

In this issue, we discuss the NIH Toolbox for Assessment of Neurological and Behavioral Function, an important initiative inspired by the National Institutes of Health's Blueprint for Neuroscience Research. The NIH Toolbox aims to develop brief but comprehensive tools for measuring function across the life span. In our newly funded Rehabilitation Research and Training Center, our first research project aims to examine the NIH Toolbox and ensure that it is accessible to people with a disability. Read more about this research project below.

We also revisit a former CROR post-doctoral fellow, Dr. Susan Magasi, and her exciting career with Northwestern University's department of Medical Social Sciences. Dr. Robert Heaton, an NIH Toolbox collaborator and Advisory Committee member, is also profiled inside.

Other updates include a new, free lecture series on measurement in healthcare available on our website, as well as recent publications and presentations.

Allen Heinemann, Director



Dr. Susan Magasi: New Directions of a Former CROR Post-doctoral Fellow

Canadian-trained occupational therapist Dr. Susan Magasi came to CROR as a post-doctoral fellow in 2006. She brought with her a strong background in qualitative research methods, a commitment to social justice for people with disabilities and a desire to understand better how major life transitions impact health and participation among people - especially women - with disabilities. Susan sought out a CROR post-doctoral fellowship because it afforded her the opportunity to work with nationally-recognized leaders in rehabilitation outcomes measurement and disabled women's health.

"I was able to integrate my background in occupational therapy and measurement in the NIH Toolbox"

Dr. Susan Magasi

"I think you need to be strategic when it comes to building a research career and I knew that by working with people at the top of their fields, like my mentors Allen Heinemann and Kristi Kirschner, I'd not only learn a lot but there would be tremendous opportunities for me professionally." Magasi says that she used her fellowship to build collaborative research relationships and enhance her skills in outcome research and instrument development.

Upon completion of her post-doctoral fellowship, Dr. Magasi was offered a research scientist position in the prestigious Center for Outcomes Research and Education at Evanston Northwestern Hospital

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Enhancing the NIH Toolbox's Accessibility and Usability

Recent efforts to create better tools for measuring patient outcomes and functional status have led to clinically useful developments, but must consider the adaptations needed to ensure they are usable for people with disabilities, according to Susan Magasi, PhD, a research assistant professor in the Department of Medical Social Services.

The NIH Toolbox exemplifies the need for usability by people with disabilities. The Toolbox is an initiative funded by the National Institutes of Health that seeks to create standardized, efficient measurement tools for assessing cognitive, motor, sensory and emotional function in the general population of individuals, aged three through 85 years. (See *Page 3* for a full description.)

As co-chair of the accessibility committee, she is charged with anticipating the needs and experiences of end users and recommending appropriate accommodations.

"Because the NIH Toolbox is designed for use in general population studies, some measures pose accessibility challenges for people with different types of impairments. For example, the cognition measures are computer administered and response options are entered via touchscreen. The sensory-motor demands are high and may disadvantage some people with disabilities" Magasi explained.

The NIH Toolbox's accessibility committee's charge in assessing these measures was to ensure

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Inside

NIH Toolbox

For a detailed description of the NIH Toolbox for Assessment of Neurological and Behavioral Function, see *Page 3*.

Robert K. Heaton

Read about Advisory Committee Member, neuropsychologist, and collaborator Dr. Robert Heaton on *Page 2*.

CROR Publications

A list of recent CROR manuscripts, abstracts, and presentations is on *Page 7*.



Dr. Robert Heaton: A Career in Cognition Measurement

For Robert Heaton, PhD, professor of psychiatry and vice-chair of academic affairs at the University of California, San Diego, his lifelong interest in neuropsychology and measurement was sparked early on during his undergraduate education at the United States Air Force Academy in Colorado Springs. A native of Maryland, Heaton followed in his father's military footsteps, but soon found it difficult to pursue psychology while still in the service.

"It became clear to me that they wanted a warrior and not a psychologist, so after I completed my four-year commitment, I went on to get a master's degree in psychology from San Francisco State University," said Heaton.

Following the completion of his master's degree, Heaton enrolled in the doctoral program in clinical psychology at the University of Washington. It was during that time, he said, that he became interested in the burgeoning field of clinical neuropsychology, a field that would allow him to better understand and treat the needs of patients who have issues with cognitive function.

Heaton subsequently accepted a position in the department of psychiatry at the University of Colorado Denver, where he did work in clinical psychology and supervised interns on an inpatient psychiatric ward. He also started the university's first neuropsychology lab, which he led from 1972 until 1987.

Most importantly, Heaton said, it was around this time that he became involved in several research projects in the departments of psychiatry, neurology and neurosurgery. These experiences marked the beginning of an intense interest in the research process, particularly in measurement issues and the way in which demographic characteristics such as age, education, gender and ethnicity affect test performance.

"My interest in demographics was particularly related to the importance of correcting for variations that may alter a test performance, especially when deciding whether test performance is impaired by disease," Heaton explained.

For instance, most adults experience some loss of cognitive function with age, he said, and people with a university education generally have better cognitive performance than those with a high school education or less. If a clinician wanted to learn whether a person with a brain dysfunction has suffered neurocognitive loss, they first need to be able to estimate how that person would perform if they did not have any disease.

"We needed to know things like whether or not this person has a high school education and how old he is," Heaton said. "I have had the ability to collect a lot of data on these variations over the years and have made many normative corrections that help us to understand if there is a real loss of cognitive function and if so, how much."



Heaton has also investigated the use of neuropsychological tests to predict everyday functioning. Specifically, Heaton said, if a person has a known diagnosis or brain injury, it is important to know how that information can be used to predict the ability to work and live independently. He has explored those questions in his work at the HIV Neurobehavioral Research Center at UCSD, where he leads research to assess the neuropsychological outcomes of HIV infection.

In addition, Heaton is a member of the NIH Toolbox's steering committee and the cognition team. The Toolbox is an effort sponsored by the National Institutes of Health to create easy-to-use, standardized measurement tools for the assessment of cognitive, motor, sensory, and emotional function.

In April, Heaton presented the NIDRR Invited

Lecture on measurement issues in neuropsychology at the Rehabilitation Institute of Chicago (RIC). Following the talk, he met with RIC investigators and trainees from the RRTC on Improving Measurement of Medical Rehabilitation Outcomes. Heaton also met with RIC clinicians to discuss the various

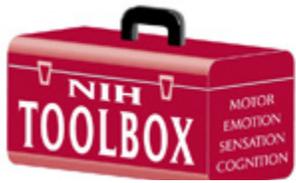
cognitive measures that can be used with specific patient populations.

According to Heaton, the lectureship affords him the ability to think about measurement issues in rehabilitation settings and will allow him to learn more about RIC's clinical services and Rehabilitation Research and Training Center, a five-year project aimed at improving instruments that measure the factors that affect community participation by tailoring them for individuals with disabilities. One of the projects in the study looks at ways to adapt the NIH Toolbox for use by people with disabilities.

"We were charged with creating tools for use in the general population so I am very interested to hear what RIC's experiences have been and which adaptations they suggest," Heaton said. "Collaboration is certainly a broadening experience and there is real potential for everyone to learn from each other and find ways to do things better."

Dr. Robert Heaton was the first presenter in the RRTC's NIDRR Invited Lectureship series

NIH Toolbox for Assessment of Neurological and Behavioral Function



Each year, thousands of research projects are conducted in laboratories, hospitals, and academic settings across the country. The U.S. National Library of Medicine's website repository for clinical trials lists more than 80,000 trials sponsored by the National Institutes of

Health (NIH), other federal agencies, and private industry. For Dr. Richard Gershon, the most frustrating aspect about the wealth of data collected in those studies is the lack of comparability of outcomes.

"There is very little uniformity among the measures used in research to assess neurological function and behavioral health," said Gershon, Vice Chairman of the Department of Medical Social Sciences at Northwestern University. "The NIH sought to minimize that limitation."

A Common Currency

As part of the NIH Blueprint for Neuroscience Research, a collaborative framework among the 16 NIH Institutes and Centers that support research on the nervous system, the purpose of the NIH Toolbox for the Assessment of Neurological and Behavioral Function (NIH Toolbox) initiative is to develop brief yet comprehensive instruments that measure motor, cognitive, sensory, and emotional function. The Toolbox's goal is to develop tools that will be useful to clinicians and researchers in a wide variety of settings, with a particular emphasis on measuring outcomes in studies that are longitudinal and capture information across the lifespan.

The NIH Toolbox is not meant to replace in-depth batteries for neurological functioning or emotional health. Instead, the goal is to make studies comparable by creating a "common currency."

"We're not trying to reinvent the wheel," explained Gershon. "We're trying to maximize the yield from large, expensive studies with a minimal increment in subject burden and cost."

When completed, the Toolbox will provide a standard set of concise, well-validated measures of cognition (such as executive function, episodic memory, working memory, processing speed, language, attention); emotion (negative affect, positive affect, stress and coping, social relationships); motor functioning (locomotion, strength, non-vestibular balance, endurance, dexterity); and sensation (vision, audition, vestibular balance, somatosensation, taste, olfaction). These measures will be available in English and Spanish for people aged three to 85 years.

The NIH Toolbox Initiative

The NIH Toolbox initiative began in September 2006 and is structured in two phases over 5 years. Phase I involved identifying the domains and tasks that would be included in the measures, and Phase II consists of testing, refining, and evaluating the instruments.

Phase I began by soliciting expert advice on the criteria that the Toolbox should meet, and the specific domains of function it should target. An internet survey was distributed to NIH-funded researchers to determine the needs of end users, and in-depth expert interviews were conducted with 44 of the 152 respondents. With the aid of the science officers who make up the NIH Toolbox Project Team and a group of independent scientific experts assembled by the NIH, the Toolbox criteria were established. Study staff, divided into teams for each domain, conducted extensive literature reviews for each domain, and began the selection of items. Some items were taken from existing instruments, while some teams identified areas where new items could be developed. By the end of Phase I, the Toolbox teams built a library of 1,391 instruments.

In Phase II, a total of 48 assessments are under development, after being

reviewed by independent expert working groups that evaluate each measure to determine its appropriateness. The groups modified items to ensure that they were culturally sensitive, accessible to people with varying levels of ability, and appropriate for both geriatric and pediatric populations. Each instrument is translated into Spanish. For candidate instruments without validity data, studies are underway to test the psychometric properties and determine validity. These studies will help to select the final measures.

Later this year, field testing of the final measures will begin with a U.S. general population sample of 4500 participants, including English and Spanish-speaking subjects. This study will describe the distribution of function across the general population, and provide normative data that are needed to provide baseline information for future studies. Phase II will provide valuable information about test-retest reliability and practice effects.

Collaborative Effort

In order to achieve these tasks, Dr. Gershon established an extensive collaborative network of experts. The Toolbox has 242 named personnel, 126 consultants, and 19 subcontracts with organizations, including the Rehabilitation Institute of Chicago (RIC).

For Dr. Sandra Weintraub, a clinical neuropsychologist at Northwestern's Cognitive Neurology and Alzheimer's Disease Center, the Medical Faculty Foundation and Northwestern Memorial Hospital, and head of the cognitive domain team, the experience has been rewarding. Her responsibilities included selecting and vetting instruments and bringing them to the team for decisions about which items best measure the constructs.



Work in progress: Toolbox researcher Abbie Sivan undergoes a trial run of a candidate cognitive test

"The task that we had was daunting, and required input from multiple great minds," Weintraub explained. "On the cognitive team, we're all colleagues, and we know each other's work. We have strong opinions on these measures, but the most important thing is that everyone agrees on the goal of the project." Dr. Weintraub's co-leaders are Drs. Sureyya Dikmen (University of Washington), Robert Heaton (University of California San Diego) and David Tulskey, Kessler Foundation Research Center.

Each domain team meets several times per year, and supplements those meetings with weekly phone calls and emails among sub-domain members. Dr. Zev Rymer, Vice President of Research at RIC serves as co-leader of the motor function domain with Dr. David Reuben at the University of California Los Angeles. "For our motor group, keeping the wheels running is on a much smaller scale," Rymer described. "Overall the Toolbox is a very complicated administrative task, and it's running astonishingly well given its size."

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NIH Toolbox (Continued From Page Three)

Tool of the future

The Toolbox is intended to be as straightforward for researchers to administer as it is for participants to take. The goal is for the entire battery to take no longer than two hours, thus each domain can be no longer than 30 minutes. The goal is for “lay” research staff, those without extensive clinical training and minimal education beyond high school, to be trained to aptly administer the test. Scoring and interpretation of results will be uncomplicated and easily accessible. Designed to be flexible, researchers can elect to use the entire Toolbox or focus on specific domains.

The technology of the Toolbox continues to evolve. It is designed to be brief and inexpensive, and one of the ways it accomplishes this is by incorporating state-of-the-art psychometric methods and advances in computing technology. Most tests are computer administered, and when appropriate, some tests will be administered adaptively – a computer program selects items based on previous responses and significantly reduces administration time.

Next steps for the Toolbox include assessing the validity of the tool within specific populations. A variety of grants have been awarded for examining disease groups, and the new RRTC on Improving Measurement of Medical Rehabilitation Outcomes at RIC will work on validating parts of the Toolbox with stroke, spinal cord injury, and brain injury samples.

For Dr. Rymer, these new applications are the most exciting part of the project. “There are a couple novel deviations in the measures which are interesting in what they portend for the future.” For example, one sub-domain group is attempting to measure balance and posture quantitatively with an accelerometer, an advanced electromechanical device. “This is a bold move, and a deviation to the minimalist approach of Toolbox, but contributes greatly to the field.”

Dr. Heinemann noted that “this RRTC was awarded at a critical time. We have the opportunity to address accessibility and usability issues and to work with Toolbox colleagues in evaluating Toolbox instruments with rehabilitation samples. Rehabilitation researchers will benefit from the investment NIDRR and NIH has made in developing Toolbox.”

Dr. Weintraub is optimistic that the NIH Toolbox will be widely used upon completion. At recent presentations, she has noted a great deal of interest in the project already. “The research world is just beginning to understand that these domains of function are so important to measure, even in studies that may be focused only on one aspect,” said Weintraub.

“If you’re studying something specific, like Alzheimer’s Disease, you’ll have your own fancy tests for what you’re measuring,” Dr. Rymer agrees. “But you and your colleagues will benefit from adding tests to measure things like balance, social relationships, or visual acuity. And since they’ve all been validated, researchers can add them confidently.”

NIH Toolbox At-a-Glance

Purpose:	The NIH Toolbox, part of the NIH Neuroscience Blueprint initiative, seeks to develop brief yet comprehensive assessment tools measuring motor, cognitive, sensory, and emotional function. Upon completion, the Toolbox will be available for use in longitudinal epidemiologic studies and prevention or intervention trials for people ages 3-85.
Additional Objectives:	<ul style="list-style-type: none"> • Enable cross-study comparisons and integration of data from multiple studies by providing a standard set of brief, well-validated measures • Dynamic/adaptable over time • Utilize state-of-the-art psychometric and technological approaches including computerized adaptive testing (CAT) and computer assisted evaluation • Cover the full range of normal function (not disease states) • Be used as the basis for detecting at-risk populations • Be minimally burdensome to subjects and investigators
Domains:	<p>Cognition: Executive Function, Episodic Memory, Working Memory, Processing Speed, Language, Attention</p> <p>Emotion: Negative Affect, Positive Affect, Stress and Coping, Social Relationships</p> <p>Motor: Locomotion, Strength, Non-Vestibular Balance, Endurance, Dexterity</p> <p>Sensation: Vision, Audition, Vestibular Balance, Somatosensation, Taste, Olfaction</p>
Testing Samples:	<ul style="list-style-type: none"> • 300-600 per each of the 48 instruments for validating instruments • 4,400 for norming (pediatric and adult, both Spanish and English speaking)
Languages:	English and Spanish
More Information:	To learn more about the Toolbox, please visit the website: www.nihtoolbox.org
Funding Source:	Blueprint for Neuroscience Research NIH (Contract HHS-N-260-2006 00007-C)
Principal Investigator:	Richard Gershon, Ph.D.(gershon@northwestern.edu)
Lead Project Officer:	Molly Wagster, Ph.D

Enhancing the NIH Toolbox for Accessibility (Continued From Page One)

compliance with federal accessibility laws such as Section 508 of the Rehabilitation Act, Magasi said. “We’ve been working closely with the development teams to tease out which components are content-specific and which ones are related simply to the mode of administration.” While this work is an important first step towards the inclusion of people with disabilities, some recommendations extend beyond compliance with federal laws and are not feasible within the original scope of work.

Making the Toolbox accessible

In response, Magasi and researchers from both the Center for Rehabilitation Outcomes Research (CROR) at the Rehabilitation Institute of Chicago (RIC) and the University of Washington decided to propose modifications to the NIH Toolbox as part of CROR’s new Rehabilitation Research and Training Center, a five-year study aimed at developing cognitive and environmental factor measures to monitor community participation.

The project, “Enhancing the NIH Toolbox’s Accessibility and Usability to Support the Inclusion of People with Disabilities in Health Research,” began in October 2009 and will run for 18 months, said Magasi, who is the principal investigator.

The project’s main objectives are to evaluate the accessibility and usability of the NIH Toolbox for people with stroke, spinal cord injury, and traumatic brain injury; develop and evaluate reasonable accommodations for these populations; and evaluate best practice guidelines for administration of the NIH Toolbox.

“We think the inclusion of people with disabilities leads to better science... It’s also a civil rights issue. They have a fundamental right to be included”

Dr. Susan Magasi, Principal Investigator

Researchers have completed training, developed protocols for reviews of usability, and have begun to recruit 30 individuals for testing – 10 people from each rehabilitation population. Testing will take place at Northwestern University and at the University of Washington, Magasi added.

“We will do the usability evaluations first and then work with a team of experts to develop a standard set of reasonable accommodations for Toolbox

administration,” she said. “Then, we will re-test to determine whether these modifications made a difference.”

Data from the project will be used in the next component of the RRTC, led by David Tulsy, PhD, vice president of outcomes and assessment research and director of the Spinal Cord Injury Research Laboratory at the Kessler Foundation Research Center. In this second project, Tulsy and other researchers will evaluate the Toolbox, which is performance-based, in the context of other measures of cognition.

“The NIH Toolbox was developed for the general population, and therefore we need the first project to adapt it and make it usable by people with disabilities,” Tulsy said. “Our project will use the results and provide validity data that may be the first step in making these adaptations.”

Inclusion is imperative

Although everyone recognizes the potential benefits of measures that can be used by all people, concerns about feasibility, practicality and scientific rigor have limited researchers’ willingness to change their measures.

“Everyone wants to come out with the best, most efficient and most rigorous measures, and there are concerns that making modifications will compromise the integrity of the measures,” said Magasi. “I am hopeful that we can change their minds.”

She is enthusiastic that this project, as part of CROR’s Rehabilitation Research and Training Center, will allow the researchers to explore the issue of accessibility in depth while remaining actively involved with the NIH Toolbox.

“We will be testing new ideas while maintaining important working relationships with the Toolbox development team,” she said. “Those close connections are important and will make our research much more relevant. For example, we’ve been able to advocate for a computer-input device that minimizes the motor demands for the cognition tests, and we will be among the first to evaluate the impact that modifications have on the system’s usability for and by people with disabilities.”

One of the main tasks facing them, said Magasi, will be to educate researchers on what having a disability means and how it can affect people in different stages of their lives. For example, disability often increases with age and if researchers are tracking people over time, they may see individuals develop age-related conditions such as glaucoma or long-term effects of diabetes.

“We think the inclusion of people with disabilities leads to better science because you get a much better cross-section of the population, and because disability is part of normal living,” Magasi said. “We believe strongly that it is the right thing to do to ensure that people with disabilities are able to participate and benefit from federally-funded research. It is also a civil rights issue. They have a fundamental right to be included.”

“Measurement in Healthcare” Lectures Available Online

As part of the RRTC on Rehabilitation Outcomes and Effectiveness, the Center for Rehabilitation Outcomes Research is pleased to present “Measurement in Healthcare.”

This three-part lecture series aims to identify the importance of measurement issues in health outcomes, guide instrument development to assure test validity, and describe how Rasch analysis may be used to create a “ruler” that can help make meaningful comparisons across measurements.

These lectures are now available for free at any time at:

<http://www.ric.org/research/centers/cror/edandtrain.aspx>

Archived using Adobe Connect Pro™ presentation software, the lectures consist of PowerPoint presentation accompanied by the speaker’s lecture.

For more information on this lecture series, please contact Holly DeMark at hdeMark@ric.org. For information about Adobe Connect Pro, get a quick overview at: http://www.adobe.com/go/connectpro_overview

Lecture 1: Why Measurement Issues Matter When Measuring Outcomes by Trudy Mallinson, PhD, OTR/L, NZROT

An introduction to measurement, emphasizing the importance of unidimensionality, hierarchical ordering, and equal interval units. Issues of measurement in rehabilitation are discussed.

Lecture 2: Instrument Development, by Allen W. Heinemann, PhD
Instrument development in healthcare measurement and the importance of test validity. Heinemann also describes an example of this process in the development of the Community Participation Indicators tool.

Lecture 3: Measurement and Rasch Analysis by Anne Deutsch, RN, PhD, Dr. Deutsch describes how Rasch analysis may be used to create a “ruler” for measurement using data collected from a set of test items or a set of items that use a rating scale.

Dr. Susan Magasi (Continued From Page One)

(now Northshore University Healthcare Systems). “At CORE, I was able to integrate my background in occupational therapy and measurement to assume the role of co-investigator and domain manager in the NIH Toolbox Assessment for Neurological and Behavioral Function.” The NIH Toolbox is a 5-year contract to develop a unified set of performance-based measures of motor, cognitive, sensory and emotional health and function for use in the general public ages three to 85 years (See full description on *Page 3*). The NIH Toolbox uses a variety of testing formats, including computer-administered, computer-adapted, and non-computer performance measures.

“It immediately became clear to me that many of the measures were tapping into constructs other than what they were designed to measure. For example, the cognition measures had very high visual and motor task demands and would therefore disadvantage people with disabilities.” Magasi, drawing on her disability studies and occupational therapy backgrounds, advocated for greater attention to accessibility issues and assumed the role of co-chair of the Toolbox accessibility committee.

While the NIH Toolbox was not intended for clinical use, there is tremendous interest in the research community to use it in a variety of clinical populations, including many groups seen in inpatient rehabilitation. “When David Tulskey proposed to include the NIH Toolbox as part of RIC’s RRTC on Outcome Measurement, it struck me as an ideal opportunity to push for accessibility, to ensure that not only are we making a set of measures that meet federal guidelines, but that we are truly ensuring that the spirit of the law and the ADA are reflected in outcome measurement by ensuring that they are accessible and usable for people with disabilities.”

Dr. Magasi and co-investigator Mark Harniss from the University of Washington developed a research protocol for usability testing in rehabilitation samples of people with spinal cord injury, traumatic brain injury and stroke. The aim of this project is to develop a set of standardized set of reasonable accommodations that improve access to the Toolbox without compromising the validity of the individual measures.

Since the FDA created its draft guidance for patient-reported outcomes in 2006, there has been an increased emphasis on patient input to determine and define end-points for clinical trials; qualitative methods are increasingly important in the instrument development process. Dr. Magasi has leveraged her expertise in qualitative methods to develop an important niche in the Patient Reported Outcomes Measurement

Information System (PROMIS), another major measurement effort funded as part of the NIH Roadmap Initiative. She oversees the qualitative core within the PROMIS Statistical Center (David Cella, PI). “In this role, I collaborate with PROMIS researchers from around the country who are developing patient-reported outcome measures on everything from family engagement and stress (Christopher Forrest, PI) in children to self-efficacy in adults with neurological impairments (Lisa Shulman, PI). It’s my role to ensure and enhance the use of rigorous qualitative methods across the PROMIS network.”

Dr. Magasi credits the training and relationship building that were part of her post-doctoral fellowship as key to her ability to engage in high profile research and measurement initiatives. In 2009, when Dr. David Cella was offered the opportunity to create a new academic department within Northwestern University’s Feinberg School of Medicine, Dr. Magasi was invited to join the department and bring her leadership to the NIH Toolbox’s accessibility team.

“I jumped at the chance to join the Department of Medical Social Sciences,” said Magasi. It is exciting to be part of something new and unique. The department is inter-disciplinary and pulls together social scientists from a variety of backgrounds to examine different aspects of health, healthcare and medicine. The opportunities to work with many groups within RIC and Northwestern University continue to expand.”

As her career develops, Dr. Magasi works hard to build collaborative relationships with the disability community in Chicago. She plans to launch an independent line of community-based research that examines the relationships between healthcare access and patient-reported outcomes among women with disabilities. She invites us to “check back in a couple of years and to see how I pull together these seemingly disparate threads of interest to integrate state-of-the-science outcome measurement, including PROMIS measures, with the principles of community-based participatory research to document the barriers to healthcare on disabled women’s health and participation.”



“Dr. Magasi came to CROR as a post-doctoral fellow in 2006, with a commitment to social justice for people with disabilities...”

Acknowledgements

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If you missed previous editions, archived copies of our quarterly newsletter are available online:

Visit <http://www.ric.org/cror> and click on “Newsletters.”

Advisory Committee Members Help Kick off RRTC's First Year

On April 13, the Rehabilitation Research and Training Center on Improving Measurement of Medical Rehabilitation Outcomes held its first annual Advisory Committee Meeting in Chicago. The purpose of the meeting was to describe each research, training, and dissemination project in detail to the committee members, and discuss the plan of operation and evaluation.

The committee members provided valuable feedback from the various professional organizations and consumer groups represented by the group. We are grateful for their commitment to this project. Our committee is listed below:

Terrie Black, Association of Rehabilitation Nurses • **Susan Connors**, Brain Injury Association of America • **Charles Callahan**, Rehab Psych Div, American Psychological Association • **Margaret Rogers** and **Leora Cherney**, American Speech-Language-Hearing Association • **Marcel Dijkers**, Mount Sinai School of Medicine • **Glenn Fujitara**, University of Illinois-Chicago • **Robert Heaton**, University of California, San Diego • **Linda Holloway**, University of North Texas • **Andrew Imparato**, American Association of People with Disabilities • **Kurt Johnson**, University of Washington • **Deborah Lieberman**, American Occupational Therapy Association • **Susan Miller**, Centers for Medicare & Med-

icaid Services

• **Kenneth Ottenbacher**, University of Texas Medical Branch • **Mercedes Rauen**, Spinal Cord Injury Association of Illinois • **Amanda Reichard**, University of Kansas • **Joan Rogers**, University of Pittsburgh • **Jane Staller**, National Stroke Association • **Marieke Van Puymbroeck**, American Therapeutic Recreation Association • **Molly Wagster**, National Institutes of Health; • **Scott Ward**, American Physical Therapy Association • **Gregory M. Worsowicz**, Association of Academic Physiatrists • **Carolyn Zollar**, American Medical Rehab. Providers Association



Recent CROR Dissemination Activities

Manuscripts

Dobrez D, **Heinemann AW**, **Deutsch A**, Manheim L, Mallinson T. **Impact of Medicare's Prospective Payment System for Inpatient Rehabilitation Facilities on Stroke Patient Outcomes.** *American Journal of Physical Medicine and Rehabilitation*, 89, 198-204, 2010.

Durkin E, **Deutsch A**, **Heinemann AW**. **Inpatient Rehabilitation Facilities: Variation in Organizational Practice in Response to Prospective Payment.** *Medical Care Research and Review*, 67, 149-172. 2010.

Dobrez D, **Heinemann AW**, **Deutsch A**, Durkin EM, Almagor O. **Impact of Mental Disorders on Cost and Reimbursement for Patients in Inpatient Rehabilitation Facilities.** *Archives of Physical Medicine and Rehabilitation*. 2010 Feb;91(2):184-188.

Granger CV, Markello SJ, Graham JE, **Deutsch A**, Reistetter TA, Ottenbacher KJ. **The Uniform Data System for Medical Rehabilitation Report of Patients with Traumatic Brain Injury Discharged from Rehabilitation Programs in 2000 – 2007.** *American Journal of Physical Medicine and Rehabilitation*, 2010; 89:265-278.

Larson E, **Heinemann AW**. **Rasch Analysis of the Executive Interview (The EXIT-25) and Introduction of an Abridged Version (The Quick EXIT).** *Archives of Physical Medicine and Rehabilitation*, 91, 389-394, 2010.

Mwachofi AK, Al-Assaf AF, **Heinemann AW**. **Factors Affecting Reduction of Gender Differences in Healthcare Coverage for Vocational Rehabilitation Clients with Disabilities.** *Women's Health Issues*, 2010; Jan-Feb;20(1):66-74.

Reistetter TA, Graham JE, Granger CV, **Deutsch A**, Ottenbacher KJ. **Utility of Functional Status for Classifying Community Versus Institutional Discharges after Inpatient Rehabilitation for Stroke.** *Archives of Physical Medicine and Rehabilitation*, 2010; 91:345-350.

Presentations

Deutsch A. **Racial and Ethnic Differences in Rehabilitation Outcomes for Medicare Patients with Stroke and Brain Injury.** 5th Annual Brain Injury Rehabilitation Conference Sponsored by the Rehabilitation Center at Scripps Memorial Hospital Encinitas, La Jolla, CA; March 26, 2010.

Deutsch A. **Medicare's Post-Acute Care Payment Reform Demonstration.** Center for Rehabilitation Sciences 2009-2010 Seminar Series. University at Texas Medical Branch. Galveston, TX; March 30, 2010.

Heinemann, AW. **The Functional Independence Measure (FIM): Measurement Properties and Utility in Assessing the Effectiveness of Rehabilitation Therapies**, Quebec Rehabilitation Institute and Laval University, February 11, 2010.

Heinemann, AW. **Community Participation Measurement: Item Response Theory (IRT) and Computer Adaptive Testing (CAT) Applications**, Quebec Rehabilitation Institute and Laval University, February 11, 2010.

Heinemann, AW. **Past, Present and Future on Outcome Measures in Rehabilitation**, Quebec Rehabilitation Institute and Laval University, February 12, 2010.

Abstracts

DeMark H, **Deutsch A**, **Heinemann AW**, Chen D. **Gender Differences in Rehabilitation Outcomes Among Older Patients with a Traumatic Spinal Cord Injury.** *Archives of Physical Medicine and Rehabilitation* 2009;90.

Ganesh SP, **Deutsch A**, Chen D, **Heinemann AW**. **Spinal cord Injury in Elderly Medicare Patients.** Poster presentation at the American Academy of Physical Medicine and Rehabilitation Annual Assembly. San Diego, CA; November 23, 2008. *Archives of Physical Medicine and Rehabilitation* 2008;89(11):E11.

Taylor C, **Deutsch A**, **DeMark H**, **Heinemann AW**, Magasi S, Papadimitriou C. **Public Reporting of Quality Information by Rehabilitation Hospitals.** *Archives of Physical Medicine and Rehabilitation* 2009;90.

White KC, **Deutsch A**, Chen D **The Prevalence of Morbid Obesity in Acute Inpatient Rehabilitation: A Review of the Medicare Database.** Presentation at the Association of Academic Physiatrists. Colorado Springs, CO; February 27, 2009. *American Journal of Physical Medicine and Rehabilitation* 2009;88(3) supplement 1:S48.

See more at: <http://www.ric.org/research/centers/cror/publications/index.aspx>