



Predicting Variables Affecting Repeat Hospitalizations in a Predominately SSI Medicaid Diabetic Population

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Background:

Many states have migrated Supplemental Security Income (SSI) populations from traditional fee-for-service to managed Medicaid. The potential benefits of this shift include cost savings attributable to capitation arrangements, managed pharmacy and disease management programs designed to reduce inpatient events. The challenge is that the SSI population utilizes resources that far exceed other Medicaid subgroups.

Medicaid, the SSI Population, and Diabetes

Medicaid populations, regardless of subcategory, present a more challenging situation to chronic disease management than private sector populations for a number of reasons; these include but are not limited to:

- Prevalence of homelessness and incarceration among vulnerable subgroups
- Medicaid eligibility churn
- General absence of benefit limitations, unlike the private sector or Medicare

The odds of being hospitalized are higher for individuals enrolled in Medicaid compared to other forms of coverage. Nationally, SSI recipients represent 16% of all Medicaid enrollees but 43% of Medicaid costs.ⁱ A four-state study of SSI recipients enrolled in Medicaid found approximately one quarter had been hospitalized and one half had been to the emergency room in a 12-month span.ⁱⁱ Moreover, the odds of being hospitalized were higher for individuals enrolled in managed Medicaid.

Higher per capita expenditures for these SSI beneficiaries with disabilities reflect their intensive use of costly, acute and long-term care services. People with severe and persistent mental illness (SPMI) have diabetes rates higher than the general population: 14% compared to 6%, respectively. Although reasons for this are not fully understood, there is some agreement that antipsychotic medication, perhaps because of its affect on glucose metabolism or weight gain, or lipid metabolism, contributes to the higher rate.

Individuals with SPMI may have a more difficult time with self-care issues, which could affect diabetes outcomes.ⁱⁱⁱ Smoking prevalence is 58% to 88% in people with schizophrenia, compared to 25% in the general population.^{iv} This exacerbates cardiovascular comorbidities. The Medicaid diabetic population and, especially, the SSI subgroup has



clinical and demographic characteristics that may likely lead to increased risk of serial hospitalizations. We are confident that being able to recognize these risk factors enables the disease management provider and the health plan to establish interventions that can attenuate this risk.

Objectives

This study had two related aims. The first was to examine a number of factors associated with an increased risk of repeat hospitalizations in a population consisting of managed Medicaid diabetic health plan members enrolled in disease management. The second was to use these findings to determine how to best apportion available resources to reduce the risk of future hospitalizations.

Study Design

This study was a retrospective analysis of administrative medical and pharmacy claims data for services incurred in calendar year 2005 and paid through 2006. The sample consisted of 695 managed Medicaid recipients in treatment for diabetes who had one or more hospitalizations in 2005. Diabetes was defined using ICD-9 codes. Stratified analysis and logistic and negative binomial regression were performed to assess differences by demographic, clinical and utilization indicators.



Results

Population Characteristics

More than 70% (N = 490) of study participants were women. Most were Caucasian. In all, 67% of the sample were Caucasian. Most individuals were over 50. Descriptive statistics indicate the mean age was 52 with a standard deviation of 12.

Table 1: Sample Characteristics

GENDER	ETHNICITY	AGE CATEGORY				GRAND TOTAL
		18-34	35-44	45-54	55+	
Female	African American	24	19	30	40	113 (23.1%)
	Caucasian	34	43	81	166	324 (66.1%)
	Hispanic	3	4	8	14	29 (1.8%)
	Other	1	4	8	11	24 (4.9%)
Female Total		62	70	127	231	490 (70.5%)
Male	African American	4	9	11	20	44 (21.5%)
	Caucasian	3	11	50	77	141 (68.7%)
	Hispanic		4	1	6	11 (5.3%)
	Other		1	3	5	9 (4.4%)
Male Total		7	25	65	108	205 (29.5%)
Grand Total		69	95	192	339	695

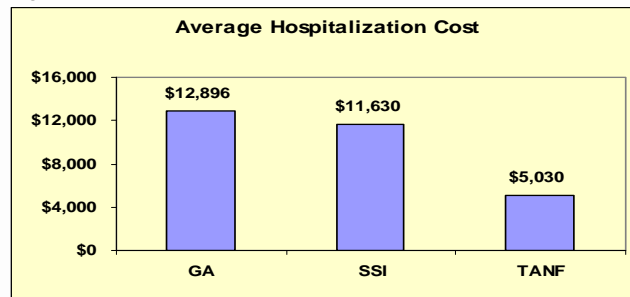
The SSI population accounted for more than 80% of all study participants. The General Assistance (GA) eligibility group had slightly higher average inpatient costs. It should be noted that often times the GA population is awaiting transition into the SSI pool.

Table 2: MEDICAID ELIGIBILITY GROUP AND INPATIENT COSTS

ELIGIBILITY GROUP	COUNT	COST
GA	36	\$464,252.98
SSI	576	\$6,698,971.95
TANF	83	\$417,496.11
Grand Total	695	\$7,580,721.04



Figure 1: HOSPITAL COST BY MEDICAID SUBGROUP



Statistical Analysis

Binary logistic regression was used to determine what variables increased the probability of having a future hospitalization. Members with comorbid CHF were more than twice as likely as those who did not have CHF to have had a repeat hospitalization.

Discussion

Our sample and results are consistent with reports documenting that the SSI population uses a disproportionate number of services. For this health plan, the SSI population represents approximately 20% of all members; yet in this study they represented 82% of the sample.

Results of this study led to a partnership with the Medicaid insurer. HMC identifies members who would benefit from home-health visits, which are provided by the insurer.

ⁱ Medicaid and the Uninsured, Henry J. Kaiser Family Foundation, Publication #7235 located at (www.kff.org/kcmu), 2005.

ⁱⁱ Anupa B., Hoover S., Mitchel JB., Four State Comparison of Access, Utilization and Quality of Care for SSI Adults and Children. RTI Project # 08502.007.001, 2004.

ⁱⁱⁱ McDevitt J., Snyder M., Breitmayer B., Paun O., & Wojciechowski E., Diabetes Management in the Context of Serious and Persistent Mental Illness Clinical Practice Recommendations EVIDENCE-BASED GUIDELINES FOR INTEGRATED CARE, 2002.

^{iv} Addington J., Group Treatment for Smoking Cessation Among Persons with Schizophrenia. *Psychiatric Services*, V49, pp. 925-928., 1998.

