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Familiarity with and Preferences for Oral and Long-Acting Injectable HIV Pre-exposure Prophylaxis (PrEP) in a National Sample of Gay and Bisexual Men in the U.S

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Abstract

We sought to determine preferences for oral versus long-acting injectable (LAI) PrEP among gay and bisexual men (GBM). We surveyed a national U.S. sample of 1071 GBM about forms of PrEP. LAI PrEP was found to be acceptable among 43.2 % of men when injected monthly compared with 53.6 % of men when injected every 3 months. When asked to choose between forms of PrEP, 46.0 % preferred LAI, 14.3 % oral, 21.7 % whichever was most effective, 10.1 % had no preference, and 7.8 % would not take PrEP. There were no differences in PrEP preferences by race/ethnicity, income, region of residence, or relationship status. Those unwilling to take PrEP were significantly older than those who preferred LAI PrEP and those who would take either. Those who preferred the most effective form were younger, had less education, and reported more recent club drug use. Those who reported condomless anal sex and those who thought they were good PrEP candidates were more willing to take PrEP. Long-term health and side effects were of the greatest concern for both LAI and oral PrEP. The availability of LAI PrEP has the potential to increase uptake among GBM. The results of ongoing clinical trials of LAI PrEP will need to demonstrate similar or greater efficacy as daily Truvada for uptake to be maximized.

Keywords

Gay and bisexual men; Pre-exposure prophylaxis (PrEP); Long-acting injectable PrEP; HIV prevention; Biomedical strategies

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Introduction

In the United States, gay and bisexual men (GBM) continue to be disproportionately affected by HIV [1, 2]. In 2013, GBM represented 68 % of all new infections in the U.S., and 84 % of those among men [2]; an increase of 12 % since 2008 [1]. The most promising bio-medical HIV prevention tool currently available is pre-exposure prophylaxis (PrEP) in the form of a once-daily pill named Truvada (emtricitabine (FTC) and tenofovir disproxil fumarate (TDF)) [3, 4]. In July 2012, the US Food and Drug Administration (USFDA) approved once-daily Truvada to be used in combination with safer sex practices for HIV-negative individuals at high risk for infection [5]. Clinical trials have been completed using a variety of samples and demonstrate that TDF and FTC/TDF as a once-daily pill reduce the risk of HIV infection by 44–75 % [6–9]. Mathematical models using data from these trials estimate the risk reduction to be as high as 99 % when optimal Truvada adherence is met [10]. However, within placebo-controlled randomized clinical trials conducted to date, optimal once-daily adherence was rarely met by participants and non-adherence resulted in the early termination of two trials [11, 12]. Another dosing regimen being studied is intermittent PrEP (i.e. taking PrEP 2–24 h before engaging in sex and then for 2 days following) [13]. This strategy has been shown to reduce risk by 86 % in GBM [13]. There have been mixed reviews from participants enrolled in intermittent PrEP studies as to which form (intermittent vs. once-daily) they prefer [14, 15], as well as concerns regarding the ability of GBM to accurately predict sexual activity [16].

Even with the approval of the USFDA, uptake of once-daily PrEP has been slow, particularly among GBM [17, 18], although there is some indication that interest in PrEP is increasing [19, 20], at least in urban areas with large populations of GBM. There are many possible reasons for the slow uptake including provider initiated barriers [21], costs around health care (i.e. quarterly doctor’s visits, health insurance, prescription coverage) [22–24], HIV stigma [25, 26], and the perception among some GBM that, despite engaging in condomless anal sex (CAS), they are not appropriate candidates for PrEP [25]. Uptake has been particularly slow among GBM of color who may have significant issues with medical mistrust, despite accounting for a disproportionate number of new HIV infections [20, 27]. One other possible explanation for the slow uptake is the necessity for the pill to be taken every day, which was a reoccurring barrier mentioned across clinical trials [28, 29]. It has been shown, however, that willingness to take PrEP and actual PrEP uptake is highest among GBM who report CAS [30].

To address this daily burden of oral PrEP and its resultant problems with adherence, researchers are developing and testing a new long-acting injectable (LAI) form of PrEP, which currently requires a quarterly intramuscular shot [31]. This LAI PrEP is made up of cabotegravir and has been shown to be effective in the prevention of HIV infection among highly susceptible macaque monkeys [32, 33]. Currently there are three phase II clinical trials evaluating the safety and tolerability of LAI PrEP (NCT02165202; NCT02178800; NCT02076178) in samples at low risk of contracting HIV. These trials are expected to be completed in 2016 and 2017 [34, 35].

If daily dosing is a critical reason for slow uptake and non-adherence of oral PrEP, LAI PrEP may provide a potential solution. Past research examining oral PrEP uptake and acceptability has predominantly focused on factors including structural access to PrEP [20, 36–40], demographic characteristics [20, 41–45], substance use [39, 41], sexual risk behaviors [41–45], and psychological factors [36, 40, 44]. However, there is little research on the acceptability of injectable PrEP among GBM. As such, we sought to look at similar demographic and behavioral variables to examine LAI PrEP acceptability. Using a sample of HIV-negative GBM in the U.S., we asked about knowledge and preferences for different forms of PrEP. This research is important as it offers insight into preferences for which form of PrEP may be preferred and ultimately may help inform the most acceptable way to protect the broader most at-risk and affected group of HIV infection in the U.S.

Method

Participants and Procedures

The *One Thousand Strong* panel is a longitudinal study prospectively following a U.S. national sample of GBM annually for a period of 3 years [46]. Participants were identified via Community Marketing and Insights, Inc. (CMI) panel of over 45,000 LGBT individuals, over 22,000 of whom are GBM throughout the United States. CMI draws panelists from over 200 sources ranging from LGBT events to social media and email broadcasts distributed by LGBT organizations, and includes non-gay identified venues/mediums such to maintain a robust and diverse panel of participants from across the United States. CMI targeted individuals based on pre-specified characteristics and invited them to participate in our study. Our goal was to recruit a sample representing the diversity and distribution of GBM at the U.S. population level. In so doing, we used data from the U.S. Census with regard to same sex households, and racial and ethnic composition to populate our recruitment parameters. CMI identified participants from their panel, screened them for eligibility, and shared their responses and contact information with the research team; we then independently enrolled participants for the longitudinal assessment.

Eligible participants had to reside in the U.S., be at least 18 years of age, be biologically male, identify as male, identify as gay or bisexual, report having sex with a man in the past year, able to complete Internet-based assessments in English, have access to a device that was capable of taking a digital photo, have an address to receive mail that was not a P.O. Box, report residential stability (i.e., have not moved more than twice in the past 6 months), and complete at-home, self-administered rapid HIV antibody testing (those testing positive at baseline were not included in the panel) as well as urethral and rectal chlamydia/gonorrhea.

Participants were enrolled over a period of 6 months (April 2014–October 2014). In total, 1071 participants joined the study. Approximately 6 months after their baseline assessment, participants were sent an email with a link to verify their contact information had not changed. They were also invited to complete a brief (~10 min) survey about PrEP. As an incentive, participants were offered entry into a raffle for one of 50 Amazon gift cards for $20. In total 950 (88.7 %) participants completed this survey; however, we excluded data from two men who indicated they had been diagnosed with HIV since baseline. Thus the

analytic sample for the current study is 948. All procedures were reviewed and approved by the university-wide Institutional Review Board of the City University of New York's Human Research Protections Program.

Baseline Measures

During the online baseline CASI, participants indicated their demographic characteristics (e.g., race or ethnicity, education, income, zip code, and relationship status), as well as whether or not they had used drugs (i.e., cocaine/ crack, crystal methamphetamine, ecstasy/ MDMA, GHB, or heroin) in the previous 3 months and if they had engaged in any CAS with casual male partners in the previous three months.

6-Month PrEP Measures

During the optional follow-up survey, participants were presented with the following description of PrEP:

> PrEP (pre-exposure prophylaxis) is a new biochemical strategy to prevent HIV infection. PrEP involves HIV-negative guys taking anti-HIV medications (for example, Truvada) once a day, every day to reduce the likelihood of HIV infection if they were exposed to the virus. Clinical trials of PrEP indicated that it reduced the likelihood of HIV infection when used in combination with other preventative methods, such as condoms. Please note that PrEP is not the same as taking HIV medications for a brief period of time (i.e., 28 days) after a high risk exposure to HIV through encounters such as being stuck by a contaminated needle or having unprotected intercourse. PrEP is intended for regular, long-term use.

Following this, they responded to a series of general PrEP questions. To assess perceived appropriateness of PrEP for themselves, participants were asked, "Do you believe that you are currently an appropriate candidate for PrEP?" with responses ranging from "Yes, I am definitely an appropriate candidate" to "No, I am definitely not an appropriate candidate." To assess willingness to take oral PrEP, participants were asked, "Suppose that PrEP is at least 90 % effective in preventing HIV when taken daily. How likely would you be to take PrEP if it were available for free?" with responses ranging from "I would definitely take it" to "I would definitely not take it." Participants were next asked about how concerned they were about a series of potential barriers to taking PrEP with responses ranging from 1 (*not at all concerned*) to 4 (*very concerned*) [20].

Following these general PrEP questions, participants received the following description of LAI PrEP:

> Scientists are also working to make a different kind of PrEP that would not require taking a pill every day. Instead, it would involve getting an injection or shot in the muscle of the butt every month or perhaps only every 3 months. Based on past experiments, scientists believe that this new drug can work similarly to daily oral PrEP to prevent HIV, but conclusive results from human trials have not yet been obtained. We are interested in knowing some of your opinions about this second form of PrEP, which we will call "long-acting injectable PrEP" due to the fact that the injections would last from one to 3 months.

Participants were asked how familiar they were with LAI PrEP with responses ranging from "I've never heard of it before today" to "I know a lot about it." Participants rated their willingness to take LAI PrEP in the same way they were asked about oral PrEP—specifically, "Suppose that long-acting injectable PrEP is at least 90 % effective in preventing HIV when injected once every month. How likely would you be to take this long-acting injectable PrEP if it were available for free?" with response options ranging from "I would definitely take it" to "I would definitely not take it." Participants were also asked, "In general, are you the type of person who would rather…" with response options of "Take a pill every single day," "Take a pill 2–3 times per week," and "Receive an injection every 3 months." Participants were asked about barriers to LAI PrEP with a nearly identical measure as was used for oral PrEP with two additional items regarding the lasting effects "wearing off" and a fear of needles.

Finally, to assess preferences for oral versus LAI PrEP, participants were asked, "Given the choice between either form of LAI PrEP and daily oral PrEP, would you prefer to take…" with responses options of "LAI PrEP," "daily oral PrEP," "either LAI or daily PrEP—no preference," "either LAI or daily PrEP—whichever is most effective," and "neither—I would not take PrEP."

Statistical Analyses

We examined basic descriptive statistics for variables of interest, including demographic, behavioral, and PrEP-related factors, and then examined the association between these factors and the five-category variable for PrEP preferences using Chi square statistics. In cases of significant omnibus Chi square statistics, we utilized standardized residuals greater than the absolute value of 2 to report on the areas of greatest difference in the table. We also utilized an analysis of variance (ANOVA) to compare mean age across the four categories and utilized least squared difference (LSD) post hoc tests to examine pairwise comparisons. Finally, we utilized paired-samples *t*-tests to compare responses to the barriers items for oral and LAI PrEP to examine within-person differences.

Results

A majority of the sample was White, with slightly more than one-quarter being men of color (Table 1). There was a diversity of representation with regard to education, income, geographic region of residence, and relationship status. The average age in the sample was 40 and ranged from 18 to 79. Less than 10 % of the sample reported having used club drugs within the 3 months prior to the baseline survey. We found that 92.8 % ($n = 880$) had never been prescribed PrEP, 5.9 % ($n = 56$) were currently prescribed PrEP, and 1.3 % ($n = 12$) had previously been prescribed PrEP. When asked about the acceptability of LAI PrEP in 1-month and 3-month intervals, 43.2 % found the 1-month version acceptable compared with 53.6 % who found the 3-month dosing acceptable. With regard to choose between types of PrEP, nearly half (46.0 %) of the sample expressed a preference for LAI PrEP, 14.3 % preferred oral PrEP, 21.7 % preferred whichever turns out to be most effective, 10.1 % had no preference between the two forms of PrEP, and 7.8 % said they would not take either

form of PrEP. Overall, only 10.1 % ($n = 96$) reported any familiarity with LAI PrEP, with only 30 men reporting they knew a fair amount or a lot about it.

Table 1 also reports on the demographic associations with PrEP preferences. As can be seen, there were no associations for race/ethnicity, annual income, geographic region of residence, or relationship status. In contrast, there were significant associations with educational attainment, recent club drug use, and age. Standardized residuals suggested that a greater number of those with a high school education or less expressed a preference for the most effective form of PrEP. Significantly more club drug users preferred LAI or whichever form was most effective. Post-hoc tests indicated that those who would not take PrEP at all were significantly older ($p < 0.05$) than those who preferred LAI PrEP and those who would take the most effective form, and those who would take the most effective form were also significantly younger than those who preferred oral PrEP.

We next examined PrEP-specific factors that might differentiate PrEP preferences and found several significant associations (Table 2). Engaging in CAS with casual male partners in the 3 months prior to the baseline appointment was associated with PrEP preferences, with standardized residuals suggesting that a lower proportion of those who engaged in CAS indicated they would not take PrEP at all. Perceptions of being an appropriate candidate for PrEP were associated with preferences, with more men who believed they were appropriate candidates expressing willingness to take whichever form is most effective and fewer reporting they would not take PrEP at all. Whether or not participants were familiar with LAI PrEP prior to taking the survey was unassociated with PrEP preferences. Willingness to take oral PrEP was associated with PrEP preferences, with more unwilling men reporting a preference for neither form of PrEP and fewer of them reporting a preference for the most effective form of PrEP; similarly, more of those currently prescribed PrEP expressed willingness to take the most effective form of PrEP. Among those who reported willingness to take LAI PrEP, a greater number reported preferences for LAI PrEP and a lower number reported they preferred oral PrEP or would not take PrEP at all. Similarly, among those who saw themselves as the type who would typically prefer to take an injection to taking a pill, a greater number preferred LAI PrEP, with the opposite being true among those who reported they were the type to prefer taking a pill every day or taking a pill a few days a week (i.e., preferences for oral PrEP were highest).

The comparisons of barriers to PrEP uptake and maintenance for both oral and LAI PrEP are reported in Table 3. The long-term health effects and concerns about side effects were of the greatest concern and there were no differences in level of concern regarding the effects for oral versus LAI PrEP. Participants reported slightly less concern about the possibility for incomplete protection from PrEP, though this also did not differ by type of PrEP. Finally, with regard to having to return for medical visits every 3 months, participants reported this as significantly less of a burden for LAI PrEP than oral PrEP. We also assessed one barrier specific to oral PrEP and two specific to LAI PrEP and found that participants generally rated them lower than the more general health concerns, with a fear of needles being the least concerning.

Discussion

As one might expect given that research on LAI PrEP is still within Phase II trials, the vast majority of men in our national US sample (90 %) had never heard of LAI PrEP prior to our survey. Once LAI PrEP was described, 46 % of men indicated a preference for LAI PrEP, although nearly 22 % said they would prefer whichever form of PrEP was most effective, suggesting that LAI PrEP will have to demonstrate that it is at least as effective as daily oral PrEP in order for uptake to be greater than that of oral PrEP. Even among those currently prescribed daily oral PrEP (6 % of the sample), nearly one-third expressed a preference for LAI PrEP and only 16 % indicated a preference for oral PrEP, suggesting that a number of GBM may want to change their PrEP modality should a LAI form become available. Further, those currently prescribed PrEP were more likely to be interested in the most effective form, suggesting that the level of protection against HIV is one of the most important factors in deciding which form of PrEP to use, particularly for these early adopters of oral PrEP.

We did not find any significant differences in PrEP preferences among demographic variables such as race/ ethnicity, income, geographic region, or relationship status. However, age was significantly associated with PrEP preferences, with those disinterested in both forms of PrEP being oldest, on average. Data suggest that nearly 50 % of all Americans living with HIV are over the age of 50 [47, 48], and with increasing numbers of older GBM contracting HIV, this is a group for whom PrEP uptake may be very beneficial; however, efforts to promote uptake among older GBM at risk of infection may prove particularly challenging. Younger and less educated GBM were interested in the most effective form of PrEP, and substance users were interested either in the most effective form or LAI, suggesting that some subgroups of GBM may be most receptive to targeted messaging around PrEP options should LAI become available.

The best candidates for PrEP are GBM who report a history of inconsistent or no condom use [4], and our results further support the notion that willingness to take PrEP is highest among these men who are at the greatest risk of infection [30]. Men in our sample who reported CAS expressed a preference for each form of PrEP rather than neither form of PrEP, but did not express preferences among the types of PrEP. Overall, willingness to take LAI PrEP was associated with a preference for LAI PrEP over oral. Nearly 64 % of GBM viewed themselves as the type of person who would rather have an injection every 3 months (compared to taking a pill daily or 2–3 times a week), and, not surprisingly, these individuals were more likely to express a preference for LAI PrEP. Interestingly, only 14 % of participants viewed themselves as the type of person who would prefer to take a pill only 2–3 times a week rather than daily pill-taking or injection, suggesting that there may be a limited population for whom intermittent oral dosing of PrEP would be the preferred method. One recent study found that implementing intermittent PrEP dosing schedules that are centered around sexual events (i.e., event-contingent dosing) may be problematic among highly sexually active GBM—who are prime targets for PrEP—due to their inability to accurately predict when they will have sex [16]. The findings of these two studies suggest that research into LAI PrEP may warrant higher priority than developing new dosing schedules for oral PrEP for GBM.

Regardless of preferences for any particular form of PrEP, these data suggest that the biggest concerns regarding both forms of PrEP are the same—men were primarily concerned about their unwanted effects on health. Although some recent research suggests the current formulation of PrEP is as safe as an aspirin regimen [49], other recent results suggest modest declines in renal function over time [50, 51]. As a result, the search for equally effective drugs with fewer complications will be critical for both oral and injectable PrEP acceptability among patients. In comparison, the concerns unique to LAI PrEP (i.e., those about needles and the effects "wearing off" if one does not return for their next visit on time) were rated with less concern, suggesting men have more general PrEP-related concerns that are primarily related to the use of potentially harmful HIV medications rather than the mode of administration. One other possible explanation for the slow uptake of oral PrEP is the necessity for the pill to be taken every day, which was a reoccurring barrier mentioned across clinical trials [28, 29]. However, our findings demonstrate that this is relatively low on the list of concerns participants have about PrEP, with general health effects being more concerning.

Finally, we also found that 10 % fewer men found LAI PrEP to be acceptable when administration would need to occur every month rather than every 3 months. Recent Phase II results on one potential form of LAI PrEP suggested faster absorption of the product than expected and thus the probable need for more frequent injections, such as every 2 months [52]. The authors also reported a greater level of pain from the injections. One or both of these situations becoming a reality of LAI PrEP may at least partially diminish acceptability —and ultimately uptake—of LAI PrEP compared to the results found in the present study.

Limitations

The current study has some important limitations. We asked about both forms of PrEP with the assumption that the medication would be available for free, thus removing cost as a potential barrier. With an increasing number of states increasing the availability of funding for PrEP, it may be feasible to obtain LAI PrEP for low or no cost, though this is not a guarantee and thus the acceptability of both forms of PrEP should be considered hypothetical. We also had participants assume LAI PrEP was as effective as daily oral PrEP, which has yet to be demonstrated within the clinical literature. Other characteristics of the description of LAI PrEP limit its correspondence with current protocols being tested, including the quantity of the dose (two large shots, one in each buttocks) and the probable need to take the medication orally for a period of time prior to receiving LAI PrEP to rule out any adverse reactions. All participants answered the section on daily oral PrEP prior to the section on LAI PrEP, and this may have influenced results. However, the fact that the general population was also introduced to oral PrEP prior to LAI PrEP and the lack of significant differences in the barriers to each suggests this may have been a minimal issue. Finally, although our sample is a national one from across the US, and represents an important general population among whom to test the acceptability of this novel form of PrEP, a large majority identified as White, and with high levels of education and income. More importantly, the sample was not selected for risk and a proportion of them may not make ideal candidates for any form of PrEP. Future studies should examine willingness and

preference for LAI and other forms of PrEP among more diverse samples, including those who report CAS, as these GBM are the best candidates for PrEP.

Conclusions

Although awareness of LAI PrEP among this national sample of GBM remains low at this early stage of investigation, the present results hint at a potentially promising future for this mode of administration. Among GBM who are willing to take PrEP, the largest number of men were interested in LAI PrEP, followed by whichever form is most effective, with fewer expressing a preference for daily oral PrEP. These findings suggest that convenience (i.e., not taking a pill every day) and effectiveness may be two primary underlying motivators of PrEP preferences. Moreover, men expressed similar concerns about both oral and LAI PrEP that were centered around their potential negative health effects. Based on these results, we suggest that two of the central foci of future clinical trials of LAI PrEP should be to document the comparative effectiveness of LAI versus oral PrEP and to compare the negative health effects of each. Taken together, these findings indicate that adding LAI PrEP to the biomedical options for HIV prevention has the potential to increase uptake among GBM, although clear comparisons of the two modes of administration will be important in assisting with decision making if and when the two forms are offered simultaneously.

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Table 1

Demographic characteristics and associations with preferences for PrEP type

	Full sample (N = 948)		Preferences for type of PrEP										$\chi^2(df)$, p value
			LAI (n = 436)		Ora (n = 136)l		Either— whichever is most effective (n = 206)		Either—no preference (n = 96)		Neither— would not take PrEP (n = 74)		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Race/ethnicity													13.20 (12), 0.35
Black	68	7.2	25	5.7	12	8.8	13	6.3	9	9.4	9	12.2	
Latino	119	12.6	61	14.0	15	11.1	22	10.7	15	15.6	6	8.0	
White	683	72.0	308	70.6	103	76.3	155	75.2	64	66.7	53	70.7	
Other/multiracial	78	8.2	42	9.6	6	4.4	16	7.8	8	8.3	6	8.0	
Education													22.81 (12), 0.03
High school degree or less	66	7.0	20	4.6	11	8.1	18	8.7	14	14.6	3	4.1	
Some college or Associate's degree	348	36.7	163	37.4	53	39.3	69	33.5	35	36.5	28	37.3	
Bachelor's degree	274	28.9	121	27.8	35	25.9	73	35.4	22	22.9	23	30.7	
Graduate school or degree	260	27.4	132	30.3	37	27.4	46	22.3	25	26.0	20	26.7	
Income													12.82 (12), 0.38
Less than $20 k per year	190	20.0	75	17.2	31	22.8	45	21.8	25	26.0	14	18.9	
$20 k to $49 k per year	314	33.1	148	33.9	46	34.1	67	32.5	34	35.4	19	25.3	
$50 k to $74 k per year	183	19.3	80	18.3	29	21.5	43	20.9	14	14.6	17	22.7	
$75 k or more per year	261	27.5	133	30.5	30	22.2	51	24.8	23	24.0	24	32.0	
Geographic region													12.69 (12), 0.39
Northeast	186	19.6	81	18.6	26	19.3	42	20.4	20	20.8	17	22.7	
South	329	34.7	159	36.5	39	28.7	82	39.8	27	28.1	22	29.7	
Midwest	165	17.4	75	17.2	23	17.0	33	16.0	17	17.7	17	22.7	
West	267	28.2	120	27.5	48	35.6	49	23.8	32	33.3	18	24.0	
U.S. possession[a]	1	0.1	–	–	–	–	–	–	–	–	–	–	
Relationship status													7.59 (4), 0.11
Single	489	51.6	228	52.3	71	52.2	112	54.4	51	53.1	27	36.5	
Partnered	459	48.4	208	47.7	65	48.1	94	45.6	45	46.9	47	62.7	
Any recent club drug use													9.63 (4), 0.05

	Full sample (*N* = 948)		Preferences for type of PrEP										$\chi^2(df)$, *p* value
			LAI (*n* = 436)		Ora (*n* = 136)l		Either— whichever is most effective (*n* = 206)		Either—no preference (*n* = 96)		Neither— would not take PrEP (*n* = 74)		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Yes	81	8.5	44	10.1	10	7.4	22	10.7	3	3.1	2	2.7	
No	867	91.5	392	89.9	126	92.6	184	89.3	93	96.9	72	97.3	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*F*(4, 943), *p* value
Age (Mdn = 39.0)	40.3	13.8	39.9	13.7	41.7	14.7	38.5	13.4	41.5	13.8	44.18	12.8	2.96, 0.02

[a]Not included in calculation of Chi square

Table 2

PrEP-specific characteristics and associations with preferences for PrEP type

	Full sample (N = 948)		Preferences for type of PrEP										$\chi^2(df)$, p value
			LAI (n = 436)		Oral (n = 136)		Either— whichever is most effective (n = 206)		Either—no preference (n = 96)		Neither— would not take PrEP (n = 74)		
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	
Any CAS with casual male partners													15.84 (4), 0.003
Yes	325	34.3	155	35.6	49	36.3	78	37.9	33	34.4	10	13.5	
No	623	65.7	281	64.4	87	64.0	128	62.1	63	65.6	64	86.5	
Perceived appropriateness of PrEP													79.24 (8), <0.001
Yes, I'm an appropriate candidate	390	41.1	175	40.1	50	36.8	112	54.4	48	50.0	5	6.8	
I'm not sure who is an appropriate candidate	236	24.9	117	26.8	41	30.1	42	20.4	22	22.9	14	18.9	
No, I'm not an appropriate candidate	322	34.0	144	33.0	45	33.1	52	25.2	26	27.1	55	74.3	
Familiar with LAI PrEP													4.54 (4), 0.34
No	852	89.9	392	89.9	126	92.6	178	86.4	88	91.7	68	91.9	
Yes (a little to a lot)	96	10.1	44	10.1	10	7.4	28	13.6	8	8.3	6	8.1	
Willingness to take daily oral PrEP													117.40 (8), <0.001
Currently prescribed	56	5.9	18	4.1	9	6.6	24	11.7	5	5.2	0	0.0	
Willing	512	54.0	248	56.9	78	57.4	120	58.3	62	64.6	4	5.4	
Unwilling	380	40.1	170	39.0	49	36.0	62	30.1	29	30.2	70	94.6	
Willingness to take 3-month LAI PrEP													155.76 (4), <0.001
Willing	507	53.5	295	67.7	39	28.7	117	56.8	56	58.3	0	0.0	
Unwilling	441	46.5	141	32.3	97	71.3	89	43.2	40	41.7	74	100.0	
Type of person who would prefer to…													427.18 (8), <0.001
Take a pill every day	210	22.2	12	2.8	87	64.0	57	27.7	33	34.4	21	28.4	
Take a pill 2–3 times per week	132	13.9	14	3.2	46	33.8	38	18.4	18	18.8	16	21.6	
Receive an injection every 3 months	606	63.9	410	94.0	3	2.2	111	53.9	45	46.9	37	50.0	

Table 3

Within-person (paired) comparisons of barriers to uptake for oral versus long-acting injectable PrEP

Barriers to uptake	Oral		Injectable		*t*(947), *p* value
	M	*SD*	*M*	*SD*	
Long-term health effects	3.10	0.92	3.11	0.92	−0.96, 0.34
Potential side effects	3.11	0.89	3.10	0.88	0.73, 0.47
Possibility of incomplete protection	2.89	0.95	2.89	0.93	0.19, 0.85
Returning for medical check-ups every 3 months	2.15	1.05	2.04	1.01	4.29, <0.001
Having to remember to take PrEP every day	1.85	0.97	–	–	N/A
Possibility it might “wear off” if I don’t return on time	–	–	2.66	0.98	N/A
Fear or dislike of needles	–	–	1.71	1.01	N/A