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ORIGINAL ARTICLE

Routine Opt-Out HIV Testing in an Urban Community Health Center

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Abstract

Undiagnosed HIV infection remains a significant public health problem. To address this, the Centers for Disease Control and Prevention revised testing recommendations, calling for routine opt-out HIV screening among adults in health care settings. However, these recommendations have not been widely implemented in primary care settings. We examined acceptability of opt-out HIV testing in an urban community health center and factors associated with accepting testing. From July 2007 to March 2008, physicians or a designated HIV tester approached patients presenting for primary care visits during 52 clinical sessions at an urban community health center. Patients were told they "would be tested for HIV unless they declined testing." Enzyme-linked immunosorbent assays, which required venipuncture, were used to test for HIV infection. We extracted demographic, clinical, and visit characteristics from medical records and examined associations between these characteristics and accepting HIV testing using logistic regression. Of 300 patients, 35% agreed to HIV testing, with no new HIV infections detected. Common reasons for declining testing were perceived low risk (54.4%) and self-reported HIV testing previously (45.1%). Younger age (adjusted odds ratio [AOR] = 0.97, 95% confidence interval [CI] = 0.96–0.99), Hispanic ethnicity (AOR = 1.78, 95% CI = 1.01–3.14), and having another blood test during the visit (AOR = 6.36, 95% CI = 3.58–11.28) were independently associated with accepting HIV testing. This study questions whether expanding HIV testing by conducting routine opt-out HIV testing in primary care settings is an acceptable strategy. It is important to understand how various testing strategies may affect HIV testing rates. In addition, further exploration of patients' reasons for declining HIV testing in these settings is warranted.

Introduction

In the United States, undiagnosed HIV infection remains a significant public health problem.[1] To address this, in September 2006, the Centers for Disease Control and Prevention (CDC) revised HIV testing recommendations. These recommendations call for routine HIV screening among adults in all health care settings using an opt-out screening strategy.[2] "Opt-out" HIV testing is defined as conducting HIV testing after notifying patients that the test will be conducted and that they may decline or defer testing.[2] These revised recommendations are specifically not based on risk, as studies have repeatedly demonstrated that risk-based HIV testing misses a substantial number of individuals with HIV infection.[3–7] Although 35 national professional societies have endorsed the CDC's recommendations of opt-out routine HIV testing in health care settings among general adult populations, notably, the U.S. Preventive Services Task Force makes no recommendations for or against routine HIV testing.[8–10]

Currently, routine opt-out HIV testing in primary care settings has yet to be widely implemented. Of the few studies reporting routine HIV testing practices, most occur in obstetrical or emergency/urgent care settings.[11–15] These studies report a wide range of HIV testing acceptance rates (33%–86%), with the highest acceptance rates occurring in obstetrical settings.[11,12,14–16] Patient-related factors associated with refusing testing in these studies included: non-English speaking, older age, higher level of education, Asian or white race.[11,12,14] We are aware of only one published study examining routine HIV testing in the primary care setting. Conducted within the Veteran's Affairs Healthcare System, this study compared different system-level strategies to conduct routine HIV testing.[17] However, only 17% of patients presenting to the VA primary care setting participated in this

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study. Thus, several issues, including acceptability of and barriers to routine HIV testing, remain unclear when routine HIV testing is applied to unselected primary care populations.

The objectives of this study were to examine the acceptability of an opt-out HIV testing program in an urban community health center and to examine factors associated with accepting HIV testing.

Methods

From July 2007 to March 2008, we implemented an opt-out HIV testing program at a community health center in the Bronx, New York. We targeted 5 general internists' patients who presented for primary care visits during 52 clinical sessions. These physicians' patients were chosen because they were most likely to fit program criteria, which included: (1) at least 18 years of age, (2) English-speaking, (3) not pregnant, and (4) not known to be HIV infected. The primary care physician or a designated HIV tester attempted to approach all patients presenting for physician visits. The HIV tester had limited clinical training, primarily in HIV counseling and testing. Two physicians approached their own patients about HIV testing, while 3 physicians had the designated HIV tester approach their patients. (The determination of who approached patients for HIV testing was by convenience.) In a standardized protocol, the HIV tester and physicians were instructed how to approach patients, what to say to them, and how to respond to them when they accepted or declined HIV testing. Specifically, when patients were in private examination rooms, they were informed about the program and told they "would be tested for HIV unless they declined testing." Additionally, when patients declined, reasons for declining were noted in medical records.

The HIV tester and physicians at the health center were trained in counseling and testing based on "ACTS" (Assess, Consent, Test, Support).[18] Thus, in accordance with New York State law, those who agreed to HIV testing received pretest counseling (which lasted a few minutes) and gave written informed consent. Immediately after the visit, patients who agreed to HIV testing had venipuncture to test for HIV using enzyme-linked immunosorbent assays (EIA), followed by confirmatory Western blots if necessary (e.g., standard, rather than rapid, HIV tests were conducted). There were no explicit protocols on how providers informed patients about HIV test results. Similar to other tests results obtained in primary care settings, most normal test results (e.g., HIV negative test results) were reported back to patients at the time of their regular follow-up primary care visit. Abnormal test results (e.g., positive HIV test results) would likely entail a telephone call or letter asking patients to come in to the clinic to discuss test results.

To evaluate our program, we reviewed medical records extracting demographic, clinical, and visit characteristics. Demographic information included age, gender, race/ethnicity (Hispanic, non-Hispanic black, non-Hispanic other), and insurance (public insurance versus other). Clinical information included chronic illnesses (hypertension or diabetes versus no hypertension or diabetes), psychiatric illnesses (depression, anxiety, or other psychiatric illness versus no psychiatric illness), and whether other blood tests were conducted during the visit (yes versus no). Visit information included visit type (scheduled appointment versus walk-in visit), physician type (usual physician versus covering physician), and the person approaching the patient about HIV testing (physician versus designated HIV tester).

Two investigators (C.O.C. and B.D.) independently created categories for free-text information in medical records regarding patients' reasons for declining testing. Categories included: perceived low risk, self-reported previous HIV test, time constraints, not wanting a blood test, not wanting an HIV test/not wanting to know HIV status, confidentiality concerns, other (e.g., too sick). Each reason was then coded into one of the categories (patients could offer more than one reason for declining testing). The coding was conducted independently, and when discrepancies occurred consensus was reached.

We examined associations between demographic, clinical, and visit characteristics and accepting HIV testing using χ^2 tests and t tests for bivariate analyses and logistic regression for multivariate analysis. Factors significant at $p < 0.20$ in bivariate analyses were included in the multivariate analysis.[19] The study was deemed exempt by the Montefiore Medical Center Institutional Review Board.

Results

Of 319 eligible patients, 300 (94.0%) were approached. Patients' mean age was 53 years (range, 18–92 years); 70.2% were female, 55.7% black, 37.7% Hispanic, and 66.0% had public insurance. A total of 105 (35.0%) patients agreed to HIV testing, with no new HIV infections detected (Table 1). The most common reasons for declining HIV testing were perceived low risk (54.4%) and self-reported HIV testing previously (45.1%).

Compared to those who declined, patients who accepted HIV testing were more likely to be young (mean age in years ± standard deviation [SD]: 55.1 ± 15.5 versus 48.6 ± 15.9, $p < 0.001$), Hispanic (32.1% versus 48%, $p < 0.01$), and have another blood test during the visit (17.4% versus 59.6%, $p < 0.005$). On multivariate analysis, younger age (AOR = 0.97, 95% CI = 0.96–0.99), Hispanic ethnicity (AOR = 1.78, 95% CI = 1.01–3.14), and having another blood test during the visit (AOR = 6.36, 95% CI = 3.58–11.28) remained significantly associated with accepting HIV testing.

Discussion

In an opt-out HIV testing program in an urban community health center, over one third of patients agreed to HIV testing. This rate of acceptance is lower than rates of acceptance of HIV testing in many emergency/urgent care settings.[12,13,16,20] However, compared to a study conducted in the VA primary care setting that randomized patients to three different routine HIV testing strategies (standard testing by physicians requiring a counselor and venipuncture versus nurse-initiated HIV testing requiring venipuncture versus nurse-initiated HIV testing using rapid tests), our study had similar findings to the arm in which physicians approached patients about HIV testing (42% of patients agreed to testing).[17] But, when nurses initiated routine testing, 85%–89% of patients agreed to testing. While these data are impressive, only 17% of those approached for this study agreed to participate. Therefore, one could speculate that HIV testing acceptance rates might have been lower if all patients who presented for care had been included in that study sample.

Table 1. Factors Associated with Accepting an HIV Test

	Bivariate analysis		*Multivariate analysis*
	Declined test n *(%)*	*Accepted test* n *(%)*	*Adjusted odds ratio (95% confidence Interval)*
Total	195 (65.0)	105 (35.0)	—
Patient characteristic			
Age, mean years ± SD	55.1 ± 15.5	48.6 ± 15.9[a]	0.97 (0.96–0.99)
Male	58 (29.7)	31 (29.8)	—
Hispanic	60 (32.1)	49 (48.0)[a]	1.78 (1.01–3.14)
Public insurance	130 (68.1)	60 (61.9)	—
Chronic illness (DM or HTN)	116 (59.5)	57 (54.3)	—
Psychiatric disorder	45 (23.1)	21 (20.0)	—
Program characteristic			
Visit is a scheduled appointment (vs. a walk-in visit)	177 (90.8)	90 (86.7)	—
Visit is with the usual primary care physician (vs. covering physician)	155 (79.5)	77 (73.3)	—
HIV test was offered by the tester (vs. offered by the primary care physician)	156 (80.0)	75 (71.4)[b]	1.11 (0.55–2.23)
Other blood test done during visit (vs. no other test done during visit)	34 (17.4)	62 (59.6)[a]	6.36 (3.58–11.28)

Data presented are column percentages.
[a] $p < 0.05$.
[b] $p < 0.20$.
SD, standard deviation; DM, diabetes mellitus; HTN, hypertension.

In our program, we found that one important factor associated with accepting HIV testing was having a blood test during the same visit. Thus, one program-related barrier to HIV testing may have been venipuncture. Despite rapid testing being widely available in various community settings, many large health care systems have yet to fully implement rapid testing into their systems. There are several potential barriers to implementing rapid HIV testing in large health care systems, including requirements to create new systems to collect, analyze, report, and track tests and results. One study evaluating rapid and standard tests at anonymous testing sites demonstrated that individuals overwhelmingly prefer rapid testing, with higher testing rates when rapid testing was used.[21] However, in the VA study mentioned above, which was conducted in the primary care setting, there was no significant difference in HIV testing rates between patients randomized to nurses using EIA tests and nurses using rapid oral tests.[17] Despite this, and because of our program findings, addressing venipuncture as a potential barrier to accepting HIV testing, and exploring the use of rapid HIV tests requiring oral fluid or finger-sticks in the primary care setting is warranted.

Similar to other studies, we found that the most common reasons for declining HIV testing were patients' perceived low risk and self-reported previous HIV testing.[12,22–24] We did not explicitly inquire about patients' perceived risks, risk behaviors, or previous HIV tests. Thus, we were unable to evaluate whether perceived low risk or self-reported previous HIV testing were associated with acceptance of HIV testing—we can only report that those who declined testing frequently reported these reasons for declining. Regarding patients' perceived risks, several studies have revealed that individuals tend to underestimate their risk behaviors.[25–28] We also did not verify whether patients had HIV tests outside of our health care system prior to our program. However, in our clinical experience, many patients report their providers have "tested them for everything," including HIV. It is possible that patients may be mistaken about which tests were conducted by previous providers. Further exploration into these reasons for declining HIV testing is warranted. With better understanding of patients' reasoning, we could modify our program accordingly, and potentially improve acceptance rates of HIV testing.

Despite approaching 300 patients and testing 105 patients, we did not diagnose any new cases of HIV infection. Although the prevalence of undiagnosed HIV infection in the Bronx is not known, the South Bronx neighborhood surrounding our community health center is one of the areas most devastated by HIV in New York City.[29] Despite this, we did not find any new cases of HIV infection. Data from emergency departments in New York City demonstrate that when several hundred patients are tested for HIV infection, few new cases of HIV are found.[13,16] In addition, according to the CDC's recommendations, routine testing should occur unless the prevalence of HIV infection is less than 0.1%.[2] This is supported by cost-effective analyses that report that routine HIV testing is cost effective when the prevalence ranges between 0.1–0.2%.[30–32] Thus, we would need to test many more patients in our community health center to detect any new cases of HIV infection.

There are limitations to our study. Because our evaluation occurred in one site with legal restrictions specific to New York State, generalizeability of our findings is uncertain. Our study design relied on medical record extraction which limited factors we could examine. In addition, our small sample size limited our power to detect significant differences between those who accepted versus refused HIV testing.

Despite these limitations, this study led us to question whether the CDC's recommendations to expand HIV testing

by conducting routine opt-out HIV testing in primary care settings is an acceptable strategy, particularly in a high-risk area where nearly half of patients declining testing self-reported previous HIV tests. If health care providers routinely offer HIV testing and observe low acceptance rates and few new cases of HIV infection, they may develop "testing fatigue" and become reluctant to continue routine HIV testing. This may be particularly true if health care providers must balance addressing patients' other health-related issues with conducting routine HIV testing. When developing programs to conduct routine opt-out HIV testing in primary care settings, the potential for low acceptance rates and detection of few new HIV cases should be considered.

In primary care settings, it is important to understand how various testing strategies may affect HIV testing rates. In addition, further exploration of patients' reasons for declining HIV testing in these settings is warranted.

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Author Disclosure Statement

No conflicts of interest.

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