NIDLRR VR-ROI Project: Not Your Father’s ROI

Government Affairs Summit
Alexandria, VA
April 11, 2016
Quick Survey

• How many of you are familiar with ROI and VR?
• Does your state agency calculate ROI?
• If so, how do they make this calculation?
• How many of you are familiar with the 38\textsuperscript{th} IRI on Return on Investment? (VRROI.ORG)
VR-ROI Project Team

Those who are here
- Bob Schmidt (PI), University of Richmond
- Joe Ashley (Co-PI), Virginia DARS
- Steven Stern, University of Virginia
- Maureen McGuire-Kuletz, George Washington University
- Chris Clapp, Florida State University

Others who could not make it
- Rob Froehlich (Project Coordinator), GW University
- Kirsten Rowe, Virginia DARS
- John Pepper, University of Virginia
- J Morrow, Morrow Consulting
- KD Nyegaard, Career Index
Critical Piece of the Puzzle

- Feedback Mechanisms-
  - Advisory Council
  - Learning Community
  - Stakeholder Meetings
    - Want to make sure the tools and products and approach are not created inside of a vacuum without appropriate feedback.
    - We’re going to talk a bit about the Project, then we’d like to hear from you all about ROI and what you believe is needed ...
Objectives for Today

- Describe the VR-ROI approach
- Present initial Virginia findings from a multi-state project for state VR agencies
- Discuss how the findings can inform VR program and policy decision-making
ROI and Celerity: What is the “Formula”? 
Some VR- ROI Project History

- Funded by the National Institute on Disability, Independent Living, and Rehabilitation Research

- Our initial grant started in 2010 with 4 state VR agencies, including both in VA, plus MD and OK
  - Initial objective was to test applicability of valid, methodologically rigorous processes for assessing ROI at state agency level

- Expanded with new funding in 2014 to 8 state VR agencies across 6 states (VA, MD, OK, DE, KY, TX)
  - Current objective is to refine and test the ROI model with a more heterogeneous set of state agencies

VR – ROI Approach

- Uses readily-available administrative data on:
  - Characteristics of VR program participants
  - VR services provided
  - Employment and earnings from state UI program records

- Focuses on applicants during an SFY (rather than closures during an SFY) because applicants face similar VR rules and employment climate

- Conducts longitudinal analyses with up to 3 years of pre-VR employment data and at least 5 years of post-application data

- Employs state-of-the-science statistical controls to ensure that the outcomes are the result of VR rather than other factors
VR – ROI Outcomes

- Estimates employment & earnings impacts at the individual level
- Examines the impact of specific types of VR services on participants’ employment and earnings
- Examines the impact of VR on employment and earnings for individuals with different kinds of disabling conditions
- Estimates quarterly and annual rates of return (ROR) for specific populations as well as agency-wide
Initial Virginia Findings
So What?
Virginia DARS VR ROI “Elevator Speech”

For those VR applicants in 2000 who received VR services, 80% enjoyed earnings gains that exceeded the cost of their VR. For every $1,000 spent by DARS, the average (median) consumer earned $7,100 more over 10 years than they would have earned without VR services… And the top 10% earned $45,100 (or more) over the same period.

VR-ROI
So What? Now What?
ROI of a Collaborative Transition Program

- PERT (Post-secondary Education/Rehabilitation Transition) Program
  - Comprehensive career and independent living skills assessments at WWRC for high school students with disabilities selected by local school divisions
  - Community-based team implementation of assessment findings
  - Participants may receive additional VR services following PERT participation

PERT Impact on Finding a Job and Income

- Increases chances of finding and keeping a job by 12%
- Combined with one more year of education the chance of getting and keeping a job increases by 38%
- After you find a job, participating in PERT will on average double the amount of a student’s earnings in the long run
What’s Behind the Scenes?
Some Selected Results  (1a of 9)

- Next two slides show employment and earnings trends for 4 years prior to application and 10 years following application.

- They show that
  - On the plus side, those who receive services have lower employment rates before application but higher after.
  - On the negative side, those who receive services have slightly lower earnings when they are working.

- These are simple comparisons without any controls and are very different from what we find from our model.
What’s Behind the Scenes?  
Some Selected Results  (1b of 9)

Employment Rates for Applicants to Virginia DARS in SFY 2000:  
Served and Not Served Applicants with Mental Illness
What’s Behind the Scenes?
Some Selected Results  (1c of 9)

Average Quarterly Earnings (if Employed) for Applicants to Virginia DARS in SFY 2000 with Mental Illness

Served

Not Served
As noted, these are simple comparisons without any controls.

Ideally, would observe same person with and without VR services over the same time period. But not possible.

To get closer to that ideal, the following results:
- Control for observed explanatory variables (e.g., gender, education, race, disability, local labor market conditions)
- Provide separate estimates by disability type
- Distinguish effects of different types of service
- Use all service information
- Control for unobserved characteristics
What’s Behind the Scenes?
Observed characteristics by disability type (3a of 9)

<table>
<thead>
<tr>
<th>Observed Characteristic</th>
<th>Mental Illness</th>
<th>Intellectual Disability</th>
<th>Physical Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Individuals</td>
<td>1,555</td>
<td>1,009</td>
<td>2,421</td>
</tr>
<tr>
<td>% Male</td>
<td>40%</td>
<td>51%</td>
<td>48%</td>
</tr>
<tr>
<td>% White</td>
<td>71%</td>
<td>56%</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avg Years*</td>
<td>11.9</td>
<td>9.4</td>
<td>11.5</td>
</tr>
<tr>
<td>% Special Ed</td>
<td>2%</td>
<td>33%</td>
<td>1%</td>
</tr>
<tr>
<td>% Missing</td>
<td>14%</td>
<td>5%</td>
<td>17%</td>
</tr>
<tr>
<td>Age</td>
<td>37.5</td>
<td>24.6</td>
<td>40.4</td>
</tr>
<tr>
<td>Observed Characteristic</td>
<td>Mental Illness</td>
<td>Intellectual Disability</td>
<td>Physical Impairment</td>
</tr>
<tr>
<td>-------------------------</td>
<td>----------------</td>
<td>-------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>% Married</td>
<td>18%</td>
<td>4%</td>
<td>38%</td>
</tr>
<tr>
<td>Avg # Dependents</td>
<td>0.81</td>
<td>0.37</td>
<td>1.03</td>
</tr>
<tr>
<td>% with Transportation</td>
<td>74%</td>
<td>46%</td>
<td>82%</td>
</tr>
<tr>
<td>% Drivers License</td>
<td>68%</td>
<td>17%</td>
<td>79%</td>
</tr>
<tr>
<td>% Public Assistance</td>
<td>18%</td>
<td>13%</td>
<td>14%</td>
</tr>
<tr>
<td>Severity of Disability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Significant</td>
<td>62%</td>
<td>57%</td>
<td>61%</td>
</tr>
<tr>
<td>% Most Significant</td>
<td>27%</td>
<td>40%</td>
<td>16%</td>
</tr>
</tbody>
</table>
What’s Behind the Scenes? purchased Services by disability type (4 of 9)

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Mental Illness</th>
<th>Intellectual Disability</th>
<th>Physical Impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Rcvg</td>
<td>Avg $</td>
<td>% Rcvg</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>39%</td>
<td>$324</td>
<td>36%</td>
</tr>
<tr>
<td>Training</td>
<td>29%</td>
<td>$2,057</td>
<td>41%</td>
</tr>
<tr>
<td>Education</td>
<td>11%</td>
<td>$1,794</td>
<td>2%</td>
</tr>
<tr>
<td>Restoration</td>
<td>28%</td>
<td>$804</td>
<td>21%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>25%</td>
<td>$970</td>
<td>25%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>$779</td>
<td>3%</td>
</tr>
</tbody>
</table>
What’s Behind the Scenes?
Impacts by service and disability type (5 of 9)

● Next three slides show employment and earnings impacts as estimated from our model
  - One slide for each of 3 separate disability types,
  - For 6 separate types of service (DTERMO)
  - For the first 2 years following application (short run) and more than 2 years following application (long run)
What’s Behind the Scenes?
Impacts by service and disability type (6 of 9)

Service Effects on Labor Market Outcomes for People with Mental Illness (App 2000)

- Diagnosis and Evaluation
- Training
- Education
- Restoration
- Maintenance
- Other Services

Graph showing impacts by service and disability type with specific details for short and long run employment and quarterly earnings.
What’s Behind the Scenes?
Impacts by service and disability type (7 of 9)

What’s Behind the Scenes? Impacts by service and disability type (8 of 9)

Service Effects on Labor Market Outcomes for People with Physical Impairments (App 2000)

- Short-Run Employment
- Long-Run Employment
- Short-Run Quarterly Earnings
- Long-Run Quarterly Earnings
### What’s Behind the Scenes?
#### Annualized ROR by Disability Group (9 of 9)

#### 10-Year Rates of Return

<table>
<thead>
<tr>
<th></th>
<th>MI</th>
<th>MI (no Diag)</th>
<th>CI</th>
<th>PI</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with Negative ROR</td>
<td>45%</td>
<td>7%</td>
<td>21%</td>
<td>2%</td>
</tr>
<tr>
<td>ROR at Median</td>
<td>3%</td>
<td>40%</td>
<td>35%</td>
<td>141%</td>
</tr>
<tr>
<td>90th Percentile</td>
<td>52%</td>
<td>97%</td>
<td>195%</td>
<td>255%</td>
</tr>
</tbody>
</table>

VR-ROI
Circling Back to the “Elevator Speech”

- These detailed ROI results cover 4,523 individuals
  - Or 44% of DARS applicants in SFY 2000.

- Analysis of benefits and costs individual-by-individual allows for these detailed summaries by disability and service type.

- It also allows for the agency-wide summary presented earlier:

  For those VR applicants in 2000 who received VR services, 80% enjoyed earnings gains that exceeded the cost of their VR. For every $1,000 spent by DARS, the average (median) consumer earned $7,100 more over 10 years than they would have earned without VR services... And the top 10% earned $45,100 (or more) over the same period.
But wait... There’s more!

- Project looks at data in ways the VR typically does not
- Can lead to rich discussion/exploration relative to clarifying observed trends:
  - Demographics
  - Delving into service provision by disability type
  - Anomalies that trigger discussions with and within the agency
But wait… There’s more!

- Can lead to rich discussion/exploration relative to clarifying observed trends:
  - Trends that are state specific
  - Observations potentially related to unmet needs
  - Relations between service systems