The Value of Rehabilitation Interventions --

Integrating Evidence, Clinical Expertise, Critical Assessment, and

Patient Needs:

A Conference Report

Running Header:
Rehabilitation Interventions: Integrating Evidence & Value

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Abstract:

In order to understand issues related to value, outcomes, and cost-effectiveness of rehabilitation interventions, and to explore how scientific evidence, clinical expertise, and patient needs can be integrated, the Rehabilitation Research and Training Center on Developing Optimal Strategies in Exercise and Survival Skills to Increase Health and Function held a State of the Science (SOS) Symposium on "*The Value of Rehabilitation Interventions*" at Shirley Ryan AbilityLab in Chicago in 2017. In this conference, the perspectives of 35 invited experts, including people with disabilities, professionals, and consumers, explored the topic of "value" of rehabilitation interventions and discussed their perspectives on the means to integrate best scientific evidence with clinical expertise and patient preferences. This Symposium also resulted in the production of several multifaceted manuscripts providing perspectives on the topic of value and how to use evidence to best determine and demonstrate it. These papers comprise this Supplement. The present paper introduces the key concepts of value, evidence, and knowledge translation, in an effort to provide a context for the papers of the Supplement.

Key Words:

Rehabilitation; Disability; Evidence-based Medicine; Cost-effectiveness; Knowledge Translation

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Current trends in the delivery of healthcare are directed toward the establishment of expectations, incentives, and mechanisms to enable clinicians and clinical leaders to perform critical analyses of patient care quality, cost, and access (1-8), codified in the Medicare Payment Advisory Commission's Report to Congress and the Patient Protection (2) and Affordable Care Act (3). These activities are implemented in an effort to create an environment in which high-quality, evidence-based, and cost-effective care is provided to all people who need it. Inherent in these expectations are the opportunities to evaluate the value of clinical practices, to make those practices more accessible and to minimize the costs and burdens associated with these activities. Ultimately, these activities are established to enhance health and community outcomes.

A heightened focus on *outcomes* of care is not new to the rehabilitation community, which has been studying and measuring outcomes of care for many years. What is novel for the rehabilitation and general medical practice communities is the enhanced emphasis on the simultaneous achievement of both outcomes and *accountability*, i.e., the linkages between performance -- as measured to a great extent by outcomes achieved -- and *payment, reimbursement, and publicly recorded ratings of quality*. This trend can be expected to redirect a great deal of the focus by all clinicians, policy makers, and investigators toward demonstrating evidence of effectiveness of clinical interventions and toward studying the value of rehabilitation services. Included in these considerations is the need to study cost-effectiveness of health-care

services. The rehabilitation community, in particular, will be challenged by these obligations, given the relative paucity of extant data providing evidence of effectiveness of many common clinical rehabilitation interventions and prevailing practices.

The movement toward increasing accountability in healthcare compels rehabilitation clinicians and investigators to provide evidence that the interventions that are used are effective underscores the importance of rigorous measurement of these clinical activities. Defined roughly as the level of outcomes achieved from interventions relative to the amount of resources used, the concept of *value* applies to all stakeholders in healthcare, including hospitals, physicians, other clinicians, payers, and consumers (9). In medical rehabilitation, there are many examples of the systematic and quantitative investigation of patient outcomes (10-14) but limited experience in the study of the *value* of our interventions and processes.

"Value" differs from "outcomes" and "effectiveness", because understanding value typically involves evaluating the relationship between *outcomes* and *costs*. An important aspect of considering value is that its definition depends, to a great extent, on the perceptions of the multiplicity of stakeholders in the healthcare environment. Patients, providers, payers, and society at large likely have differing views on what defines value. Each of these perspectives influence the care processes utilized by clinicians, the metrics employed by clinicians and decision makers to evaluate the interventions, the assessment instruments used by investigators, and the policies implemented by societal leaders.

Scientific evidence is now understood to be the foundational basis for patient care interventions, and this is now considered an essential component of developing and delivering effective rehabilitation practices. The technical definition of "evidence-based medicine" is "…the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients." This means that true evidence-based practice, according to strict definitions, includes not only scientifically based information derived from research studies, but also clinician practices and expertise, and an equally important consideration of patient values and desires (15).

All stakeholders involved in rehabilitation processes can be expected to benefit from participating in the search for ideal evidence. For rehabilitation investigators, this search offers the potential to improve the collective understanding of the interconnectedness between health, function, community participation, and the social context. To do this, it will be necessary to study the value of new and prevailing interventions that are designed to maximize the likelihood of achieving favorable medical, functional, and community outcomes.

A potential complicating factor that has limited the critical assessment of value of rehabilitation interventions or the evidence base on which to build future rehabilitation practices has been a lack of specificity about the "*dosing*" of interventions provided in most efficacy studies to date (16-19). Unlike medication administration, for which frequency, quantity, and duration of the intervention are typically stated explicitly in clinical practice and experimental trials, the same degree of specificity is often lacking in exercise and behavioral interventions (16-21). In clinical environments, failure to specify rehabilitation dosing leads to patient confusion, missed opportunities to achieve adequate treatment effectiveness, and possibly medical

complications. In clinical research investigations, lack of attention to determining or specifying the exact amount, duration, or intensity of an intervention causes a failure to identify potential clinical effectiveness or ultimately to elucidate optimal regimens of the interventions. The clinical and scientific community's collective ability to understand a treatment strategy's effectiveness or value, or lack thereof, suffers when the parameters of the intervention are poorly specified. This methodological flaw has contributed to recurrent criticism of medical rehabilitation research.

The need to develop an understanding of the evidence that supports common clinical practices and to demonstrate value and cost-effectiveness of those interventions is particularly compelling for people with disability. In contemplating definitions of "value", "effectiveness", and "evidence" of rehabilitation interventions, consideration needs to be given to the unique perspectives of people with disabilities. Including individuals with disabilities in this consideration will prevent them from being ignored and underserved in the public and professional practice and discourse on the topics of assessments, interventions and outcomes. For the estimated 57 million Americans with disabilities (22), achieving and maintaining health, accessing affordable quality care, and navigating the complicated healthcare system constitute a frequent and often intense struggle that can be directly influenced by the organization of the healthcare delivery system itself. Many of the health problems, and the treatments employed to address them, occur across a range of physical disabilities, and all have in common an adverse effect on the individuals' well-being and social participation.

To address issues related to value, outcomes, and cost-effectiveness of rehabilitation interventions, and to best explore the integration of scientific evidence, clinical expertise, and patient needs, the State of the Science (SOS) Symposium on "The Value of Rehabilitation Interventions", was held on September 14-15, 2017 at Shirley Ryan AbilityLab in Chicago. During this conference, sponsored by NIDILRR through the "Rehabilitation Research and Training Center on Developing Optimal Strategies in Exercise and Survival Skills to Increase Health and Function", the perspectives of 10 invited experts, including people with disabilities who served as primary speakers and discussants, were deliberated. In addition, 25 professionals and consumers serving as commentators aired their perspectives on the topic of "value" of rehabilitation interventions. The Symposium also sought to leverage the opportunity for collaborative discussions as a basis on which to better understand and to expand the rehabilitation community's collective perspectives on the means of integrating best scientific evidence with clinical expertise and patient preferences.

Accordingly, the objectives of the SOS Symposium were as follows:

- To review current clinical practices and research on new and developing interventions that improve the health and function of people with disabilities;
- To discuss issues related to access to quality primary and specialty health care by people with disabilities;
- To discuss the meaning of value in healthcare according to clinicians, providers, and people with disabilities;
- To discuss how to implement evidence-based research into practice; and

- To develop research and policy agendas in the key areas of effectiveness and value of rehabilitation interventions that will improve the health and function of people with disabilities.

Derived from the presentations and discussions at this Symposium, the papers that comprise this Supplement of *Archives of Physical Medicine and Rehabilitation* are presented as a means of exploring the assessment of effectiveness and value of rehabilitation interventions, discussing the integration of evidence with patient perspectives and describing the implementation of scientifically supported interventions into daily clinical rehabilitation practice.

Jordan and Deutsch provide useful background on the topic by describing the rationale and methodology for determining and applying the concept of "value" in rehabilitation. Several articles provide concrete examples of the determination of value, cost-effectiveness, and predictive factors for various types of rehabilitation interventions, including high-intensity gait training (Fahey et al and Henderson et al) and high-intensity aphasia therapy (Boyer et al, Cherney et al and Wambaugh et al). The role of peer support as an adjunctive rehabilitation intervention to empower people with disabilities is described by Magasi and associates.

Finally, several papers study and review various aspects of the application of knowledge translation as a means of implementing evidence-based information into practice. These diverse knowledge translation papers, led by Dr. Moore and colleagues, include a description of a study of the effectiveness of implementation of objective mobility measures in a clinical setting; a commentary from front-line users on the experience of process implementation; a review of

various knowledge translation methods; and a description of "learning health systems" which are distinguished by their use of evidence-based practices, as they relate to rehabilitation. Together, all of these papers offer a multifaceted but focused perspective on the complicated topic of "value" and how to use "evidence" to determine and demonstrate it.

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