



# DSHS | Washington's Medicaid Buy-In Program

REPORT 9.96 | **Impact on Employment, Earnings, Medicaid Coverage, and Basic Food Program Participation**



## Healthcare for Workers with Disabilities: Supporting and Encouraging Employment

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**W**ASHINGTON'S HEALTHCARE FOR WORKERS WITH DISABILITIES (HWD) program is the state's version of the Medicaid Buy-In (MBI) program authorized under the federal Ticket to Work and Work Incentives Improvement Act of 1999. HWD provides medical coverage to working individuals ages 16 to 64 who meet federal disability requirements and who have income and/or assets high enough that they no longer qualify for conventional Medicaid. The program is distinct from conventional Medicaid in that enrollees purchase full Medicaid coverage by paying a monthly premium based on a sliding income scale.

This study compared HWD participants with persons enrolled in conventional Medicaid selected by using a rigorous statistical matching process (see Technical Notes). Relative to Medicaid recipients in the closely matched comparison groups, participants in HWD had significantly improved outcomes in the year following enrollment, including:

- Higher likelihood of employment,
- Higher earnings and greater contributions to state tax revenues,
- More stable Medicaid coverage, and
- Less reliance on the Basic Food program (i.e., food stamps).

These findings suggest that HWD participants may be achieving greater self-sufficiency while obtaining comprehensive health care and benefits needed by workers with disabilities.

### The Evaluation

This study evaluates HWD's impact on employment and earnings, Medicaid coverage, and receipt of Basic Food benefits (i.e., food stamps) in the year following enrollment. Analyses use the Washington State Department of Social and Health Service (DSHS)'s integrated database, created and maintained by the Research and Data Analysis (RDA) Division. Given that participation in the HWD program is non-random, the evaluation makes use of a wealth of information available in the integrated database to construct matched comparison groups that are as close as possible to HWD participants on a variety of measures in the period prior to enrollment. Preliminary descriptive analyses indicated that individuals with prior Medicaid coverage had different employment trajectories than those without prior coverage. As a result, analyses are conducted separately for individuals with and without prior Medicaid coverage.<sup>1</sup>

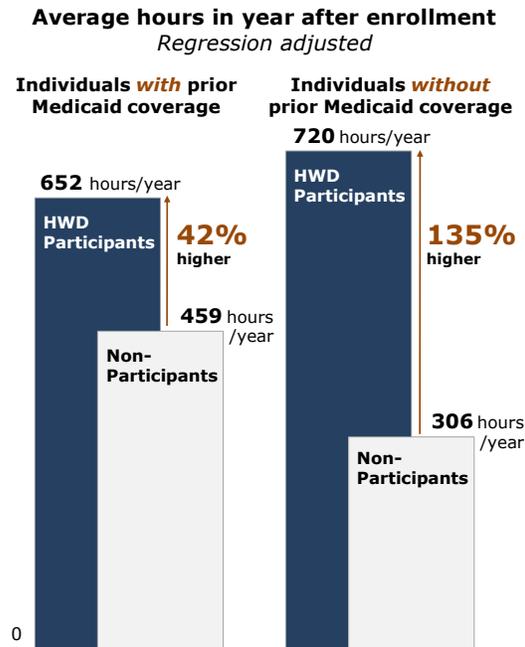
The possibility of pre-existing differences between program participants and non-participants—often referred to as “selection bias”—is an inherent challenge in evaluations of Medicaid Buy-In programs. This is because individuals are eligible to participate precisely because they have higher earnings than individuals covered under conventional Medicaid. To test how sensitive our findings were to such bias, we conducted analyses using a comparison group drawn from a period in time prior to HWD implementation in addition to our primary analyses, which used a contemporaneous comparison group. In light of the precautions taken methodologically, the findings presented in this report are particularly encouraging, as they are consistent irrespective of prior Medicaid coverage status or the point in time in which the comparison group was selected.

<sup>1</sup> In this case, Medicaid coverage was defined as eligibility for categorically needy or medically needy Medicaid.

## HIGHLIGHTS | Employment and Self-Sufficiency

HWD participants were each matched with non-participants who were similar to them on a variety of measures. A series of regressions were then performed on employment outcomes in the year following enrollment (the “post-period”), holding constant possible confounding factors. Results suggest that the HWD program encourages and supports employment.

### HWD participants are working more



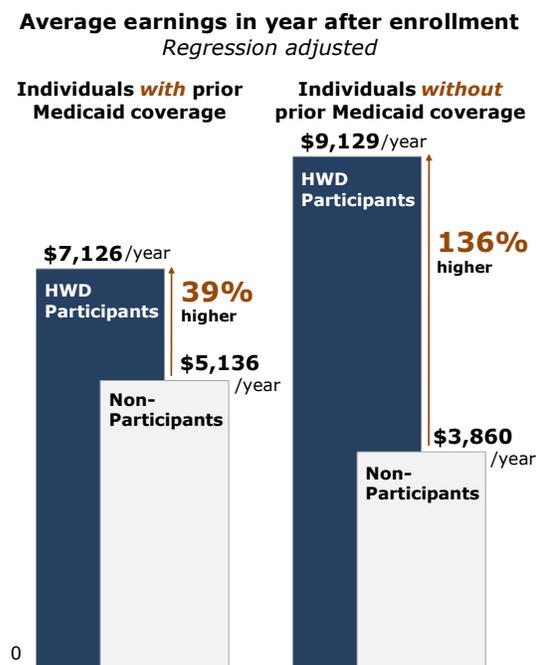
#### Individuals **with** Prior Medicaid Coverage

- The odds of being employed in the post-period were 4 times higher among HWD participants with prior Medicaid coverage relative to their matched non-participant counterparts (OR = 3.8;  $p < 0.0001$ ).
- On average, HWD participants with prior coverage also worked 193 hours more than their counterparts in the year following enrollment ( $p < 0.0001$ ).

#### Individuals **without** Prior Medicaid Coverage

- The odds of being employed in the post-period were twice as high among HWD participants without prior Medicaid coverage relative to their non-participant counterparts (OR = 2.1;  $p < 0.0001$ ).
- On average, these participants also worked 414 hours more than their counterparts in the year following enrollment ( $p < 0.0001$ ).

### HWD participants are earning more



#### Individuals **with** Prior Medicaid Coverage

- On average, HWD participants with prior Medicaid coverage had earnings that were \$1,990 per year higher than individuals in a matched comparison group ( $p < 0.0001$ ).
- In the year following enrollment, HWD participants’ annual earnings averaged \$7,126, other things being equal.

#### Individuals **without** Prior Medicaid Coverage

- On average, HWD participants without prior Medicaid coverage had earnings that were \$5,269 per year higher than individuals in a matched comparison group ( $p < 0.0001$ ).
- In the year following enrollment, these HWD participants’ annual earnings averaged \$9,129, other things being equal.

## HWD participants are moving toward self-sufficiency

Aside from the benefits that HWD participants are likely to experience personally from increased participation in the labor market, our findings suggest that they are also moving towards self-sufficiency in ways that may help preserve and contribute to state and federal resources:

### They are paying health insurance premiums.

- By definition, participants in Medicaid Buy-In programs are paying into the system in exchange for needed health care benefits. In the case of HWD, participants pay Medicaid premiums that average \$90 per month.
- The analytical methods we employed made it inappropriate to explore the impact of the HWD program on Medicaid medical costs.<sup>ii</sup> However, exploratory analyses suggest that to the extent HWD participants experience any increased medical costs relative to non-participants, these are likely offset by the monthly premiums participants pay.

### They are contributing more in taxes.

- An analysis conducted prior to the implementation of HWD suggested that approximately 7 percent of participants' increased earnings could be assumed to contribute to the state general fund tax revenue based on the share of personal income subject to state property and excise taxes.<sup>1</sup> More recent estimates from the Washington State Office of Financial Management (OFM) suggest that 6 percent may be more appropriate.
- Assuming HWD participants contribute 6 percent of their personal income to the state general fund, we estimate that those with prior Medicaid coverage contributed approximately \$189,965 more and those without prior coverage contributed about \$205,807 more in the year following enrollment as a result of HWD.
- This translates into an additional contribution of almost \$400,000. Note, however, that this is an underestimate, as it does not consider the increased contribution participants would make beyond the first year after enrollment.

TABLE 1

### Estimated Increase in Contributions to the State General Fund 1 Year after Enrollment

	HWD Participants Jan 2002—Sept 2008	Increase in Earnings per Participant	Total Increase in Earnings	Contribution to State General Fund 6 Percent of Total Increase in Earnings
Individuals with prior Medicaid coverage	1,591	\$1,990	\$3,166,090	\$189,965
Individuals without prior Medicaid coverage	651	\$5,269	\$3,430,119	\$205,807
<b>TOTAL</b>	<b>2,242</b>		<b>\$6,596,209</b>	<b>\$395,772</b>

### They are relying less on food stamps.

- Our findings suggest that in the year following enrollment, the odds of participating in the Basic Food Program (i.e., food stamps) are about 80 percent lower among HWD participants with prior Medicaid coverage relative to non-participants. They also participate for 3 fewer months, on average, and receive about \$217 less in food stamps.
- Similarly, HWD participants without prior Medicaid coverage have odds of participating in the Basic Food Program that are 90 percent lower and they also participate for approximately 3 fewer months relative to their non-participant counterparts. On average, these HWD participants receive about \$300 less in food stamps relative to non-participants.
- Together, these findings suggest that the HWD program may help participants "earn their way off" food stamps and potentially other social services not explored here.

<sup>ii</sup> To rule out the possibility that any observed between-group differences in post-period employment outcomes were due to between-group differences in health status, we matched HWD participants with non-participants on their post-period chronic illness risk scores for some analyses and their post-period Medicaid medical costs for other analyses.

## **About Washington's Healthcare for Workers with Disabilities (HWD) Program**

### ***What is the Healthcare for Workers with Disabilities (HWD) program?***

The HWD program extends medical coverage to working individuals with disabilities who otherwise earn too much to qualify for Medicaid. It is Washington State's Medicaid Buy-In program, which was authorized under the federal Ticket to Work and Work Incentives Improvement Act (TWWIIA) of 1999 (HR 1180). That legislation allows states to expand Medicaid coverage to working individuals with disabilities and to set income and asset eligibility limits at whatever level they wish (including none at all). States are also provided flexibility with respect to how they structure premiums, fees, and other cost-sharing arrangements. DSHS implemented HWD on January 22, 2002.

### ***What is the intent of the Healthcare for Workers with Disabilities (HWD) program?***

The HWD program is designed to help participants earn and save more than they otherwise might while providing them with a full Medicaid benefit package to cover their health care costs. It aims to help individuals with disabilities achieve greater personal and financial independence. Moreover, HWD closes an important gap in the safety net by providing Medicaid benefits to recipients of SSI who do not qualify for SSI 1619(b) Medicaid protections. Finally, it provides needed health insurance in the transition from federal cash benefits to competitive employment and greater self-sufficiency.

### ***What are the distinguishing characteristics of Washington's Medicaid Buy-In Program?***

#### **INCOME AND OTHER ELIGIBILITY CRITERIA**

Individuals must be Washington State residents between the ages of 16 and 64, meet federal disability requirements, and be employed full- or part-time. They qualify if they have a *net* income (including both earned and unearned income) of up to 220 percent of the Federal Poverty Level (FPL), which was \$1,908 for a single person or \$2,568 for a married couple in 2008. If "countable" spousal income is greater than one-half the federal benefit rate (FBR) of \$637, then it is used in determining eligibility that is based on the 2-person FPL standard. If there are children in the household, up to half of the FBR is deducted from the household's income for each child.

#### **ASSET LIMITS**

The HWD program places no limits on the assets individuals can have in determining eligibility. This means that, to qualify, individuals do not need to spend down their savings or sell assets to purchase coverage. This is important because prior research suggests that asset limits tend to reduce the number of high earners in Medicaid Buy-In programs.<sup>2</sup>

#### **WORK VERIFICATION RULES**

Previous research has shown that programs that require verification of employment have participants with higher earnings and a greater likelihood of employment.<sup>2</sup> Washington State has such verification requirements. In particular, HWD participants must be getting paid for work and have payroll taxes taken out of wages, unless they are self-employed. In cases of self-employment, they must provide tax forms (such as, the IRS Schedule SE form) or legitimate business records.

#### **GRACE PERIOD**

Cross-state analyses of the Medicaid Buy-In program suggest that shorter grace periods are associated with higher average earnings and a greater likelihood of employment.<sup>2</sup> Grace periods closer to 12 months in length are considered longer and more generous. In Washington, enrollees whose employment ends after enrollment may continue to purchase coverage through the end of their current 12-month certification period if they intend to return to work and job loss is due to (1) a health crisis or (2) an involuntary job dismissal. The participant must continue to pay the monthly premium based on remaining income.

#### **PREMIUM STRUCTURE**

In Washington, monthly premiums are the lesser of (1) 7.5 percent of total income or (2) a total of the following: 50 percent unearned income above the medically needy income limit (MNIL), which is equivalent to the FBR, plus 5 percent total unearned income plus 2.5 percent earned income after deducting \$65.

## STUDY POPULATION | Matched Comparison Groups

The nature of the HWD program is such that it is likely to attract individuals with disabilities who are motivated to work and who, by definition, have higher earnings than other Medicaid enrollees. As a result, it is difficult to determine whether observed differences in outcomes between HWD participants and non-participants are the result of the HWD program itself as opposed to pre-existing differences between participants and non-participants. Nevertheless, through the careful construction of matched comparison groups using administrative data from RDA's integrated database, we were able to remove some of the observable selection bias. For example, the matching process removed HWD participants from the analysis if they had extreme values on a measure (such as earnings) such that there was not a comparable match in the comparison group sampling frame.

### Contemporaneous and Historical Sampling Frames

In the analyses presented in this report, we use propensity score matching to construct two sets of comparison groups, each of which comes from a different sampling frame. The first sampling frame is advantageous because it identifies individuals who participated in Medicaid during the same time period that HWD participants were enrolled in that program. In this way, comparable information is available on both participants and non-participants. In addition, a contemporaneous comparison group allows us to essentially control for possible contextual factors (such as economic conditions, the availability of jobs, and public policies affecting workers with disabilities) that are not included as variables in our models. The limitation of a contemporaneous group, however, is that selection bias is inescapable given that comparison group members may have had the option to participate in the HWD program but did not. This could be due simply to lack of awareness, but it could also be that they have other characteristics – both observable and unobservable – that distinguish them from HWD participants. For example, contemporaneous comparison group members may be more comfortable “parking” at a certain level of income relative to similar individuals who chose to participate in HWD.

In light of the selection bias one encounters with a contemporaneous comparison group, we also constructed comparison groups from a historical sampling frame as a means of testing our findings to see how sensitive they might be to such bias. These individuals participated in Medicaid between July 1999 and December 2000, a period during which HWD was not yet offered. As a result, individuals in the historical comparison group sampling frame did not have the option of participating in HWD and thus any selection bias is likely to be less acute relative to the first approach. However, one disadvantage of this approach is that there is not always the same information available in the administrative data on the comparison group as there is for HWD participants. In addition, whereas the aforementioned time-variant contextual factors are likely to have affected individuals in the first approach the same regardless of whether they were HWD participants or non-participants, individuals selected from the historical sampling frame will likely have experienced different economic and political realities than the HWD participants with whom they are being compared.

### Prior Medicaid Coverage Status

Once the two sampling frames had been identified, separate comparison groups were constructed according to whether or not individuals were eligible for categorically needy (CN) or medically needy (MN) Medicaid at any point in the year prior to a randomly selected index month (see Technical Notes). This yielded a total of four comparison groups: (1) prior Medicaid coverage, contemporaneous, (2) prior Medicaid coverage, historical, (3) no prior Medicaid coverage, contemporaneous, and (4) no prior Medicaid coverage, historical.

Conducting separate analyses based on prior Medicaid coverage was important for a few reasons. First, there is reason to believe individuals without prior Medicaid coverage will be different from those with prior coverage. For example, the former may have been more likely to have health insurance through an employer in the past or, alternatively, to have been uninsured. Secondly, preliminary descriptive analyses suggest that the employment and earnings trajectories of the two groups are markedly different. Finally, there is some precedent for looking at these two groups separately, as well as some indication that policy-makers are particularly interested in outcomes for Medicaid Buy-in participants who previously were enrolled in Medicaid under another type of coverage.<sup>3</sup>

## Propensity Score Matching

In order to construct each of the four comparison groups described above, we estimated propensity scores for both HWD participants and individuals in the comparison group sampling frame. This method leverages observable individual-level information to estimate the probability that someone would be a HWD participant. Propensity scores are then used to match each HWD participant with the one person in the comparison group sampling frame who is most similar to them on a variety of measures. Tables 2 and 3 below show the outcomes of the matching processes for each of the four analyses presented in this report in terms of key individual-level characteristics. (The Technical Notes at the end of this report provide more detail about the matching process, including a list of the variables included in the propensity score model.)

It is noteworthy that more HWD participants were removed from the analyses when matching with the contemporaneous comparison group (119 with prior coverage and 114 without prior coverage) than with the historical comparison group (44 with prior coverage and 55 of those without). This supports the notion that simply drawing individuals from a historical comparison group may help remove some of the selection bias from the analysis. Yet it also suggests that the propensity score matching process itself is successfully removing some of this bias.

TABLE 2  
**Individual Averages Following 1:1 Match – Individuals *with* Prior Medicaid Coverage**

Descriptive Summary	Contemporaneous Match <i>TOTAL = 2,260</i>		Historical Match <i>TOTAL = 2,410</i>	
	HWD Participants <i>n = 1,130</i>	Non-Participants <i>n = 1,130</i>	HWD Participants <i>n = 1,205</i>	Non-Participants <i>n = 1,205</i>
<b>DEMOGRAPHICS</b>				
Average age	43	43	43	43
Percent female	49	51	49	49
Percent male	51	49	51	51
Percent white	87	86	87	88
<b>HEALTH AND RISK INDICATORS</b>				
Average post-period chronic illness risk score	1.0	1.1	—	—
Average post-period Medicaid medical costs in constant 2008 dollars (per member per month)	—	—	427	422
Percent in post-period with schizophrenia/bipolar affective disorder	23	25	—	—
Percent with post-period Mental Health Division services	—	—	49	49
Percent with prior indication of need for alcohol or other drug treatment	5	5	5	5
<b>AVERAGE NUMBER OF MONTHS OF MEDICAID ELIGIBILITY</b>				
Prior Categorically Needy Medicaid eligibility	5	5	4	4
Prior Medically Needy Medicaid eligibility	5	5	5	5
Prior Dual Medicaid-Medicare eligibility	7	7	8	8
Post Dual Medicaid-Medicare eligibility	9	9	9	9
<b>PRIOR EARNINGS AND HOURS</b>				
Total earnings prior quarter in constant 2008 dollars	1,558	1,601	1,591	1,661
Total hours prior quarter	143	145	149	152

TABLE 3  
**Individual Averages Following 1:1 Match – Individuals *without* Prior Medicaid Coverage**

Descriptive Summary	Contemporaneous Match <i>TOTAL = 802</i>		Historical Match <i>TOTAL = 920</i>	
	HWD Participants <i>n = 401</i>	Non-Participants <i>n = 401</i>	HWD Participants <i>n = 460</i>	Non-Participants <i>n = 460</i>
<b>DEMOGRAPHICS</b>				
Average age	47	48	47	47
Percent female	52	53	49	49
Percent male	48	47	51	51
Percent white	87	85	87	88
<b>HEALTH AND RISK INDICATORS</b>				
Average post-period chronic illness risk score	1.0	1.0	—	—
Average post-period Medicaid medical costs in constant 2008 dollars (per member per month)	—	—	736	791
Percent in post-period with schizophrenia/bipolar affective disorder	13	12	—	—
Percent with post-period Mental Health Division services	—	—	27	28
Percent with prior indication of need for alcohol or other drug treatment	3	2	2	2
<b>AVERAGE NUMBER OF MONTHS OF MEDICAID ELIGIBILITY</b>				
Prior Dual Medicaid-Medicare eligibility	1	1	1	1
Post Dual Medicaid-Medicare eligibility	6	6	7	3
<b>PRIOR EARNINGS AND HOURS</b>				
Total earnings prior quarter in constant 2008 dollars	2,357	2,320	2,337	2,418
Total hours prior quarter	183	182	186	191

## Quarterly Earnings: Pre- and Post-Period

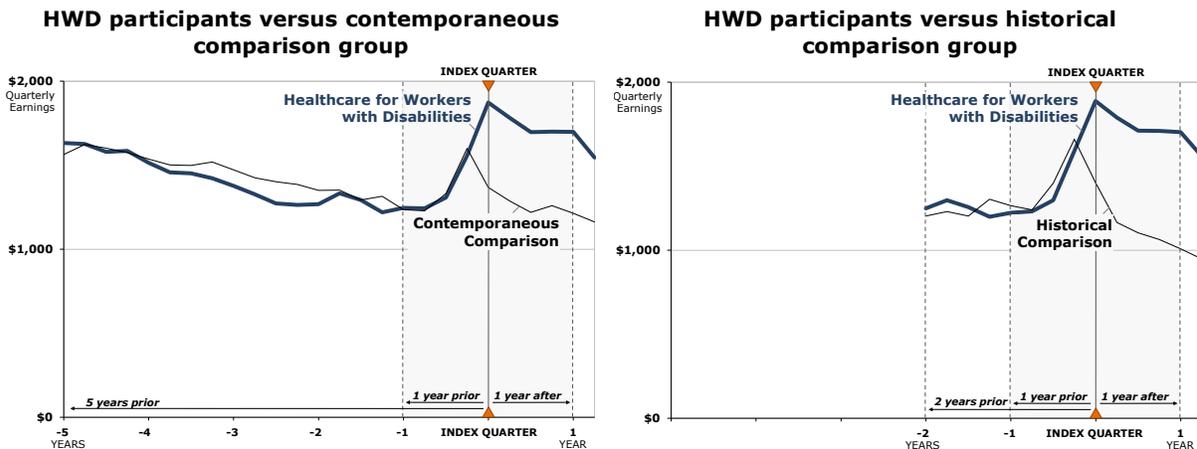
### Raw earnings in constant 2008 dollars prior to regression adjustment

To assess the impact of HWD on earnings and employment, we used Washington State Employment Security Department (ESD) Unemployment Insurance wage data. All earnings were adjusted to constant 2008 dollars (second quarter) using the Consumer Price Index (CPI). This allowed us to compare earnings for HWD participants with individuals selected from the historical sampling frame since differences might otherwise be attributable to inflation.

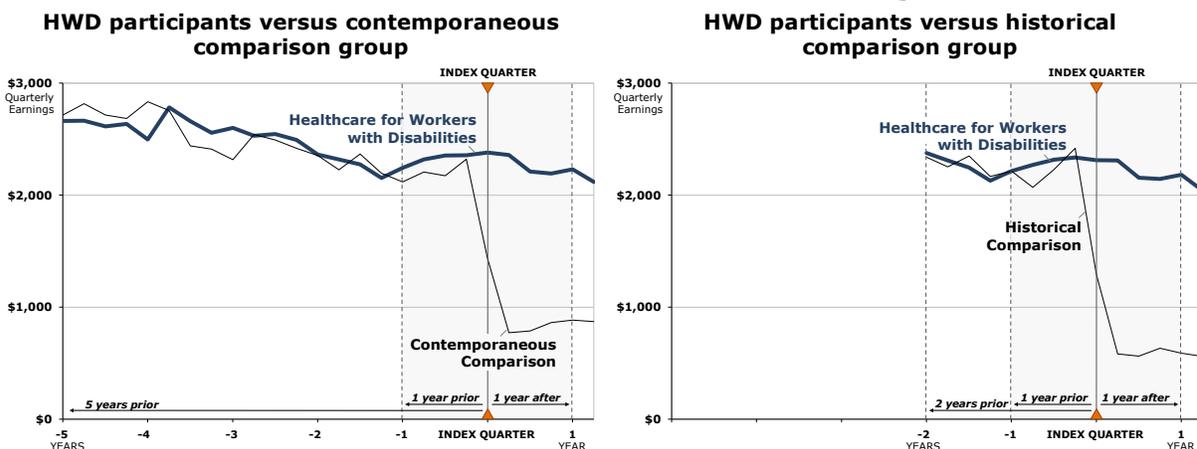
In the next section we present results from a series of regressions on employment status, earnings, and hours that control for a variety of factors that might be expected to relate to employment outcomes. Prior to presenting the regression results, however, we present the raw earnings charts below. These illustrate the extent to which the propensity score matching process was successful in identifying comparison group members whose employment trajectories were similar to those of HWD participants in the five years leading up to the index quarter (or two years prior in the case of the historical comparison group). On the whole, individuals in each of the four comparison groups exhibit a similar level of earnings as HWD participants in the pre-period.

For individuals who had Medicaid coverage at some point in the 12 months prior to the index month, the charts show that HWD appears to provide an incentive to work and earn more. By contrast, HWD participants who did not have Medicaid coverage in the prior 12 months appear to continue to earn at rates comparable to what they were earning prior to enrolling in the program. The difference in this latter case is that the matched comparison groups show dramatic declines in earnings, suggesting that for individuals without prior coverage, conventional Medicaid may provide a disincentive to work. It is worth bearing in mind that the comparison group is matched on post-period health status (for the contemporaneous analyses) and post-period Medicaid medical costs (for the historical analyses). Thus, the rather extreme dip in earnings that we observe after the index quarter for the comparison group without prior Medicaid coverage is unlikely attributable to individuals in the comparison group simply being in poorer health than HWD participants in the post-period.

### Individuals *with* Prior Medicaid Coverage



### Individuals *without* Prior Medicaid Coverage



## OUTCOMES AFTER 1 YEAR | Regression Results<sup>iii</sup>

We ran a series of logistic and ordinary least squares (OLS) regressions to estimate the association between HWD program participation and various outcomes, controlling for possible confounding individual-level characteristics. The control variables included in the models varied slightly depending on the outcome being considered, the study population (prior Medicaid coverage or no prior coverage), and the comparison group (contemporaneous or historical).

In general, the regression models controlled for the following characteristics: race, age, gender, type of prior Medicaid coverage (as applicable), prior costs for Adult and Aging Services, an indicator of prior need for alcohol or other drug (AOD) treatment, a chronic health risk score in the post-period (or alternatively, Medicaid medical costs in the post-period), diagnoses of schizophrenia or bipolar affective disorder in the post-period (or alternatively, receipt of services from the Mental Health Division in the post-period), prior receipt of services through the Division of Developmental Disabilities, prior employment status, prior hours, and prior earnings. We also included the propensity score as a covariate to help account for any residual variation in the outcomes that might be due to pre-existing differences between participants and non-participants and that also might have made the former more inclined to participate in the HWD program.<sup>iv</sup>

### HWD Participants More Likely to Be Employed

In the year following enrollment, HWD participants were more likely to be employed relative to their counterparts in the comparison group regardless of their prior Medicaid coverage status (see Table 4 below). Employment is defined as having any earnings greater than \$0 in the year that includes the index quarter and three subsequent quarters. That HWD participants are employed in the post-period is not at all surprising given that they must demonstrate employment and earnings in order to qualify for program participation in the index quarter. Rather, what these findings help illuminate is the extent to which the program may help to encourage employment *relative to individuals in the comparison groups* who had similar employment and earnings trajectories in the two to five years prior to the index quarter.

TABLE 4  
**Estimated Effect of HWD Participation on Odds of Employment**

Outcome Variable	Individuals <i>with</i> Medicaid Coverage			
	HWD Participants vs. Non-Participants <i>Contemporaneous</i> • n=2,260		HWD Participants vs. Non-Participants <i>Historical</i> • n=2,410	
	Odds Ratio Point Estimate   Standard Error	p-value	Odds Ratio Point Estimate   Standard Error	p-value
Employment	3.8   0.4	<0.0001	3.8   0.4	<0.0001

Outcome Variable	Individuals <i>without</i> Prior Medicaid Coverage			
	HWD Participants vs. Non-Participants <i>Contemporaneous</i> • n=802		HWD Participants vs. Non-Participants <i>Historical</i> • n=920	
	Odds Ratio Point Estimate   Standard Error	p-value	Odds Ratio Point Estimate   Standard Error	p-value
Employment	2.1   0.4	<0.0001	3.3   0.6	<0.0001

<sup>iii</sup> Note that estimates presented in charts and tables throughout this section are rounded but calculations (such as, percent change) were performed in Excel and were not rounded.

<sup>iv</sup> In almost every case, the regression-adjusted estimate of the HWD participation effect was almost identical to the unadjusted estimate from a simple comparison of differences in mean outcomes between participants and their matched comparison group. However, when a broader set of regression controls was included in the model, in addition to the propensity score, the estimated effect of HWD participation on the odds of employment was substantially higher than the unadjusted difference-of-means estimate. Consequently, estimates of the effect of HWD participation on the odds of employment presented in Table 4 are based on models that included only the propensity score as an additional regression control.

## Annual Earnings Higher for HWD Participants

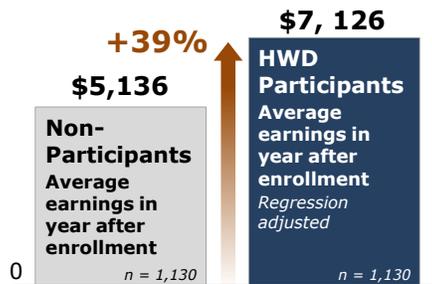
*In constant 2008 dollars, CPI-adjusted*

We conducted four regressions on total annual earnings in the year following enrollment. We did not exclude quarterly earnings of \$0 and individuals were not necessarily working across all four quarters. Results consistently show that HWD participants had higher post-period earnings relative to their matched non-participant counterparts, and this finding is statistically significant ( $p < 0.0001$ ) across all four models.

### Individuals *with* Prior Medicaid Coverage

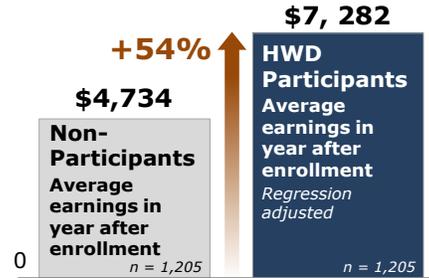
Results from regressions on earnings suggest that HWD participants with prior Medicaid coverage earn substantially more than non-participants in the year following enrollment. On average, they earn roughly \$2,000 more than their contemporary peers in the following year and \$2,500 more than a historical comparison group. As shown in the raw earnings charts above, the increased earnings among HWD participants appear to be due to an incentive the program creates for those transitioning from conventional Medicaid to earn more while still retaining their medical coverage.

**HWD participants versus contemporaneous comparison group**



TOTAL ANNUAL DOLLARS EARNED		
Point Estimate	Standard Error	p value
\$1,990	208	<.0001

**HWD participants versus historical comparison group**

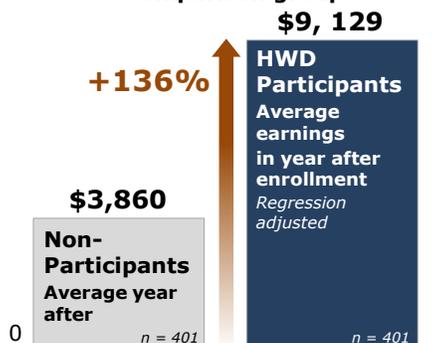


TOTAL ANNUAL DOLLARS EARNED		
Point Estimate	Standard Error	p value
\$2,549	211	<.0001

### Individuals *without* Prior Medicaid Coverage

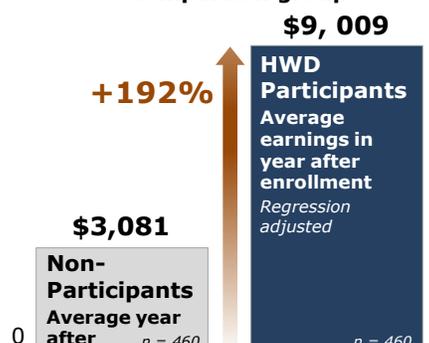
The results of the regressions on earnings for those who did not have Medicaid coverage in the 12 months prior to the index month are even more striking. These estimates suggest that earnings among HWD participants may be as much as \$5,000 to \$6,000 higher in the post-period relative to matched non-participants. Recalling again the above charts showing raw earnings over time, it appears that the HWD program operates slightly differently for individuals who were not covered by Medicaid in the prior year. For these individuals, the program appears to allow participants the opportunity to maintain a steady level of earnings while giving them access to important health care benefits. By contrast, individuals with very similar employment trajectories and post-period health profiles who are newly enrolling in conventional Medicaid appear to encounter a disincentive to work and earn at levels comparable to what they were earning before. In some ways, the individuals in the comparison group appear to be facing a difficult trade-off: either they maintain their current earned income levels or they earn less so they can qualify for needed health care benefits available through conventional Medicaid.

**HWD participants versus contemporaneous comparison group**



TOTAL ANNUAL DOLLARS EARNED		
Point Estimate	Standard Error	p value
\$5,269	478	<.0001

**HWD participants versus historical comparison group**



TOTAL ANNUAL DOLLARS EARNED		
Point Estimate	Standard Error	p value
\$5,928	407	<.0001

## HWD Participants Work More Hours

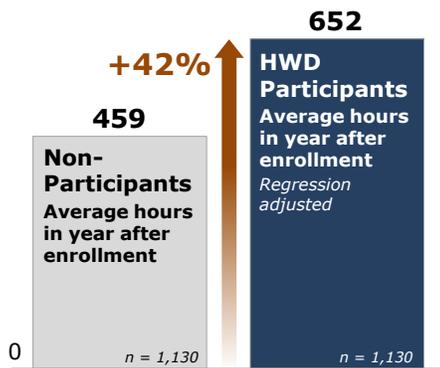
### Annual hours worked in the year following enrollment

We also examined the association between HWD program participation and hours worked in the post-period, controlling once again for a number of possible confounding factors. Results from all four regression analyses show that HWD participants worked more hours in the year following enrollment and that this was statistically significant ( $p < 0.0001$ ).

### Individuals *with* Prior Medicaid Coverage

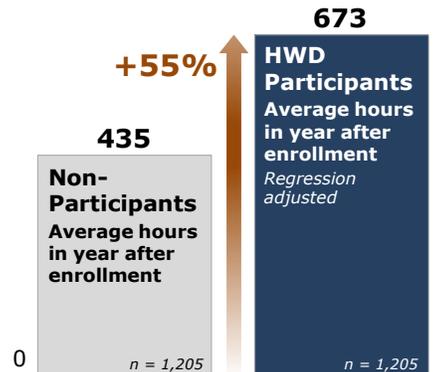
Not surprisingly, our findings on the number of hours worked in the post-period correspond with the findings presented above on total earnings. Just as HWD participants with prior Medicaid coverage earned approximately 40% more when compared to a contemporaneous comparison group and 55% more compared to a historical comparison group, their hours worked were also approximately 40% and 55% higher respectively. Once again, these findings suggest that the HWD program may provide an incentive for individuals with prior coverage to work and earn more.

HWD participants versus contemporaneous comparison group



TOTAL ANNUAL HOURS WORKED		
Point Estimate	Standard Error	p value
193	17	<.0001

HWD participants versus historical comparison group

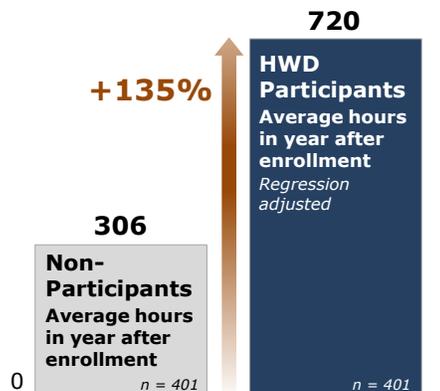


TOTAL ANNUAL HOURS WORKED		
Point Estimate	Standard Error	p value
238	17	<.0001

### Individuals *without* Prior Medicaid Coverage

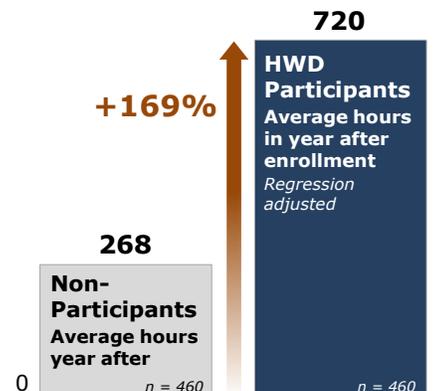
Among individuals who did not have Medicaid coverage in the 12 months prior to the index month, regression results also suggest that HWD participants work more hours in the post-period relative to their matched non-participant counterparts. Compared to a contemporaneous comparison group, HWD participants worked 414 hours more in the post-period. Similarly, HWD participants worked 452 hours more when compared to a historical comparison group.

HWD participants versus contemporaneous comparison group



TOTAL ANNUAL HOURS WORKED		
Point Estimate	Standard Error	p value
414	34	<.0001

HWD participants versus historical comparison group



TOTAL ANNUAL HOURS WORKED		
Point Estimate	Standard Error	p value
452	32	<.0001

## HWD Participants Have More Months of Medicaid Coverage

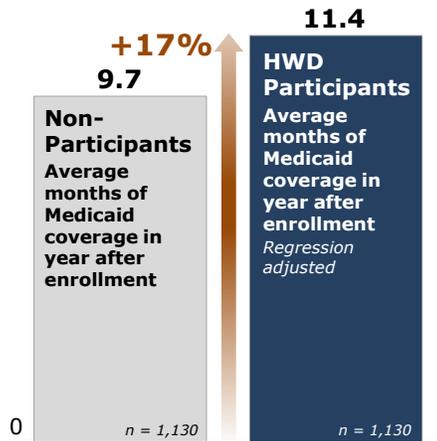
**Number of months in the post-period in any of the following Medicaid coverage categories: categorically or medically needy (aged, blind, or disabled), GA-U, ADATSA, or HWD**

One of the objectives of the HWD program is to provide comprehensive health coverage to individuals with disabilities so they might have the support they need to obtain and retain paid employment. Regressions on Medicaid coverage in the post-period suggest that HWD participants have more months of coverage in the year following enrollment than do their matched counterparts. These results are highly statistically significant across all four models.

### Individuals *with* Prior Medicaid Coverage

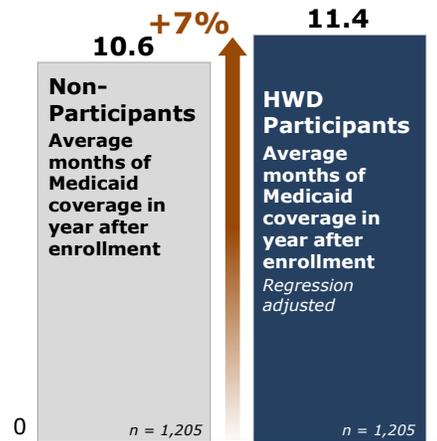
Among individuals who had prior Medicaid coverage, HWD participants had approximately 1 to 2 more months of Medicaid coverage in the post-period relative to non-participants. This was statistically significant ( $p < 0.0001$ ) in both regression models.

**HWD participants versus contemporaneous comparison group**



MEDICAID COVERAGE (MEMBER MONTHS)		
Point Estimate	Standard Error	p value
1.7	0.1	<.0001

**HWD participants versus historical comparison group**

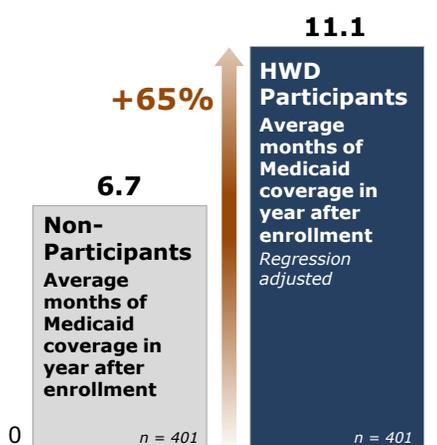


MEDICAID COVERAGE (MEMBER MONTHS)		
Point Estimate	Standard Error	p value
0.8	0.1	<.0001

### Individuals *without* Prior Medicaid Coverage

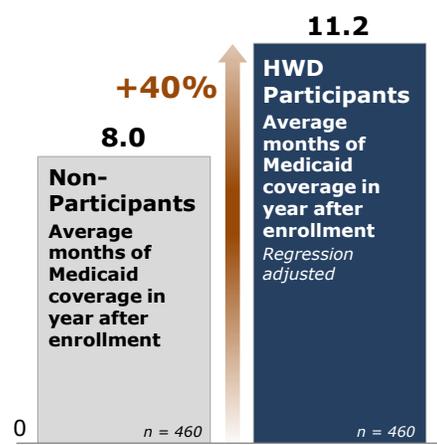
Among individuals who did not have Medicaid coverage in the 12 months prior to the index month, HWD participants had 3 to 4 more months of Medicaid coverage in the post-period relative to non-participants. Once again, the results from both regressions were statistically significant ( $p < 0.0001$ ).

**HWD participants versus contemporaneous comparison group**



MEDICAID COVERAGE (MEMBER MONTHS)		
Point Estimate	Standard Error	p value
4.4	0.3	<.0001

**HWD participants versus historical comparison group**



MEDICAID COVERAGE (MEMBER MONTHS)		
Point Estimate	Standard Error	p value
3.2	0.2	<.0001

## HWD Participants Less Likely to Participate in the Basic Food Program

### *Odds of Participating in the Basic Food Program (BFP) in the Post-Period*

One possible indicator of whether the HWD program is helping individuals move toward self-sufficiency is the extent to which participants are relying on publicly-funded social services. Accordingly, we examined the association between HWD program participation and the odds of participating in the Basic Food Program (i.e. food stamps). We controlled for whether an individual had participated in the BFP in the year prior to the index month. We were unable to include a historical comparison group, as we did not have sufficient data on BFP participation prior to fiscal year 2001. Nonetheless, results from the two models shown below in Table 7 for individuals with and without prior Medicaid coverage suggest that HWD participants have odds of participating in the BFP in the post-period that are 80 to 90 percent lower, respectively, relative to their matched non-participant counterparts.

TABLE 7

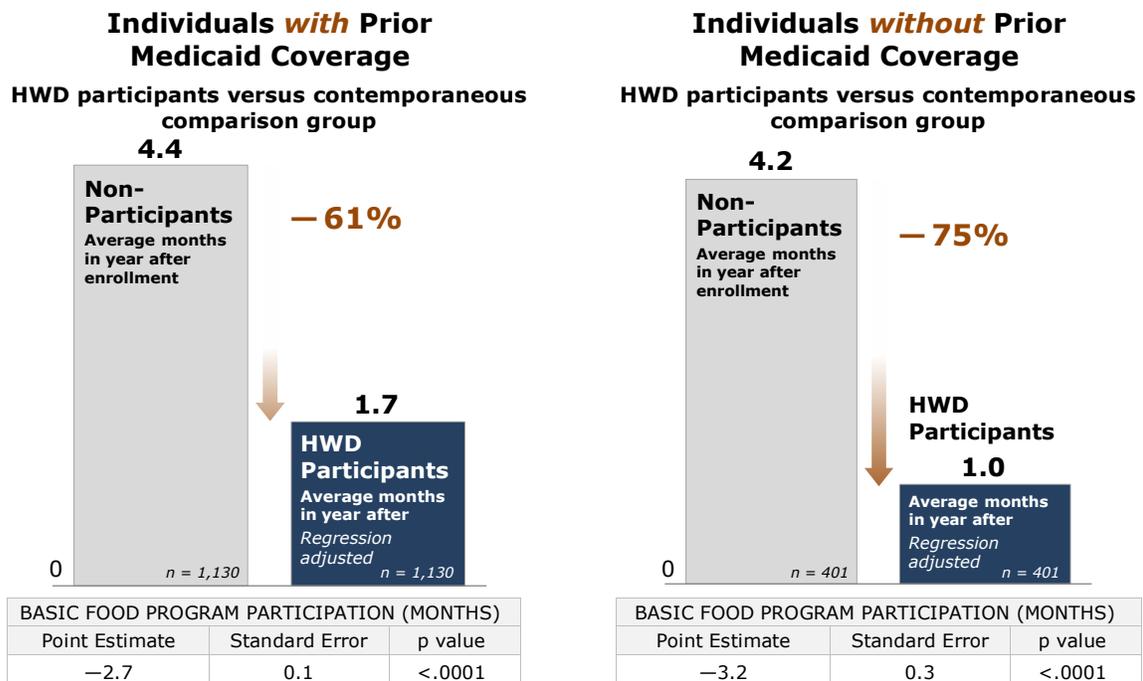
### Estimated Effect of HWD Participation on Basic Food Program Participation

	Individuals <i>with</i> Prior Medicaid Coverage		Individuals <i>without</i> Prior Medicaid Coverage	
	HWD Participants vs. Non-Participants (contemporaneous) <i>n</i> =2,260		HWD Participants vs. Non-Participants (contemporaneous) <i>n</i> =802	
Outcome Variable	Odds Ratio Point Estimate   (Standard Error)	p-value	Odds Ratio Point Estimate   (Standard Error)	p-value
Basic Food Program Participation	0.2   0.1	<0.0001	0.1   0.2	<0.0001

## HWD Participants Have Fewer Months of Basic Food Participation

### *Number of Months of Participation in the Basic Food Program (BFP) in the Post-Period*

In addition to looking at the odds of participating in the BFP, we also explored the average number of months that HWD participants received food stamps in the post-period. We controlled for the number of months individuals had participated in the BFP in the year prior to the index month. Among individuals with prior Medicaid coverage, as well as for those without prior coverage, HWD participants received food stamps for approximately 3 fewer months in the post-period relative to non-participants. The results from both models are statistically significant ( $p < 0.0001$ ). Given the increases in hours and earnings that we observed among HWD participants relative to comparison group members, it is reasonable to assume that HWD participants may have “earned their way off” food stamps by earning above the BFP eligibility threshold.

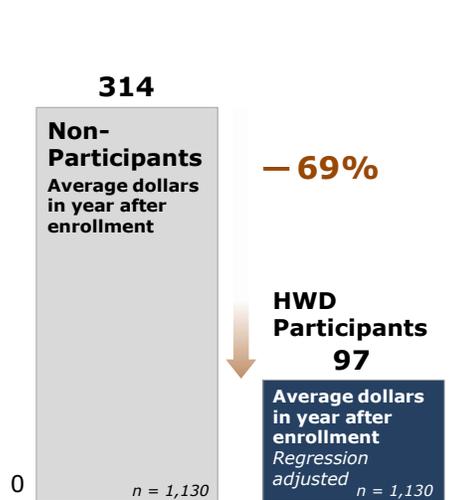


## HWD Participants Receive Less Basic Food Benefits

### Basic Food Program (BFP) Dollars Received in the Post-Period

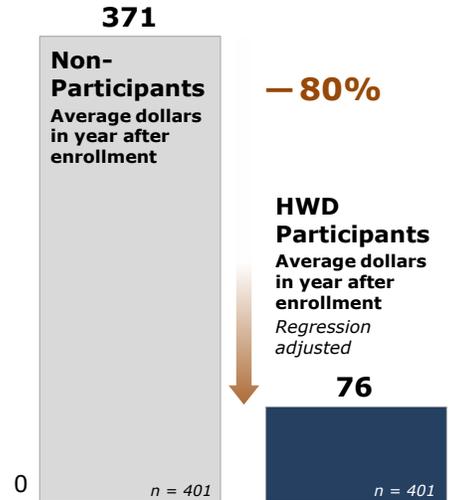
We also explored the amount of Basic Food benefits (i.e., food stamps) HWD participants received in the year following enrollment relative to their non-participant counterparts. We controlled for the amount received in food stamps in the year prior to the index month. We found that among HWD participants with and without prior Medicaid coverage, the amount received in food stamps was about 70 and 80 percent lower, respectively, than the amount received by non-participants. Consistent with our findings on BFP participation, these findings lend even more support to the notion that the HWD program may be helping individuals move towards self-sufficiency.

**Individuals *with* Prior Medicaid Coverage**  
HWD participants versus contemporaneous comparison group



BASIC FOOD PROGRAM ASSISTANCE (DOLLARS)		
Point Estimate	Standard Error	p value
-\$217	13	<.0001

**Individuals *without* Prior Medicaid Coverage**  
HWD participants versus contemporaneous comparison group



BASIC FOOD PROGRAM ASSISTANCE (DOLLARS)		
Point Estimate	Standard Error	p value
-\$295	27	<.0001

## DISCUSSION | Moving Toward Economic Self-Sufficiency

The findings presented in this report are very promising and suggest that Washington's Healthcare for Workers with Disabilities (HWD) program is successfully supporting and encouraging employment among individuals with disabilities.

To summarize, among HWD participants compared to a matched contemporaneous comparison group of non-participants who received Medicaid at some point between January 2002 and June 2007, we observe the following outcomes in the year after enrollment (all findings are highly statistically significant with p-values less than 0.0001):

- **They are more likely to be employed.** The odds of being employed are 4 times greater among HWD participants with prior Medicaid coverage and twice as great among participants without prior coverage.
- **They are working more hours.** On average, HWD participants with prior Medicaid coverage are working about 193 hours more per year and those without prior coverage are working about 414 hours more per year.
- **They are earning more income.** On average, HWD participants with prior Medicaid coverage are earning \$1,990 more per year and those without prior coverage are earning \$5,269 more per year. Applying these averages to all individuals who have participated in the HWD program since its inception in January 2002, we estimate that the total increase in earnings experienced by HWD participants is approximately \$6.6 million after one year in the program. Assuming that 6 percent of personal income in Washington goes towards state property and excise taxes, we estimate that HWD participants contribute an additional \$400,000 to the Washington State General Fund. This estimate only takes into account increases in earnings after one year of enrollment in HWD and would be even greater if future analyses showed that these higher earnings were sustained over time.
- **They have more stable Medicaid coverage.** On average, HWD participants with prior Medicaid coverage have almost 2 more months of post-period coverage and those without prior coverage have almost 4 ½ more months of post-period coverage.
- **They are relying less on Basic Food benefits.** HWD participants with and without prior Medicaid coverage have odds of participating in the Basic Food Program (BFP, i.e., food stamps) that are 80 and 90 percent lower, respectively. Similarly, participants in both prior coverage groups participate in the BFP for about 3 fewer months relative to the comparison group. Finally, on average, HWD participants with prior Medicaid coverage receive approximately \$217 less and those without prior coverage about \$295 less in food stamps in the post-period.

Together, these findings suggest that the HWD program is successfully encouraging employment and self-sufficiency among individuals with disabilities. Relative to tightly matched comparison group members, HWD participants are working and earning more. They also have more stable Medicaid coverage. Finally, they are relying less on food stamps, an indication that they may be "earning their way off" public support programs while maintaining the sorts of comprehensive health care and personal service benefits that are so important to workers with disabilities.

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## REFERENCES

1. Lerch S. *Medicaid Expansion for Employed Persons with Disabilities: Costs and Benefits of the "Ticket to Work" Buy-In*. Olympia, WA: Washington State Institute for Public Policy; 2000.
2. Gimm G, Davis SR, Andrews KL, Ireys HT, Liu S. *The Three E's: Enrollment, Employment, and Earnings in the Medicaid Buy-In Program, 2006*. Washington, D.C.: Mathematica Policy Research, Inc.; 2008.
3. Ellison ML, Samnaliev M, Henry AD, Beauchamp JS, Shea A, Himmelstein J. *How do Employment Outcomes of Medicaid Buy-In Participants Vary Based on Prior Medicaid Coverage? An Example from Massachusetts*. Washington, D.C.: Mathematica Policy Research, Inc.; 2008.

## TECHNICAL NOTES

### Data Sources

This report provides an analysis of outcomes for enrollees in the Healthcare for Workers with Disabilities (HWD) program funded through DSHS' Health and Recovery Services Administration (HRSA). The analyses used data from the following sources, all of which are part of RDA's integrated database:

- RDA's Client Services Database provided client demographics; data from the Mental Health Division, the Basic Food Program, and the Division of Developmental Disabilities; and a common identifier for linking client information from multiple data sources.
- An indicator of the need for alcohol or other drug (AOD) treatment was constructed using data from the Division of Alcohol and Substance Abuse (DASA)'s TARGET data system, the Health and Recovery Service Administration's Medicaid Management Information System (MMIS), and the Washington State Patrol.
- Medical claims from the Medicaid Management Information System (MMIS) provided the following: diagnoses of chronic physical conditions and mental illness; information from pharmacy claims; and medical service cost and utilization data.
- Office of Financial Management (OFM) eligibility data provided information on clients' medical coverage.
- Mental illnesses were identified using the psychiatric diagnosis categories from the Chronic Illness and Disability Payment System (CDPS). A chronic illness risk indicator combined diagnoses from CDPS with pharmacy claim information from the Medicaid-Rx pharmacy-based risk adjustment tool.
- Washington State Employment Security Department (ESD) Unemployment Insurance wage data provided information on quarterly earnings, hours, and employment status.

### Case Selection

The treatment group was composed of individuals who enrolled in HWD between January 2002 and June 2007. The contemporaneous comparison group sampling frame consisted of all individuals statewide in DSHS' administrative data that were eligible for any type of DSHS Medical Assistance for at least one month between FY 1998 and FY 2008 and who were between the ages of 18 and 64 in a randomly assigned index month. From there, the sample was restricted to all individuals who were ever enrolled in Medicaid through categorically needy (blind or disabled), medically needy (blind or disabled), or as a Qualified Medicare Beneficiary (QMB) between January 2002 and June 2007. The historical comparison group consisted of individuals who were eligible for Medicaid under one of these three coverage types at some point between July 1999 and December 2000.

### Time Frame for Analysis

For HWD participants, the "index month" was defined as the month between January 2002 and June 2007 in which the individual first enrolled in the HWD program. For the contemporaneous comparison group, individuals were randomly assigned an "index month" between January 2002 and June 2007 through a process that ensured that the distribution of index months was the same for this group as it was for the treatment group. In a similar manner, individuals in the historical comparison group were randomly assigned an "index month" between July 1999 and December 2000. For all groups, the pre-period is defined as the 12 months prior to the index month and the post-period is the index month and the 11 months following it. One exception to this is the pre-period for quarterly hours and earnings data, which goes back five years prior to the index quarter for analyses with the contemporaneous comparison groups and back two years for analyses with the historical comparison groups. The post-period for employment outcomes includes the index quarter and three subsequent quarters. The index month for both HWD participants and comparison group members can fall anywhere in the index quarter.

### Constructing the Comparison Group

To estimate the impact of the HWD program, we constructed a matched comparison group to provide a counterfactual projection of the experience HWD enrollees would have had if they had not enrolled in the program. We performed a 1:1 match on the following individual-level measures available in RDA's integrated database:

- Demographics: age, gender, race
- Post-period chronic illness risk score based on diagnoses and prescriptions in the Medicaid record (contemporaneous analyses) and post-period CPI-adjusted Medicaid medical costs (historical analyses)
- Prior indication of need for alcohol or other drug (AOD) treatment
- Post-period schizophrenia/bipolar affective disorder (contemporaneous analyses) and post-period receipt of services through DSHS' Mental Health Division (historical analyses)
- Prior receipt of services through DSHS' Division of Developmental Disabilities during the same fiscal year as the index month
- Prior member months in each of the following Medicaid coverage areas: categorically needy (CN), medically needy (MN), and Qualified Medicare Beneficiary (QMB). Propensity score models for individuals with no prior Medicaid coverage did not include prior CN or MN member months because, by definition, these individuals had no such prior coverage.
- Prior and post-period dual eligibility for Medicaid and Medicare
- Total earnings and total hours worked in the quarter prior to the index quarter
- Average quarterly earnings and average hours worked in the two or five years prior to the index quarter
- Employment status in the prior year
- Employment status in the quarter prior to the index quarter

### Regression Analyses

Once each HWD participant had been matched to a non-participant who looked similar on a variety of individual characteristics, a series of regressions were run on employment, earnings, Medicaid coverage, and Basic Food Program participation in the post-period, controlling for possible confounding factors.

*Additional copies of this paper may be obtained from: <http://www1.dshs.wa.gov/RDA/> or by calling 360.902.0701. Please request report number 9.96.*