

## Measuring, Modeling, and Managing Rehabilitation Outcomes: Reflections on Nearly 30 Years of ACRM Membership ... and a Research Agenda

Allen W. Heinemann, PhD, FACRM



## The view from 30 meters and 30 years



*Bubo scandiacus* *Buteo jamaicensis*

## Learning Objectives

1. Describe the history of rehabilitation outcome measurement
2. Identify sentinel events in the development of rehabilitation outcome measures
3. Describe opportunities to improve rehabilitation services through the routine collection, reporting and aggregating of details about rehabilitation services, processes and outcomes
4. Discuss a research agenda related to rehabilitation outcomes improvement

## I. A brief and selective history of rehabilitation outcome measurement

## Who was John S. Coulter?

- Served in the US Army 1911 - 1920
- Responsible of the first overseas rehabilitation center during World War I
- Assistant editor, Archives of Physical Medicine and Rehabilitation
- Contributed 50+ articles on PM&R
- One of the first board certified PM&R specialists
- Introduced the practice of PT and OT in the treatment of industrial workers sustaining disability due to injury and disease
- 3<sup>rd</sup> president of ACRM 1925-6
- Helped to establish the AMA Council on Physical Medicine and Rehabilitation; served as its chair 1942-1949
- Instrumental in forming the American Registry of Physical Therapy Technicians
- "The father of physical medicine and rehabilitation" Kristian G. Hansson

## A selective timeline of key outcome measurement events

- 1987 Marcus Fuhrer: *Rehabilitation Outcomes: Analysis and Measurement*
- 1987 Keith et al: Birth of the FIM and UDsmr
- 1993 Heinemann et al: Application of the Rasch model to functional status measurement
- 1994 Stineman et al: A Case-Mix Classification System for Medical Rehabilitation
- 1997 Fuhrer: *Assessing Medical Rehabilitation Practices: The Promise of Outcomes Research*
- 2001 Stucki et al. Emerging attention to clinically important change
- 2008 John Whyte: Coulter lecture – theoretical frameworks and intervention taxonomies
- 2005 Cella et al: PROMIS item banks 



### Definitions

- Rehabilitation outcomes
  - "Changes produced by rehabilitative services in the lives of service recipients and their environment" *Fuhrer, 1987*
- Outcome measures
  - "Intended to quantify a patient's performance or health status based on standardized evaluation protocols or close ended questions." *Jette, Halbert, Iverson, Miceli, Shah, 2009*

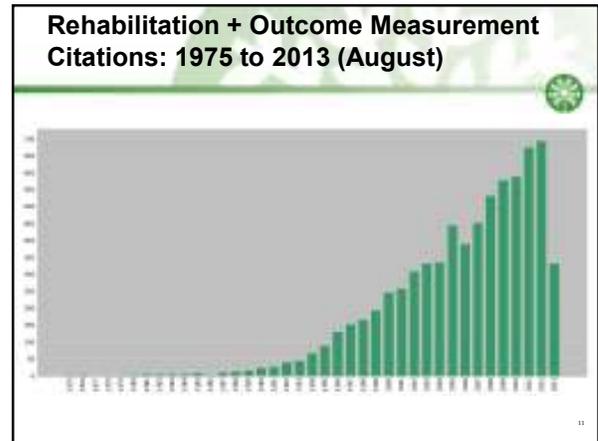
### Donabedian's quality improvement model

The diagram illustrates Donabedian's model. On the left, a box labeled 'Antecedents Conditions' has an arrow pointing to a central cylinder. The cylinder is divided into two horizontal sections: 'Structure' on top and 'Care Process' on the bottom. An arrow points from the right side of the cylinder to a box labeled 'Outcome'. Below the cylinder is a black bar with the text 'Patient Safety Management'.

The Donabedian Model of Patient Safety: Medical Teamwork and Patient Safety: The Evidence-based Relation. July 2005. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/research/findings/final-reports/medteam/figure2.html>

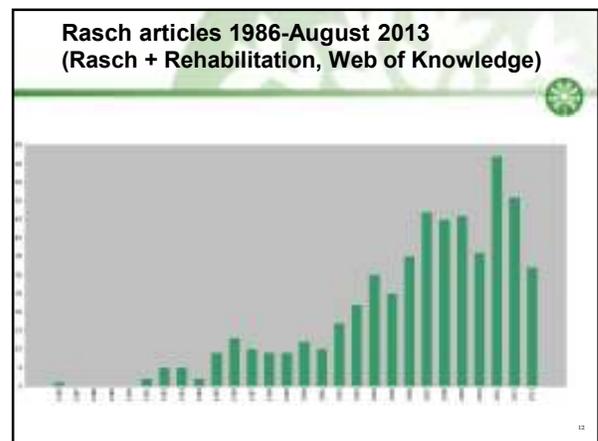
### Types of rehabilitation outcome measures

- Patient performance (Timed Up and Go)
  - Ecological validity
- Clinician ratings of patient performance (FIM)
  - Require on-going rater training
- Patient-reported (PROMIS, AM-PAC)
  - Require some method to assure items "add-up" to a meaningful score
  - Contemporary methods include item response theory or Rasch model methods



### Uses of outcome measures

- Establish a patient's baseline status, need for services
- Monitor a patient's progress to determine the effectiveness of an intervention
- Inform patients and family of progress in a quantifiable manner
- Justify reimbursement by payers
- Provide data for program evaluation
- Support accreditation decisions
- Define quality measures for provider selection
- Evaluate clinical trial benefits



### Where were these 525 articles published?

- Archives of Physical Medicine and Rehabilitation
- Journal of Rehabilitation Medicine
- Disability and Rehabilitation
- Investigative Ophthalmology Visual Science

### A. Conceptual clarification Whyte's 2007 Coulter Lecture

- Theoretical models and taxonomies are crucial in scientific development
- Rehabilitation theories are insufficiently developed
- Medical rehabilitation should develop a body of well-articulated theories



### November 2013 APMR articles with "Rasch" keyword

- Hays: Upper-Extremity and Mobility Subdomains From the Patient-Reported Outcomes Measurement Information System (PROMIS) Adult Physical Functioning Item Bank
- Heinemann: Measuring Enfranchisement: Importance of and Control Over Participation by People With Disabilities
- Angst: Effects of Inpatient Rehabilitation in Hip and Knee Osteoarthritis: A Naturalistic Prospective Cohort Study With Intraindividual Control of Effects
- Major: Validity and Reliability of the Berg Balance Scale for Community-Dwelling Persons With Lower-Limb Amputation

### Messick reframes validity considerations

- **Content:** relevance, representativeness, and technical of the measure to the construct
- **Substantive:** empirical evidence for the theoretical construct of interest
- **Structural:** fidelity of the scoring structure to the structure of the construct domain
- **Generalizability:** extent scores generalize across populations, settings, and tasks
- **External:** convergent, discriminant, and criterion-based evidence for the measure. How does this measure perform in comparison to other similar or different measures?
- **Consequential:** positive or negative, and intentional or unintentional consequences of use of the measure

### II. Identify sentinel events in the development of rehabilitation outcome measures

- A. Conceptual clarification
- B. Taxonomies
- C. Measurement technology
- D. Measurement resources for clinicians

### B. International Classification of Functioning Disability and Health

Body Functions & Structures	Activities & Participation	Environmental Factors
		 
<b>Functions Structures</b>	<b>Capacity Performance</b>	<b>Barriers Facilitators</b>

<http://apps.who.int/classifications/icfbrowser/>



### Body functions and structures

1. Mental Functions
2. Sensory Functions and Pain
3. Voice and Speech Functions
4. Functions of the Cardiovascular, Hematological, Immunological and Respiratory Systems
5. Functions of the Digestive, Metabolic, and Endocrine Systems
6. Genitourinary and Reproductive Functions
7. Neuromusculoskeletal and Movement-related Functions
8. Functions of the Skin and Related Structures



### C. Rehabilitation's embrace of patient-reported outcomes

*"Any report of status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else"*




### Activities and participation

1. Learning and Applying Knowledge
2. General Tasks and Demands
3. Communication
4. Mobility
5. Self-care
6. Domestic life
7. Interpersonal Interactions and Relationships
8. Major Life Areas
9. Community, Social and Civic Life



### What do PROs measure?

- Symptoms
- Health status
- Quality of life
- Satisfaction with services
- Medication use
- Perceived value of treatment

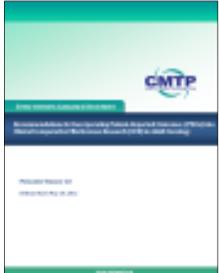


### Outcome measures across ICF domains

- Body function
  - Mini Mental Status Examination (performance)
  - Beck Depression Inventory (patient reported)
- Activity and Participation
  - 10 Meter Walk Test (performance)
  - Functional Independence Measure (clinician rated)
  - Community Integration Questionnaire (patient reported)
- Environmental factors
  - Community Health Environment Checklist (user rated)
  - Measure of the Quality of the Environment (patient reported)

### Why use PROs in clinical practice?

- Patient perspective is essential in comparative effectiveness and patient centered outcomes research
  - When making decisions, patients need to understand experiences of previous patients "like them"
  - Clinicians and payers need to understand how patients experience interventions
  - PROs predict whether patients comply with treatment and use services
- Institute of Medicine
  - "Purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at individual and population levels"



### PROs: Address goals of patient-centered outcomes research

- Patient-Centered Outcomes Research Institute
  - PCOR Definition
    - \* "Given my personal characteristics, conditions and preferences, what should I expect will happen to me?"
  - Methodology Report, Standard 4.1.3:
    - \* "Use patient-reported outcomes when patients or people at risk of a condition are the best sources of information."



### PROs and computerized adaptive testing

- Algorithm development uses psychometric framework of Item Response Theory
- CAT utilizes algorithms to estimate person ability and choose the next best item to administer using test specifications such as
  - Content coverage
  - Desired length
  - Precision



### How PROs can be used in clinical practice

- Identifying goals for collecting PROs in clinical practice
- Selecting patients, setting, and timing for assessment
- Determining which questionnaires to use
- Choosing a mode for administering the PROs
- Reporting PRO results
- Interpreting scores
- Responding to issues identified by the PRO
- Evaluating the impact of PRO intervention on the practice



### CAT advantages

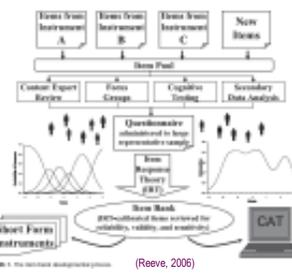
- Reduce patient burden without loss of precision
- Immediacy of feedback
- Communication on a common metric
- Dynamic tailoring of instrument difficulty to the level of patient
- Reduce clerical errors

#### Spinal Cord Injury-Functional Index: Item Banks to Measure Physical Functioning in Individuals With Spinal Cord Injury

*David S. Furler, PhD, Alan M. Jette, PT, PhD, Pamela A. Kinoshita, MA, Claire Kuchelstein, PhD, Marcia P. Dikary, PhD, Gale Wilcox, PhD, Pengsheng N. MD, MPH, Steven Kurland, MD, Susan Chaffin, PhD, Alan W. Hruschka, PhD, Martin Cavallone, MPH, Mary E. Skriver, PT, PhD, Barbara Bushnell, MPH, MPH, Debra C. Tate, PhD, Trevor Brown-Balton, MD, Dennis G. Taffe, PhD, Steve Williams, MD, Anne Zeman, MPH, PhD*



### Standardized methods for measure development that allows CAT administration

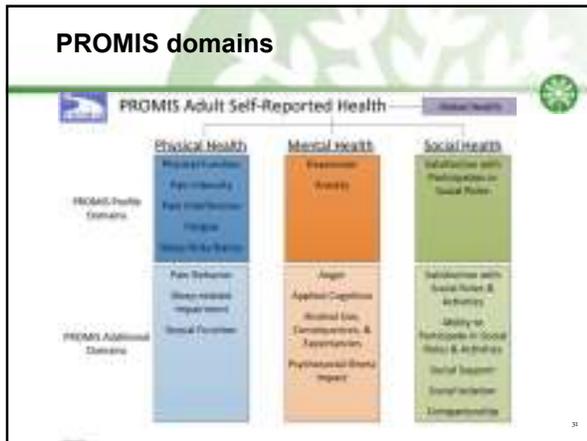


(Reeve, 2006)

(Velozo, Seel, Magasi, Heinemann, & Romero, 2012)

### Patient Reported Outcomes Measurement Information System





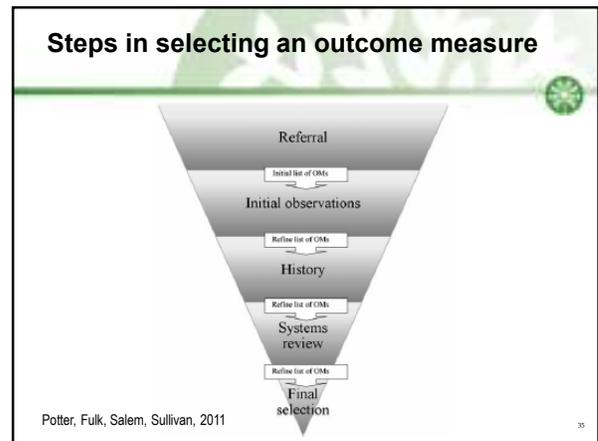
### Archives' measurement "tear sheets"

Additional collaborations:

- Rehabilitation Nursing
- American Journal of Occupational Therapy

### D. Resources to enhance clinician knowledge of measurement concepts

- Center on Outcome Measurement in Brain Injury (COMBI)
- Evidence-Based Review of Stroke Rehabilitation (EBRSR)
- StrokEDGE
- Spinal Cord Injury Rehabilitation Evidence (SCIRE)
- Rehabilitation Measures Database (RMD)



### Rehabilitation Measures Database

### Considerations in outcome measure selection

- What to measure
  - Body structure, function, activity, participation, environmental factors
- Purpose of measurement
  - Discriminative, predictive, evaluative
- Types of measure
  - Condition-specific, generic
- Patient and clinical factors
  - Patient ability, goals, clinic requirements
- Psychometric considerations
  - Reliability, validity, diagnostic accuracy, responsiveness, sensitivity
- Feasibility
  - Time, space, equipment, training, cost, burden, culture, language, proprietary restrictions

**Goal: Improved patient care**

- Standardized outcomes reported by all disciplines
- Assessment across settings
- Outcomes reported graphically to highlight trends over time
- Incorporates key patient reported factors into treatment planning
- Allows team conference to focus on trends and treatment modifications, not reporting



**III. Describe opportunities to improve rehabilitation services through the routine collection, reporting and aggregating of details about rehabilitation services, processes and outcomes**

**Facilitators of outcome measurement**

- Individual facilitators
  - Belief in benefits of routine measurement
  - Flexibility in selecting instruments to patients' circumstances
  - Evidence to negotiate with insurers regarding coverage
  - Opportunity to use information for quality improvement
- External facilitators
  - Access to resources about a variety of measures
  - Influential opinion leaders
  - Accrediting organizations
  - Information on selecting, administering, scoring, and interpreting measures

**Example 1: Development of an outcomes dashboard for team conferences**

Funding provided by the Rehabilitation Institute of Chicago, Henry B. Betts Innovation Award



**Barriers to outcome measurement**

- Individual barriers
  - Limited time to search, administer, score, interpret measures
  - Limited knowledge on selection and interpretation criteria
  - Limited resources to purchase, set-up, store equipment
  - Belief that outcome measures are unnecessary, contrary to individualized services
- Organizational barriers
  - Perception that return on investment is insufficient
  - No policies promoting routine use of standardized outcome measures, limited compliance monitoring
  - Limited consensus or recommendations from professional organizations

**Project goal: Improve patient care with integrated information**

<p><b>Current situation</b></p> <ul style="list-style-type: none"> <li>• Clinicians report patient status verbally: FIM, TUG, behavioral descriptions</li> <li>• Daily FIM ratings are collected but not used clinically; other ratings are in text notes</li> <li>• Patient voice is not documented using standard instruments</li> <li>• No objective measure of patient activity level</li> <li>• Can't monitor trends over time</li> </ul>	<p><b>Vision</b></p> <ul style="list-style-type: none"> <li>• Clinicians have access to standardized outcomes data</li> <li>• Clinicians see progress in an easy-to-digest visual display</li> <li>• The patient's voice is heard during team conferences</li> <li>• Accelerometers allow documentation of patient activity level</li> <li>• Team monitors patient trends over time</li> </ul>
--	--

### Project tasks

- Created an outcomes dashboard that can be used in all levels of care
- Extracted nursing and PT-reported performance information from EMR
- Installed local version of NIH PROMIS Center
- Deployed accelerometers using Android phones to collect 3D movement
- Developed a procedure manual to support use of the Dashboard, PROMIS, and accelerometers
- Encouraged the clinical team to reconsider how they organize team conferences
- Compared team conference functioning with a floor not using the Dashboard

### Qualitative feedback

- "I'm excited at the potential impact that the dashboard can have on team communication surrounding patient progress and outcomes. It can also assist with educating patients and families about progress in a way that they can understand" *OT*
- "The visual representation of progress really allows the team to understand whether or not a patient is progressing and how quickly they are doing so" *Clinician*
- "The dashboard has great potential to improve communication and enhance understanding of patient performance and progress by all members of the team." *Physician*
- "I think that this is great. The questions about my sleeping and the way I am feeling about things make me think. It is good to see that I am making progress because sometimes I feel like I am not." *Patient*



### Outcomes dashboard available during team conferences



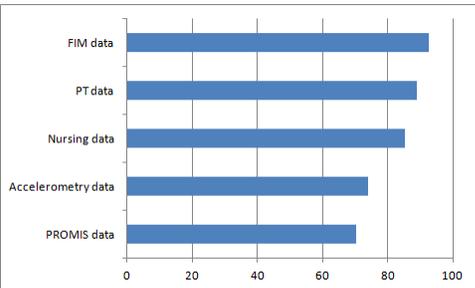
### Example 2: A quality improvement demonstration project for prosthetic clinics

Funding provided by the National Institute on Disability and Rehabilitation Research  
Rehabilitation Engineering Research Center on Prosthetics and Orthotics



### Dashboard evaluation

Percent of clinical team members rating each data source as at least somewhat useful in understanding patients' progress



Data Source	Percent of Clinical Team Members Rating as at Least Somewhat Useful
FIM data	~90%
PT data	~85%
Nursing data	~80%
Accelerometry data	~75%
PROMIS data	~70%

### Continuous quality improvement

- CQI seeks to improve healthcare by
  - Monitoring healthcare outcomes
  - Engaging staff
  - Maintaining a patient focus
  - Understanding processes of care
- Factors to consider
  - Patients
  - Clinicians
  - Organization
  - Community
- CQI requires the use of performance indicators
  - specify key desired outcomes
  - enable comparisons across facilities or over time within a facility
  - create the potential for benchmarking

### Benefits of continuous quality improvement

- Improve patient satisfaction
- Reduce or eliminate problems within delivery systems
- Reduce costs while maintaining or improving quality
- Satisfy an existing need more effectively or efficiently
- Identify and meet new needs



50

### Project methods

- Facilities: Five Midwest prosthetic clinics
- Instrumentation: Orthotic and Prosthetic Users' Survey
- Procedures: Admission, device delivery, 2 month follow-up OPUS administration
- Variation: Facilities selected data collection methods
- Reporting: Investigators provided comparative outcomes information and consulted on quality improvement opportunities

52

### ABC's mission promotes CQI



- ABC's Mission
  - To establish and promote the highest standards of organizational and clinical performance in the delivery of O&P services
- Performance Management & Improvement Standards
  - A set of 10 standards promote tracking of the organization's strengths and weaknesses in providing quality patient care

50

### Data collection forms and timing

- Initial visit
  - Orthotics Prosthetics Users Survey (OPUS)
    - Functional status
    - Quality of life
  - Health status
  - Clinician documentation (K levels, demographic details, goals)
- Device delivery
  - Functional status, quality of life, satisfaction with services and device
- Follow-Up at 2 months post-device delivery
  - Functional status, quality of life, satisfaction with services and device

53

### Project objectives

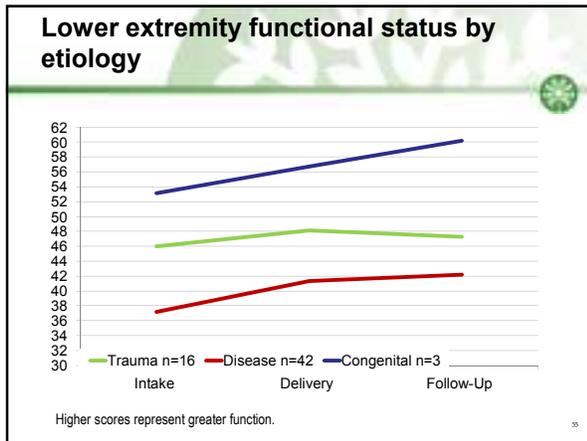
- Implement continuous quality improvement (CQI) projects in several prosthetic clinics
- Evaluate the utility of the Orthotic and Prosthetic Users' Survey as a CQI tool
- Describe challenges and strategies used by facilities in implementing CQI projects

51

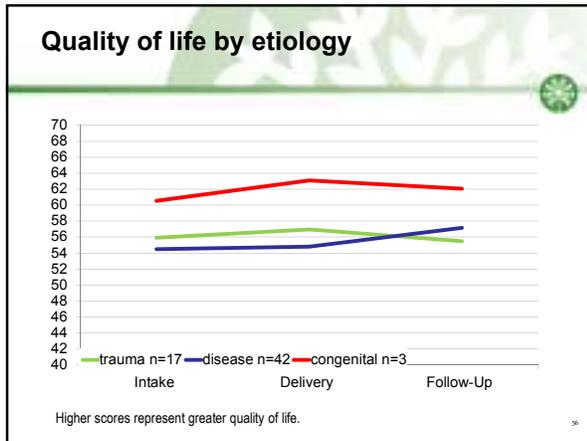
### Consultation process

- Review PRO results
- Discuss ways in which to improve clinical practice
- Develop draft action plans
- Monitor action plan implementation

54



- ### Challenges encountered
- Time limitations
    - "It's difficult to get any patient to return surveys... Everyone is busy, whether they are high-income, low-income, have a disability, or don't have a disability."
    - "Time is the biggest barrier. We have limited staff who have multiple roles."
  - Tracking patient participation over the course of treatment
    - Electronic health record helps
  - Obtaining follow-up data when patients do not return for appointments
  - Patients not understanding the value in filling out the surveys



- ### Strategies to collect quality data
- "It is important to structure time for survey completion during a standard clinic visit."
  - "It would be very helpful if the survey was part of our EMR."
  - "We need to work on having our clinicians talk about the survey with patients and encourage the patient to begin filling it out while they are in the waiting room, and then while they are in the evaluation appointment."
  - "We offered a \$50 gift card to the clinician who completed the most complete sets of surveys."
  - "We hand the delivery survey to the patient as they arrive. They bring it back at their follow-up appointment."
  - "Some of our patients live in the country and if they don't want to come back in for a follow-up appointment, we don't demand it. We have to rely on them to mail the surveys in."

- ### Quality improvement foci
- Facilities A and B
    - Identify trends for patients with declining functional status and satisfaction with service
    - Identify patients whose functional status or satisfaction with services decreases over time
    - Conduct follow-up calls using scripted open ended questions
    - Structure staff education to address identified needs
    - Collect follow-up data
  - Facility C
    - QI Project planning on hold due to Medicare audits
    - Continue to collect surveys with goal of participating in QI project in the future

- ### Benefits of CQI activities
- Target the needs of patients and achieve accreditation requirements
    - "To have richer data to show whether the services we provide are actually improving patient's function and participation."
    - "We truly understand the value in gathering data about patients' experience."
  - Enhance patient-centered care
    - "To document our successes and to give patients a chance to specify where we can improve."
    - "Patients would be valued by seeking their feedback, success and problems."

### Example 3: Feasibility of Obtaining Patient-Reported Outcomes after Rehabilitation Discharge

Rehabilitation Research and Training Center on Measuring Rehabilitation Outcomes and Effectiveness  
(NIDRR Award H133B040032111)

Rehabilitation Research and Training Center on Improving Measurement of Medical Rehabilitation Outcomes  
(NIDRR Award H133B090024)



### Focus group input from stakeholders

Consumers	"It means to make some sort of contribution in life" "Working and living" "It's important to socialize" "Just being able to do the things that you enjoy"
Caregivers	"Just doing what you want to do" "Being able to go to the store, to school, being able to do all of the things that normal people do"
Providers	"It goes beyond just daily living activities" "What you want when you want with who you want" "You are seen as having something to give"
Payers	"Allowed to fail, take on challenge" "Lack of information can be as isolating as any physical barrier"
Policy Makers	"Just the stuff we do and take for granted"

### Project background and objectives

- Background
  - Post-discharge information on participation is critical to improving rehabilitation services and patients' quality of life
  - Telephone interviews are valuable, but costly
  - IRT/CAT methods may save resources, but feasibility is unknown
- Objectives
  - Develop patient-reported outcome measure of participation
  - Implement participation measure CAT
  - Evaluate feasibility of CAT data collection using web and telephonic interface

### What we heard: Participation enfranchisement



• Hammel J, Magasi S, Heinemann AW, Whiteneck G, Bogner J, Rodriguez E. What does participation mean? An insider perspective from people with disabilities. *Disability and Rehabilitation*, 30:19, 1445-1460.

• Magasi S, Hammel J, Heinemann AW, Whiteneck G, Bogner J. Participation: A comparative analysis of multiple rehabilitation stakeholders' perspectives. *Journal of Rehabilitation Medicine*, 41, 936-944, 2009.

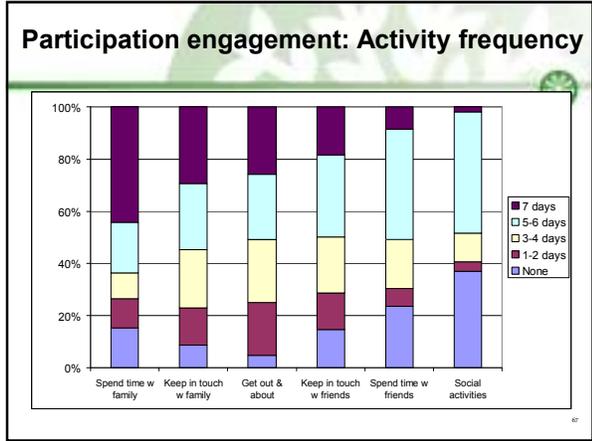
### Developing a measure of participation

- Conduct literature review
- Conduct focus groups with consumers, caregivers, providers, payers, policy makers
- Develop items and rating scales to operationalize participation
- Conduct cognitive interviews with consumers and general public
- Revise and pilot test participation instrument
- Collect and analyze population data from persons with and without disabilities (BRFSS)
- Refine instrument
- Evaluate instrument as part of routine post-discharge follow-up assessment

### Community Participation Indicators

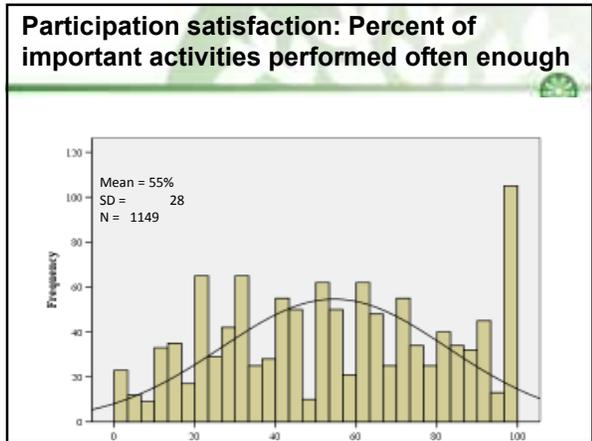
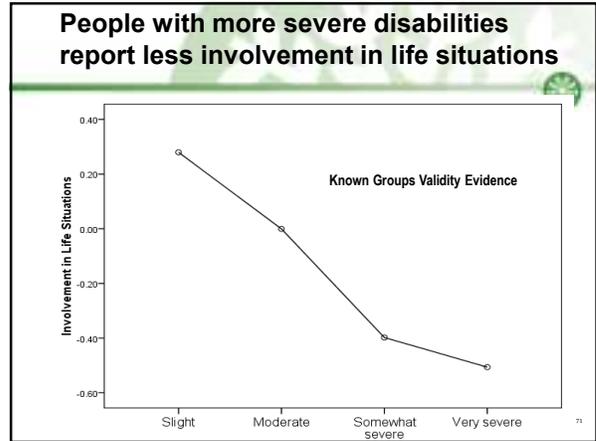
- Frequency of activity
- Importance of activity
- Evaluation of activity frequency
- 48 enfranchisement items
  - Control over participation
  - Involvement in life situations





- ### Rating scale analysis of enfranchisement items
- Control over participation
  - Involvement in life situations

- ### Scoring decision: Consider importance of activities
- Avoid creating a “busy-ness” index
  - Personal preferences, opportunities, environmental factors influence activity patterns
  - Report descriptive information about activity patterns
  - Evaluate “percent of important activities performed often enough” as an indicator of participation satisfaction



- ### Participation: Conclusions
- Participation as measured by activity frequency, evaluation and enfranchisement items is not a unidimensional construct
    - Activity frequency, importance and evaluation are distinct aspects
    - Individuals' preferences and opportunities vary greatly
    - Personal preferences determine individual's participation profile
  - Involvement in and control over participation are distinct constructs that can be measured reliably
  - Preliminary construct validity of involvement in and control over participation is promising

### Feasibility of collecting post-discharge information using IRT/CAT

- Sample recruitment
  - Outcomes Management Systems and Analysis staff invited discharged adult inpatients to complete study instruments after a 1-month post-discharge telephone satisfaction survey.
- Data collection options
  - Secure web site
  - Interactive voice response (IVR) system
  - Questions administered using a CAT algorithm
- Data analysis
  - CAT data matched to de-identified inpatient data.

### Results

- 674 patients agreed to complete the CAT-CPI.
  - Patients who agreed to complete the CAT-CPI were younger and reported slightly higher satisfaction with overall care than did those who did not participate.
- 34% actually completed the CAT-CPI
  - 61% selected telephonic administration
  - 39% selected internet administration.
- Decreased odds of completing the CAT-CPI associated with
  - black and "other" race; stroke, brain injury, orthopedic and "other" impairments; being a Medicaid beneficiary, shorter LOS, and lower discharge FIM cognition measure
- Increased odds of choosing telephonic administration associated with
  - younger age, retirement status, female gender, lower discharge FIM motor measure

### Timeline of events

### Conclusions

- CAT administration by internet and telephone is feasible for collecting post-rehabilitation outcomes data
- Incentives required to assure sufficient level of patient follow-up
- Providing alternative ways of answering questions helps assure that a larger proportion of patients will respond
- Patient characteristics influence selection of phone vs. web-based option

### Flow diagram of patient enrollment

### IV. Research agenda

## Agenda

- Promoting routine outcomes measurement in rehabilitation practice
- Selecting optimal measures across populations and settings
- Measuring what matters
- Measuring what's feasible
- Appreciating policy priorities that influence outcome measurement
- Minimizing the unintended consequences of measurement

79

## Selecting optimal measures across populations and settings

- How many measures are "enough"?
- How do we distinguish between the "good enough," "better" and "optimal" measures within a domain?
- Institution specific measures
  - Prevent comparisons between institutions
- Challenges quantifying "change" when related but distinct instruments are used
- What criteria are clinicians using when they choose an instrument?

82

## Promoting routine outcomes measurement in rehabilitation practice

- What are clinicians taught?
  - How do they acquire measurement knowledge?
  - How does their training affect practice?
  - How does their training affect the choice of outcome measures they use?
  - How do different disciplines learn to use each others' measures to guide care and place the focus on the patient?
- How do clinicians access outcomes information?
  - Do they have access to Medline, CINAHL, PsychLit?
  - What sources of information do they use?
- What are their training needs?

80

## Measuring what matters

- Neglected areas of assessment
  - Longer term outcomes
  - Environmental factors
- Cultural sensitivity and population specificity
  - Gender differences
  - Racial / ethnic differences
  - Impairment group differences
  - Age differences

83

## New Technology

- Electronic Medical Records
  - CMS is adding items to the "meaningful use" requirements
  - Software vendors are using the new standardized version of items and these items are assigned special codes/names (LOINC, Snomed, etc.)
  - Goal: inter-operability
- The move to "mobile" computing
  - Tablets to record PMI
  - PROs collected with portable devices
- Cloud (de-centralized) computing

84

## What matters to whom?

- Needs of the patient
  - Enhance outcomes
  - Enhance value
- Needs of the clinician
  - Improve efficacy
  - Improve efficiently
- Needs of researchers
- Needs of organizations
  - Compliance / Accreditation
  - Monitor productivity
  - Complying with payer requests

84

### Appreciating policy priorities that influence outcome measurement

- How will the Affordable Care Act impact the use of outcome measures?
  - Are we revisiting "No Child Left Behind"?
  - How will mandates impact clinical decision making?
  - Will mandated measurement improved the quality of care provided or the quantity of care provided?
- How will use of quality metrics affect what's measured?

### State-of-the-science conference on improving measurement of rehabilitation outcomes

1. Utilize common data elements in rehabilitation research
2. Improve measures of participation and environmental measures
3. Refine measures of cognition function
4. Enhance accessible and alternative test formats for people with disabilities
5. Translate knowledge for clinical applications, pre-service curriculum development, and research applications
6. Develop measures that inform health service and policy decisions

### Public expectations

- Changing public expectations
- Aging populations in industrialized nations
- Increased access to healthcare
  - Affordable care
  - Healthcare in "developing" economies

### At ground level...

- Utilize sensitive, reliable, appropriate instruments in CER studies
- Evaluate methods to promote knowledge translation with clinical end users
- Develop and evaluate quality measures for medical rehabilitation
- Sustain efforts to evaluate promising interventions with carefully targeted endpoints operationalized by instruments that are reflective of and sensitive to clinical investigators' goals



### Minimizing the unintended consequences of measurement

- Clinician and patient burden
- Risky uses of outcomes data
  - Using validated measures for a different population or setting than which it was evaluated
  - Measuring to impress
  - Provider compensation
  - Third-party payer reimbursements
  - Policy / political decisions
  - Marketing

### In conclusion

Improved outcome measurement helps fulfill ACRM's mission




## Acknowledgments

### The Rehabilitation Research & Training Center on Improving Measurement of Medical Rehabilitation Outcomes

Award H133B090024.

This presentation does not necessarily represent the policy of the Department of education, and you should not assume endorsement by the Federal Government.

