



A Study of the Post Vocational Rehabilitation Earnings Attributable to the Montana Vocational Rehabilitation Program

MAY 2012

Submitted to:

Jim Marks, Mike Hermanson
Montana Vocational
Rehabilitation Program
Helena, MT 59604

Gregg Davis and Jim Sylvester
Bureau of Business
and Economic Research
The University of Montana
Missoula, MT 59812

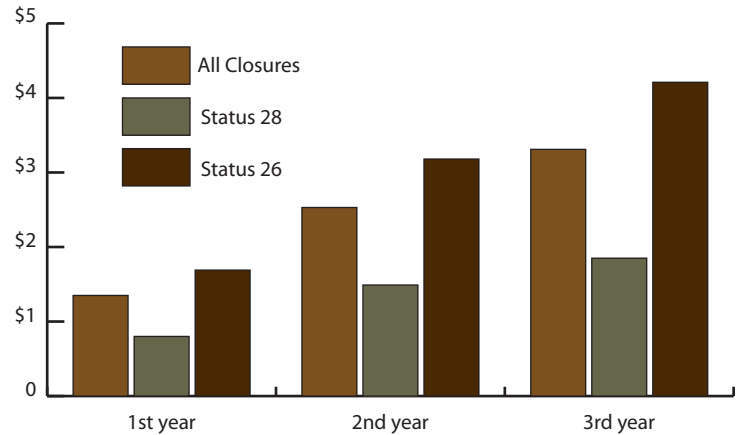
TABLE OF CONTENTS

Findings at a Glance	1
Background	2
Characteristics of the Population with Disabilities	3
Vocational Rehabilitation Return-on-Investment in Montana	6
Average Wages for Closures in 2007	8
Conclusion	8
References	10
Table 1: Socio-Economic Characteristics of Montana and U.S. Populations with Disabilities, 2010	3
Table 2: Closure Status Categories Used in Vocational Rehabilitation Services	4
Table 3: Vocational Rehabilitation Population Characteristics, Montana	4
Table 4: Vocational Rehabilitation Population with Closure in 2007, by Closure Status	5
Table 5: Vocational Rehabilitation Population with Significant Disabilities, by Closure Status	5
Table 6: Montana Vocational Rehabilitation Population with Closure Status in 2007, Percent Reporting No Health Insurance At Application	5
Table 7: Return-on-Investment for Vocational Rehabilitation Population with Closures in 2007, by Closure Status	6
Table 8: Return-on-Investment for Vocational Rehabilitation Population with Closures in 2007, by Closure Status and Disability	7
Table 9: Average Wages by Closure Status	8
Figure 1: Working-Age Montanans by Disability Type	4

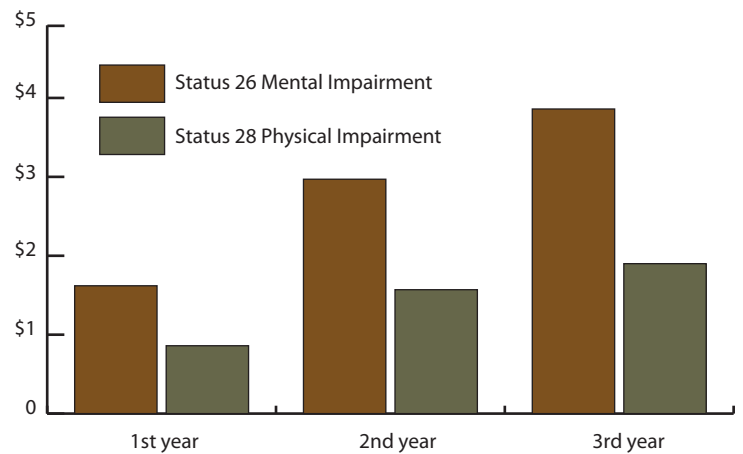
FINDINGS AT A GLANCE

- ✓ More than 64,000 working-age Montanans have a disability, accounting for half of Montana’s total population with a disability.
- ✓ Thirteen percent of Montana’s civilian non-institutionalized population has a disability, above the proportion nationally (12 percent).
- ✓ From 2002 to 2008, combined state and federal spending nationally on working-age people with disabilities increased faster than growth in the nation’s gross domestic product, all federal outlays, and all federal revenues.
- ✓ Almost all state and federal spending for the disabled nationally is for health care and income maintenance. Only a fraction of the remainder is targeted for improving employment and economic independence for the disabled.
- ✓ Factors driving the growth in state and federal spending are disabled veterans returning from the Middle East, an aging demographic, and the recession of 2007. Montana’s population is disproportionately represented by both veteran and baby boom populations. Veterans represent nearly 13 percent of the population 18 years and older, compared to only 9 percent of the population nationally. Baby boomers account for 15 percent of the population in Montana and 13 percent nationally.
- ✓ In Montana, the population with disabilities compared to the population without disabilities is:
 - ✓ less likely to be employed (28 percent versus 66 percent),
 - ✓ more likely to not participate in the labor force (69 percent versus 29 percent),
 - ✓ more likely to have less than a high school education (18 percent versus 6 percent),
 - ✓ less likely to have a four year college degree or more (16 percent versus 32 percent), and
 - ✓ more likely to live in poverty (37 percent versus 21 percent).
- ✓ Return-on-investment is calculated for status 26 and status 28 individuals whose cases were closed during 2007. Status 26 closures are successfully rehabilitated individuals, while status 28 individuals are closed as ‘non-rehabilitated’ after having been accepted for vocational rehabilitation services and whose services had already begun. Some reasons for status 28 closures are death, the individual no longer has rehabilitation potential due to failing health, or refuses further vocational rehabilitation services.

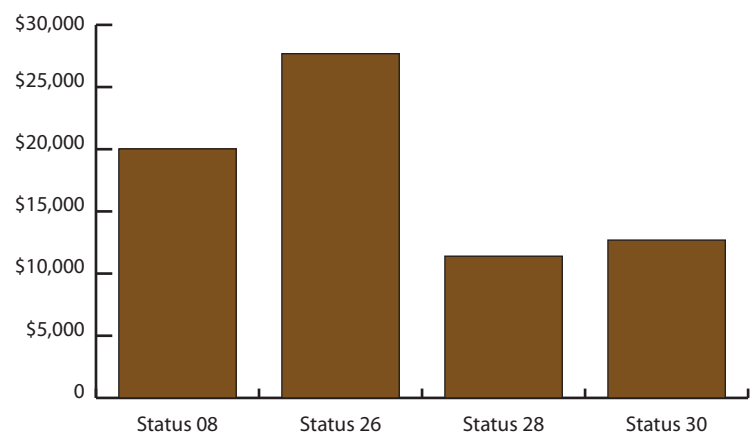
Return-on-Investment by Closure Status



Return-on-Investment by Closure Status, Impairment



Average Wages Post Closure



- ✓ Return-on-investment is computed as the ratio of administrative and servicing costs for closures occurring in 2007 to post closure wages for 12 consecutive quarters, federal and state tax revenues paid due to post VR employment, reduced Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) based on post VR substantial gainful activity, and Social Security reimbursement made to the Montana Vocational Rehabilitation Program for closures occurring in 2007.
- ✓ For both status 26 and status 28 closures, return-on-investment is positive. For every dollar expended for both status closures, \$1.35 is returned in the first year, \$2.53 by the second year, and \$3.31 in the third year.
- ✓ Return-on-investment varies by closure status, and disability type.
- ✓ Return-on-investment for status 26 closures is \$1.69 for the first year, \$3.18 for the second year, and \$4.21 for the third year after closure.
- ✓ Return-on-investment for status 28 closures is \$0.80 for the first year, \$1.49 for the second year, and \$1.85 for the third year after closure.
- ✓ Return-on-investment for physical impairments is \$1.35, \$2.56, and \$3.33 for years one through three after closure.
- ✓ Return-on-investment for status 26, mental impairment, is \$1.62, \$2.97, and \$3.86 for the three years after closure.
- ✓ Return-on-investment for status 28 physical impairments is \$0.86, \$1.57 and \$1.90 for each of the three years after closure.
- ✓ Average wages are higher for successful closures (status 26) relative to status 08 (ineligible for VR services), and status 30 (eligible but closed before plan developed).

BACKGROUND

There are more than 36 million people with a disability in the United States, accounting for almost 12 percent of the total civilian non-institutionalized population. In Montana, the proportion with a disability is greater. Thirteen percent (125,302) of the civilian non-institutionalized population in Montana has a disability. Working age adults with a disability, those 18-64 years of age, comprise over half of the disabled population in Montana and nearly 11 percent of all working adults in this age group. With continued increases in the cost of health care and an increase in the number of working-age Montanans with disabilities as a result of the aging baby boom generation, the federal and state share of spending to support this population represents a large and faster growing share of all federal and state expenditures. The aging of the baby boom generation is expected to contribute to growth in Social Security Disability Insurance awards for at least another decade. In Montana, federal government payments for Social Security Disability Insurance and Supplemental Security Income alone totaled more than \$469 million in 2010, up 5 percent from 2009, and almost 10 percent from 2008.

An estimated \$357 billion in federal spending spread over 63 federal agencies went to assist working-age people with disabilities nationally. This represents 12 percent of all federal spending. In

addition, states spent \$71 billion on joint federal-state programs, with more than 90 percent of these funds going to Medicaid. Of the combined federal and state spending for the disabled, 95 percent covered health care and income maintenance, with only a subset of the remainder devoted to improving employment and economic independence for the disabled. Most problematic, however, is that state and federal spending for working-age people with disabilities increased faster than the nation's gross domestic product, all federal outlays, and all federal revenues for the period 2002 to 2008. Contributing to this growth was the increase in the number of disabled served, primarily attributable to the aging baby boom population, disabled veterans returning from the Middle East, and the recession of 2007. Many of these unemployed workers applied for Social Security Disability Insurance (SSDI).

Expenditures per beneficiary also increased, due in part to medical inflation continually outpacing inflation in general. SSDI benefits also increased at a faster pace, primarily due to benefits for new awardees increasing with a wage index that typically grows more rapidly than consumer prices.

The Affordable Care Act may also impact disabled workers' entry into Social Security Disability Insurance, and into Medicare, but the effect is unknown. Better access to health care under the

Affordable Care Act may help Montana workers with significant medical problems return to the workplace instead of seeking Social Security benefits. On the other hand, the availability of public support for health insurance via subsidies and the Medicaid expansion during the 24-month Medicare waiting period will reduce the cost of applying for Social Security benefits.

The large and rapidly growing share of government spending to support working-age people with disabilities, along with efforts to reduce the federal deficit, increases the need to find efficient ways to take care of this population. One way is to increase the employment opportunities for the disabled and reduce their reliance on public programs. (Livermore et al., 2011).

CHARACTERISTICS OF THE POPULATION WITH DISABILITIES

Only 22 percent of the disabled civilian non-institutionalized population 16 years of age and older are employed nationally, compared to 64 percent with no disability. In Montana, 28 percent of the disabled population 16 years old and older has a job, compared to 66 percent of the 16+ population without a disability. Nearly 6 in 10 disabled adults in Montana are not in the labor force, compared to only 3 in 10 for the non-disabled.

Most of Montana's disabled population (39 percent) is employed in retail trade and education-health care-social assistance, compared to 35 percent for the non-disabled. Montana's disabled population also tends to have less formal education than their non-disabled counterparts. Over half of the population 25 years of age and older with disabilities has a high school diploma or less, compared to 35 percent of those without disabilities. As a result, the disabled are more likely to be low-income earners and live in poverty. Median incomes for the disabled are only 60 percent of the earnings of Montana's non-disabled for those with earnings. Nearly twice as many disabled are likely to fall below 150 percent of the federal poverty level than their non-disabled counterparts. (Table 1)

In Montana, there are 64,072 working-age adults with disabilities, accounting for half of Montana's total disabled population (Figure 1). Most have ambulatory impairment (48 percent), followed by cognitive difficulties (39 percent), and difficulty living independently (29 percent).

Table 2 summarizes four closure status categories used by vocational rehabilitation (VR) services. Status 08 is ineligible for VR services. A case is closed in status 08 when an

Table 1
Socio-Economic Characteristics
of Montana and U.S. Populations with Disabilities, 2010

	% Total Civilian Non-Institutional Population			
	With Disability		Without Disability	
	U.S.	MT	U.S.	MT
Total Civilian Non-Institutionalized Population	11.9	12.8	88.1	87.2
Population 16 years of age and older	14.1	15.1	85.8	84.9
Employed	21.8	27.6	64.2	65.7
Not in Labor Force	73.0	68.6	28.4	29.2
Employed in Retail Trade	13.1	12.8	11.6	11.7
Employed in Educ/Hlth Care/Social Assist	23.0	26.4	23.3	23.4
Education Attainment (25+ Population)				
Less than High School	26.6	17.8	11.8	6.1
High School or Equivalent	34.5	36.8	27.2	28.4
Some College or Associate Degree	25.4	29.4	29.6	33.8
Bachelor's Degree or Higher	13.5	16.0	31.4	31.8
Earnings in Past 12 Months (16+ Population)				
\$1 - \$4,999 or loss	19.1	20.5	11.2	13.8
\$5,000 - \$14,999	23.2	29.7	16.7	19.2
\$15,000 - \$24,999	16.5	16.0	15.5	17.7
\$25,000 - \$34,999	12.1	12.1	13.5	14.7
\$35,000+	29.1	21.6	43.0	34.5
Median Earnings (2010 dollars)	\$19,500	\$14,871	\$29,997	\$24,491
Poverty Status (16+ Population)				
< 100% Federal Poverty Level	21.0	21.2	12.3	11.8
100% - 149% Federal Poverty Level	14.4	15.4	8.1	9.0
> = 150% Federal Poverty Level	64.6	63.3	79.6	79.2

Source: U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates

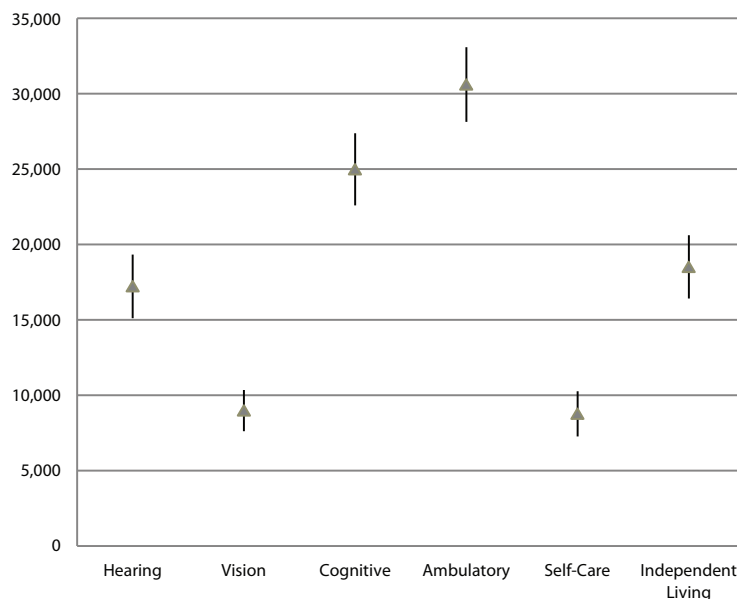
**Table 2
Closure Status Categories Used
in Vocational Rehabilitation Services**

Closure Status	Explanation
08	Ineligible for Vocational Rehabilitation Services
26	Successful Closure, Rehabilitated
28	Case Closed, Not Rehabilitated after Rehabilitation Program has been Initiated
30	Case Closed, Not Rehabilitated, Before Rehabilitation Program has been Initiated

individual has been processed through referral, applicant, or extended evaluation and cannot be accepted for vocational rehabilitation services. Status 08 is the status for individuals who do not meet the federal criteria for VR services. Status 26 is successful closure and rehabilitated. Status 26 individuals receive an evaluation of vocational rehabilitation potential as well as counseling and guidance services. Status 26 closures demonstrate that services delivered under an Individualized Plan for Employment (IPE) had a substantial impact on the individual's job at the time of closure. Status 26 individuals achieve their vocational goals. Status 28 is unsuccessful closures, but after-services have been delivered. These individuals must be closed as "not rehabilitated" after having been accepted for VR services and whose services, under the IPE, had already begun. With status 28 closures, the VR counselor determines that the individual cannot progress to the point of entering employment. Status 30 is eligible for VR services, but closed before a rehabilitation plan could be developed. Status 30 closures are for cases which have been accepted for VR services but have to be closed in a non-rehabilitated status before VR services were initiated.

Table 3 depicts the characteristics of the vocational rehabilitation population in Montana whose cases were closed in 2007 with the Montana Vocational Rehabilitation Program. There were over 3,000 closures in 2007. Of the 3,301 closures, 25 percent are status 26 closures, or successful closures. The median age for all closures is 38, after removing closures with applicants 65 years of age and older. Slightly less than half of the vocational population with closures in 2007 is

**Figure 1
Working Age Montanans, by Disability Type**



Source: U.S. Census Bureau, 2010 American Community Survey 1-Year Estimates

**Table 3
Vocational Rehabilitation Population Characteristics, Montana**

	Number	Percent
Total Closures 2007	3,301	100
Successful Rehabilitated Closures	840	25.4
Median Age at Application	38	
Female	1,575	47.7
Disability Sensory/Communicative	233	7.1
Disability Physical	1,334	40.4
Disability Mental	1,734	52.5
Significant Disability	2,436	73.8
Mean Weekly Hours Worked, Successful Closure		
At Application	6.9	
At Closure	29.4	
Mean Weekly Earnings, Successful Closure		
At Application	\$59	
At Closure	\$302	
No Medical Insurance at Application	1980	60.0

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

female, or 48 percent. Almost three-quarters of the sample have a significant disability, with the majority having a mental disability (53 percent), followed by physical disability (40 percent), and sensory/communicative disabilities (7 percent).

For status 26 closures, the average weekly hours worked at application are 7 hours, increasing substantially to 29 hours per week at closure. The average weekly earnings at application are \$59, compared to \$302 at closure. Six in ten applicants lacked health insurance of any kind (Medicaid, Medicare, employer sponsored).

Of the four closure statuses possible, 44 percent are status 30 closures during 2007 (eligible for vocational rehabilitation services, but closed before a vocational plan was completed). Status 26 closures follow, (25 percent), with status 28 closures slightly lower (19 percent). Only 11 percent are status 08 closures, those deemed ineligible for vocational rehabilitation services. (Table 4).

Table 5 shows that significant disabilities are most pronounced among the status 30 closures, accounting for 48 percent of the total vocational rehabilitation population with significant disabilities. Status 26 and 28 closures follow, with 27 percent and 22 percent significantly disabled. As expected, only 4 percent of those ineligible for vocational rehabilitation services are significantly disabled. Hence, nearly half of the significantly disabled vocational rehabilitation population with closure status in 2007 receives services.

Sixty percent of the total VR population lack health insurance of any kind, Medicaid, Medicare, and employer sponsored health insurance. Most likely to lack health insurance are status 30 closures, accounting for 26 percent of the total VR population. (Table 6).

**Table 4
Vocational Rehabilitation Population
with Closure in 2007, by Closure Status**

Closure Status in 2007	Number	Percent of Total
08 Not Eligible for Services	360	10.9
26 Successful Closure, Rehabilitated	840	25.4
28 Unsuccessful Closure, After Services	639	19.4
30 Closed before Plan Completed	1,462	44.3
Total	3,301	100

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

**Table 5
Vocational Rehabilitation Population
with Significant Disability, by Closure Status in 2007**

Closure Status in 2007	Number	Percent of Total
08 Not Eligible for Services	88	3.6
26 Successful Closure, Rehabilitated	660	27.1
28 Unsuccessful Closure, After Services	528	21.7
30 Closed before Plan Completed	1,160	47.6
Total	2,436	100

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

**Table 6
Montana Vocational Rehabilitation Population with
Closure Status in 2007, Percent of Total VR Population
Reporting Health Insurance at Application**

Type Health Insurance	Closure Status in 2007				Total
	08	26	28	30	
Medicaid	1.1	4.8	4.3	10.2	20.4
Medicare	0.3	4.8	3.6	7.5	16.2
Employer Sponsored	0.7	1.1	0.6	1.0	3.4
No Coverage: Percent of Total VR Population	8.8	14.8	10.9	25.5	60.0
No Coverage: Percent of Closure Status Population	80.3	58.2	56.2	57.7	60.0

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

VOCATIONAL REHABILITATION RETURN-ON-INVESTMENT IN MONTANA

The Council of State Administrators of Vocational Rehabilitation (CSAVR) recognizes the need to assess the efficacy of publicly funded vocational rehabilitation programs. Work is under way to develop a national return on investment (ROI) formula using costs for all vocational rehabilitation applicants, including those not eligible for vocational rehabilitation services. This methodology captures the costs for all in-house services delivered, regardless of the client outcome.

The Bureau of Business and Economic Research at The University of Montana used unemployment insurance (UI) data available from the Montana Department of Labor and Industry, along with data from the Montana Vocational Rehabilitation Program to estimate the return-on-investment for all services delivered to status 26 (successful closure and rehabilitated) and status 28 (unsuccessful closure after services and without employment) clients whose cases were closed in 2007. Administrative and operational cost data was supplied by the Montana Vocational Rehabilitation program, with wage data supplied by the Montana Department of Labor and Industry for 12 consecutive quarters after closure.

Since this study is constrained by wage earnings reported under unemployment insurance, other wage income may be missing. Unemployment insurance data only covers workers with unemployment insurance; the self-employed are not captured by this data set. The self-employed in Montana are a significant proportion of the Montana job market. In 2010, the self-employed (proprietors) accounted for 28 percent of total employment in Montana.

Other data provided by the Montana Vocational Rehabilitation program includes disability codes, age and gender of applicant, and information on whether Medicare, Medicaid, Supplemental Security Income, Social Security Disability Insurance, Temporary Assistance to Needy families payments were received at time of application and closure.

Return-on-investment is calculated based on status 26 and status 28 closures in 2007. The benchmark year

Table 7
**Return-on-Investment for Vocational Rehabilitation
Population with Closures in 2007, by Closure Status**

Closure Status	Return on Investment by Year, post Closure in 2007		
	1 st Year	2 nd Year	3 rd Year
26 Successful Closure, Rehabilitated	\$1.69	\$3.18	\$4.21
28 Unsuccessful Closure, After Services	\$0.80	\$1.49	\$1.85
Closures 26/28 Combined	\$1.35	\$2.53	\$3.31

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

(2007) is constrained by the availability of post closure wage data from the Montana Department of Labor and Industry. Wages are used in the return-on-investment calculation for 12 consecutive quarters beyond the year of closure. Excluded from the sample are those 65 years of age and older at time of application. Return-on-investment is conservatively estimated based on administrative costs and program operational (service) costs and post closure wages. Other components included in this analysis are federal and state tax revenues paid due to post vocational rehabilitation employment, reduced Supplemental Security Income (SSI) and Social Security Disability Insurance (SSDI) based on substantial gainful activity (SGA), and Social Security reimbursement received by the Vocational Rehabilitation Program (\$520,377) for cases related to 2007 closures, reducing the costs of services provided.

Table 7 summarizes the three year return-on-investment for status 26 and status 28 closures occurring in 2007. For status 26 and status 28 closures combined, a positive return-on-investment (in excess of one) occurs for all three years following closure in 2007. For Year 1, for every tax dollar invested for vocational rehabilitation services (VR), \$1.35 is returned to society due to post VR wage earnings, tax revenues for both the state and federal government, and reduced Social Security SSI and SSDI benefit payments. The return on investment increases in

Table 8
Return-on-Investment for Vocational Rehabilitation Population with Closures in 2007,
by Closure Status and Disability

Closure Status	Disability	Return-on-Investment		
		1 st Year	2 nd Year	3 rd Year
26 Successful Closure, Rehabilitated	Sensory/Communicative	\$1.88	\$3.66	\$5.00
	Physical	\$1.69	\$3.23	\$4.30
	Mental	\$1.62	\$2.97	\$3.86
	All Disability Total	\$1.69	\$3.18	\$4.21
28 Unsuccessful Closure, After Services	Sensory/Communicative	\$0.63	\$1.19	\$1.54
	Physical	\$0.86	\$1.57	\$1.90
	Mental	\$0.75	\$1.44	\$1.85
	All Disability Total	\$0.80	\$1.49	\$1.85
Closures 26/28 Combined	Sensory/Communicative	\$1.55	\$3.00	\$4.08
	Physical	\$1.35	\$2.56	\$3.33
	Mental	\$1.29	\$2.38	\$3.08
	All Disability Total	\$1.35	\$2.53	\$3.31

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

the second year to \$2.53 for every tax dollar invested in vocational rehabilitation and to \$3.31 for every tax dollar by the third year. For both Status 26 and Status 28 closures, VR services are delivered, so the higher returns-on-investment are attributable to successful wage earners.

Table 8 expands on the return-on-investment estimates in Table 7 by examining the return-on-investment by type of disability; sensory/communicative, physical, or mental based on the disability impairment codes at time of application. The “All Disability Total” rows for status 26 and 28 closures repeat the return-on-investment estimates

from Table 7. Return-on-investment varies considerably by closure status, year, and by type of disability impairment. First, for both closures collectively, return-on-investment is highest for sensory-communicative impairments. For status 28 closures, unsuccessful closures but after VR services are delivered, the return-on-investment for physical impairment is almost two-fold the return-on-investment by the third year. The return-on-investment for mental disability is most pronounced for status 26 closures, returning \$1.62 for every dollar the first year, and \$3.86 by the third year.

AVERAGE WAGES FOR 2007 CLOSURES

Another gauge of the efficacy of VR services is to examine wage levels after closure for those receiving VR services and those not receiving VR services. Although identification of a control group is problematic for wage comparison purposes, some insights are possible by looking at average wage levels for different status categories. Although some studies do use status 30 closures as a control group, caution is warranted. It is possible that status 30 disabled could conceivably receive VR services from other sources, move from out-of-state to Montana after receiving VR services elsewhere, or receive VR services through other unique circumstances.

Table 9 shows average wages for status 08, 26, 28, and 30 for closures occurring in 2007. Note that these estimates are generated using 84 percent of the disabled population used for this study. If one assumes a measure of VR success is the wage gap between those receiving services with successful closure (status 26) and those disabled not receiving VR services (status 30), then subject to the cautions expressed by Bau-Iam and Bias, status 26 closures are considerably more successful in elevating wage levels. The average wage for status 26 closures is almost \$28,000, compared to only \$13,000 for status 30 closures. Status 26 wages are over twice those of status 30 closures. Again, caution is urged in drawing too many conclusions from this data. There is no attempt to control for age, gender, type of disability and

Table 9
Average Wages by Closure Status

Closure Status in 2007	Mean Wage After Closure	Number in Group
08 Not Eligible for Services	\$20,027	337
26 Successful Closure, Rehabilitated	\$27,683	770
28 Unsuccessful Closure, After Services	\$11,399	519
30 Closed before Plan Completed	\$12,694	1,157
All Closures in 2007	\$17,488	2,783

Source: Montana Vocational Rehabilitation Program, Montana Department of Labor and Industry; Bureau of Business and Economic Research, The University of Montana.

other attributes that could conceivably explain some of the wage variation. Given sufficient sample size, this could be investigated for future studies.

Another way to examine the average wage data is to compare status 08 with status 26. Here the measure of success is how close VR services were able to bring the disabled population (status 26) to the non-disabled population (status 08) with respect to wage levels. Again, it appears VR services contribute to wages that are 138 percent of the wages for status 08 closures. An apples-to-apples comparison however, would require sample sizes large enough to control for characteristics other than receiving VR services that contribute to wage levels, such as gender, education, type of disability, and so forth.

CONCLUSION

Federal and state spending for the working-age populations with disabilities is increasing faster than gross domestic product, consuming an ever-increasing share of the nation's output. Almost all the combined federal and state spending nationally for the disabled is for health care and income maintenance. Only a small fraction is spent on improving employment and economic independence for populations with disabilities. This trend is expected to continue as aging baby boomers qualify for Social Security Disability Insurance awards. Disabled veterans are also expected to contribute to this trend. This may be particularly significant for

Montana since veterans and baby boomers are disproportionately represented in the state.

Given federal efforts to reduce the deficit, along with rising spending on the disabled for health care and income maintenance, improving employment opportunities for the disabled will reduce their reliance on income support programs and well as possibly provide health insurance coverage through their employers.

In Montana, 13 percent of the state's civilian non-institutionalized population is disabled, slightly above the proportion nationally. Working-age adults comprise half of

the state's disabled population. For the population 16 years of age and older, only three in ten of Montana's disabled have a job, compared to almost seven in ten for the population without disabilities. Even more noteworthy, six in ten are not in the labor force, contrasted to only three in ten for the non-disabled. Among those reporting earnings, the median income for Montana's disabled is only 60 percent of the median earnings for the non-disabled population. Montana's disabled are twice as likely to fall below 150 percent of the federal poverty level as well.

This study estimates the return-on-investment resulting from participation in Montana's Vocational Rehabilitation Program. More than 1,400 closures occurring in 2007 for two status categories are examined. Status closures include status 26 (successful closure and rehabilitated), and status 28 (unsuccessful closure but after services are delivered). Wage data is obtained for 12 consecutive quarters after closure, permitting an analysis of the earning power of the post closure disabled. Return-on-investment is based on the benefits of post vocational rehabilitation earnings, tax revenues to state and federal governments, and reduced reliance on Social Security SSI and SSDI benefits relative to the administrative and servicing costs associated with the Montana Vocational Rehabilitation Program. Excluded from analysis are the disabled 65 years of age and older.

The return-on-investment estimated in this study is conservative. Unemployment insurance data only covers employed persons who pay unemployment insurance, excluding many self-employed and other types of possible income. These benefits are not included in this analysis, conservatively biasing the return-on-investment results toward the low end.

Return-on-investment for status 26 and status 28 closures combined is at least three times the tax payer investment in vocational rehabilitation by the third year. Return-

on-investment does however vary considerably by closure status, year, and type of disability impairment.

For status 26 and status 28 closures combined, the highest return-on-investment is for sensory-communicative impairments. Vocational rehabilitation returns a fourfold return-on-investment by the third year. For status 26 closures, return-on-investment increases to a fivefold return-on-investment by the third year.

Status 26 closures have a threefold return-on-investment for mental impairment rehabilitation efforts in the second year, and nearly a fourfold return-on-investment by the third year.

Another approach to valuing the contribution of vocational rehabilitation services to Montana's population with disabilities is to assess the average wages earned post closure relative to some benchmark. The relative wages for status 26 closures compared to those for status 30 closures represent a wage gap between those receiving services with successful closure to those not receiving VR services. Status 26 wages (\$28,000) are over twice the average wages for status 30 closures (\$13,000). In this sense then, it appears VR services are successful in increasing the earnings of the disabled who successfully complete the VR program.

Another way to do a wage comparison is between status 08 and status 26 closures. Here the measure of success is how close VR services were able to bring the disabled population to the wages of those ineligible for VR services. Using this methodology, VR services contribute to wages that are 138 percent of the wages for Status 08 closures.

Caution should be exercised when comparing these wage estimates however. There is no attempt to control for characteristics known to contribute to wage disparities, such as gender, age, education, type of disability, and other worker attributes that could explain wage variation.

Consolidate Federal Funds Report, 2010, U.S. Census Bureau, On-Line Query System.

“Costs, Cuts, and Consequences: Charting a New Course for Working-Age People with Disabilities,” David Stapleton and Gina Livermore, Issue Brief, Center for Studying Disability Policy, Mathematica Policy Research, September 2011, Number 11-03.

“Disability Characteristics,” American Community Survey, 1-Year Estimates, 2010, U.S. Census Bureau.

“Economic Impacts of West Virginia Division of Rehabilitation Services on Consumers with Significant Disabilities: Realistic Return-on-Investment Models for State-Federal VR Programs,” Pisnu Bua-Iam and Thomas K. Bias, *Journal of Rehabilitation*, 2011, Volume 77, Number 3, pages 25-30.

“Health care Costs Are A Key Driver of Growth in Federal and State Assistance to Working-Age People with Disabilities,” Gina Livermore, David Stapleton, and Meghan O’Toole, *Health Affairs*, 2011, Volume 30, Number 9, pages 1664-1672.

“Select Economic Characteristics for the Civilian Non-Institutionalized Population by Disability Status,” American Community Survey, 1-Year Estimates, 2010, U.S. Census Bureau.