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Washington Medicaid Integration Partnership:

Medical Care, Behavioral Health, Criminal Justice, and Mortality Outcomes for Disabled Clients Enrolled in Managed Care

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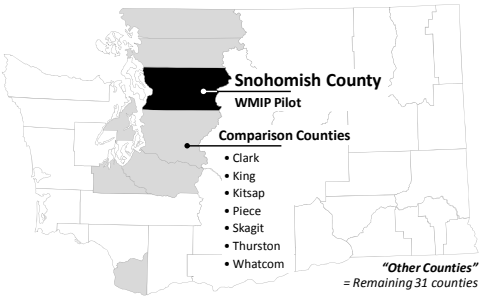
Report to Beverly Court, PhD, MHA, Research Manager, Office of Quality and Care Management, Medicaid Purchasing Administration

THE WASHINGTON MEDICAID INTEGRATION PARTNERSHIP (WMIP) is a voluntary managed care pilot project in Snohomish County. WMIP is designed to improve care for disabled Medicaid clients who are 21 years of age or older by coordinating services that in the past have been provided through separate treatment systems. Molina Healthcare of Washington began providing care for clients in January 2005. The benefit package includes medical care, substance abuse treatment, mental health treatment (fully phased-in October 2005), and long-term care services (added October 2006).



The WMIP project is being evaluated to determine whether Molina's integrated managed care model improves client health outcomes, increases client satisfaction with care, and controls growth in Medicaid expenditures. Prior reports have presented findings from analyses of two client satisfaction surveys conducted in 2006 and 2007.[1] This report presents findings from a claims-based analysis of changes in medical and behavioral health costs and utilization, arrests, and mortality. Most of the findings are based on an analysis of two cohorts of WMIP enrollees, relative to "matched" comparison groups of other Medicaid-only categorically needy disabled adults in the fee-for-service delivery system.

Key Findings

To date, the WMIP project has not demonstrated Medicaid cost savings on a county level, perhaps in part because individuals most likely to benefit from integrated care have been more likely to disenroll. On the positive side, mortality rates and inpatient hospital admissions are somewhat lower among those who enrolled in WMIP compared to similar clients in other counties, though neither finding achieves statistical significance. Although the number of months spent in chemical dependency treatment increased, the increase was somewhat lower for WMIP enrollees compared to their peers (not statistically significant). The significantly lower growth in prescriptions filled for mental illness among WMIP enrollees may be a positive finding given concerns about over-prescription of some psychotropic medications.

[1] Mancuso, et al. (2007, 2008). *Findings from the WMIP Client Surveys*. Olympia, WA: DSHS Research and Data Analysis Division. Report numbers 9.88 and 9.93, http://publications.rda.dshs.wa.gov/1363/.

HIGHLIGHTS | Summary of Findings

Enrollment Trends

- Enrollment has been relatively stable at over 3,000 clients per month. Over the life of the project, high cost medical clients have been disproportionately likely to disenroll. For example, in June 2009 the average chronic disease risk score for Medicaid-only disabled WMIP enrollees was 17 percent lower than the average for other clients in that coverage group in Snohomish County.

Medical Care Costs and Utilization

- Using an "intent-to-treat" approach, we found that changes from CY 2004 to CY 2008 in per member per month (PMPM) medical costs for Medicaid-only categorically needy disabled adult clients in Snohomish County were somewhat higher compared to the changes in costs experienced by similar clients in other Washington counties.
- WMIP enrollees in both cohort 1 and 2 experienced lower rates of inpatient hospital admissions in the post-period relative to their matched comparison group counterparts. [2]
- Other medical service utilization measures did not show a strong pattern of differences between WMIP enrollees and the comparison clients.

Chemical Dependency Treatment Costs and Utilization

- WMIP enrollees in both cohorts received less chemical dependency treatment in the post-period, as well as a smaller increase in the number of months spent in treatment over time, compared to their matched counterparts. However, these between-group differences were not statistically significant.
- The "fee-for-service equivalent" value of the outpatient chemical dependency treatment received by WMIP enrollees now exceeds the cost of this component of the WMIP capitation payment.

Mental Health Service Utilization

- WMIP enrollees in cohort 1 experienced lower growth in the volume of mental health medications filled relative to their matched peers in the comparison group. Similarly, WMIP enrollees in cohort 2 experienced a small decline in prescriptions for mental illness compared to an increase among their matched peers.
- State mental health hospital utilization has gone up for both groups and cohorts. The increase was smaller for WMIP enrollees in cohort 1 but larger and statistically significant for WMIP enrollees in cohort 2 compared to their non-WMIP counterparts.

Arrests

- Criminal justice findings are mixed. The number of arrests went up for both groups in cohort 1, though the increase was larger for WMIP enrollees. Conversely, arrests went down for both groups in cohort 2, and the decrease was larger and statistically significant for WMIP enrollees.

Mortality

- WMIP enrollees in cohorts 1 and 2 had lower rates of mortality in the post-period compared to their matched counterparts, though these differences did not reach statistical significance.

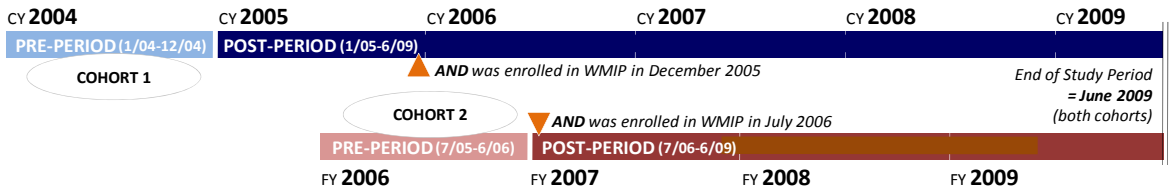
[2] In this report, the pre-period for cohort 1 is January 2004 to December 2004 (CY 2004) and the post-period is January 2005 to June 2009. For cohort 2, the pre-period is July 2005 to June 2006 (FY 2006) and the post-period is July 2006 to June 2009 (FY 2007-2009).

STUDY DESIGN

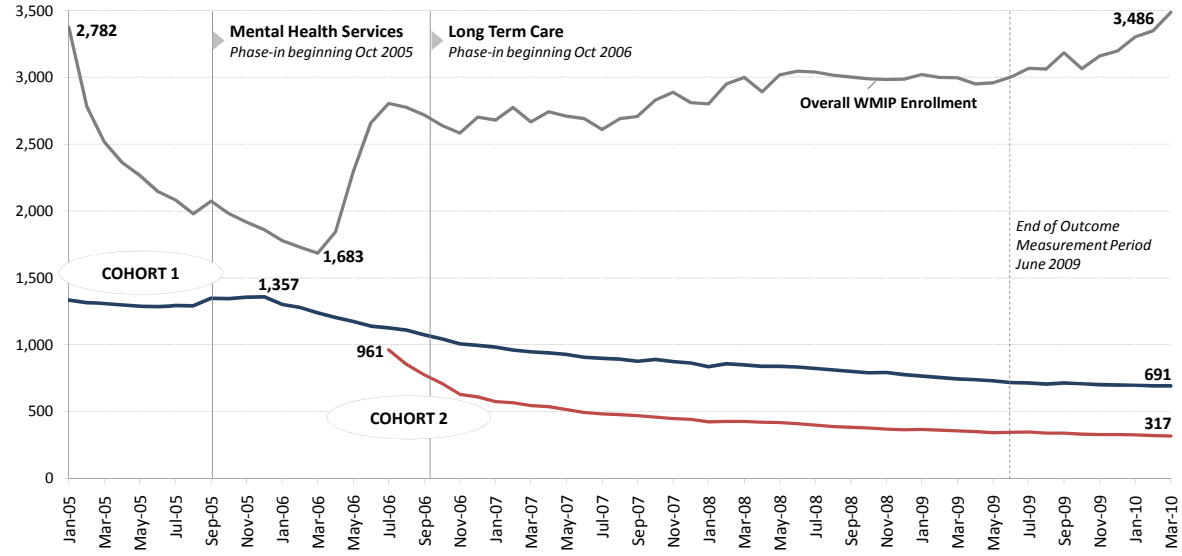
Enrollment in WMIP is voluntary and the project has experienced a higher rate of disenrollment among clients with greater health care needs. One consequence of the selective composition of WMIP enrollment is that any analysis of the program's effectiveness must take into consideration differences in relative medical risk of WMIP enrollees that distinguish them from other disabled Medicaid clients. To address this we used propensity score methods to sample a comparison group for each of two cohorts of WMIP enrollees from the universe of categorically needy Medicaid-only disabled adult clients residing in large western Washington counties.[3] This method "matches" comparison clients to WMIP enrollees using demographic and disease condition information to help reduce biases that may result from the selective disenrollment from WMIP. One drawback of this approach is that measured differences in some outcomes may be due to differences in the robustness of Medicaid service delivery systems in Snohomish County relative to the comparison counties, as opposed to differences in health plan performance relative to regular systems of care. (Please see the Technical Notes for more detail on the matching process.)

We analyze changes over time in outcomes for two cohorts of WMIP enrollees relative to statistically matched comparison groups. We use an intent-to-treat approach that continues to track WMIP enrollees through June 2009 even if they leave the program. Most Cohort 1 clients were enrolled in WMIP for all of calendar year 2005 and all were still enrolled as of December 2005. The second cohort is comprised of clients enrolled in WMIP as of July 2006 who entered the program after March 2006, during a period of rapid expansion in enrollment. Based on these cohort definition. Cohort 2 is likely to better represent the impact of offering WMIP enrollment to new client populations.

Study timeline for the two cohorts



WMIP Enrollment: Cohorts 1 and 2, January 2005-March 2010



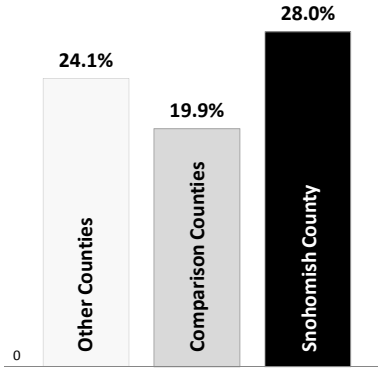
[3] We removed the small number of individuals who were over age 65 or dually eligible for Medicaid and Medicare from the analysis in order to ensure better matching on observed characteristics (such as, health care utilization).

MEDICAL CARE | Medical Costs and Health Care Service Utilization

In most of the analyses that follow, we compare utilization and outcomes for the two study cohorts against measures for matched comparison groups. However, this approach is not feasible for the examination of medical cost impacts, because the risk adjustment process used to adjust WMIP capitation payments for chronic disease acuity does not adjust capitation payments at the claim level. Therefore, it would be inappropriate to compare capitation payments for select cohorts of WMIP clients against fee-for-service costs for comparison group members, because the observed capitation payments for a given WMIP enrollee do not reflect the full contribution of the member to the payment to Molina.

Growth in Medical Costs

Change in risk-score adjusted per member per month medical costs
(CY 2004 to CY 2008)

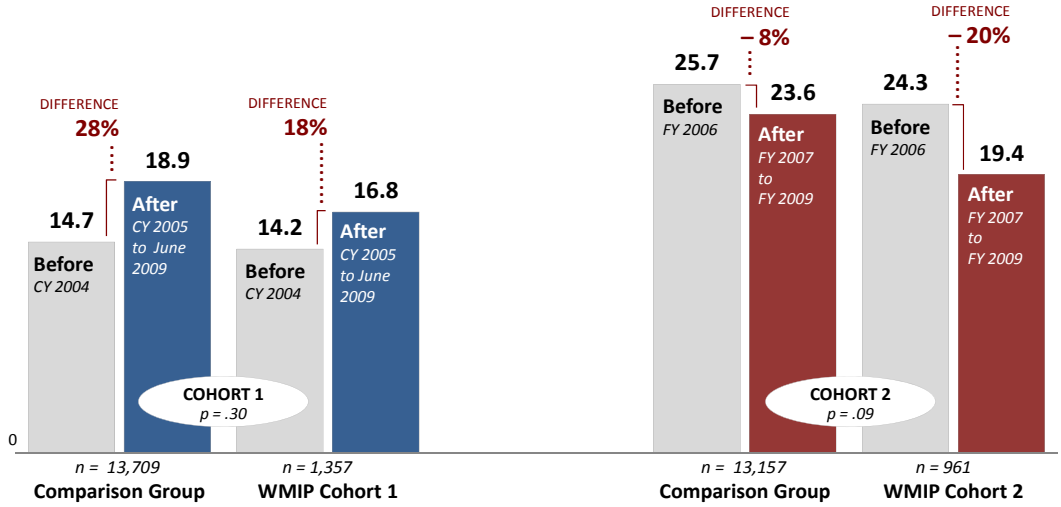


Instead, we use an intent-to-treat approach to analyze changes in medical costs for individuals the program was primarily designed to serve – Medicaid-only categorically needy disabled adult clients – rather than comparing WMIP enrollees against a matched comparison group. We compare changes in costs for disabled adult clients in Snohomish County (including WMIP enrollees) with changes occurring in the balance of the state (considering large Western Washington counties separately from other counties throughout the state). In doing so, we find that percent changes in PMPM medical costs over a four year period (CY 2004 to CY 2008) for disabled adult clients in Snohomish County have been somewhat higher relative to the changes experienced by similar clients in other counties throughout the state. The higher costs in Snohomish County are statistically significant (p = 0.02).

Inpatient Hospital Admissions

Our findings with respect to inpatient hospital admissions are encouraging. Relative to their matched peers, WMIP enrollees in cohort 1 experienced a relatively smaller increase in admissions (28 percent for the comparison group compared to 18 percent for WMIP enrollees). Results are more promising and approach statistical significance for cohort 2, where WMIP enrollees show a decline in inpatient admissions of 20 percent compared to 8 percent for the comparison group.

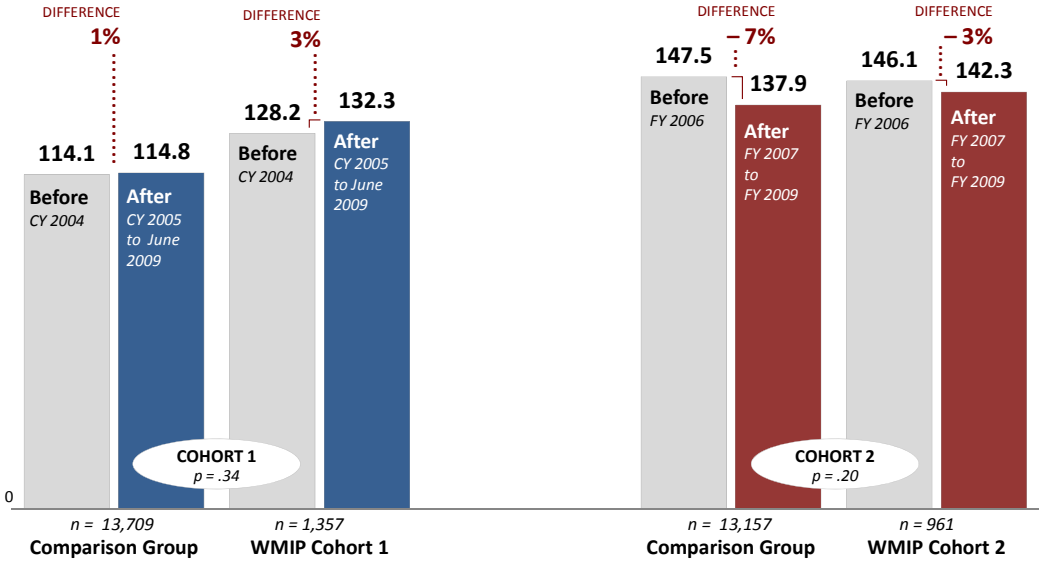
Admissions per 1,000 member months



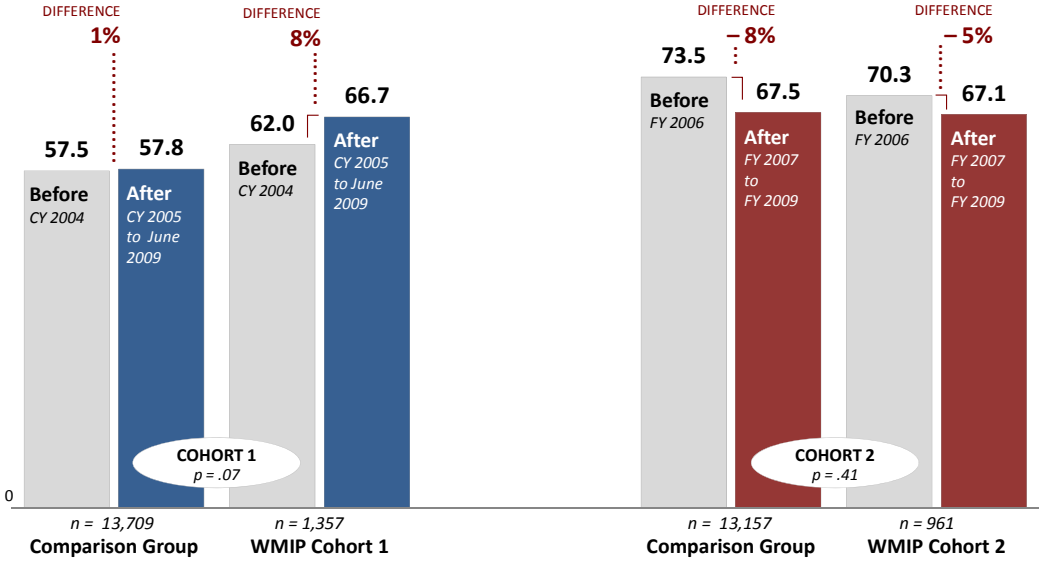
Emergency Department Visits: Overall and "Avoidable"[4]

WMIP enrollees in cohort 1 experienced a larger increase in both emergency department visits and visits considered "avoidable" compared to non-WMIP patients. Conversely, both WMIP enrollees and their matched counterparts in cohort 2 experienced a decline in emergency department visits and visits considered "avoidable." None of these differences between groups were statistically significant.

Emergency Department Visits per 1,000 member months



Avoidable Emergency Department Visits per 1,000 member months

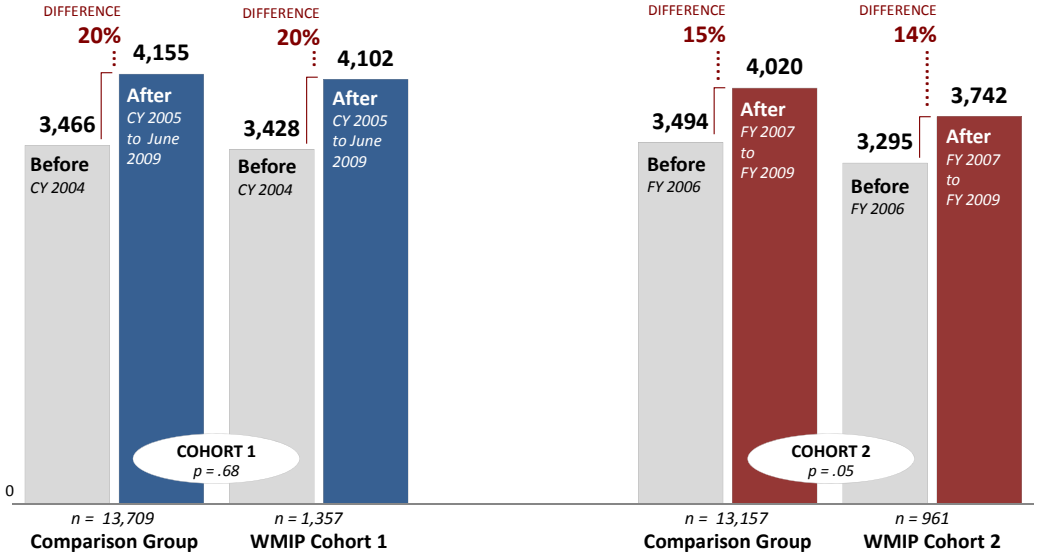


[4] We examined Emergency Department visits that did not result in a hospital admission. We classified these visits by relying on the Emergency Department Classification Algorithm developed by the New York University (NYU) Center for Health and Public Service Research. This approach classifies emergency department visits into five major categories (visits in categories #1-3 are considered "avoidable"): 1) Non-emergent, 2) Emergent – Primary Care Treatable, 3) Emergent – Emergency Department Care Needed - Preventable/Avoidable, 4) Emergent – Emergency Department Care Needed - Not Preventable/Avoidable, and 5) Other. (See http://wagner.nyu.edu/chpsr/ed_background.shtml.)

Prescriptions Filled

One concern some have with managed care plans is that capitation payments may lead providers to prescribe, diagnose, and treat patients less than fee-for-service patients. Our findings around prescriptions filled suggest this is not the case here, as WMIP enrollees filled a greater number of prescriptions than the comparison group. The change over time was also very similar for both cohorts.[5]

Number of filled prescriptions per 1,000 member months

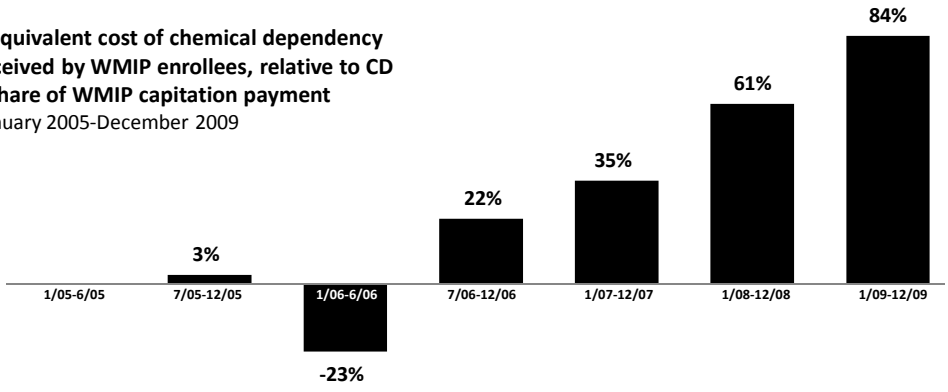


BEHAVIORAL HEALTH | Costs and Service Utilization

Chemical Dependency Treatment Cost Comparison

The "fee-for-service equivalent" value of the chemical dependency (CD) treatment services received by WMIP enrollees now exceeds the cost of the share of the WMIP capitation payment Molina receives to provide outpatient CD treatment (excluding opiate substitution treatment). In CY 2009, the value of these services received by WMIP enrollees exceeded the CD share of the capitation payment by 84 percent.[6]

Fee-For-Service-equivalent cost of chemical dependency (CD) treatment received by WMIP enrollees, relative to CD treatment share of WMIP capitation payment
January 2005-December 2009



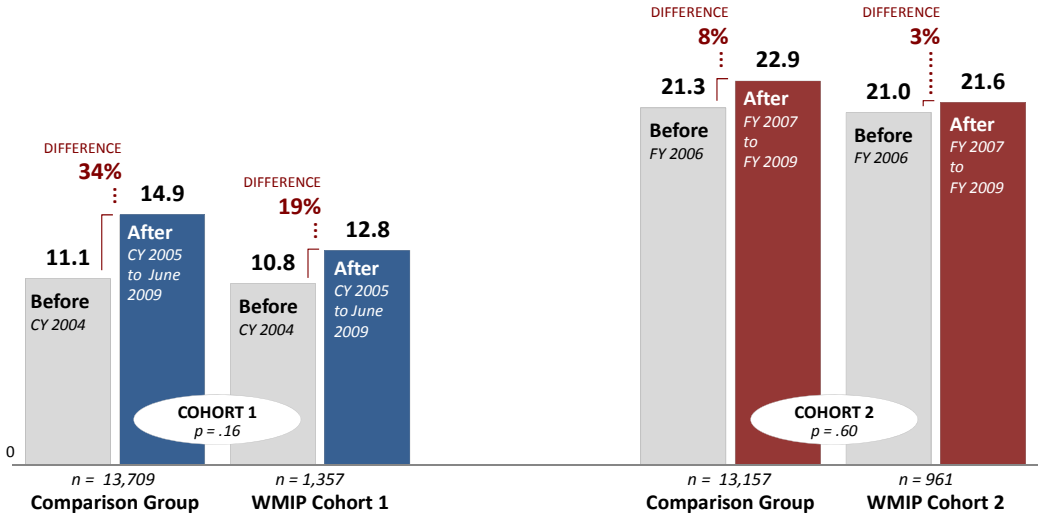
TOTAL Imputed Cost	48,680.36	36,101.32	24,404.51	54,441.78	128,862.47	$177,545.10	$205,654.71
CD Tx Capitation Payment	n/a	$35,132.30	$31,822.36	$44,733.82	$95,645.05	$110,264.82	$111,642.19
DIFFERENCE	n/a	$969.02	-$7,417.85	$9,707.96	$33,217.42	$67,280.28	$94,012.52
Percent Difference	n/a	**3%**	**-23%**	**22%**	**35%**	**61%**	**84%**

[5] Although the between-group difference achieves statistical significance for Cohort 2, this is likely due in part to the large number of observations for prescriptions, which increases the power to detect significance.
[6] Total imputed costs are the sum of imputed encounter costs and imputed county administrative costs.

Chemical Dependency Treatment

WMIP enrollees in both cohort 1 and 2 received slightly fewer months of chemical dependency treatment than their counterparts in the matched comparison groups.[7] They also experienced a smaller increase in the number of months in treatment from the pre- to post-period, though this difference between WMIP enrollees and comparison clients was not statistically significant.

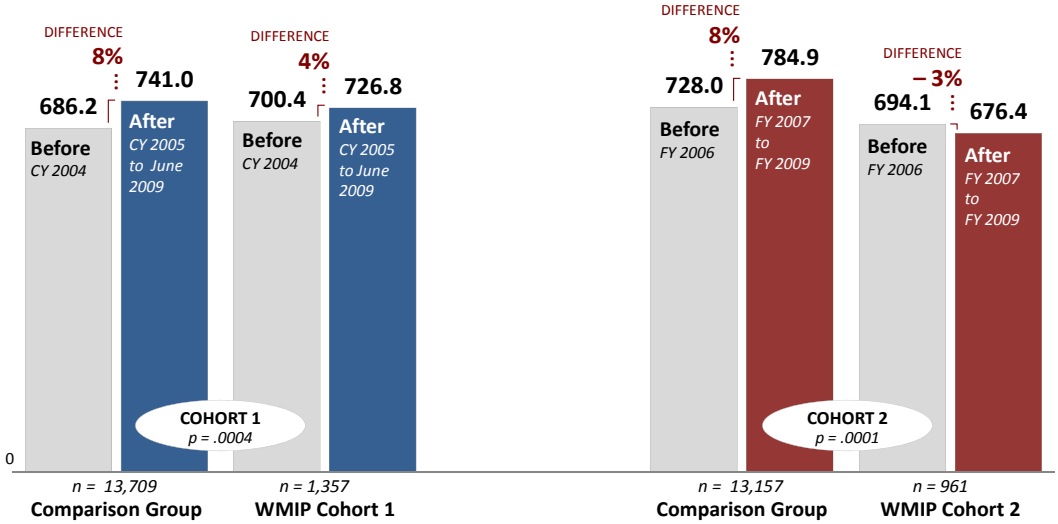
Months in chemical dependency treatment per 1,000 member months



Mental Health Prescriptions Filled

WMIP enrollees in cohort 1 showed a lower growth in the volume of mental health medications filled relative to their matched peers (4 percent compared to 8 percent). WMIP enrollees in cohort 2 experienced a slight decline in mental health scripts compared to an increase among their peers. Differences between WMIP enrollees and comparison clients in both cohorts were statistically significant.

Mental health medications per 1,000 member months

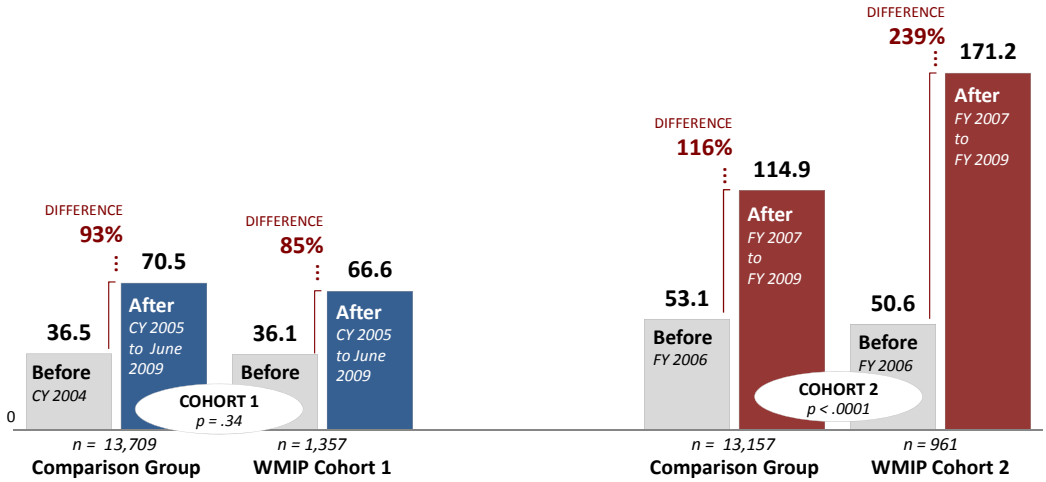


7 During the study period, the fee-for-service delivery system benefited from increased resources for chemical dependency treatment through the Treatment Expansion initiative, which may account for the greater relative increase in treatment among clients in the comparison group.

Days in State Mental Health Institutions

For both cohorts, there was an increase in state hospital utilization among both WMIP enrollees and comparison group clients.[8] The increase was smaller for WMIP enrollees in cohort 1 than for comparison clients, but WMIP enrollees in cohort 2 demonstrated a statistically significant increase in state mental health days compared to their matched counterparts.

Days in State Mental Health Hospital per 1,000 member months

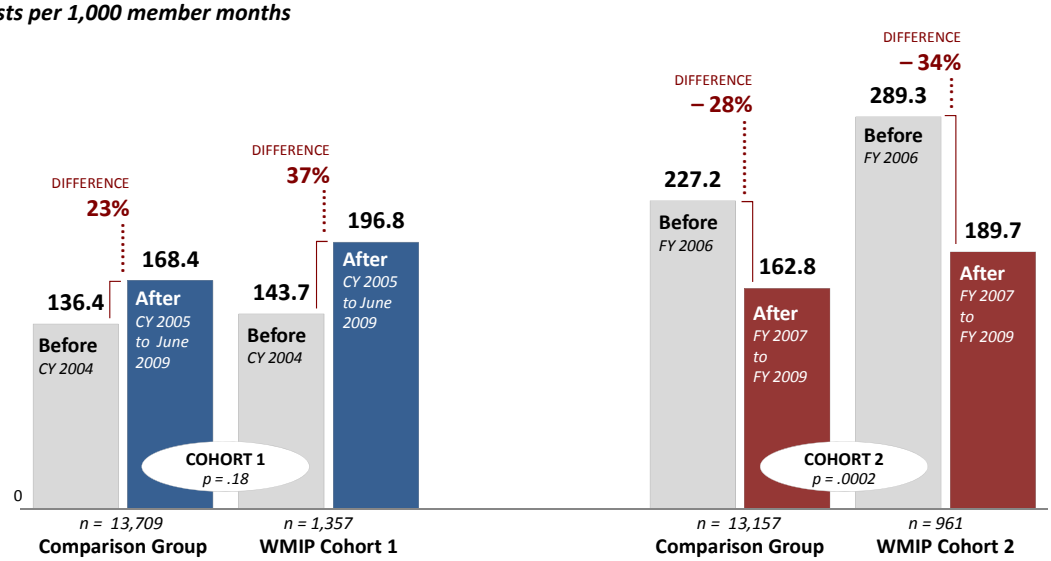


OTHER OUTCOMES | Criminal Justice and Mortality

Criminal Justice

Our findings on changes in the number of arrests over time are mixed. Among cohort 1 clients, WMIP enrollees had more arrests as well as a larger increase in arrests from the pre- to post-period (a 23 percent increase for the comparison group compared to a 37 percent increase for WMIP enrollees). Among cohort 2 clients, WMIP enrollees continued to exhibit a larger volume of arrests per 1,000 member months but also experienced a larger and statistically significant reduction in arrests over time (a 34 percent decline for WMIP enrollees compared to a 28 percent decline for the comparison group).

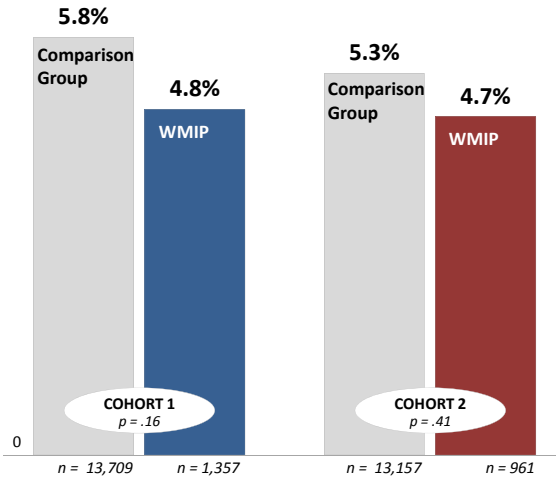
Arrests per 1,000 member months



[8] Cohort selection criteria required that individuals in our analysis be enrolled in Medicaid at the end of the baseline period. Individuals lose Medicaid eligibility while in state mental health institutions, so the increase from baseline to the follow-up period represents a significant degree of "regression to the mean".

Mortality

Percent who died in the post-period



Keeping in mind that individuals in the study population are all under 65 years-old, our findings with respect to mortality show promise. Among cohort 1 clients, 4.8 percent of WMIP enrollees died in the post-period compared to 5.8 percent of the comparison group. Among cohort 2 clients, a slightly smaller proportion of WMIP enrollees died in the post-period relative to the comparison group (4.7 percent compared to 5.3 percent). Neither of the between-group differences achieve statistical significance. Nevertheless, these findings may suggest that the WMIP project is providing better coordinated care that in turn results in fewer deaths.

DISCUSSION | Successes and Challenges

The findings presented in this report suggest that the WMIP approach to integrating care for disabled Medicaid clients through managed care shows some promise, but there are also challenges.

Successes

- WMIP appears to be containing inpatient hospital admissions, which tend to be the largest driver of overall medical costs.
- WMIP enrollees in both cohorts experience lower rates of early mortality in the post-period relative to their matched fee-for-service counterparts.
- WMIP enrollees in cohort 2 experienced a significant reduction in arrests compared to their peers.

Challenges

- WMIP does not appear to be reducing growth in Medicaid costs in Snohomish County when compared to growth in other counties throughout the state.
- There has been selective disenrollment from WMIP such that the individuals most likely to benefit from improvements in coordinated care have also been less likely to participate in the program over time.
- On average, WMIP enrollees spend fewer months in outpatient chemical dependency treatment, which may in part be due to inadequate funding to Molina to provide these services. Lower levels of CD treatment participation is consistent with a 2007 consumer satisfaction survey, which found that WMIP enrollees were less satisfied than their fee-for-service counterparts with access to treatment and counseling.

APPENDIX | Technical Tables

TABLE 1

Medicaid Purchasing Administration Medical Assistance Cost and Risk

MPA Medical Assistance Unadjusted Medical Costs (per member per month) Medicaid-only Categorically Needy Disabled Adults						
Calendar Year	Unadjusted			Risk Score Adjusted		
	Snohomish	Comparison Counties	Other Counties	Snohomish	Comparison Counties	Other Counties
2004	$803	$826	$823	$808	$837	$806
2005	$891	$835	$873	$909	$843	$856
2006	$876	$870	$899	$888	$882	$879
2007	$929	$942	$935	$941	$949	$922
2008	$1,047	$998	$1,005	$1,035	$1,003	$1,001

Risk Scores Medicaid-only Categorically Needy Disabled Adults				
Calendar Year	Snohomish	Comparison Counties	Other Counties	Weighted Average
2004	1.124	1.117	1.156	1.131
2005	1.139	1.151	1.185	1.162
2006	1.135	1.135	1.175	1.150
2007	1.135	1.142	1.167	1.151
2008	1.165	1.146	1.157	1.152

TABLE 2

Baseline demographic characteristics after propensity-score sampling

COHORT 1		
AGE	COMPARISON *n = 13,709*	WMIP *n = 1,357*
18-24	5.7%	5.7%
25-34	16.8%	16.9%
35-44	22.1%	22.0%
45-54	31.2%	31.3%
55-64	24.2%	24.2%
GENDER	COMPARISON *n = 13,709*	WMIP *n = 1,357*
Female	54.1%	53.7%
Male	45.9%	46.4%

RACE | ETHNICITY	COMPARISON *n = 13,709*	WMIP *n = 1,357*
Asian/Pacific Islander	7.3%	7.4%
African American	4.2%	4.4%
Hispanic	2.7%	2.8%
American Indian/Native Alaskan	0.4%	0.7%
Other	2.3%	2.1%
White, *non-Hispanic*	83.1%	82.6%

COHORT 2		
AGE	COMPARISON *n = 13,157*	WMIP *n = 961*
18-24	15.2%	14.7%
25-34	17.8%	18.0%
35-44	26.2%	26.4%
45-54	24.8%	24.9%
55-64	16.0%	16.0%
GENDER	COMPARISON *n = 13,709*	WMIP *n = 1,357*
Female	50.3%	50.5%
Male	49.7%	49.5%

RACE | ETHNICITY	COMPARISON *n = 13,157*	WMIP *n = 961*
Asian/Pacific Islander	4.7%	5.1%
African American	6.2%	6.7%
Hispanic	3.8%	3.8%
American Indian/Native Alaskan	0.7%	0.4%
Other	2.5%	2.6%
White, *non-Hispanic*	82.0%	81.5%

TABLE 3

Baseline year utilization and risk measures after propensity-score sampling

	COHORT 1 (CY 2004)		COHORT 2 (FY 2006)	
MPA MEDICAL COSTS, RISK, AND COVERAGE	COMPARISON *n = 13,709*	WMIP *n = 1,357*	COMPARISON *n = 13,157*	WMIP *n = 961*
MPA PMPM medical costs while CN Medicaid-only Blind/Disabled	$529	$538	$760	$774
Chronic disease risk score	0.965	0.958	1.103	1.123
Member Months CN Medicaid-only Blind/Disabled	11.5	11.5	10.0	10.5
CHEMICAL DEPENDENCY TREATMENT				
Received DBHR-funded treatment, Full Year	5.2%	5.2%	8.8%	9.6%
Received DBHR-funded treatment, Q1	3.3%	3.3%	5.8%	6.5%
Received DBHR-funded treatment, Q4	2.9%	2.9%	4.7%	4.9%
MEDICAL UTILIZATION				
Outpatient emergency room visits	1.4	1.5	1.6	1.7
Inpatient hospital admissions	0.18	0.18	0.29	0.30
Physician visits	12.8	13.1	13.7	13.8
Prescriptions filled	40.5	40.4	37.3	37.5
MENTAL HEALTH SERVICE UTILIZATION				
Any service	31.3%	31.1%	—	—
Community inpatient services	3.7%	3.9%	7.3%	9.7%
Community services	31.0%	30.7%	—	—
Days in state mental hospital	0.42	0.42	0.53	0.53
Days in state mental hospital Q1	*0.11*	0.07	*0.*25	*0.27*
LONG-TERM CARE UTILIZATION				
Aging and Adult Services in-home services	5.2%	5.4%	4.8%	4.9%
Had Skilled Nursing Facility stay	1.6%	1.7%	2.1%	2.1%
Aging and Adult Services assisted living	0.3%	0.2%	0.2%	0.2%
Aging and Adult Services community residential (AL, AFH, ARC)	1.5%	1.6%	1.6%	1.6%
Developmental Disabilities Division services	1.9%	1.7%	13.6%	12.5%
CDPS DIAGNOSIS IN MMIS CLAIMS				
Psychiatric "High"	10.0%	10.2%	7.4%	7.7%
Psychiatric "Medium"	5.7%	5.3%	9.7%	11.2%
Psychiatric "Low"	19.5%	19.1%	28.1%	28.0%
Drug Use Disorder	6.6%	6.6%	11.9%	12.8%
Alcohol Use Disorder	4.3%	4.5%	5.6%	6.0%
ARRESTS				
Any type, per member per year	—	—	0.247	0.289

TIME PERIODS

WMIP was implemented in January 2005. Cohort 1 includes 1,357 Medicaid-only categorically needy disabled adult clients enrolled in WMIP in December 2005. Cohort 2 includes 961 Medicaid-only categorically needy disabled adult clients who first enrolled in WMIP during the ramp-up of enrollment in the spring of 2006. The analysis was restricted to Medicaid-only disabled adult clients who comprise the vast majority of WMIP enrollment. The relatively small number of WMIP enrollees who were above age 65 or dually eligible for Medicare were not included in this analysis.

SELECTION OF COMPARISON GROUPS

A separate comparison group was selected for each study cohort using propensity score sampling. The method includes the following steps:

- **Identify Medicaid clients** meeting comparable medical eligibility criteria (enrolled in Categorically Needy Medicaid-only blind/disabled medical coverage in the same time period) and residing in selected comparison counties (King, Pierce, Whatcom, Skagit, Kitsap, Thurston, and Clark).
- **Measure demographics** (age, gender, race/ethnicity), baseline service utilization, physical conditions, mental illness conditions, and substance use disorders as summarized by CDPS diagnosis groups and applied to clients' baseline period medical claims. Also measure baseline months of medical assistance eligibility to "match" on months of claims "exposure" in the baseline year used to measure disease conditions.
- **Estimate a statistical model** over these populations that relates the probability the client is a WMIP enrollee to the measured demographic, baseline service utilization, diagnosis, and medical eligibility characteristics.
- **Stratify the fitted probabilities** from the statistical model (the "propensity score") into deciles. Randomly sample comparison group members out of the deciles to match the propensity score distribution of WMIP enrollees.

MATCHED COMPARISON

- The resulting comparison groups approximately match the measured baseline characteristics of WMIP enrollees—age, gender, and race/ethnicity; baseline service utilization; baseline physical, mental health, and substance use disorder characteristics; and baseline year medical assistance eligibility.
- The comparison group for Cohort 1 includes 13,709 clients.
- The comparison group for Cohort 2 includes 13,157 clients.

REGRESSION ANALYSES

- We used regression analysis to compare changes in outcomes from pre- to post-period between WMIP enrollees and their matched comparison group counterparts.

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