Return-to-Work after Brain Injury: Evidence on the Effectiveness of Resource Facilitation

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Feasibility Stage:
How did we know providing
Resource Facilitation Services was Feasible?

• From previous HRSA grant, had
  – Indiana Statewide Needs and Resources Assessment
  – Randomized Control Trial (RCT) of Resource Facilitation (RF)
  – Economic Impact Study
  – Successful collaboration with Indiana Vocational Rehabilitation Services (VRS)
• Funding for a second RCT in RF
• Consultation with Sandra Knutson, Principal Research Analyst, Traumatic Brain Injury (TBI) Technical Assistance Center
• Indiana VRS decision to fund RF for eligible individuals
Prospective Randomized Controlled Trial of Resource Facilitation on Community Participation and Vocational Outcome Following Brain Injury

Lance E. Trexler, PhD; Laura C. Trewler, OTR; James F. Malec, PhD, ABPP-CN, Rp; Daniel Klyce, MA; Devan Parrott, BS
The Indiana Resource Facilitation Pilot
Trexler, Trexler, Malec et al., (2010) JHTR, 25; 440-446

- 23 people with acquired brain injury recruited from The Rehabilitation Hospital of Indiana (RHI)
- 12 subjects received RF services, and 11 subjects - in the control group - did not.
- Six months of RF Services (Conners, 2001)
- Team = Neuropsychologist, VR TBI Specialist, Resource Facilitator, Brain Injury (Occupational-Vocational) Therapist
<table>
<thead>
<tr>
<th></th>
<th>TBI</th>
<th>ICH</th>
<th>Stroke</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Treatment</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>22</td>
</tr>
</tbody>
</table>
Results

No significant differences between the RF and Control groups for:
- Age
- Sex
- Education
- Severity of cognitive impairment
- Diagnosis (TBI, stroke, etc.)
Results

• 64% of the RF group was employed at follow-up compared to 36% of the control group (Wald-Wolfkowitz Z = -3.277, p < .0001)

• Participation increased significantly for both groups (F = 60.65, p < .0001), but the interaction between groups and time demonstrated greater improvement for the RF group as compared to the control group (F = 9.11, p < .007).
Mayo-Portland Participation Index

Figure 1: M2PI by Group and Time
Participation Index for T1 & T2 for each subject

RF
Control
Potential Economic Impact of Resource Facilitation for Post-Traumatic Brain Injury Workforce Re-Assimilation

Rehabilitation Hospital of Indiana
Economic Impact Study
(Reid, McGeary & Hicks, 2011)

- Total Economic Impact in Lost Wages (Annual)
  - $31,017,775

- Does not include annual losses to:
  - Business ($10 million);
  - Personal tax revenues ($4.8 million);
  - Fringe benefits, Medicare, Medicaid, Disability; and
  - Salary/Compensation for Caregivers/Care Partners unable to work full- or part-time due to new role.
Planning Stage:
How do we provide Resource Facilitation Services throughout Indiana?

• Input from the Indiana Brain Injury Leadership Board
• Consultation with Indiana VRS
  – Grant: Peri Rogowski & Carole Surratt-Bradley
  – Program: Jeff Hughes
• Input from the Brain Injury Association of Indiana
Vocational Rehabilitation Services
Lead State Agency Representative

Indiana Brain Injury Leadership Board

Brain Injury Association of Indiana

RHI Foundation
Project Management Team

The Greater Fort Wayne Advisory Council
The Greater Indianapolis Advisory Council
The Greater Bloomington Advisory Council

Local Support Network: Programs/Services
Indiana Brain Injury Leadership Board Members

- RHI;
- BIAI;
- Consumers;
- State of Indiana Agencies, Divisions, & Offices: FSSA Divisions of DMHA, DDRS, and OMPP; DoA, DOE, DOC, and ISDH;
- Indiana Protection and Advocacy Services (IPAS);
- Provider Organizations & Professionals;
- Indiana Spinal Cord and Brain Injury Research Fund Board;
- Veterans’ Administration/Vocational Rehabilitation (VA/VR);
- Indiana University – The Indiana School of Medicine, Indiana Institute on Disability and Community (IIDC), Department of Occupational Therapy, Traumatic Brain Injury Model Systems Grant, and The Indiana Institute on Disability and Community (IIDC); and
- The Indiana Data and Assistive Technology Act (INDATA) Project
Implementation Stage:
How have we gone about implementation?

• **Indiana VRS**
  – Funding of RF services
  – Designation and Training of 25 VR TBI Specialists
  – Results of Clinical Trials

• BIAI’s Role

• Change in Direction: The Rehabilitation Hospital of Indiana
Clinical Trials of Resource Facilitation
Clinical RF Subjects

- 61 participants
- Mean age at enrollment = 39.9
Clinical RF Subjects

- **Time since injury**
  - Mean = 9.21 years
  - Median = 6.07 years
Clinical RF Subjects
(HRSA Grant 2009-2013)

Education at Enrollment

- Post graduate: 5%
- Non-high school graduate: 15%
- High school graduate: 23%
- Some college: 34%
- College graduate: 23%
Clinical RF Subjects

- Male: 77%
- Female: 23%

Diagnosis:
- TBI: 88%
- ICH: 9%
- Other: 3%
Clinical RF Subjects

- Urban: 79%
- Rural: 21%
Clinical RF Results

- Return to Work: 63%
- Did not Return to Work: 37%

Mean Days from Enrollment to RTW/RTS = 216 days
Clinical RF Results

- Returned to Previous Job: 11%
- Full Time: 11%
- Part Time: 39%

23
Clinical RF Treatment Variables
Hours of RF Per Subject (Mean = 19.44)
Clinical RF Treatment Variables

Resource Facilitator Time Spent Across all Participants (hours) WITHOUT Initial Evaluation & Travel
Case Study

- 51-year old female presented to ER in July of 2011
- Left sided weakness and slurred speech
- CT revealed right carotid artery dissection with right internal carotid artery occlusion and subsequent stroke
- Single, HS Education and 2 adult Children in College
- Business Manager for 10 years
  - Fast paced and high energy in 12-person office
  - Marketing, Research & Project Manager
  - Customer Complaints
  - Web and Brochure Design
# Neuropsychological Exam Results

<table>
<thead>
<tr>
<th>Strengths/Resources</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Family Support</td>
<td>• Word finding problems</td>
</tr>
<tr>
<td>• Employer Support</td>
<td>• Reduced use of left arm/hand</td>
</tr>
<tr>
<td>• Psychological coping resources resilient</td>
<td>• Significant difficulty with attention, working</td>
</tr>
<tr>
<td>• High School Education</td>
<td>memory, spatial organization &amp; memory</td>
</tr>
<tr>
<td>• Two adult children currently in college</td>
<td>• “Creativity” impaired</td>
</tr>
<tr>
<td>• Very independent</td>
<td></td>
</tr>
<tr>
<td>• Creative, high-energy and loyal to her employer and family</td>
<td></td>
</tr>
</tbody>
</table>
Spatial Organization
Spatial Memory
Timeline and Outcomes

- **July 29**: Intracerebral Hemorrhage (ICH) at St. Vincent’s
- **August 5**: RHI Acute Rehabilitation
- **August 18**: Discharge from RHI Acute
- **August 24**: RHI NRC Outpatient Neuropsychology & Therapies
- **September 1**: Resource Facilitation started
- **September 15**: RTW part-time (6-weeks post-stroke)
- **Oct – Dec**: Increased work hours to full-time
- **November 1**: Driving Evaluation and lessons
Implementation Strategies

- Brain Injury Association of Indiana
  - Train/Certify Resource Facilitation Providers in key regions of Indiana for each Local Support Network
- Change in direction
- Rehabilitation Hospital of Indiana
Local Support Network Structure

Local Advisory Council
- LSN Leader
- VR TBI Specialist
- BIAI Support Group Leader
- Resource Facilitator
LSN Advisory Councils

Members of Advisory Council may represent:

- Consumers and Caregivers
- Employment Providers
- Community Mental Health/Substance Abuse Providers
- Education/School Representatives
- Clinicians
- Local elected officials
- Local Hospitals - Case Managers/Discharge Planners
- Veterans Administration Representatives
- Other State Agency Representatives/Partners not limited to
  - VRS
  - Division of Family Resources
  - DMHA
  - Bureau of Developmental Disabilities Services
  - OMPP/Medicaid
  - WorkOne
  - Area Agencies on Aging
Resource Facilitation Team and Processes
Team Structure

• Resource Facilitator
• Rehabilitation Neuropsychologist
• Brain Injury Occupational Therapist
• Local Support Network Leader
• VR TBI Specialist
Three Phases of Resource Facilitation

- Assessment
- Resource Facilitation
- Vocational Stabilization
Resource Facilitation Assessment

- RF Intake
- Local Support Network Community Resources Assessment
- Vocational Assessment for Resource Facilitation
- Initial Team Conference
  - Vocational Goals
  - Vocational Barriers
  - Resource Facilitation Objectives
Vocational Assessment for Resource Facilitation

- Family Coping & Social Support
- Transportation
- Substance Abuse
- Flexibility with Vocational Goals
- Cognitive & Physical Endurance
- Awareness & Acceptance

- Cognitive, Neurobehavioral and Psychological Status
- Mayo-Portland Adaptability Inventory-4
- Community Resources
- Vocational Independence Scale
- Vocational Preferences and Barriers
Resource Facilitation Services

• Patient & family or care partner
• Access to private & public sector services
• Purchased & natural supports
• Coordination with other providers
• Resource Facilitator contact every two-weeks to monitor status & progress
• Team conference every month
Vocational Stabilization

• 3-month follow-up after job placement
• Monitor employment adjustment
• Maintenance of cognitive-behavioral strategies
• Employer education-consultation
• Maintenance of community supports
Evaluation Stage:
How did we evaluate the program & access impact?

• JHTR publication
• Economic Impact Study
• Future:
  – Quality Assurance and Program Evaluation Program
  – Patient, Family, Employer, and VR TBI Specialist Satisfaction Survey
  – Economic Impact (pending additional funding)
Future for RF in Indiana

• Complete Replication of Resource Facilitation RCT

• Roll-out Resource Facilitation Services throughout Indiana

• Expand focus of RF to other areas pertinent to BI and study clinical and economic impact

• Guide RF within the DOC and w/ other partners and entities when appropriate
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