

# **Association between Interruptions in Medicaid Coverage and Utilization and Expenditures Among Enrollees with Diabetes**

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# Medicaid coverage is not necessarily continuous

- 38 percent of non-elderly population estimated to have some instability in their coverage
- Over 4 years only 17 percent of beneficiaries were continuously enrolled
- Of those who left Medicaid/SCHIP – 65 percent became uninsured
- 40 percent of those with any time on Medicaid left and later re-enrolled (Short, 2003)

# Interruptions in coverage occur because.....

- Beneficiaries are required to re-enroll after a fixed period of enrollment
- Individuals may have trouble navigating complex procedures to renew coverage

# What happens when interruptions occur...

Survey research has shown that:

- As the number of ‘noncoverage’ episodes increased, preventive services use declined (Sudano et. al., 2003)
- Persons losing coverage over a two-year period were more likely to report access barriers compared to those continuously insured (Kasper et. al., 2000)
- Recently uninsured were 2-3 times as likely as those with continuous coverage to report access problems (Schoen and DesRoches, 2000)

# Little research on actual claims experience...

Using Medicaid claims from Utah

- Greater inpatient utilization among individuals with schizophrenia with gaps in Medicaid coverage (Harman, 2003)

# Research Questions

- Do individuals with diabetes have greater utilization of emergency room and inpatient services during periods immediately following an interruption in Medicaid coverage?
- Do individuals with diabetes have greater Medicaid costs in the periods immediately following an interruption in Medicaid coverage?

# Conceptual Model

When some individuals lose Medicaid coverage:

- Access to care is difficult
- Primary, preventive health care utilization declines
- Health status is compromised —→ leading to a major event (hospitalizations, ER)
- Major event forces re-enrollment

# Data

- Florida Medicaid claims and eligibility data from January 1999 to December 2002
- Individuals with diabetes identified based on diagnoses assigned by providers
- 50,852 individuals
- Analysis only on individuals with at least one lapse in coverage; N=2,804



# Analytic Approach

Individuals served as their own controls

- Utilization and expenditures for 3 months prior to interruption compared to utilization and expenditures for 3 months immediately after the interruption
- 3-month span is the unit of analysis

# Variables

- Dependent
  - Number of inpatient episodes
  - Total length of stay
  - Number of ER visits
  - Total Medicaid expenditures
- Independent
  - Dummy variable to identify span as a post-interruption span (gap $\geq$ 32 days)
  - Length of interruption
  - Age, gender, race, urban/rural, qualified based on a disability

# Statistical Approach

- Number of inpatient episodes emergency room visits: negative binomial regression
- Length of stay: exponential regression
- Total expenditures: used a two-part model
  - Logit and gamma regression
- Differences in utilization and expenditures between the pre-interruption and post-interruption period

# Florida MediPass beneficiaries with diabetes with at least one interruption in coverage, 1999-2002

Mean Number of Interruptions	1.2
Mean Length of Interruption	283 days

# Results for Inpatient Episodes and Length of Stay

	Inpatient Episodes		Length of Stay	
	IRR	P-value	TR	P-value
Post-Int.	2.64	<.001	1.24	.105
Length	1.00	.622	1.00	.095
Age	.98	<.001	1.01	.006
Male	.81	.133	0.69	.003
White	1.12	.418	0.97	.823
Disabled	1.43	.017	1.68	<.001
Rural	0.81	.061	0.86	.336

## Results for Number of ER Visits

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	IRR	P-value
Span post-interruption	155.15	<.001
Length of interruption	1.00	<.001
Age	0.98	<.001
Male	0.69	<.003
White	1.01	.920
Disabled	1.31	.038
Rural	1.44	.017

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# Results for Total Expenditures

	Any Expenditures		Expenditures Use	
	Coeff	P-value	Coeff	P-value
Post-Int.	-.436	<.001	.516	<.001
Length	-.002	<.001	.002	.352
Age	-.027	.005	.014	<.036
Age <sup>2</sup>	.0002	.808	-.0001	.117
Male	-.360	<.001	-.118	.068
White	-.018	.850	.190	.004
Disabled	.827	<.001	.552	<.001
Rural	.022	<.001	-.159	.032

# Change in Utilization and Expenditures

	<b>Difference in Utilization/Expenditures</b>	<b>P- value</b>
Hospital Episodes	+0.081	<.001
Avg.Length of Stay	+2.8	.003
ER Visits	+.505	<.001
Expenditures	+\$777	<.001



# Summary and Conclusions

- Appears to be some association between coverage lapses and subsequent increase in use of inpatient and emergency room services
- The presence of the lapse rather than the length of the lapse appears to be critical
- Similar findings on people with depression

## Limitations

- Not able to measure utilization and expenditures during the coverage lapse
- Claims data are messy

## Future Work

- Different disease categories
  - Hypertension and asthma

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