Integrating Routine HIV Testing into a Public Health STD Clinic

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SYNOPSIS

Objective. To integrate routine HIV testing into the services offered at a public health department STD clinic and document the rate of acceptance and rate of test positivity during the first 18 months.

Methods. Testing for HIV was added to the array of tests offered to all patients at the Maricopa County STD clinic. Patients were informed of this new option at registration and were provided with a consent form and instructions to read the form and sign it, unless they did not desire testing. STD clinicians were responsible for insuring that questions regarding testing were answered and that consent forms were signed. HIV prevention was integrated into the general STD preventive messages during the clinical encounter.

Results. Sixty-eight percent of patients accepted testing (12,176 of 17,875). Of these, 68 were HIV-positive, for a rate of 5.6 per 1,000. The positive rate for men was 8.6/1000 and for women 1.2/1,000. The rate for men who reported having sex with men (MSM) was 63.8/1,000. Fourteen of the HIV-positive MSM were co-infected with syphilis. Of the 68 who were HIV-positive, 58 (85.3%) were successfully located, informed of their test results, and referred for HIV treatment and support services.

Conclusions. HIV testing can be included in the routine battery of tests offered at an STD clinic with high patient acceptance. Routine testing can discover those who are unaware of their HIV-positive status, providing an opportunity for early referral for treatment, counseling to avoid disease transmission, and notification of sexual contacts.

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The Centers for Disease Control and Prevention (CDC) estimates that 40,000 new HIV infections occur in the United States each year, and that one quarter of those living with HIV infection do not know they are infected.¹ In an attempt to increase the rate of early detection, improve outcomes for those infected with HIV, and decrease disease transmission, the CDC Division of HIV/AIDS Prevention has developed a new initiative, "Advancing HIV Prevention," with the intent of increasing the availability and utilization of HIV testing.²

Historically, funding and programmatic separation has existed between sexually transmitted disease (STD) and HIV control programs, yet there is recognition nationally and locally that efficiencies can be gained through better integration of STD and HIV services.³ Local public health department clinics that provide diagnosis and treatment for STDs serve patient clientele who may be at increased risk for HIV infection,⁴ and these clinics would appear to be an ideal location for HIV testing programs.

Prior to July 1, 2003, the Maricopa County Department of Public Health (MCDPH) offered only one option for HIV testing, the traditional HIV Counseling and Testing (C & T) program that included the option of either anonymous or confidential testing combined with pre- and post-test counseling sessions. Since July 1, 2003, a second option has been offered that consists of HIV testing as part of the routine battery of tests performed on patients in the STD clinic. Prior to that date, STD clinic patients who desired HIV testing were referred to the HIV C & T program. This required a separate appointment with an HIV counselor for a 30-minute counseling session, possibly on another day, and a return appointment to receive the test results along with another counseling session. Fewer than 10% of the STD patients accepted referral for this service. The patients in the STD clinic were often disappointed that they could not obtain HIV testing in the STD clinic and did not understand why STD and HIV testing occurred in different locations. Some STD clinic patients assumed incorrectly that HIV testing was one of the services they had received. Very few of the patients expressed a strong preference for anonymous testing.

Not only was the traditional HIV C & T approach proving to be a barrier to testing in the setting of our STD clinic, the published literature raised questions about the effectiveness of such extensive counseling among those who test negative.⁵⁻⁷ However, intensive patient-centered counseling of those who are HIV-positive does appear to result in a reduction in high risk behavior and, presumably, a reduction in disease

transmission.⁸⁻¹⁶ The literature also shows that partner counseling and referral services can identify up to 0.23 infected partners per HIV-positive index case, supporting potential additional benefit from early detection if contact notification is an available service.¹⁷ Another consideration was that those who are HIV-positive but detected late in the disease progression are more likely to be African American, Hispanic, and less educated—populations that disproportionately utilize the county STD clinic.¹

Faced with the low HIV testing rate, the MCDPH leadership decided to reduce the barriers to HIV testing that previously existed at the STD clinic, to test as many patients as possible by adding the test to the battery of tests provided to all patients, and to find HIV-positive patients and concentrate counseling efforts on them. The counseling would focus on emotional support, referral to medical care and social support networks, and teaching how to avoid disease transmission. Clinicians in the STD clinic would still provide prevention counseling to all patients as part of routine care. In addition, the traditional HIV C & T program was maintained, allowing patients who desired more intensive counseling and/or anonymous testing to have that option.

The decision to initiate HIV testing in the STD clinic was controversial. There was concern and opposition from within the county and state public health departments. Some felt HIV testing should be provided only if it was accompanied by pre- and post-test counseling for those positive and negative. The state public health department HIV program would not pay for the laboratory testing, as they do for the traditional HIV Counseling and Testing Program, unless extensive pre- and post-test counseling was provided. Faced with the impracticality of implementing those requirements in the STD clinic, a policy decision was made to add \$5 to the STD clinic fee to partially cover the addition of HIV testing and to perform the HIV tests at the MCDPH laboratory; after much discussion within the department, the program was initiated in July of 2003.

This article summarizes the results of STD clinic-based HIV testing program after the first full 18 months of operation.

METHODS

Maricopa County, with a population in 2003 of 3.4 million, has one publicly funded STD clinic, located in central Phoenix. Patients are charged \$20 for a clinic visit although they are not refused service if they cannot pay. When patients register at the clinic, they are

informed that HIV testing will be provided as part of the routine laboratory testing and, as required by Arizona law, they are given an HIV test consent form and are instructed to read and sign it, unless they do not desire an HIV test. Clinicians insure that the consent forms are signed and that questions regarding HIV testing are answered. During the clinic visit, patients are provided with information on how to avoid contracting and transmitting STDs and advised that if any of their test results are positive they will be notified. Those patients who prefer to initiate contact with the public health department for their results are provided a telephone number and a coded visit number.

Patients in the STD clinic are routinely tested for syphilis, gonorrhea, and chlamydia. Wet mount microscopic exams are routinely performed on female patients. Other tests such as gram stains of urethral discharges and herpes cultures are performed when clinically indicated. Testing for HIV is routinely performed unless the patient declines to sign the consent form. The initial HIV test is an HIV-1 enzyme immune assay (EIA) performed in the MCDPH lab. Positive EIA tests are confirmed by western blot analysis. Only tests confirmed by western blot are classified as positive for HIV infection.

When a laboratory test is positive for an untreated disease (HIV, syphilis, gonorrhea, or chlamydia), the patient is contacted and informed that one of their tests is positive and that they need to return to the clinic for specific information and treatment. Patient notification is done in-person, over the phone, or by mail, in that order of preference. Specifics about which tests are positive are not provided unless the notification is face-to-face. This procedure is the same for patients who call in and ask for test results. An appointment is made for HIV-positive patients to meet with a counselor in the HIV C & T program to confirm the test result, receive information about HIV treatment and support services, learn about prevention of disease transmission, and have any questions answered.

RESULTS

During the first 18 months of testing, from July 1, 2003, through December 2004, 17,875 patients sought services at the clinic at least once; 6,783 females (37.9%) and 11,092 males (62.1%). HIV testing was accepted by 12,176 (68.1%); 4,995 females (73.6% of female patients) and 7,181 males (64.7% of male patients). Sixty-eight were HIV-positive for a rate of 5.6 per 1,000, or one out of every 179 patients tested.

Table 1 lists the number tested, number positive

Table 1. HIV test results by gender and race/ethnicity

	Number tested	Number positive	Rate positive per 1,000
African American			
Female	600	1	1.7
Male	980	5	5.1
Asian			
Female	59	0	0
Male	69	2	29.0
Hispanic			
Female	2,667	3	1.1
Male	3,554	28	7.9
Native American			
Female	43	0	0
Male	58	0	0
Non-Hispanic white			
Female	1,626	2	1.2
Male	2,520	27	10.7
Total			
Female	4,995	6	1.2
Male	7,181	62	8.6

and rate positive by gender and race/ethnicity. The positive rate for men was 8.6/1,000 and for women 1.2/1,000. This compares to a Maricopa County HIV prevalence in 2004 of 1.89/1,000 for men and 0.31 for women and a HIV/AIDS prevalence of 3.56/1,000 for men and 0.53 for women.¹⁸ Citizenship status was asked of those testing HIV-positive. Three positive women (50%) and 16 positive men (23.5%) were non-U.S. citizens.

Of HIV-positive men, 66% (41/62) reported having sex with men. The positive rate for men who have sex with men (MSM) was 63.8/1,000; for men who report having sex only with women it was 3.2/1,000. Table 2 lists the number tested, number positive and rate positive by age for MSM and other males. All six HIV-positive women were heterosexual; one reported using intravenous drugs and exchanging sex for money and another reported sex with a high risk partner.

Fourteen of the positive MSM were co-infected with syphilis (34.1%)—three with primary syphilis, three with secondary, four with early latent, and four with late latent. Three other HIV-positive MSM had previously been treated for syphilis. Three HIV-positive heterosexual males were co-infected with syphilis, one with early latent and two with late latent. Five had previously been treated for syphilis.

Of the 68 HIV-positive patients, 58 (85.3%) were located and notified of their test results. Nine could not be located; one was located but refused to return

Table 2. HIV testing results in men by age

Age (years)	Heterosexual			MSM		
	Number tested	Number positive	Rate positive per 1,000	Number tested	Number positive	Rate positive per 1,000
13–19	510	0	0	61	0	0
20–29	3,380	6	1.8	300	17	56.7
30–39	1,550	10	6.5	176	13	73.9
40–49	713	2	2.8	79	8	101.3
50–59	281	2	7.1	18	3	166.7
≥60	104	1	9.6	9	0	0
Total	6,538	21	3.2	643	41	63.8

calls to discuss his test results. Of the 58 with positive HIV tests, 52 reported no previous positive test.

DISCUSSION

The implementation of routine HIV testing in the county STD clinic led to a testing acceptance rate of 68% and the identification of 68 HIV-infected individuals in the first 18 months. A high proportion of those with a positive test were located and informed of their test results and most of them had not tested positive previously. Prior to this new policy, fewer than 10% of clinic patients were tested for HIV. In 2004, 7,278 people in central Arizona were known to be HIV infected. If we assume that another 25% are unknowingly infected, then routine HIV screening at the county STD clinic detected 3% of them in the 18-month period of the new testing program.

The HIV test acceptance rate at the clinic is nearly the same as at other locations that use a similar approach.¹⁹ The low rate of HIV test acceptance at the county STD clinic prior to the inclusion of routine HIV testing was similar to other locations that offer testing contingent upon receiving pre- and post-test counseling.²⁰ It was the experience in our STD clinic that many patients offered testing under those circumstances refuse because they do not feel they are at risk and do not want to invest the additional time and effort required to obtain a test. “Opt-out” procedures in prenatal care clinics have also achieved markedly higher rates of testing than other approaches.²¹ A true opt-out procedure is currently not possible at the county STD clinic because of a state statutory requirement for signed, informed consent prior to HIV testing. Our success at locating 85% of those who test positive has also been duplicated elsewhere.^{22–24}

The testing of over 12,000 patients for HIV in the STD clinic did not have a large effect on the numbers in the traditional HIV C & T program, which tested 5,578 patients the year before the STD clinic started

HIV testing, and 5,268 patients from July 1, 2003, to June 30, 2004. The HIV testing in the STD clinic appears to have been an add-on to, not a substitution for, the existing C & T program, resulting in an overall increase in the number of people tested in the county disease prevention programs.

While the program was successful the first year, there were still 32% of the STD clinic patients who did not accept testing. Other studies in similar settings have found that rates of HIV infection were higher in those who declined testing than in those who accepted it.^{18,25,26} If that is true in our community, there are a significant number of HIV-positive patients who visit the STD clinic who are not being tested. It is not known, however, what proportion of these untested patients might have recently been tested elsewhere and were already aware of their HIV status. We do not know how many preferred anonymous testing and might have been tested elsewhere. We also do not know how many of the 52 who had no previous positive test would have eventually been tested elsewhere or how soon their infections would have been discovered.

It is possible that the HIV test consent requirement serves as a barrier to testing by singling out HIV tests for special attention, raising patient concern. Such consent is not required for any other laboratory test. The consent requirement was initially implemented in the early days of the HIV epidemic as a precaution because of the implication that anyone tested for HIV was in a stigmatized high risk group. Since that time, HIV testing has become much more commonplace, with over 40% of the U.S. adult population having received at least one HIV test.

Our results indicate that the patients in the STD clinic are at higher risk for HIV infection than the general county population. These results are consistent with HIV seroprevalence studies performed at other STD clinics around the country, which also document a higher risk for STD clinic clients.⁴ The demographics of those found to be HIV-positive in the STD

Table 3. Racial/ethnic and risk profile of HIV-infected at the STD clinic and in the Central Arizona region

	STD clinic Percent	Central Arizona Percent
MSM	60.3	55.0
IVDU	10.3	11.8
Both MSM and IVDU	7.4	7.9
Heterosexual contact	4.4	9.6
Other or no risk determined	17.6	15.7
Male	91.2	86.3
Female	8.8	13.7
Non-Hispanic white	42.5	62.7
Hispanic	45.6	19.5
Black	8.3	11.6

clinic are very similar to those who are HIV-positive in the central Arizona region (see Table 3), except for a higher proportion of Hispanics at the STD clinic. This reflects the demographics of the STD clinic clientele, which consists of a higher proportion of Hispanics than the general population. The high rate of co-infection with syphilis in HIV-positive MSM has also been found in other locations and is a cause for concern.^{25,26} Co-infection with other STDs facilitates the transmission of HIV.²⁷ It also indicates recent high risk sexual behavior that should be a high priority target for risk reduction counseling.

Adding the HIV test to the routine battery of tests at the STD clinic cost the MCDPH \$6.51 per test or \$1,168.50 per positive patient discovered. Rapid HIV testing offers the possibility of learning about test results at the initial clinic visit, and thereby increasing the rate of notification of positives to 100%. However, this advantage needs to be weighed against the time needed to obtain test results—30 to 40 minutes under optimal circumstances—and the need for confirmatory testing, which takes one to two days.

There were two patient complaints about the new HIV testing program in the first 18 months. One patient thought he was receiving anonymous testing. This misunderstanding resulted in a redesign of the consent form to emphasize the difference between the HIV C & T program, which can be anonymous or confidential, and the HIV testing performed in the STD clinic, which is confidential. Another patient did not discover his positive test result until a repeat visit to the clinic six months after it was performed. However, he had refused to return telephone calls on three occasions and did not respond to repeated mail messages, all of which occurred immediately after the test results were first known to county staff.

The fact that HIV-infected patients are having their infections discovered earlier than they otherwise would

have does not necessarily mean that community disease transmission has been reduced. The next step in the evaluation of this enhanced testing program will be to document what proportion of those who test positive for HIV at the STD clinic seek medical services, how far advanced their infections are at the time of discovery, what degree of reduction of high risk sexual behavior results from counseling, and how many of their sexual contacts are notified and tested. These results will help determine if the theoretical benefits of early detection actually occur.

Achieving higher rates of HIV testing and finding occult HIV infection among those who either do not recognize their risk or simply choose not to receive testing in traditional HIV C & T programs should be a local public health priority and should lead to reduced disease transmission. To achieve higher testing and disease detection rates, barriers to HIV testing will need to be reduced. Addition of routine HIV testing at public STD clinics is one method to achieve this objective without detracting from traditional HIV C&T programs.

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