for structural changes to establish more equitable access for PrEP, but perceived such changes to be complex. One participant described feeling overwhelmed by the numerous, intersecting structural barriers that needed to be addressed:

> I think those who are less well-resourced are also more skeptical of the health care system, less likely to be engaged in medical care, less likely to believe in taking a medication, much less likely to be health literate, much less HIV literate, much less HIV prevention literate, have a lot more comorbid issues that might compromise their ability to stay healthy, stay HIV negative, adhere to a daily oral pill, and when you try to

think about how to solve those issues, you get weighted down by the enormity of the problems you're really talking about, which are poverty, racism, sexism, homophobia, and how do you fix all that? I don't have an answer to that. [P9]

Discussion

This study with early-adopting PrEP prescribers highlights multiple mechanisms through which stigma may interfere with PrEP access for key populations. At the structural level, participants identified the interaction with the health care system required to obtain and maintain a prescription as a deterrent for populations with high medical mistrust and/or limited health care experience. They perceived current PrEP implementation strategies in clinical settings, such as offering PrEP referrals primarily in response to patient-initiated requests, to favor populations privileged with greater medical literacy, generally, and greater PrEP awareness and information access, specifically. At the interpersonal level, participants believed that social stigma, personal values about sex, and discomfort discussing sex with patients systematically influenced PrEP prescription, and unanimously condemned other providers who refused to prescribe PrEP for these reasons. However, participants' perceptions of their own susceptibility to these influences varied. Recommended strategies for improving PrEP access equity in the context of health care included standardizing PrEP service delivery and engaging providers in ongoing cultural competence training.

The most common personal bias acknowledged by participants was age-related stigma. Manifestations of this bias included discomfort discussing sex with older (vs. younger) adults, the assumption that older adults themselves were less comfortable engaging in sexual health discussions, and the presumption that older adults had low levels of sexual activity and associated risk. Age-related stigma may be a less widely recognized form of stigma operating in health care and, consequently, less proactively addressed. However, HIV and other facets of sexual health are important health considerations across the age spectrum. More than 6500 US adults >50 become newly infected with HIV annually.[40] Given that many older adults are sexually active and potentially at risk,[40,41] it is important that ageism be recognized and addressed in clinical practice to avoid compromising the quality of care received by older adults.

Admission of personal biases related to sociodemographic characteristics other than age, such as race and sexual orientation, was rare. It is possible that participants' desire to respond to interview questions in a socially acceptable manner led to under-reporting of these particular forms of stigma. Alternatively, many participants may have genuinely believed themselves to be unbiased. However, conscious (explicit) and unconscious (implicit) biases are often poorly correlated,[42,43] and well-intentioned providers may contribute to disparities in PrEP access through biases operating outside of their conscious awareness. Implicit biases may lead to unfavorable patient interactions[44] and treatment decisions,[45] and tend to exert their influence in the absence of strong guidelines that can alert people to the need to consciously correct for potential bias.[46] In the context of PrEP service delivery, clinical decision making may be especially sensitive to implicit social biases because norms and standards are still developing and provider discretion is heavily relied upon.[47,48]

Despite perceiving themselves as relatively unbiased, several providers described a selective approach to PrEP service delivery that systematically disadvantaged certain groups based on sexual orientation or other characteristics. For example, MSM were prioritized over non-MSM, ostensibly because of the higher HIV incidence among MSM or assumed participation of MSM in sexual activities that conferred greater risk. One provider, in particular, described routinely educating all MSM patients about PrEP but only discussing PrEP with non-MSM if they initiated the conversation. Beyond the obvious access inequalities cultivated across gender and sexual orientation lines, such an approach could contribute to more subtle differences in PrEP access that exacerbate existing HIV disparities, such as decreasing the likelihood that black versus white MSM are educated about PrEP since black MSM may be less likely to disclose their same-sex activity to providers.[49,50]

Effectively addressing stigma and PrEP disparities within the health care system will require intervention at multiple levels, including both structural and interpersonal initiatives.[51] Multiple promising intervention strategies were offered directly by providers, and others can be inferred from the sources of stigma that they identified.

One structural initiative consistent with participants' recommendations is discussing PrEP with all patients as part of routine preventive care.[5] This is particularly important for social groups who are not commonly educated about PrEP, such as women who have sex with men. Even though women may utilize preventive and reproductive health services more often than men,[52,53] a pattern that study participants implied as favoring PrEP access for women, only a minority of women are actually informed about PrEP in the process of receiving care.[15] Routinely communicating with all patients about PrEP and sexual health would help curb inequities in PrEP prescription and referral.

Structural interventions aimed at supporting PrEP access among people who do not regularly interact with the health care system should also be prioritized.[54] These may include strengthening health outreach initiatives within the community and promoting norms that foster engagement in routine preventive health care. Overcoming logistical barriers may require innovations such as mobile service delivery vans, patient–provider online videoconferencing, or home-based laboratory monitoring.[54,55] Hiring sociodemographically diverse health care providers that reflect the diversity of the patient population served may also support care engagement.[51,56,57]

At the interpersonal level, increasing cultural competence training was among the interventions most commonly recommended by providers in our sample. A categorical approach to such training (teaching ''facts'' about black Americans, MSM, etc.) is an unrealistic strategy for preparing providers to deliver culturally competent PrEP care, given the heterogeneity and intersectionality of social groups eligible for PrEP; moreover, a categorical approach could contribute to stereotyping.[51] Rather, training initiatives should focus on raising awareness about cross-cutting cultural considerations, building communication skills, encouraging patient involvement in medical decisions (shared

decision making), and increasing providers' knowledge about decisional processes and their vulnerability to biases.[51,58]

A key barrier to PrEP access that study participants perceived among other providers was discomfort discussing sexual behavior, particularly with sexual minority patients. Previous research suggests that many sexual and gender minority patients believe that it is important for their health care providers to be aware of their sexual and gender minority status(es) and are willing to answer questions in this realm.[59] Cultural competence training in the context of PrEP education should offer clear guidance on how to engage in sensitive, nonjudgmental sexual health communication with patients of all sexual and gender identities.

Participating providers' reports of low or no personal biases corroborate the importance of informing providers about their vulnerability to implicit forms of stigma. Cultural competence training should be proactively integrated into foundational training related to PrEP. If early-adopting PrEP prescribers have lower levels of interpersonal stigma and higher levels of cultural competence compared with the rest of the provider workforce (as suggested by study participants' self-perceptions), there is potential for emerging social disparities in PrEP prescription to become even more pronounced as PrEP is more widely implemented.

Results of this study should be interpreted within the context of several limitations. The sample is not intended to be representative of US health care providers broadly. Interviews were conducted during the early phase of PrEP rollout, when PrEP prescription was limited to early adopters,[34] and we used a purposeful sampling strategy to recruit this small, hard-to-reach population. Differences in PrEP familiarity, comfort, and implementation approaches among early versus later adopters and among specialists versus generalists[60,61] may correspond to systematic differences in stigma. Our sample of providers was more racially and sexually diverse than the broader US health care workforce, and may therefore have been more attuned to stigma based on their own experiences. Almost all providers had clinical experience with HIV treatment, and all had cared for vulnerable populations in the past, which likely affected their cultural awareness and comfort caring for diverse populations.

An additional limitation of this work is that the data represent the perceptions of our sample of providers rather than objective documentation of existing structural inequities and interpersonal biases affecting PrEP availability for key populations. Moreover, participants' accounts of the stigmatizing attitudes and actions of other providers were partially based on secondhand information (patient recollections) rather than firsthand observations. Interviews with patients whose requests for PrEP were denied and with providers who choose not to prescribe PrEP could offer complementary perspectives to inform intervention development.

Insights from early-adopting PrEP prescribers suggest that manifestation of stigma at multiple levels within the health care system could exacerbate existing HIV inequities. As PrEP implementation practices and policies are established and updated, integrating effective strategies to counter such stigma is an ethical imperative for health practitioners, policymakers, and the broader public health community.

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References

1. Riddell J 4th, Amico KR, Mayer KH. HIV preexposure prophylaxis: A review. JAMA 2018;319:1261–1268.
2. Siegler AJ, Mouhanna F, Mera Giler R, et al. The prevalence of PrEP use and the PrEP-to-need ratio in the fourth quarter of 2017, United States. Ann Epidemiol 2018;pii: S1047-2797(18)30107-8.
3. Bush S, Magnuson D, Rawlings MK, et al. Racial Characteristics of FTC/TDF for Preexposure Prophylaxis (PrEP) Users in the US, Abstract 2651. Boston, MA: ASM Microbe, 2016.
4. Smith DK, Van Handel M, Grey JA. By race/ethnicity, Blacks have highest number needing PrEP in the United States. In: Conference on Retroviruses and Opportunistic Infections (CROI 2018), Abstract 86, Boston, MA, 2018.
5. Calabrese SK, Krakower DS, Mayer KH. Integrating HIV pre-exposure prophylaxis (PrEP) into routine preventive healthcare to avoid exacerbating disparities. Am J Public Health 2017;107:1883–1889.
6. Major B, Dovidio JF, Link BG, Calabrese SK. Stigma and its implications for health: Introduction and overview. In: Major B, Dovidio JF, Link BG, eds. The Oxford Handbook of Stigma, Discrimination, and Health. New York: Oxford University Press; 2018, pp. 1–28.
7. Hatzenbuehler ML, Link BG. Introduction to the special issue on structural stigma and health. Soc Sci Med 2014; 103:1–6.
8. Dovidio JF, Gaertner SL. Intergroup bias. In: Fiske ST, Gilbert DT, Lindzey G, eds. Handbook of Social Psychology. Hoboken, NJ: John Wiley & Sons, Inc.; 2010, pp. 1084–1121.
9. Golub SA, Gamarel KE, Surace A. Demographic differences in PrEP-related stereotypes: Implications for implementation. AIDS Behav 2017;21:1229–1235.

10. Mutchler MG, McDavitt B, Ghani MA, et al. Getting PrEPared for HIV prevention navigation: Young Black gay men talk about HIV prevention in the biomedical era. AIDS Patient Care STDS 2015;29:490–502.
11. Eaton LA, Kalichman SC, Price D, et al. Stigma and conspiracy beliefs related to pre-exposure prophylaxis (PrEP) and interest in using PrEP among Black and White men and transgender women who have sex with men. AIDS Behav 2017;21:1236–1246.
12. Mustanski B, Ryan DT, Hayford C, et al. Results from the RADAR cohort of diverse young men who have sex with men and transgender women. AIDS Behav 2018;22:3044–3056.
13. Farhat D, Greene E, Paige MQ, et al. Knowledge, stereotyped beliefs and attitudes around HIV chemoprophylaxis in two high HIV prevalence neighborhoods in New York City. AIDS Behav 2017;21:1247–1255.
14. Arnold T, Brinkley-Rubinstein L, Chan PA, et al. Social, structural, behavioral, and clinical factors influencing retention in pre-exposure prophylaxis (PrEP) care in Mississippi. PLoS One 2017;12:e0172354.
15. Calabrese SK, Dovidio JF, Tekeste M, et al. HIV pre-exposure prophylaxis stigma as a multidimensional barrier to uptake among women who attend planned parenthood. J Acquir Immune Defic Syndr 2018;79:46–53.
16. Marks SJ, Merchant RC, Clark MA, et al. Potential healthcare insurance and provider barriers to pre-exposure prophylaxis utilization among young men who have sex with men. AIDS Patient Care STDS 2017;31:470–478.
17. Patel RR, Mena L, Nunn A, et al. Impact of insurance coverage on utilization of pre-exposure prophylaxis for HIV prevention. PLoS One 2017;12:e0178737.
18. Zammitti EP, Cohen RA. Health insurance coverage: Early release of quarterly estimates from the national health interview survey, January 2010–March 2018. Available at: https://www.cdc.gov/nchs/data/nhis/earlyrelease/Quarterly_estimates_2010_2018_Q1.pdf (Last accessed September 1, 2018).
19. Tekeste M, Hull S, Dovidio JF, et al. Differences in medical mistrust between Black and White women: Implications for patient-provider communication about PrEP. AIDS Behav 2018 Sep 27. doi: 10.1007/s10461-018-2283-2. [Epub ahead of print]
20. Cahill S, Taylor W, Elsesser SA. Stigma, medical mistrust, and perceived racism may affect PrEP awareness and uptake in black compared to white gay and bisexual men in Jackson, Mississippi and Boston, Massachusetts. AIDS Care 2017;29:1351–1358.
21. Calabrese SK, Earnshaw VA, Krakower DS, et al. A closer look at racism and heterosexism in medical students' clinical decision-making related to HIV pre-exposure prophylaxis (PrEP): Implications for PrEP education. AIDS Behav 2018;22:1122–1138.
22. Calabrese SK, Earnshaw VA, Underhill K, et al. The impact of patient race on clinical decisions related to prescribing HIV pre-exposure prophylaxis (PrEP): Assumptions about sexual risk compensation and implications for access. AIDS Behav 2014;18:226–240.
23. Calabrese SK, Earnshaw VA, Underhill K, et al. Medical students are less inclined to prescribe pre-exposure prophylaxis for patients in highest need. J Int AIDS Soc 2018;21:e25147.
24. Doblecki-Lewis S, Jones D. Community federally qualified health centers as homes for HIV preexposure prophylaxis: Perspectives from South Florida. J Int Assoc Provid AIDS Care 2016;15:522–528.
25. Mullins TL, Lally M, Zimet G, et al. Clinician attitudes toward CDC interim pre-exposure prophylaxis (PrEP) guidance and operationalizing PrEP for adolescents. AIDS Patient Care STDS 2015;29:193–203.
26. Adams LM, Balderson BH. HIV providers' likelihood to prescribe pre-exposure prophylaxis (PrEP) for HIV prevention differs by patient type: A short report. AIDS Care 2016:28:1154–1158.
27. Edelman EJ, Moore BA, Calabrese SK, et al. Primary care physicians' willingness to prescribe HIV pre-exposure prophylaxis for people who inject drugs. AIDS Behav 2017;21:1025–1033.
28. Hakre S, Blaylock JM, Dawson P, et al. Knowledge, attitudes, and beliefs about HIV pre-exposure prophylaxis among US Air Force health care providers. Medicine 2016;95:e4511.
29. Karris MY, Beekmann SE, Mehta SR, et al. Are we prepped for preexposure prophylaxis (PrEP)? Provider opinions on the real-world use of PrEP in the United States and Canada. Clin Infect Dis 2014;58:704–712.
30. Mullins TLK, Zimet G, Lally M, et al. HIV care providers' intention to prescribe and actual prescription of pre-exposure prophylaxis to at-risk adolescent and adults. AIDS Patient Care STDS 2017;31:504–516.
31. Puro V, Palummieri A, De Carli G, et al. Attitude towards antiretroviral pre-exposure prophylaxis (PrEP) prescription among HIV specialists. BMC Infect Dis 2013;13:217.
32. Patel VV, Santoro AF, Chaudhry J, et al. Primary care providers' role in HIV prevention with pre-exposure prophylaxis: Perspectives from young men of color who have sex with men. In: 11th International Conference on HIV Treatment and Prevention Adherence, Abstract 184, Fort Lauderdale, FL, 2016.
33. Patel RR, Chan PA, Harrison LC, et al. Missed opportunities to prescribe PrEP by primary care physicians in Saint Louis, Missouri. LGBT Health 2018;5:250–256.
34. Krakower DS, Mayer KH. The role of healthcare providers in the roll out of preexposure prophylaxis. Curr Opin HIV AIDS 2016;11:41–48.
35. Calabrese SK, Magnus M, Mayer KH, et al. Putting PrEP into practice: Lessons learned from early-adopting US providers' firsthand experiences providing HIV pre-exposure prophylaxis and associated care. PLoS One 2016;11:e0157324.
36. Calabrese SK, Magnus M, Mayer KH, et al. ''Support your client at the space that they're in'': HIV pre-exposure prophylaxis (PrEP) prescribers' perspectives on PrEP-related risk compensation. AIDS Patient Care STDS 2017;31:196–204.
37. Corbin J, Stauss A. Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory, 3rd ed. Thousand Oaks, CA: Sage Publications, Inc., 2008.
38. Creswell JW. Qualitative Inquiry and Design: Choosing Among Five Traditions. Thousand Oaks, CA: SAGE Publications, 1998.
39. Gale NK, Heath G, Cameron E, et al. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. BMC Med Res Methodol 2013;13:1–8.
40. US Centers for Disease Control and Prevention. HIV surveillance report: Diagnosis of HIV infection in the United States and dependent areas, 2016. 2017. Available at:

https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2016-vol-28.pdf (Last accessed June 29, 2018).
41. Schick V, Herbenick D, Reece M, et al. Sexual behaviors, condom use, and sexual health of Americans over 50: Implications for sexual health promotion for older adults. J Sex Med 2010;7 Suppl 5:315–329.
42. Dovidio JF, Kawakami K, Beach KR. Implicit and explicit attitudes: Examination of the relationship between measures of intergroup bias. In: Brown RS, Gaertner S, eds. Blackwell Handbook of Social Psychology: Intergroup Processes. Malden, MA: Blackwell Publishing; 2002, pp. 175–197.
43. Greenwald AG, Poehlman TA, Uhlmann EL, Banaji MR. Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. J Pers Soc Psychol 2009;97:17–41.
44. Cooper LA, Roter DL, Carson KA, et al. The associations of clinicians' implicit attitudes about race with medical visit communication and patient ratings of interpersonal care. Am J Public Health 2012;102:979–987.
45. Green AR, Carney DR, Pallin DJ, et al. Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. J Gen Intern Med 2007;22:1231–1238.
46. Dovidio JF, Kawakami K, Smoak N, Gaertner SL. (2009). The roles of implicit and explicit processes in contemporary prejudice. In: Petty RE, Fazio RH, Brinol P, eds. Attitudes: Insights from the New Implicit Measures. New York, NY: Psychology Press, pp. 165–192.
47. Geiger HJ. Racial and ethnic disparities in diagnosis and treatment: A review of the evidence and consideration of causes. In: Smedley D, Stith AY, Nelson AR, eds. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: National Academic Press; 2003, pp. 417–454.
48. Dovidio JF, Penner LA, Albrecht TL, et al. Disparities and distrust: The implications of psychological processes for understanding racial disparities in health and health care. Soc Sci Med 2008;67:478–486.
49. Bernstein KT, Liu KL, Begier EM, et al. Same-sex attraction disclosure to health care providers among New York City men who have sex with men: Implications for HIV testing approaches. Arch Intern Med 2008;168:1458–1464.
50. Petroll AE, Mosack KE. Physician awareness of sexual orientation and preventive health recommendations to men who have sex with men. Sex Transm Dis 2011;38:63–67.
51. Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O II. Defining cultural competence: A practical framework for addressing racial/ethnic disparities in health and health care. Public Health Rep 2003;118:293–302.
52. Vaidya V, Partha G, Karmakar M. Gender differences in utilization of preventive care services in the United States. J Womens Health 2012;21:140–145.
53. Fowler CI, Gable J, Wang J, Lasater B. Title X Family Planning Annual Report: 2016 National Summary. 2017. Available at: https://www.hhs.gov/opa/sites/default/files/title-x-fpar-2016-national.pdf (Last accessed June 29, 2018).
54. Eaton LA. What can we do or change to encourage people to seek out preexposure prophylaxis? Am J Public Health 2017;107:1862.
55. Siegler AJ, Mayer KH, Liu AY, et al. Developing and assessing the feasibility of a home-based PrEP monitoring and support program. Clin Infect Dis Available at: https://www.ncbi.nlm.nih.gov/pubmed/29982304. [Epub ahead of print]
56. Martos AJ, Wilson PA, Gordon AR, et al. ''Like finding a unicorn'': Healthcare preferences among lesbian, gay, and bisexual people in the United States. Soc Sci Med 2018;208:126–133.
57. Malebranche DJ, Peterson JL, Fullilove RE, Stackhouse RW. Race and sexual identity: Perceptions about medical culture and healthcare among Black men who have sex with men. J Natl Med Assoc 2004;96:97–107.
58. Bate L, Hutchinson A, Underhill J, Maskrey N. How clinical decision are made. Br J Clin Pharmacol 2012;74:614–620.
59. Cahill S, Singal R, Grasso C, et al. Do ask, do tell: High levels of acceptability by patients of routine collection of sexual orientation and gender identity data in four diverse American community health centers. PLoS One 2014;9:e107104.
60. Krakower DS, Ware NC, Maloney KM, et al. Differing experiences with pre-exposure prophylaxis among lesbian, gay, bisexual, and transgender specialists and generalists in primary care: Implications for scale-up. AIDS Patient Care STDS 2017;31:297–304
61. Petroll AE, Walsh JL, Owczarzak JL, et al. PrEP awareness, familiarity, comfort, and prescribing experience among US primary care providers and HIV specialists. AIDS Behav 2017;21:1256–1267.

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