HIV Testing Rates, Testing Locations, and Healthcare Utilization among Urban African-American Men

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ABSTRACT *African-American men bear a disproportionate burden of HIV infection in the United States. HIV testing is essential to ensure that HIV-infected persons are aware of their HIV-positive serostatus, can benefit from early initiation of antiretroviral therapy, and can reduce their risk of transmitting the virus to sex partners. This cross-sectional study assessed HIV testing history and healthcare utilization among 352 young African-American men recruited in urban neighborhoods in a Midwestern city. The self-administered survey measured sexual risk behaviors, factors associated with HIV testing, and barriers to testing. The acceptability of community venues for HIV testing was also assessed. Of the respondents, 76% had been tested for HIV at some time in their lives, 52% during the prior 12 months. Of the participants, 70% had unprotected intercourse during the prior 12 months, 26% with two or more partners. Nearly three-quarters (72%) of participants had seen a healthcare provider during the prior year. In univariate analyses, those who had at least one healthcare provider visit during the prior 12 months and those who had a primary doctor were more likely to have been tested in the prior 12 months. In multivariate analyses, having a regular doctor who recommended HIV testing was the strongest predictor of having been tested [OR=7.38 (3.55, 15.34)]. Having been diagnosed or treated for a sexually transmitted disease also was associated with HIV testing [OR=1.83 (1.04, 3.21)]. The most commonly preferred testing locations were medical settings. However, community venues were acceptable alternatives. Having a primary doctor recommend testing was strongly associated with HIV testing and most HIV testing occurred at doctors' offices. But, a substantial proportion of persons were not tested for HIV, even if seen by a doctor. These results suggest that HIV testing could be increased within the healthcare system by increasing the number of recommendations made by physicians to patients. The use of community venues for HIV testing sites could further increase the number of persons tested for HIV.*

KEYWORDS *HIV, HIV testing, Healthcare utilization, Healthcare access, Community-based HIV testing, African American, Urban, Inner city*

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INTRODUCTION

Approximately 55,000 Americans are newly infected with HIV each year.[1] African Americans bear a disproportionate burden of this disease. Although African Americans constitute about 13% of the U.S. population,[2] they account for nearly half of all new HIV diagnoses.[1] The prevalence of HIV infection among African-American men and women is six to 18 times higher than among white men and women.[3] African-American men are approximately twice as likely to be HIV-positive as African-American women.[3]

Diagnosing HIV-infected individuals is an important step toward decreasing new transmission events. Many individuals, once aware of their HIV infection, reduce risky sexual behaviors with partners who are HIV-negative.[4–6] A recent meta-analysis found a 68% reduction in the prevalence of unprotected intercourse among HIV-positive persons aware of their status compared with HIV-infected persons unaware of their HIV status.[7] Persons who are unaware of their HIV serostatus may contribute disproportionately to the number of new transmissions. One model estimated that 54% of new infections are transmitted by the 25% of HIV-infected Americans who are unaware of their HIV-positive serostatus.[8]

Without an HIV diagnosis, the health and lives of undiagnosed HIV-infected individuals are threatened. Undiagnosed individuals cannot benefit from antiretroviral therapy, which can preserve immune system function, prevent opportunistic infections, and increase length of life.[9–14] Unfortunately, diagnosis of HIV at a late stage is common. One large study found that nearly half (45%) of persons diagnosed with AIDS were first diagnosed with HIV less than 1 year prior to their AIDS diagnosis.[15] African-American patients were 1.8 times more likely than white patients to be diagnosed late in the course of HIV disease progression.[15]

Many patients who are eventually diagnosed with HIV have had prior encounters with the healthcare system during which HIV was not diagnosed.[16,17] These encounters are missed opportunities both for decreasing HIV-associated morbidity and mortality as well as for preventing HIV transmission. In an attempt to reduce the number of infected persons who are unaware of their serostatus, the Centers for Disease Control and Prevention (CDC) recently revised its recommendations for HIV testing in healthcare settings. These guidelines recommend that all patients aged 13 to 64 years be screened for HIV as a routine part of medical care.[18] However, these recommendations will affect only those persons who have contact with the healthcare system.

To succeed, these recommendations must overcome existing racial disparities in healthcare utilization. Nationally, compared with whites, African Americans are less likely to have visited a healthcare provider in the prior year, less likely to have a primary source of healthcare, and more likely to be seen in an emergency department.[19–21] Moreover, among African Americans, as in the population overall, men are less likely than women to have contact with the healthcare system.[19,22] Expanding HIV testing into new healthcare settings, such as urgent care clinics and emergency departments, may improve HIV testing access for some persons without a usual source of primary medical care.

Testing for HIV in community settings may be a useful complement to healthcare-based testing. However, to date, community-based testing sites have performed a relatively small proportion of all HIV tests,[23,24,29] and their capacity to test a significantly larger proportion of the population is unknown. In addition, little is known about the acceptability of community-based HIV testing among urban African-American men.

This research study described self-reported HIV testing history and its relationship to healthcare utilization among young, urban, African-American men recruited from inner-city neighborhoods with an elevated HIV prevalence. The study identified factors associated with self-reported HIV testing and assessed whether individuals at higher risk for HIV transmission were more likely to be tested. Finally, it evaluated whether the use of community venues for HIV testing is an acceptable strategy to increase testing among young African-American men.

METHODS

Study Design
Data were collected using a cross-sectional, community-based survey of self-identified African-American men aged 18 to 45 years. Participants completed an anonymous, self-administered, written survey that was collected immediately upon completion. In total, 352 surveys were collected during July 2007.

Sampling and Recruitment Procedures
Participants were recruited outside of a national drugstore chain's four locations within the four zip codes with the highest HIV prevalence in Wisconsin.[25] These zip codes are geographically contiguous and are all located within inner-city Milwaukee. The population of these zip codes is largely African American, ranging from 51% to 91%. The median household income ranges from $14,660 to $26,436, and the percentage of individuals below the poverty level ranges from 32.7% to 45.4%.[26] Recruiters approached both persons who were entering the drugstores and others passing by on the street. Potential participants were informed that the survey focused on men's health. Interested persons were asked their age and those who met the inclusion criteria (self-identified African-American males, aged 18 to 45 years) were informed that the survey would include questions about their HIV risk, sexual behaviors, and healthcare utilization. Participants were given a $10 gift card to compensate them for time spent completing the survey, which took 10 to 15 min. Upon completion of the survey, all participants were given an informational brochure containing information on HIV and HIV prevention[27] and a resource guide that included information on local HIV testing locations and other local health and social services. The study protocol was reviewed by the Institutional Review Board (IRB) at the Medical College of Wisconsin. Because no identifying information was collected from study participants and all other required criteria were met, the IRB granted this study an exemption from review in accordance with the Code of Federal Regulations 46.101(b)(2).

Participants
Recruiters made verbal contact with 405 potential participants; 352 individuals (87%) agreed to participate in the study. Thirty-three surveys (9%) were completed by individuals who did not meet the inclusion criteria of the study, based on their written survey responses. Thirteen additional respondents (4.1%) indicated that they were HIV-positive. Surveys completed by HIV-positive respondents were excluded from the analysis. Therefore, a total of 306 surveys were available for analysis.

Measures

The survey measured demographic information, healthcare utilization, HIV status and HIV testing history, sexual risk behaviors, HIV testing barriers, and HIV testing location preferences. Demographic information included age, gender, race, educational attainment, and employment status. To assess healthcare utilization, participants responded "yes" or "no" to questions asking whether they had seen a healthcare provider during the prior 12 months and whether they had a healthcare provider that they considered their "primary doctor" (participants were told to consider any type of primary healthcare provider, such as a nurse practitioner or physician assistant, as their "primary doctor" for the purposes of the survey). Those who had seen a healthcare provider were asked to report the number of visits over the prior 12 months, as well as to select the setting of their visits from eight possible location options. Respondents who reported having a primary doctor were asked whether that doctor had ever recommended an HIV test to them.

Participants were asked ("yes" or "no") whether they had ever been tested for HIV and whether they had been tested in the prior 12 months. For those who had been tested during the prior 12 months, respondents selected from nine healthcare and community settings to indicate the location of their recent HIV test(s).

To assess sexual risk behavior, participants were asked to report the number of women and men with whom they had had sex during the prior 12 months and the number of women and men with whom they had had *unprotected* sex during that time, e.g., "In the past 12 months, how many women did you have sex with?" The phrase "sex without a condom" was added in the items pertaining to unprotected sex. "Sex" was defined prior to the questions regarding women as "either vaginal or anal intercourse [the man puts his penis into the woman's vagina or anus (butt)]." An analogous definition was given prior to the questions regarding sex with men. Participants also were asked whether they had ever been treated for or told that they had a sexually transmitted disease (STD), and several examples of sexually transmitted infections were listed, including Chlamydia, gonorrhea, herpes, genital warts, and syphilis.

Twenty-nine items addressed potential barriers or facilitating factors that may influence HIV testing behaviors. Barriers from six domains were included, and items of both positive and negative polarity were included within these domains. Respondents selected answers on a five-point scale: "strongly agree," "agree," "neutral/don't know," "disagree," or "strongly disagree." Seven items assessed logistical barriers (e.g., "I don't have transportation to an HIV testing site," "I know where I could get an HIV test") and concerns for privacy (e.g., "I feel comfortable that my HIV test results would be kept private"). Fatalism was assessed using three items (e.g., "There is no cure for HIV, so it's not worth knowing if you have it"). Two items assessed respondents' perception of their risk for HIV, and social norms were assessed using three items (e.g., "Most of my friends have gotten tested for HIV"). Fear surrounding HIV was assessed with seven items (e.g., "If I tested positive for HIV, I might lose my job"). The 29 items were combined (some items were reverse-coded) to form a "barriers to HIV testing" scale with larger scores indicating greater perceived barriers. The barriers scale demonstrated good internal consistency (Cochran's alpha = 0.89).

Finally, preferences for HIV testing venues and the acceptability of community-based testing venues were assessed. Respondents were asked how likely they would be to get tested at different locations if free, rapid testing were available at each location. The eight potential test locations included three healthcare settings (public health clinic, doctor's office, hospital) and five community settings (community center, drugstore, grocery store, church, and bar/club). Participants' likelihood of

being tested at each location was selected from four choices: "very likely," "somewhat likely," "somewhat unlikely," and "very unlikely."

Data Analysis

Statistical analyses were performed using SPSS software (SPSS, Chicago, IL, USA). Univariate logistic regression analyses were used to determine the association of recent HIV testing with other factors. Factors that reached a provisional threshold for statistical significance in the univariate analyses ($p<0.10$) were subsequently entered into a multiple logistic regression. Evaluation of preferences for community venues calculated the proportion of participants who indicated they were "very likely" or "somewhat likely" to be tested at each location.

RESULTS

Demographic Characteristics and Sexual Risk Behaviors

Participants' demographic characteristics are summarized in Table 1. Participants were African-American males with a mean age of 32 years (range, 18 to 45 years). Approximately two-thirds (68%) had graduated from high school, but only 7.2% had earned a college degree. About half (47%) of the participants were employed at the time of the study and 9% were attending school.

Eighty-eight percent of the men were sexually active during the prior 12 months. More than two-thirds (70%) reported engaging in unprotected intercourse in the past 12 months, 52% had multiple sexual partners, and about one-quarter (27%) reported *unprotected* sex with two or more sexual partners. Nearly one-third of study participants reported having had a STD. Only six participants (2%) reported having anal sex with another man.

TABLE 1   Demographic characteristics

	Number	Percent
Gender		
Male	306	100
Race		
African American or Black	306	100
Education		
Did not attend high school	17	5.6
Some high school	82	26.8
High school graduate or GED	122	39.9
Some college	63	20.6
Completed college	22	7.2
Employment and school enrollment		
Currently working	145	47.4
Currently attending school	26	8.5
Sexual activity (prior 12 months)		
Sexually active	269	87.9
Unprotected sex	215	70.3
Unprotected sex with 2+ partners	81	26.5
History of STD	97	31.7
Sex with one or more men	6	2.0

HIV Testing Rates

Overall, 76% of the men surveyed reported that they had been tested for HIV at some time and 52% reported being tested during the prior 12 months. The majority of testing occurred in healthcare settings. Testing occurred most commonly at doctors' offices (51%), in jail or prison (17%), and at STD clinics (13%). Few men (less than 6%) reported being tested in emergency rooms, urgent care clinics, community settings, or while hospitalized.

HIV testing during the prior 12 months was not associated with any of the demographic variables, such as age or education, or with greater sexual risk behavior. Specifically, those who reported unprotected sex with two or more partners during the prior 12 months were not more likely to have been tested for HIV than those without this risk factor. There was a trend toward increased testing among those who reported having had an STD (60.8% vs. 49.8%, $p=0.084$).

Healthcare Utilization

Nearly three-quarters (72%) of the men studied had seen a healthcare provider during the prior 12 months, as indicated in Table 2. Among those who had seen a

TABLE 2   Healthcare utilization and HIV testing

	N (%)	Percent with HIV test, ever	Percent with HIV test, prior 12 months
Overall	306 (100)	76.4	52.3
Had seen a healthcare provider (N=304)			
Yes	219 (72.0)	79.9	56.6
No	85 (28.0)	68.2	40.0
Number of healthcare provider visits (N=200)[a]			
1 visit	27 (13.5)	70.4	40.7
2 visits	48 (24.0)	81.3	54.2
3 visits	38 (19.0)	81.6	55.3
4 visits	29 (14.5)	79.3	58.6
5 or more visits	58 (29.0)	77.6	56.9
Location of healthcare visits (N=219)[b]			
Primary doctor's office	134 (61.1)	81.3	58.2
Emergency room	52 (23.7)	82.7	57.7
Jail or prison	17 (7.8)	76.5	64.7
Another doctor's office	16 (7.3)	68.8	43.8
Urgent care clinic	10 (4.6)	80.0	30.0
STD clinic	7 (3.2)	100	85.7
Inpatient hospital stay	7 (3.2)	57.1	42.9
Did not have a regular doctor[c]	125 (41.8)	73.6	44.8
Had a regular doctor at time of study[c]	174 (58.2)	80.5	59.8
Doctor recommended HIV test[d]	85 (53.5)	96.5	81.2
Doctor did not recommend HIV test[d]	74 (46.5)	62.2	36.5

[a]Among persons who reported seeing a healthcare provider
[b]Percentages add to greater than 100%. More than one visit site was reported by some respondents
[c]Among persons reporting whether they had a primary healthcare provider
[d]Among persons with a regular doctor reporting whether their healthcare provider recommended an HIV test

healthcare provider, most men (63%) reported at least three healthcare visits during the prior 12 months. Overall, 61% of the men reported a healthcare visit at a primary doctor's office and 24% had been seen at an emergency room. Men who had one or more healthcare provider visits were significantly more likely to have been tested for HIV during the previous 12 months (56.6% vs. 40.0%, $p=0.009$).

Just over half of the men had a primary doctor at the time of the survey. Men with a primary doctor were significantly more likely than other men to have been tested in the past 12 months (59.8% vs. 44.8%, $p=0.010$). Among those men who had a primary doctor, 49% reported that their primary doctor had recommended getting an HIV test, and of these, 81% had been tested in the prior 12 months. Men whose primary doctor had recommended an HIV test were significantly more likely to report being tested in the past 12 months than men whose primary doctor had not recommended a test (81% vs. 37%, $p=0.000$).

Of the 67 men who report never being HIV tested, 51% had a primary doctor and 58% had seen a healthcare provider during the prior 12 months. Most (79%) of these never-tested men reported at least two healthcare encounters during the prior 12 months. The majority of these visits took place in a doctor's office.

Multivariate Analysis

As shown in Table 3, the multivariate regression included four factors found in the univariate analyses to be associated ($p<0.10$) with self-reported HIV testing in the prior 12 months: having a visit with a healthcare provider during the prior 12 months, having a primary doctor, having a primary doctor who recommended an HIV test, and having been diagnosed with or treated for an STD. In the multivariate analysis, having a primary doctor who recommended HIV testing was found to be strongly associated with HIV testing during the prior 12 months [OR=7.38 (3.55, 15.34)]. Having been diagnosed with or treated for an STD also was significantly associated with HIV testing [OR=1.83 (1.04, 3.21)]. Having a primary doctor or seeing a healthcare provider during the prior 12 months were not associated with HIV testing after controlling for other factors.

TABLE 3 Predictors of having an HIV test in the prior 12 months

Predictor	Univariate analyses		Multiple regression[a]	
	OR	95%CI	OR	95%CI
Age (in years)	0.99	0.97, 1.02		
Currently employed	1.13	0.72, 1.77		
Education (continuous range)	0.98	0.78, 1.24		
Higher education	0.97	0.56, 1.70		
Saw any healthcare provider in past 12 months	2.03	1.21, 3.39	1.76	0.97, 3.19
Has a regular doctor	1.86	1.17, 2.97	0.61	0.32, 1.17
Regular doctor recommended an HIV test	5.69	3.12, 10.39	7.38	3.55, 15.34
Told he had or was treated for an STD	1.54	0.94, 2.52	1.83	1.04, 3.21
Had 2+ sex partners in past 12 months	1.23	0.78, 1.94		
Had unprotected sex with 2+ sex partners in past 12 months	1.43	0.85, 2.41		

[a]Included variables that attained a p value <0.10 in the univariate tests

Barriers to HIV Testing

Lower scores on the "barriers to HIV testing" scale (indicating fewer barriers) were not significantly associated with whether or not an individual reported HIV testing in the prior 12 months. However, responses to several of the individual barrier items were noteworthy. Knowing one's HIV status was highly valued by the respondents. Participants were most likely to strongly agree (mean rating=1.38) with the statement "It is important to know if you have HIV" (1="strongly agree," 2= "somewhat agree," 3="neutral," 4="disagree," 5="strongly disagree"). In addition, there was general agreement with the two statements, "If I wanted to get tested, I'd ask my doctor to test me" (mean rating=1.85) and "If testing was available in my neighborhood, I might get tested there" (mean rating=1.82). These findings indicate, respectively, a preference for HIV testing in medical settings and the potential utility of HIV testing in community-based venues.

Physician Recommendations

Because a doctor's recommendation was the strongest predictor of having been tested for HIV, a secondary analysis was conducted to determine whether doctors were recommending HIV testing to persons who were at an elevated risk for HIV acquisition. This analysis was restricted to those men who had a primary doctor and had seen that doctor during the prior 12 months. Men were classified as being at an elevated risk for HIV acquisition if they had two or more sex partners of either gender during the prior 12 months. (This definition was selected because the 2001 CDC guidelines classify such individuals as being at increased risk for HIV.[28]) Doctors were not more likely to recommend HIV testing to these elevated-risk individuals than to other participants (53% vs. 51%, p=0.842). Similarly, doctors also were not more likely to recommend testing to individuals who had two or more *unprotected* sex partners (63% vs. 51%, p=0.305). However, there was a trend toward greater doctor recommendation for testing among those men who had a history of an STD (66% vs. 49%, p=0.057).

Testing Site Knowledge and Location Preferences

Overall, 81% of study participants either agreed or strongly agreed with the statement "I know where I could get an HIV test." Previously tested men were more likely to agree with this item compared with those who had not been tested (88% vs. 63%).

Participants were asked how likely they would be to get HIV tested at each of eight locations if free, rapid HIV tests were offered at each location. Overall, more respondents indicated they would be likely to get tested in a medical setting than in a community setting. As shown in Table 4, of the 180 respondents who answered all eight of the location preference questions, 90% indicated they would be "very likely" or "somewhat likely" to be tested at a doctor's office. Eighty-six percent of the men were likely to be tested at a public health clinic or at a hospital. Fewer men indicated a likelihood of getting tested at nonmedical settings.

Those men who had not been HIV tested during the prior 12 months showed similar preferences for testing locations, but reported being less likely to get tested overall. Compared with those men who had a primary doctor, a larger percentage of those without a primary doctor reported they were likely to be tested in community settings, such as a community center, drugstore, or church. However, these men showed a preference for testing in medical settings over community settings. Still,

TABLE 4   HIV testing location preferences

Location	Overall sample (N=180)	No primary doctor (N=74)	Has primary doctor (N=101)	Not tested in past 12 months (N=91)
Doctor's office	90	92	90	84
Public health/STD clinic	86	91	83	82
Hospital	86	87	87	79
Community center	82	89	78	75
Drugstore	67	71	64	67
Church	64	74	57	58
Grocery store	54	58	53	50
Bar/club	46	46	47	41

Percent of respondents who indicated they would be "very likely" or "somewhat likely" to be HIV tested if free, 20-min HIV tests were offered in each location

more than half said they were likely to be tested in a church, drugstore, or community center.

DISCUSSION

This study examined HIV testing and its relationship to healthcare utilization among a sample of young African-American men at risk for HIV acquisition. Participants were recruited from areas with locally high rates of HIV (approximately 0.5% overall, but up to 1.6% in young adults) and 4% of the surveyed men reported being HIV-positive (these men were excluded from the analyses). This study found that approximately half of the men reported being tested during the prior 12 months. This rate is greater than the 22% to 41% rates found in many national surveys involving young African-American men recruited from the general population.[29–31] This finding may be due to either an increased awareness of HIV risk on the part of these men who were recruited from a geographic location with an elevated HIV prevalence or an increased awareness by the healthcare providers serving this population of men.

Many respondents' sexual behaviors placed them at risk for HIV acquisition: 70% reported engaging in unprotected intercourse in the prior 12 months, 52% had multiple sex partners, and 27% reported unprotected sex with multiple partners. In light of this relatively high HIV risk, the study population would be an appropriate target for structural interventions to increase HIV testing. Our examination of these men's HIV testing patterns, preferences for HIV testing sites, and perceived barriers to testing could help inform the design of such interventions.

This study highlights the fact that attempts to increase HIV testing will require a multifaceted approach. First, despite known barriers to healthcare access among African-American men, a significant proportion of the inner-city men surveyed reported contact with the healthcare system. Having any healthcare encounter, having a primary care doctor, and having a primary doctor recommend an HIV test were all associated with receiving testing. Among those associations, however, a doctor's recommendation was the strongest. Therefore, expanding HIV testing into all aspects of the healthcare system and instituting routine and universal HIV screening may result in increased testing rates. Such changes would capitalize on the

association between a doctor's recommendation and the receipt of HIV testing, thus increasing the likelihood of testing, even among those individuals who do not specifically intend to be tested for HIV or actively seek HIV testing.

Encouraging healthcare visits among those who have access to the healthcare system and increasing access among those currently without access could further enhance testing rates. Improving providers' skill and comfort recommending HIV testing may also result in increased testing rates. The strong influence that doctors' recommendations have on testing should be made known to primary and other providers. Higher-level interventions could be directed toward changing policies to routinize HIV testing at clinics serving populations with an elevated HIV prevalence.

Our findings also confirmed the suboptimal results that have been shown with risk-based testing.[16] In our study, doctors did not recommend testing more often to those men at higher risk for HIV. Barriers that prevent doctors from obtaining risk information from patients and recommending HIV tests need to be studied, especially in light of the more streamlined HIV testing process that is currently recommended.[18]

Second, study participants indicated a strong preference for HIV testing in medical settings, especially doctors' offices, public health clinics, and hospitals. This finding held true even among those who previously had not been tested and those who did not have a primary doctor. One method of utilizing these findings, for example, would be to offer free, rapid HIV tests in currently established medical settings without requiring a visit with a healthcare provider. Tests could be offered on a walk-in basis at hospitals and clinics, performed by the trained staff of that facility. This model could allow access to testing to those without insurance, those without a primary physician, and those who do not otherwise wish to see a physician. This strategy would utilize the stability and reputation of existing healthcare centers within communities, while simplifying the testing process. The cost of testing and the potential for reimbursement would need to be considered. On-site, rapid testing would avoid some of the costs and difficulties associated with outreach testing, such as the transportation of staff and equipment, the logistical challenges of securing appropriate outreach facilities, and the advertising necessary to promote testing at impermanent sites. In addition, on-site testing could facilitate easier connection to HIV-specific medical care and social or legal services for those who test positive, provide a gateway to primary medical care for those who test negative, and raise awareness of HIV among the staff of those facilities.

Finally, although these men reported a relatively low rate of testing in community settings, community-based testing remains a feasible way to expand testing capacity. Some community testing sites may be underutilized, such as community centers, drugstores, or churches. These sites were acceptable to the majority of men in this study, especially among those who did not have a primary doctor. Utilizing community venues may reduce some logistical barriers associated with healthcare facility-based testing for some individuals, such as service hours, proximity, and cost, barriers to health-seeking behavior identified among African Americans.[32] In addition, providing testing opportunities in community settings would be another method to reach those persons who would accept HIV testing if they encountered a testing site, but who might not specifically seek testing.

There are several limitations to this research study. Study data were collected using a self-administered, pen-and-paper survey tool. The survey included questions about some activities that may be stigmatized, hence underreported, such as anal sex with other men. In addition, the survey did not include items assessing HIV-related

knowledge or previous or future testing intentions. Regarding testing site preferences for future testing, "hospital" was the most common response. However, no distinction was made regarding particular departments within a hospital. Therefore, it remains unclear whether, for instance, testing in an emergency department was more desirable than other hospital departments. Furthermore, no distinction was made in this question to determine whether participants would be tested if they were already at a particular location or whether they would intentionally seek testing at that location.

Study data were collected only during daytime hours, which may have limited participation by men with daytime employment. Whether the findings of this study can be generalized to a population of employed individuals is unclear. Finally, recruitment was done outside of drugstores, which may have biased the sample toward individuals with health-seeking behavior. However, any individuals walking past the recruitment sites were approached for recruitment. Therefore, it is unclear how many individuals were planning to enter the stores.

In summary, the present study found higher HIV testing rates than those reported in many previously published studies. The majority of persons tested for HIV were tested at doctors' offices and the results of the location preference items indicated that an overwhelming majority of participants would be willing to be tested in doctors' offices or other traditional healthcare settings. HIV testing was associated with healthcare visits, having a primary doctor, having a history of an STD, and most strongly with a primary doctor's recommendation for HIV testing. Still, a substantial proportion of persons were not tested for HIV, even if they had been seen by a doctor. Study findings suggest that the proportion of the population tested for HIV within the healthcare system could be increased by encouraging providers to recommend HIV tests when appropriate. Until such time when all persons have access to the healthcare system and HIV testing is offered universally and routinely, other strategies, such as offering HIV testing at healthcare facilities without a doctor visit or at conveniently located and accessible community venues may enhance HIV testing rates.

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