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HIV Testing Attitudes and Practices Among Clinicians in the Era of Updated Centers for Disease Control and Prevention Recommendations

INTRODUCTION

Over 1 million individuals are estimated to be infected with HIV living in the United States, approximately 25% of whom do not know their diagnosis.[1] Moreover, approximately 40,000 individuals become infected with HIV annually in the United States. Furthermore, current data demonstrate an unacceptably high rate of delayed diagnosis of HIV in the United States.[2–3]

There have been enhanced local and national HIV testing efforts to address these related issues of delayed diagnosis and undiagnosed HIV. In May 2006, San Francisco General Hospital (SFGH), a public, university-affiliated hospital, enacted a policy of verbal-only consent for HIV testing of nonpregnant adults.[4] In September 2006, the Centers for Disease Control and Prevention (CDC) published its revised recommendations for HIV testing to include routine HIV testing of all 13- to 64- year olds.[5] Few studies have evaluated provider testing practices in the current era of routine HIV testing. The primary objective of this study was to assess provider-level characteristics associated with the offering of routine HIV testing as per CDC recommendations. In addition, we sought to measure provider knowledge of local, state, and national policies, laws and recommendations, providers' attitudes towards HIV testing, and current provider practices related to HIV pretest counseling.

METHODS

Between January and April 2007, we administered a confidential, web-based questionnaire to all medical providers (including physicians, nurse practitioners, physician assistants, and nurse midwives) with active clinical privileges at SFGH. To be included in the survey, clinicians needed to have provided direct patient care at some point 6 months before the survey. Excluded from the survey were providers from the departments of pathology, psychiatry, laboratory medicine, radiology, community primary care (outside clinics), pharmacy, and pediatrics. The 20-item survey assessed knowledge of local, state, and CDC guidelines, attitudes towards HIV testing, current HIV testing practices, and perceived barriers to offering routine HIV testing. The questionnaire was based on provider surveys used in prior studies.[6,7] The survey was sent via electronic mail initially to all medical staff, then subsequently to nonresponders, up to 7 times. Data were stored in a relational database and imported into STATA 9.1 (College Station, TX) for analysis.

Our primary outcome was self-reported offering of routine HIV testing to patients as per CDC recommendations. In the analysis, providers were categorized as primary care if they were affiliated with the departments of general internal medicine or family and community medicine. We compared HIV testing knowledge, attitudes, and practices among primary care and nonprimary care providers—comparing proportions using χ^2 test and means using Student T test. We conducted a multivariable analysis using logistic regression, including in the model all variables with a P value of ≤ 0.2 in bivariate analysis. We considered a P value <0.05 to be statistically significant. The Committee on Human Research at University of California San Francisco approved this study.

RESULTS

Of the 656 surveyed medical staff, 398 (60.7%) responded. Participants included attending physicians (34.9%), resident physicians (42.0%), clinical fellows (4.8%), and nurse practitioners, certified nurse midwives, and physician assistants (18.3%) from an array of departments in the hospital, including family and community medicine (15.8%), general internal medicine (27.9%), surgical subspecialties (16.8%), medicine subspecialties (14.6%), obstetrics/gynecology (12.6%), emergency medicine (6.3%), and HIV/infectious disease (6.0%). Participants had been practicing a median of 6 years since receiving their most advanced medical degree, and 58.9% reported having received specific training in HIV risk assessment or test counseling.

Overall, participants had limited knowledge of hospital-wide HIV testing policies and state laws (Table 1). As compared with nonprimary care providers, primary care providers were significantly more likely to correctly identify the SFGH policy on verbal consent, the state physician-to-physician disclosure allowance, and the 2006 CDC HIV recommendations.

The majority of participants (84.2%) reported feeling very or mostly

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comfortable with consenting patients for HIV testing. Despite comfort with consenting patients, only 28.7% of participants reported no obstacles to offering HIV testing. Participants reported always or usually discussing numerous issues when consenting patients for HIV.

Only 20.3% of participants reported offering routine HIV testing to all patients, per updated CDC recommendations, with no difference reported between primary care and nonprimary care providers. Instead, the majority of participants reported selective offering of HIV testing with primary care providers significantly more likely to do so as compared with nonprimary care providers.

In multivariable analysis adjusting for type of specialty, comfort with consenting patients for HIV testing, reported reasons for not offering HIV testing, typical discussion points during pretest counseling and knowledge of the verbal consent policy, state HIV laws, and CDC testing recommendations, clinicians in obstetrics/gynecology [adjusted odds ratio (OR) 2.82, 95% confidence interval (CI) 1.19 to 6.69] and HIV/infectious diseases (OR 4.15, 95% CI 1.27 to 13.57) were significantly more likely to offer routine HIV testing to their patients as were those providers reporting no obstacles to testing (OR 4.14, 95% CI 1.69 to 10.13). On the other hand, clinicians perceiving a low prevalence of HIV among their patients were significantly less likely to offer routine testing (OR 0.18, 95% CI 0.00 to 0.38).

DISCUSSION

Although we found that clinicians, overall, felt comfortable consenting their patients for an HIV test, they reported numerous obstacles to offering routine testing, with insufficient time to do pretest counseling to be the most commonly cited. Although we did not inquire about providers' knowledge of or attitudes towards CDC recommendations for streamlined pretest counseling, the vast majority of respondents reported covering numerous discussion points during the pretest consent process—implying that providers felt obliged to conduct lengthy pretest counseling. Other studies have reported provider-related barriers to the routine offering of HIV testing. Among 154 emergency department providers, only 10% reported routine recommendation of HIV testing and 45% did not offer HIV testing because they were not certified HIV test counselors.[8]

Providers' perception of low prevalence of HIV among patients was

TABLE 1. HIV Testing Knowledge, Attitudes, and Practices Among Primary Care Versus Nonprimary Care Providers, SFGH, 2007

	All Providers N = 398 No. (%)	Primary Care Providers* n = 174 No. (%)	Nonprimary Care Providers n = 224 No. (%)	P†
Knowledge‡				
Hospital's verbal-only consent policy	119 (35.4)	67 (43.5)	52 (28.6)	< 0.01
California named reporting requirements	74 (22.2)	39 (25.8)	35 (19.2)	0.15
California physician-to-physician disclosure law	108 (32.4)	60 (39.7)	48 (26.4)	0.01
2006 CDC HIV testing recommendations	106 (31.5)	62 (40.5)	44 (24.0)	< 0.01
Mostly/very comfortable consenting patients for HIV testing	288 (84.2)	141 (91.6)	147 (78.2)	< 0.01
Reasons for not offering HIV testing§				
Insufficient time to do HIV counseling	111 (33.9)	61 (40.7)	50 (28.2)	0.02
No systematic follow-up for disclosure of results	88 (26.9)	34 (22.7)	54 (30.5)	0.11
Not relevant to visit	79 (24.2)	41 (27.3)	38 (21.5)	0.22
Low prevalence among patients	41 (12.5)	21 (14.0)	20 (11.3)	0.46
Uncertain of guidelines/consent requirements	52 (15.9)	25 (16.7)	27 (15.3)	0.73
Not prepared to disclose positive results	23 (7.0)	6 (4.0)	17 (9.6)	0.05
Lack of patient acceptance	23 (7.0)	14 (9.3)	9 (5.1)	0.13
No obstacles	94 (28.7)	49 (32.7)	45 (25.4)	0.15
Discussion points during HIV counseling‖				
Personal risk and sexual history	249 (77.6)	130 (85.0)	119 (70.8)	< 0.01
Significance of preparation for positive/negative results	228 (72.2)	121 (79.6)	107 (65.2)	< 0.01
Benefits and risks of testing	247 (76.7)	121 (78.6)	126 (75.0)	0.45
Prevention/risk reduction	238 (73.9)	121 (78.6)	117 (69.6)	0.07
HIV transmission	244 (76.0)	117 (76.5)	127 (75.6)	0.85
Window Period/most recent risk event	195 (60.4)	97 (63.4)	98 (57.6)	0.29
Confidentiality and partner notification	146 (45.9)	70 (46.1)	76 (45.8)	0.96
Current HIV treatment options	137 (42.9)	63 (41.7)	74 (44.0)	0.68
Confidential versus anonymous testing options	126 (39.4)	54 (35.3)	72 (43.1)	0.15
Type of patients offered HIV testing¶				
All patients	69 (20.3)	33 (21.4)	36 (19.4)	0.64
High-risk sexual or drug-using behavior	191 (56.2)	113 (73.4)	78 (41.9)	< 0.01
Upon patient request	180 (52.9)	106 (68.8)	74 (39.8)	< 0.01
Suspected immunosuppression	178 (52.4)	98 (63.6)	80 (43.0)	< 0.01
New sexually transmitted infection	152 (44.7)	99 (64.3)	53 (28.5)	< 0.01

*Primary care: general internal medicine and family and community medicine.
†The χ^2 comparing primary care versus nonprimary care providers.
‡Number (%) of respondents who correctly identified policy, law, or recommendation.
§Participants could respond to multiple options, however, "no obstacles" was a mutually exclusive option.
‖Always or usually.
¶Participants could respond to multiple options, however, "all patients" was a mutually exclusive option.

inversely associated with offering routine testing. The prevalence of HIV among patients in care at SFGH is estimated to be 10%, certainly above cost-effectiveness thresholds established by various researchers.[9,10] Studies have shown that routine HIV testing can be cost effective among populations with a prevalence of 1% and, when including decreased HIV transmission in the setting of antiretroviral therapy in the cost-effectiveness model, as low as 0.20%.[11]

On the other hand, clinicians in obstetrics/gynecology and HIV/infectious disease specialties were significantly more likely to routinely test their patients. These findings are not surprising. Numerous national organizations, including the Institute of Medicine, American College of Obstetricians/Gynecologists, and CDC, have long called for the implementation of universal prenatal HIV testing. In addition, numerous states mandate that providers offer prenatal HIV screening.[12] Given that HIV/infectious disease specialists see the impact of delayed HIV testing and often care for patients seen as "high risk" for HIV, it is logical that routine HIV testing would be incorporated into routine practice by these clinicians.

This study has several limitations. We conducted this survey about 6 months after the publication of CDC recommendations. As with all national guidelines and recommendations, it can take time for institutions and clinicians to adopt new standards of care. Moreover, this study relied on self-reported testing practices, and we did not compare our findings with actual testing practices by specific providers. Although our response rate was comparable with similar studies, the testing attitudes and practices of responders may have differed from those of nonresponders and, thus, may not be generalizable. Because we did not have demographic and employment information on nonresponders, however, it is possible that some of the nonresponders were not eligible for participation and that our response rate of eligible medical providers was, in fact, higher than we calculated. There may also be limited generalizability from this study of a single hospital setting. SFGH is a unique institution—housing the country's first in-patient AIDS ward—serving a high HIV prevalence population. As such, the attitudes and practices of providers at SFGH may well differ from clinicians at other institutions. Despite this setting, however, implementation of routine HIV screening was far from established.

Through enhanced HIV screening nationwide, there is a tremendous opportunity to not only identify individuals with HIV infection who could benefit substantially from treatment but also to decrease the risk of transmission on a population level. This study reinforces the need to not only create and disseminate national guidelines related to routine HIV screening but also conduct ongoing evaluation on the local level. As many states are currently updating HIV testing laws, it will be crucial to ensure that clinicians are adequately informed of those changes and that programs are put into place to evaluate provider, institutional, and public health practices related to HIV screening.

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Barriers to Recruit Female Commercial Sex Workers for HIV Vaccine Trials: The Rio de Janeiro Experience

To the Editor:

Access to populations at high risk for HIV infection is crucial for the conduct of preventive vaccine trials. Djomand et al[1] recently described a multicountry vaccine preparedness study to assess enrollment and retention of HIV-negative, high-risk individuals and to access their willingness to participate in