BRINGING STROKE RESEARCH FROM BENCH TO BEDSIDE

BY MOOYEON OH-PARK, M.D., AND A.M. BARRETT, M.D.

AT THE HEART of many research endeavors are essential questions about quality of care: How can we integrate exciting, emerging rehabilitation methods in our programs, refine existing processes and use outcomes to check our progress?

Indeed, the value of clinical study data depends on translating results into better interventions. Traditional evidence-based studies, however, often fail to include the types of individuals who seek treatment at rehabilitation hospitals.

For example, most studies of stroke recovery fail to categorize patients by the side of the brain affected, a critically important variable. Those with stroke affecting the right brain have a 1.5-fold increase in fall risk, higher costs related to length of stay and in-hospital morbidity, and greater likelihood of dependence in the community compared with people with left-sided stroke.

At Kessler Institute for Rehabilitation, research conducted in collaboration with the Kessler Foundation focuses on the needs of patients in our care setting. As a result, we are rewarded with valuable information to develop new care models. Several significant developments are shaping the future of stroke management.

MORE EFFECTIVE SCREENING

One emerging patient care model relates to hidden disabilities of functional vision (spatial neglect), which often impacts individuals with right-sided stroke. This condition is challenging to both diagnose and treat. In a recent study of spatial neglect, only 80 percent of right-brain stroke patients with this condition were identified by occupational therapists as having this deficit. As a result, Kessler occupational therapists now follow a protocol that provides a systematized, viable process for screening known as the Kessler Foundation Neglect Assessment Process (KF-NAP). The KF-NAP, analogous to fall risk assessment, predicts recovery and helps identify people who have a hidden disability of functional vision.

In addition, a care model known as prism adaptation therapy was systematically implemented to improve outcomes. It consists of wearing prism goggles for intensive 15-minute sessions daily for 10 days. Kessler is the third organization worldwide to report positive outcomes of prism adaptation during post-acute inpatient care—the other centers are in Japan and the Netherlands. Individuals receiving prism therapy through Kessler are being enrolled in a new study to determine which patients are the best candidates for this treatment. (continued on page 7)
Focus on Rehabilitation

THE TRAGEDIES last year in Aurora, Colo., and Newtown, Conn., among others, have energized the gun control discussion. Those deaths are just the tip of the iceberg, however; in 2011, 48,676 people suffered gun-related, nonfatal injuries, many of whom were treated in rehabilitation settings.

Thus, it is important that our field has a voice in the discussion. After all, we treat the survivors and understand best the impact such wounds have on future quality of life.

Firearm-related injuries are, first and foremost, a public health issue, and account for 6.6 percent of premature deaths in this country. As with other public health issues, firearm violence and its repercussions are largely preventable, and their complexity requires a multidisciplinary, community-based approach to resolve. So in addition to the political and legal context that has been the major focus in the discussion, we need also to frame the debate with a public health emphasis.

Such a perspective has been used successfully to reduce tobacco-related illnesses and motor vehicle-related injuries. Both were achieved with a two-pronged approach: educate and change people’s behavior, and modify the environment. For instance, most states now ban indoor smoking in all private and public buildings, a move shown to reduce smoking rates. Meanwhile, speed limit enforcement and safety campaigns such as the “Click It or Ticket” initiative and designated driver programs, as well as improved automotive safety technologies, have helped reduce motor vehicle-related accidents, injuries and deaths.

A 2011 Morbidity and Mortality Weekly Report on gun-related injuries suggested several interventions, including education about the safe storage and handling of guns; changing the design of firearms to make them more difficult to use unintentionally or if illegally obtained; and altering current licensing requirements and storage laws. The article also recommended implementing evidence-based strategies to prevent violence, screen for suicide ideation and improve access to mental health care.

Rehabilitation can engage in relevant community activities to reduce firearm-related injuries. I serve on the board of the ThinkFirst National Injury Prevention Foundation, formerly the National Head and Spinal Cord Injury Prevention Program. This organization educates people about injury prevention, including firearms. Rehabilitation hospitals or individual physiatrists can sponsor local chapters, volunteer their time, and engage their facilities as well as their patients.

In addition, clinicians should consider incorporating questions about the availability and storage of firearms in the home into routine clinical assessments.

While it is clear that the topic can become politically heated, we all can agree on the goal of reducing firearm-related deaths and injuries. Rehabilitation hospitals and providers have an important role to play in this effort.

Bruce M. Gans, M.D.
Chief Medical Officer


Stronger ties: How to build more effective academic and clinical networks nationwide

By Steven Kirshblum, M.D.

The adage that no man is an island is equally applicable when it comes to systems of health care delivery. Reliance on an effective network of medical centers for the promotion of academic and clinical advancement is extremely important for ensuring patients everywhere receive the most beneficial and scientifically rigorous care possible.

Kessler Institute for Rehabilitation, as part of the Select Medical network of inpatient, outpatient and long-term acute care rehabilitation programs, is working toward that objective. In concert with our fellow inpatient rehabilitation hospitals—Baylor Institute for Rehabilitation, Penn State Hershey Rehabilitation Hospital, SSM Rehabilitation, and West Gables Rehabilitation Hospital—we are focused on improving models of care throughout our growing national network.

Having recently been named chief academic officer for Select Medical’s Inpatient Rehabilitation Hospital Division, in addition to my role as Kessler’s medical director, I am in a unique position to serve as both a network member and as a resource for our colleagues on how to improve the implementation of evidence-based practice and integrated service delivery.

Planning for the Future

The overarching aim for each hospital in the Division is to benefit continuously from each other’s medical, clinical and administrative leaders; exchange, evaluate and adapt best practices; share the latest clinical interventions and information to keep staff up-to-date; and foster collaboration on research endeavors.

Specific activities have been developed to meet these goals, many of which reflect strategies already in place at Kessler. Quarterly reports on research will be conducted at each of the hospitals to facilitate monitoring of progress. The plan to establish basic research courses for all sites will help ensure that clinicians are properly trained in conducting and understanding research. These can be individualized for different departments depending on expertise and the types of studies being conducted at a given center. For example, a site participating in large-scale conferences. Also in the spirit of knowledge sharing, it is vital that centers such as Kessler, with their highly established track records of clinical research, assist network members in developing their own appropriate infrastructure. This may include assisting with specific studies at individual sites and overseeing seed grant funding across all centers.

Division-wide educational blogs will be used to promote rapid sharing of information.

Ultimately Benefiting Patients

My goal is to work with the premier researchers at the Kessler Foundation Research Center who will play a key role in determining whether any of Kessler’s local research projects can also be performed at any of the other divisional hospitals. In addition, we will look at research being performed at these other hospitals to see if any studies can be brought to another center. It is expected that at least one new study will be initiated across the entire network of rehabilitation hospitals.

Each member hospital contributes its own unique set of expertise and specialized programs of care. But through such collaboration strategies, each site will actively improve its own research infrastructure and clinical practice as well as that of our network colleagues—and ultimately allow patients to reap the most benefit.

Steven Kirshblum, M.D., is the medical director of Kessler’s West Orange campus, director of the hospital’s Spinal Cord Injury Rehabilitation Program, and the chief academic officer for Select Medical’s Inpatient Rehabilitation Hospital Division. He can be reached at skirshblum@kessler-rehab.com.
Establishing effective clinical programs that span the continuum of care

Q&A WITH LORAN VOCATURO, ED.D., ABPP (RP)

IN THE INPATIENT rehabilitation hospital/unit setting, successful clinical programs are well defined, highly organized and fully integrated services aligned to special diagnostic-related groups. They are created based on the needs of the patient, the referrer and the payer, and promote consistency across the post-acute care continuum.

To better understand how to develop and mature thriving clinical programs, we sought the insights of Loran Vocaturo, Ed.D., ABPP (RP), vice president of Program Development and Education for the Inpatient Rehabilitation Hospital Division of Select Medical.

Focus on Rehabilitation: What does a clinical program include?

Loran Vocaturo: Each represents an evidence-based, best practices approach to patient care. It includes standards of care, clinical protocols, patient care plans, staff training and competencies, patient and family education, and advocacy. Such treatment at Kessler Institute for Rehabilitation focuses on the lifelong needs of our patients, particularly their ability to function as members of their families and society and to sustain a quality of life after suffering a catastrophic injury, illness or other disabling condition. The approach is comprehensive and holistic with an emphasis on interdisciplinary treatment and functional goals in rehabilitation.

One of the key components in this structure is the partnership with acute care hospitals in the preadmission phase. Identifying concerns while the patient is still in an acute setting makes the transition to rehabilitation easier, the interventions more effective and the outcomes better. Similarly, addressing the post-acute rehabilitation needs through a full continuum of outpatient services is an important part of our programs.

Focus: How many clinical programs are in place at Kessler?

Vocaturo: In addition to being a fully accredited hospital by The Joint Commission, we currently have four CARF-accredited programs: Spinal Cord Injury, Brain Injury, Amputation Specialty and Stroke Specialty. Some clinical programs, however, are offered that do not have accreditation available. These include orthopedics, cardiac rehabilitation, multiple sclerosis and Parkinson’s disease. Also, in collaboration with the Kessler Foundation, Kessler is one of only eight federally designated Model Systems in the country for the treatment and research of both traumatic brain injuries and spinal cord cases.

Focus: What are the benefits of an accredited program?

Vocaturo: Accreditation provides a set of standards by which patient care can be measured and indicates that a rehabilitation hospital has a demonstrated expertise. The benefits include better functional outcomes, higher quality and patient safety. Accreditation also drives greater satisfaction for stakeholders, improves organizational efficiency and effectiveness, and enhances our reputation for expertise at the local, state and national levels.

Focus: How is the development process different between accredited and non-accredited programs?

Vocaturo: All clinical programs are developed in the same way independent of their specific accreditation status. Once a business model has been established, a committee is formed to define the program formally. Development starts by identifying evidence-based, best practices and existing standards of care for a particular diagnosis or condition. Sources for these may be found through accrediting standards, professional organizations, model systems and clinical research. Kessler is also responsible for helping to establish standards of care and defining best practices, particularly for newer programs that address the unique and changing needs of rehabilitation patients.

Focus: Do the programs include both inpatients and outpatients?

Vocaturo: Yes, an integrated multidisciplinary team helps advance the patient through all stages of rehabilitation and facilitates the transition to the next level of care, with a goal of getting patients home. In fact, many programs, such as

PLANNING FOR SUCCESS

Kessler Institute for Rehabilitation maintains a commitment to lifelong learning. Not only is rehabilitation-specific board certification required for physicians, but Kessler also provides the education. Physician training that started 25 years ago now aligns to preparation for board exams. Today, Kessler runs the largest of only three Physical Medicine and Rehabilitation board review courses for physicians in the country. The programs are fully accredited by the Accreditation Council for Continuing Medical Education and attract over 100 physicians to each course. A similar board review course is conducted for nurses studying to be a Certified Rehabilitation Registered Nurse (CRRN). These certifications help to define clinical specialties in rehabilitation medicine, which in turn helps drive our clinical programs and ensure quality care for our patients.
A multidisciplinary team meets regularly to discuss program issues.

brain and spinal cord injury and amputation, have protocols that continue to outpatient care.

Focus: Who is responsible for a clinical program and how is it maintained?
Vocaturo: A support team consists of a physician as medical chair, rehabilitation nurses, therapists, case managers, education coordinators, researchers, hospital administrators and a stakeholder representative. The stakeholder is usually a patient survivor or a caregiver advocate who understands rehabilitation from an insider perspective. The teams meet at least quarterly to discuss the program elements as they apply to all care settings, from preadmission through outpatient and community reintegration.

Focus: Who is responsible for ensuring that a program has the most current standards?
Vocaturo: Our medical leaders and clinical champions who develop the programs are fully engaged in lifelong learning, specialty and advanced training, and clinical research. These individuals also actively participate in discipline- and diagnosis-specific professional organizations locally and nationally. Changes can occur at the committee level based on new research or information, or as a result of a quality improvement initiative.

Focus: Who decides what clinical programs should be implemented?
Vocaturo: It is a collaborative effort with all of the staff. Anyone who sees the need for a new service or an opportunity for improvement can work with business development, medical and administrative leadership to determine viability. While ideas might lead to a new clinical approach, there is an opportunity to enhance current programs, practices or services.

Focus: Are there other types of less formal clinical programs?
Vocaturo: Ideas frequently are developed into subsets that work within the context of a clinical program. Patient safety and quality initiatives drive many of these. For example, we have a behavior program that was developed for patients with brain injury, but is also used for those in rehabilitation who have other medical conditions or psychological issues that manifest behavioral sequelae. These initiatives are developed similarly to specialized programs by bringing together a committee of clinical champions who can institute practice standards and ensure our staff is adequately trained.

Focus: How are new programs rolled out?
Vocaturo: After aggregating the components and documentation, the program committee develops a strategic plan for implementation. This includes communication across all disciplines and hospital campuses as well as staff training. New programs are often piloted at one of the three Kessler campuses. Once running smoothly, they are made available to a broader group.

Focus: Do you share your programs with other rehabilitation hospitals?
Vocaturo: Many of Kessler’s processes are well respected and recognized as a model of excellence. The maturity of our programs and the experience of our staff have been shared with some of the newer inpatient hospitals in the Select Medical system. Additionally, many of our physicians and clinical champions provide lectures and training to other providers about the success associated with a component, which further disseminates information.

Focus: How do you measure success?
Vocaturo: Outcomes data are reviewed quarterly. Our director of Quality Management and Outcomes develops a program-specific report card that examines the key aspects of patient care and outcomes compared with identified benchmarks and other providers in the region. Patient satisfaction results, employee engagement, and testimonials from our care recipients, families, employees, referrers and community all play an important role.

Focus: How do you ensure the staff is appropriately trained?
Vocaturo: Kessler is committed to the ongoing education and training of its employees. Not only do professional licenses require continuing education, but specialty credentialing and advanced certification are valued as well. Care providers working with specific patient populations are evaluated according to annual clinical competencies for each program. Clinical ladders and professional development plans for our clinicians help to ensure our commitment to our employees and that our patients receive the highest quality care.

Focus: What else is in the pipeline?
Vocaturo: We continue to explore and develop programs to match the increasing complexity associated with spinal cord and brain injuries, cardiac conditions, oncology and Parkinson’s disease. Weight loss and management for bariatric patients is a matter we are addressing across our clinical settings. These initiatives exemplify our commitment to looking for new ways to address the changing needs found in the rehabilitation setting.

Loran Vocaturo, Ed.D., ABPP (RP), is vice president of Program Development and Education for the Inpatient Rehabilitation Hospital Division of Select Medical. She can be reached at lvocaturo@selectmedical.com.
With a view to the past, it’s time to evaluate where post-acute care is going

BY BRUCE M. GANS, M.D.

REHABILITATION CARE delivery has undergone dramatic changes since its inception. The significant transformation it is facing today makes it imperative that we understand how we arrived at this point and how past choices are responsible for many of the weaknesses in the current system.

The rehabilitation movement began during and just after World War I in response to the thousands of injured soldiers who survived and returned to the U.S. with permanent impairments. It continued to gain traction given the needs of polio survivors and then, of course, World War II veterans.

In 1938, this growth led to the establishment of the American Academy of Physical Medicine and Rehabilitation. At that time, rehabilitation services were primarily provided within an acute care hospital as a normal part of hospitalization. There, clinical programs flourished and dedicated bed services emerged to take advantage of economies of scale. At the time, there were no regulatory requirements or constraints, and payment for the rehabilitation component of a hospital stay was based on cost.

Today, however, rehabilitative services are provided in siloed, “walled cities” of post-acute care settings that largely developed in reaction to payment and regulatory factors rather than in response to what is best for the patient.

This evolution toward post-acute silos began with the introduction of the diagnosis-related group prospective payment system for acute care hospitals in the 1980s, which encouraged shorter stays. Patients who were not ready to be discharged to a home setting, yet who were not sick enough to remain in the hospital, needed somewhere to go. This triggered an expansion of rehabilitation “distinct part units” and free-standing rehabilitation hospitals, as well as comprehensive outpatient rehabilitation facilities and outpatient therapy centers.

It also stimulated some nursing homes to offer specialized care delivery programs. Long-term acute care hospitals also evolved, with some emphasizing rehabilitation services over caring for medically complex patients.

In the late 1990s, prospective payment finally came to post-acute care.

However, reimbursement methods and, thus, incentives, differ based on the setting. Inpatient rehabilitation hospitals are incentivized to reduce length of stay; long-term care hospitals to ensure an average 25-day length of stay; and skilled nursing facilities and home health agencies to increase the level of services they offer. More recently, the implementation of caps for outpatient therapy has given an incentive to reduce episodes of care in this setting.

The primary effect of these varied payment systems has been to maximize facility utilization and reimbursement rather than to provide the integrated continuum of care patients need for quality outcomes.2, 3

Current research on the comparability between sites of care is conflicting, with advocates for each model contending they offer equivalent, if not superior, care over other settings.1 Other research in process may shed more light, but it is months to years away from completion and publication.

Despite the lack of evidence, the Centers for Medicare & Medicaid Services is now funding grand experiments such as accountable care organizations, bundled payments and, possibly, the Continuing Care Hospital pilot in an effort to reduce the cost of post-acute care.

It is clear that funding drives health care in this nation. The challenge in caring for patients requiring a long-term approach to managing their health, disability and quality of life is to adapt to the changes in our field while ensuring that economic imperatives do not drive the system away from providing high-quality and cost-effective rehabilitation and health care services.

Each of us has a voice in this debate, and I encourage you to make sure yours is heard clearly.

Bringing stroke research from bench to bedside
(continued from page 1)

A Promising Adjunct
Transcranial magnetic stimulation (TMS) has been used for diagnostic purposes in neuromuscular disease for about 30 years, and more recently as a therapeutic intervention for drug-resistant depression. TMS provides a noninvasive electrical stimulation to the superficial layer of the brain to modulate neural activities and recovery. It also has been shown to improve motor function of the upper limb as well as non-motor function in language and dysphagia. Although the procedure is not FDA-approved in the U.S., data from other countries have shown that TMS is a promising adjunct to conventional stroke rehabilitation.

In 2011, stroke rehabilitation researchers at Kessler Foundation began studying the effect of TMS on various stroke outcomes. We have completed a protocol in healthy people, which has been approved for stroke patients. The research team is actively soliciting individuals with subacute stroke and will extend the study to acute stroke when enough data are gathered. The impact of TMS on recovery of motor, cognitive and language function will be evaluated and the physiologic and structural changes in the brain after stroke will be evaluated.

Bridging a Gap
A new study by Kessler researchers has implications for infection control among stroke patients. We are the first organization to suggest that risk for infection may differ depending on the brain hemisphere involved. Pasquale Frisina, Ph.D., director of research and quality management at Kessler Institute, and Dr. Barrett have shown that individuals with left-sided stroke are more likely to develop hospital-acquired infection during inpatient rehabilitation than those with right-sided stroke.3 A number of hypotheses may explain this finding, including differential involvement of the left brain in immunity, hand hygiene and even mood-related immunity changes. Our Stroke Outcomes and Research Subcommittee is considering a quality improvement project targeting hand hygiene in patients with left-brain (right paralysis) stroke.

Encouraged to Walk
Mobility is one of the top priorities for stroke survivors. Walking speed, a reliable predictor of both independence and mortality among older adults, typically is used as an indicator for community ambulation. The international SIRROWS study, in which Kessler participated, also reported a high correlation between encouragement and improved gait speed and outcomes.4

The Gait Velocity Initiative is a collaborative effort among the Kessler Lower Extremity Task Force (a knowledge-building group of Kessler clinicians led by physical therapists), researchers, and other clinicians. The goal is to establish walking speed as one of the primary mobility outcomes during inpatient stroke rehabilitation, as well as a predictor for outcomes post-discharge. Standardization of a gait velocity protocol across Kessler’s three campuses is expected by May 2013.

By translating the findings into effective tools for the clinical setting, these efforts—and our other research initiatives—will make a positive difference in the lives of stroke patients.


A.M. Barrett, M.D., is the director of Stroke Rehabilitation Research at Kessler Foundation and chief of Neurorehabilitation Program Innovation at Kessler Institute for Rehabilitation. She can be reached at abarrett@kesslerfoundation.org.

Mooyeon Oh-Park, M.D., is assistant director of Stroke Rehabilitation Research at Kessler Foundation, and a consulting physiatrist at Kessler Institute for Rehabilitation. She can be reached at moh-park@kesslerfoundation.org.
LAST CHANCE TO REGISTER!

The First National Summit on Safety and Quality for Rehabilitation Hospitals

★LISTEN
to leading experts in patient safety and quality.

★SHARE
best practices and strategies for improvement.

★LEARN
to meet the challenges at your hospital.

Join us May 20-21 at The Fairmont, Washington, D.C. and be part of this first-ever summit to advance safety and quality in Inpatient Rehabilitation Hospitals and Units.

★ CME/CEU credits will be offered.
★ Online registration opens November 1, 2012.
★ A call for papers and poster presentations will be made November 1, 2012 on SafetyQualitySummit.org.

For more information, visit SafetyQualitySummit.org.