Toward Demonstrating the Value of Rehabilitation: 
*Outcome Measurement in Clinical Practice*

Deborah Backus, PT, PhD, FACRM
Director, MS Research
Crawford Research Institute

“Good science and good clinical practice depend upon sound information, which in turn relies on sound measurement.”


Objectives

- Discuss the rationale and value of implementing outcome measurement into routine clinical practice
- Identify principles & strategies for selection of outcome measures
- Discuss strategies for integration of outcome measurement into clinical practice
- Take it to Monday: Discuss ways to immediately empower clinical staff to incorporate scientific rigor and outcome measurement into their own clinical practice
RATIONAL & VALUE OF OUTCOME MEASUREMENT IN REHABILITATION

Value Based Payment Reform

\[ \text{VALUE} = \text{Quality} + \text{Patient Experience} \]
\[ \text{Cost of Care} \]

Fee for Service
- Provider
- Volume
- Siloes of care

Value-Based Payment
- Patient
- Coordinator Care
- Population Health

Value-Based Programs

- Reward health care providers with incentive payments for quality of care to people with Medicare
- Purpose to reform how health care is delivered and paid for
- Support the Triple Aim

CMS.gov
Current Healthcare Environment

Value-Based Program Examples

• Hospital Readmissions Reduction Program (2012)
• Medicare Access & CHIP Reauthorization Act (MACRA) (2015)
• Skilled Nursing Facility-Value-Based Purchasing program (SNF-VBP) (2018)

CMS.gov

How can Organizations be Successful in this Health Care Environment

• Demonstrate the use of evidence-based practice
• Return individuals to full health and activity faster
• Attract new agreements with third-party payers or self-funded employer health plans
• Generate more revenue and strengthen the bottom line
**Need More and Better Information**

- Service provision, service outcomes, and the economic benefits of rehabilitation
- Evidence for the effectiveness of interventions and programs is extremely beneficial to:
  - Support people with disabilities in decision-making
  - Allow rehabilitation workers to employ appropriate interventions
  - Identify need/potential for programs to fill identified gaps
  - Guide policy-makers in supporting appropriate services

---

**Outcome Measurement vs Research Data Collection**

---

The evolution from data to knowledge requires integration of outcomes measures in meaningful ways to inform decisions about care.
Principles for Selecting Outcome Measures

OUTCOME COLLECTION

Outcomes & Outcome Measurement

- **Outcome**: what is achieved
- **Outcome measure**: the process of applying a standard scale to the outcome in which interested
  - *Rehabilitation outcome measures* target body functions and structures, activities and participation, environmental factors, and personal factors

Decision-Making Framework

- What to measure
- Purpose of the measure
- Type of measure
- Measurement properties
  - Psychometric factors
- Patient factors
- Clinic factors
- Feasibility

Define the Question

Exs., Fatigue in MS
  • Muscle fatigue vs. general fatigue

Clinical Questions

• Does XXX function improve in people who are treated with this intervention?
• Does adding this technology to our program improve patient outcomes?
• Are the outcomes of this program meaningful enough to continue dedicating resources to it?
• How do our outcomes compare to other institutions/programs?

Define the purpose

• Choose the measure to:
  – Define the baseline level of function
  – Diagnosis and/or prognosis
  – Inform the plan of care
  – Inform the patient
  – Inform other stakeholders, e.g. payer
  – Help evaluate the effectiveness of interventions
  – Track changes
  – Identify problems before they happen

The International Classification of Function (ICF)

http://www.who.int/classifications/icf/training/icfbeginnersguide.pdf

Figure 2. Integration of the ICF and the Guide to Physical Therapist Practice. The ICF levels (body function/structure, activity, participation) are integrated with the components of the physical therapy examination (history, systems review, and tests and measures), leading to the identification of outcome measures. Abbreviations: ICF, International Classification of Functioning, Disability, and Health; STREAM, Stroke Rehabilitation Assessment of Movement.

Use guidelines that may be provided

- AAN MS Measurement Set 2015
- NINDS Common Data Elements (SCI, MS, BI, PD, HD, Stroke, Neuromuscular disease)
Type of Measure

- Clinician- vs. Patient-reported outcome measures
  - Performance-based vs. Self-report
- Example: Assessment of walking function
  - CRO: Timed 25 foot walk test, 2 or 6 minute walk test
  - PRO: MS Walking Scale

Generic vs. Disease-Specific Measures

Consider:
- Purpose:
  - Overall impact of health condition vs. information re; impact of specific condition
- Benefits
  - Compare to normative values and across populations/patient groups vs. gain insight into relationship of parts to whole of the specific population
- Limitations
  - Ceiling or floor effects in generic measures vs. inability to compare across groups with condition specific
- Examples:
  - FIM vs. Stroke Impact Scale, MS Impact Scale

Tools for Selecting Disease/Condition Specific Outcome Measures

- International Campaign for Cures of spinal cord injury Paralysis (ICCP) Clinical Guidelines Panel
- SCIRE (SCI Rehabilitation Evidence) Chapter 28 “Outcome Measures”
- AAN MS Measurement Set 2015
- NINDS Common Data Elements (SCI, MS, BI, PD, HD, Stroke, Neuromuscular disease)

NINDS Common Data Elements https://www.commondataelements.ninds.nih.gov/#page=Default
Clinical Utility & Feasibility

• Organizational goals and vision
• Value/Cost:
  – Resource allocation
  – Financial considerations
• Work flow
• Recording mechanisms
  – Integration with EMR?
• Considerations of stakeholder needs
  – Patient
  – Payer

Strategies for Integration into Clinical Practice

Standardized Outcome Measurement Collection

• The practice of collecting and recording the same defined data elements
• Ensuring all elements are implemented in “exactly” the same way
• Recorded as part of the patient assessment and intervention record/EMR (or other ways if not possible?)
• Accurate information can be extracted from the EMR
Develop a proposal

- Identify care gaps/knowledge gaps
- Engage the stakeholders
  - Clinicians
  - Management/Administration
  - Patient
- Engage or consider payer

Problem analysis/Target Group

- Assess the work flow
- Consider documentation
- Limit burden
- Limit number of steps
- Anticipate human error
Implementation

- Put it in writing
- Educate/train
- "Check off"/Competencies

Importance of a Manual
Define, define, define

- Timing, methods, identity of responsible parties
- Outcomes to be collected
- Full description of instruments/measures
- Step-by-step instructions on administering tests
- Identify specific content and strategies for training or retraining staff members (when, how, how often)
- Where and how documented
- Otherwise:
  - Missed data points/inaccurate or inconsistent data
  - Appropriate adjustments and calibrations not made leading to inaccurate data

http://www.niu.edu/rcportal/datamanagement/dctopic.html

Evaluation and Adjustment

- Audit
- Analyze
- Interpret
- Make adjustments
Evaluate and adjust

- **Fidelity** – how closely is what was proposed to what is done
- **Dosage** – how many times actually carried out and how completely
- **Quality**
- **Participant responsiveness**
- **Contribution** of outcome and ability to differentiate
- **Reach** – rate of involvement and representativeness of stakeholders
- **Adaptation** – were there changes made in the original program during implementation


“Whilst the importance of routinely measuring outcomes within the allied health professions is well recognised, it has largely failed to be delivered in practice. Factors that influence clinicians’ ability and desire to undertake routine outcome measurement are bi-directional: they can act as either facilitators or barriers. Routine outcome measurement may only be deliverable if appropriate action is taken at individual therapist, team, and organisational levels of an organisation.”

Duncan and Murray BMC Health Services Research 2012, 12:96
http://www.biomedcentral.com/1472-6963/12/96
Change the thinking (end expectation) of the clinician

*The Scientist-Practitioner*

- The “scientist-practitioner” should be versed in the scientific method:
  - Logical, systematic and objective process of evaluating a problem or question.
  - Employed in *every aspect of practice*
  - Recognizes value of case studies as part of the larger population

---

**Change the clinic culture**

- **A culture** of scientific inquiry and rigor
- **Values** scientific inquiry and rigor
- Positive **attitude** toward research and researchers
- **Behaviors** of all involved demonstrate the value
- Establishes the expectation that all clinicians engage in the scientific method and participate in *measurement*

---

Jones ML, Cifu DX, Baucke D, Slater SA. Arch phys med rehab 2013.
Frontera et al. / Neuroengineering and Rehabilitation. 2006.
### Create an outcome measure-friendly culture

- Develops and supports the scientist-practitioner
- Facilitates collection of standardized outcome measures
- Ultimately to:
  - Advance clinical care
  - Improve patient outcomes
  - Contribute to the evidence base


### What does an outcome measure-friendly culture look like?

- Identifies outcome assessment as a key component of the clinical mission
- Acknowledges the need and value of outcome assessment, analysis and interpretation
- Engages the clinician (and other key stakeholders) early and often in the process of selecting, implementing and interpreting data from outcome measures
- Provides opportunities to create competence and expertise – didactic and experiential
- Ensures dissemination of findings to advance patient care within (and outside the facility)


### Change the thinking (end expectation) of the patient

- Align expectations for the time required to collect additional outcomes
- Engage the patients in the decision about meaningful outcomes
- Share the outcomes with the patients
Examples

- Upper extremity (UE) clinical outcome measure collection effort
- MS Clinical Outcomes Initiative in an outpatient setting

Take it to Monday

Thank you!
Deborah_backus@shepherd.org
References


Hatfield, Derek R., and Benjamin M. Ogles. "Why some clinicians use outcome measures and others do not." Administration and policy in mental health and mental health services research 34, no. 3 (2007): 283-291.


References cont'd


Thorne FC. Am Psychol 1947


Image on slide 12: https://steemit.com/aphorism/@andrarchy/my-words-of-wisdom

References cont'd