

Washington State’s Fostering Well-Being Program: Impacts on Medical Utilization

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THE FOSTERING WELL-BEING (FWB) program launched in State Fiscal Year (SFY) 2010 to facilitate access to comprehensive health care for children in out-of-home placement. The program aims to improve health and wellness, particularly among children with complex chronic health needs, by providing care coordination services to caregivers and enhancing linkage with primary, specialty, and behavioral health providers.

Over the first two years of the program (March 2010 – March 2012), more than 550 children received care coordination services through FWB. On average, children served by the FWB program had substantially greater health needs than other children on Medicaid in Washington State. To assess the effects of FWB on medical utilization, we created a statistically matched comparison group of children in out-of-home placement with demographics, health conditions, and baseline medical utilization similar to that of FWB recipients. Of all those children receiving FWB care coordination services in the program’s first two years, 473 met the data requirements for the study, and 436 were successfully matched to similar children who did not receive FWB.

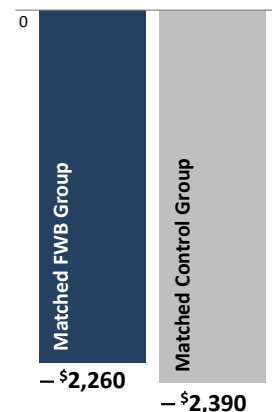
We then compared the change in medical utilization (as measured by per member per month medical costs, outpatient emergency room visits, and inpatient hospitalizations) in the 12 months before and 12 months after first receiving FWB coordination services (for the matched FWB recipients), relative to the change experienced by the matched comparison group over comparable time periods.

Key Findings

- FWB recipients experienced dramatically reduced medical utilization in the 12 months after entry into the FWB program.
- Reductions in medical utilization among FWB recipients did not differ significantly from those of similar children in out-of-home-placement with high baseline medical costs who did not receive care coordination services through FWB.

Decline in Medical Costs

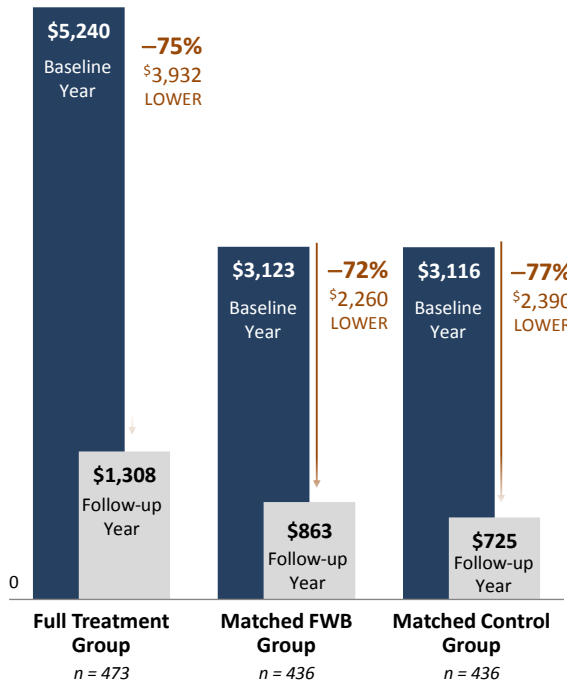
Per member per month



Medical Costs

Medical costs were dramatically lower in the year following entry to FWB

Per member per month



Children who received FWB care coordination services had high baseline medical costs (\$5,240 PMPM) and experienced dramatic reductions in costs in the year following entry to the FWB program (-\$3,932 or -75 percent).

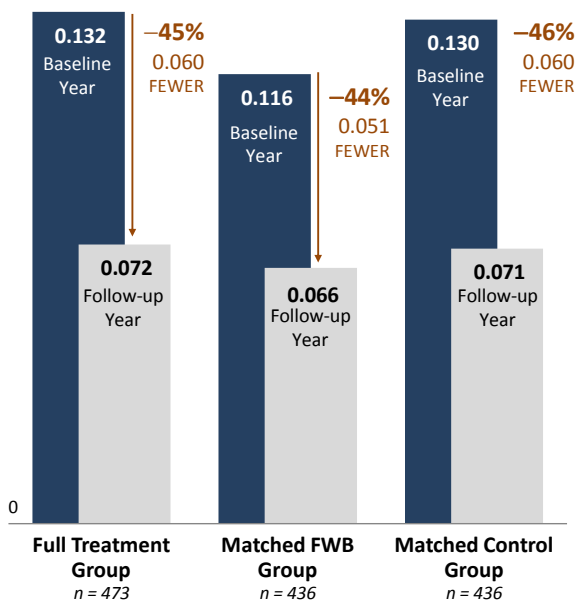
Because it was difficult to find suitable matched controls for FWB treatment group members with the most extreme costs, the matched FWB group averaged substantially lower baseline costs relative to the full FWB treatment group (\$3,123 PMPM vs. \$5,240 PMPM).

The matched FWB treatment group and the matched control group averaged very similar baseline medical costs (\$3,123 PMPM vs. \$3,116 PMPM), as well as changes in costs over time (-\$2,260 or -72 percent vs. -\$2,390 or -77 percent). The slightly larger decline in costs experienced by the matched control group is not statistically significant.

Outpatient Emergency Room Visits

Outpatient emergency room visits were dramatically lower in the year following entry

Per member per month



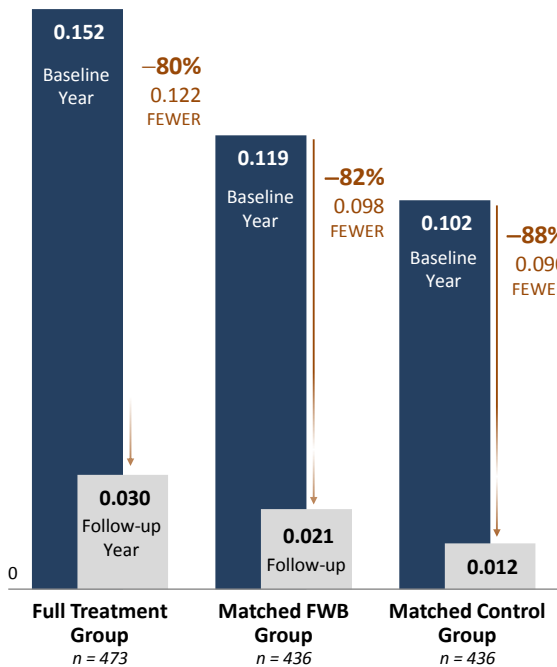
Children who received FWB care coordination services also had high baseline utilization of outpatient emergency room (ER) services. On average, they visited the ER 0.132 times per month, or 1.6 times per year in the 12 months before entering the program. In the year after entering FWB services, their ER utilization decreased by nearly half.

Matched FWB recipients and control group members both had baseline ER utilization similar to the full FWB treatment group. The matched FWB recipients decreased their ER utilization by 0.051 visits PMPM, or about 44 percent. This decrease did not differ significantly from that of matched control group members (-0.060 visits PMPM or -46 percent).

Inpatient Hospitalizations

Inpatient hospitalizations were dramatically lower in the year following entry to FWB

Per member per month



Children who received FWB care coordination services had high baseline rates of inpatient hospitalization, and experienced large declines in these rates following entry to the FWB program. In the year prior to entering the FWB program, they averaged 0.152 hospitalizations per month or almost twice per year. In the 12 months after entering the program, this rate declined by 80 percent.

Those FWB recipients who could be matched to similar children not receiving FWB had slightly lower baseline rates of hospitalization—0.119 per month. Both the matched FWB group and the matched control group members experienced substantial declines in hospitalization in the 12 months following the index date. The decline in inpatient hospitalization among matched FWB group members was -0.098, or -82 percent, while the decline among control group members was -0.090, or -88 percent. This difference in the reduction of inpatient hospitalization is not statistically significant.

Discussion

FWB recipients experienced dramatically reduced medical utilization in the 12 months after entry into the FWB program. However, evaluation results show that these reductions were similar in magnitude to those experienced in the same timeframe by other medically complex children in out-of-home placement who were not served by the FWB program. The results presented in this report do not control for differences between the matched FWB group and the control group that remained after the matching process, but additional regression analyses that did control for small remaining differences yielded the same general pattern of findings (see Technical Notes).

This evaluation's findings should not be interpreted to mean that the Fostering Well-Being program has no effects on the children and caregivers it serves. Although the small number of children served by the program and the program's relatively short tenure restricted us to look only at medical utilization outcomes in the first twelve months after program entry (or a comparable index date), a longer follow-up period may reveal delayed, longer-term effects on health outcomes and medical utilization. If FWB helps caregivers of children with complex medical needs access health care services, it may be unreasonable to expect to see short-term declines in medical utilization. Rather, short-term program effects may be more difficult to measure—for example, declines in caregiver stress, improved access to necessary health care services, stabilization of children's medical conditions—and only later translate into declines in medical utilization and cost reductions.

It should also be noted that the children who receive FWB services are much more extreme in terms of baseline medical costs and risks compared to other children on Medicaid. As such, it was difficult to find suitable matched controls for some recipients, and ultimately nearly one-tenth of the treatment group was dropped in the matching procedure. These children, excluded from the final analysis of utilization changes between the matched samples, had by far the greatest baseline medical utilization and the largest declines in utilization of any children in the program. It is possible that the program yielded large and significant reductions in medical utilization among this highest-risk group, but that could not be determined using the available observational data.

This report summarizes an evaluation of the Fostering Well-Being (FWB) program. We examined medical utilization outcomes over a twelve-month follow-up period for FWB recipients compared to statistically matched peers. Matched peers were drawn from a pool of other children in out-of-home placement and on Medicaid. Those selected for the comparison group had demographics, health issues, and baseline medical utilization similar to those children who participated in the FWB program.

SELECTION CRITERIA FOR FWB RECIPIENTS INCLUDED IN ANALYSIS

Out of all children who received FWB care coordination services since its inception in March 2010, we first identified those who entered the program prior to April 2012 (n = 572); these children had sufficient follow-up data to examine outcomes for 12 months after program entry. The month of program entry defines the “index month,” the prior 12 months define the baseline year, and the subsequent 12 months define the follow-up year (or outcome period). The FWB treatment group was further restricted to children ages 0-17; in out-of-home placement in the index month; on Medicaid in the index month and in at least one month in both the baseline period and the outcome period; and whose records did not reflect administrative data linkage errors. 473 FWB treatment group members met the data requirements for the study.

SELECTION CRITERIA FOR NON-FWB RECIPIENTS INCLUDED IN POTENTIAL COMPARISON POOL

The potential comparison pool is defined at the *person-month* level. This means that a child can appear in the potential comparison pool more than once, with each observation representing a child at a unique point in time. For example, child “A” may qualify for the potential comparison pool in both June 2010 and September 2011, and thus appear in the potential comparison pool twice. The month that each observation represents is the “index month.”

The potential comparison pool (n=170,012) includes two types of person-months:

1. **Person-months from children who did not receive FWB care coordination services:** These children contributed person-months to the potential comparison pool if in any given month between March 2010 and March 2012, inclusive, they were: ages 0-17; in out-of-home placement; currently on Medicaid; on Medicaid at least one month in both the baseline year (12 months prior) and the follow-up year (12 months after); and whose records did not reflect administrative data linkage errors.
2. **Person-months from children who received FWB care coordination services, prior to FWB program participation:** Children who received FWB care coordination services could also contribute person-months to the potential comparison pool, if they met the standard requirements for entry in that month (see above) and if there was at least a 12-month follow-up period that did not overlap with their subsequent receipt of FWB care coordination services.

PROPENSITY SCORE MATCHING

Demographics and baseline measures were constructed for both the FWB treatment group and the potential comparison pool. Baseline measures included medical risk factors (e.g., medical utilization, prospective chronic disease risk score) in the 12 months prior to the index date, utilization of other DSHS services (e.g., months in out-of-home placement, any use of BRS), and type of Medicaid eligibility in the index month. Using these demographics and baseline measures, a matched comparison group of children who did not receive FWB care coordination services (and a small number who had not yet received FWB care coordination services) was constructed using a multistep procedure based on propensity scores and exact matching on specific variables (sex, age group, baseline medical cost categories, baseline prospective risk score categories). Thirty-seven of 473 treatment group members could not be matched; these tended to be the FWB recipients with the most extreme baseline medical utilization and risk scores. The matching procedure resulted in 436 matched FWB treatment group members and 436 matched control group members. The Appendix presents the balance between the two groups on selected key variables.

ROBUSTNESS OF RESULTS

This evaluation finds no significant differences between the changes in medical utilization over a 12-month follow-up period experienced by FWB care coordination recipients and a statistically matched control group. These results are robust to several alternative approaches we explored for this evaluation:

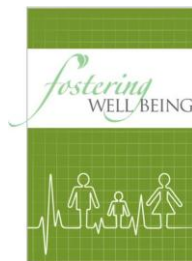
1. **Weighting observations by the number of months on Medicaid fee-for-service in the outcome period:** This adjustment, which aims to place higher weight on observations for which more data is available, made no substantive effects on results.
2. **10:1 propensity score matching ratio:** We replicated the above approach with a higher number of comparison units being matched to each FWB treatment group unit. Results were very similar.

3. **Respecifying the propensity score model:** We explored various ways to specify the logistic regression models that estimated the probability of receiving care coordination services through FWB, considering factors such as linearity and interaction effects. Respecifications of the propensity score model with similar predictive value did not alter the main conclusions of the study.
4. **Controlling for remaining imbalances via regression analysis:** The results presented in this report reflect unadjusted results. Regression analyses that control for remaining imbalances between the matched FWB treatment group and the matched comparison group yield similar findings. The controls in these models included demographics, fiscal year, months of medical eligibility in baseline period, months in out-of-home placement in baseline period, type of medical eligibility in index month, baseline medical utilization and risk indicators, and several more specific risk indicators.
5. **Different approaches to constructing statistically balanced FWB treatment and comparison groups:** We also explored other methods of constructing the comparison group, including Coarsened Exact Matching and Quantile Sampling. Neither method produced well-balanced samples, the first due to the problem of dimensionality and the second likely due to the extreme outliers on medical risk and cost that are included in the FWB treatment group. As such, these methods were discarded.

Selected Baseline Measures for FWB Recipients and Matched Comparison Group

	Full FWB Group	Matched FWB Group	Matched Control Group
Baseline Demographics, Index Month	<i>n</i> = 473	<i>n</i> = 436	<i>n</i> = 436
AGE			
0	31.9%	31.7%	31.7%
1-6	38.7%	38.3%	38.3%
7-12	16.1%	16.3%	16.3%
13-18	13.3%	13.8%	13.8%
GENDER			
Female	45.0%	44.7%	44.7%
Male	55.0%	55.3%	55.3%
RACE/ETHNICITY (categories not mutually exclusive)			
White	88.4%	88.5%	86.7%
Black	18.2%	17.4%	18.1%
Hispanic	18.8%	19.3%	20.4%
Asian/Pacific Islander	5.7%	5.5%	6.9%
American Indian	15.4%	15.6%	15.4%
Other	21.1%	20.6%	20.4%
Baseline Medical Risk Factors, Prior 12 Months			
Medical costs PMPM	\$5,240	\$3,123	\$3,116
Outpatient ER visits PMPM	0.132	0.116	0.130
Inpatient ER visits PMPM	0.086	0.065	0.046
Inpatient Hospitalizations PMPM	0.152	0.119	0.102
Prospective chronic disease risk score	1.185	0.844	0.843
Any need for alcohol/drug treatment	4.9%	4.4%	4.6%
Any injuries	19.7%	19.7%	21.8%
Baseline Medical Coverage, Index Month			
Disability-related medical coverage	8.9%	8.3%	4.1%*
Family medical coverage	15.9%	16.3%	17.4%
Child medical coverage	75.3%	75.5%	78.4%
Months of FFS eligibility (prior 12 months)	6.224	6.108	6.096
Baseline Utilization of Other DSHS Services, Prior 12 Months			
Months in out-of-home placement	4.309	4.294	4.739
Any behavioral rehabilitation services	4.9%	4.6%	5.1%
Any developmental disabilities services	19.0%	17.9%	15.4%
Any residential habilitation center services	0.0%	0.0%	0.0%

*Indicates that the difference between the matched FWB group and the matched comparison group is statistically significant at $p < .05$.



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Copies of this paper may be obtained at www.dshs.wa.gov/rda/ or by calling DSHS' Research and Data Analysis Division at 360.902.0701.

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