

Summer 2011: Measuring Function and Quality of Life

This summer, we give an update to a study that we first wrote about in Fall 2007. (Read the original article [here!](#)) Dr. Trudy Mallinson talks about preliminary results from the study, Equating Outcomes across Post-Acute Rehabilitation Settings, and their implications for policy and practice. We also describe a series of projects aiming to measure quality of life issues that impact patients with a spinal cord injury, stroke, or traumatic brain injury.

Inside you'll find a profile of our collaborator from Indiana University, Dr. Marieke Van Puymbroeck, and her work in therapeutic recreation. We also profile one of our own clinical research coordinators, Hsiang-Yi Tseng, an occupational therapist.

In addition, we highlight a pre-conference symposium on Quality Measures at the American Congress of Rehabilitation Medicine - American Society of Neurorehabilitation Annual Conference in Atlanta on October 12, 2011. Registration is still available!

For more information about our projects and educational opportunities, please visit our page at www.ric.org/cror. And don't forget to "like" us on [Facebook!](#)

Allen Heinemann, Director



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Dr. Marieke Van Puymbroeck, Recreational Therapist

Most people who have been through rehabilitation therapy remember two things—the pain and how tired they were when the sessions were over.

But what if rehabilitation was more like playing golf or taking a yoga class? What if patients could make progress while having fun?

Finding ways to make that happen is Marieke Van Puymbroeck's life calling. She is an associate professor of recreation therapy at Indiana University in Bloomington, Ind. She also is an advisory committee member of RIC's Rehabilitation Research and Training Center where she provides input from the field of recreational therapy.

"When you're doing something you enjoy, something you consider play, you may not recognize you're getting better at the same time," said Van Puymbroeck, who holds a master's degree in recreation therapy and a Ph.D. in rehabilitation science, both from the University of Florida. "Patients may actually forget they are working so hard. They enjoy it and they get function back."

Van Puymbroeck, 38, readily admits that some in the rehabilitation world consider her field more fun and games than serious therapy. But she says that getting people involved in sports and recreation as part of rehabilitation

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Measuring Quality of Life after a Stroke, Brain Injury, or Spinal Cord Injury

Her physicians at TIRR Memorial Hermann hospital have described U.S. Rep. Gabrielle Giffords' recovery from a serious brain injury as remarkable. After being shot in the head in January, Giffords is now communicating and walking on her own. She even made a surprise appearance in the U.S. House of Representative to cast a vote to raise the U.S. debt ceiling. But how does the 41-year-old Congresswoman from Arizona feel about her progress and her current quality of life?

These are the kind of questions that new quality of life measures developed by the Center for Rehabilitation Outcomes Research (CROR) are designed to answer. One survey assesses quality of life for patients with traumatic brain injuries. Another looks at the same issues for those with spinal cord injuries, and a third is focused on stroke survivors.

"We are critical of healthcare professionals for not communicating enough. This provides a means to do that in an easy and quick way."

Dr. David Victorson

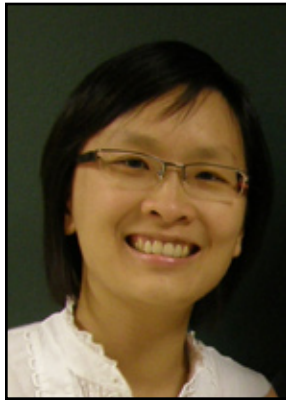
All three surveys have some things in common. They attempt to gauge a patient's pain level, difficulty performing daily activities, mental health and social well-being.

"Pain is a particularly good example," says Allen Heine-

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Hsiang-Yi Tseng, Clinical Research Coordinator



Hsiang-Yi Tseng can't take full credit for ending up in a field where she is both helping rehabilitation patients recover and creating new models to measure their progress. Her mother in Taiwan picked occupational therapy for Tseng after consulting some acquaintances who recommended it as a solid and great career for

her due to her patient and caring personality.

"Growing up in Taiwan, you were told to do your homework, listen to adults and don't ask questions," Tseng says. "I never thought about what I wanted to do. I just studied hard to get good grades."

Tseng got her bachelor's degree in 2001 and then worked in occupational therapy in Taipei for several years. Then she decided to push herself. "I basically wanted to know what else I could do," she says. "I was ready to see the world on my own and that's why I picked Chicago where I didn't know anyone."

Tseng had been accepted into a master's degree program in occupational therapy at the University of Illinois—Chicago. There she spent two years focused on the research side of the field, taking classes in statistics and analyzing data. While at UIC, she created a model to predict how people with developmental disabilities would fare based on their geographic location.

Using data already collected from Chicago and Buffalo, N.Y., Tseng found that patients in Buffalo used many more assistive devices such as walkers and communication boards than those in Chicago even when the patients had the same level of disability.

Some studies speculated that the colder weather in Buffalo might be the reason, but "I wasn't happy with that explanation," Tseng recalls. Some colleagues suggested she took a look at state spending on assist devices.

That turned out to be the key. "State budgets vary and New York had more funding. More money—more devices," Tseng says. "If there isn't money, you have limited accessibility to devices. I realized how policy decisions can really affect people's lives."

After finishing her masters in 2005 with a

grade point average of 3.92, Tseng could have gone on for her Ph.D. but decided she wanted to get some hands-on experience with occupational therapy in the U.S. The Rehabilitation Institute of Chicago hired her and Tseng found herself helping patients relearn how to perform the activities of daily life after they suffer both physical and cognitive declines due to various diseases. Activities like buttoning a shirt, getting out of tub or taking care of a baby are not the same tasks for them anymore.

"Our goal is to help them get back to their lives," says Tseng, 31.

As rewarding as that was, Tseng found herself missing the research side—the challenge of modeling data and analyzing it. She asked Trudy Mallinson, a researcher and occupational therapist at RIC, to let her know if any opportunities came up.

One did, and Tseng began working on a study Mallinson was heading comparing outcomes for rehab patients depending on where they were treated—at a hospital, skilled nursing facility or at home.

"She has really been so self-motivated and such a self-starter," Mallinson says of Tseng. "She has taken classes on her own time and made an effort to learn as she goes along. She has a great work ethic and great attention to detail."

By 2008, Tseng found herself splitting her time almost evenly between research and clinical work. Last year, she spent 75 percent of her time on research.

Still, she has no desire to give up working directly with patients. And her multi-cultural experience has convinced her that she is more comfortable working in the U.S. where most patients are eager to regain their independence.

"I was ready to see the world on my own and that's why I picked Chicago where I didn't know anyone."

"In Taiwan, families are close by or they hire people to do many of their daily activities. Hiring caregivers is very affordable. They cook, they help you get dressed, they do grocery shopping," Tseng says.

"In Taiwan, patients want to be able to stand and walk again. Bathing themselves or getting on and off the toilet is not their first priority."

"Here I feel like I practice OT as it's meant to be."

Recovery of Function Across Rehabilitation Settings

If you were having a knee replaced or recuperating from a stroke, where would you like to recover after leaving the acute care hospital—in an inpatient rehabilitation facility (IRF), a skilled nursing facility (SNF) or at home? More importantly, where would you recover quickest with the best results?

That's what the Center for Rehabilitation Outcomes Research (CROR) set out to discover in 2004 with a five-year grant from the National Institute on Disability and Rehabilitation Research (NIDRR). But because Congress changed the rules of the healthcare game while the study was ongoing, researchers were still collecting data this spring, about 18 months longer than expected. NIDRR has extended the study through November.

"We didn't anticipate that Congress would have such influence. They changed the rules about access to care at IRFs and nursing homes," said Allen Heinemann, director of CROR. "Transferring many joint replacement patients to a SNF from acute care is now the standard of care unless they have comorbidities or some other complications that makes them more appropriate for care at an IRF."

He added: "It didn't allow us to define patient populations in as pure a way as we planned, but we were studying real patterns of care as they exist. If it doesn't reflect what Medicare would pay for, it's not relevant."

Another issue that complicated the task of comparing results across the three settings was the fact that Medicare mandates that each type of rehabilitation setting use a different assessment instrument to measure patient progress. Home health care agencies use the Outcome and Assessment Information Set (OASIS) while SNFs use the Minimum Data Set (MDS) and IRFs use the Inpatient Rehabilitation Facility Patient Assessment Instrument (IRF-PAI).

Trudy Mallinson, the principal investigator on the project, says the goal is to create a "crosswalk" that allows clinicians and researchers to compare scores from one setting and assessment to another. The data are being analyzed using Item Response Theory (IRT), a measurement method that converts raw scores from different instruments into equal-interval measures. This puts scores from the three assessments in the same metric. The key, however, is lining up the "zero" point on all three assessments, she says. That is why the investigators needed to collect all three assessments from patients in all three settings.

Although the current study involves just 547 patients with hip fractures, joint replacements or stroke, "What we're really interested in doing, and what IRT enables us to do, is connect this data set to a large set of Medicare patients so we can look across this large population and see what happened to them."

Already, the findings are intriguing and may disappoint some who believe that intensive therapy in an IRF is almost always the best option.

For those recovering from hip and knee replacements, home health care turned out to be the optimal setting, after controlling for important differences among patients like functional status at admission and comorbidities. "Patients going directly home from the hospital did best if they were not medically complex and had somebody at home with them," said Jillian Bateman, project manager and trainer of the nurses in the 21 facilities that collected data. The joint replacement patients averaged 75.6 years of age.

That result makes sense to Mallinson. "If you're at home and you want to move from a chair to your bed, you do it. The environment encourages you. You're not waiting for someone to help you or take you to therapy to practice the transfer first," she says.

For sicker patients, an IRF setting with 24-hour medical and nursing care may be needed, but the intensive therapy provided there "did not seem to provide additional improvement in functional recovery," the team wrote in a May 2011 article in the *Archives of Physical Medicine and Rehabilitation*.

However, the story appears quite different for patients recovering from hip fractures. In preliminary analyses, home health-care setting patients had much lower functional status at discharge, when compared with patients in IRFs or skilled nursing facilities. The RIC researchers are conducting further analyses to determine what role the amount of therapy patients received has in these findings. "We found wide variation in the amount of therapy patients in different settings received," said Mallinson.

In these preliminary findings, functional outcomes for patients at the other two settings, IRFs and SNFs, were basically the same after controlling for other factors. The research team is analyzing the data on hip fracture patients and working on an article that they plan to submit to a peer-reviewed journal.

The study also focused on patients who were recovering from stroke. But there the researchers encountered an unexpected obstacle—there weren't many stroke patients admitted to SNFs directly from acute care hospitals. Patients in SNFs received almost the same amount of therapy as patients who were recovering in an IRF, but it was spread over a longer period of time.

The study of patients in an IRF averaged 15 days. Skilled nursing stays were 24 days on average and home health care involved care over an average of 28 days.

The researchers are now ready to begin analyzing the cost and benefits related to caring for patients in the three settings and hope to have that work completed this fall. They plan to wrap up the entire study by the end of the year.

"The early blush is that we'll see for many orthopedic patients that SNFs provide sufficient care to achieve functional outcomes similar to inpatient rehabilitation at much lower cost," Heinemann says.



Dr. Trudy Mallinson,
Principal Investigator

ORIGINAL ARTICLE

A Comparison of Discharge Functional Status After Rehabilitation in Skilled Nursing, Home Health, and Medical Rehabilitation Settings for Patients After Lower-Extremity Joint Replacement Surgery

Trudy R. Mallinson, PhD, OTR/L, NZROT, Jillian Bateman, OTD, OTR/L, Hsiang-Yi Tseng, MA, OTR/L, Larry Manheim, PhD, Orin Almagor, MA, Anne Deutsch, PhD, CRRN, Allen W. Heinemann, PhD, ABPP

ABSTRACT: Mallinson TR, Bateman J, Tseng H-Y, Manheim L, Almagor O, Deutsch A, Heinemann AW. A comparison of discharge functional status after rehabilitation in skilled nursing, home health, and medical rehabilitation settings for patients after lower-extremity joint replacement surgery. *Arch Phys Med Rehabil* 2011;92:712-20.

Objective: To examine differences in outcomes of patients after lower-extremity joint replacement across 3 post-acute care (PAC) rehabilitation settings.

Design: Prospective observational cohort study.

Setting: Skilled nursing facilities (SNFs; n=5), inpatient rehabilitation facilities (IRFs; n=4), and home health agencies (HHAs; n=6) from 11 states.

Participants: Patients with total knee (n=146) or total hip replacement (n=84) not related to traumatic injury.

Interventions: None.

Main Outcome Measure: Self-care and mobility status at PAC discharge measured by using the Inpatient Rehabilitation Facility Patient Assessment Instrument.

Results: Based on our study sample, HHA patients were significantly less dependent than SNF and IRF patients at admission and discharge in self-care and mobility. IRF and SNF patients had similar mobility levels at admission and discharge and similar self-care at admission, but SNF patients were more independent in self-care at discharge. After controlling for differences in patient severity and length of stay in multivariate analyses, HHA setting was not a significant predictor of self-care discharge status, suggesting that HHA patients were less medically complex than SNF and IRF patients. IRF patients were more dependent in discharge self-care even after controlling for severity. For the fall discharge mobility regression model, urinary incontinence was the only significant covariate.

Conclusions: For the patients in our U.S.-based study, direct discharge to home with home care was the optimal strategy for patients after total joint replacement surgery who were healthy and had social support. For sicker patients, availability of 24-hour medical and nursing care may be needed, but intensive therapy services did not seem to provide additional improvement in functional recovery in these patients.

Key Words: Arthroplasty, replacement, hip; Arthroplasty, replacement, knee; Recovery of function; Rehabilitation; Skilled nursing facilities.

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LOWER-EXTREMITY JOINT replacement is a rapidly growing surgical procedure in the United States.¹ Between 1990 and 2002, the rate of primary THRs per 100,000 persons increased by approximately 50%, while the rate of primary TKRs increased almost 3-fold.² In 2003, a total of 205,500 primary THRs and 402,100 primary TKRs were performed in the United States. During the same year, 38,000 revision THRs and 32,700 revision TKRs were performed.³ The aging of the population, increased rates of obesity, and increased prevalence of arthritis is creating an increased demand for lower-limb joint replacements.⁴

Immediately after acute hospital discharge, 87% of Medicare beneficiaries receiving lower-extremity joint replacement surgery use postacute rehabilitation services. Approximately 37% of these patients use SNF care, 19% use IRF care, 36% return home with home health care, and 7% receive rehabilitation in

Dr. Marieke Van Puymbroeck (Continued from page one)

also reengages them with their communities.

“When people come home from the hospital, often times they are really isolated. Either places aren’t accessible to their wheelchair or walker so they just don’t go out.”

Van Puymbroeck believes that recreational therapy is going to be particularly important for a growing group of rehabilitation patients - veterans from Afghanistan and Iraq, many of whom are young and strong despite their injuries. The U.S. Department of Veterans Affairs is one of the biggest employers of recreational therapists in the country, she says.

When it comes to a recreational activity that can help patients with limitations from breast cancer to stroke, yoga is hard to beat, Van Puymbroeck says.

“Yoga is really great because it can be modified for people wherever they are. With breast cancer, we focused on the chest area, loosening up scar tissue. That was fantastic,” she said.

Van Puymbroeck also studied a group of older, very active adults who exercised four or five times a week. She discovered that despite their activity level, the study participants were very fearful of poses that involved lying down on the floor. They preferred standing poses, and they were allowed to use a chair to assist with their balance.

Eventually, though, the participants became more comfortable with the idea they could get up and down without risking a serious fall. Van Puymbroeck saw the

same phenomenon when she studied yoga’s effect on stroke survivors. They also were very afraid of falling and not being able to regain their balance.

The yoga sessions have proved so popular with the stroke survivors that 100 percent have indicated they want to continue. Van Puymbroeck and her colleagues are extending the study for four more weeks at their request.

“We’ve seen that perceived constraints have been significantly reduced in all the studies. People start to look at things with a more open mind and then they’re willing to try new things.”

Allen Heinemann, director of the RRTC, says Van Puymbroeck’s input has been invaluable. “She has encouraged us to think broadly about rehabilitation team members’ interests and contributions. Therapeutic recreation focuses on community participation and how patients can develop skills to participate in additional activities.”



The Retirement Research Foundation awards grant to support Rehabmeasures.org

Rehabmeasures.org is an online database designed with the clinician in mind. As a National Institute on Disability and Rehabilitation Research-funded initiative, our mission is to increase the appropriate use of outcome measures in rehabilitation medicine by providing clinicians with high quality, concise instrument reviews. Since our launch in January 2011, thousands of visitors from over 50 countries have utilized the rehabmeasures.org database to access instrument reviews, download copies of measures and learn more about the role of measurement in rehabilitation medicine.

The rehabmeasure.org initiative is led by Dr. Allen Heinemann, Director, Center for Rehabilitation Outcomes Research (CROR). We are delighted to announce the award of a generous grant made by The Retirement Research Foundation that will enable us to include geriatric-specific outcome measures to the rehabmeasures.org database. Over the next three years we will add a number of instruments designed to measure various aspects of conditions commonly treated in geriatric rehabilitation. Dr. Linda Ehrlich-Jones, Dr. Jennifer Moore, and Jason Raad were involved in developing the competitive application along with Ebony Jones, MBA, Research Administrator. The three specific aims of the grant include:

- 1) Increase the number of instruments in the Rehabilitation Measures Database relevant to assessment of older individuals undergoing rehabilitation, with diagnoses such as osteoarthritis, cognitive impairments, cardiopulmonary disease, Parkinson’s disease, urinary incontinence and balance deficits and falls;
- 2) Customize the website with hover text that defines important research terms and tips for clinical application of information; and
- 3) Provide online and live continuing education courses for rehabilitation professionals who primarily treat older adults. Course information will focus on outcomes measure utilization, instrument selection (using the Rehabilitation Measures Database), administration and progress monitoring of older individuals undergoing rehabilitation. The content of the courses will focus entirely on assessment of the older adults and translating the information into clinical practice, and will address barriers to behavior change that limit routine assessment with standard instruments.

We welcome your nominations for instruments to be included in our growing database! We invite you to visit www.rehabmeasures.org to see what we’ve already done, then visit [CROR’s Facebook page](#) to make your recommendations! We look forward to hearing from you!

Measuring Quality of Life (Continued from page one)

mann, director of CROR. “In the past we used a one-to-10 scale visual analog. We assumed that the unlabeled scale points were interpreted the same by everybody. Now, we’re asking more detailed questions about pain and anxiety and function, and we’ve administered the questionnaire to a large group of people.”

The work is an extension of a previous five-year project funded by the National Institute of Neurological Disorders and Stroke (NINDS) to create “a clinically relevant and useful health-related quality of life measurement system for major neurological diseases that affect the U.S. population.” That study, which concluded in 2009, was led by David Cella, a Professor in the Department of Medical Social Sciences at Northwestern University’s Feinberg School of Medicine.

The resulting instrument is referred to as Neuro-QOL, and it can be used for patients with neurological conditions as diverse as stroke, Parkinson’s disease, brain tumors and multiple sclerosis.

Before Neuro-QOL, clinicians who wanted to know how patients felt about their life after rehabilitation had little to work with beyond Short Form 36 of the Medical Outcomes Survey, a set of 36 questions

developed by the RAND Corp. that asks patients to rate themselves in areas such as how much energy they feel and to what extent pain interferes with their normal activities. The 1980s saw the advent of the EuroQOL, a much shorter instrument that measures five dimensions: mobility, self-care, usual activities, pain or discomfort and anxiety or depression. Patients were asked to rate themselves in one of three categories on each item: no problem; some problems; extreme problems.

“It’s much simpler to administer, but there’s a tradeoff between precision and administrative burden. It takes more time to answer more questions,” explains Allan Kozlowski, a post-doctoral fellow who is re-analyzing data from previous quality-of-life studies.

The three new quality of life measures have the advantage of being more precise and less burdensome than previous measures because they can be administered through computer-adaptive technology.

“We want these to be smart tests,” explains David Tulsy, a clinical psychologist and director of the Center for Rehabilitation Outcomes and Assessment Research at the University of Michigan who is heading the quality of life research for those with traumatic brain and spinal cord injuries.

“When an item is given, the computer will estimate how the person is functioning based on one item. Then the computer will say, “This person is high functioning so we can skip over low-functioning questions.”

It’s the same sort of technology now used to administer academic placement tests such as the SAT, the LSAT and the MCAT. When test

takers get an answer wrong, the computer provides an easier question. When they get one right, the next question is harder.

“The benefit is you could have 100 items on depression or fatigue and pain—too much to give any one person. But after five or 10 items, the computer is pretty accurately estimating the person’s functioning,” Tulsy said. “Rather than give the other 95 items, you’re much better off going on to something else like fatigue or anxiety or mobility.”

Researcher David Victorson, who is heading the study into quality of life for stroke survivors, used the same computer-adaptive approach. He believes that by making the questionnaire briefer, it will be used more frequently and will yield much more information from patients.

The surveys are mainly designed to help clinicians and researchers, but there is a patient focus as well. “On one level, we believe these measures will give voice to patients. They will help physicians, policymakers and hospitals know what is happening to patients before, during and after procedures,” says Victorson, who holds a Ph.D. from the University of Miami and is an assistant professor in Medical Social Sciences at the Feinberg School.

“We are constantly critical of healthcare professionals for not communicating long enough or well enough. This provides a means to do that in an easy and quick way.”

In the best possible outcome, patients will get more information and the pros and cons of various procedures and treatments, and institutions will gather more data about the cost/

benefit ratio of procedures and treatments.

Neuro-QOL took five years to develop and gather initial data to demonstrate its validity. The three new measures took a little more than a year. Victorson is now waiting for a second phase of funding that will allow him to roll out the stroke quality of life measure in a way that will engage so-called early adopters and the neurological research community.

In the meantime, Victorson will be presenting papers at major neurology meetings around the country.

Kozlowski, a post-doctoral fellow in health services research at Northwestern and a researcher on the quality of life projects, believes the stroke-specific version of Neuro-QOL may help clinicians because “the questions are targeted toward symptoms and impairments that happen with a specific condition. It will give you a more precise score in terms of the quality of life of someone living with the consequences of stroke.”

As part of his research, Kozlowski is evaluating the stroke quality of life scale administered to 100 stroke survivors and 100 proxy respondents who were their partners, family members or friends. The good news is that spouses, friends and parents tend to over estimate the impairment or limitations on activities for the patients compared with how the patients themselves felt.

“All three surveys have some things in common: They attempt to gauge a patient’s pain level, difficulty performing daily activities, mental health and social well-being.”

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.”

Upcoming Conference on Quality Measures for Rehabilitation: Policy, Provider and Patient Perspectives

Dr. Anne Deutsch is pleased to announce a pre-course to the American Congress of Rehabilitation Medicine - American Society of Neurorehabilitation Annual Conference in Atlanta this October. "Quality Measures for Rehabilitation: Policy, Provider and Patient Perspectives," will be held Wednesday, October 12, 2011 at the Hyatt Regency Atlanta.

This course is a timely addition to the national conversation: The Patient Protection and Affordable Care Act of 2010 requires the Secretary of Health and Human Services to publish quality measures for inpatient rehabilitation hospitals and units by October 1, 2013 and data on these quality measures will be submitted to CMS starting in fiscal year 2014.

The course will begin with a review of the key characteristics of a quality measure, including the review criteria (importance, scientific acceptability, usability and feasibility) used by the National Quality Forum.

The second segment will include a review of the current status of quality measures from several perspectives. Dr. Barbara Gage will discuss the public policy perspective. Ms. Suzanne Snyder will discuss work underway by the rehabilitation industry through the Quality Committee of the American Medical Rehabilitation Providers Association (AMPRA), and Ms. Holly Neumann will summarize research describing the public's response to rehabilitation quality measures.

The third segment of the course will focus on data collection and data analysis challenges. This will include presentations focused on several case-mix adjustment approaches and challenges in defining adverse events occurring in inpatient rehabilitation programs.

The final segment of the course will include a panel of researchers who will discuss possible future policy changes that would affect rehabilitation care and potential research opportunities related to these changes. Topics include proposals that bundle acute and post-acute care presented by Dr. Gerben DeJong, updates on the CARE tool, and potential unintended consequences. Participants will have time for discussion with course faculty.

Registration:

Please visit www.acrm.org to find out about registration. For more information about the pre-course, please contact Dr. Deutsch at adeutsch@ric.org.



Recent CROR Dissemination Activities

Manuscripts

Babbitt E, **Heinemann AW**, **Semik P**, Cherney L. **Psychometric Properties of the Communication Confidence Rating Scale for Aphasia (CCRSA):Phase 2.** *Aphasiology*, iFirst, 2011, 1-9.

Bogner J, Whiteneck G, Corrigan J, Lai JS, Dijkers MP, **Heinemann AW**. **Comparison of Scoring Methods for the Participation Assessment with Recombined Tools – Objective.** *Arch Phys Med Rehab*, 2011;92:552-63.

Chen Y, **Deutsch A**, DeVivo MJ, Johnson K, Kalpakjian C, Nemunaitis G, Tulsy D. **Current Research Outcomes from the Spinal Cord Injury Model Systems.** *Arch Phys Med Rehab*, 2011;92:329-331.

Mallinson TR, **Bateman J**, **Tseng H-Y**, Manheim L, Almagor O, **Deutsch A**, **Heinemann AW**. **A Comparison of Discharge Functional Status After Rehabilitation in Skilled Nursing, Home Health, and Medical Rehabilitation Settings for Patients After Lower-Extremity Joint Replacement Surgery.** *Arch Phys Med Rehab*, 2011;92:712-20.

Heinemann AW, Lai JS, Magasi S, Hammel J, Corrigan JD, Bogner J, Whiteneck GG. **Measuring Participation Enfranchisement.** *Arch Phys Med Rehab*, 2011;92:564-71.

Whiteneck GG, Bogner JA, **Heinemann AW**. **Advancing the measurement of participation.** *Arch Phys Med Rehab*, 2011;92:540-1.

Presentations

Deutsch, A & DeMark, H. **Health Literacy: Best Practices for Communicating with Patients.** Webinar sponsored by CARF International. July 21, 2011

Deutsch A. **Successes and Challenges in Implementing NIDRR Capacity Building Grants: Switzer Fellowship at the Research Capacity Building Summit: Critical Conversations on Repositioning NIDRR's Investments for the Future.** Sponsored by the National Institute on Disability and Rehabilitation Research, Alexandria, VA, July 21, 2011.

See more at:

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



Rehabilitation Institute of Chicago



FELLOWSHIP IN HEALTH SERVICES RESEARCH FEINBERG SCHOOL OF MEDICINE NORTHWESTERN UNIVERSITY

The Institute for Healthcare Studies and the Department of Physical Medicine and Rehabilitation of Northwestern University's Feinberg School of Medicine, anticipate the availability of post-doctoral health services research fellowships. These two-year, full-time fellowships provide an opportunity for individuals who have completed an M.D. or Ph.D. to gain expertise and experience in health services and outcomes research, with the goal of preparing fellows for a career in health services and outcomes research. Program graduates will help ensure that there are adequate numbers of highly trained individuals to carry out the Nation's health services research agenda, with a focus on improving quality and safety of healthcare, enhancing access and healthcare equity, and appraising the effectiveness of healthcare expenditures and health policy. Positions preferably begin between July and September 2012. Research is centered on the following topical areas:

- Disability and Rehabilitation
- Healthcare Equity
- Patient Safety
- Healthcare Quality
- Healthcare Communication
- Health Services and Outcomes Research
- Health Policy
- Healthcare Economics and Comparative Effectiveness

The major clinical areas for research include general internal medicine, maternal and child health, health of persons with disabilities, hospital medicine, emergency medicine, psychiatry and behavioral sciences, transplantation surgery, and rheumatology. The fellowship requires enrollment in one of the following degrees: MS in Health Services and Outcomes Research, MS of Public Health, MS in Healthcare Quality and Patient Safety, MS in Epidemiology and Biostatistics, or MS in Clinical Investigation.

Information is available at <http://www.medschool.northwestern.edu/ihs/education/index.html>.

The fellowship program builds on the synergy between several Northwestern University departments, schools and organizations, including Feinberg School of Medicine Departments of Medicine (Divisions of General Medicine, Hospital Medicine, Gastroenterology), Pediatrics, Obstetrics and Gynecology (Maternal Fetal Medicine), Physical Medicine and Rehabilitation, Emergency Medicine, Preventive Medicine, Psychiatry and Behavioral Sciences, Surgery (Transplantation) and the Northwestern University Kellogg Graduate School of Management, Robert H. Lurie Cancer Center, the Buehler Center on Aging, the McCormick School of Engineering and Applied Sciences, and the Rehabilitation Institute of Chicago.

We are particularly interested in candidates who share an interest in rehabilitation outcomes research and have an interest in contributing to the Rehabilitation Research and Training Center on Improving Measurement of Medical Rehabilitation Outcomes
(<http://www.ric.org/research/centers/cror/projects/RRTCImprovingMeasurement/RRTC-Improving.aspx>).

Applicants should submit their curriculum vitae, detailed statement of career objectives and research interests, official graduate transcripts, and two letters of recommendation to Allen Heinemann, PhD, Co-Chair, Executive Committee, Fellowship in Health Services Research, Rehabilitation Institute of Chicago, 345 E. Superior Street, Chicago, IL 60611 (a-heinemann@northwestern.edu).

We encourage applications from women, minorities, and persons with disabilities. Northwestern University is an affirmative action, equal opportunity employer.