



Quantifying the relationship between attrition rates and health outcomes in the Florida Medicaid system

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BACKGROUND RESEARCH

- Low-income households are less likely to have health insurance/frequent healthcare services which means disproportionately lower health outcomes.
- Individuals enrolled in insurance tend to have better health outcomes than those that are uninsured.
- Insured people tend to utilize more preventative services and have more accurate health monitoring
- Uninsured people will also be less likely to test for chronic illnesses and have consistent great health monitoring.

POLICY RELEVANCE

- The Affordable Care Act(ACA) expanded insurance coverage to 10 million citizens and the 2014 expansion raised income requirement to 138% of the FPL.
- Because the expansion was optional, Florida did not adopt the expansion.
- Florida Medicaid recipients must annually reapply for Medicaid (medical redetermination) to ensure eligibility.
- Medical redetermination was removed during Covid pandemic due to the severity of the virus and the volatility of employment during this time/
- Now that the severity of the pandemic has lessened, the Florida legislature is trying to re implement the medical redetermination

REFERENCES

1. Kasper JD, Giovanni TA, Hoffman C. Gaining and Losing Health Insurance: Strengthening the Evidence for Effects on Access to Care and Health Outcomes. *Medical Care Research and Review*. 2000;57(3):298-318. doi:10.1177/107755870005700302
2. Ross, C.E. and Mirowsky, J. (2000), Does Medical Insurance Contribute to Socioeconomic Differentials in Health?. *The Milbank Quarterly*, 78: 291-321. <https://doi.org/10.1111/1468-0009.00171>
3. Guevara JP, Moon J, Hines EM, et al. Continuity of Public Insurance Coverage: A Systematic Review of the Literature. *Medical Care Research and Review*. 2014;71(2):115-137. doi:10.1177/1077558713504245

INTENTION

This research quantifies the relationship between an enrollee's attrition (length of enrollment) rates and the severity of their doctor visits. Based on our data here, we compose policy recommendations for general welfare.

Two-sample t test with equal variances

Group	Obs	Mean	Std. err.	Std. dev.	[95% conf. interval]	
0	5917068	.2881255	.0001862	.4528899	.2877606	.2884904
1	3502174	.1261205	.0001774	.3319852	.1257728	.1264682
Combined	9419242	.2278903	.0001367	.4194715	.2276224	.2281582
diff		.162005	.0002778		.1614604	.1625495
diff = mean(0) - mean(1)					t = 583.0960	
H0: diff = 0					Degrees of freedom = 9.4e+06	
Ha: diff < 0			Ha: diff != 0			Ha: diff > 0
Pr(T < t) = 1.0000			Pr(T > t) = 0.0000			Pr(T > t) = 0.0000

METHODS

This project used eligibility claim data (D₁) and insurance claims (D₂) from Florida Medicaid between 2014-2019. In D₁, we controlled for enrollees eligible for more than one age based public medical assistance program by only using the 18-59 age range. Then, using the recipient ID number, we isolated then number months each year an enrollee was eligible for. We then organize the dataset by calendar year instead of fiscal year. In D₂, we control for age and organize datasets by calendar year once again. Next, we isolated the service code (SC) in eligibility data to outpatient evaluation/management services by new patient (SC == 99201-5) or recurring patient (SC==99211-5) (see figure below). Next, we merge D₁ and D₂ by matching the recipient ID between datasets. Once the dataset is merged, we represent severity using the 5th character of outpatient E/M SC (1 representing most simple and 5 representing most complex). Finally, using (D₁) as the VAR1(attrition) and (D₂) as VAR2 (severity of services), we run a regression for holistic analysis and a Ttest for differences in new/recurring patients.

Code	History	Exam	MDM
99201	Problem focused	Problem focused	Straightforward
99202	Expanded problem focused	Expanded problem focused	Straightforward
99203	Detailed	Detailed	Low complexity
99204	Comprehensive	Comprehensive	Moderate complexity
99205	Comprehensive	Comprehensive	High complexity

RESULTS

TTEST: Inconsistent enrollees go to the doctors for increasingly more than consistently enrolled peoples. The mean of inconsistent patient severity is significantly higher (m=0.288) than consistent severity (0.162). the difference in means (diff) between both test groups is approximately 0.162, indicating a substantial disparity in health outcomes based on attrition rates.

Regression: Both the “nummonths” (value for attrition) and “new” (whether they have visited that doctor prior) variables represent substantial impact on severity, with coefficients 0.0139 and 0.8403, respectively. Based on this data, severity increases by around 0.0139 units as the number of months decreases. “New” condition yield a severity increase of approximately 0.8403 units compared to the established enrollees. The model’s high significance (F(2, 6600451) > 99999.00, p < 0.05) represents a 48.30% of the variance in severity. So, their attrition rate represents a significant variable to their healthcare utilization

Source	SS	df	MS	Number of obs	= 6,600,454
Model	585109.947	2	292554.973	F(2, 6600451)	> 99999.00
Residual	626278.749	6,600,451	.094884236	Prob > F	= 0.0000
				R-squared	= 0.4830
				Adj R-squared	= 0.4830
				Root MSE	= .30803
severity	Coefficient	Std. err.	t	P> t	[95% conf. interval]
nummonths	.0139167	.0000299	465.25	0.000	.0138581 .0139753
new	.8403123	.0003629	2315.77	0.000	.8396011 .8410235
_cons	.0135353	.0002801	48.33	0.000	.0129864 .0140843

PRACTICAL ANALYSIS

Policy implication:

- The Florida Legislature has repropoed annual Medicaid redetermination making high risk enrollees (low income but Medicaid ineligible) more susceptible to loss of coverage. We predict that health outcomes after the passing of the policy will behave similarly to the Florida Medicaid system from 2014-2019.

Research continuation:

- To fully test the effects of medical redetermination on health outcomes, our future research will compare the “no medical redetermination era” (2020 to 2023) with the data above to identify a significant relationship between the two implementation of policy.

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