

Upcoming Conference

Join us for a conference on Improving Efficiency in Health Outcome Measurement on Saturday, March 28, 2009. RIC will be hosting this event, but sites may also participate via live video conference. See *Page 6* for more information.

Collaborating with Nurses

CROR proudly collaborates with a number of RIC nurses. Read about nurse roles in CROR research projects on *Page 3*.

Our Publications

Highlights of publications from our Health Services Research project on the Impact of Medicare's Prospective Payment System on *Page 7*.

Fall 2008: Importance of Nurses in Outcomes Research

In this issue of CROR Outcomes, we highlight the important contribution that nurses make to outcomes research. RIC was the first rehabilitation hospital to receive Magnet Status designation, and nurse involvement in research projects plays a significant role in that achievement. Read about the Magnet application process, and CROR projects on which nurses serve key roles.

We also share information about CROR conferences; Our "International Symposium on Measurement of Participation in Rehabilitation Research"

was a great success, and our hope is that it results in a permanent networking group within the American Congress of Rehabilitation Medicine. Our next conference focuses on "Improving Efficiency in Health Outcome Measurement." See inside for more details.

RIC honored Michael L. Keiser, out-going Board of Directors Chair during the RIC annual Board meeting in November with "Thanks Mike" caps. "Welcome Jude!" caps (pictured, right) were distributed to recognize incoming Board Chair, M. Jude Reyes.



CROR appreciates the on-going support of outcomes research by RIC's Board.

Allen Heinemann, Director

RIC's Magnet Status Designation Celebrates Nursing Excellence

In 2005, the Rehabilitation Institute of Chicago (RIC) achieved Magnet Status designation from the Magnet Recognition Program – a four-year distinction that indicates nursing excellence and is awarded to less than two percent of healthcare organizations in the country.

RIC, the first freestanding rehabilitation hospital in the country to receive this prestigious designation, was recognized for promoting an environment that fostered research and leadership opportunities for nurses. That nursing involvement is especially important in a post-acute care setting, according to Dr. Allen Heinemann, director of the Center

"CROR is committed to supporting the role of nurse researchers, and has benefited tremendously from the participation of nurses in many of our projects."

Dr. Allen Heinemann, Director

for Rehabilitation Outcomes Research (CROR) at RIC.

"Medical rehabilitation is a multi-disciplinary effort and that means nurses are a critical part of the team," Heinemann said. "CROR is committed to supporting the role of nurse researchers, and has benefited tremendously from the participation of nurses in many of our projects. I think there is an incredible amount of untapped potential to engage nurses even further in the future."

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Staff Profile:

Dr. Pamela Semanik

More than two decades ago, Dr. Pamela Semanik, a researcher at the Rehabilitation Institute of Chicago (RIC), stumbled upon a mystery that would indelibly shape her career. While working as a nurse practitioner in the rheumatology division at Northwestern Medical Faculty Foundation (NMFF) of Northwestern University (NU), Semanik noticed something striking about her patients.

Although some of them had ominous x-rays and severe arthritis, they were functioning at a much higher level than Semanik expected they would be. By contrast, some patients seemed able to do very little physically, but had levels of disease that was not consistent with their poor status.

"It became clear to me that the people who had severe disease, but were high-functioning, had something else working in their favor," said Semanik. "What was setting them apart, of course, was their determination to stay physically active in life, even when they didn't have access to a gym."

That realization marked a watershed moment for Semanik, whose interest in the importance of physical activity was further piqued when she worked as

...Continued on Page 6



Diane Rowles: Integrating Patient Care and Research



According to Diane Rowles, nurse practitioner in the Spinal Cord Injury program at the Rehabilitation Institute of Chicago (RIC), her twofold interest in research and clinical practice stretches back to the beginning of her career. Raised in Princeton, Illinois, Rowles earned

her bachelor's degree in nursing at St. Mary's College and began working as a staff nurse at RIC in 1985.

"There was always something that drew me to rehabilitation," said Rowles, who traced her interest in helping patients with a spinal cord injury all the way back to her grade school years. "It is just something I always wanted to do and I've pursued it all the way through."

Rowles enjoyed her clinical work in RIC's spinal cord injury program, but her interests soon began to expand to include research. After a SCI fellow enlisted Rowles' help on a study involving topical electrical stimulation, she was hooked on the research process.

"That was my very first time assisting in any project and after that, it went from being an assistant to being a coordinator and then later, to being a co-investigator," Rowles said. "RIC definitely encouraged my participation in research, and there were always positions available."

In 1996, while working at RIC, Rowles earned a master of science degree, specializing as an acute care nurse practitioner in critical care. As her involvement with SCI research continued, she also began to collaborate closely with the

Center for Rehabilitation Outcomes Research (CROR) at RIC. For instance, Rowles currently works with CROR on the Project to Improve Symptoms and Mood in People with Spinal Cord Injury (PRISMS), which is one component of the Midwest Regional Spinal Cord Injury Care System. The project requires interaction between patient care practitioners and researchers who can help determine eligibility and monitor patients who may be depressed.

"My role in the PRISMS study is basically to help out with the clinical parts of the research – seeing patients, performing physical exams, prescribing medications," Rowles explained. "I like to think of myself as a support person, especially when it comes to clarifying diagnoses and other

clinical issues, and I think my background with SCI allows me to be a good resource."

Rowles also collaborates with CROR on recruiting patients for the National Spinal Cord Injury Database. The database, which was created in 1973,

contains information from approximately 13 percent of new SCI cases nationally, and allows researchers to draw conclusions about treatments and best practices. Rowles explains the specific details of the database project to the patient, highlights any risks as well as the potential benefits, and gets their consent.

Although Rowles' title is nurse practitioner with the SCI program, she is quick to point out that her responsibilities include not only inpatient care and outpatient clinics, but also program development and a significant amount of research.

"For nurses, being involved in both the clinical and research side of things allows us to obtain an understanding that is richer and deeper than you would learn from just clinically caring for patients," Rowles added. "Research lets you confront those problems that nurses face on a daily basis and attempt to solve them."

"Research lets you confront those problems that nurses face on a daily basis and attempt to solve them"
Diane Rowles, MS, CRRN, Nurse Practitioner

RIC Well Represented at Annual Nursing Conference

More than 15 RIC-affiliated nurses attended the Association of Rehabilitation Nursing annual conference in San Francisco at the beginning of October. The primary goals for the ARN Annual Educational Conference are to increase attendees' awareness of new trends in rehabilitation health care and to support the continued growth of the specialty of rehabilitation nursing as well as that of individual nurses.

Kathy Stevens, RN, PhD spoke on "Application and Implementation of Evidence-Based Practice" during the dinner benefiting the Rehabilitation Nursing Foundation. In addition, four RIC nurses presented papers during the event.

Adrienne Sarnecki, RN, MS, spoke on "Staff Nurse Involvement in Managing Staffing in the Rehabilitation Setting;" Florence Denby, RN, MS, addressed "Opening the Path to Communication and Mobility for the Patient with Locked-In Syndrome;" Eileen French, RN, MS, presented a paper on "Taste Comparison of Fiber/Fruit/Juice Formulas



Photo (left to right): Eileen French, Sue Sullivan, and Florence Denby at the Association fo Rehabilitation Nursing annual conference

Used to Prevent and Treat Constipation;" and Janet McCarthy, RN, spoke about "Building an Electronic Bridge Linking Care Plans and Outcome Documentation."

At next year's ARN Conference, CROR Scientist and nurse Dr. Anne Deutsch has been invited to present an update on the Medicare Post-Acute Care Reform Demonstration with RTI International's Barbara Gage, PhD.

CROR and Nurses Collaborate on Outcomes Research Projects

At the Rehabilitation Institute of Chicago (RIC), nurses are actively involved in research projects that aim to improve quality of care and better assess patient outcomes. According to Dr. Allen Heinemann, director of the Center for Rehabilitation Outcomes Research (CROR) at RIC, nurses are valuable additions to post-acute care research, particularly because they interact with patients regularly and can bring specific insights and advice to the process.

RIC's nurses are currently participating in projects related to a range of topics including spinal cord injury and physical activity in patients with arthritis.

Pivotal role in spinal cord injury study

One research study that has seen a high level of involvement from nursing staff is SCIREhab – a multi-site collaborative project that is one practice improvement component of the Model Spinal Cord Injury System Program, sponsored by the National Institute on Disability and Rehabilitation Research (NIDRR). The goal of the SCIREhab project is to develop tools and procedures that improve clinical decision-making and best practices, said Heinemann. SCIREhab sites include RIC, Craig Hospital in Denver (the lead site), Carolinas Rehab in Charlotte, Mt Sinai in New York, Shepherd Rehab in Atlanta, and the National Rehabilitation Hospital in Washington, D.C.

Ivy Reyes is a charge nurse in RIC's Spinal Cord Injury Unit who also serves as the nursing coordinator for the SCIREhab study. The main tasks for nurses involved in the project, according to Reyes, are to teach patients various skills such as pain management and skin care, and to enter that data into specialized handheld devices so that the data can be uploaded for analysis. Nurses utilize standardized documentation of their interventions so the results can be compared across the six participating rehabilitation centers.

The project uses data from ten clinical disciplines – including nursing, social work and respiratory therapy – to assess practices and draw conclusions on quality of care and optimal practices.

“There are a lot of nurses involved in the study, as well as representatives from other areas like occupational therapy and physical therapy,” Reyes explained. “Nurses do the teaching interventions whenever we have time, and we always make sure we are documenting everything. For example, if a patient wakes up in the middle of the night and needs our assistance, we can take that opportunity to do a little teaching about future medication management.”

Nurses can play an important role in post-acute care research, particularly because they have round-the-clock interaction with patients, said Reyes. It can also raise morale among nurses who are passionate about rehabilitation and who enjoy being involved in studies that will have an impact upon care, she said.

“We can always be involved in research in different ways, whether it is patient care, answering questions for patients, or even just encouraging them,” Reyes said. “Our main goal, of course, is patient care, but we're passionate about research too. Gone are the days when nurses just gave medications. Nurses today are much more involved and receptive to new ideas.”

Testing the CARE tool

The Centers for Medicare and Medicaid Services (CMS) recently initiated a post-acute care demonstration project to better understand costs and patient outcomes across a range of different care sites. The program also includes the development of a patient assessment instrument, known as the Continuous Assessment and Record Evaluation (CARE) tool.

According to Barbara Lillwitz, RN, nurse and coordinator for the CMS CARE tool project, the instrument is used to measure patients' health and functional status during the first two calendar days after admission and again

during the last two days before discharge.

“Medicare is gathering this data so it can make changes on a national level,” Lillwitz said. “One of the biggest reasons we wanted RIC to be involved is because we treat a very complex medical population with a myriad of issues – including patients with diagnoses such as spinal cord injury, traumatic brain injury, and cancer – and we wanted them to be represented when Medicare changes their policies.”

While Lillwitz handles the day-to-day operational duties of the project such as entering data, Susan Sullivan, RN, a floor nurse at RIC, is responsible for completing the instrument with patients. Sullivan gathers medical histories as well as information on pain, mood and cognition.

“Occupational therapists and physical therapists are invaluable, but they treat patients for a few hours a day,” Sullivan said. “Nurses are able to capture a little more of the big picture, and that's why they're so important on a study like this.”

Working on the CARE tool project has meant a little extra work, said Lillwitz, but the chance to be involved in policymaking was something neither she nor Sullivan could pass up.

“It is a humbling experience to be involved in an important project developing a tool that will be used nationally,” Lillwitz said.

Clinical nursing background is beneficial in research

Kathleen Feary, a research coordinator at RIC, credits her hiring five years ago to her three decades of nursing experience. After spending four years in retirement, she was chosen as a part-time research assistant – despite her limited research experience – because she was comfortable with patients and skilled at putting them at ease, Feary said. She participates in screening and recruitment, conducts patient interviews, and assists with documentation.

“Because we were working directly with patients, my background served a real purpose,” Feary said. “Nurses are good at gathering information in a very natural way, and we are also consistent and detail-oriented with our charting and documentation. Those are important skills to bring to the table.”

Feary currently serves as the research coordinator on a study led by Dr. Pamela Semanik involving questionnaires about day-to-day physical activity in people with arthritis. Other projects with Semanik have entailed everything from performing physical examinations to conducting interviews, Feary added. In addition, she also helps with screening and randomization on several additional arthritis projects, led by Dr. Rowland Chang, co-director of the Arthritis Center at RIC.

“Working as a floor nurse and working in research are very different,” Feary said. “I'm not responsible for someone's life, but I still get to work with patients. Not a day goes by that I don't learn something new and I get to feel like a valuable member of the team.”

Acknowledgements

The Center for Rehabilitation Outcomes Research at the Rehabilitation Institute of Chicago is funded, in part, by the National Institute on Disability and Rehabilitation Research (NIDRR), National Institutes of Health, Centers for Medicare and Medicaid Services, and the Rehabilitation Institute of Chicago. We thank NIDRR for its continued support.

Comments?

Your opinions are important to us. If you have a comment or suggestion regarding our research or the *CROR Outcomes* newsletter, please email your comments to hdemark@ric.org.

International Symposium on Measurement of Participation



Photo (left to right): Planning Committee members **Marcel Dijkers** and **Wayne Gordon**, and Panel Member **Wendy Coster**

The Rehabilitation Research and Training Center on Measuring Outcomes and Effectiveness hosted an "International Symposium on Measurement of Participation in Rehabilitation Research" on Tuesday, October 14 and Wednesday, October 15, 2008.

This pre-meeting symposium to the 2008 American Congress of Rehabilitation Medicine (ACRM) and American Society of Neurorehabilitation (ASNR) Joint Educational Conference occurred in Toronto, Ontario, Canada at the Delta Chelsea Hotel.

Examining Participation

This symposium, attended by more than 100 researchers, clinicians, and students from the US, Canada, and Europe, examined the construct of participation and its measurement. Presenters gave historical background and critical evaluation of existing measures and frameworks, as well as discussed applications for participation measurement in clinical trials, among individuals with a developmental disability and those with traumatic brain injury. Small working groups discussed conceptualization, operationalization, environmental influences, and personal characteristics, and a panel of experts and consumers synthesized the information and offered insight into aspects yet to be investigated.

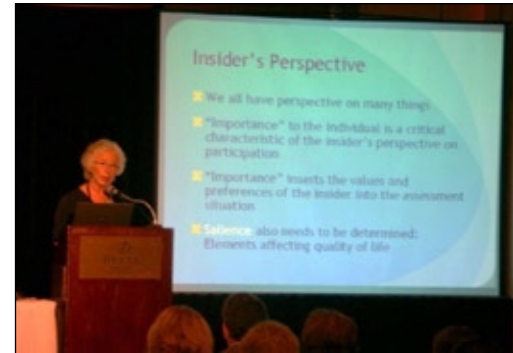


Photo: Presenter **Margaret Brown**

What next?

The American Congress of Rehabilitation Medicine will be forming an outcomes measurement networking group with a focus on participation. In December 2009, the Archives of Physical Medicine and Rehabilitation's annual supplemental issue will contain articles derived from the symposium.

For reprints and more information, please contact Allen Heinemann at (312) 238-2802, or email a-heinemann@northwestern.edu.



Photo (left to right): Panel members **Kathy Boschen**, **Wendy Coster**, **Glen White**, **Harley Nott**, and Moderator **Marcel Dijkers**

Webinar Coming Soon

This symposium was video recorded for future webinar use. For information about the webinar, including continuing education credits, please contact Holly DeMark at (312) 238-2826 or email hdemark@ric.org.

CROR Observes Health Literacy Month in October

According to a report from the Institute of Medicine, nearly half of all American adults - 90 million people - have difficulty understanding and using health information, and there is a higher rate of hospitalization and use of emergency services among these patients. Limited health literacy is estimated to cost billions of dollars in avoidable health care services.

This October marked the ninth annual Health Literacy Month, created to promote the importance of understandable health information. To address this important issue, researchers from RIC's Rehabilitation Research and Training Center on Measuring Outcomes and Effectiveness collaborated with the Brain Injury Association of Illinois at their annual education conference October 24-25, 2008. Drs. Allen Heinemann, and Christina Papadimitriou spoke to individuals with brain injury, family members/caregivers, and professionals working in the field with a presentation entitled, "Health Literacy and Brain Injury Rehabilitation: What providers and consumers need to know."

For more information about health literacy research, please contact Anne Deutsch at (312) 238-2809, or adeutsch@ric.org

Magnet Status (Continued From Page One)



What is Magnet Status?

The American Nurses Credentialing Center (ANCC) created the Magnet Recognition Program in order to acknowledge best practices and quality patient care in nursing. The designation acts not only as an honor for the nurses involved, but also serves as a valuable benchmark for patients when they are choosing a healthcare organization, ANCC stated.

“Achieving Magnet status demonstrates that nurses are using evidence in practice, and it also shows that nurses have significant autonomy, have opportunities for professional development, and are involved in the community,” said Laura Ferrio, chief nurse executive at RIC. “You must have an interdisciplinary approach where nurses are also working as teachers, and are focused on quality of care and patient outcomes.”

In order to receive Magnet recognition, organizations must exhibit the Forces of Magnetism – 14 characteristics that ANCC attributes to the most successful nursing programs. Among them are nursing leadership, organizational structure, management style, quality of care, quality improvement, autonomy, and the way in which nurses are perceived by other members of the healthcare team. Another key “force,” according to ANCC, is having nurses actively engaged in educational roles, including development and mentoring of students and new nurses.

In addition, it’s critical to have nurses involved in leadership roles within the research process, said Dr. Kathy Stevens, RIC’s director of nursing education.

“Many of the Magnet standards are related directly to the use of evidence in clinical management, and when gaps in evidence exist, there need to be opportunities to initiate nursing research projects,” Stevens said. “In fact, they look specifically at instances where nurses serve as principal investigators.”

An extensive application process

RIC’s decision to pursue Magnet designation began in 2002, when Ferrio, Stevens and other members of nursing leadership began to discuss the possibility of applying. Two years later, they submitted a letter of intent after spending a full year gathering the necessary documentation.

“It was an arduous process, but also a very thoughtful one because it caused nursing to pull everything together to create a mission, practice model and philosophy,” said Ferrio.

Before an organization can apply, ANCC has several requirements: the chief nursing officer must have a master’s degree, staff nurses must be able to express opinions and concerns confidentially and there must be a mechanism in place for effective data collection.

After submitting the initial application materials, reviewers from ANCC conducted a site visit at RIC, looking less at what nurses were doing wrong and more for evidence of what was detailed in the documentation, said Ferrio.

“I think they saw evidence that there are strong and healthy relationships here at RIC, Ferrio explained. “I think they were also looking at how research nurses work at the bedside, and how we develop nursing-specific research projects.”

RIC also gained points because it set up scholarship opportunities for

nurses to help them obtain advanced certification; 37 percent of nurses have taken advantage of the program, she added.

The next step for RIC is making sure that the upcoming application for re-designation is successful – a process that will likely prove to be even more rigorous than the first one, said Stevens. Once organizations achieve Magnet status, ANCC raises the bar considerably the next time around.

“Things do change over time, and hospitals going for re-designation are expected to show how they have progressed and achieved additional goals, outcomes and innovations,” Stevens explained. “The standards are definitely higher.”

RIC submitted a letter of intent in July of this year, and has until August 2009 to complete the required self-study. That documentation will then be sent to reviewers, who will evaluate and score it. Finally, a site visit will be scheduled. Ferrio predicts ANCC will want to see more evidence of peer-to-peer review of nurses, nurses in leadership positions, and of course, more nurse involvement in research projects.

Demonstrating active nurse involvement in research can sometimes prove challenging for RIC because it is a very interdisciplinary setting, said Stevens. In other words, staff members work in so many capacities, and ANCC wants clear evidence of nurses in specific roles. Still, RIC is committed to providing an environment where nurses can delve into research projects and answer questions they find compelling.

“Any committee meeting we are in or any time nurses are participating in a certain activity, we step back and ask ourselves which ‘force of magnetism’ we looked at,” said Ferrio. “We want to make sure we’re keeping those guidelines in mind, especially now that we’re in the middle of that one-year documentation period.”

“I think [the ANCC] saw strong and healthy relationships here. I think they were looking at how research nurses work at the bedside, and how we develop nursing-specific research projects.”

Dr. Kathy Stevens, Director of Nursing Education

Magnet status benefits everyone

For nurses at RIC, achieving Magnet status is one indicator of a culture that supports their leadership and expanding roles in research, said Stevens. “They were very excited and proud to be working at a Magnet hospital.”

Magnet designation has also had a significant impact on RIC’s ability to recruit new nurses. Instructors at universities are advising nurses to look for jobs at organizations that have achieved Magnet status, and being on that list makes it that much easier to attract the most qualified applicants, Ferrio said.

Finally, patients are starting to look beyond lists of top hospitals and are seeking out more detailed information from sources such as ANCC – particularly for information on quality of care and staffing ratios, she added.

“Magnet is like a seal of approval,” Ferrio said. “In an environment of controversy over errors and nursing shortages, this is one way to communicate that we have the best nurses and that they are involved in every aspect of care.”

Dr. Pamela Semanik (Continued From Page One)



a research assistant on EDUCIZE – an exercise and education program for patients with rheumatoid and osteoarthritis. Semanik was impressed with the program, which provided aerobic instruction and arthritis management techniques, and she later became certified to teach it.

“That program was so appealing to me because it began to answer my original question – Why are these people different from other patients, and why are they so high-functioning?” Semanik explained. “Meeting the people involved in the program and taking an active role in the exercise component is really how I became interested in physical activity and arthritis.”

As she became more involved in the research part of her work, Semanik participated in several projects at Northwestern University, including one that examined the relationship between strength training and functional status, on which she served as a strength trainer. In 1990, she also began working at the Rehabilitation Institute of Chicago (RIC), after a research

assistant position opened up on an arthritis rehabilitation project.

While working at NU and RIC, Semanik completed her Ph.D. in nursing science at the University of Illinois at Chicago (UIC). “Finishing my doctorate allowed me to explore my original question about physical activity even further, and I was able to finish while working at RIC,” she said.

Semanik is working on several research projects, including one led by Dr. Rowland Chang, co-director of the Arthritis Center at RIC. Chang’s project seeks to increase physical activity levels and improve function in persons with arthritis by developing physical activity plans that are individually tailored to each patient. Semanik is also principal investigator on another project, which is testing the best way to measure lifestyle activities for people with arthritis.

administering physical activity surveys, some respondents said they were able to perform tasks such as mopping, which Semanik knew they were physically unable to do. She pressed them for details and found they were completing the tasks in non-traditional ways, such as tying towels to their feet in order to wash the floor.

“It was so important for my research to know that these people were doing tasks in ways that were different than the general population, but if it weren’t for my clinical background, I probably wouldn’t have known to ask the right questions,” Semanik added.

She has also found that patients tend to feel a strong connection with her because she is a clinician, and even seem to go to greater lengths to answer her questions completely.

“For me, research would not be nearly as productive without my

“If it weren’t for my clinical background, I probably wouldn’t have known to ask the right questions”

Dr. Pamela Semanik, Research Nurse

According to Semanik, her ongoing experience as a nurse practitioner has played a key role in her success as a researcher. Having a clinical background has enabled her to formulate relevant questions and has also given her an advantage when interpreting the results, she said.

For instance, when Semanik was working on her dissertation and

clinical nursing background,” she said. “I’m a firm believer that clinical practice is a springboard for a lot of our most important questions, and I think that we need to have research opportunities for nurses because they have relationships and regular interaction with patients. They can bring thoughtful questions and insights about what will work best.”

Upcoming Conference: Efficiency in Outcome Measurement

The RRTC on Measuring Rehabilitation Outcomes and Effectiveness will be hosting a conference on **Improving Efficiency in Health Outcome Measurement** on Saturday, March 28, 2009, at the Rehabilitation Institute of Chicago.

What is the symposium about?

The goal of the conference is to provide health and rehabilitation administrators, clinicians and researchers with advances in objective measurement as it relates to outcomes.

What will I learn?

The objectives are to define and discuss the state-of-the-art in the contemporary measurement methods, including item

response theory/Rasch model and computer adaptive testing.

Who are the speakers?

Benjamin D. Wright, Ed Bouchard, David Cella, William Fisher, Jr., Richard Gershon, Carl Granger, Dennis Hart, Jin-Shei Lai, Robert W. Massof, A. Jackson Stenner, David Tulskey

May I participate via video conference?

We can provide a free, live video ‘feed’ for groups wishing to participate remotely.

For more information, please contact Dr. Allen Heinemann at (312) 238-2802 or aheinemann@ric.org

Impact of Medicare's Prospective Payment System on Inpatient Rehabilitation

As part of a Health Services Research project on Medical Rehabilitation, CROR scientists have been investigating the impact of Medicare's prospective payment system (PPS) on inpatient rehabilitation. Below is a sample of recent publications that probe the consequences of the PPS system:

Manuscripts:

Granger C, Deutsch A, Russell C, Black T, Ottenbacher K. Modifications of the FIM Instrument Under the Inpatient Rehabilitation Facility Prospective Payment System. American Journal of Physical Medicine & Rehabilitation. 86(11):883-892, November 2007.

In the pre-PPS period, admission motor FIM ratings decreased slightly, and discharge motor, admission cognitive, and discharge cognitive ratings remained stable. Between 2001 and 2003, all four ratings decreased: admission motor by 1.8 FIM units, discharge motor by 3.3 FIM units, and admission and discharge cognitive each by 1.0 FIM unit. The lower admission FIM ratings led to an increase in the mean case-mix index from 1.39 to 1.49. Conclusions: The decrease in FIM ratings in the IRF-PAI/PPS years may reflect alterations in coding practices as a result of changed rules for rating the FIM instrument, "downcoding" leading to assignment into higher-paying categories, changes in the IRF patient population, and/or changes in IRF patient outcomes. Coding changes should be considered when comparing pre-PPS and PPS FIM data

Mallinson T, Manheim L, Almagor O, DeMark H, Heinemann AW. Trends in the supply of IRF services: 1996-2004. Archives of Physical Medicine and Rehabilitation, 89, 2066-2079, December 2008.

Objective: Describe the supply of inpatient rehabilitation facilities (IRFs) services in 1996 and examine changes between 1996 and 2004. The number of IRFs grew from 1037 to 1183 between 1996 and 2001 and grew to 1235 between 2001 and 2004. The likelihood of IRF closures trended lower after PPS, and there was a significant increase in the likelihood of openings when PPS was introduced. For-profit, rural, and small IRFs were more likely to open over the entire period. There was a 12.9% increase in the number of total inpatient days. There was no impact of PPS on beds available but a significant decline in total inpatient days after PPS. Conclusions; These observations imply that IRFs were implementing strategies to recruit a sufficient number of patients, even though bed numbers were increasing and length of stay was declining. Consequently, policy that limits the potential of IRFs to increase patient admissions is likely to produce substantial decreases in total inpatient days.

Shah P, Heinemann A, Manheim L. The Effect of Medicare's Prospective Payment System on Patient Satisfaction: An Illustration with Four Rehabilitation Hospitals. American Journal of Physical Medicine & Rehabilitation. 86(3):169-175, March 2007.

Objective: To examine the impact of Medicare's Prospective Payment System (PPS) on patient satisfaction at four inpatient rehabilitation hospitals. Conclusions: Patient characteristics such as motor FIM gain, discharge status, and respondent type were significantly associated, although only slightly, with patient satisfaction in inpatient rehabilitation. Percentage of excellent satisfaction improved at these four facilities after PPS implementation, despite declines in motor FIM gain. The improvement may be the result of numerous ongoing quality-improvement initiatives directed at improving patient satisfaction at these facilities.

In Press:

Deutsch A, Granger CV, Russell C, Heinemann AW, Ottenbacher KJ. Apparent Changes in IRF Outcomes Due to a Change in the Definition of Program Interruption. Archives of Physical Medicine and Rehabilitation.

Presentations:

Deutsch A, Almagor O, Heinemann AW, Mallinson T, Manheim L. Medicare Fee-For-Service Patients Discharged from Inpatient Rehabilitation Hospitals and Units: 2002 to 2005. Presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. October 17, 2008.

Heinemann AW, Deutsch A, Semik P. Inpatient Rehabilitation Facilities' Compliance with the "75 Percent" Rule. Presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. October 17, 2008.

Mallinson T, Neville C, Almagor O, Dobrez D, Heinemann A. Prevalence of Urinary Incontinence in Medical Rehabilitation. Presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. October 17, 2008

Worsowicz GM, Deutsch A, Almagor O, Heinemann AW. Financial Considerations for Inpatient Rehabilitation. Presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. October 17, 2008.

Poster Presentations:

Deutsch A, Worsowicz GM, Manheim LM, Heinemann AW. Money Matters: Inpatient Rehabilitation Financial Data. Poster presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. Archives of Physical Medicine and Rehabilitation 2008;89(10):E26-27.

Worsowicz GM, Deutsch A, Heinemann AW. Integrating Financial Data into Inpatient Rehabilitation Health Services Research. Poster presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. Archives of Physical Medicine and Rehabilitation 2008;89(10):E27.

Graham JE, Deutsch A, Ripsin CM, Kuo Y, Markello S, Granger CV, Ottenbacher KJ. Diabetes and Post-Acute Stroke Rehabilitation: The Association Between Tier Status and Outcomes. Poster presentation at the American Congress of Rehabilitation Medicine and American Society of Neurorehabilitation Joint Conference. Archives of Physical Medicine and Rehabilitation 2008;89(10):E40.

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