



**The Hilltop Institute**

*analysis to advance the health of vulnerable populations*

# Impact of Coordination/Integration on Medicaid Expenditures for Persons with Substance Use Disorders

---

Academy Health Research Meeting, Baltimore, Maryland

Monday, June 24, 2013

Michael T. Abrams, Seung O. Kim, Jayne M. Miller,

Yngvild Olsen, Jose J. Arbelaez



*\*Work supported by a grant from  
Baltimore Substance Abuse Systems, Inc.*

# General Questions

---

- What evidence is there in Maryland Medicaid administrative data that coordination/integration of care strategies for persons with substance use disorders (SUDs) yield aggregate medical expenditure savings?
  - What is the apparent magnitude of those savings?
  - What are apparent pathways to those savings?

# Why are these questions important and timely?

---

- Affordable Care Act  
(U.S. Public Laws 111-148 and 111-152)
- General interest in addressing fragmentation of care across behavioral and somatic health care treatment domains
- Parity efforts that do not typically emphasize SUDs in isolation



# A health home provider is...

---

“a physician, clinical practice or clinical group practice, rural clinic, community health center, community mental health center, home health agency, or any other entity or provider (including pediatricians, gynecologists, and obstetricians) that is judged by the State and approved by the Secretary to be qualified to be a health home for eligible individuals with chronic conditions on the basis of documentation showing that the physician, practice, or clinic – (A) has the systems and infrastructure in place to provide health home services; and (B) satisfied the qualification standards established by the Secretary”

(ACA § 2703(a)(h)(5)(A and B) – p. 232)

# CMS Expectation

---

...we expect that use of the health home service delivery model will result in lower rates of emergency room use, reduction in hospital admissions and re-admissions, reduction in health care costs, less reliance on long-term care facilities, and improved experience of care and quality of care outcomes for the individual.

*Mann C. "Re: Health Homes for Enrollees with Chronic Conditions," 2010 Nov 16.*

# Data, sample, key explanatory variable

---

- CY 2010 Maryland Medicaid data
- Persons with a SUD whose outpatient (not ER) most frequent provider (MFP) also served >50 others with SUD
- MFPs classified as “coordinated” or not based on stakeholder input **{Coord<sub>MFP</sub>}**

# Statistical Model

---

Total Medicaid Expenditures =

$f(\mathbf{Coord}_{MFP};$  Age, Sex, Race,  
Urban/Suburban, Enrollment Months,  
Coverage Category, Disability Status,  
Pregnancy, Disease Burden, Opioid  
Agonist/Antagonist Therapy, Drug  
Dependence, SMI)

# Results, *Unadjusted*

Variable	Coord <sub>MFP</sub> = Yes (n= 7,930)		Coord <sub>MFP</sub> = No (n=25,713)	
	Mean or Percent	Standard Deviation	Mean or Percent	Standard Deviation
Total Medicaid Expenditures (\$)	16,249	27,620	18,933	37,875
Age (years)	37	13	39	13
Females (percent)	54	-	47	-
White race (percent)	59	-	38	-
Urban/suburban residence (percent)	66	-	87	-
PAC enrollment (percent)	21	-	29	-
Disease burden (count)	6.2	3.9	5.8	3.8



# Log-Linear Regression Results

Variable	Main Model	Increased Coord <sub>MFP</sub> Sensitivity
Coord <sub>MFP</sub> %	24	29
Adjusted r-square	.55	.55
<i>Regression coefficients (selected, not all)</i>		
Coord <sub>MFP</sub>	-.079***	-.055***
Urban/Suburban	.19***	.19***
Disabled	.30***	.30***
Disease burden	.19***	.19***
ORT	.42***	.42***
Drug dependence	.30***	.30***
Schizophrenia or affective psychosis	.58***	.58***

1-  $e^{(-.079)} * \$18,301 = \$1,390$  (an estimate of savings correlated with exposure to a Coord<sub>MFP</sub>)

# Pathways-Utilization Correlates (logistic regressions results)

Independent Variable	Dependent Variable	Inpatient		ED (Ambulatory)	
		aOR	95% CI	aOR	95% CI
<i>Utilization outcome (ref: none)<sup>c</sup></i>					
Coord <sub>MFP</sub>	Low	.97	.88, 1.08	1.03	.95, 1.11
	Moderate	.91	.82, 1.00	1.05	.96, 1.14
	High	.76	.68, .85	1.08	.97, 1.20

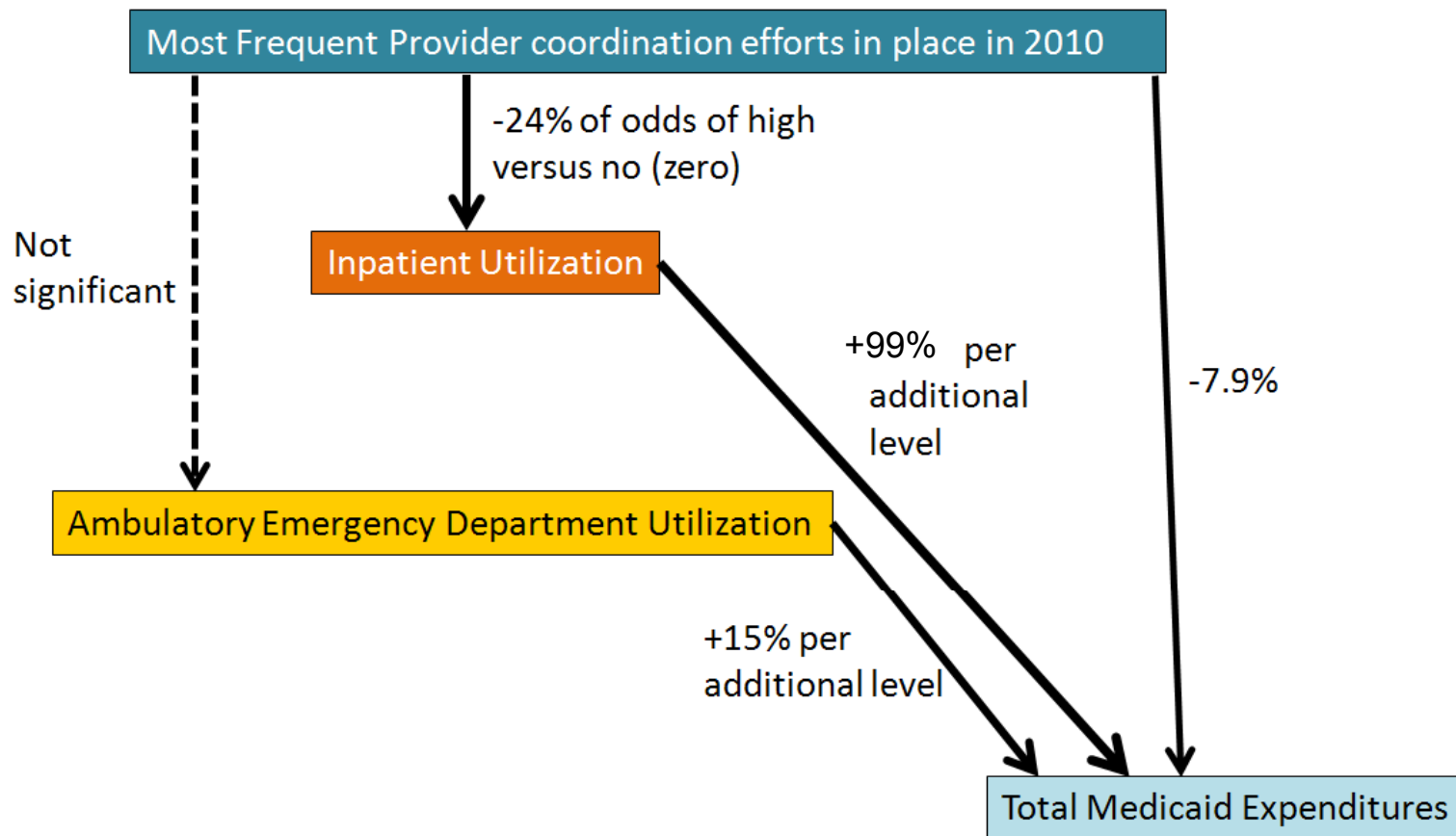
<sup>a</sup> Overall model fit statistics-  $n=24,528$ ,  $R^2=.42$ ,  $\chi^2=11,340$ ,  $df=51$ ,  $p<.0001$

<sup>b</sup> Overall model fit statistics-  $n=33,643$ ,  $R^2=.53$ ,  $\chi^2=83,041$ ,  $df=54$ ,  $p<.0001$

<sup>c</sup> For Inpatient, Low = 1-3 days, Moderate = 4-7 days, High > 7 days; for ED, Low = 1 visit, Moderate = 2-4 visits, High > 4 visits.

aOR = adjusted odds ratio (adjustments made using the following covariates: age, sex, race, urban/suburban residence, Medicaid coverage category, Opioid Maintenance Therapy, pregnancy, disease burden, and schizophrenia or affective psychosis diagnosis).

# Summary of Results



# Conclusions/Limitations

---

- Coordination efforts save \$ in a Medicaid SUD population
    - Bodes well for current state efforts to expand chronic health homes within methadone clinics
    - Inpatient reductions seem key, ED not necessarily so
- 
- Administrative data, not clinical and shadow pricing
  - $\text{Coord}_{\text{MFP}}$  variable is simple and rough
  - Observational, cross-sectional data

# Contact Information

---

Michael T. Abrams, MPH

Senior Research Analyst

The Hilltop Institute

University of Maryland, Baltimore County (UMBC)

410.455.6390

[mabrams@hilltop.umbc.edu](mailto:mabrams@hilltop.umbc.edu)