DSHS | Vocational Rehabilitation Rates Since 2000

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Examining Washington State's Vocational Rehabilitation Rates: *Why the decline?*

Aftermath: To what degree is field office performance stable after the 2000 decline?

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The first report[1] compared two cohorts of DVR clients before and after implementation of federal Order of Selection beginning November 2000. Results showed the drop in rehabilitation (from above 60 to near 40 percent) was mainly related to: 1) a struggling state economy in 2001-03; 2) a growing proportion of clients with more severe disabilities; and 3) a growing proportion on disability related economic assistance (SSI/SSDI). However, in some offices, clients were more likely to succeed than expected after accounting for differences in local labor markets, disability type, disability grants, and services provided. If these office success rates prove stable over time, it could indicate that key office practices contributed to these better rates. Therefore, this analysis examined the stability of office performance over time by comparing rehabilitation rates for clients in 2004 with those in 2002-03.

Key Findings

- DVR clients in the 2004 cohort faced very much the same obstacles as other clients had in prior years. Three major factors continued to have negative impacts on the likelihood of rehabilitation: poor labor markets, more severe disabilities, and receiving SSI/SSDI and TANF economic assistance. See statistical model results, page 5.
- Good DVR office performance was stable over time; 70 percent of the offices that did better than expected in the 2002-03 cohort continued to do well in the 2004 cohort (9 out of 13).
- Among the nine offices consistently doing better than expected, actual rehabilitation rates reached levels only seen before the year 2000 decline; 63 percent were successfully rehabilitated.

The consistent better-than-expected performance among nine offices suggests that there may be some systematic practices that generated these outcomes.

Stability of Office Performance (2002-03 to 2004) and Rehab Rates Achieved in 2004

Office performance is defined as the difference between average observed and expected rehabilitation rates for DVR clients in that office (Statistically modeled for 2002-03 and 2004)		**Office Performance in the 2004 Client Cohort**			
		Better than Expected	**Close-to-Expected**	**Worse than Expected**	Total Number of Offices in 2002-03 Client Cohort
In 2002-03 Cohort	**Better than Expected**	**70%** Rate = **0.63**, n=9	**15%** Rate = **0.46**, n=2	**15%** Rate = **0.35**, n=2	**100%** Subtotal=13
	Close-to-Expected	**25%** Rate = **0.46**, n=3	**42%** Rate = **0.46**, n=5	**33%** Rate = **0.40**, n=4	**100%** Subtotal=12
	Worse than Expected	**25%** Rate = **0.49**, n=4	**19%** Rate = **0.51**, n=3	**56%** Rate = **0.35**, n=9	**100%** Subtotal=16
	Total Number of Offices in 2004 Client Cohort	Subtotal=16	Subtotal=10	Subtotal=15	Total Comparable Offices[2] (in 2002-03 and 2004): N=41

[1] See "Examining Washington State's Vocational Rehabilitation Rates: *Why the decline?* A Study of Two Cohorts" www1.dshs.wa.gov/RDA/.
[2] Results for 3 of the 44 offices in the 2002-03 cohort could not be assessed in the 2004 cohort: Parkland combined with Puyallup, Whatcom WS results were combined with Bellingham ones, and Vancouver 1 and 2 offices were combined into a single office. Please note that the two Bremerton offices moved location and changed names but staff and 'catchments areas' remained relatively the same.

Performance was stable from 2002-03 to 2004 - for most offices doing better than expected

- 70 percent of the offices that performed better than expected in 2002-03 continued to perform better in 2004 (9 out of the 13 offices).
- 56 percent of the offices that performed worse than expected in 2002-03 were still performing badly in 2004 (9 out of the 16 offices).
- Fluctuation was evident among the 12 offices doing 'close-to-expected' in 2002-03. In 2004, 25 percent performed better than expected, 42 percent performed the same, and 33 percent performed worse (3 offices better, 5 the same, and 4 worse).

Actual rehabilitation rates were highest among consistently high-performing offices

The nine offices consistently doing better than expected achieved the highest rehabilitation rate: 0.63 on average. This was higher than any other set of offices, and close to the 0.65 average achieved by all DVR offices for clients in the 1997-98 cohort studied in the first report.

The nine offices consistently doing worse than expected had one of the lowest rehabilitation rates: 0.35 on average. This low rate was matched by only two other offices that performed much worse in 2004 than in 2002-03.

Most other offices achieved rates close to the overall median for all offices in 2004: around 0.47.

This means that offices just beginning to do better than expected in 2004 showed modest improvement, but did not reach rehabilitation rates close to those obtained by offices that were consistently better.

Consistently good offices could not be explained demographically

The table below shows that the nine offices that did consistently better than expected were spread out geographically in different parts of Washington State, were located in different urban/rural areas, and had expected rehabilitation rates ranging from 0.37 to 0.83 in 2004.

	2004 Results			2002-03 Results		
	PERFORMANCE SCORE	OBSERVED RATE	EXPECTED RATE	PERFORMANCE SCORE	OBSERVED RATE	EXPECTED RATE
Spokane 3	0.20	0.76	0.55	0.05	0.58	0.53
Wapato	0.19	0.71	0.52	0.07	0.53	0.46
Spokane WS	0.17	1.00	0.83	0.09	0.48	0.40
Ellensburg	0.14	0.53	0.39	0.04	0.52	0.48
Mount Vernon	0.12	0.57	0.45	0.08	0.59	0.51
Bellevue	0.11	0.62	0.51	0.04	0.53	0.49
Bellingham+WhatcomWS	0.10	0.52	0.42	0.13	0.57	0.44
Omak	0.09	0.46	0.37	0.19	0.58	0.39
Lynnwood	0.05	0.53	0.48	0.04	0.58	0.54
Averages	**0.13**	**0.63**	**0.50**	**0.08**	**0.55**	**0.47**

Conclusion

It seems likely that there are systematic practice differences that generate these rehabilitation outcomes in the nine consistently improving offices. These practices could include ways in which counselors managed their cases, coordinated supports provided by other DSHS programs and community partners or ways they related with local employers. Identifying these practices and diffusing them could lead to rehabilitation rates that equal the levels seen before 2000.

Vocational Rehabilitation Rates Since 2000

APRIL 2007

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DEFINITIONS OF PERFORMANCE

Better/Same/Worse than Expected by Individual Office

We defined office performance as the difference between the actual (observed) rehabilitation rate and the expected rate: the rate predicted by the statistical model, controlling for differences between offices in labor market, client characteristics, and service factors. Thus the performance score was:

- Exactly "0" if the observed rate was the same as the expected rate.
- A positive percentage if the achieved (observed rate) was higher than the expected one: i.e. performance was a number of percentage points above the expected rate.
- A negative percentage if the achieved (observed rate) was lower than the expected one: i.e. performance was so many percentage points below the expected rate.

'Better than', 'Close to' and 'Worse than Expected' Office Groupings

We divided the 41 offices into three groups of similar sizes using the following criteria:

- The "close to expected" offices had to have percentage scores relatively close to zero.
- A "better than expected" office had to have a percentage scores sufficiently above zero.
- A "worse than expected" office had to have a percentage score sufficiently below zero.

We needed two cutoff points of the same size, one above and one below zero. The standard error of performance percentages scores for all 41 DVR offices provided us with statistically defensible cutoffs. The standard error was calculated as about 0.15 for both cohorts. Two standard errors above and below zero provided us with a 95% confidence interval of 0.03 above and below zero. *See the descriptive statistics table on the next page* (page 5).

These cutoffs, based on standard errors, generated the following definitions and sets of offices:

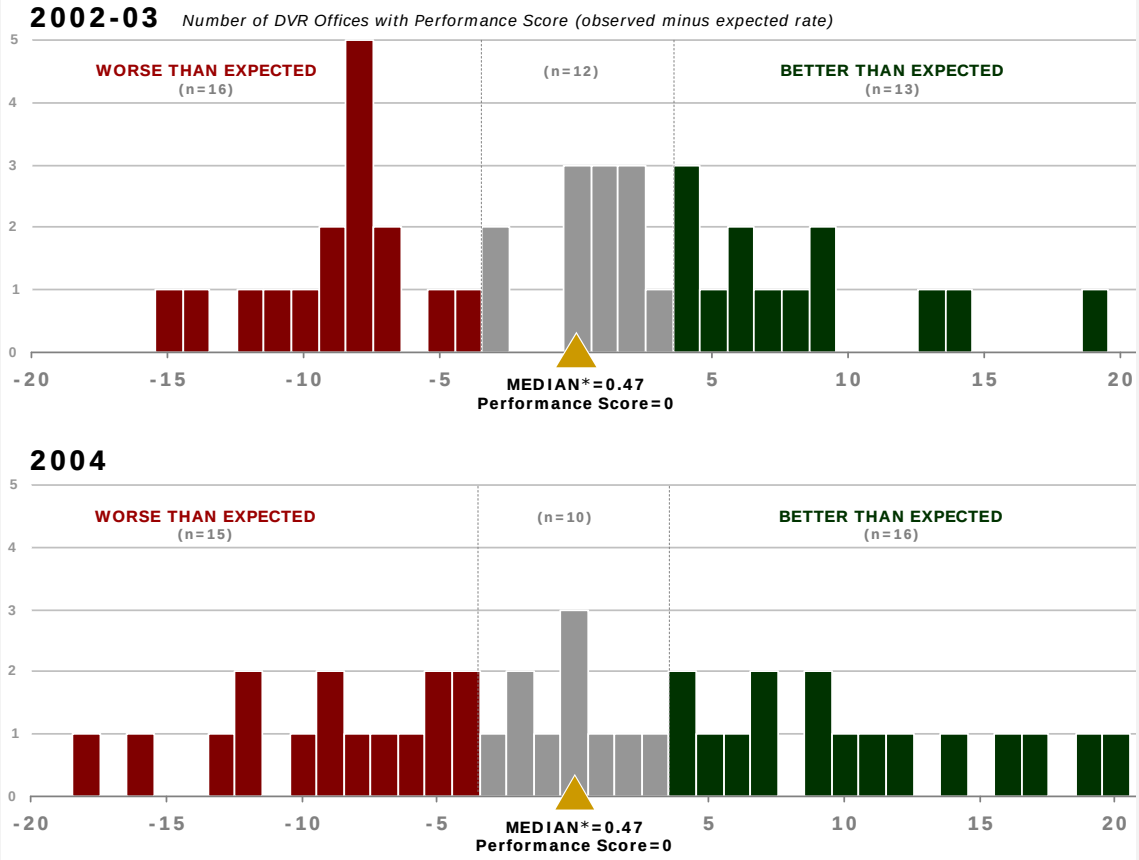
1. The "Close to Expected" set was defined as any office that had a performance score ranging between –3 and +3 (including –3, –2, –1, 0, +1, +2, +3; N=12 in 2002-03, N=10 in 2004).
2. The "Better than Expected" set was defined as any office with a percentage score equal or higher than +4 (office scores ranged from +4 to +20; N=13 in 2002-03, N=16 in 2004).
3. The "Worse than Expected" set was defined as any office with score equal or lower than –4 (offices scores ranged from –4 to –18; N=16 in 2002-03, N=15 in 2004).

DISTRIBUTIONS OF OFFICE PERFORMANCE SCORES

The data showed the distributions were very similar:

- They had, by definition, the same median "0" (which reflected the same actual observed median rehabilitation rate of 0.47 for both cohorts); and
- They had similar variances: similar ranges of performances (scores ranging from –15 to +19 for the 2002-03 cohort and ranging from –18 to +20 for 2004), and similar standard deviations. *See statistical table below.*

Degree to Which Each DVR Offices Did Better or Worse Than Expected, 2002-03 and 2004



*The observed medians were almost exactly the same as the expected medians.

STATISTICAL TABLE

Performance Differences Between Offices in 2004 versus 2002-03

	2002-03	2004
Range	33.5	38.2
Standard Deviation	8.0	9.7
Standard Error	1.3	1.5

THE STATISTICAL MODEL: TESTING FOR DIFFERENCES OF EFFECTS OF VARIOUS FACTORS ON THE LIKELIHOOD OF REHABILITATION FOR EACH CLIENT DEPENDING ON COHORT (2002-03 versus 2004)

Results: The effects of almost all factors were statistically the same across the two cohorts, except for the effects of the "mobility" type of disability and for some levels of DVR services.

VARIABLES IN THE STATISTICAL LOGISTIC REGRESSION MODEL		Var. Effects for 02-03 Cohort		Diff. of 04 from 02-03 Cohort		Var. Effect for 04 Cohort
		Log Odds	Sig. Level	Log Odds	Sig. Level	Log Odds
LABOR MARKET						
Unemployment Rate		-0.0548	0.4272	-0.0371	0.3298	**-0.0919**
TYPE OF DISABILITY						
Mental Health		**-0.1988**	**0.0004**	-0.1464	0.2769	**-0.3452**
Cognitive		-0.0392	0.5049	0.1441	0.2963	0.1049
Mobility		**-0.1517**	**0.0066**	**0.4384**	**0.0018**	**0.2867**
Deaf/Blind		**0.2917**	**0.0005**	-0.3396	0.1012	**-0.0479**
ECONOMIC & MEDICAL ASSISTANCE						
SSDI-SSI Economic Assistance		**-1.2433**	**<.0001**	0.1945	0.3523	**-1.0488**
TANF and Other Economic Assistance		**-2.3141**	**<.0001**	-0.2148	0.5108	**-2.5289**
Medicaid-Medical Assistance		0.0063	0.9444	-0.1884	0.3592	-0.1821
DVR SERVICES & AMOUNT SPENT						
Job Placement Services	$ 501-1500	**0.1692**	**0.0124**	**-0.6451**	**0.0002**	**-0.4759**
	$ 1501-3000	**2.1263**	**<.0001**	0.1837	0.5597	**2.3100**
	$ 3001-4500	**2.7441**	**<.0001**	**-1.2011**	**0.0011**	**1.5430**
	$ 4,501+	**3.5603**	**<.0001**	**0.5587**	**0.0495**	**4.1190**
Education Training	$ 501-1000	0.0632	0.4135	0.1848	0.3304	0.2480
	$ 1001-2500	-0.0479	0.6353	0.1179	0.6412	0.0700
	$ 2501-4500	**0.4416**	**0.0008**	0.1459	0.6894	**0.5875**
	$ 4501+	**0.8934**	**<.0001**	0.1059	0.7813	**0.9993**
Assessment Services	$ 501-1500	-0.0828	0.2027	-0.1378	0.4498	-0.2206
	$ 1501-3000	-0.0644	0.4297	**-0.4156**	**0.0354**	-0.4800
	$ 3001+	0.0371	0.7695	-0.3914	0.2848	-0.3543
DIFFERENCES OF 04 FROM 02-03 COHORT				-0.2280	0.4880	
		Var. Effects for Both				
DEMOGRAPHICS, EDUCATION, & PRIOR JOB						
Gender (Female)		-0.0089	0.8558			
Age (When Implementing Plan)		0.0011	0.6397			
Marital Status (Married)		0.0448	0.4846			
Dependents (Any)		**0.1794**	**0.0012**			
High School Grad. or GED		**-0.1451**	**0.0250**			
Post Secondary Ed. (No Degree)		**-0.2019**	**0.0150**			
Post Secondary Ed. (Degree)		**0.3083**	**<.0001**			
Special Education		-0.0555	0.6009			
Other Disability		-0.1065	0.0632			
Ever Employed (10 Years Before DVR)		**-0.1536**	**0.0030**			
African American		**-0.2750**	**0.0036**			
Asian Pacific		-0.2293	0.4146			
American Indian		-0.0059	0.9547			
Hispanic		0.0239	0.8004			
Native Language (Non English)		-	-			
DISTANCE FROM OFFICE & TIME IN SERVICE						
Living 11-50 Miles from DVR Office		0.0724	0.2197			
Living Further than 50 Miles		-0.1268	0.4578			
Log of Time in DVR since Start of Plan		0.0813	0.3628			
Interaction of Log of Time with Unempl. Rate		-0.0161	0.1233			
Log of Time Spent Developing Plan		**-0.1970**	**0.0081**			
Interaction of Log of Time with Unempl. Rate		0.0082	0.3391			
INTERCEPT		0.5021	0.4101			

Based on two groups of clients. The first group was composed of 7,925 DVR clients in the 2002-03 cohort who had completed and signed their rehabilitation plan and whose cases were closed before December 2005. The second group was composed of 6,237 DVR clients in the 2004 cohort who had completed and signed their rehabilitation plan and whose cases were closed before December 2006.

Association of Predicted Probabilities and Observed Responses

Percent Concordant	82.2	Somers' D	0.65
Percent Discordant	17.6	Gamma	0.65
Percent Tied	0.2	Tau-a	0.32
Pairs	26,762,967	c	0.82

BOLD = Statistically significant effects • **YELLOW HIGHLIGHTS** = Statistically significant differences in effects (2004 vs. 2002-03)

PLOTS OF PERFORMANCE SCORES FOR EACH OFFICE, CORRELATION, AND REGRESSION (2004 versus 2002-03)

The analyses presented in the text of this brief report divided offices in three distinct sets: offices performing above, below, and close to expected levels. To this point, we have not presented data on the degree of variation across cohorts office by office.

In the plots displayed below, each office has a 2002-03 performance score on the horizontal axis and a 2004 performance score on the vertical axis. Each point represents one of the offices, with actual observed performance values in blue and predicted values in pink along the diagonal regression line.

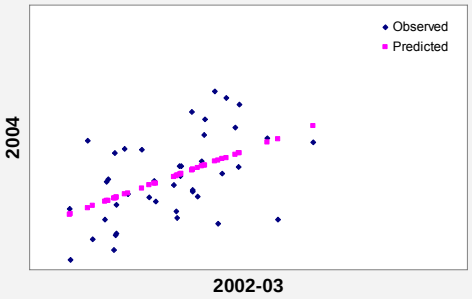
Correlation and regression results appear under each plot.

The first plot is for all 41 comparable offices across the two cohorts. The second plot is for 35 offices, excluding "extreme cases." The six extreme cases comprise the two offices that moved from having above expected scores to below expected ones, and the four offices that moved from below to above expected performance.

The results:

- The plots show that there was some variation in performance for each office from cohort to cohort: performance improved somewhat for some offices, and worsened for others. However, overall, performance scores across cohorts were positively correlated; the correlation was moderately high (+0.50).
- When six extreme cases were eliminated (those representing offices with extreme changes), the correlation became much higher (0.75). This suggests that, for most offices (35 of the 41 offices) one can predict their future performance based on prior performance reasonably well.
- When examining the 35 offices separately, the regression equation has an intercept value close to zero (0.01) and a regression coefficient close to one (0.95). This indicates a "one to one" predictability: a one unit difference in performance score in 2003-04 generates a one unit difference in predicted performance score in 2004.

Predicting 2004 Performance Scores from 2002-03 Scores



All 41 Offices
Correlation: + 0.50
Regression Equation: Y = 0.01 + 0.60 X

35 Offices *(excluding 6 extreme cases)*
Correlation: + 0.75
Regression Equation: Y = 0.01 + 0.95 X

The above analyses of performance by individual office, and the previous one presented in the text of this report, provide similar results. They show that performance is relatively stable and predictable between the two cohorts.

Additional copies of this paper may be obtained from: http://www1.dshs.wa.gov/RDA/.

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