

# Alternative HIV Testing Methods Among Populations at High Risk for HIV Infection

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## SYNOPSIS

**Objective.** The purpose of this study was to determine the levels of awareness and use of alternative HIV tests (home collection kit, oral mucosal transudate collection kit, and rapid tests) among people at high risk for HIV infection.

**Methods.** Data were collected as part of an anonymous, cross-sectional interview study—the HIV Testing Survey (HITS)—conducted in seven states from September 2000 to February 2001. Three high-risk populations were recruited: men who have sex with men, injection drug users, and high-risk heterosexuals. Respondents were asked about their awareness and use of alternative HIV tests.

**Results.** The overall awareness and use of the alternative tests was limited: 54% of respondents were aware of the home collection kit, 42% were aware of the oral mucosal transudate collection kit test, and 13% were aware of rapid tests. Among those aware of alternative tests, self-reported use of the tests was also low. The most common reasons given for not using alternative HIV tests were: preference for the standard test; concern that the results could be less accurate; and that alternative tests were not offered.

**Conclusions.** The low levels of awareness and use of alternative HIV tests suggest that the potential for promoting testing among individuals at high risk for HIV by encouraging use of alternative HIV tests has not been fully realized. Alternative tests should be made more broadly available and should be accompanied by education about these tests for physicians and people at risk. Educational efforts should be evaluated to determine if promoting alternative HIV tests increases the numbers of people at risk for HIV who are tested.

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Approximately 75% of HIV-infected people in the United States know their HIV serostatus.<sup>1</sup> One of the prevention priorities for the National Center for HIV, STD, and TB Prevention is to increase the percentage of HIV-infected people who are aware of their infection to 95% by the year 2005.<sup>1</sup> The Centers for Disease Control and Prevention's (CDC) Serostatus Approach to Fighting the Epidemic (SAFE) strategy also emphasizes the need to promote testing and knowledge of serostatus.<sup>2</sup> Data are needed on HIV testing practices, attitudes, and preferences among people at risk for HIV infection. Such data can be used in developing strategies to increase people's comfort with testing and in tailoring test offerings to certain groups of people.

The standard laboratory strategy for HIV testing in the United States is to use an ELISA as a screening test, followed by a confirmatory high specificity test (Western Blot or Immunofluorescence Assay). As of February 2003, five Food and Drug Administration-approved alternative HIV tests/collection methods are commercially available: the HIV home collection kit (Home Access<sup>®</sup>, Home Access Corporation, Hoffman Estates, IL); the oral mucosal transudate collection kit (OraSure<sup>®</sup>, OraSure Technologies, Inc., Bethlehem, PA); a screening ELISA for the detection of urine HIV-1 antibodies (Calypte HIV-1 urine test, Calypte Biomedical Corporation, Alameda, CA); the Single Use Diagnostic System HIV-1 rapid test (SUDS<sup>®</sup>, Abbott Laboratories, Abbott Park, IL); and an HIV rapid test that uses fingerstick whole blood specimens (OraQuick<sup>®</sup>, OraSure Technologies, Inc., Bethlehem, PA). Alternative HIV tests differ from standard phlebotomy and HIV screening tests in that a less invasive sample collection method is used, because test results are available more rapidly, or both.

This report addresses four of the five available alternative HIV tests: home collection kit, oral mucosal transudate collection kit (oral test), and the two rapid tests. Three of these tests were available when the HIV Testing Survey began in 1996; one of the rapid tests (OraQuick<sup>®</sup>) was approved by the FDA in late 2002. We report data on awareness and use of the three types of tests among people at high risk for HIV infection: men who have sex with men, injection drug users, and high-risk heterosexuals. In addition, we document reasons reported for using or not using certain alternative HIV screening tests.

## METHODS

The HIV Testing Survey (HITS) is an anonymous cross-sectional interview survey that has been conducted

several times since 1996; our data come from the study year 2000 (HITS 2000). HITS methods have been previously described.<sup>3</sup> HITS 2000 study staff surveyed participants in Kansas, Texas, Illinois, Florida, Nevada, New York, and Washington State, recruiting subjects from three different populations at risk for recent exposure to HIV: men who have sex with men (MSMs), injection drug users (IDUs), and high-risk heterosexuals (HRHs) who attended a sexually transmitted disease (STD) clinic. The aim was to recruit at least 100 individuals from each of these populations in each state (300 total per state), using consistent recruitment methods across participating states. More than 100 people were enrolled at many sites; these higher enrollment targets were planned to ensure enrollment of at least 100 eligible individuals, since some potential subjects were ineligible because of behavioral criteria assessed during the interview. To be interviewed, participants had to be at least 18 years of age and to have resided for at least six months in the state in which the interview was conducted, according to self-report. Participants also had to provide informed consent prior to interviews.

Study staff recruited MSMs at gay bars, IDUs at street venues, and HRHs at STD clinics. During the interview, study staff assessed other behavioral criteria in addition to attendance at the venue of recruitment: MSMs were included only if they reported having sex with another man in the past 12 months; IDUs were included only if they reported injecting drugs in the past 12 months; and HRHs were included only if they reported being sexually active with a person of the opposite sex, but not a person of the same sex, in the past 12 months and were attending the clinic because they suspected they had an STD.

Venues for recruitment were selected through a three-month, structured formative research process that was intended to identify venues where people representative of those at risk for HIV infection in the state could be recruited. In all selected venues, study staff used systematic random sampling to select potential participants. For STD clinics, study staff oversampled women when necessary in an attempt to enroll equal numbers of women and men.

## Data collection

Participants who provided consent were administered an anonymous, structured interview, conducted by trained study staff, in a private space whenever possible. No personal identifiers were collected. The interview obtained information about the participant's demographic background, HIV risk behaviors, and HIV testing history. Study staff asked participants if they

had ever heard of three alternative HIV testing methods: the home collection kit, the oral mucosal transudate collection kit (oral test), and HIV rapid tests. Respondents who were aware of a particular alternative test were asked if they had ever used that test and then asked to respond yes or no to a list of reasons why they had or hadn't used the test. Self-reported race/ethnicity was collected by first asking if respondents considered themselves to be Hispanic, and then asking respondents if they considered themselves to be Asian, Black/African American, Native American/American Indian, Pacific Islander, White/European, or "other," each as a separate yes/no question.

### Data analyses

Reasons for not using a particular test differed according to HIV testing history. Therefore, we stratified reasons for not using alternative tests by HIV testing status: we considered people who knew their serostatus as well as people who had been tested but had not returned for their results as "tested" and those who had never been tested or were uncertain if they had been tested as "untested."

Descriptive data were summarized using SAS, Version 6.12.<sup>4</sup> We used Epi Info 2000<sup>5</sup> to generate chi-square statistics to determine the statistical significance of differences by risk group in proportions of respondents who had been tested or not tested for HIV and differences by risk group in proportions of respondents who had heard of or used alternative tests. The HITS survey was reviewed for human subjects research protections at the Centers for Disease Control and Prevention and participating state health departments.

## RESULTS

### Characteristics of HITS 2000 participants

During the HITS 2000 study period, 6,092 people were approached, 875 were ineligible, and 3,464 people completed the interview (66% acceptance rate for eligible individuals). Of these 3,464 respondents, 628 were excluded from the final analysis due to incomplete responses or not meeting behavioral eligibility requirements. This left 2,836 respondents for the analysis, including 1,017 MSMs, 891 IDUs, and 928 HRHs.

The overall demographics of the HITS 2000 respondents were similar across the three populations (Table 1). The MSM group was disproportionately white (60.9%), and the HRH group was disproportionately African American (50.2%).

The majority of the respondents at each venue reported having been tested for HIV at some time before being interviewed: 924 (90.9%) of the MSM re-

spondents, 836 (93.8%) of the IDU respondents, and 706 (76.1%) of the STD clinic attendees reported being tested. Higher proportions of women than of men reported being tested in the IDU population (96.2% of women vs. 92.5% of men;  $p < 0.05$ ) and HRH population (83.1% of women vs. 69.6% of men;  $p < 0.05$ ).

### Alternative HIV testing methods

Awareness of the alternative tests, especially the HIV rapid tests, was limited (Table 2). The highest levels of awareness of an alternative HIV test method were for the home collection kit: 62% of untested and 74% of tested MSMs reported awareness of the test. The STD clinic respondents also had a higher degree of awareness of the home collection kit than of other alternative tests, with approximately half of respondents reporting awareness of the test. About half of MSMs and IDUs, and about a quarter of HRHs, reported being aware of the oral test. The lowest levels of awareness were reported for the rapid tests by respondents in all three venues.

The results shown in Table 2 are not divided according to HIV testing history. In general, a greater percentage of previously tested respondents were aware of alternative tests than their previously untested counterparts. This difference was most notable in awareness of the oral test (MSMs 52% tested vs. 23% untested; IDUs 50% tested vs. 24% untested; HRHs 31% tested vs. 18% untested; all comparisons  $p < 0.05$ ). In the IDU population, previously untested respondents were more aware of the home collection kit than of the oral test.

The relatively high awareness of the home collection kit did not translate into frequent use. Among respondents at all venues who had heard of an alternative HIV test, the test reported to have been used most frequently was the oral test: 30.1% of the MSM respondents, 48.7% of the IDU respondents, and 35.4% of the STD clinic respondents who had heard of the oral test reported having used it. Use of HIV rapid tests was lower: 11.4% of the MSM respondents, 26.4% of the IDU respondents, and 8.0% of the STD clinic respondents who had heard of rapid tests reporting having used one. The home collection kit had the lowest reported usage, with fewer than 7% of respondents who had heard of the home collection kit having used the test.

### Reasons for using alternative HIV testing methods

Respondents often cited "convenience" and "privacy" as reasons for using an alternative test, although other reasons also predominated among certain groups (Table 3). For the users of the home collection kit,

**Table 1. Self-reported demographic characteristics of eligible respondents, by HIV risk status, among individuals interviewed in seven states as part of the HIV Testing Survey, September 2000 to February 2001**

Characteristic	MSMs (n=1,017)	IDUs (n=891)	HRHs (n=928)	Total
	Number (Percent)	Number (Percent)	Number (Percent)	Number
<b>Gender</b>				
Male	1,010 (99.3)	576 (64.7)	484 (52.2)	2,070
Female	—	314 (35.2)	444 (47.8)	758
Transgender	7 (0.7)	1 (0.1)	—	8
<b>Age</b>				
<25 years	146 (14.4)	98 (11.0)	366 (39.4)	610
25–34 years	417 (41.0)	214 (24.0)	317 (34.2)	948
35–44 years	327 (32.2)	309 (34.7)	169 (18.2)	805
>44 years	127 (12.5)	269 (30.2)	76 (8.2)	472
Missing/refused	—	1 (0.1)	—	1
<b>Race</b>				
White, non-Hispanic	619 (60.9)	271 (30.4)	224 (24.1)	1,114
Black, non-Hispanic	132 (13.0)	287 (32.2)	466 (50.2)	885
Hispanic	141 (13.9)	215 (24.1)	110 (11.9)	466
Asian	8 (0.8)	4 (0.5)	9 (1.0)	21
American Indian	11 (1.1)	15 (1.7)	6 (0.7)	32
Pacific Islander	1 (0.1)	—	—	1
Other	35 (3.4)	29 (3.3)	10 (1.1)	74
More than one race reported	67 (6.6)	63 (7.1)	98 (10.6)	228
Missing/refused	3 (0.3)	7 (0.8)	5 (0.5)	15
<b>Education</b>				
<High school or GED	31 (3.1)	306 (34.3)	203 (21.9)	540
High school or GED	195 (19.2)	355 (39.8)	330 (35.6)	880
>High school or GED	790 (77.7)	229 (25.7)	394 (42.5)	1,413
Missing/refused	1 (0.1)	1 (0.1)	1 (0.1)	3
<b>Employment</b>				
Unemployed	120 (11.8)	568 (63.8)	312 (33.6)	1,000
Work <35 hours	145 (14.3)	181 (20.3)	185 (19.9)	511
Work >35 hours <sup>a</sup>	752 (74.0)	142 (15.9)	431 (46.4)	1,325
<b>Income (household)</b>				
<\$1,000/month	57 (5.6)	587 (65.9)	233 (25.1)	877
\$1,000–\$1,999/month	228 (22.4)	175 (19.6)	305 (32.9)	708
\$2,000–\$2,999/month	275 (27.0)	65 (7.3)	177 (19.1)	517
\$3,000–\$3,999/month	166 (16.3)	19 (2.1)	93 (10.0)	278
\$4,000 or more/month	272 (26.8)	34 (3.8)	99 (10.7)	405
Missing/refused	19 (1.9)	11 (1.2)	21 (1.8)	51

<sup>a</sup>Includes seven individuals who reported working but did not specify number of hours.

MSM = man who has sex with men

IDU = injection drug user

HRH = high-risk heterosexual

**Table 2. Awareness and use of alternative HIV tests, by HIV risk status, among individuals interviewed in seven states as part of the HIV Testing Survey, September 2000 to February 2001**

Variable	MSMs (n=1,017)	IDUs (n=891)	HRHs (n=928)	Total (N=2,836)
	Number (Percent)	Number (Percent)	Number (Percent)	Number (Percent)
Aware of:				
Home collection kit	743 (73.1)	338 (37.9) <sup>a</sup>	461 (49.7) <sup>a</sup>	1542 (54.4)
OraSure®	498 (49.0)	429 (48.1)	255 (27.5) <sup>a</sup>	1182 (41.7)
Rapid tests	211 (20.7)	87 (9.8) <sup>a</sup>	75 (8.1) <sup>a</sup>	373 (13.2)
Used <sup>b</sup> :				
Home collection kit	47 (6.3)	11 (3.3) <sup>a</sup>	3 (0.7) <sup>a</sup>	61 (4.0)
OraSure®	150 (30.1)	209 (48.7) <sup>a</sup>	59 (23.1) <sup>a</sup>	418 (35.4)
Rapid tests	24 (11.4)	23 (26.4) <sup>a</sup>	6 (8.0)	53 (14.2)

<sup>a</sup>Proportion different from that for MSMs,  $p < 0.05$ , chi-square test.

<sup>b</sup>For calculation of proportion of people who had ever used the test, only those people who reported being aware of the test were included in the denominator.

MSM = man who has sex with men

IDU = injection drug user

HRH = high-risk heterosexual

“convenience” and “privacy” were the two reasons reported most frequently by respondents from all venues. For the MSM respondents, the third most frequent choice was “getting the test results back more quickly,” whereas for the IDU and STD clinic respondents the third most frequent choice was that someone had recommended the test. A small proportion of people reported using the test because it was “easier”; other respondents mentioned “not wanting anyone to know,” “wanting to try it,” and “getting it for free.”

Most users of the oral test reported that “it was the only test offered.” The second most frequently reported reason was “convenience.” A higher proportion of IDU respondents reported concerns about “privacy,” a preference for “getting the test results back more quickly,” and that “someone had recommended the test” than did MSM or HRH respondents. A quarter of the MSM respondents reported not liking needles and pain.

The main reasons reported for using a rapid test across all three venues were “getting the test results back more quickly” and “convenience.”

### Reasons for not using alternative HIV testing methods

Among respondents who knew of alternative tests but did not use them, many expressed a preference for the “standard test.” As shown in Table 4, this result was consistently reported across all groups. All groups also reported concerns about privacy and accuracy.

For the home collection kit, the main reason for not using the kit among those who were aware of it was that respondents preferred the standard test. Other reported reasons were the respondents’ concern that “the results could be less accurate” and that the respondents desired “face to face counseling.” Among MSM and HRH respondents, higher percentages of tested than of untested respondents reported the latter two reasons. In all three groups, higher percentages of untested than of tested respondents reported being “concerned about privacy.” Few MSM or HRH respondents reported that “the kits were too expensive,” but approximately 40% of both tested and untested IDU respondents reported that cost was a reason for not using the home collection kit.

For the oral test, each of two reasons for not using the test was reported by approximately half of the tested populations in each venue: the method was not offered and respondents preferred the standard test. Approximately one-third of the tested respondents at each of the venues, as well as one-third of the untested STD clinic respondents, reported concern that “results could be less accurate” as a reason for not using the oral test. Respondents gave numerous “other” reasons for not using the oral test. For the untested MSM respondents, that they didn’t think they needed a test or didn’t want a test and “lack of knowledge or trust of the test” were the main reasons for not using the oral test.

**Table 3. Reasons for using specified test, by HIV risk status, among individuals interviewed in seven states as part of the HIV Testing Survey, September 2000 to February 2001**

Test	MSMs	IDUs	HRHs
	Number (Percent)	Number (Percent)	Number (Percent)
Home collection kit	(n=47)	(n=11)	(n=3)
Convenience	37 (78.7)	10 (90.9)	3 (100.0)
Privacy	33 (70.2)	10 (90.9)	3 (100.0)
Getting test results back more quickly	19 (40.4)	7 (63.6)	1 (33.3)
Someone recommended	7 (14.9)	9 (81.8)	2 (66.7)
Other reasons:			
Easier	2 (4.3)	—	—
Other <sup>a</sup>	10 (21.3)	2 (18.2)	—
OraSure <sup>®</sup>	(n=150)	(n=209)	(n=59)
Convenience	69 (46.0)	131 (62.7)	27 (45.8)
Privacy	34 (22.7)	80 (38.3)	17 (28.8)
Getting test results back more quickly	39 (26.0)	86 (41.2)	15 (25.4)
Someone recommended	47 (31.3)	91 (43.5)	15 (25.4)
It was the only test offered	85 (56.7)	138 (66.0)	39 (66.1)
Other reasons:			
Don't like needles/pain	38 (25.5)	6 (2.9)	6 (10.2)
Other <sup>b</sup>	35 (23.4)	12 (5.7)	7 (11.9)
Rapid tests	(n=24)	(n=23)	(n=6)
Convenience	16 (66.7)	16 (69.6)	5 (83.3)
Privacy	10 (41.7)	15 (65.2)	3 (50.0)
Getting test results back more quickly	17 (70.8)	17 (73.9)	5 (83.3)
Someone recommended	9 (37.5)	14 (60.9)	1 (16.7)
It was the only test offered	11 (45.8)	12 (52.2)	2 (33.3)
Other reasons <sup>c</sup>	4 (16.7)	1 (4.3)	—

NOTE: Percentages do not total 100% because participants could select one or more reasons for using a test.

<sup>a</sup>Other reasons included "not wanting anyone to know," "wanting to try it," and "getting it for free" as well as others that were mentioned once or twice.

<sup>b</sup>Other reasons included "wanting to try it," "insurance reasons," "getting it for free," and "it was something new" as well as others that were mentioned once or twice.

<sup>c</sup>Other reasons included "hated waiting two weeks for results," "drug treatment," "hospital recommended," and "would have precluded plasma donation."

MSM = man who has sex with men

IDU = injection drug user

HRH = high-risk heterosexual

Among those with awareness of rapid tests, the main reasons given for not using the rapid test were similar to reasons reported for not using the oral test. The method was "not offered" and "preference for the standard test" were reasons reported by approximately half of the tested populations across the three venues as well as by the untested STD clinic respondents.

## DISCUSSION

Overall, awareness and use of alternative methods of HIV testing was limited across all of the venues. Previous studies about acceptability and preference for alternative HIV tests,<sup>6-11</sup> as well as misconceptions about the accuracy of the tests as reported in our analysis, suggest that appropriate education about alternative HIV tests has the potential to increase testing among at-risk individuals.



**Table 4. Reasons for not using specified test by those aware of specified test, by HIV risk status, among individuals interviewed in seven states as part of the HIV Testing Survey, September 2000 to February 2001**

Test	MSMs		IDUs		HRHs	
	Percent not tested	Percent tested	Percent not tested	Percent tested	Percent not tested	Percent tested
Home collection kit	(n=58)	(n=636)	(n=20)	(n=304)	(n=100)	(n=357)
Concerned about privacy	19	12	20	6	11	7
Results could be less accurate	28	45	35	35	29	41
Kits were too expensive	16	13	40	42	16	21
Want face to face counseling	22	44	40	41	38	51
Uncomfortable asking for the kit	12	16	20	19	26	19
Prefer the standard test	35	62	45	53	47	70
Other reasons:						
Already knew status	—	6	—	2	—	—
Didn't think test was needed/didn't want test	12	3	15	4	19	9
Lack of access	—	4	—	3	6	1
Lack of knowledge/trust	—	3	—	2	—	3
Prefers a doctor	—	1	—	1	—	3
Other <sup>a</sup>	9	5	—	4	1	4
OraSure <sup>®</sup>	(n=21)	(n=327)	(n=13)	(n=197)	(n=40)	(n=154)
Method was not offered	19	51	31	55	10	47
Concerned about privacy	5	6	—	10	3	3
Results could be less accurate	19	36	15	32	35	30
Prefer the standard test	19	50	23	52	38	63
Other reasons:						
Already knew status	—	5	—	2	—	—
Didn't think test was needed/didn't want test	14	3	—	2	10	5
Lack of access	—	5	—	3	5	2
Lack of knowledge/trust	10	2	—	—	3	3
Other <sup>b</sup>	—	2	8	1	5	—
Rapid tests	(n=14)	(n=173)	(n=0)	(n=64)	(n=15)	(n=54)
Method was not offered	7	43	—	47	27	43
Concerned about privacy	29	7	—	11	13	4
Results could be less accurate	22	28	—	19	13	20
Prefer the standard test	29	54	—	44	53	50
Other reasons:						
Already knew status	—	5	—	3	—	—
Didn't think test was needed/didn't want test	—	3	—	—	27	4
Lack of access	—	4	—	5	13	—
Lack of knowledge/trust	7	6	—	3	—	4
Other <sup>c</sup>	7	1	—	2	7	2

NOTE: Percentages do not total 100% because participants could select one or more reasons for using a test.

<sup>a</sup>Other reasons included "same partner," "just didn't use," "unprofessional," "can't prick self," "other test free," "insurance reasons," "never been tested," and "blood test" as well as others that were mentioned only once or twice.

<sup>b</sup>Other reasons included "never been tested," "blood test," "insurance reasons," "other test free," "embarrassed," "burned out," "military," and "God's will."

<sup>c</sup>Other reasons included "never been tested," "inconvenient," "insurance reasons," "burned out."

MSM = man who has sex with men

IDU = injection drug user

HRH = high-risk heterosexual

Studies have shown that alternative HIV tests are highly accepted and may be preferred when people are educated about these tests. Studies looking at adolescents' preferences for HIV tests have shown that noninvasive HIV antibody tests (such as oral mucosal transudate and urine collection) and tests with rapid results were preferred.<sup>6,7</sup> Similar studies have been done to look at the HIV testing preferences of adults.<sup>8-12</sup> Most participants in these studies preferred rapid testing, followed by testing using oral fluid or urine. Throughout all of the studies, the least preferred method was standard blood testing.

In the present study, respondents commonly cited concern for accuracy as a reason for not using rapid tests. The standard blood draw test, home collection kit, and the oral test use different collection methods and specimens, but each uses the same screening ELISA and confirmation Western Blot, and all have been shown to have sensitivity and specificity greater than 99%.<sup>13,14</sup> The rapid tests, which use a different testing method, have been shown to have equally high sensitivity and specificity.<sup>15,16</sup> Therefore, the concern that alternative tests may be less accurate is not supported by experience with the tests and is likely due to lack of knowledge about test performance. This suggests a need for increased education among high-risk populations about the accuracy of these tests.

Our findings related to knowledge and use of home collection kits were very similar to the results of an analysis of data from an earlier version of HITS conducted in 1998 in different project areas.<sup>11</sup> The results of that earlier survey indicated that 46% of respondents had never heard of home collection kits, and only 1% had used the kits. Our analysis showed that in 2000 and in different geographic areas, 46% of interviewees had never heard of home collection kits and a very small proportion of individuals (<2%) reported ever having used the kits.

A common reason reported by respondents from all venues for not testing with the oral test or rapid tests was that the test was not offered to them. Providers might not offer alternative tests if "standard" testing is accepted by a client. A provider survey to ascertain the levels of knowledge and situations in which alternative testing may or may not be offered by physicians and HIV testing centers would help to determine specific educational needs.

Our analysis and the HITS 2000 study have some limitations. Although an extensive, formal formative research process was conducted to select venues representative of communities at risk for HIV infection, sites were not randomly selected, and therefore our findings may not be generalizable to all individuals at

risk for HIV infection in the areas where the survey was conducted. Also, our response rate of 66% of eligible individuals may introduce some bias if those refusing interviews were different from those accepting interviews. We did not collect information on the demographics of those who declined to talk to the recruiter, and thus could not characterize this potential bias. There was also variation in state laws regarding HIV infection reporting at the time of the study: in five participating states, HIV infection was reported with names used as identifiers; in one state, codes were used as identifiers; and in one state, reporting was by name with subsequent conversion to code.

The results from this analysis suggest that promotion of alternative HIV test technologies has not been fully developed as a strategy to increase levels of HIV testing among people at risk for HIV infection. Increasing awareness of these alternative tests among individuals at risk and providers may be an appropriate strategy to increase the numbers of people who know their serostatus; however, our analysis does not make clear the extent to which availability of alternative HIV tests would increase testing among those high-risk individuals previously untested for HIV. This question, which relates most directly to CDC's strategic goal of increasing awareness of serostatus among people living with HIV infection, may be answered by questions in future interview studies about willingness or intent to test with alternative HIV tests among individuals untested in the past.

In the meantime, promotion of the availability of alternative tests accompanied by education of providers and individuals at risk for HIV have the potential to increase testing in high-risk communities. Evaluation of the impact of alternative test availability and education on HIV testing behaviors will allow an objective measure of the benefits, if any, of this approach in increasing HIV testing. Regulatory agencies should consider strategies to make rapid tests with well-documented performance characteristics available in public health and clinical settings.

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