Impact of the Ryan White HIV/AIDS Program on HIV treatment outcomes in the United States

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Background

- The Ryan White HIV/AIDS Program (RWHAP) provides HIV-infected persons in the United States with outpatient medical services, medications, and supportive services that are not covered, or only partially covered, by other health coverage types.
- Under the Patient Protection and Affordable Care Act (ACA), many persons living with HIV are newly eligible for Medicaid coverage or subsidized private insurance.
- The most appropriate role for RWHAP given this transition in healthcare financing is unclear.

Objective

To assess the association between receiving RWHAP assistance, alone or in combination with other sources of healthcare coverage, and HIV treatment outcomes among HIV-infected adults in medical care.

Methods

Data

- Used data from the Medical Monitoring Project (MMP), a surveillance system that produces nationally representative estimates of characteristics of HIV-infected adults in care in the United States.
- Data collected in 2009 – 2012 using interview and medical record abstraction.

Analysis

- Two outcomes measured by medical record abstraction: Prescription of antiretroviral therapy (ART) and having undetectable viral load at last measure (<200 copies/mL)
- Exposure of interest measured by interview: healthcare payer type
- Used F-tests and logistic regression to assess bivariate and multivariate associations between two outcomes and healthcare payer type.
- Estimated adjusted prevalence of outcomes among patients with selected healthcare payer types with vs. without RWHAP assistance using logistic regression.

Results

Table 1. Percentage of patients by healthcare payer type: Medical Monitoring Project, 2009 – 2012 (n=13,158)

Healthcare payer type	%	95% CI
RWHAP only	15.0	12.9 – 17.2
Private	16.8	14.9 – 18.7
Medicaid	16.6	14.9 – 18.2
Medicare	3.4	2.9 – 3.8
Medicaid+Medicare	9.6	8.4 – 10.8
Other public	1.4	0.5 – 2.4
Private+RWHAP	5.6	4.9 – 6.2
Medicaid+RWHAP	5.2	3.8 – 6.6
Medicare+RWHAP	3.4	2.6 – 4.2
Medicaid+Medicare+RWHAP	4.0	3.3 – 4.8
Other public+RWHAP	2.3	1.3 – 3.2
VA/Champus/Tricare	1.8	0.9 – 2.8
Other payer type	12.0	9.9 – 14.2
Uninsured	2.9	2.2 – 3.6

40% of patients received any RWHAP assistance

No variation in healthcare payer type by year

Figure 1. Percentage of patients prescribed ART by healthcare payer type among those with healthcare coverage or assistance: Medical Monitoring Project, 2009 – 2012

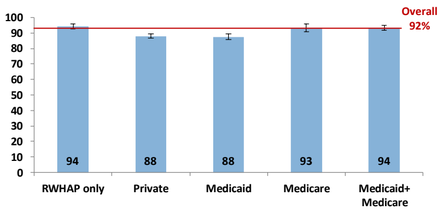


Figure 2. Percentage of patients with undetectable viral load by healthcare payer type among those with healthcare coverage or assistance: Medical Monitoring Project, 2009 – 2012

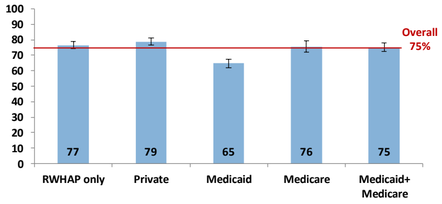


Table 2. Adjusted[a] prevalence ratios for being prescribed ART[b] and for having undetectable viral load[c] among HIV-infected adults receiving medical care with healthcare coverage or assistance: Medical Monitoring Project, 2009 – 2012 (n=12,773)

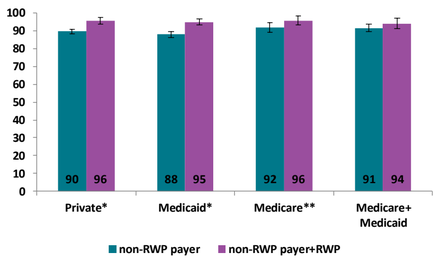
	ART prescription		Viral load < 200 copies/mL	
Healthcare payer type	aPR	P-value	aPR	P-value
RWHAP only	1.00		1.00	
Private	0.94	<0.01	0.95	0.01
Medicaid	0.92	<0.01	0.87	<0.01
Medicare	0.96	0.02	0.92	0.01
Medicaid+Medicare	0.96	<0.01	0.95	0.01
Private+RWHAP	1.00	0.91	0.99	0.72
Medicaid+RWHAP	0.99	0.35	0.92	<0.01
Medicare+RWHAP	1.00	0.99	0.98	0.45
Medicaid+Medicare+RWHAP	0.98	0.29	0.95	0.15
Other payer type	0.96	<0.01	0.94	<0.01

[a] Confounders selected for models based on significant ($P \leq 0.05$) associations with healthcare payer type and outcome and forward stepwise selection.

[b] Results from logistic regression model adjusted for age, race, time since HIV diagnosis, and HIV disease stage.

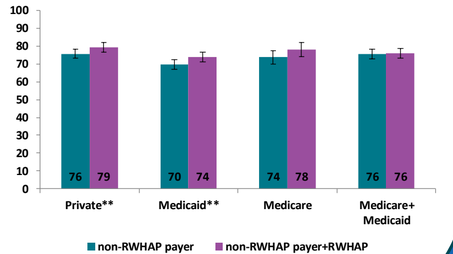
[c] Results from logistic regression model adjusted for age, race, place of birth, poverty, education, homelessness, and HIV disease stage

Figure 3. Adjusted prevalence of being prescribed ART[d] by healthcare payer type and receipt of RWHAP assistance among HIV-infected adults receiving medical care: Medical Monitoring Project, 2009 – 2012 (n=12,773)



[d] Results from logistic regression model adjusted for age, race, time since HIV diagnosis, and HIV disease stage
*P<0.01 for chi-squared test comparing healthcare coverage with and without RWHAP
**P<0.10 for chi-squared test comparing healthcare coverage with and without RWHAP

Figure 4. Adjusted prevalence of having undetectable viral load[e] by healthcare payer type and receipt of RWHAP assistance among HIV-infected adults receiving medical care: Medical Monitoring Project, 2009 – 2012 (n=12,773))



[e] Results from logistic regression model adjusted for age, race, place of birth, poverty, education, homelessness, and HIV disease stage
*P<0.01 for chi-squared test comparing healthcare coverage with and without RWHAP
**P<0.10 for chi-squared test comparing healthcare coverage with and without RWHAP

Discussion and Limitations

- Adjustment for patient characteristics revealed positive associations between RWHAP assistance (versus other healthcare payer types) and HIV treatment outcomes.
- Statistical differences between persons with and without supplemental RWHAP assistance were marginal for viral suppression outcome.
- No information on which types of RWHAP assistance patients received so cannot attribute findings to particular services.
- Healthcare payer type self-reported.
- Cross-sectional data do not allow assessment of temporality in associations.

Conclusions

- Uninsured and underinsured persons living with HIV infection who received RWHAP assistance were more likely to be prescribed ART and virally suppressed than those with many other healthcare payer types.
- MMP data are uniquely suited to examine the association between RWHAP and HIV treatment outcomes through ascertainment of healthcare payer type and other patient characteristics that are associated with both healthcare payer type and treatment outcomes.
- RWHAP is likely to remain an important source of support for HIV medical care, even as some patients' healthcare coverage options increase.

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