



Medical Assistance Cost Outcomes

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Medical Assistance Costs Declined Among Emergency Department Patients who Received Brief Interventions for Substance Use Disorders through WASBIRT

Medicaid-Only Aged, Blind or Disabled, April 2004-December 2005

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Costs to the Medical Assistance Program were examined for aged, blind or disabled Medicaid clients who received at least a brief intervention through the Washington State Screening, Brief Intervention, Referral and Treatment (WASBIRT) Program between April 2004 and December 2005. The WASBIRT Program was implemented in nine large hospitals in the state, primarily among Emergency Department patients. Chemical dependency professionals screened 27,805 patients by the end of December 2005 and provided at least a brief intervention to 53% of these patients. Of all patients screened, 85% gave permission for the use of administrative records for analyses of the effectiveness of the WASBIRT Program.

Analyses focused on patients whose medical care was covered by Medicaid through the aged, blind or disabled programs.¹ Comparisons were drawn between 1,110 of these clients who received at least a brief intervention through WASBIRT and 22,926 Medicaid-only clients in these programs who were 18 to 64 years old, were treated in an Emergency Department in the same period, and lived in one of the six participating counties (Clark, King, Pierce, Snohomish, Thurston, or Yakima). Changes in medical costs after an Emergency Department visit were examined using two-stage, propensity-score adjusted regression models.²

Total medical costs and inpatient costs declined more for Medicaid-only aged, blind or disabled clients who got at least a brief intervention for substance use disorders than for similar clients who did not.

- The reduction in **total medical costs** after receiving the brief intervention ranged from **-\$157 per member per month (pmpm) (p<.05)** based on a regression model in which the propensity score was used as a weighting factor to **-\$202 pmpm (p=.10)** based on a model in which the propensity score was used as a covariate.
- Most of the reduction in medical costs was due to a decline in **inpatient hospital costs** ranging from **-\$115 pmpm (p=.05)** to **-\$178 pmpm (p=.10)**.
- **Outpatient Emergency Department** costs increased for the group that received an intervention relative to those who did not by **+\$35 (p<.05)** to **+\$36 pmpm (p<.05)**.

Overall reductions in total Medicaid costs could amount to as much as **\$1.9 to \$2.4 million** a year given the range of estimated reductions in medical costs found in these preliminary results. These figures are based on the assumption that about 1,000 Medicaid clients would be likely to receive a brief intervention annually at the current rate of screening patients in the nine hospitals participating in the WASBIRT Project. These results are preliminary but will be updated periodically as more clients are screened by the project. The evaluation of this project will continue through September 2008, the end of the federal cooperative agreement that funds WASBIRT. Future analyses will examine the stability of the cost outcomes over time.

¹ Clients who were eligible for both Medicaid and Medicare coverage (i.e., dual eligible) were excluded from analyses.

² The first stage regression model produces the propensity score which represents the estimated likelihood that a Medicaid patient in the comparison group would receive a brief intervention based on his or her background characteristics relative to the characteristics of those who received an intervention. In the second stage regression equation, the propensity score is employed either as a weighting factor or as a covariate. Results from both models are shown in order to provide a potential range of cost reduction estimates.

TECHNICAL NOTES

Selection Criteria

Eligibility

- Medicaid-Only Aged, Blind or Disabled Clients (ABD)
- Medicaid Eligibility: at least 1 month of Medicaid-only ABD eligibility in 12 months before index event and at least 1 month after
- Dual Eligibility Exclusion: excludes ABD clients with **any** period of dual Medicaid-Medicare eligibility
- Age: 18-64
- Alive at end of post period (March 31, 2006)

WASBIRT Participants:

- Received at least a brief intervention
- May have also received brief therapy or chemical dependency treatment
- Screening period: April 2004 – December 2005
- Index Event: 1st screening for which at least a brief intervention was received
- Alcohol or Other Drug (AOD) Risk Level: excluded 79 participants whose risk score was below standard cutoffs even if they received a brief intervention

Comparison Group:

- Emergency Department Use: at least one ED visit between April 2004 and December 2005
- Index Month: Month in which ED visit occurs (if more than one ED visit, one is chosen randomly as the index)
- County: resident of one of six WASBIRT counties (Clark, King, Pierce, Snohomish, Thurston, Yakima)

Regression Analyses

WASBIRT participants were compared to other aged, blind or disabled clients using a two-stage regression model. In the first stage, a logistic model was used to estimate the propensity (or probability) of receiving a brief intervention given the baseline characteristics of individuals and statistically relevant interactions between these variables:

- Demographics: age, gender, race/ethnicity, county of residence
- Prior AOD use indicators: potential need for AOD treatment based on diagnoses, arrests for alcohol or drug-related offenses, detoxification, or receipt of AOD treatment in the last 12 months
- Prior chronic disease risk scores: risk indicator based on diagnoses in Medicaid record in last 12 months
- Prior medical use: treatment for injuries, ED use, treatment for depression in the last 12 months
- Medical costs in the index month in which the ED visit occurred
- Prior Medicaid eligibility: months eligible in last 12 months through aged, blind or disabled; GAU; or ADATSA

In the second stage, the propensity scores were used in two separate ordinary least squares regression models to estimate the effects of the intervention. In the first model, the propensity score was included as a weighting factor (Lunceford and Davidian 2004; Rubin 2001). In the second model, the propensity score was included as a covariate (Heckman *et al.* 1989; Rosenbaum and Rubin 1993). Both models included the variables described in the preceding list and the number of months of Medicaid eligibility in the outcome period.

Medicaid cost outcome measures are based on what is commonly called a difference-of-differences approach. Specifically, the changes in Medicaid costs before and after the WASBIRT brief intervention are compared to the changes in Medicaid costs before and after the index emergency room visit for the comparison group.

Criteria for Level of Intervention

Screening scores	RECOMMENDED INTERVENTION			
	Screen Only	BI Only*	BT	CD Tx
AUDIT - Female	Less than 7	7-15	16-19	20-40
AUDIT - Male	Less than 8	8-15	16-19	20-40
DAST	0	1-4	5-7	8-10

*BI may also be given if the AUDIT score falls below 7 for females or 8 for males if there is evidence of binge drinking based on AUDIT questions, the patient has used alcohol 6 hours before an injury, the patient requests help, or the counselor identifies some other reason for offering a brief intervention (e.g., underage drinking).

References

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