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Characterization of healthcare seeking behaviors and perceptions of pre-exposure prophylaxis (PrEP) among HIV-negative men who have sex with men (MSM) in Atlanta, Georgia

By

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Master of Public Health

Epidemiology

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By

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B.S., University of Delaware, 2017

Faculty Thesis Advisor: Allison T. Chamberlain, PhD, MS

An abstract of

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University

in partial fulfillment of the requirements for the degree of
Master of Public Health
in Epidemiology

2019

Abstract

Characterization of healthcare seeking behaviors and perceptions of pre-exposure prophylaxis (PrEP) among HIV-negative men who have sex with men (MSM) in Atlanta, Georgia

By Susanna Trost

Background: Given high rates of HIV infection in the United States and more specifically in Atlanta, Georgia, there is a need to improve HIV prevention programs by more effectively leveraging the health care system to bolster promotion of pre-exposure prophylaxis (PrEP) to individuals at greatest risk of acquiring HIV. Using data collected from a cross-sectional survey administered by the Fulton County Board of Health (FCBOH) at the 2018 Atlanta Black Pride Festival and the 2018 Atlanta Pride Festival, we examined factors associated with interfacing with the health care system, having discussed PrEP with a provider, and barriers to PrEP uptake among HIV-negative men who have sex with men (MSM) residing in the Atlanta 29-county Metropolitan Statistical Area (MSA). **Methods**: Chi-square and Fisher's exact tests assessed differences in health-seeking behaviors and provider discussion of PrEP across key demographic factors. We estimated prevalence ratios for the associations between medical locations visited, HIV risk status, and provider discussion of PrEP using multivariate log binomial models. Associations between demographic factors, healthcare-seeking behaviors, reasons for not taking PrEP, and reasons for being more likely to take PrEP were assessed using bivariate log binomial models. **Results**: In total, 256 HIV-negative MSM residing in Atlanta MSA were available for analysis. While 87.1% cited interfacing with the healthcare system in the past year, less than one third (31.1%) of PrEP naïve HIV negative MSM reported a provider discussing PrEP. The most frequently cited reasons for not taking PrEP were not knowing enough about PrEP and low risk perception for HIV, with black MSM being more likely than non-Black MSM to cite lack of knowledge about PrEP as a barrier (PR = 1.66, 95% confidence interval [CI]: 1.07, 2.58) and less likely to cite low risk perception for HIV as a barrier (PR = 0.49, 95% CI: 0.34, 0.70). **Conclusion**: Despite the vast majority of HIV-negative MSM in this sample interfacing with the healthcare system, greater effort on the part of health care providers needs to be made to ensure they routinely inform at-risk individuals about PrEP and appropriately address each patient's most pressing concerns.

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Acknowledgements

Foremost, I would like to thank Dr. Allison Chamberlain for her guidance and encouragement throughout the entire thesis process. I am very thankful for her mentorship and the opportunities she has offered to enhance my thesis experience. I would also like to thank Udodirim Onwubiko for her tireless efforts in developing and administering the survey and her technical assistance during the analysis. Many thanks to the Department of Epidemiology for providing students with the knowledge and skills needed to successfully complete thesis requirements and pursue meaningful careers in public health.

I also thank my parents and sister for their endless support and encouragement as I pursue my passions within public health. Many thanks to my friends and peers for creating such a wonderful community within Rollins and for their words of inspiration over the past two years. Finally, I would like to thank all of the survey participants for their willingness to contribute to this research.

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Introduction

Despite decreases in the rate of human immunodeficiency virus (HIV) infection

diagnoses between 2012 and 2016 in the United States, 991,447 individuals had a

diagnosed HIV infection at the end of 2016 (1). Disparities in HIV diagnosis are

observed across the United States, with the South having the highest rate of HIV

diagnoses in 2017 (1). Within the state of Georgia, the burden of HIV disproportionately

affects areas in and around Atlanta, the state's capital. For example, HIV prevalence

rates are consistently higher in Fulton County compared to rates across Georgia, and

about 1 in 4 individuals diagnosed with HIV in Georgia lives in Fulton County (2).

Between 2010 – 2016, young adults aged 20-29 accounted for 40% of new HIV

infections in Fulton County, and 75% of HIV transmission among Fulton County

residents living with HIV occurred through male to male sexual contact (3). In 2019,

Fulton County was identified as one of forty-eight county "hotspots" in the U.S. for new

HIV diagnoses (4).

Given the high rates of HIV infection in the United States and more specifically in

Atlanta, Georgia, there is a need to improve HIV prevention programs and to target these

programs to high-risk populations. Pre-exposure prophylaxis (PrEP), a daily medication

that can decrease the risk of sexually acquiring HIV-infection, was approved by the U.S.

Food and Drug Administration (FDA) in 2012 and has emerged as an important tool in

the prevention of HIV (5). According to the Centers for Disease Control and Prevention

(CDC), PrEP lowers the risk of becoming sexually infected with HIV by over 90% if

taken daily as prescribed (6). However, both the FDA and CDC have emphasized that

PrEP is intended to be used in conjunction with safer sex practices such as condom use

(5, 7). One model predicted that if 40% of men who have sex with men (MSM) at risk for HIV infection use PrEP in combination with increased condom usage, as many as 25% of new infections could be prevented over 10 years (8).

To achieve marked declines in HIV incidence on account of PrEP, barriers in both awareness and use of the drug need to be addressed, especially among those at greatest risk for HIV. While multiple studies have revealed limited PrEP awareness, particularly among black MSM, progress is being made (9, 10). For example, awareness of PrEP increased from 15.5% in 2012 to 28.3% in 2015 among black MSM and transgender women in New York City and from 39.1% in 2011 to 73.8% in 2014 among MSM in Washington, DC (9, 11). Another survey administered at the Seattle Pride Parade found that self-reported use of ever taking PrEP rose from 5% to 31% from 2012 to 2015 among individuals at high-risk for HIV (12).

While these increases are promising, overall uptake of PrEP is still suboptimal (12), suggesting that more effort should be placed on getting at-risk individuals connected to PrEP-prescribing providers. All licensed prescribers can offer patients PrEP, including physicians like primary care providers (PCPs) who do not specialize in HIV or infectious disease (7). Ensuring that provider types like internists and family medicine physicians routinely evaluate patients for PrEP and prescribe to those at-risk of HIV is important; PCPs are most likely to see HIV-uninfected individuals at risk for infection, while HIV specialists see patients who are already HIV-positive (13). Beyond access to PrEP prescriptions, discussion of PrEP in clinical encounters, particularly when coupled with HIV risk assessments, is critical to increasing PrEP awareness and addressing barriers among at-risk individuals.

Using data collected from a cross-sectional survey administered by the Fulton County Board of Health (FCBOH) in 2018 to ascertain the state of PrEP awareness and use among high risk populations in Atlanta, this analysis examines factors associated with interfacing with the health care system and having discussed PrEP with a provider among HIV-negative MSM residing in Atlanta, GA. We also explore whether differences exist in the reasons cited for not taking PrEP across important demographic factors and between those who discussed PrEP with a provider and those who did not. By identifying factors associated with reportedly not discussing PrEP with a provider, these findings can help refine provider-focused components of HIV prevention programs that are occurring or being planned for implementation in the Atlanta area and beyond.

Methods

Data Collection

To obtain insights on PrEP awareness and use among specific populations at risk for HIV residing in and around Atlanta, the FCBOH administered a forty-three question survey to attendees of the 2018 Atlanta Black Pride Festival and the 2018 Atlanta Pride Festival. Trained study team members recruited primarily male and transgender festival attendees; eligibility criteria included being 18 years of age or older and a self-identified Georgia resident. Verbal informed consent was received from all participants. Data was collected from willing, eligible participants via paper-based and electronic, tablet-based surveys. Data collected included demographics, HIV risk behaviors, health-seeking behaviors, and PrEP use and awareness. Respondents received a $5 Publix gift card upon completion of the survey. All male respondents living in the Atlanta 29-county

Metropolitan Statistical Area (MSA) who reported having sex with a male in the past twelve months and an HIV-negative status were included in this analysis.

The FCBOH Pride Survey and analysis was approved by the Georgia Department of Public Health Institutional Review Board (IRB) and Emory University IRB.

Outcomes and correlates of interest

The main outcome of interest was having had a medical provider discuss PrEP in the past year. This was was ascertained by the question, "If you have never taken PrEP, has any medical provider discussed PrEP with you in the past year?" Available responses were 'Yes', 'No', 'I have not seen a doctor in the past year' and 'N/A (I am HIV positive/have used PrEP)'. Health-seeking behaviors were evaluated as additional outcomes of interest through the question, "Where have you gone to see a doctor or nurse for a medical issue in the past 12 months?" Potential responses included 'I have not gone to any', 'Primary care office (doctor, PA, etc.)', 'Emergency room (hospital)', 'Service organization (AID Atlanta, etc.)', 'Student health services', 'County health department/clinic', 'Urgent care clinic (not emergency)' and 'Other'. Participants could choose multiple responses. Reasons cited for not taking PrEP and reasons cited for being more likely to use PrEP were also collected using a check-all that apply format. Demographic factors such as race, age, education, income, and health insurance status, as well as participant risk status were assessed as correlates of the aforementioned outcomes. Using the HIV Incidence Risk Index for MSM (HIRI-MSM) and the criteria for PrEP for Gay and Bisexual men in the CDC's clinical practice guidelines (2017 update), respondents who reported condomless sex with a non-committed partner or a

sexually transmitted infection (STI) diagnosis within the previous six months were classified as risk-based PrEP eligible (14, 15).

Statistical analysis

Differences in health-seeking behaviors and provider discussion of PrEP were assessed across key demographic factors using chi-square tests. Fisher's exact test was used in instances where expected cell counts were less than five. Prevalence ratios were calculated for the associations between medical locations visited in the last 12 months, HIV risk status, and provider discussion of PrEP using crude and adjusted log binomial models. Age and race were included a priori in adjusted models, with additional covariates considered for inclusion based on statistical significance. The associations between demographic factors, healthcare-seeking behaviors, reasons for not taking PrEP, and reasons for being more likely to take PrEP were also assessed using bivariate log binomial models. Statistical significance was defined as a p-value of less than 0.05 (two-sided tests). All analyses were performed using SAS 9.4 (SAS Institute Inc., Cary, NC).

Results

Of 782 total completed surveys, 478 were completed by MSM (61.1%). After excluding participants who resided outside metropolitan Atlanta (n=117) or reported being HIV-positive or unsure of their status (n=133), 256 HIV-negative MSM residing in Atlanta MSA remained available for analyses.

The median age of our sample was 31 years (interquartile range 18-70). The majority of participants reported their race as Black (55.5%), and slightly more than half of participants resided outside of Fulton County (51%). Most participants were college-

educated and employed with an income of less than $60K. Over eighty percent of participants reported having any type of insurance. A minority of participants reported any drug use or diagnosis of a sexually transmitted infection (STI) within the past six months (8.3% and 4.4%, respectively). [Table 1]

Health-seeking behaviors

Two hundred and twenty-three respondents (87.1 %) reported seeing a doctor or nurse for a medical issue in the past 12 months. Among those visiting a health care provider in the past 12 months, the majority were 30 years of age or older, were college educated, and had gross income of less than $60K. [Table 1] No significant differences in these demographics were observed between individuals who did and did not see a provider in the past 12 months, although a significant association was noted between insurance status and report of seeing a clinician in the past year (p<.01).

Of the 223 respondents who reported seeing any clinician in the past year, the vast majority (79.8%) reported going to a primary care office. Type of medical location visited in the past 12 months differed significantly between participants who did and did not attend college, as well as for participants with and without insurance and with different levels of income (p <.01 for all three covariates). [Table 1] Following primary care office, emergency room and urgent care clinic (not emergency) were the two most commonly reported medical locations, with about 10% of respondents seeking care at each of these facilities in the past 12 months.

Discussion of PrEP

Among PrEP naïve participants who reported seeing a provider in the past 12 months, forty-seven (31.1%) reported having a provider discuss PrEP with them in the

past year. Provider discussion of PrEP did not differ significantly by any of the assessed demographic factors. In adjusted analyses, visiting only a primary care office was non-significantly associated with decreased provider discussion of PrEP compared to prevalence of discussion among non-primary care locations (aPR=0.83, 95% CI 0.46, 1.48). Visiting a primary care office and another provider location was associated with a non-significant increased prevalence of provider PrEP discussion compared to participants who only visited a non-primary care location (aPR=1.15, 95% CI 0.55, 2.40). A non-significant association was also observed between risk-based PrEP eligibility and provider discussion of PrEP (aPR=0.74, 95% CI 0.46, 1.19). [Table 2]

Barriers and perceptions of PrEP

The two most frequently cited reasons for never taking PrEP were not knowing enough about PrEP and the perception of being low risk for HIV, with over 35% of participants citing each of these reasons as barriers. [Table 3] These two reasons were cited substantially more often than the next most frequent reasons of concern about side-effects (15.7%) and expense (12.4%). In bivariate analyses, seeing a clinician in the past year , black race, and being risk-based PrEP eligible were significantly associated with a decreased prevalence of reporting low HIV risk perception as a reason for not taking PrEP (PR=0.66, 95% CI 0.44, 0.98; PR=0.49, 95% CI 0.34, 0.70; PR=0.59, 95% CI 0.40, 0.86, respectively). [Table 4] The prevalence of citing not knowing enough about PrEP as a reason for not taking the drug was significantly higher among black participants compared to non-black participants (PR=1.66, 95% CI 1.07, 2.58), and significantly lower among those who were younger or had ever heard of PrEP.

More education or knowledge of PrEP and a change in HIV risk (new partners, more risky sex, etc.) were the most frequently cited reasons for being more likely to take PrEP. [Table 3] The prevalence of citing more education or knowledge of PrEP as a consideration for taking PrEP was almost double among black men compared to non-black men (PR= 1.84, 95% CI 1.23, 2.75). Participants who saw a clinician in the past 12 months were less likely to cite more education or knowledge as a reason for being more likely to take PrEP compared to those who did not see a provider (PR=0.69, 95% CI 0.48,0.9996). However, participants whose provider did not discuss PrEP had an increased prevalence of citing more education or knowledge as a reason (PR=1.61, 95% CI 0.99, 2.62) for being more likely to take PrEP. Compared to non-black respondents, black respondents were half as likely to cite change in HIV risk status as a reason for being more likely to take PrEP (PR=0.51, 95% CI 0.35, 0.76), and younger individuals were more likely than older individuals to cite this reason as contributing to their decision to take PrEP (PR=1.61, 95% CI 1.07, 2.43). [Table 4]

Discussion

Our study identified important health-seeking behaviors among HIV-negative MSM in Atlanta, Georgia. While the vast majority of participants are interfacing with the healthcare system, less than one third of PrEP naïve HIV negative MSM reported a provider discussing PrEP with them in the past year. Honing in on specific reasons for not taking PrEP, it is apparent that lack of knowledge regarding PrEP is a key barrier to uptake. More specifically, black participants were less educated about PrEP and the risk factors for needing to be on PrEP when compared to non-black participants.

The majority of men saw a provider and sought medical care in a primary care office within the past 12 months. However, men who only visited a primary care office were non-significantly less likely to report provider discussion of PrEP compared to men who had only visited a non-primary care location. While our data cannot tease out specific provider specialties encompassed within this category of 'primary care office', our findings highlight a need for provider-focused efforts in Atlanta in order to increase PrEP usage among high-risk individuals. Published in 2017, a survey of primary care physicians and mid-level practitioners in Massachusetts also noted suboptimal rates of PrEP discussion. Among providers who had cared for MSM, only 40% cited discussing PrEP with multiple patients within the past 12 months (16). These gaps in discussion highlight important opportunities for increasing PrEP awareness among clinicians so they are better informed and more comfortable discussing PrEP with patients who would benefit from its use.

While most men cited visiting a primary care office, considerations are needed for high-risk individuals who do not have access to primary care and instead seek care at other medical locations such as service organizations or county health departments. This is especially important since we found significant associations between income and insurance with type of medical location visited. A cohort study conducted in Atlanta between 2010 and 2012 found that additional barriers to PrEP usage for patients without insurance include high out-of-pocket costs for the prescription, follow-up visits, and laboratory tests (17). Interestingly, less than 15% of respondents in our survey reported PrEP being too expensive or not covered by insurance as a reason for never taking PrEP. Thus, risk perception and lack of knowledge of PrEP may be greater perceived barriers to

PrEP usage than financial burden within our study population. Of the men who cited cost as a barrier, 50% were black and over 75% had insurance.

Prior studies in Houston, Chicago, and Washington, DC observed racial differences in PrEP uptake and likelihood of using PrEP, but our survey did not find significant differences in provider discussion of PrEP by demographic factors including race (11, 18). Prevalence of provider PrEP discussion was lower among participants classified as risk-based PrEP eligible, although this association was non-significant. This finding differs from a previous survey of over 300 HIV care providers where 78% were "very likely" to prescribe PrEP for MSM who have an HIV-positive partner. The percentage was significantly higher compared to other groups of MSM, suggesting clinician risk perception plays an important role in which types of patients are informed of PrEP or offered a PrEP prescription (19). This discrepancy in provider discussion of PrEP may be explained by differences in study design. While the provider study used an online survey to assess provider likelihood of prescribing PrEP, our study surveyed patients to assess provider behavior during actual patient encounters. Thus, there may be variations in provider intentions and actual practice in regards to PrEP promotion.

While our data suggest gaps in either clinician perception of risk among their patients or targeting of PrEP discussion to high-risk individuals, participants' more accurately classified their risk status. Respondents classified as risk-based PrEP eligible were less likely to report low risk perception as a barrier to taking PrEP, suggesting that these participants are aware of their risk for HIV. Therefore, it is important to identify barriers that may hinder these patients from self-advocating for PrEP with their clinicians and encourage providers to more accurately screen for risk status.

Our findings suggest that providers who do discuss PrEP with their patients may be providing adequate information. Respondents who visited a clinician in the past 12 months were less likely to report not knowing enough about PrEP as a reason for not taking the medication and less likely to cite more education or knowledge as a reason for being more likely to take PrEP. Additionally, citing more education or knowledge as a reason for being more likely to take PrEP was higher among participants who did not have a provider discuss PrEP compared to those who did have a provider discuss PrEP. Therefore, patients who visited a clinician and discussed PrEP with their provider seem to feel educated about PrEP and comfortable making decisions regarding PrEP uptake based on their current level of knowledge.

Lack of knowledge was more of a concern among black MSM compared to non-black MSM. This finding is consistent with previous reports of Black and Latino MSM having greater concerns regarding PrEP's effectiveness (20). Although we did not find differences in provider discussion of PrEP between black and non-black patients, there may be discrepancies in the quality and thoroughness of these discussions depending on a patient's race. Similarly, participants aged 18-29 were less likely to cite lack of knowledge as a barrier to taking PrEP compared to participants older than 30 years. Although PrEP advertising is fairly new and research on this marketing is limited, these findings may reflect successful efforts to target PrEP advertisements and discussion to young MSM. A 2019 study found that young MSM who saw advertisements for a citywide campaign promoting PrEP in Chicago were more likely to discuss PrEP with a provider compared to those who did not know about the campaign (21).

Findings from this study should be understood in the context of its limitations. Venue-based recruitment may limit how representative participants are of all MSM living in Atlanta MSA. Reporting of sexually transmitted infections within the past 6 months was low, with less than 5% of participants reporting an infection. History of sexually transmitted infection was included in our classification of risk status, thus our study may underreport the number of high-risk individuals within this population. Additionally, we did not collect information on reasons for provider visit and therefore could have captured some visits where provider discussion of PrEP was not warranted. Provider types within 'primary care office' (e.g., family practitioner, internist, infectious disease specialist) were also not identified, limiting our ability to draw conclusions regarding PrEP promotion among these specific types of providers. Finally, our question assessing provider discussion of PrEP was limited to those individuals who had reported never taking PrEP before. As more time passes since PrEP's release and the number of individuals who initiate PrEP and then discontinue its use increases, it will be important for future studies to ascertain whether providers discuss PrEP again with these patients and identify the perceived barriers to reinitiating PrEP.

Despite these limitations, this survey offers useful insights into the healthcare seeking behaviors and perceptions of PrEP among MSM in the Atlanta metropolitan area. Understanding how high-risk individuals interface with the healthcare system will guide prevention programming, including work with providers themselves. While the vast majority of HIV-negative MSM in this sample are interfacing with the healthcare system, greater effort on the part of health care providers needs to be made to ensure they routinely inform at-risk individuals about PrEP. Ensuring PrEP programs address the

concerns of those at greatest risk and limit key barriers is critical to reducing new

infections in Atlanta and beyond.

Tables

Table 1. Characteristics of HIV-negative MSM residing in Atlanta MSA by health seeking behaviors and discussion of PrEP, Fulton County Board of Health (FCBOH) Pride Survey, Atlanta, Georgia, 2018

	Total Sample (n=256)		Saw provider in past 12 months					Medical location visited in the past 12 months[a]					Provider discussion of PrEP[b]				
			Yes (n=223)		No (n=33)		p-value[c]	Primary care office (n=178)		Other (n=43)		p-value	Provider discussed PrEP (n=47)		Provider did not discuss PrEP (n=96)		p-value
	N[d]	%	N	%	N	%		N	%	N	%		N	%	N	%	
Age							0.05					0.05					0.48
18-29	114	44.7	94	42.3	20	60.6		70	39.6	24	55.8		24	52.2	44	45.8	
30+	141	55.3	128	57.7	13	39.4		107	60.5	19	44.2		22	47.8	52	54.2	
Race							0.62					0.16					0.27
Black	142	55.5	125	56.1	17	51.5		95	53.4	28	65.1		31	66.0	54	56.3	
Non-Black	114	44.5	98	44.0	16	48.5		83	46.6	15	34.9		16	34.0	42	43.8	
Jurisdiction of residence							0.80					0.89					0.91
Fulton County	125	49.0	110	49.3	15	46.9		89	50.0	21	48.8		23	48.9	46	47.9	
Not Fulton County	130	51.0	113	50.7	17	53.1		89	50.0	22	51.2		24	51.1	50	52.1	
Education							0.87					<.01					0.89
No college	51	20.2	44	20.0	7	21.2		28	16.0	16	37.2		10	21.3	21	22.3	
College	202	79.8	176	80.0	26	78.8		147	84.0	27	62.8		37	78.7	73	77.7	
Employed							0.21					0.22					0.57
Yes	232	90.6	204	91.5	28	84.9		165	92.7	37	86.1		41	87.2	87	90.6	
No	24	9.4	19	8.5	5	15.2		13	7.3	6	14.0		6	12.8	9	9.4	
Gross income							0.16					<.01					0.62
Less than $60K	183	71.5	156	70.0	27	81.8		116	65.2	38	88.4		37	78.7	72	75.0	
Greater than $60K	73	28.5	67	30.0	6	18.2		62	34.8	5	11.6		10	21.3	24	25.0	
Insurance							<.01					<.01					0.88
Yes	208	82.9	192	87.3	16	51.6		163	93.1	27	62.8		40	85.1	80	86.0	
No	43	17.1	28	12.7	15	48.4		12	6.9	16	37.2		7	14.9	13	14.0	
Drug use[e]							0.17					0.53					1.0
Yes	21	8.3	16	7.2	5	15.2		12	6.8	4	9.3		3	6.4	6	6.3	
No	233	91.7	205	92.8	28	84.9		164	93.2	39	90.7		44	93.6	90	93.8	
History of STI[f]							0.37					0.70					1.0
Yes	11	4.4	11	5.0	0	0.0		10	5.7	1	2.4		1	2.1	2	2.1	
No	241	95.6	209	95.0	32	100.0		166	94.3	41	97.6		46	97.9	93	97.9	

a. Among those who reported seeing a provider in the past 12 months
b. Among those who are PrEP naïve and reported seeing a provider in the past 12 months (n=151)
c. Chi-square tests used for all p-values except where expected cell count too small and Fisher's Exact Test used instead; missing values excluded from statistical tests
d. Values may not sum to column totals due to missing values.
e. Reported at least one type of drug use in the past 6 months
f. Based on the question "In the past 6 months, were you diagnosed with any sexually transmitted infection (STI)?"

Table 2. Characteristics and discussion of PrEP among PrEP naïve HIV-negative MSM residing in Atlanta MSA who saw a clinician in the past 12 months, Fulton County Board of Health (FCBOH) Pride Survey, Atlanta, Georgia, Fall 2018

	Provider discussed PrEP				
		Crude PR		PR adjusted for age and race	
	Yes (n=47)	PR	95% CI	PR	95% CI
Medical location					
Primary care office only	25 (55.6)	0.77	0.43-1.37	0.83	0.46-1.48
Primary care office and another location	9 (20.0)	1.41	0.73-2.73	1.15	0.55-2.40
Non-primary care location	11 (24.4)	REF		REF	
Risk based PrEP eligible					
Yes	22 (46.8)	0.75	0.47-1.21	0.74	0.46-1.19
No	25 (53.2)	REF		REF	

Table 3. PrEP usage behaviors and perceptions among PrEP naïve, HIV-negative MSM residing in Atlanta MSA, Fulton County Board of Health (FCBOH) Pride Survey, Atlanta, Georgia, 2018

	N (178)	%
Reasons for never taking PrEP		
Don't know enough about PrEP	65	36.5
Low risk for HIV and don't need PrEP	70	39.3
Too expensive and it is not covered by insurance	22	12.4
Don't know where to get PrEP	12	6.7
Concerned about side-effects	28	15.7
Worried about being judged for taking PrEP	2	1.1
Transportation costs/nearest provider too far away	2	1.1
Will not remember to take pills everyday	7	3.9
It is is hassle	5	2.8
Reasons for being more likely to take PrEP		
More education/knowledge of PrEP(safety, costs etc.)	78	43.8
Change in HIV risk (e.g., new partners, more risky sex)	65	36.5
Able to take pills less often (weekly, monthly, etc.)	5	2.8
No out of pocket cost/covered by insurance	27	15.2
No judgement for taking PrEP	1	0.6
PrEP provider closer to home	8	4.5
Way to remember to take pill daily/ more consistently	3	1.7
Option to take pills as needed	11	6.2
Other	17	9.6

All responses listed in the order they appeared in the survey

Table 4. Factors associated with reasons for not taking PrEP and being more likely to take PrEP among PrEP naïve, HIV-negative MSM residing in Atlanta MSA, Fulton County Board of Health (FCBOH) Pride Survey, Atlanta, Georgia, Fall 2018 (n=178)

| | Reasons for not taking PrEP | | | | | | Reasons for being more likely to take PrEP | | | | | |
| | Low risk perception (N=70) | | | Don't know enough about PrEP (N=65) | | | More education/knowledge of PrEP (N=78) | | | Change in HIV risk (N=65) | | |
	N[a] (%)	PR	95% CI	N (%)	PR	95% CI	N (%)	PR	95% CI	N(%)	PR	95% CI
Saw provider in last 12 months												
Yes	55 (78.6)	**0.66**	**0.44-0.98**	52 (80.0)	0.72	0.46-1.13	62 (79.5)	**0.69**	**0.48-0.9996**	53 (81.5)	0.79	0.49-1.27
No	15 (21.4)	REF		13 (20.0)	REF		16 (20.5)	REF		12 (18.5)	REF	
Medical location												
Primary care office only	34 (50.0)	0.66	0.42-1.04	32 (51.6)	0.73	0.44-1.23	39 (52.7)	0.76	0.49-1.18	32 (50.0)	0.73	0.44-1.23
Primary care office and another location	9 (13.2)	0.92	0.51-1.67	5 (8.1)	0.61	0.26-1.44	5 (6.7)	0.51	0.22-1.18	12 (18.8)	1.45	0.84-2.51
Non-primary care office location	12 (17.7)	0.63	0.35-1.14	14 (22.6)	0.87	0.48-1.58	17 (23.0)	0.87	0.53-1.44	9 (14.1)	0.55	0.27-1.11
No provider	13 (19.1)	REF		11 (17.7)	REF		13 (17.6)	REF		11 (17.2)	REF	
Age												
18-29	40 (57.1)	1.30	0.90-1.89	26 (40.6)	**0.67**	**0.45-0.9997**	34 (43.6)	0.75	0.53-1.05	40 (62.5)	**1.61**	**1.07-2.43**
30+	30 (42.9)	REF		38 (59.4)	REF		44 (56.4)	REF		24 (37.5)	REF	
Race												
Black	29 (41.4)	**0.49**	**0.34-0.70**	46 (70.8)	**1.66**	**1.07-2.58**	57 (73.1)	**1.84**	**1.23-2.75**	28 (43.1)	**0.51**	**0.35-0.76**
Non-Black	41 (58.6)	REF		19 (29.2)	REF		21 (26.9)	REF		37 (56.9)	REF	
Jurisdiction of residence												
Fulton County	37 (52.9)	1.29	0.89-1.85	28 (43.8)	0.89	0.60-1.32	38 (49.4)	1.13	0.81-1.58	31 (47.7)	1.06	0.72-1.56
Not Fulton County	33 (47.1)	REF		36 (56.3)	REF		39 (50.7)	REF		34 (52.3)	REF	
Education												
No college	11 (15.9)	REF		19 (29.2)	REF		16 (20.5)	REF		11 (17.2)	REF	
College	58 (84.1)	1.51	0.88-2.59	46 (70.8)	0.69	0.47-1.03	62 (79.5)	1.10	0.73-1.68	53 (82.8)	1.37	0.80-2.36
Employed												
Yes	61 (87.1)	0.86	0.51-1.46	56 (86.2)	0.79	0.47-1.34	70 (89.7)	1.11	0.63-1.95	56 (86.2)	0.79	0.46-1.34
No	9 (12.9)	REF		9 (13.9)	REF		8 (10.3)	REF		9 (13.9)	REF	
Gross income												
Less than $60K	51 (72.9)	REF		50 (76.9)	REF		58 (74.4)	REF		51 (78.5)	REF	
Greater than $60K	19 (27.1)	1.28	0.86-1.89	15 (23.1)	1.03	0.65-1.62	20 (25.6)	1.15	0.80-1.67	14 (21.5)	0.92	0.57-1.48
Insurance												
Yes	59 (86.8)	1.62	0.89-2.92	46 (73.0)	0.67	0.44-1.01	60 (80.0)	0.98	0.64-1.49	53 (85.5)	1.44	0.79-2.62
No	9 (13.2)	REF		17 (27.0)	REF		15 (20.0)	REF		9 (14.5)	REF	
Risk-based PrEP eligible												
Yes	28 (40.0)	**0.59**	**0.40-0.86**	31 (47.7)	0.81	0.55-1.19	43 (55.1)	1.10	0.79-1.54	33 (50.8)	0.92	0.63-1.36
No	42 (60.0)	REF		34 (52.3)	REF		35 (44.9)	REF		32 (49.2)	REF	
Ever heard of PrEP												
Yes	64 (91.4)	1.91	0.79-4.62	46 (70.8)	**0.42**	**0.29-0.61**	63 (80.8)	0.83	0.50-1.37	53 (81.5)	0.90	0.48-1.66
No	4 (5.7)	REF		13 (20.0)	REF		9 (11.5)	REF		7 (10.8)	REF	
Somewhat	2 (2.9)	1.13	0.26-4.94	6 (9.2)	1.04	0.63-1.70	6 (7.7)	1.50	0.81-2.76	5 (7.7)	1.61	0.73-3.54
Provider discussed PrEP[b]												
Yes	17 (32.7)	REF		16 (32.0)	REF		14 (23.3)	REF		19 (37.3)	REF	
No	35 (67.3)	1.00	0.63-1.60	34 (68.0)	1.04	0.64-1.68	46 (76.7)	1.61	0.99-2.62	32 (62.8)	0.82	0.53-1.29

a. Values may not sum to column totals due to missing values
b. Among those who have seen a clinician in the past 12 months

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