

FREQUENCY OF HIV SCREENING IN THE VETERANS HEALTH ADMINISTRATION: IMPLICATIONS FOR EARLY DIAGNOSIS OF HIV INFECTION

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We evaluated the frequency of HIV testing across the Department of Veterans Affairs (VA), the largest provider of HIV care in the United States. An electronic survey was used to determine the volume and location of HIV screening, confirmatory testing, rapid testing and laboratory consent policies in VA medical centers between October 1, 2005, and September 30, 2006. One hundred thirty-five VA laboratories reported that 112,033 HIV screening tests were performed (81% outpatients vs. 19% inpatients, $p < .0001$). Overall HIV prevalence was 1.49% (1.62% in inpatients vs. 1.46% in outpatients, $p = N.S.$, range = 0.2–3.8%). Rapid testing was available in 67% of facilities, 60% of which took place in the clinical laboratory. Sixty-four percent of labs required a copy of the informed consent in order to perform testing. We estimate that fewer than 10% of VA inpatients and fewer than 5% of VA outpatients were tested for HIV during the survey period. Substantial opportunities for increasing routine HIV testing exist in this population.

Early diagnosis of HIV infection remains a challenge in the United States. The U.S. Centers for Disease Control and Prevention (CDC, 2006) has reported that of all HIV infections diagnosed in 2004 in the 33 states with confidential name-based HIV reporting, 40% progressed to AIDS within 12 months after HIV infection was first diagnosed. Given that the median time from HIV infection to the development of AIDS in untreated individuals can be as long as a decade (Hessol et al., 1994), these so-called late testers were infected for years prior to diagnosis. During that long interval, these undiagnosed persons weren't able to take advantage of lifesaving treatments; nor is it likely that they would have taken precautions to prevent the spread of an unknown HIV infection to their partners (Valdiserri, 2007).

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Nationally, the CDC estimates that of the approximately 1 million persons in the United States who are infected with HIV, some 252,000–312,000, are unaware of their infection (Glynn & Rhodes, 2005). A number of factors have been associated with late HIV diagnosis, including misperception of risks for HIV infection by providers and/or patients, patients' fear of receiving a positive HIV diagnosis, and providers' perceptions that requirements for HIV consent and counseling are too time consuming (CDC, 2003; Jenkins, Gardner, Thrun, Cohn, & Berman, 2006; Klein, Hurley, Merrill, & Quesenberry, 2003).

As the largest integrated health care system in the United States (Oliver, 2007), the Veterans Health Administration (VHA) is the biggest provider of HIV care in the United States. In fiscal year 2006, VHA provided care to nearly 23,000 HIV-infected veterans *Veterans With HIV-AIDS*, in VA Care, 2007). Although widely recognized as an efficient and high-performing health care system (Asch et al., 2004; Jha, Perlin, Kizer, & Dudley, 2003), late diagnosis of HIV infection has also been identified among veteran populations. In a retrospective chart review of four large Veterans Administration (VA) medical centers, Owens and his colleagues (2007) documented that only 36% of 13,991 veterans at risk for HIV had been tested for the virus (12). More telling still, Gandhi, Skanderson, Gordon, Concato, and Justice (2006) and his colleagues reported that among 3760 HAART-naïve patients newly presenting for HIV care at VA medical centers during 1998–2002, 55% had immunologic AIDS at the time of presentation. And Holodniy and his colleagues (2007) opined that “delayed identification of HIV infection” was responsible for a “substantial number” of HIV-infected veterans starting antiretroviral treatment below recommended CD4+ cell count thresholds.

Within the U.S. Department of Veterans Affairs, the Public Health Strategic Health Care Group (PHSHG) is responsible for promoting population health and clinical preventive services, including early HIV diagnosis and referral into care, for over 5 million veterans who receive care in VA health facilities. As part of an ongoing effort to encourage early diagnosis of HIV infection, a national survey of VA clinical laboratories was undertaken in early 2007, to determine the frequency of HIV diagnostic testing during a 1-year period across the entire VA system.

METHODS

A brief electronic survey was jointly developed by PSHHG and the Pathology and Laboratory Medicine Service (P&LMS), Office of Patient Services, at the VHA. The purpose of the survey was to collect baseline information on the volume and location of HIV screening, HIV confirmatory testing, rapid HIV testing—including point of care rapid testing—and practices related to informed consent. Prior to widespread dissemination, the survey was pilot-tested among a group of four VA clinical laboratory directors and revised based on their feedback. Following standard operating procedures, the survey was distributed electronically, in early January 2007, to chief and assistant chief medical officers at each of the 21 VA regional jurisdictions (known as Veterans Integrated Service Networks, or VISNs) with the instructions that the survey be forwarded to all clinical laboratory directors. Follow-up e-mail reminders were sent to nonresponsive laboratories during the month of February 2007.

RESULTS

Completed surveys were received from 135 VA laboratories. At present, the VA does not have a uniform reporting structure for clinical laboratories at a national level; furthermore, some facilities combine data, including point-of-care testing, and report as a single entity. Therefore, the denominator of all clinical laboratories across the VA system can vary between 150 and 171, depending upon whether test volumes are bundled prior to reporting. Although we cannot provide an exact response rate, we estimate that approximately 90% of all VA clinical laboratories responded to the survey.

The 135 laboratories that responded reported providing 112,033 HIV screening tests between October 1, 2005, and September 30, 2006 (fiscal year 2006). The total number of HIV screening tests was significantly greater in outpatients (81%) compared with inpatients (19%) ($p < .0001$, two-tailed t test), reflecting patient distribution (Table 1). The total positive tests ($n = 1,669$) were also significantly greater in outpatients (80%) compared with inpatients (20%) ($p < .003$). The overall rate of confirmed HIV seropositive tests was 1.49%, with inpatients having a slightly higher seropositivity rate compared with outpatients (1.62% vs. 1.46%, $p = N.S.$). When analyzed by VISN, combined inpatient and outpatient prevalence ranged from 0.2% to 3.8%, inpatient prevalence ranged from 0.3% to 4.37% and outpatient prevalence ranged from 0.2% to 3.98% (see Table 1). In general, prevalence rates by VISN reflected the number of HIV-infected veterans in care in that VISN.

Forty-three percent (58/135) of laboratories reported performing HIV screening tests in-house, 32% (43/135) at another VA laboratory, 21% (28/135) at a commercial laboratory and 4% (6/135) "other." Fewer HIV confirmatory tests were performed "in house" (8%, or 11/135), with the majority of confirmatory tests being performed by commercial laboratories (51%, or 69/135) or another VA laboratory (33% or 45/135); 7% (10/135) reported that confirmatory HIV tests were performed by "other" laboratories.

When asked about rapid HIV testing, 67% (90/135) of reporting laboratories indicated that they had rapid HIV testing available within their facilities. In response to a follow-up question, most rapid HIV testing in the VA system appears to be taking place within the laboratory, rather than as point-of-care testing; over 60% of all rapid-test locations cited were "laboratory." The next most frequently cited locations were emergency departments (11% of locations cited) and employee health clinics (11% of locations cited). Primary care clinics, mental health clinics, substance abuse clinics, and other outpatient locales were less frequently cited.

Finally, respondents were asked, "Does your laboratory require a copy of the consent form prior to HIV testing?" Sixty-four percent of the respondents (87/135) indicated that the laboratory required a copy of the HIV testing consent form—or some other tangible proof that consent had been obtained—prior to testing.

DISCUSSION

In September 2005 the Under Secretary for Health at the Department of Veterans Affairs (2005) sent an Information Letter (an official VA communiqué) to all VA providers, stressing "the importance of offering every veteran under the care of the Department of Veterans Affairs the opportunity to have a voluntary test for human immunodeficiency virus." However, the same communication reminded providers that HIV testing in the VA is governed by Federal statutes and regulations that require written informed consent and documented pretest and posttest counseling (Department of Veterans Affairs, 2005).

TABLE 1. HIV Screening Across the Veterans Health Administration: Diagnostic Yield by Inpatient/Outpatient Status and Veterans Integrated Service Networks (VISNs), FY 2006

	Total Outpatients ^a	Total Inpatients ^a	Total HIV+ in Care ^b	Total Screening	Total Positive	Total Prevalence	Inpatient Screening	Inpatient Positive	Inpatient Prevalence	Outpatient Screening	Outpatient Positive	Outpatient Prevalence
VISN	5,537,839	368,585	24,067	112,033	1,669	1.49%	20,844	337	1.62%	91,189	1,332	1.46%
1	257,142	14,438	689	3149	16	0.50%	455	2	0.43%	2694	14	0.50%
2	133,474	8,327	332	2745	11	0.40%	337	1	0.30%	2408	10	0.40%
3	195,727	13,564	2,058	4478	172	3.80%	860	28	3.20%	3618	144	3.98%
4	319,688	16,216	1,009	4150	75	1.80%	822	15	1.80%	3328	60	1.80%
5	134,719	10,281	1,604	4065	87	2.10%	511	20	3.91%	3554	67	1.88%
6	288,231	19,652	1,398	8323	89	1.00%	2689	27	1.00%	5634	62	1.10%
7	317,158	19,693	2,235	6151	77	1.25%	1016	14	1.37%	5135	63	1.22%
8	529,248	34,624	3,110	12386	262	2.11%	1390	31	2.20%	10996	231	2.10%
9	259,690	23,228	722	3265	40	1.20%	629	11	1.70%	2636	29	1.10%
10	197,639	13,381	522	2540	7	0.20%	402	2	0.40%	2138	5	0.20%
11	253,397	14,617	805	3343	30	0.90%	521	5	0.95%	2822	25	0.88%
12	262,230	17,324	782	4711	51	1.08%	754	5	0.60%	3957	46	1.20%
15	231,049	17,492	546	3582	25	0.70%	597	6	1.00%	2985	19	0.60%
16	471,069	33,663	2,053	8140	140	1.70%	2172	32	1.50%	5968	108	1.80%
17	249,141	18,947	1,064	5590	150	2.70%	1895	83	4.37%	3695	67	1.80%
18	251,242	17,178	692	5434	31	0.60%	433	8	1.84%	5001	23	0.45%
19	156,833	10,926	397	3365	14	0.40%	359	6	1.67%	3006	8	0.26%
20	230,529	15,662	658	3962	26	0.60%	719	8	1.10%	3243	18	0.55%
21	240,813	13,366	1,149	5099	83	1.62%	838	8	0.95%	4261	75	1.78%
22	269,510	19,215	1,917	15935	274	1.71%	3143	23	0.73%	12792	251	1.96%
23	289,310	16,791	325	1620	9	0.50%	302	2	0.66%	1318	7	0.53%

^aNumber of unique veterans seen within each VISN. ^bFor FY2005: Based on lab tests/ICD-9 codes, followed by manual confirmation.

Despite clear policy directives encouraging routine HIV testing among U.S. veterans, substantial evidence exists that HIV testing is underutilized throughout the VA system (Owens et al., 2007). Although the VHA has a well-documented track record of high-quality medical care, strongly associated with proactive clinical performance measurement (Asch et al., 2004), routine HIV testing is not a specified performance measure in the VA system. Gifford and colleagues (2006) identified nearly 271,000 veteran patients at increased risk for HIV infection (based on documented diagnoses of hepatitis B, hepatitis C, sexually transmitted infection, or substance abuse) of whom only 21% had been tested for HIV. Among nearly 12,000 veteran patients from the Pacific Northwest who were infected with hepatitis C virus, only a third (35%) had been tested for HIV (Huckans, Blackwell, Harms, Indest, & Hauser, 2005).

Among the documented barriers to HIV testing in the VA health system are “lack of provider prioritization of HIV testing and the time needed for pre and post-test counseling” (Goetz et al., 2006). At present, a 1988 federal law (section 124 of Public Law 100-322) requires written informed consent for HIV testing, documented in the veteran’s medical record (*Department of Veterans Affairs Information*, 2006). Many VA providers have stated that the requirement to obtain written informed consent is an impediment, given the multiple time demands on primary care providers (personal communications). Heightened awareness of the federal requirement for written informed consent among veteran patients can be seen in the widespread laboratory practice of requiring a copy of the HIV testing consent form, or some comparable documentation, before the laboratory will actually test the specimen (64% of surveyed laboratories).

Because of the current lack of a uniform reporting structure for VA clinical laboratories at a national level, it is not possible to calculate exact rates of HIV testing across the entire VA system. However, it is possible to develop functional estimates. In FY 2006 the VA recorded 5,537,839 unique outpatients and 368,585 unique inpatients (Dr. L. Mole, personal communication, March 19, 2007). During this same time period, clinical laboratories reported performing 91,189 HIV screening tests on outpatients and 20,844 HIV screening tests on inpatients. Although a crude estimate with a number of caveats (e.g., not every laboratory responded to survey, the current lab survey tallied tests and not unique patients who had been tested, reported lab figures include duplicate tests, survey did not determine or account for previously tested veterans, etc.), one can reasonably assert that fewer than 5% of VA outpatients ($91,189/5,367,774 = .0170$) and fewer than 10 percent of VA inpatients ($20,844/368,585 = .056$) were tested for HIV in fiscal year 2006.

The overall seroprevalence of HIV infection in VA of those tested in this survey was 1.49% (VISN range = 0.2-3.8%). This prevalence rate is consistent with data from a recent blinded HIV seroprevalence study in six VA medical centers where the total prevalence was 3.7%, with a prevalence of previously undocumented HIV infection ranging from 0.1% to 2.8% among outpatients and from 0% to 1.7% among inpatients (Owens et al., 2007). In that study, HIV infection was significantly more likely to be present in VA outpatients and those veterans who were younger and Black. Current CDC recommendations suggest that routine universal HIV screening should be performed if the known seroprevalence in the population is $> 0.1\%$ (CDC, 2006). Given the HIV seroprevalence found in this and other VA studies, the VA would benefit from a universal HIV testing policy.

Revised CDC HIV testing guidelines, released in September 2006, recommend that in health care settings, screening for HIV infection should be performed routinely for all patients aged 13–64 years of age (CDC, 2006). Although the CDC stresses that screening should be voluntary and undertaken only with “the patient’s knowledge and understanding that HIV testing is planned,” the CDC no longer recommends a separate consent form for HIV testing (CDC, 2006, p. 7). Instead, the September 2006 guidelines recommend that “consent for HIV screening should be incorporated into the patient’s general informed consent for medical care on the same basis as are other screening or diagnostic tests (CDC, 2006, p. 8). The guidelines recommend that patients should be informed orally or in writing that HIV testing will be performed, unless they decline. This is known as “opt-out” testing.

At present, federal law prohibits the VA system from adopting the CDC’s HIV testing recommendations (*Department of Veterans Affairs Information*, 2006). However, a number of facility-level efforts are underway to improve HIV testing rates in the VA system. Various approaches include social marketing to encourage providers to prioritize HIV testing, streamlined pretest and posttest counseling, and clinical reminders embedded in the electronic medical record prompting providers to offer HIV testing in the face of documented risk factors (e.g., hepatitis B or C infection, a history of substance abuse, a history of other sexually transmitted diseases, etc.) (Anaya & Asch, 2006; Goetz et al, 2006). One recent analysis conducted in two VA clinics in a large urban area found that nurse-initiated screening with streamlined counseling and rapid HIV testing was able to double testing rates compared with traditional methods (89% vs. 40%, $p < .01$) (Anaya et al., 2007). Although these interventions have demonstrated substantial success at a facility level, system-wide, the majority of VA inpatients and outpatients are not being routinely tested for HIV—as demonstrated by the results of this survey. Therefore, promoting routine HIV testing among veteran patients in support of early diagnosis may require more widespread structural and policy changes.

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