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## Are VA Primary Care Providers Aware of HIV Testing Recommendations for Veterans? Findings at an Urban VA Primary Care Clinic

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### Abstract

Given the prevalence of human immunodeficiency virus (HIV) in veterans and that nearly 90% of veterans have not been HIV tested, the Veterans Affairs (VA) has recommended routine HIV testing of all veterans. The objective of this study carried out at an urban VA primary care clinic was to assess provider knowledge of recent U.S. Centers for Disease Control and Prevention (CDC) and VA HIV testing recommendations and policies. Fifty-six primary care providers completed a survey. Nearly 40% of providers were unaware of the CDC recommendation to test all persons ages 13 to 64 in health care settings or the VA policy to test veterans of all ages. Over 75% of providers were unaware of the latest requirements for pre- and posttest counseling, and many were unaware of the latest consent process requirements. Educating VA providers about recent HIV testing recommendations and policies may improve the low HIV testing prevalence in the VA.

### INTRODUCTION

The Veterans Affairs (VA) Health Care System is the nation's largest single provider of health care to HIV-positive patients.<sup>1</sup> Based on a blinded serologic study of six urban VA facilities between the years 2000 and 2002, the HIV prevalence among veterans is over 3%.<sup>2</sup>

More recently, based on veterans having an outpatient visit and an HIV test in the VA system in 2010, the HIV prevalence is 0.7%.<sup>3</sup> Despite this prevalence of HIV among veterans, many veterans go untested. A study done of patients with risk factors that should universally prompt HIV testing (e.g., patients with a sexually transmitted disease, hepatitis B

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or C, substance use) found that only 36% of veterans were tested.<sup>4</sup> On the basis of the VA electronic health record in 2010, only 13.5% of veterans having had an outpatient visit at a VA medical center had ever been tested for HIV.<sup>3</sup> Given the low frequency of HIV testing, it should not be surprising that when veterans are diagnosed with HIV, many are diagnosed late in the course of their disease and 50% have a CD4 count of <200 cells/mm<sup>3</sup> at the time of presentation for VA care.<sup>5</sup>

Because of the high prevalence of HIV among veterans and relative undertesting of veterans, in 2005 the U.S. Under Secretary for Health sent out a communiqué to all VA providers stating that voluntary HIV testing be “a routine part of the initial assessment in care settings where the prevalence of HIV risk is expected to be high” and “in settings where expected HIV prevalence is lower, such as primary care clinics (routine voluntary HIV testing), is likely to be cost effective as well”.<sup>6</sup> To increase HIV testing rates nationally, in 2006 the U.S. Centers for Disease Control and Prevention (CDC) recommended that all persons ages 13 to 64 be tested for HIV in all health care settings with an undiagnosed HIV prevalence of >0.1%.<sup>7</sup> Because of previously recognized barriers to testing, the CDC recommended that this testing not be risk-factor based, not require written consent before testing, and not require pretest or posttest counseling. In August 2009 because of ongoing studies finding, low HIV testing prevalence despite high HIV prevalence in the VA, the U.S. Department of Veterans Affairs changed its HIV testing regulations so as to be more closely aligned with the 2006 CDC recommendations.<sup>8</sup> Specifically, in 2009, the VA removed the requirements for (a) written consent before HIV testing and (b) pretest and posttest counseling accompanying HIV testing.<sup>9</sup> These VA regulations do emphasize that testing should be done after voluntary informed consent is obtained (“oral consent is sufficient”)<sup>9</sup> and that patients must be provided with written educational materials about HIV testing and be given the opportunity to have any HIV testing questions answered before giving testing consent.<sup>8,9</sup> Notably, although the CDC has highlighted testing of persons ages 13 to 64, the VA has recommended testing of all veterans, regardless of age.<sup>8</sup>

Although several studies have been conducted to elucidate reasons why patients forego HIV testing, there is a paucity of research on the reasons why primary care providers may not be offering HIV testing, particularly in the context of the new paradigm of routine HIV testing, which has attempted to remove predetermined physician barriers (e.g., pretest counseling and written informed consent). To better understand the low prevalence of HIV testing among veterans, this study was conducted in a single VA primary care clinic with the purpose of assessing primary care providers’ knowledge of the most up-to-date CDC HIV testing recommendations and VA HIV policies. The study took place in the primary care clinic of the Michael E. DeBakey Veterans Affairs Medical Center (MEDVAMC) in Houston, Texas. MEDVAMC facilities provide HIV care to the sixth largest population of veterans with HIV in the United States.<sup>10</sup> In 2009, in the Veterans Integrated Service Network Location 16—the network in which the MEDVAMC resides—only 10% of outpatient veterans had ever been tested for HIV.<sup>11</sup>

## METHODS

We developed a self-administered survey (Table I) to assess primary care provider knowledge of CDC HIV testing recommendations and VA HIV testing policies. Our study took place in June and July 2010 in the primary care clinic of the MEDVAMC. This was nearly 4 years after the CDC HIV testing recommendations were updated<sup>7</sup> and nearly 1 year after the VA HIV testing policies were updated.<sup>8,9</sup> MEDVAMC is closely affiliated with the Baylor College of Medicine (BCM), and BCM faculty and trainees are among those who provide primary care to veterans in the MEDVAMC primary care clinic.

## Participants

All outpatient primary care providers (faculty and trainee physicians, nurse practitioners, and physician assistants) caring for veterans in the primary care clinic of the MEDVAMC were eligible for participation. Providers were recruited at regularly scheduled academic conferences held throughout the week during each week of the study period.

Participants completed their self-administered anonymous paper survey during the MEDVAMC academic conferences. Providers were instructed to return their survey to research assistants immediately, submit their completed survey to the office of an assigned contact person at the MEDVAMC, or mail their survey back directly to the research team via interoffice mail. As an incentive for participation, participants were offered a voucher for a small VA gift item (e.g., umbrella, photo frame) to redeem in the MEDVAMC human resources office.

## Statistical Analyses

We investigated the number and proportion of providers who were able to correctly identify the nine CDC and five VA HIV testing recommendations. For these analyses, if a provider responded “not sure” about an HIV testing recommendation, we categorized this response as incorrect. We conducted the nonparametric Fisher’s Exact Test to examine whether awareness of HIV testing recommendations differed as a function of (a) professional training (physicians versus allied health professionals) and, for physicians only, (b) the amount of physician experience (faculty versus intern or resident trainee). These statistical tests were conducted as 2-sided tests, using an alpha of 0.05 as the criterion for statistical significance. Analyses were performed with SAS, version 9.2 (SAS Institute, Cary, North Carolina). This study was approved by the VA Research and Development Committee and the Baylor College of Medicine Institutional Review Board. Completion of the voluntary survey was deemed an appropriate indication of consent for study participation.

## RESULTS

Of 106 eligible outpatient primary care providers at the MEDVAMC primary care clinic, 58 primary care providers participated in this study (55% participation rate). We report the data for 56 providers since two participating providers did not indicate their professional role in the primary care clinic. The average age of the providers was 35.5 years (SD = 10.3 years), 28 (50.0%) were women. Providers reported having seen patients at the MEDVAMC primary care clinic for an average of 4.0 years (SD = 3.3 years). Of the 56 primary care providers, 46 (82.1%) were physicians and 10 (17.9%) were allied health professionals (three nurse practitioners and seven physician assistants). Of the 46 physicians who participated, 12 (26.1%) were faculty level, four (8.7%) were internal medicine interns in training, 23 (50.0%) were internal medicine residents in training, and seven (15.2%) did not specify their professional level. For physicians, the average time since graduation from medical school was 6.8 years (SD = 7.8 years).

### Knowledge of CDC HIV Testing Recommendations

Among the 56 primary care providers, 53 (94.6%) knew that HIV testing should be recommended for all patients attending sexually transmitted infection clinics (Table II for percentage correct responses among participants). Forty-eight (85.7%) knew that testing is recommended for all patients in prenatal care settings. Relatively fewer providers knew that HIV testing is also recommended for all patients in emergency departments or in primary care practices (75.0% and 73.2%, respectively). Only 35 (62.5%) primary care providers knew that HIV testing is recommended for all patients ages 13 to 64. Fifty-five providers (98.2%) knew that HIV testing should be recommended for patients showing signs or

symptoms of acquired immunodeficiency syndrome (AIDS) or patients who are at high risk for HIV. Although a majority ( $n = 42$ ; 76.4%) knew that separate written consent is no longer needed for performing HIV testing, few providers ( $n = 13$ ; 23.2%) were aware that pretest counseling is no longer required when performing routine HIV testing.

There were no statistically significant differences in knowledge of the CDC HIV testing recommendations between physicians and allied health professionals (i.e., nurse practitioners and physician assistants) ( $p = 0.10$  for all knowledge items).

For analyses by physician experience, faculty-level physicians were significantly more likely than trainee-level physicians (interns and residents) to know that HIV testing is recommended for (a) all patients in primary care practices (100.0% vs. 55.6%, respectively,  $p = 0.01$ ) and (b) for all patients ages 13 to 64 (83.3% versus 44.4%, respectively,  $p = 0.04$ ). There were no other statistically significant differences in knowledge of CDC HIV testing recommendations between faculty-level and trainee-level physicians (all  $p$  values  $> 0.27$ ).

### Knowledge of VA HIV Testing Recommendations

Among the 56 primary care providers, only 35 (63.6%) knew that all veterans, regardless of age, should be screened for HIV (see Table III for percentage correct responses among participants). Thirty-two (61.5%) providers thought only veterans between the ages 18 and 50 should be screened. Thirty-eight (67.9%) providers knew that verbal consent is required for HIV testing at the VA. Notably, nine (16.1%) thought that neither written nor verbal consent is necessary. A very small minority of providers ( $n = 8$ , 14.3%) knew that neither pre- nor post test counseling is required when performing routine HIV testing; instead, a majority (55.4%) thought that both pre- and post-test counseling are required. Only 1 (1.8%) provider (an allied health professional) knew that at the VA, written educational materials need to be provided before ordering an HIV test—without the requirement of also verbally describing both HIV and the HIV test. Eleven (19.6%) providers thought both written materials and a brief verbal description of HIV and HIV testing were required. The majority of providers (51.8%) incorrectly believed that only a brief verbal description of HIV and HIV testing is required before testing. There were no statistically significant differences in knowledge of the VA HIV testing recommendations between physicians and allied health professionals (i.e., nurse practitioners and physician assistants) ( $p = 0.18$  for all knowledge items).

Among physicians only, faculty-level physicians were significantly more likely than trainee-level physicians (interns and residents) to know that HIV testing at the VA requires verbal consent (100.0% vs. 44.4%, respectively,  $p < 0.001$ ). Notably, about one-fifth (22.2%) of trainees thought that neither written nor verbal consent is required for HIV testing, whereas 18.5% of trainees were unsure about the consent requirements. There were no other statistically significant differences in knowledge of VA HIV testing recommendations between faculty-level physicians and trainee-level physicians (all  $p$  values  $> 0.16$ ).

## DISCUSSION

Despite the relatively high prevalence of HIV in veterans, based on VA electronic health records of veterans having an outpatient visit with the VA, nearly 90% of veterans have never been tested for HIV.<sup>3</sup> Our results indicate that many of the VA practicing primary care providers at the MEDVAMC were unaware of the latest testing recommendations. Notably, although 63.6% of providers knew that all veterans should be tested for HIV, fewer than 15% knew that no pre- or post-test counseling was required. Given that counseling requirements have been noted to be a major barrier to HIV testing,<sup>12-4</sup> educating providers about the most recent policy removing formal counseling requirements may improve HIV

testing rates. This may be particularly salient for this population since 63.6% of providers knew that HIV testing is recommended for all veterans; it is possible that beliefs about counseling requirements may have limited actual HIV testing of patients. Nearly 68% of all primary care providers did know that verbal consent is required before HIV testing. Among physicians, however, only trainees were significantly less likely to know about the required verbal consent. In fact, nearly one-quarter of trainees thought HIV testing could be done without any consent. Although not a statistically significant difference, trainees were less likely than faculty to be aware of all of the VA testing policies queried except the recommendation to test patients with signs and symptoms of AIDS. This finding may reflect trainees' limited years of experience caring for patients in the VA. Notably, BCM trainees do serve as primary care physicians for veterans at the MEDVAMC at their weekly continuity clinic. Alternatively, the more limited knowledge among trainees may reflect that trainees are not scheduled to attend the VA faculty meetings in which information in changes in VA policy is disseminated and are less likely to receive this information by other means (e.g., VA e-mails or memos). The director of the HIV program at the MEDVAMC meets annually with providers to provide updates on HIV-related topics; during these sessions, the director provides information about HIV testing policies and procedures and provides health care providers with the resources (e.g., VA intranet Web site) to learn more about HIV testing. In January 2010, before our study that began in June, this director met with primary care providers to review VA HIV testing policies; given trainees' limited time in the MEDVAMC primary care clinic, it is unlikely that many trainees were present at this meeting. Finally, this finding of trainees' limited awareness of VA HIV testing policies may reflect confusion about the differing HIV testing policies in the different hospital settings that BCM trainees serve during clinical rotations.

Our study is subject to several limitations. Our study sample reflects primary care providers at only one VA site; our results may not be generalizable to other VA primary care settings. Although we had a low response rate, our response rate was higher than that achieved in recent studies based on internal medicine physician HIV testing related surveys.<sup>14,15</sup> Over half of our sample were medical trainees and they were less likely than experienced faculty to be aware of the latest CDC recommendations; because these recommendations were released before these trainees beginning their postgraduate school clinical training, it is possible these trainees would not have been educated about these clinical recommendations. Notably, there was no significant difference between trainees and faculty in knowledge of whom should be tested for HIV in the VA. Finally, nearly 20% of providers thought that both written materials and a brief verbal description of HIV and HIV testing were required at the time of testing. Given that the VA 2009 HIV policy<sup>8</sup> states, "Patients must be provided with written educational materials about HIV testing before, or at the time, consent is obtained. Any questions the patient has about HIV testing must be fully answered before HIV testing is performed," it is possible that providers may have interpreted this to mean that "a brief verbal description of HIV and HIV testing" (as worded in the survey question) is required. The survey question may have been misleading. It is also possible that providers misconstrued the requirements to provide written educational materials and answer questions as the nature of "pretest counseling" and, therefore, incorrectly thought that pretest counseling is still required by the VA.

In conclusion, given that knowledge deficits are a barrier to provider adherence to practice guidelines,<sup>16</sup> this study's observed knowledge deficit in a sample of VA primary care providers about current CDC and VA HIV testing recommendations may help explain the low testing prevalence among our veteran population. A recently published study of physician knowledge of the CDC 2006 HIV testing recommendations found that physicians aware of the guidelines were more likely to practice routine testing.<sup>15</sup> Improving physician knowledge of HIV testing recommendations may be a critical step for improving the early



diagnosis of HIV among veterans. Given the MEDVAMC primary care clinic logs approximately 1 million patient visits each year,<sup>17</sup> increasing HIV testing knowledge among primary care providers could have a profound impact on the local patient population. A recently published Internet survey of veterans found that nearly three-quarters of veterans indicated they would “very likely” get an HIV test if their doctor recommended it.<sup>18</sup> Other studies also have found that physician recommendation for HIV testing is associated with acceptance of testing.<sup>19–22</sup> These findings, along with our results, suggest a need for additional campaigns targeting physicians about current HIV testing recommendations. A multimodal intervention study that included physician education initiatives and audit feedback did improve HIV testing rates in a VA system<sup>23</sup>; such initiatives should be considered for additional VA medical centers. Notably, since this study was conducted in 2010—which was soon after the release of the updated HIV testing recommendations for the VA—the MEDVAMC has intensified its HIV testing efforts and provider education initiatives. In fact, from 2009 to 2011, the prevalence of veterans ever having been tested in the Houston VA system increased 35% (Office of Public Health, United States Department of Veterans Affairs, unpublished data). Longitudinal changes in providers’ knowledge are worth evaluating. Since knowledge alone may not impact testing behavior, research is also needed to assess attitudes and other potential barriers that may impact provider HIV testing behavior. Given the high prevalence of HIV in veterans and the discouraging fact that many veterans remain undiagnosed or are diagnosed late in the course of infection when health outcomes are likely to be worse, adoption of routine HIV testing for all veterans is a critically needed and cost-effective health intervention.

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TABLE I

## Survey Questions Pertaining to Knowledge of HIV Testing Recommendations

Based on the CDC recommendations, in which healthcare settings is HIV testing recommended for all patients?			
Emergency departments	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
Sexually transmitted infection clinics	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
Primary care practices caring for adults and adolescents	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
Prenatal care settings	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
The most recent CDC recommendations for HIV testing state:			
HIV test all patients 13–64 year of age	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
HIV test patients who display signs or symptoms of AIDS	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
HIV test patients who are at high risk for HIV	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
HIV test patients only after providing pre-test counseling	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
HIV test patients only after obtaining separate written consent	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
According to the most recent VA policy, HIV screening tests should be done for:			
All veterans regardless of age	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
Only veterans between the ages of 18–50	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> I'm not sure
According to the most recent VA policy, HIV testing of your patient requires			
<input type="checkbox"/> Written consent	<input type="checkbox"/> Both	<input type="checkbox"/> Neither	<input type="checkbox"/> I am not sure
According to the most recent VA policy, when HIV testing your patient you must provide			
<input type="checkbox"/> Pre-test counseling	<input type="checkbox"/> Both	<input type="checkbox"/> Neither	<input type="checkbox"/> I'm not sure
According to the most recent VA policy, before ordering an HIV test you must provide your patient with			
<input type="checkbox"/> Written educational materials	<input type="checkbox"/> Brief verbal description of HIV and HIV testing	<input type="checkbox"/> Both	<input type="checkbox"/> Neither
			<input type="checkbox"/> I'm not sure



**TABLE II**  
 Awareness of CDC HIV Testing Recommendations for All Providers, by Professional Training and by Physician Experience. Number of Providers Who Responded Correctly, *n* (%)

CDC Item	All Providers ( <i>N</i> = 56)	Professional Training			Physician Experience <sup>d</sup>		
		Allied Health Professionals ( <i>n</i> = 10)	Physicians ( <i>n</i> = 46)	<i>p</i> Value <sup>b</sup>	Faculty ( <i>n</i> = 12)	Trainees ( <i>n</i> = 27)	<i>p</i> Value <sup>c</sup>
In Which Health Care Settings is HIV Testing Recommended for All Patients?							
Emergency Departments	42 (75.0)	6 (60.0)	36 (78.3)	0.25	10 (83.3)	20 (74.1)	0.69
Sexually Transmitted Infections Clinics	53 (94.6)	10 (100.0)	43 (93.5)	1.00	11 (91.7)	26 (96.3)	0.53
Primary Care	41 (73.2)	8 (80.0)	33 (71.7)	0.71	12 (100.0)	15 (55.6)	0.007
Prenatal Care	48 (85.7)	8 (80.0)	40 (87.0)	0.62	11 (91.7)	23 (85.2)	1.00
HIV test							
All Patients 13–64	35 (62.5)	7 (70.0)	28 (60.9)	0.73	10 (83.3)	12 (44.4)	0.037
Patients with AIDS Signs/Symptoms	55 (98.2)	10 (100.0)	45 (97.8)	1.00	12 (100.0)	27 (100.0)	1.00
High Risk Patients	55 (98.2)	10 (100.0)	45 (97.8)	1.00	12 (100.0)	26 (96.3)	1.00
(Not) After Pretest Counseling	13 (23.2)	3 (30.0)	10 (21.7)	0.68	4 (33.3)	5 (18.5)	0.42
(Not) After Written Consent	42 (76.4) <sup>d</sup>	9 (100.0) <sup>e</sup>	33 (71.7)	0.10	10 (83.3)	16 (59.3)	0.27

<sup>a</sup> 7 Physicians did not report training status, leaving 39 (12 faculty and 27 trainees) eligible for comparisons by training status.

<sup>b</sup> For comparison of allied health professionals and physicians, using Fisher's exact test.

<sup>c</sup> For comparison of faculty and trainees, using Fisher's exact test.

<sup>d</sup> *N* = 55.

<sup>e</sup> *n* = 9.

Awareness of VA HIV Testing Policies for All Providers, by Professional Training and by Physician Experience. Number of Providers Who Responded Correctly, *n* (%)

TABLE III

VA Item	All Providers ( <i>N</i> = 56)	Professional Training			Physician Experience <sup>a</sup>		
		Allied Health Professionals ( <i>n</i> = 10)	Physicians ( <i>n</i> = 46)	<i>p</i> Value <sup>b</sup>	Faculty ( <i>n</i> = 12)	Trainees ( <i>n</i> = 27)	<i>p</i> Value <sup>c</sup>
Screening Tests Should Be Done for							
All Veterans	35 (63.6) <sup>d</sup>	7 (77.8) <sup>e</sup>	28 (60.9)	0.46	9 (75.0)	15 (55.6)	0.31
Veterans Between 18–50	32 (61.5) <sup>f</sup>	7 (77.8) <sup>g</sup>	25 (58.1) <sup>h</sup>	0.45	7 (63.6) <sup>i</sup>	14 (53.8) <sup>j</sup>	0.72
HIV Testing Requires							
Verbal Consent	38 (67.9)	8 (80.0)	30 (65.2)	0.47	12 (100.0)	12 (44.4)	<0.001
No Pretest or Posttest Counseling	8 (14.3)	1 (10.0)	7 (15.2)	1.00	3 (25.0)	2 (7.4)	0.16
Written Educational Materials	1 (1.8)	1 (10.0)	0 (0.0)	0.18	0 (0.0)	0 (0.0)	1.0

<sup>a</sup> 7 Physicians did not report training status, leaving 39 (12 faculty and 27 trainees) eligible for comparisons by training status.

<sup>b</sup> For comparison of allied health professionals and physicians, using Fisher's exact test.

<sup>c</sup> For comparison of faculty and trainees, using Fisher's exact test

<sup>d</sup> *N* = 55.

<sup>e</sup> *n* = 9.

<sup>f</sup> *N* = 52.

<sup>g</sup> *n* = 9.

<sup>h</sup> *n* = 43.

<sup>i</sup> *n* = 11.

<sup>j</sup> *n* = 26.