

# **Ryan White Title I Medical Record Review 2001**

**Prepared for the Miami-Dade County  
Office of Management and Budget  
Ryan White Title I Program**

**July 1, 2002**



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Funded entirely by Ryan White Title I funds from the Health Resources and Services  
Administration Through Miami-Dade County

## Introduction

This document reports on the 2001 review of medical care provided to HIV positive people eligible for services under Title I of the Ryan White CARE Act. The CARE Act is administered locally by the Miami-Dade County Office of Management and Budget. During 2001, 12 agencies were funded to provide outpatient medical care services. A review of medical records for these 12 agencies, covering care provided between January 2000 through November 2001, was conducted late in 2001 at the provider locations.

The purpose of the review was to assess HIV/AIDS primary medical care funded in full or in part by Ryan White Title I. Similar reviews have been conducted with Title I-funded medical care providers in 1997, 1999, and 2000. Williams, Stern & Associates (WSA) administered the review and analyzed the resultant data per the terms and conditions of its contract with the Miami-Dade County Office of Management and Budget. Medical Systems Review, Inc. was engaged by WSA to perform the actual record reviews.

A total of 594 records were reviewed for 12 providers. Patients were divided into four categories for the purpose of analysis:

- undetectable level of disease
- detectable
- high risk
- very high risk

The major findings for the 2001 review included:

- The population appears healthier, judging from measures such as CD4 and viral load counts. A higher percentage had undetectable viral loads.
- About ten percent fall into a very high-risk category; this is a constant figure.
- There are no disparities in either gender or race/ethnicity in the receipt of HAART.
- Those with undetectable viral loads are more likely to be on HAART and less likely to be on no medications.
- A slightly higher percentage of patients are not on any antiretroviral therapy.
- There is a great deal of variation both within providers and among them in terms of compliance with immunizations and labs.
- There was large variation in the amount of education provided to patients.

Comparing the 2001 review with the 2000 review yielded the following major trends:

- Screening and assessment scores have improved overall.
- TB screening and treatment have improved.
- Gynecological screening continues to improve, but more improvement is needed.
- Providers scored lower, on average, in several areas.
- Immunizations continue to need improvement.

## **Contents of the Report**

This report consists of a written summary, summary tables and provider-specific tables summarizing results of the review. Comparisons with previous years' findings and provider-specific comparisons for individual questions are presented. A summary table of averaged scores across all providers as well as the relevant provider-specific tables was mailed on February 20, 2002 to each agency for which records were reviewed.

This report should be viewed as a tool that identifies areas of excellence as well as areas of weakness. Providers are therefore urged to review their individual scores on each question in order to identify areas of strength and areas needing improvement. To better evaluate an individual performance, providers should also review other agencies' results and use the summary scores as benchmarks for their own performance. Where areas of weakness are identified processes need to be examined and modified in order to implement improvements.

Included in this report are six appendices. Appendix I contains a resource list of major clinical guidelines currently in use, as well as selected educational resources. Appendix II contains the 2001 instrument used for the record review. Appendix III consists of a letter from Mercy Hospital addressing shortages of tetanus and diphtheria toxoids during the review period. Appendix IV contains provider-specific tables of responses to each question

## **The Instrument**

The protocol used for the 2001 review was developed from the Ryan White Title III review, the New York State Department of Health review, and the 2000 Title I Miami-Dade review, including revisions made by the Medical Care Subcommittee of the HIV/AIDS Partnership. Nurses from Medical Quality Resources, Inc. (MQR) also made suggestions for improving the instrument.

The Medical Care Subcommittee reviewed the Title I Medical Care Guidelines developed locally for guidance on questions. Questions were divided into categories that included: assessments and referrals; laboratory; therapy/interventions; and antiretroviral medications. A list of medications was developed that included Reverse Transcriptase Inhibitors, Non-nucleoside Reverse Transcriptase Inhibitors, and Protease Inhibitors. A copy of the review instrument, approved by the Medical Care Subcommittee, is included as Appendix II.

## **Review Process**

Three experienced record reviewers (RNs) from Medical Systems Review, Inc. conducted the actual chart reviews. A training session, given by Williams, Stern & Associates, was provided to assure cross-reviewer consistency. The reviews were conducted between October 13 and December 4, 2001. Data collected was recorded by the nurses and the information was scanned into a database programmed for scoring and reporting.

The reviewers examined the medical records in the random order assigned by WSA. The review nurses and staff at MQR who had contact with the providers commented that cooperation at the

centers was good. Only records of clients who had received primary care were reviewed. If a record was not available for review, the reason was indicated by the reviewer. A total of 127 records (18%) were not available at the time of review. Reasons records requested in advance were not available at the time of review are detailed in Table I.

Provider	Specialty Care	Patient Inactive	Chart Out	Total Not Reviewed	Total Reviewed
Borinquen	13	0	7	20	35
CARE Resource	0	0	12	12	35
CHI	3	0	7	10	35
EOFHC	0	0	0	0	30
Helen Bentley	0	0	0	0	20
Mercy Hospital	2	9	1	12	81
Miami Beach	0	0	0	0	45
MOVERS	0	2	1	3	15
PHT/Liberty City	0	2	3	5	30
PHT/North Dade	1	0	1	2	45
PHT/PET Center	0	0	0	0	50
South Shore	11	26	5	42	75
University of Miami	11	3	7	21	98
Totals	41	42	44	127	594

### **Providers and Sites Reviewed**

Records were reviewed for 12 providers at 19 locations: Borinquen Health Clinic; CARE Resource; Community Health of South Dade (CHI); Equal Opportunity Family Health Center (EOFHC); Helen B. Bentley Family Health Center; Liberty City Health Services Center; Mercy Hospital (Albert Canas, MD; Steinhart Medical Group; Jose Arocha, MD; Donna Jacobson, DO; Camillus Health Concern; MOVERS/Deborah Holmes, MD; Irma R. Rey, MD; Jose Hernandez, DO; and Drs. Piperato, King, & Wohlfeiler); North Dade Health Services; Prevention, Education and Treatment (PET) Center; Miami Beach Community Health Center, Inc. (formerly Stanley Myers); South Shore Hospital Outpatient Services; and the University of Miami. Although MOVERS was under subcontract with Mercy Hospital during the report period, they are now an independent provider of medical care. MOVERS' individual data is therefore reported separately from Mercy's.

### **The Review Sample**

#### *Sample selection*

Table 2 compares the number of records reviewed for each provider with the total number of Ryan White Title I outpatient medical clients served. Records for review were chosen from a

pool of adult clients in the Ryan White Title I Service Delivery Information System (SDIS). Record selections were randomly drawn by CIS number for clients who had at least one medical visit billed between March of 2000 and September of 2001: the scope of review for those records selected covered medical visits between January 3, 2000 and October 31, 2001. A total of 594 records were reviewed representing nine percent of the 6,500 clients who received outpatient medical care during Year 10 (3/1/00 - 2/28/01). A sample of this size provided a confidence interval of plus or minus 5.1 percent with 99 percent certainty or plus or minus 3.8 percent with 95 percent certainty.

A stratified random sample, roughly proportional to the number of patients served by each provider, was selected for the review. Small providers were over-sampled to ensure sufficient data for analysis. For providers with more than one service location (e.g., Mercy) patients were selected from each location. Once the number of records to be reviewed at each provider site was determined, clients were randomly selected from those served at that site. WSA provided the reviewers with lists of identification numbers for patients to be reviewed.

<b>Table 2. Review Sample for Title I Outpatient Medical Care by Provider</b>				
	Sample		Total Ryan White	
	Number	Percent	Number	Percent
Borinquen	35	6%	167	2%
CARE Resource	35	6%	161	2%
CHI	35	6%	204	3%
EOFHC	30	5%	159	2%
Helen Bentley	20	3%	61	1%
HIVUS <sup>1</sup>	-	-	172	2%
Mercy Hospital	81	14%	1,293	17%
Miami Beach CHC	45	8%	480	6%
MOVERS <sup>2</sup>	15	3%	-	-
PHT/Liberty City	30	5%	106	1%
PHT/North Dade	45	8%	366	5%
PHT/PET Center	50	8%	469	6%
South Shore	75	13%	708	9%
University of Miami	98	16%	3,278	43%
Total <sup>3</sup>	594	100%	7,624	100%

<sup>1</sup>HIVUS is no longer a Title I provider.

<sup>2</sup>Included with Mercy's total.

<sup>3</sup>Does not sum to the total served because some patients see more than one provider.

### ***Characteristics of the Sample Population***

Table 3 compares demographics of the review sample with the Ryan White Title I population receiving medical care, the Ryan White Title I population as a whole, and the total reported HIV/AIDS population in Miami-Dade County.

**Table 3. Demographic Characteristics of Ryan White Title I Medical Care Clients**

	Sample		Ryan White - Medical		Ryan White - All Services		All HIV/AIDS in County	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Race/Ethnicity</b>								
White, not Hispanic	113	19%	752	12%	1,363	13%	3,152	16%
Black, not Hispanic	208	36%	2,512	39%	4,267	40%	10,645 <sup>1</sup>	55% <sup>1</sup>
Haitian	43	7%	665	10%	1,083	10%		
Hispanic	202	35%	2,478	38%	3,766	35%	5,630	29%
Other	15	3%	81	1%	158	1%	36	<1%
<b>Gender</b>								
Male	426	73%	4,400	68%	7,258	68%	13,470	69%
Female	157	27%	2,084	32%	3,392	32%	5,984	31%
<b>Age</b>								
< 13 years	-	-	276	4%	308	3%	138	1%
13 - 19 years	-	-	110	2%	121	1%	140	1%
20 - 29 years	50	9%	783	12%	924	9%	12,641 <sup>2</sup>	65% <sup>2</sup>
30 - 39 years	253	44%	2,544	39%	3,743	35%		
40 - 49 years	195	34%	1,944	30%	3,773	35%		
50+ years	81	14%	831	13%	1,799	17%	6,536	34%
<b>HIV Status</b>								
HIV Asymptomatic	269	46%	2,830	44%	3,596	37%	9,300	48%
HIV Symptomatic	69	12%	681	11%	997	10%		
AIDS	245	42%	2,954	45%	5,220	53%	10,155	52%
Total <sup>3</sup>	594	100%	6,500	100%	10,561	100%	19,463	100%

<sup>1</sup>Combined figures for non-Hispanic Black and Haitian.

<sup>2</sup>Combined figures for age categories 20 through 49 years.

<sup>3</sup>Note: Categories do not always sum to the same totals because of missing or incomplete data.

The medical record view findings apply only to those who receive outpatient medical care from a Ryan White Title I provider. They cannot be generalized to all Ryan White clients or to the broader HIV/AIDS population. However, record reviews provide a comprehensive view of care received at a provider regardless of who pays for it. No medical records of children or adolescents were reviewed.

## Findings

### *CD4 and Viral Load Measurements*

**Frequency of Visits.** The time between the patient's last visit to their medical care provider and the date of review was computed: 56 percent of patients had visited their medical provider within

three months, 77 percent within six months, and 91 percent within 12 months. We did not collect information on the frequency of outpatient medical care visits, but we did collect the dates of the last ten CD4 and viral load counts.

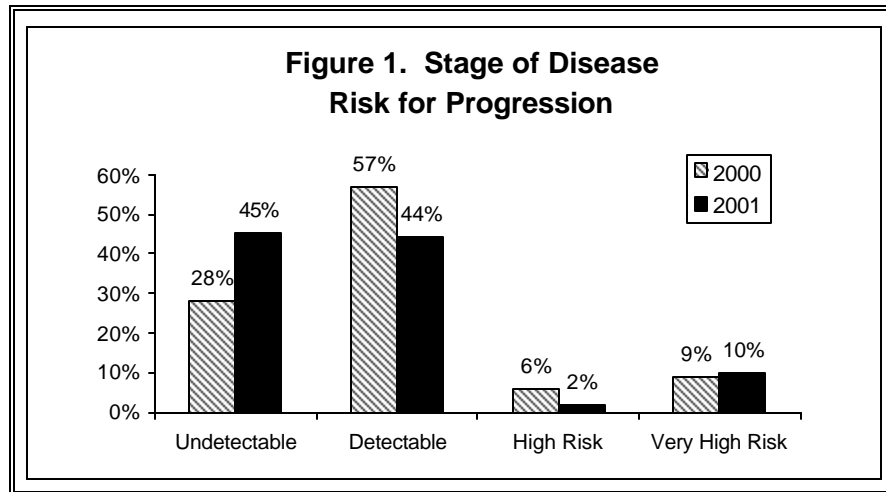
The average number of CD4 counts was four. Eleven patients (2%) had no CD4 count recorded in their chart and 13 percent had only one. The average patient had two viral loads. Sixteen patients (3%) had no viral load recorded in their chart and 14 percent had only one. Approximately one-third of those who had no CD4 or viral load information had only one physician visit recorded. In addition, the average time since their last visit was longer for those who had no or only one CD4 count or viral load (9 months versus 4 months for the sample as a whole). The average time between the two most frequent CD4 and viral load counts was four months for both measures. There was, however, large variation in the time between measures. Some patients had more than one CD4 or viral load done within a month and others had not had a second CD4 or viral load for more than a year. Quarterly tests are considered the standard for established patients on an effective medication regimen.

**Change in CD4 and Viral Loads.** The most recent average CD4 count for the reviewed patients was 448, with a range of 3 to 1,705. Nineteen percent had a CD4 count less than 200. For 17 percent of the patients, their most recent CD4 count was significantly higher than it had been at the lowest reading during the review period; for 27 percent it was significantly lower than their highest, and for 56 percent there was no significant change either up or down. A 30 percent change is considered a significant change in CD4 count. There were no significant relationships between change in CD4 count and race/ethnicity, gender, or provider.

The most recent average viral load for the reviewed patients was 48,318, with a range of undetectable to 750,001 copies. A three-fold change is considered a significant. For 35 percent of the patients, their most recent viral load was significantly lower than it had been at the highest reading during the review period; for 14 percent it was significantly higher than their lowest reading, and for 51 percent there was no significant change either up or down. There were no significant relationships between change in viral load by race/ethnicity or gender, but there was a significant difference among providers. The amount of decrease in viral load was greatest for patients at the Miami Beach Community Health Center.

### ***Stage of Disease – Risk for Progression***

Patients were categorized in terms of risk of progression to a more serious stage of the illness. The categories were undetectable (a viral load less than 400 regardless of CD4 count), detectable (a viral load between 400 and 9,999 regardless of CD4 count or a viral load of 10,000 or more and a CD4 count of 200 or more), high risk (viral load between 10,000 and 50,000 and CD4 count less than 200, and very high risk (viral load greater than 50,000 and CD4 count less than 200. Disease stage (i.e., risk for progression) was based on the most recent CD4 count and viral load. It could not be computed for three percent of the sample because of missing CD4 or viral load information. Figure 1 compares the distribution of stage of the disease for the Ryan White Title I patients whose charts were reviewed in 2001 and those who were reviewed in 2000.



As can be seen in Figure 1, there has been an increase in the percentage of patients who have undetectable viral loads, but the percent of those who are at very high risk has remained constant at about ten percent.

There was a significant difference in the distribution of patients by the stage of disease among providers,  $\chi^2 = 39.4$ ,  $p < .004$ . The PET Center and Miami Beach had the lowest percentage of those at very high risk (4%) and the highest who were undetectable (59%); CHI, EOFHC, Liberty City, and UM had the highest percentage of those at very high risk (17% of their patients) and a lower percentage who were undetectable (40%); the other providers fell between these extremes. Blacks, Haitians, and to a lesser extent females, were more likely to be in one of the high risk categories. Those who were at very high risk were twice as likely to have been diagnosed within the last year as those who were undetectable (18% versus 9%).

### ***Overall Scores***

Table 4 is a question by question breakdown of the scores for all providers combined. Results for individual providers are presented in Appendix IV. Not all questions are applicable to all patients. “Number in Sample” is the number of client records that were reviewed; “Applicable Cases” is the number of persons to whom the question applies, for example, in Question 3, the applicable number of cases is 150 rather than 594 because gynecological examinations are applicable only to females; “Number Yes” is the number of positive responses to the question; “Percent in Compliance” refers to the percentage of applicable cases for whom the answer to the question was “Yes”, for example, 95 out of 150 is 63 percent. It is important to note that when the number of applicable cases is small, one or two cases will have a large effect on the percentage; care should be used in interpreting these.

**Table 4. All Providers of Ryan White Title I Outpatient Medical Care**

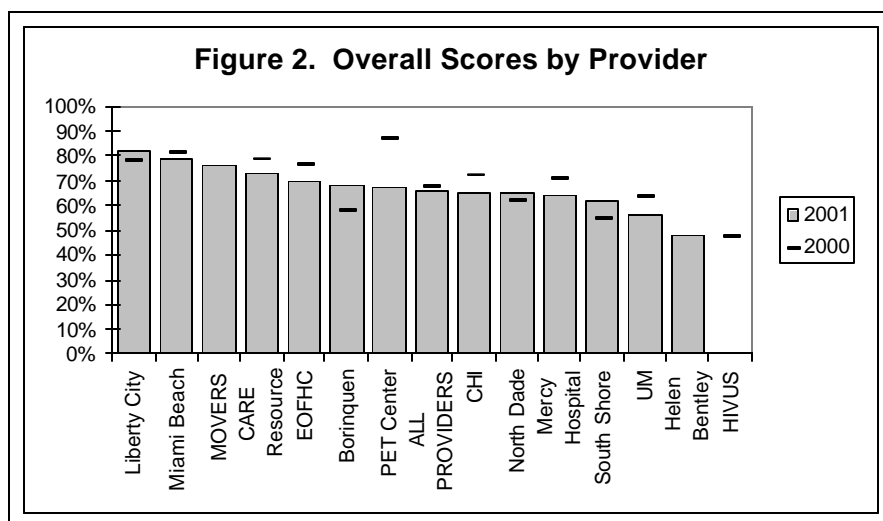
<b>ASSESSMENTS AND REFERRALS</b>	<b>Number in Sample</b>	<b>Applicable Cases</b>	<b>Number "Yes"</b>	<b>Percent in Compliance</b>
1. Comprehensive History and Physical done or updated in past year	594	594	505	85%
2. Vital signs, including weight, at least quarterly	594	594	533	90%
3. GYN exam including Pap annually	594	150	95	63%
4. RPR / VDRL screening for Syphilis annually	594	594	378	64%
5. Gonorrhea screening annually	594	594	132	22%
6. Chlamydia screening annually (females only)	594	150	85	57%
7a. Assess for annual review: Oral health care	594	594	456	77%
7b. Assess for annual review: Nutritional assessment/care	594	594	461	78%
7c. Assess for annual review: Mental Health assessment/care	594	594	442	74%
7d. Assess for annual review: Substance abuse assessment/care	594	594	410	69%
8a. Referred for care where problem was identified: Oral health care	594	232	224	97%
8b. Referred for care where problem was identified: Nutritional assessment/care	594	221	212	96%
8c. Referred for care where problem was identified: Mental health assessment/care	594	229	222	97%
8d. Referred for care where problem was identified: Substance abuse assessment/care	594	99	71	72%
9. TB skin test performed and read annually	594	518	237	46%
10. If PPD positive and/or active were they treated or referred	594	41	32	78%
<b>Overall Assessments and Referrals Score</b>	594			<b>70%</b>

<b>LABORATORY</b>	<b>Number in Sample</b>	<b>Applicable Cases</b>	<b>Number "Yes"</b>	<b>Percent in Compliance</b>
11. CBC every six months	594	542	458	85%
12. Chemical profile every six months	594	542	434	80%
13. Hepatitis A serology	594	594	408	69%
14. Hepatitis B serology	594	590	482	82%
15. Hepatitis C serology	594	592	459	78%
16. Baseline Toxo antibody titer	594	594	336	57%
17. CMV screening since January 1, 2000 (CD4 < 50)	594	117	77	66%
Overall Laboratory Score	594			<b>74%</b>
<b>THERAPY / INTERVENTIONS</b>	<b>Number in Sample</b>	<b>Applicable Cases</b>	<b>Number "Yes"</b>	<b>Percent in Compliance</b>
18. Influenza vaccine given annually	594	583	131	22%
19. Pneumovax given	594	590	284	48%
20. Hepatitis A vaccine given if HCV+	594	62	23	37%
21. Hepatitis B vaccine series given once	594	473	187	40%
22. Tetanus/Diphtheria is up to date	594	593	228	38%
23. HAART offered, including risks and benefits	594	594	139	23%
25. If Resistance testing performed, is reason documented	594	75	34	45%
26. On PCP prophylaxis (CD4<200)	594	248	138	56%
27. On MAC prophylaxis (CD4<50)	594	117	49	42%
29. If a medication failure was documented, were meds changed	594	39	35	90%

30a. Patient education documented: Adherence to medications	594	524	437	83%
30b. Patient education documented: Diet and Nutrition	594	594	385	65%
30c. Patient education documented: Risk Reduction	594	594	405	68%
31a. Documentation: Presence of: Problem list	594	594	505	85%
31b. Documentation: Presence of: Medications list	594	594	494	83%
31c. Documentation: Presence of: Allergies list	594	594	508	86%
31d. Documentation: Presence of: Immunization list	594	594	301	51%
Overall Therapy / Intervention Score	594			<b>57%</b>
<b>Overall Score</b>	594			<b>66%</b>

An overall score was computed by summing the number of questions that were answered “Yes” and calculating an average. The overall score for all providers was 66 percent, however, there is much variation among providers.

Figure 2 presents the overall score for each provider; scores reported for 2000 are also shown. There were significant differences among providers ( $F = 42.8, p < .001$ ); the range of scores showed a high of 82 percent and a low of 48 percent. Four of the top five providers from 2000 were among the top five for 2001.



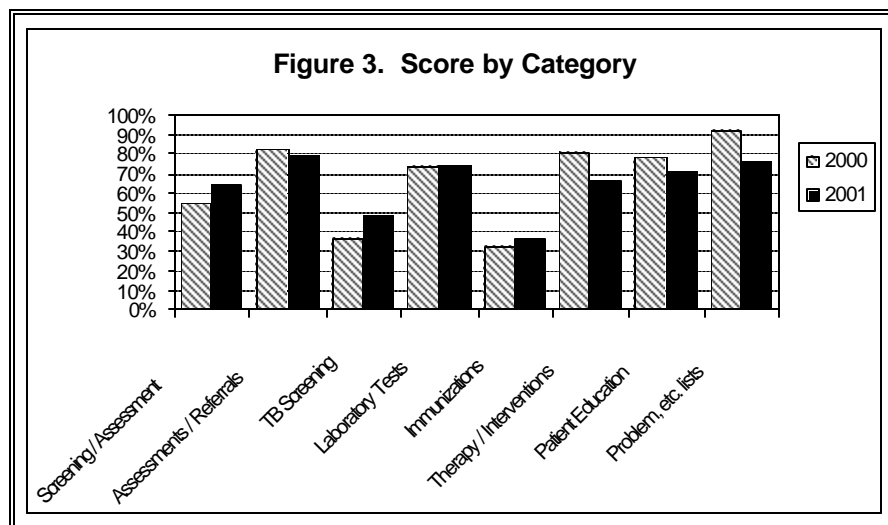
For many providers, there appears to be opportunity for improvement in documentation of care. Many activities might occur during a visit that are not recorded in the patient's file. However, the only way to measure whether something was done is if it is documented. Documentation also can affect the quality and continuity of care provided to patients without a regular provider. For example, documenting a problem list can be very helpful for transient patients without a single, complete medical history or chart.

**Category Scores**

In addition to the overall score, which summed across all items, categories of similar items were formed and examined. These included:

- \$ Screening and Assessments - Questions 1 through 6
- \$ Assessments and Referrals for Other Services - Questions 7a through 8d
- \$ TB Screening and Treatment - Questions 9 and 10
- \$ Laboratory Tests - Questions 11 through 17
- \$ Immunizations - Questions 18 through 22
- \$ Therapy/Interventions - Questions 26, 27 and on HAART
- \$ Patient Education - Questions 30a through 30c
- \$ Problem, Medication, and Allergy Lists - Questions 31a through 31d

There was much variation in the percent of compliance for the different categories that were reviewed. The percent of compliance across all providers ranged from 37 percent for immunizations to 79 percent for the assessments and referrals for other services such as substance abuse treatment, oral health care, etc. Scores for each category of documentation or treatment are shown in Figure 3. This figure also compares the scores obtained in 2000 with those recorded in 2001.



**Screening and Assessments.** The sub score for the screening and assessments category was 65 percent. This is up ten percentage points from last year. Scores and ranges for the questions that comprise this category are shown in Table 5. Compliance with having a comprehensive history

and physical done or updated in the past year and having vital signs checked at least quarterly was good, 85 and 90 percent respectively. The range among providers was 65 percent to 100 percent for annual physicals and 10 to 100 percent for quarterly checks of vital signs. This means that for several providers every patient had had an annual physical but for at least one provider only about two thirds of patients had a record of having had an annual physical. The average score for across all providers and the range of scores among providers are presented for each item reviewed.

<b>Table 5: Screening and Assessments</b>		
	Range among Providers	Average Score
Comprehensive history and physical	65% to 100%	85%
Vital signs, including weight	10% to 100%	90%
GYN exam including Pap annually	0% to 100%	63%
RPR screening for Syphilis annually	5% to 93%	64%
Gonorrhea screening annually	3% to 73%	22%
Chlamydia screening annually	0% to 100%	57%

Gynecological examinations for women were less than optimal, but have been improving for the last three years. Screening for Syphilis was ten percentage points higher than last year. The lowest score was for gonorrhea screening which was only slightly higher than it was last year. An examination of this and the Chlamydia item showed that Blacks and Haitians are twice as likely to be screened for these STDs as whites or Hispanics. There were no significant differences in syphilis testing by gender or ethnicity.

As can be seen in Table 4 there was wide range among providers in whether screening and assessments were done and recorded. For some providers they were done for all patients, but for others they were done for no or few patients for whom they were indicated. Percentages of compliance were computed only for those patients for whom they were appropriate. For example, Pap smears and Chlamydia screening were computed only for females, and quarterly vital signs were counted as at least four visits in the past 18 months for those who had at least four visits in that time, but for every visit if there were fewer than quarterly visits. Percentages for individual items by provider are shown in Appendix IV.

**Assessments and Referrals for Other Services.** Overall, compliance for this category was 79 percent, slightly down from last year. Slightly more than half (51%) of patients in the sample had been assessed on all four areas, oral health, nutrition, mental health, and substance abuse. This was down from 72 percent last year. Table 6 shows average scores and ranges among providers. Of those who were identified as needing another service, most were referred for care. Those identified as needing substance abuse counseling or treatment were least likely to be referred to care.

There were significant differences among providers on the percentage of assessments and referrals to other services that were accomplished. Percentages for individual items by provider are in Appendix IV.

<b>Table 6: Assessments and Referrals for Other Services</b>		
	Range among Providers	Average Score
Oral health assessment	60% to 97%	77%
Oral health referral, if needed	75% to 100%	97%
Nutritional assessment	69% to 100%	78%
Nutritional referral, if needed	73% to 100%	96%
Mental health assessment	53% to 93%	74%
Mental health referral, if needed	90% to 100%	97%
Substance abuse assessment	46% to 100%	69%
Substance abuse referral, if needed	0% to 100%	72%

**Tuberculosis Screening and Treatment.** Almost half (46%) of patients who were eligible for a PPD, i.e., not known positive, not being currently treated for TB or immunized with BCG, had evidence of a PPD being placed and read. This is a nine percentage point increase over last year. Of those with a positive PPD (either identified at the time of current testing or previously), 78 percent had received treatment or had been referred. Even though there were increases in compliance on these items, the overall compliance still remains low. Table 7 shows the data for TB screening and testing. Percentages for individual items by provider are in Appendix IV.

<b>Table 7: Tuberculosis Screening and Treatment</b>		
	Range among Providers	Average Score
PPD placed and read	26% to 91%	46%
Positive PPD treated	0% to 100%	78%

**Laboratory Tests.** Across all providers nearly three-quarters of the patients (74%) had received the recommended laboratory tests; this is the same percentage of compliance as reported last year. There were significant differences among providers. Some providers had nearly perfect compliance, while at others few patients received the laboratory and diagnostic tests recommended for the management of HIV-infected adults. Table 8 shows average scores and ranges among providers. Percentages for individual items by provider are shown in Appendix IV.

<b>Table 8: Laboratory Tests</b>		
	Range among Providers	Average Score
CBC every six months	50% to 98%	85%
Chemical profile every six months	45% to 98%	80%
Hepatitis A serology	9% to 92%	69%
Hepatitis B serology	55% to 100%	82%
Hepatitis C serology	45% to 96%	78%
Baseline Toxo antibody titer	0% to 96%	57%
CMV screening for CD4 < 50	0% to 100%	66%

**Immunizations.** Poor compliance scores were found for immunizations. A little more than a third (37%) of patients had received the immunizations that are recommended in the Miami-Dade HIV/AIDS Guidelines. This is a slight increase over last year. Patients who were offered a vaccine and refused it were not used in the computation, so refusal by the patient was not counted against the provider. There is wide variation among sites in the immunization rates, and there is no clear pattern of compliance. A provider may have very high rates of compliance on several vaccinations and near zero rates on others. Table 9 summarizes average scores and the range among providers. Percentages for individual items by provider are shown in Appendix IV. One provider pointed to shortages of tetanus and diphtheria toxoids as a reason (Appendix III). However, this was only one measure.

<b>Table 9: Immunizations</b>		
	Range among Providers	Average Score
Influenza	0% to 63%	22%
Pneumovax	19% to 85%	48%
Hepatitis A, if HCV+	0% to 100%	37%
Hepatitis B	0% to 75%	40%
Tetanus/diphtheria	2% to 93%	38%

**Therapy and Interventions.** The category was formed by summing and averaging the number of clients who were on HAART, and were on therapy for opportunistic infection, if appropriate. Table 10 summarizes the scores. The overall compliance in these areas was 66 percent which is significantly lower than it was last year (81%). The percentage of patients on HAART was 75 percent this year compared to 93 percent last year; however, this decrease may be due to the tightening of our definition of HAART. For this review, the definition of HAART was that proposed by the DHHS/Kaiser Panel for the 2002 guidelines. The definition is presented below in the section on medication regimens. It is not clear why the percentages of those on PCP or MAC prophylaxis are lower is year (56% versus 86% and 42% versus 69%). It may be related to more complete CD4 information being available this year. If a patient's CD4 count dropped below 200 for PCP or 50 for MAC at any time during the review period, the patient was included in the pool of "applicable cases" for which the therapy for the opportunistic infection should have been provided. Table 9 summarizes average scores and the range among providers.

Provider specific percentages for PCP and MAC prophylaxis are shown in Appendix IV. Receipt of HAART is discussed in the section on medication regimens.

<b>Table 10: Therapy and Interventions</b>		
	Range among Providers	Average Score
On HAART	51% to 89%	75%
On PCP prophylaxis (CD4 < 200)	28% to 100%	56%
On MAC prophylaxis (CD4 < 50)	9% to 100%	42%

**Patient Education.** The category average for patient education was 72 percent, slightly lower than what was reported last year. However, only about half (49%) of the patients in the sample received all three types of patient education required by the Ryan White Title I Standards of Care and 15 percent had no record of receiving any. Adherence to medications was reported for 83 percent of the patients, but diet and nutrition counseling and risk reduction were noted for only about two thirds of the patients. Discussion of adherence to medications, diet and nutrition, and risk reduction are required for activities for a number of Title I services, but as with outpatient medical care they are not done for all clients. Many patients appear to be “falling through the cracks” and not receiving vital patient education. As with other items reviewed for this report some providers were better than others about providing the various types of patient education. Table 11 shows the ranges and average scores. Percentages for individual items by provider are shown in Appendix IV.

<b>Table 11: Patient Education</b>		
	Range among Providers	Average Score
Adherence to medications	61% to 100%	83%
Diet and nutrition	20% to 88%	65%
Risk reduction	15% to 93%	68%

**Problem, Education, and Allergy Lists.** The average score for this category of 76 percent was lower than last year’s. However, the presence of an immunization record was not in last year’s review and this was the list that was most frequently missing. Only about half of the patients had an immunization record; this may be related to the fact that required immunizations were present for 37 percent of the sample. Prominently placed lists of patient problems, medications, or allergies were observed for the majority of records, but for several providers such lists were rare. Table 12 shows the ranges and average scores. Percentages for individual items by provider are shown in Appendix IV.

<b>Table 12: Problem, Education, and Allergy Lists</b>		
	Range among Providers	Average Score
Problem list	38% to 100%	85%
Medications list	37% to 100%	83%
Allergies list	31% to 100%	86%
Immunizations list	1% to 96%	51%

### ***Medication Regimens***

Information on antiretroviral medications was collected. All the medications the patients were on at their last visit were noted, as well as all medications patients had been taking immediately prior to their current medication regimens. Drug combinations were categorized in several ways. First, was the patient on any kind of antiretroviral drug regardless of the kind, number, or combination of drugs? Second, was the patient on HAART (highly active antiretroviral therapy)? We also looked at combinations the PHS Guidelines for Antiretroviral Therapy in Adults and Adolescents labeled as not recommended (should not be offered), including monotherapy.

Only 23 percent of patient records recorded that HAART was offered and the risks and benefits explained. Since this is a two-part question, it was not used to measure whether the person was on HAART. However, it does show a lack of either documentation or patient education about HAART. The Medical Care Subcommittee felt it was important to learn whether the physician was educating patients about HAART.

This year's review used a more stringent measure of HAART than in the previous year. Last year, the nurses were given instructions for identifying these patients. In 2001, we used a definition from the PHS guidelines specifying the combinations.

The definition of HAART used for this report was (a) two or more NRTIs in combination with at least one PI or one NNRTI, (b) one NRTI in combination with at least one PI and at least one NNRTI, (c) a regimen containing ritonavir and saquinavir in combination with one NRTI and no NNRTI, and (d) an abacavir containing regimen of three or more NRTIs in the absence of both and PIs and NNRTIs. Combinations of zidovudine (AZT) and stavudine with either a PI or NNRTI were not considered HAART. (DHHS/Henry J. Kaiser Family Foundation Panel on Clinical Practices for the Treatment of HIV Infection. Guidelines for the use of antiretroviral agents in HIV-infected adults and adolescents. February 2002 revision. Available at [HTTP://hivatis.org](http://hivatis.org).)

Table 13 shows the distribution of the various medication regimens by the provider. Seventy-five percent of the patients whose charts were reviewed were currently on HAART. Except for Liberty City Health Services Center, where 27 percent of patients were on a non-HAART combination therapy, most patients who were not on HAART were currently taking no antiretroviral drug. The percentage of patients who were not on ART increased from last year

(13% in 2000 to 17% in 2001). For those who had no antiretroviral medications recorded in their chart, nine percent were new patients having had only one visit recorded in the chart. For the rest (not their initial visit), 77 percent had no prior antiretroviral medications listed in their chart, 16 percent had previously been on HAART, and seven percent had been on some other form of ART.

For those who were on a non-HAART combination therapy, it was most frequently a combination of NRTIs with no PI or NNRTI (52% were on two NRTIs only and 12% on three NRTIs only), the next most frequent combination was one or more PIs and one or more NNRTIs, but no NRTIs (21%), and the least common combination was one NRTI and one PI, but no NNRTI (15%). Few patients (2%) were on one of the not recommended regimens. Only one was on monotherapy; this was not a pregnant woman on AZT. Another patient was taking only PIs. The rest of the cases were not recommended combinations including Invirase without Ritonavir, AZT with Zerit, and ddC in combination with either Zerit or ddI.

	<b>HAART</b>		<b>Combination Therapy</b>		<b>Not Recommended</b>		<b>None</b>	
	<b>N</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>
<b>Borinquen</b>	31	89%	0	0%	1	3%	3	9%
<b>CARE Resource</b>	18	51%	1	3%	1	3%	15	43%
<b>CHI</b>	21	60%	1	3%	2	6%	11	31%
<b>EOFHC</b>	22	73%	1	3%	2	7%	5	17%
<b>Helen Bentley</b>	16	80%	1	5%	1	5%	2	10%
<b>Liberty City</b>	21	70%	8	27%	1	3%	0	0%
<b>Mercy</b>	56	69%	5	6%	1	1%	19	23%
<b>Miami Beach</b>	37	82%	1	2%	0	0%	7	16%
<b>MOVERS</b>	10	67%	0	0%	0	0%	5	33%
<b>North Dade</b>	40	89%	1	2%	1	2%	3	7%
<b>PET Center</b>	41	82%	0	0%	1	2%	8	16%
<b>South Shore</b>	61	81%	6	8%	2	3%	6	8%
<b>UM</b>	72	73%	8	8%	0	0%	18	18%
<b>All Providers</b>	446	75%	33	6%	13	2%	102	17%

The most frequently prescribed antiretroviral medication was Combivir, with 38 percent of patients currently taking that medication either alone or in combination with another medication. Table 14 shows the number and percentage of patients who were either currently on or had previously been on any of the drugs recorded for this review.

<b>Figure 14. Number and Percentage of Patients on Various Medications</b>				
	<b>Current</b>		<b>Previous</b>	
<b>Agenerase (APV/amprenavir)</b>	24	4%	16	3%
<b>Combivir (AZT+3TC)</b>	227	38%	75	13%
<b>Crixivan (IDV/ indinavir)</b>	59	10%	36	6%
<b>Epivir (3TC/lamivudine)</b>	123	21%	43	7%
<b>Fortovase (saquinavir soft-gel)</b>	11	2%	7	1%
<b>Hivid (ddC/zalcitabine)</b>	6	1%	6	1%
<b>Hydrea/hydroxyurea</b>	2	0%	3	1%
<b>Invirase (saquinavir hard-gel)</b>	3	1%	4	1%
<b>Kaletra (lopinavir/ritonavir)</b>	66	11%	14	2%
<b>Norvir (RTV/ritonavir)</b>	55	9%	29	5%
<b>Rescriptor (DLV/delavirdine)</b>	4	1%	2	0%
<b>Retrovir (AZT/ zidovudine)</b>	19	3%	9	2%
<b>Sustiva (EFV/efavirenz)</b>	108	18%	21	4%
<b>Trizivir (AZT+3TC+ABC)</b>	39	7%	8	1%
<b>Videx (ddI/didanosine)</b>	61	10%	26	4%
<b>Viracept (NFV/nelfinavir)</b>	84	14%	30	5%
<b>Viramune (NVP/nevirapine)</b>	98	16%	25	4%
<b>Zerit (d4T/stavudine)</b>	168	28%	55	9%
<b>Ziagen (ABC/abacavir)</b>	113	19%	64	11%

WSA collected current and previous medications, as well as many CD4 and viral load counts in order to analyze the possible reasons for and effects of medication changes. Of the 594 records reviewed only 219 clients (27%) had evidence of a medication change during the review period; of those, only 116 had at least one viral load recorded prior to the medication change and at least one recorded after the change. These 116 records were examined to determine what was happening to the patient's viral load both before and after the change in medication.

Medications may be changed for various reasons. Most important, one would want to change the client's medication regimen if his or her viral load was high or increasing. However, medications may also be changed even if the viral load is low or even undetectable, but the patient is having adverse side effects or the medication is problematic for other reasons. Almost two thirds (62%) of medication changes occurred for clients whose viral loads prior to the change were undetectable or less than 10,000 copies. For 73 percent of these individuals, their viral load remained the same before and after the change and for only five percent did their viral load increase to more than 10,000 copies. Twenty-two percent of clients whose medications had been changed had very high viral loads (50,000 or more) prior to their medications being changed. Of these half showed no significant reduction in viral load after the medication change,

but nearly a fourth (22%) dropped to an undetectable level after the change. The remaining 16 percent of the sample had viral loads between 10,000 and 50,000 at the time of their medication change; three-quarters of these showed a significant drop in viral load and none significantly increased.

These findings suggest that many medication changes are made for reasons other than attempting to decrease viral loads and for the vast majority of this group there is no detrimental effect on the viral load. For those with very high viral loads, a change in medication is effective for about half, and for those with viral loads between 10,000 and 50,000, approximately 75 percent show improvement.

**Patient Characteristics and Medication Regimen.** We examined the relation between the medication regimen that a patient was currently on and his or her current disease stage category. There was a significant relationship ( $\chi^2 = 50.3, p < .001$ ). Those who had undetectable viral loads were more likely to be on HAART and less likely to be taking no antiretroviral medication than those in the riskier stages of the disease. This data is presented in Table 15.

<b>Figure 15. The Relationship Between Disease Stage and Medication Regimen</b>								
	<b>HAART</b>		<b>Combination Therapy</b>		<b>Not Recommended</b>		<b>None</b>	
<b>Undetectable</b>	224	86%	16	6%	6	2%	13	5%
<b>Detectable</b>	165	65%	11	4%	7	3%	69	27%
<b>High Risk</b>	7	64%	1	9%	0	0%	3	27%
<b>Very High Risk</b>	41	73%	3	5%	0	0%	12	21%

Past national studies have found that race/ethnicity and gender appear to influence receipt of antiretroviral medications. We, therefore, examined medication regimens in regard to these factors. There were no differences for gender, but there was a marginal, but not statistically significant, relationship with race/ethnicity such that those who received non-HAART combination therapy were twice as likely to be Black. However, all racial/ethnic differences disappeared when Liberty City and the University of Miami were removed from the analysis. These two sites were the most likely to use non-HAART combination therapy and they have a high percentage of Black clients. There was no effect of race/ethnicity at these two providers.

**Resistance Testing.** Although resistance testing is relatively new we examined whether it was being used. Seventy patients had had genotype assays and seven had phenotype assays. Overall 13 percent of the sample had had resistance testing. The reason that the testing was done was documented for 45 percent. Three-quarters (76%) of those who had resistance testing had evidence of a medication regimen change. There was a significant association between having had resistance testing and current disease stage ( $\chi^2 = 16.6, p = .01$ ). Twenty-two percent (22%) of patients who were at high or very high risk for disease progression had a test, and 12 percent of those who were detectable or undetectable.

## **Conclusions and Recommendations**

The 2001 reviews demonstrated a standard of treatment that is generally good and consistent, particularly in HIV-specific treatments. Eighty-seven percent of patients whose records were reviewed were on HAART. While several national studies have identified racial, ethnic and gender disparities in the provision of antiretroviral therapy, no gender differences were identified in whether people are on a medication, on HAART, or on a strongly recommended regimen.

In contrast with prior years, there were no racial/ethnic disparities in whether people were on HAART. This is a significant finding, and differs from studies conducted in other parts of the nation. This finding reflects the progress that has been made in this community toward providing services to all people in all parts of the community using a wide variety of providers. We hope the previous four reviews conducted by the Title I program have encouraged providers to be attentive to the need to eliminate disparities in treatment and to treat up to standards.

Improvement is needed, however, in the offering and provision of HAART, or its documentation. The record review reveals that patient education may still be a challenge for physicians.

Provider performance varies considerably. Some providers appear to have undertaken major improvement efforts, while others have demonstrated level results. Documentation has improved at most providers, while others continue to experience difficulties in this area. In addition, several providers do not appear to have significantly changed their treatment patterns, even though prior reviews have identified the need for improvement.

### ***1. Providers should know and utilize clinical guidelines***

As was highlighted in last year's report, and is reiterated here, there remain many opportunities for improvement. All physicians and their staff should be familiar with and routinely use guidelines, especially those produced by the Public Health Service. The Ryan White CARE Act requires that patients whose care is funded by Title I receive a standard of care that at the least is consistent with the Public Health Services guidelines.

### ***2. Documentation of care needs improvement.***

Documentation of care is critically important to the quality of care rendered and to the continuity of care. The patient record is an important means of communication among providers and of patient care follow-up. Quality assurance activities teach that "if it isn't documented it isn't done." In most programs, including Ryan White Title I, reimbursement depends on being able to demonstrate that things were done. Providers, including the administrators of organizations serving Ryan White clients, should find ways to improve the level of documentation in their patient records and monitor the documentation. Then they can monitor their own care.

**3. *Continued provider education is needed to optimize treatment.***

In order to improve documentation, increase certain treatments and optimize antiretroviral therapy, ongoing provider education regarding medication compliance and the prevention of drug resistance is needed. Providers, particularly administrators, should find ways to encourage medical staff to obtain continuing education on the latest treatment protocols, particularly in the fast-moving area of drug therapies. The PHS guidelines, which are updated on the Internet, should be routinely reviewed as well.

**4. *Quality assurance and improvement activities should be integral in the organization.***

Physicians and other providers, as well as administrators, should utilize various means of monitoring and improving quality. Self-review within the organization is essential. Patient records, or at least a sample, should be routinely reviewed for documentation and quality of care (i.e. state-of-the-art therapies and treatments). Organizations may create their own record review protocols based on clinical practice guidelines and standards, or they may use a pre-existing instrument.

Peer review and self-review are necessary components of medical care quality maintenance and improvement and are recommended. However the reviews are conducted, feedback and problem-solving sessions are critical to being able to utilize the information collected. These should not be seen as punitive activities, but as ways to optimize patient care.