

NeRC

Northwest Economic Research Center
College of Urban and Public Affairs



Vocational Rehabilitation Results
January 23, 2013



Presentation Outline

1. Descriptive statistics for program and comparison groups
2. Program and comparison group employment figures
3. Return on investment
4. Impact analysis
5. End

Descriptive statistics for program and comparison groups

Age & Gender

Characteristics	<i>Whole Sample</i>			
	Program Group	Comparison Group	Difference	Whole Sample
Total Participants	8763	6209	2554	14972
Gender				
Male	56%	54%	-3%	52%
Female	44%	46%	3%	48%
Median Age	41	41	-	41
Standard Deviation	13.63	12.99	0.64	13.37
Age less than 18	2%	1%	1%	1%
Age between 18 and 22	16%	14%	2%	15%
Age between 23 and 39	30%	32%	-2%	31%
Age between 40 and 50	29%	31%	-2%	30%
Age greater than 50	24%	23%	1%	24%

Education

Characteristics	Whole Sample			
	Program Group	Comparison Group	Difference	Whole Sample
Total Participants	8763	6209	2554	14972
Special Education	7%	5%	2%	6%
Secondary Education, no HS Diploma	15%	17%	-2%	16%
Post-Secondary Education, no degree	19%	20%	-1%	19%
AA Degree or VoTech Certificate	8%	7%	1%	8%
Bachelor's Degree	7%	5%	2%	6%
Elementary Education (Grades 1-8)	3%	4%	-1%	4%
HS graduate or equivalent	38%	39%	-1%	39%
Master's degree or higher	3%	1%	2%	2%
No formal schooling	0%	0%	0%	0%

Race & ethnicity

Characteristics	Whole Sample			
	Program Group	Comparison Group	Difference	Whole Sample
Total Participants	8763	6209	2554	14972
White	91%	90%	1%	91%
Black	5%	6%	-1%	5%
American Indian	4%	5%	-1%	5%
Asian	2%	1%	1%	1%
Hawaiian	1%	1%	0%	1%
Hispanic (any race)	1%	5%	-4%	6%
Total	103%	108%	-5%	108%

Types of disability

Characteristics	Whole Sample			
	Program Group	Comparison Group	Difference	Whole Sample
Respiratory	1%	1%	0%	1%
Psychosocial	15%	18%	-3%	16%
Physical	12%	13%	11%	12%
Orthopedic Disabilities	7%	8%	-1%	7%
Other Mental Impairment	14%	17%	-3%	15%
Mobility and Manipulation Impairment	11%	11%	0%	11%
General Physical Debilitation	4%	5%	-1%	4%
Hearing Impairments	8%	3%	5%	6%
Blindness and other visual impairment	1%	1%	0%	1%
Substance Abuse	3%	4%	-1%	4%
Cognitive Impairment	26%	22%	4%	25%
Communication Impairment	2%	1%	1%	1%
Deaf-Blindness	0%	0%	0%	0%
Total	103%	104%	-1%	104%

Program and Comparison Group Employment Figures

Select Model Variables

- Plan (binary)
- Gender
- Regional unemployment
- Program time
- Total purchase of services
- Services received
- Disability level
- Race
- Education level
- Marital status
- TANF, SSDI, & SSI
- Age at eligibility
- Year of exit

Other significant variables

- Gender
- Regional Unemployment Rate
- Program Time
- Total Purchase of Services
- Marital Status
- TANF, SSI, SSDI
- Bachelors Degree, AA Degree or Equivalent, some college
- Most Significant Disability
- Drug and alcohol programs
- Job Retention, Job Maintenance, Job Readiness

Effect of program participation on wages

Time period post-program	Wages (plan coefficient)
1 st Quarter	\$1,353
1 st Year	\$4,941
3 rd Year	\$3,653
Total post-program	\$12,697

Difference-in-Difference

Time period post-program	Wages (plan coefficient)
1 st Quarter Post-1 st Quarter Pre	\$331
1 st Year Post-1 st Year Pre	\$1,249
3 rd Year Post-1 st Year Post	\$1,289
3 rd Year Post-1 Quarter Post	\$2,300

Effect of program participation on hours

Time period post-program	Hours
1 st Quarter	65
1 st Year	176
3 rd Year	99
Total post-program	416

Effect of program on likelihood of employment

$(\text{Odds of Success Group 1} / \text{Odds of Failure Group 1}) / (\text{Odds of Success Group 2} / \text{Odds of Failure Group 2})$

The program group was **1.93** times as likely to be employed in the first quarter as the comparison group

Effect of plan by quintile

Dependent Variables	Plan Coefficients				
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile
Wages					
1st Quarter Post	\$585	\$887	\$1,086	\$1,062	\$1,885
1st Year Post	\$1,947	\$3,270	\$3,978	\$3,768	\$7,069
3rd Year Post	\$1,220	\$2,682	\$2,462	\$2,747	\$5,304
Total Post (Inflation)	\$4,650	\$9,007	\$9,837	\$9,577	\$18,054
Hours					
1st Quarter Post	46	76	56	56	66
1st Year Post	114	200	156	178	168
3rd Year Post	59	156	86	100	75
Total Post	259	536	371	435	350
Likelihood of Employment in First Quarter					
Likelihood of Employment	1.47	2.17	2.14	1.53	1.55
Difference in Difference (Wages)					
1st Quarter Post - 1 Quarter Pre	\$304	\$325	\$573	\$569	\$435
1st Year Post - 1 Year Pre	\$699	\$1,441	\$2,505	\$2,210	\$2,432
3 Year Post - 1 Year Post	\$727	\$588	\$1,517	\$1,021	\$1,765
3 Year Post - 1 Quarter Post	\$635	\$1,795	\$1,376	\$1,685	\$3,418

1st Quintile (Least Likely) -> 5th Quintile (Most likely)

Boosted regression results for plan influence

Time period post-program	Plan influence
1 st Quarter wages	7.54%
1 st Year wages	7.87%
Total post wage (inflation-adjusted)	5.73%

Influence is percent of variation in earnings accounted for by program participation.

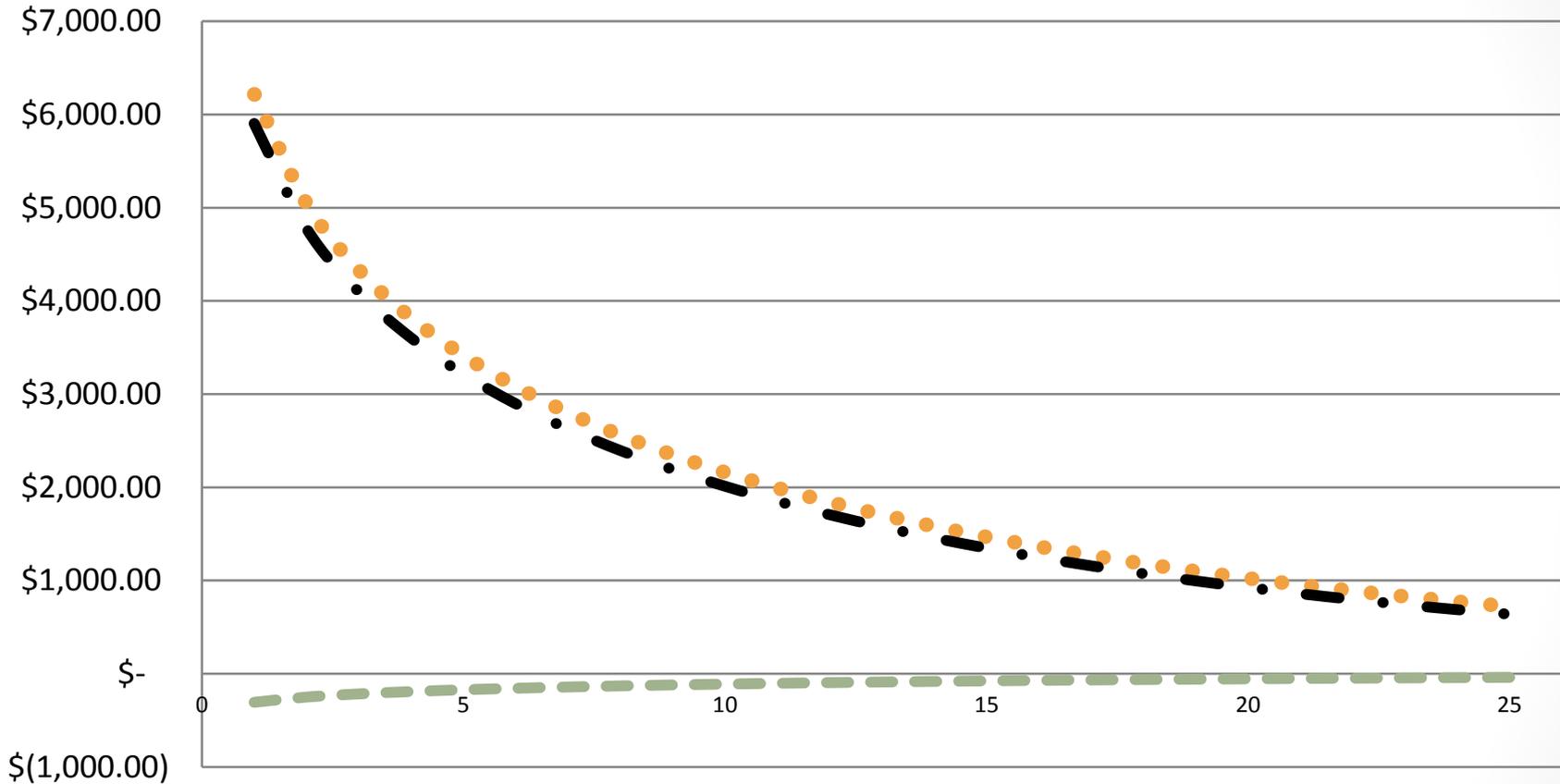
Boosted regression break-down

Other Important Variables	1st Qtr	1st Yr	Total
Total Purchase of Services	34.98	31.81	37.35
Time in Program	14.73	14.68	13.83
Age at Eligibility	10.76	10.19	9.55
County Unemployment	8.43	7.54	8.74
Married	6.61	7.26	6.67
SSI	6.24	8.33	7.07

Return on Investment

Benefit / Cost	Time Period and Perspectives			
	First ten years		Lifetime (until 65)	
	Participant	Taxpayer	Participant	Taxpayer
Estimated Benefit	\$27,609.74	\$-	\$42,040.87	\$-
Fringe Benefit	\$8,172.48	\$-	\$12,444.10	\$-
Subtotal: Estimated + Fringe	\$35,782.23	\$-	\$54,484.97	\$-
Taxes	\$(9,679.09)	\$9,679.09	\$(14,738.18)	\$14,738.18
Reduction in Public Assistance	\$(1,795.31)	\$1,795.31	\$(2,786.98)	\$2,786.98
Subtotal: Taxes + reduction in public assistance	\$(11,474.41)	\$11,474.41	\$(17,525.17)	\$17,525.17
Foregone earnings and loss of fringe benefits of foregone earnings	\$(8,180.35)	\$-	\$(8,180.35)	\$-
Loss of taxes associated with foregone earnings	\$-	\$(2,212.79)	\$-	\$(2,212.79)
Subtotal: Foregone earnings and associated loss of benefits/taxes	\$(8,180.35)	\$(2,212.79)	\$(8,180.35)	\$(2,212.79)
Program cost	\$-	\$(3,231.35)	\$-	\$(3,231.35)
Subtotal: Program Cost	\$-	\$(3,231.35)	\$-	\$(3,231.35)
Total (Benefits – Costs)	\$16,127.47	\$6,030.27	\$28,779.45	\$12,081.03

Impact Curves



— NPV Reduc. Of Pub. Assistance

● NPV Gross Benefit: Expected Earnings Benefit Plus Fringe Benefits

— Total Benefit (untaxed)

Ratios and Returns

Net Benefit

Estimated Lifetime Benefit	\$28,779.45
Benefit for all program participants (Est. Lifetime benefit * Number of program participants (8,773))	\$252,482,148.17
Total Program Cost (entire sample)	\$(48,415,317.05)
Difference	\$204,066,831.12
Ratio of total program benefit to total program cost	5.2

State share of cost

State share of program cost (21.8% of total program costs for entire sample)	\$10,554,539.12
Ratio of total benefit to state share of cost	24
Ratio of lifetime Oregon income tax from all program participants to states' share of total program cost	4.3

Value of additional counselors

Average Counselor Salary FY 12	\$77,602.08
Average number of cases closed as rehabilitation per counselor	17.87
Value of one additional counselor (Salary * cases closed as rehabilitation)	\$514,288.84
Total government benefit of one additional counselor (Lifetime tax payments and reduction in public assistance * cases closed as rehabilitation)	\$313,174.71
Government Benefit to State's Share of Salary ratio	10.8
Oregon's lifetime income-tax benefit from one additional counselor (one year)	\$42,840.44

Impact Analysis Results

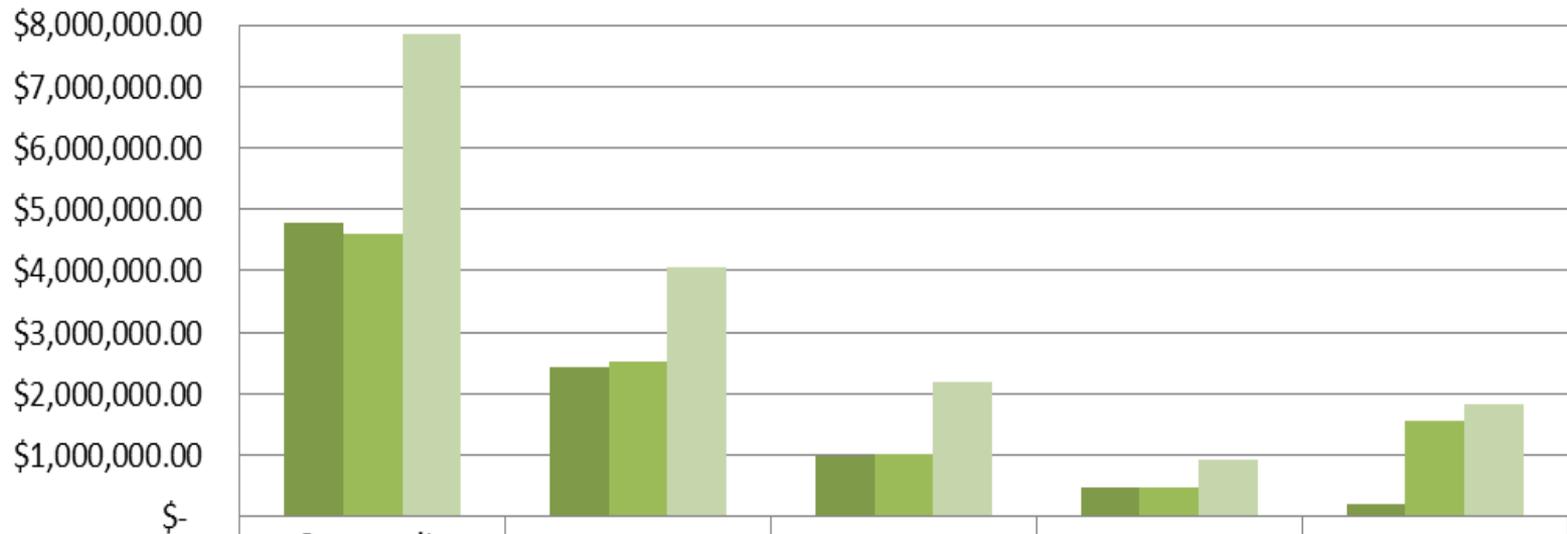
Purchase of Service Impacts

Impact Type	Employment	Labor Income	Total Value Added	Output
Direct Effect	292.4	\$9,929,909.60	\$9,767,391.20	\$16,267,067.10
Indirect Effect	49.2	\$1,938,964.40	\$3,586,030.90	\$5,806,521.60
Induced Effect	99.7	\$3,825,790.70	\$6,883,557.00	\$11,180,790.50
Total Effect	441.4	\$15,694,664.70	\$20,236,979.10	\$33,254,379.20

Top Ten Employment Impacts Summary

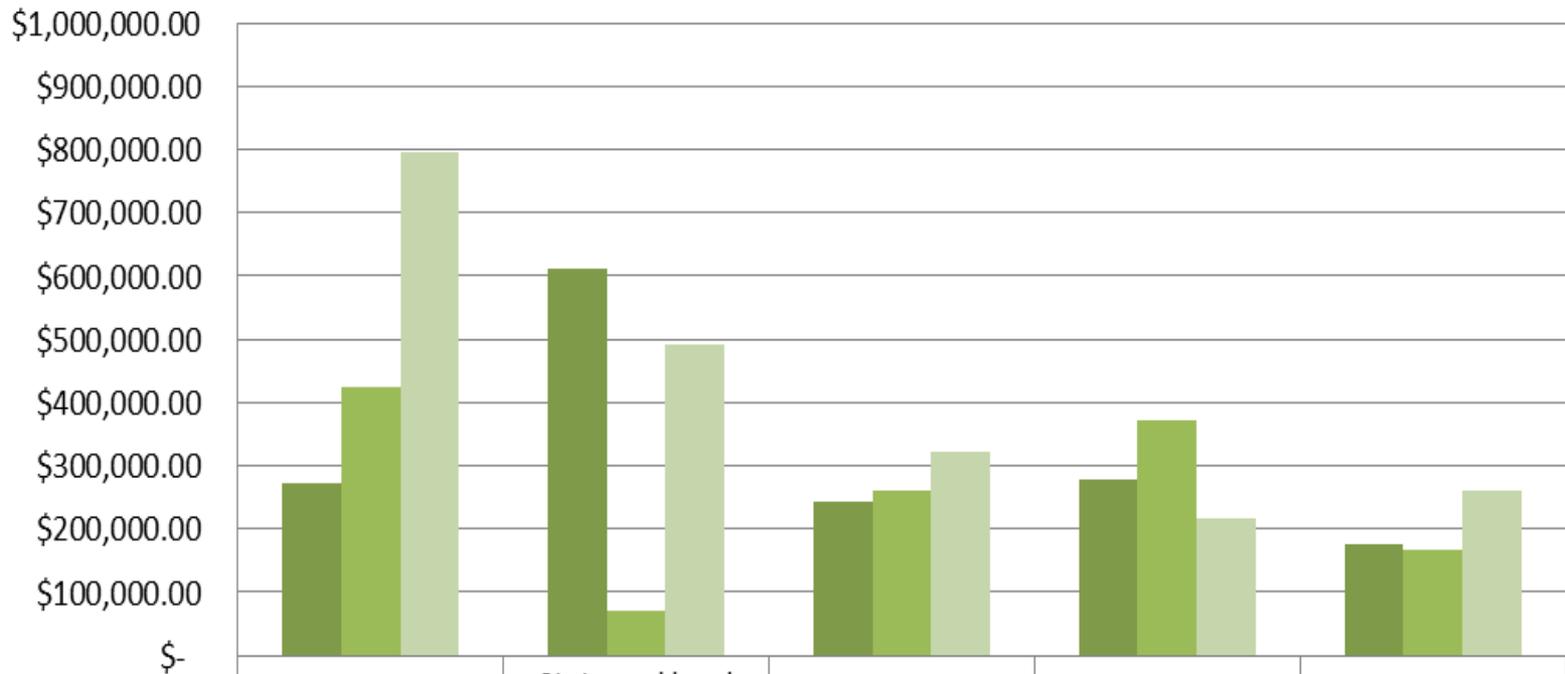
Sector	Total Employment	Total Labor Income	Total Value Added	Total Output
Community food, housing, and other relief services, including rehabilitation services	177.2	\$4,784,791.81	\$4,601,911.41	\$ 7,859,873.66
Offices of physicians, dentists, and other health practitioners	32.0	\$2,434,165.93	\$2,513,340.38	\$ 4,070,742.00
Private junior colleges, colleges, universities, and professional schools	23.8	\$988,095.80	\$1,012,646.26	\$ 2,183,398.75
Other private educational services	16.8	\$475,662.51	\$466,560.64	\$920,660.35
Real estate establishments	15.9	\$214,379.25	\$1,568,399.23	\$1,830,151.54
Food services and drinking places	13.9	\$272,665.10	\$424,654.10	\$794,569.60
State and local government passenger transit	8.5	\$610,090.89	\$70,987.49	\$492,888.59
Employment services	8.1	\$243,053.67	\$262,007.15	\$323,275.36
Retail Stores - Health and personal care	7.8	\$279,473.20	\$370,778.89	\$215,787.04
Individual and family services	7.1	\$176,831.37	\$168,148.29	\$260,424.34

Top ten employment impacts (1-5)



	Community food, housing, and other relief services, including rehabilitation services	Offices of physicians, dentists, and other health practitioners	Private junior colleges, colleges, universities, and professional schools	Other private educational services	Real estate establishments
■ Total Labor Income	\$4,784,791.81	\$2,434,165.93	\$988,095.80	\$475,662.51	\$214,379.25
■ Total Value Added	\$4,601,911.41	\$2,513,340.38	\$1,012,646.26	\$466,560.64	\$1,568,399.23
■ Total Output	\$7,859,873.66	\$4,070,742.00	\$2,183,398.75	\$920,660.35	\$1,830,151.54

Top ten employment impacts (6-10)



	Food services and drinking places	State and local government passenger transit	Employment services	Retail Stores - Health and personal care	Individual and family services
■ Total Labor Income	\$272,665.10	\$610,090.89	\$243,053.67	\$279,473.20	\$176,831.37
■ Total Value Added	\$424,654.10	\$70,987.49	\$262,007.15	\$370,778.89	\$168,148.29
■ Total Output	\$794,569.60	\$492,888.59	\$323,275.36	\$215,787.04	\$260,424.34

Opportunities for Expansion

Variable	Unemployed due to disability	People with daily activity limits
Number of people	26,000	6,000
Percent of cases closed as rehabilitation (entire sample)	13%	
Potential additional cases closed as rehabilitation	3380	780
Cost of additional closures	\$(11,214,983.47)	\$(2,588,073.11)
Estimated benefit for all additional participants	\$99,884,289.41	\$23,050,220.63
Estimated lifetime benefit minus cost of additional closures	\$88,669,305.94	\$20,462,147.53

Thank you,

NeRC

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