Results of a Physician Survey on Ordering Viral Load Testing
Opportunity for Laboratory Consultation

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Objective.—To profile physicians' practices, utilization, and understanding of human immunodeficiency virus type 1 RNA (viral load) testing and the laboratory's role in this testing.

Design.—Cross sectional study using a 34-item self-report survey mailed to physicians identified as requesting viral load testing, with follow-up mailings to nonresponders.

Participants.—A sampling of US physicians specializing in infectious diseases, internal medicine, and family practice associated with high, medium, and low human immunodeficiency virus/acquired immunodeficiency syndrome incidence areas.

Results.—Most respondents using viral load results were infectious diseases specialists practicing in urban areas. The reasons most frequently given for requesting viral load testing were (1) to assist in patient follow-up or monitoring (75.4%), and (2) to initiate/guide therapy (62.5%). Respondents indicated that the interpretation and use of viral load results presented difficulty in the areas of patient treatment and in determining what change from baseline was clinically significant. Few respondents used the testing laboratory pathologist as a resource for interpreting viral load test results.

Conclusions.—Our study indicates that physicians have questions about (1) the meaning of viral load tests, (2) how often to monitor the viral load, and (3) what change from baseline of the viral load is significant. Few physicians avail themselves of the expertise available in the laboratory for testing viral loads and interpreting such results.

(Arch Pathol Lab Med. 2003;127:446–450)
A total of 147 physicians responded to the survey for a response rate of 29.4%. Only 66 (44.9%) of the 147 physicians responding indicated that they requested HIV-RNA testing. Most of the respondents who requested such testing listed infectious diseases as their specialty (80.3%, 53 of 66). It should be noted that the total number of responses varied because some respondents did not answer all of the questions. The mean number of years for physicians in family practice ($n = 7$) was 12.6 years, with a range of 9 to 20 years. For physicians in infectious diseases ($n = 48$), it was 11.3 years, ranging from 1 to 28 years, and for physicians in internal medicine ($n = 8$), it was 9.6 years, ranging from 6 to 15 years. The distribution of respondents by specialty and the number of years in specialty practice varied. Most respondents worked in a group practice (34.9%) or medical school (19.0%) setting. Fewer worked in a nongovernment hospital (14.3%), were in sole practice (11.1%), or worked in a government health system (7.9%). Even fewer of the respondents were affiliated with a health maintenance organization (6.3%), were in research (3.2%), or were affiliated with a community health center (3.2%).

Physicians were asked to indicate their specialty and whether they practiced in an urban or a suburban setting. As mentioned earlier, most respondents were infectious diseases practitioners (80.3%), and most respondents indicated that they had an urban practice (68.2%, 45 of 66). When considering the infectious diseases respondents by specialty and geographic setting, most had practices in urban (54.6%) or suburban (24.2%) settings. (Note: There were only 7 respondents in the “rural” category, none of whom requested this testing.)

Of those in internal medicine (91.1% of the total sample), most (83.5%) practiced in an urban setting. Finally, those in general practice (10.6% of this total) were more equally distributed between the urban (57.5%) and suburban (42.4%) settings.

Physicians were asked to indicate reasons for using viral load testing and to rank their use in order of frequency. Figure 1 shows the responses to this question. Most respondents used the testing for the follow-up or monitoring of patients (75.4%), with initiation/guidance of therapy being the second most frequent reason (62.5%).

In response to whether interpretation and use of viral load results had ever been a problem, only a few physicians (12.1%, 8 of 66) reported frequently occurring problems, and these were reported in the areas of (1) how to treat the patient, and (2) what change from baseline was clinically significant. In the second category, “sometimes a problem,” the most frequent responses again were for (1) how to treat the patient (65.1%), and (2) what change from baseline is clinically significant (62.1%). Figure 2 displays the results for the possible choices.

The resources that physicians use to interpret the results of the viral load test are shown in the Table. Physicians responding to the survey identified other knowledgeable physicians (54.5%, 36 of 66), medical journals (53.0%, 33 of 66), and reference books (27.3%, 18 of 66) as resources consulted “often” or “occasionally.” Few physicians used the laboratory pathologist (4.5%, 3 of 66) and test manufacturer (4.5%, 3 of 66) as an “often” or “occasional” source.

When asked not about interpretation but about treat-
Figure 1. Reasons for requesting viral load testing by ranking for frequency of use (some respondents gave >1 reason for the same ranking).

Figure 2. Rating of problem frequency for interpretation and use of viral load results (n = 66).

Physicians’ Choices of Resources for Interpretation and Use of Viral Load Results (n = 66)*

<table>
<thead>
<tr>
<th>Source</th>
<th>Often</th>
<th>Occasionally</th>
<th>Seldom</th>
<th>Never</th>
<th>No Response to Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physicians</td>
<td>13.6</td>
<td>40.9</td>
<td>16.7</td>
<td>19.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Lab pathologist</td>
<td>1.7</td>
<td>3.4</td>
<td>16.7</td>
<td>68.2</td>
<td>10.6</td>
</tr>
<tr>
<td>Lab scientist</td>
<td>1.7</td>
<td>12.1</td>
<td>22.7</td>
<td>53</td>
<td>9.1</td>
</tr>
<tr>
<td>Test manufacturer</td>
<td>0</td>
<td>4.5</td>
<td>16.7</td>
<td>66.7</td>
<td>12.1</td>
</tr>
<tr>
<td>AIDS hotline</td>
<td>0</td>
<td>0</td>
<td>15.2</td>
<td>74.2</td>
<td>10.6</td>
</tr>
<tr>
<td>Reference book</td>
<td>7.6</td>
<td>19.7</td>
<td>19.7</td>
<td>40.9</td>
<td>12.6</td>
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<td>MMWR</td>
<td>9.1</td>
<td>15.1</td>
<td>16.7</td>
<td>50.0</td>
<td>9.1</td>
</tr>
<tr>
<td>NIH publications</td>
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<td>13.6</td>
<td>13.6</td>
<td>51.5</td>
<td>12.1</td>
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<tr>
<td>Journals</td>
<td>16.7</td>
<td>36.4</td>
<td>13.6</td>
<td>27.3</td>
<td>6.0</td>
</tr>
<tr>
<td>Newsletters</td>
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<td>12.1</td>
<td>4.5</td>
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<tr>
<td>Internet</td>
<td>4.5</td>
<td>10.6</td>
<td>15.2</td>
<td>51.5</td>
<td>18.2</td>
</tr>
</tbody>
</table>

* AIDS indicates acquired immunodeficiency syndrome; MMWR, Morbidity and Mortality Weekly Report; and NIH, National Institutes of Health.
to treat the patient on the basis of the result, how often to monitor viral load, and what change from baseline is significant. Physicians tend to rely on one another or on current medical journals for information about using or interpreting tests. Few, if any, use the laboratory as a resource for these needs. Laboratorians, especially clinical pathologists, are experts in testing and test interpretation. Viral load testing should be noted as a unique opportunity for greater dialog between treating physicians and the laboratorians, who are best positioned to understand the test methods and provide consultation. Efforts should be made to both increase the awareness and invite the use of this expertise.

On the basis of the results obtained in this study, we have identified opportunities for pathology consultation concerning viral load testing. While there may be many approaches and strategies the laboratory pathologist could use to optimize the opportunity for pathology consultation, we suggest some strategies for consideration. A class or seminar on a new technology or methodology could be presented for physicians ordering or considering its use, preferably with continuing education credits offered. Manufacturers may be willing to assist in course development and/or delivery. The test requisition and the laboratory test report could contain the name and telephone number of the laboratory pathologist or the laboratory director for consultation. Laboratory representatives should then be prepared to answer physician questions on the use of the test, the test methods, the test results, and the restrictions in using the test results. The pathologist or laboratory director could also, if appropriate, suggest other tests (eg, viral resistance or CD4 T-cell counts) that might provide more information for patient treatment. The laboratory test report could also contain the name and telephone number of a staff infectious diseases specialist who might be able to provide consultation to the requesting physician concerning testing issues and clinical treatment. In the case of physician groups, a hard-copy testing alert could be disseminated throughout the integrated system alerting physicians of potential problems and the most appropriate use of the test. Additionally, commercial laboratories could use this strategy to disseminate information to their client base. In integrated systems, individual hospital complexes or medical organizations could disseminate this information through a Web site. This approach could be used internally for organizations as an Intranet site or as an Internet site for access between external organizations. The laboratory may already be implementing some of these strategies, but maximizing opportunities for additional avenues of consultation could benefit the laboratory’s physician clients by providing the added value.

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**References**


