


Department of Rehabilitation Science and Technology

School of Health and Rehabilitation Sciences



Exploring a Telerehabilitation Uniform Data System

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R2.14 User Modeling – Platform Session

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Objectives

- Recognize steps taken to conduct meta-analysis of Telerehab (TR) outcomes
- Familiarize the outcomes of an expert panel meeting of TR leaders

Introduction – Why Collect Outcomes Data?

- Shrinking healthcare dollars
- Demonstrate effectiveness of services
- Justify our position
- Challenged by payers, legislators, administrators & consumers to prove value
- Accreditation bodies (i.e. CARF)

What is Uniform Data System

- ‘A minimum or limited set of variables identified as core data points, gathered across all practitioners/settings, which are managed in a central database’

The Need

- Diversity of clinical applications, disability services, technologies utilized, & professional disciplines
- Lack of extensive research, small sample size, lack of common metrics
- Considerable variability in rehab services
- No consensus on common, practical, standard measures

Proposed Solution

The most effective and powerful way to meet these challenges and answer critical questions related to treatment outcomes is through the use of an aggregated local and national outcomes “Uniform Data System (UDS)”

Examples

- Functional Independence Measure (FIM) managed by *Uniform Data Set for Medical Rehabilitation* (UDSMR), and used across rehabilitation settings nationally, including the Veterans Healthcare Administration.
- TBI National Data and Statistical Center
- ASHA – FCM
- NAHC - Home care & hospice
- Alzheimer's - National Alzheimer's Coordinating Center (NACC) database
- Diabetes education - National Diabetes Education Outcomes System (NDEOS)

Steps taken for TR Meta-Analysis

- Identified 3 key outcomes/variables
 - Cost-effectiveness, efficacy, usability/satisfaction
- Expanded with sub-heading terms
- Complex database systems
- Inclusion/Exclusion criteria
- Reviewed by internal group with data extraction spreadsheet
 - Pre-defined variables: participants, setting, outcomes, conclusions
- Grouped back into 3 variables

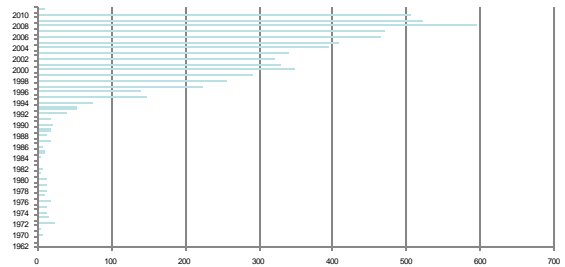
Results

- Over 1700 articles reviewed
- 280 retained based on title & abstracts
- Full text articles retained
- Internal group had one expert in one of 3 variables
- Conclusions include: no standardized outcome tools, and quality of methodology and reporting was weak

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TR Publications

Figure 1: Year of Publication



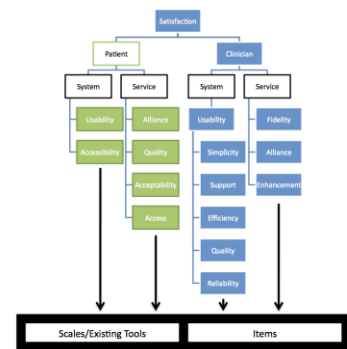
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UDS-International Consensus Group (UDS-ICG)

- RERC-TR Members and 13 TR international experts met in November 2010 (2 day mtg)
 - Academia, public policy, management
- Each core area discussed & what stakeholders should be looking for
 - Patients, clinicians, researchers, payors, and facility



Satisfaction/Usability

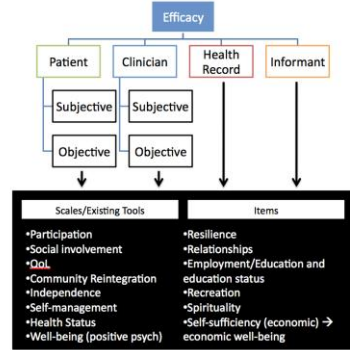


Ex: Telerehabilitation Usability Questionnaire (TUQ)

- Based on the following tools:
 - TAMPUEU: Technology Acceptance Model, Perceived Usefulness/Ease of Use
 - Relations between perceived qualities of a system usage & responses
 - TSQ: Telemedicine Satisfaction Questionnaire
 - Audio and video components
 - PSSUQ: Post-Study System Usability Questionnaire
 - System usability from function, information, interface,
- Components: usefulness, ease of use, interface quality, reliability, satisfaction

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Clinical Efficacy



Cost-Effectiveness

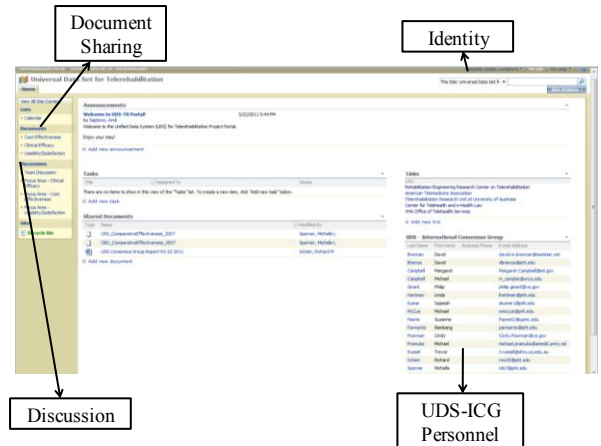
Cost Effectiveness

	Cost	Benefit
Patient	<ul style="list-style-type: none"> •Transportation •Equipment •Caregiver/attendant 	<ul style="list-style-type: none"> •Access •QoL •Improved outcomes
Clinician	<ul style="list-style-type: none"> •Travel •Licensure 	<ul style="list-style-type: none"> •QoL
Facility	<ul style="list-style-type: none"> •Staff (clinical, admin, support) •Equipment (start-up, maintenance, support) 	<ul style="list-style-type: none"> •Reduction in missed appointments •Reduction in readmissions •Staff retention
System		
Societal	<ul style="list-style-type: none"> •Institutionalize •Caregiver burden 	<ul style="list-style-type: none"> •Return to work/family
Payer	<ul style="list-style-type: none"> •Reimbursement 	<ul style="list-style-type: none"> •Decreased cost

ASB		D	E	F	
A	B	C			
27	5.	Recipient Site Revenue	\$ -	\$ -	\$ -
28	6.	Other Revenue (Please list)	\$ -	\$ -	\$ -
29	a.	0	\$ -	\$ -	\$ -
30	b.	0	\$ -	\$ -	\$ -
31		Total Revenues	\$ -	\$ -	\$ -
32					
33		Expenses			
34	1.	Non-Clinical Personnel - Salaries & Benefits	\$ -	\$ -	\$ -
35	2.	Clinical Expenses	\$ -	\$ -	\$ -
36	3.	Telecommunications Expenses	\$ -	\$ -	\$ -
37	4.	Supplies & Operations Expenses	\$ -	\$ -	\$ -
38	5.	Training Expenses	\$ -	\$ -	\$ -
39	6.	Educational Program Expenses	\$ -	\$ -	\$ -
40	7.	Marketing	\$ -	\$ -	\$ -
41	8.	Other Direct Program Expenses	\$ -	\$ -	\$ -
42	9.	Travel	\$ -	\$ -	\$ -
43	10.	Recipient Site Support Expense	\$ -	\$ -	\$ -
44	11.	Capital Expenses			
45	a.	Equipment	\$ -	\$ -	\$ -
46	b.	Building Renovation	\$ -	\$ -	\$ -
47	c.	Other Fixed Overhead Exp as Line Item	\$ -	\$ -	\$ -
48	d.	Overhead Exp as a % of Non-Cap Exp	\$ -	\$ -	\$ -
49	12.	F & A Expenses (Grants)	\$ -	\$ -	\$ -
50		Total Expenses	\$ -	\$ -	\$ -
51					
52		Direct Surplus/(Deficit)	\$ -		
53		In-Kind or Non-Cash Contributions (please list)			
54	a.				
55	b.				

Future Actions

- In order to continue discussions and add personnel, developed collaboration portal
- Specific user name and password
- Review, edit, and add materials
- Discussion section for three areas



Conclusions

- Conducting second phases of meta-analysis
- Collaboration and inviting additional members to group
- Further investigation of drafting TR outcome tools based on 3 variables
- Piloting tools

Thank you..Any Questions??

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