REPORT ON THE SURVEY TO ASSESS THE IMPACT OF WITHDRAWAL OF THE HIV ORAL FLUID ASSAY
August 2007

BACKGROUND AND INTRODUCTION

Since its introduction in the United States in 1996, oral fluid HIV testing has been an important tool for publicly supported HIV testing efforts. The advent of oral fluid testing enabled HIV testing to move out of clinic settings and put HIV testing in the hands of community-based organizations. It also enabled HIV testing in the context of outreach and other "field-based" activities such as partner counseling and referral services (PCRS). This greatly facilitated access to, and utilization of, HIV testing services by at-risk communities. The precise number of conventional oral fluid HIV tests conducted in publicly supported HIV testing programs is not known. However, findings from this survey revealed that 14 percent (220,468 of 1,585,105) of all HIV tests performed in 2006 in association with health department supported programs were conventional oral fluid tests. Thus, oral fluid HIV testing continues to be a key tool to health department HIV prevention efforts.

Beginning in early 2005, health departments began to experience the recurrent national shortage of bioMerieux Vironostika HIV-1 oral fluid enzyme immunoassay (EIA) kits. These shortages negatively impacted health department HIV testing programs in that, during shortages, some health departments' reported significant delays in obtaining HIV test results (and returning results to clients), while other health departments temporarily suspended HIV testing programs. In October 2005, the Association of Public Health Laboratories (APHL) submitted a proposal to the Centers for Medicare and Medicaid Services (CMS) for public health laboratories to use a serum-based assay to test oral fluids. This proposal enabling "off label use" of serum-based assays (based on validation studies[1]) was accepted and many public health laboratories have reported to APHL that they have adopted the proposal.

In late December 2006, bioMerieux announced its plans to discontinue production of their HIV-1 serum and oral fluid Vironostika EIA platforms by the end of 2007. To gain a better understanding of health department plans for oral fluid HIV testing in light of the withdrawal of these products, and the potential impact upon HIV testing programs, NASTAD conducted a brief survey among health departments. Findings will be used to identify key areas for education and technical assistance across health departments

[1] Validation studies compare one test to another, FDA-approved test to determine whether the non-FDA approved test performs within accepted standards.

and to identify important areas of advocacy with federal partners and the diagnostic manufacturers.

METHODOLOGY

A brief, five-item, self-administered survey questionnaire (Appendix A) was developed, in consultation with the APHL. The questionnaire asked health departments to describe their plans for adoption of alternative testing technologies, including plans for validation studies, if any. Health departments were also asked to describe the impact on HIV testing efforts associated with withdrawal of these products. The survey was distributed electronically to HIV prevention program managers in late March 2007 with a two-week response time. Follow-up correspondence was transmitted to state HIV/AIDS program directors in late April to encourage response. In total, 28 of 50 (56 percent) state health departments completed and returned survey questionnaires.

FINDINGS

Adoption of Alternative Testing Strategies

Health departments were asked to indicate their plans for responding to the withdrawal of the Vironostika products. As presented in Table 1, a majority (59 percent) of responding health departments indicated they planned to validate a serum-based assay for use with oral fluid specimens. One in five health departments indicated plans to convert to oral rapid HIV testing using the *OraQuick Advance* product.

Table 1: Health Department Plans to Respond to Withdrawal of Vironostika Products (N=27)	**Percent Responding[2]**
Validate a serum assay for use with oral fluid (N=16)	59.3%
Convert to oral rapid HIV testing using OraQuick Advance (N=6)	22.2%
Discontinue oral fluid testing and convert to venipuncture (N=3)	11.1%
Discontinue oral fluid testing and convert to DBS (N=3)	11.1%
Send all oral fluid specimens to another laboratory (N=2)	7.4%
Other (e.g., *convert to fingerstick rapid testing; have sufficient reagents through 2008; have already discontinued oral fluid and will not validate; already switched to oral rapid testing; already switched to another lab via direct agreement with OraSure*) (N=5)	18.5%

Six health departments reported plans to adopt multiple testing strategies to address the withdrawal of the Vironostika products. Three of these health departments indicated combining conversion to serum testing via venipuncture with conversion to oral fluid rapid HIV testing. One is sending oral specimens to another lab and converting to use of dried blood spots (DBS); one is combining conversion to oral rapid testing with validation of a serum assay; and one health department is combining conversion to oral

[2] Does not total 100 percent. Health departments were allowed multiple responses.

rapid testing with sending oral specimens to another laboratory. A jurisdiction-by-jurisdiction summary is presented in Appendix B.

Health departments were asked to indicate the approximate date by which they expect to implement alternative testing methods. As presented in Table 2, of the 20 health departments that responded to this question, five (25 percent) indicated having already implemented alternative testing methods at the time of the survey.

Table 2: Approximate Date for Implementing Alternative Testing Methods (N=20)	**Percent Responding**
2003 – 2006 (N=3)	15.0%
January – March 2007 (N=2)	10.0%
April – June 2007 (N=6)	30.0%
July – September 2007 (N=5)	25.0%
October – December 2007 (N=1)	5.0%
2008 (N=3)	15.0%

The majority of health departments (80 percent) indicate they will have implemented an alternative method for conducting oral HIV testing by September 2007.

Validation of Serum-Based Assays

Health departments that indicated plans to validate a serum-based assay were asked to indicate which EIA they planned to validate (or already had). As presented in Table 3, the majority of health departments indicated planning to validate the Bio-Rad HIV-1/HIV-2 Plus O EIA.

Table 3: Serum-based assays health departments are validating for use with oral fluid[1] (N=16)	**Percent Responding**
Bio-Rad HIV-1/HIV-2 Plus O EIA (Bio-Rad Laboratories) (N=13)	81.3%
Genetic Systems rLAV EIA (Bio-Rad Laboratories) (N=2)	12.5%
Abbott HIV AB HIV-1/2 EIA (Abbott Laboratories) (N=1)	6.3%
AVIDIA Centaur HIV-1/O/2 Enhanced EIA (Bayer) (N=0)	0.0%
Other (N=2)	12.5%

One health department (MI) indicated plans to validate both the Bio-Rad HIV-1/HIV-2 Plus O EIA and the Genetic Systems rLAV EIA. Another health department (IN) indicated plans to validate the Abbott HIV AB HIV-1/2 EIA, but were also "investigating the use of Bio-Rad" for the future.

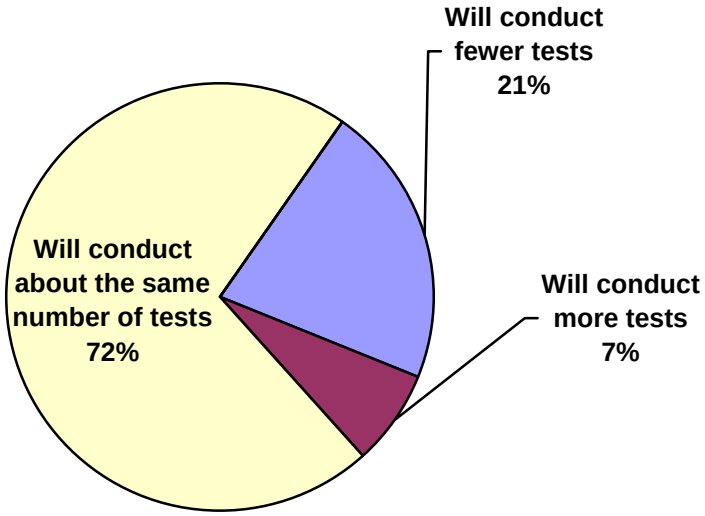
Thirteen of the 16 health departments that reported plans to validate a serum-based assay provided the approximate dates on which validation studies were (or will be) initiated. Eight of these 13 (62 percent) had already initiated validation studies by late

April 2007, when bioMerieux announced they would no longer be able to provide the Vironostika products. Four of these health departments initiated validation studies between December 2005 and May 2006. The other four health departments that indicated having already initiated validation studies did so between January and April 2007. The remaining five health departments indicated plans to begin validation studies by the end of 2007. All of the health departments that indicated plans to validate a serum assay indicated their willingness to share results of validation studies with NASTAD, APHL and the CDC.

Impact on Overall Testing Efforts

Health departments were asked to indicate how withdrawal of the Vironostika products is expected to impact HIV testing programs. As presented in Figure 1, most health departments do not anticipate being negatively impacted by the withdrawal of the Vironostika products.

Figure 1: Responses to "*How will withdrawal of the Vironostika products impact your HIV testing efforts, overall?*"



Six health departments (21 percent) indicated they would be conducting fewer HIV tests as a result of the withdrawal of Vironostika products. Of these, four (CA, HI, MD, VA) indicated that they would be converting, at least in part, to oral fluid rapid HIV testing. The remaining two jurisdictions (GA, MO) both reported that they planned to valid a serum-based assay for use with oral fluid testing. Only two health departments (ID, NJ) (seven percent) indicated that they anticipated conducting more HIV tests.

Health departments were asked to indicate the number of tests conducted by health department supported programs during 2006, by testing method. During 2006, health

departments reported conducting a total of 1,585,105 HIV tests. Of those, 926,225 HIV tests were conducted by conventional testing methods using venipuncture (58 percent, mean 33,080; median 185,000); 220,468 conventional tests were conducted using oral fluid (14 percent; mean 8,819; median 2,588); 264,890 were conducted using finger stick or venous blood rapid tests (17 percent; mean 11,037; median 6,406); and 173,522 were conducted using oral fluid rapid tests (11 percent; mean 8,263; median 2,001).

Health departments were also asked to indicate the approximate number of tests that they anticipate conducting annually, subsequent to the withdrawal of the Vironostika products. Health departments reported that they anticipate conducting a total of 1,512,910 HIV tests. Of those, 882,589 will be conducted by conventional testing methods using venipuncture (58 percent; mean 33,946; median 18,211); 153,002 will be conventional tests using oral fluid (10 percent; mean 6,652; median 750); 287,671 will be conducted using rapid tests conducted on finger stick or venous blood (19 percent; mean 12,507; median 4,300); and 189,648 will be oral fluid rapid tests (13 percent; mean 9,482; median 1,925).

DISCUSSION

A majority of health departments responding to this survey indicated that they do not expect the withdrawal of the Vironostika products to adversely affect HIV testing programs overall, at least for the short term. Most health departments anticipate being able to convert HIV testing to one or more alternative methods, with a majority indicating that they have validated, or will validate, a serum-based assay for use with oral fluid HIV testing. In mid-April 2007, however, bioMerieux announced that it would cease production of the Vironostika EIA, many months earlier than previously planned. This will likely have a negative impact on health department efforts to conduct validation studies insofar as all health departments may not have a sufficient supply of reagents to complete validation studies. Indeed, survey findings revealed that only one-quarter of health departments had initiated validation tests by the end of March 2007 and 45 percent indicated that they would not begin until July 2007 or later.

It is important to note that validation studies allow for the “off label” use of a test and while CMS has accepted use of validated serum-based assays as an interim solution to the current situation, it is impossible to tell if they will continue to allow for this indefinitely. If CMS withdraws its support for use of validated serum-based assays, this will undoubtedly have a substantial impact on health department HIV testing efforts as many programs, particularly those operated by community-based providers or which are delivered in outreach settings, rely on the availability of oral testing and cannot practically convert to venipuncture. At the same time, conversion to rapid oral tests entirely would be cost prohibitive for health department programs, as the cost of oral rapid HIV tests is substantially higher than for conventional oral testing. Thus, the best long-term solution is introduction of a replacement FDA-approved oral EIA.

Based on survey findings, a small number of health departments (several of which operate relatively high volume testing programs) will be immediately and substantially adversely affected by this situation. Six health departments indicated they would be conducting fewer HIV tests as a result of the withdrawal of Vironostika products. Of these, four (CA, HI, MD, VA) indicated that they would be converting, at least in part, to oral fluid rapid HIV testing. Three of these health departments specifically linked the projected decrease in testing volume to the relatively higher cost of oral fluid rapid tests, when compared with conventional testing methods, regardless of specimen used. It is notable that these jurisdictions were four of only six jurisdictions that reported plans to convert to oral fluid rapid testing. Two of these jurisdictions (CA, HI) are known to have statutory and/or regulatory barriers associated with testing using venous or whole blood samples. Both of these jurisdictions are also known to have statutory or regulatory challenges associated with using a validated serum-based assay for oral fluid testing. The other two jurisdictions (NJ, UT) planning to convert to oral rapid testing also reported plans to adopt other methods for testing (e.g., oral testing with validated serum-based assay, conversion to venipuncture, conversion to dried blood spots).

APPENDIX A

SURVEY TO ASSESS THE IMPACT OF WITHDRAWAL OF ORAL FLUID ASSAY

In late December, NASTAD alerted AIDS Directors that bioMérieux will discontinue production of their HIV-1 serum and oral fluid Vironostika enzyme immunoassay (EIA) platforms in 2007. The company has indicated that it intends to manufacture serum and oral fluid Vironostika kits in sufficient quantity to ensure that current customers are supplied through the end of 2007, unless all current customers are able to transition to an alternative method for testing prior to that time.

To help us gain a better understanding of health department plans for oral HIV testing, in response to withdrawal of this product, we are asking for health department HIV/AIDS program managers to take a few minutes to respond to a few questions. In completing these questions, we encourage you to work with your public health laboratory partners.

Jurisdiction:

Contact: Phone: Email:

1. Approximately how many oral fluid HIV tests are conducted by the health department and/or its grantees last year?

2. How do you plan to respond to the withdrawal of the Vironostika products (check all that apply)?

☐ Send all oral fluid specimens to another laboratory for testing.
☐ Discontinue oral fluid testing and convert sites to serum based testing via venipuncture.
☐ Discontinue oral fluid testing and convert to use of dried blood spots.
☐ Convert to oral rapid HIV testing using OraQuick Advance.
☐ Validate a serum-based assay for use with oral fluid.
☐ Other (please describe):

2a. If you plan to validate a serum-based assay, please indicate which EIA:

☐ Bio-Rad HIV-1/HIV-2 Plus O EIA (Bio-Rad Laboratories)
☐ Genetic Systems rLAV EIA (Bio-Rad Laboratories)
☐ Abbott HIV AB HIV-1/2 EIA (Abbott Laboratories)
☐ AVIDIA Centaur HIV-1/O/2 Enhanced EIA (Bayer)
☐ Other (please describe):

2b. By what date do you to expect to begin validation?

/ /

2c. Once completed, would you be willing to share your validation study with NASTAD, APHL, and CDC?

☐ Yes
☐ No

3. By what date, approximately, do you expect to implement an alternative testing method(s)?

/ /

4. In the following table, please indicate the approximate number of HIV tests conducted by health department supported programs in 2006:

Conventional Tests Conducted with Venipuncture 2006	Conventional Tests Conducted using Oral Fluid Collection Device 2006	Rapid Tests Conducted with Fingerstick/Blood 2006	Rapid Tests conducted with Oral Fluid 2006

5. How will withdrawal of the Vironostika products impact your HIV testing efforts, overall?

☐ We will conduct fewer HIV tests
☐ We will conduct more HIV tests
☐ We will conduct about the same number of HIV tests

5a. In the following table, please indicate the approximate number of HIV tests that you anticipate conducting, annually, after the withdrawal of the Vironostika products?

Conventional Tests Conducted with Venipuncture	Conventional Tests Conducted using Oral Fluid Collection Device	Rapid Tests Conducted with Fingerstick/Blood	Rapid Tests conducted with Oral Fluid

Thank you for your time in completing this survey. Please return your completed survey, by fax or email, to Connie Jorstad at cjorstad@NASTAD.org or 202.434.8092. We would appreciate your response by **Wednesday, April 11, 2007**. Thank you.

APPENDIX B

Jurisdiction-Specific Responses to "*How do you plan to respond to the withdrawal of the Vironostika products?*" (N=27)

STATE	Send Oral Specimens to Another Lab	Convert to Serum Based via Venipuncture	Convert to DBS	Convert to Oral Rapid Testing	Validate a Serum-Based Assay for use with Oral Fluid	Other
Arizona					X	
California				X		
Florida					X	
Georgia					X	
Hawaii	X	X		X		
Idaho						*We have only used OraQuick Advance*
Illinois					X	
Indiana					X	
Kansas						*Lab (non-DOH) has secured enough reagents to continue processing thru CY Q1 2008; KS is not directly participating in validating a serum-based assay.*
Massachusetts					X	
Maryland		X		X		
Michigan					X	
Minnesota						*Convert to fingerstick rapid testing using UniGold and OraQuick; clinic sites will continue both serum and rapid testing*
Missouri					X	
Mississippi						
New Hampshire					X	
New Jersey		X	X	X		
New York	X		X			
Oklahoma			X			
Pennsylvania					X	
Tennessee						*Using Quest lab's products.*
Texas					X	
Utah				X	X	
Virginia				X		*In December 2006 the State lab discontinued oral fluid testing due to the chronic shortage & backorders for the Vironostika kits and to date has not indicated it will validate a serum-based assay. VDH recently entered into a direct contract with OraSure to process oral fluid specimens through a subcontract with Quest.*
Vermont					X	
Washington					X	
Wisconsin					X	
Wyoming					X	