

# Adherence to HIV clinical treatment guidelines among healthcare providers in Texas



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## Introduction

The U.S. Health Resources and Services Administration HIV/AIDS Bureau (HAB) created Core Clinical Performance Measures that healthcare providers can utilize to assess the quality of HIV care.

The Medical Monitoring Project (MMP) is a national surveillance project designed to generate representative data on persons living with HIV (PLWH) who receive medical care.

The MMP is designed to provide prevalence estimates for unmet needs, access to care, risk behaviors, treatment and adherence, clinical outcomes, reproductive history and prevention services among PLWH receiving medical care through patient interviews and medical record abstractions (MRA).

## Methods

2009 Texas MMP MRA data were analyzed to assess the provision of HIV patient care in comparison with selected HAB clinical measures and the Institute for Healthcare Improvement (IHI) targets for these same measures.

This analysis examined selected HAB measures for MMP participants who received care in the state of Texas. Houston MMP is funded separately, thus Houston data is excluded from this analysis.

A three-stage randomized cluster design was used to sample sites, medical facilities and patients. 359 of 400 sampled patient MRAs were completed at 29 Texas facilities. The clinical measures evaluated during the measurement year included:

- Percentage of patients who had two or more CD4 T-lymphocyte counts performed
- Percentage of patients w/ HIV infection who had two or more medical visits in an HIV care setting
- Percentage of patients w/ HIV infection and CD4T-lymphocyte count below 200 cells/mm<sup>3</sup> who were prescribed Pneumocystis carinii pneumonia (PCP) prophylaxis
- Percentage of patients with AIDS who were prescribed HAART

For this analysis, the measurement year is the MMP surveillance period (SP), the 12 months prior to patient interview date/date of first contact/date of death. All analyses were conducted using weighted data. All percentages are weighted for the probability of selection and non-response bias adjustments. Associations between demographic variables and clinical measures were tested using Rao Scott chi-square at p<0.05 using SAS Version 9.2.

## Results

Of the 359 medical charts reviewed, the majority of Texas MMP participants were male, white and between 40 and 49 years of age:

Figure 1. Gender of Texas MMP Participants, 2009

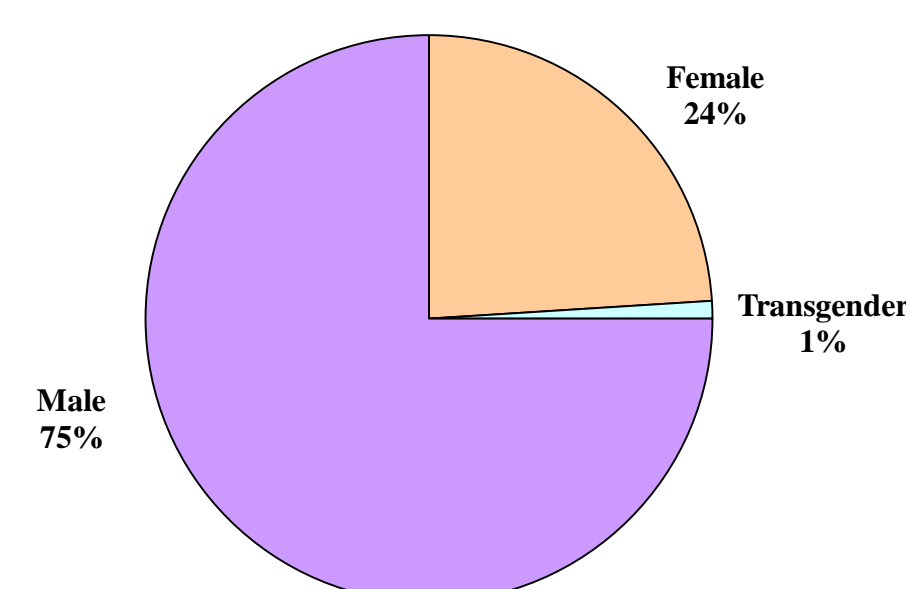
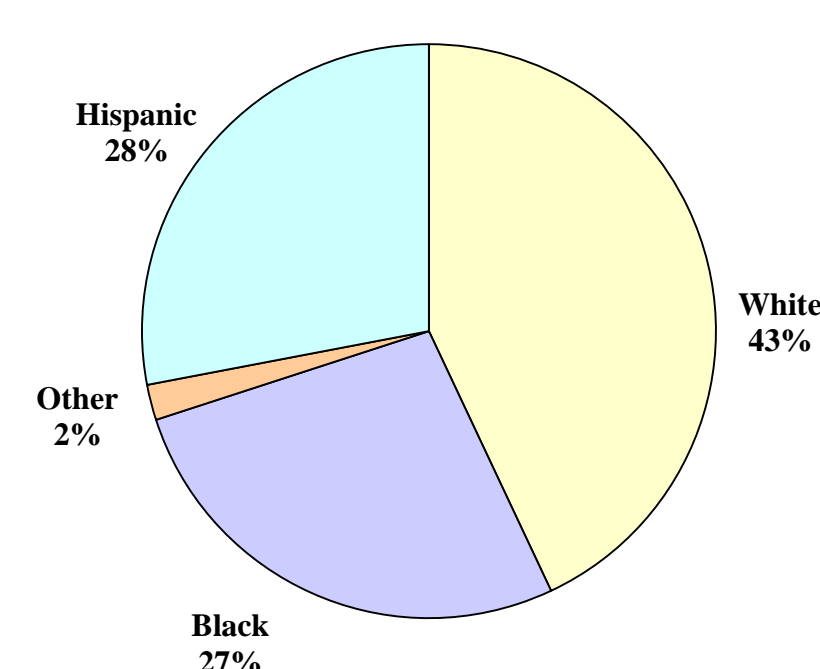
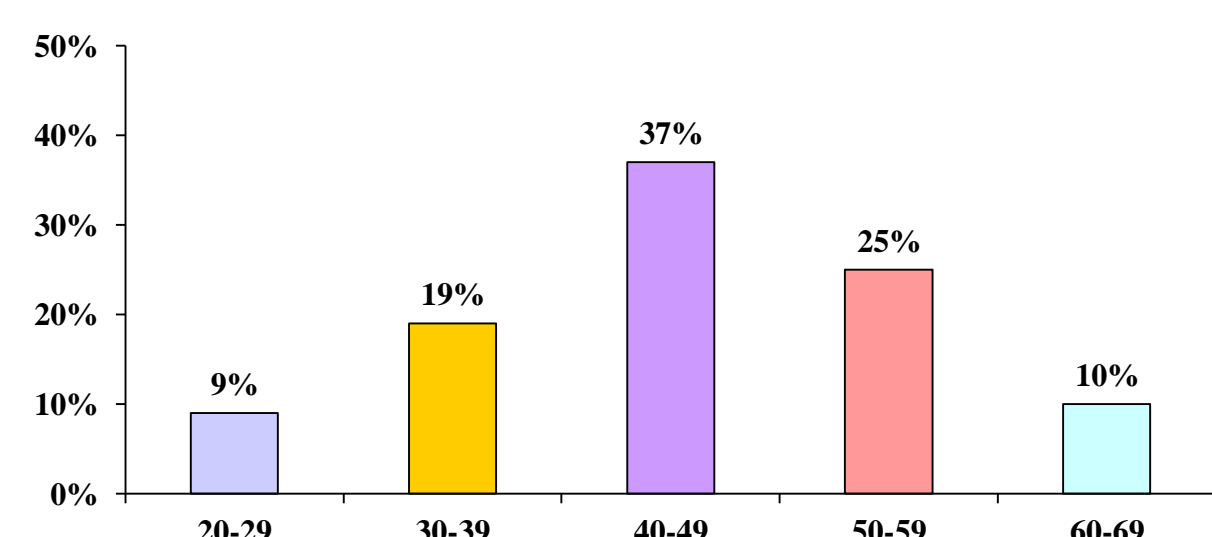


Figure 2. Race/Ethnicity of Texas MMP Participants, 2009



\*Other = Asian, Pacific Islander, Native Hawaiian and Multiracial

Figure 3. Age of Texas MMP Participants, 2009



Among Texas MMP participants, 79% had two or more CD4 T-lymphocyte count tests and 95% had two or more medical visits during the SP. Of participants with AIDS, 97% were prescribed HAART during the SP. Of participants with sustained CD4 T-lymphocyte counts <200 in the SP, 73% were prescribed PCP prophylaxis (Table 1).

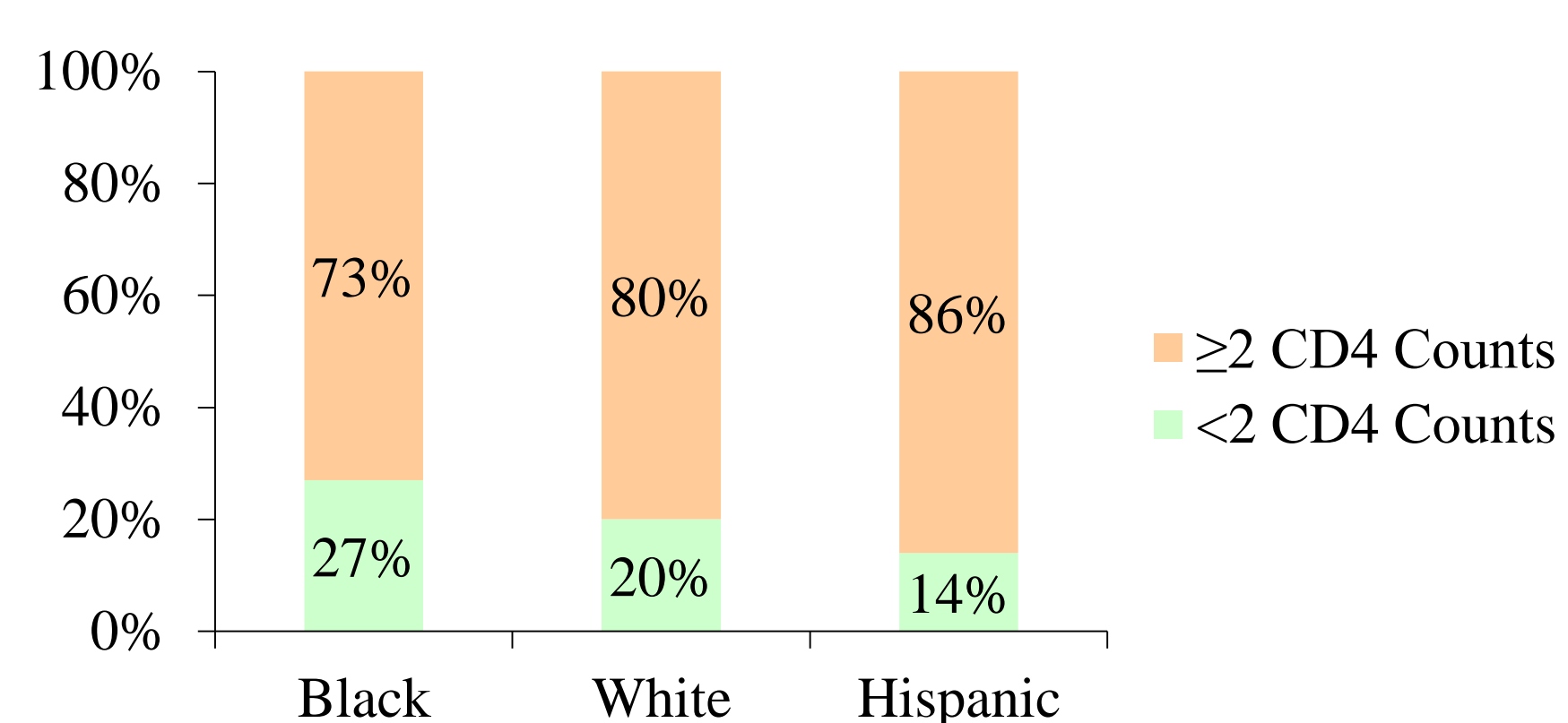
Table 1. Texas MMP Participants Receiving Care according to HIV/AIDS Bureau (HAB) Core Clinical Performance Measures Compared to Institute for Healthcare Improvement (IHI) Targets

HIV/AIDS Bureau Core Clinical Performance Measures*	Texas MMP Participants†	Institute for Healthcare Improvement (IHI) Target*	Percent Difference
Patients w/ ≥2 CD4 counts	79%	90%**	-11%
Patients w/ ≥2 medical visits	95%	N/A	N/A
Patients prescribed PCP prophylaxis^	73%	95%	-22%
AIDS patients prescribed HAART	97%	90%	+7%

Source: Texas Department of State Health Services, 2009 Medical Monitoring Project Data  
 \*Health Resources & Services Administration, HIV/AIDS Bureau HIV Performance Measures, 2008  
 \*\*IHI target is patients with ≥2 CD4 counts (>3 months apart) in 12 months  
 †The measurement year for MMP is the surveillance period (SP)  
 ^Among patients with CD4 count <200 sustained in the SP

Among all Black non-Hispanic MMP participants, 27% had less than two CD4 T-lymphocyte counts during the SP, compared to 20% of all White non-Hispanic participants and 14% of all Hispanic participants ( $\chi^2=9.62$ ,  $p=0.0221$ ) (Figure 4).

Figure 4. Percentage of CD4 Count Tests within Race/Ethnicity Groups



Source: Texas Department of State Health Services, 2009 Medical Monitoring Project Data

Among MMP participants with two or more medical visits in the SP, 44% were White, 26% were Black, 28% were Hispanic and 2% were other race/ethnicity groups. Black participants were significantly less likely to have had two or more medical visits in the SP when compared to all other race/ethnicity groups (Rao-Scott Chi Square =5.6571, p-value=0.0174) (Table 2).

Table 2. Comparison of Medical Visits between Race/Ethnicity Groups

Race/Ethnicity**	<2 Visits in SP*		≥2 Visits in SP*		Rao-Scott Chi Square	p-value
	n	%	n	%		
Black	11	12	87	88	5.6571	0.0174
Non-Black^^	7	2	253	98		

Source: Texas Department of State Health Services, 2009 Medical Monitoring Project Data

\*The measurement year for MMP is the surveillance period (SP)  
 \*\*Cell sizes for Hispanic participants were too small to calculate a separate Rao-Scott chi square  
 ^^Non-Black: White, Hispanic and Other (Asian, Pacific Islander, Native Hawaiian, Multi-race)

No significant associations were found between each of the core clinical performance measures and:

- Age of participant: ≤44 years of age and 45+ years of age
- Education level: High school GED or less and some college/undergraduate/graduate degree
- Poverty status: Below poverty line w/ two dependents and above poverty line w/ two dependents
- Facility location: Large (>1 million people) and small metro areas (<1 million people)

## Discussion

Of the HAB core clinical performance measures examined in this study, healthcare providers in Texas exceeded the IHI target for prescribing HAART to patients with AIDS (97% versus 90%).

However, 73% of individuals with a CD4 count <200 sustained in the SP were prescribed PCP prophylaxis, below the IHI target of 95%.

Furthermore, 79% of MMP participants had two or more CD4 T-cell lymphocyte counts done during the SP, also below the IHI target of 90%.

Black, non-Hispanic MMP participants were less likely to have had at least two or more CD4 T-lymphocyte counts, compared to individuals of other race/ethnicity groups.

Although a small proportion of participants had less than two medical visits during the SP, Black, non-Hispanics represent the majority (Rao-Scott chi square=5.6571, p=0.0174).

## Conclusions

HIV-positive patients with CD4 T-cell lymphocyte counts <200 are highly susceptible to PCP infection. Texas MMP participants did not meet the IHI goal for receiving PCP prophylaxis but this may have been due to the way PCP prophylaxis was measured in this analysis (see Limitations).

Treatment as prevention is the new hope for stopping HIV by lowering the amount of virus in the body through regular, ongoing medical care and treatment. The high percentage of care visits during the SP and prescription of HAART to patients with an AIDS diagnosis, in line with the HAB core clinical performance measures, shows excellent progress among Texas HIV providers toward that end. However, not all racial groups receive care equally, with Black non-Hispanic patients receiving less care than other groups.

To provide a more complete picture of the care that HIV-infected Texas residents receive, future studies should incorporate Houston MMP data and include patient medical history since HIV+ diagnosis and the start of medical care.

## Limitations

This information is a snapshot of the healthcare provided to HIV-positive individuals in the state of Texas (excluding Harris County) and cannot be generalized beyond this geographic region.

For this analysis, the calculation of the number of CD4 counts during the SP was more lenient in time than the HAB criteria of at least three months apart between CD4 count; therefore the proportion in this study is likely to be higher than if the original HAB CD4 measure had been used.

Prescription of PCP prophylaxis may be underrepresented. MMP abstraction guidelines require that PCP "prophylaxis" be documented as such or the dosage of medications is noted indicating prophylactic treatment; documentation of the medications alone is not sufficient.

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