A KEY GOAL of acute rehabilitation is to foster functional independence and well-being early after the precipitating event. Most facilities have long had processes for tracking patients’ progress in this setting and for linking information to measures of outcomes and excellence of care.

Assessment of patients, however, should not stop when they leave an acute care hospital. Truly successful management includes long-term status. Optimal outcomes and quality are possible only with continued communication and evaluation after the person has returned home or transferred to another location. If adverse events such as deep vein thrombosis or stroke occur shortly after discharge, or gains achieved are not maintained, then reanalysis of the care delivered may be worthwhile.

Hospitals can use aggregated follow-up data to adjust their practices and procedures and thereby enhance both quality of life and quality of care at the facility level. The most recent analysis from Kessler Institute for Rehabilitation, for example, showed that functional outcomes were improved and pain levels were down compared with previous years after using post-discharge data to modify inpatient treatment.

At the patient level, tracking demonstrates a consideration of patient sensibilities and needs. In other words, the rehabilitation professionals care enough to reach out after discharge. This will become increasingly significant in 2012, when the Affordable Care Act (ACA) calls for development of indicators of treatment quality, to include client perceptions. More important, such contact gives the rehabilitation team an opportunity to identify problems and challenges early, help patients strategize about addressing them, and thereby maximize progress and minimize complications. The ACA includes other requirements that further stress the need for follow-up (see sidebar on page 7).

Coordinating Care

In the current U.S. system, medical treatment and interventions tend to be compartmentalized by specialty and setting. In this regard, following individuals after they have been discharged can serve two main functions: First, it can provide a continuum of interdisciplinary rehabilitation after the acute phase, and second, it can be a tool for assessing and ensuring the value of coordinated management.

Furthermore, collecting such information after release is essential (continued on page 7)
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MEASURING UP

The benefits of quality reporting include improved outcomes, more transparency and reduced costs

UNDER THE STANDARDS of the Affordable Care Act, the Centers for Medicare & Medicaid Services (CMS) soon will be implementing mandatory quality reporting for inpatient rehabilitation hospitals and units (IRH/Us). CMS plans to publish quality measures by October 2012, and reporting on these parameters likely will begin in 2013. Quality reporting already has been mandated for acute care hospitals, so IRH/Us will be joining most other segments of the provider community in meeting this responsibility.

There are several rationales for this requirement. A standardized reporting of quality should enable patients and families to choose a rehabilitation facility based on the data. Mandating these assessments also will increase public awareness about the importance of quality measures. Furthermore, the “Hawthorne effect” likely will result in improvements. This is the phenomenon where people tend to perform better simply because their behavior is being observed.

At a minimum, how to assess quality can be broadly characterized by quantifying negative results and/or recording positive results. For example, pressure sores can be a serious problem in the IRH/U. An ideal reporting system would measure both the frequency of IRH/U-acquired wounds (an adverse event) and the rate a facility heals pressure sores in the patient who initially presents with them (a positive outcome). The point is that how we choose to measure may impact the results that are obtained.

Other reasons that may be motivating the establishment of mandatory quality reporting include the potential to reduce the costs of care and health care utilization. Measurements could focus on improving factors related to cost and inefficiency such as length of stay, rates of unplanned rehospitalization or discharge destination (home versus other). The data that are reported likely will lead to CMS implementing financial rewards for exceeding certain performance criteria or penalties for failure to meet these standards.

If the major need is to decrease cost, then FIM efficiency data should be reported. If the primary reason for implementing this program is to improve utilization, then length of stay and the discharge setting should become major components. If the idea is to improve health and overall functioning of our rehabilitation patients, then we should measure both adverse events and positive outcomes. Lastly, if an underlying reason for requiring quality to be reported is consumer driven, then patient satisfaction data should become key.

The rehabilitation field will respond to the challenges of quality reporting by embracing the opportunity to work with CMS to determine what aspects of patient care are the most appropriate to measure. IRH/Us also should become early adopters of measuring and reporting these items, not only to CMS, but also to consumers and other payers. Of course, if CMS adopts required standards that we think are unreasonable, then the field must be prepared to disagree and offer alternatives.
The traditional imaging approaches of computed tomography (CT) and magnetic resonance imaging (MRI) are complementary methods that offer clinicians unique advantages depending on the type and pattern of injury. These can be used in tandem to diagnose location and extent of injury, determine the presence of secondary effects of trauma such as bleeding, and predict clinical outcomes. Neuroscientists also have employed CT/MRI to detect the location of brain lesions that enable them to then associate particular areas of the brain with specific functions—for example, memory, social, language or visuospatial processes—by correlating deficits after injury with location and size of lesions. This type of information has proved valuable in predicting deficits and probable outcomes in rehabilitation patients.

Diffusion tensor imaging (DTI), a recently developed technique, is a specialized MRI that has become clinically available. DTI enables a more precise view of damage in the white matter tracts that go to and from all brain sectors and help convey special plasticity-promoting signal codes in damaged and unaffected brain areas after injury. If a patient’s brain lesion affects both gray matter and white matter tracts, then we know that recovery will be much more difficult.

Another structural imaging technique requiring MRI scanning, voxel-based morphometry (VBM), measures changes in gray matter. With specialized training, a rehabilitation patient may be able to improve a specific function altered by brain injury, but it has been difficult to find structural correlations that mirror functional improvements. Now, however, VBM can assess changes in tissue volume and density, which indicate whether a specific brain area is responding to practice or other remediation.

Analyzing Function
Newer imaging approaches can assess changes in tissue function in specific brain regions during rest and cognitive testing. One example is functional MRI (fMRI) employing the BOLD technique (blood-oxygen-level dependence). This promising avenue may one day help us to evaluate whether a patient in a minimally conscious state who cannot otherwise communicate is able to process what he or she is seeing or hearing. A novel fMRI method presents imaging results as a form of biofeedback that may soon contribute to improvement in a variety of functions. In research on healthy individuals, fMRI signal strength measured in a specific brain region was converted to a graph or other visual stimulus, and some subjects were able to apply this information to manage brain activity in that specific brain region and improve performance. fMRI also may be used for discovery purposes, such as determining the patterns of brain activity that are linked to the most efficient manner of performing a task or to better predict the impact of brain injuries on specific behaviors.

The Future
Another advance being explored to benefit rehabilitation is the combination of fMRI with radioactive dyes or chemical labeling and additional imaging techniques such as positron emission tomography and magnetic resonance spectroscopy. This would allow clinicians to detect concentrations of particular molecules such as dopamine in certain areas of the brain at rest or during the performance of a task. Most of this work is being done in animal models, but these approaches have the potential to provide breakthroughs in the field of brain imaging in rehabilitation. The Kessler Foundation Research Center hopes to facilitate more study in this rapidly changing discipline with the goal of helping patients recover as quickly and completely as possible from brain injury or other neurological illness.

Jordan Grafman, Ph.D., received his doctoral degree from the University of Wisconsin-Madison in 1981. Prior to coming to the Kessler Foundation Research Center, he was chief of the cognitive neuroscience section in the National Institute of Neurological Disorders and Stroke, a part of the National Institutes of Health. You can reach him at jgrafman@kesslerfoundation.org.
Focus on Rehabilitation:

Can you briefly describe Kessler’s initiative to reduce restraint utilization?

Mary Ann Brigante, R.N., MSN, CRRN:

In the third quarter of 2009, a small component of our Provision of Care team examined Kessler’s policies to make sure that we were implementing all of the updated standards from The Joint Commission’s National Patient Safety Goals and from the Centers for Medicare & Medicaid Services. Restraint use is a quality indicator that we monitor on a daily basis as well as through aggregate quarterly data. We noticed that while we remained below our internal benchmark for restraint usage, we had not seen a sustained reduction. We decided to renew our emphasis on decreasing use, so we started a formal review, including what types of restraints were utilized and with what populations, to get a clearer picture of where we could focus our attention and make improvements. We rewrote our policies to ensure adherence to the wording as well as the intent of these national standards. For instance, what formerly were called “medical restraints” and “behavioral restraints” are now termed “violent or self-destructive restraints” and “nonviolent or non-self-destructive restraints.” This seemingly minor change in verbiage has provided much-needed clarification about when to employ which types of restraints. As a result of our policy review, we also implemented an extensive education program to make sure staff were aware of these changes and why they were being put into place.

Focus on Rehabilitation: Can you briefly describe Kessler’s initiative to reduce restraint utilization?

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Focus: What impact did these adjustments have?

Brigante: After implementing the new policies, education and reduction

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The use of physical restraints presents a dual challenge for the rehabilitation world. Patients who have traumatic and nontraumatic brain injuries often experience cognitive changes that can lead to disorientation, agitation, impulsivity or aggression. Behavioral difficulties may necessitate restraints to ensure patient and staff safety. At the same time, professionals must weigh the benefits of such a step against potential costs to the patient’s autonomy, dignity and safety.

Focus on Rehabilitation spoke with Mary Ann Brigante, R.N., MSN, CRRN, director of nursing at Kessler Institute for Rehabilitation’s Chester campus, about how recent changes at Kessler have lessened the usage of restraints—and how these improvements may help other medical facilities that wish to follow suit.

Physical Restraints: What are the Standards?

According to the Centers for Medicare & Medicaid Services (CMS), restraints include “any manual method, physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely; or a drug or medication when it is used as a restriction to manage the patient’s behavior or restrict the patient’s freedom of movement and is not a standard treatment or dosage for the patient’s condition.”

Numerous regulatory bodies oversee patient restraints in health care settings, including The Joint Commission, CMS and state health departments. Guidelines vary somewhat by state, but universal requirements for restraints include the following:

- Implementation is documented in writing.
- The decision to restrain is made by a licensed, clinically trained health care provider, such as a physician, nurse or physician assistant.
- Use is time-limited and employed only when not restraining would likely lead to compromised safety for the patient, staff or others.
- The individual is restrained only to the absolute degree necessary.
- Under no circumstances are they used for coercion, punishment or staff convenience.

For detailed information on CMS regulations, read “Medicare and Medicaid Programs; Hospital Conditions of Participation: Patients’ Rights” (42 CFR Part 482), published in the Federal Register on Dec. 8, 2006 (Volume 71, Number 236; pages 71378–71428).
sessions, minimizing the need for restraint use.

activities to engage patients between therapy

Kessler’s safety coaches provide meaningful

plans, we observed a marked improvement. For example, at the Chester campus, when the initiative and education training were first rolled out at the end of 2009 and into the first quarter of 2010, restraint use was at 7.7 percent. By the second quarter, we saw that number drop to 4.5 percent, and it continued to decrease the following quarter, to 2.3 percent. By the end of 2010, usage was at 2.8 percent. So it’s clear that the staff has really embraced these new initiatives.

Focus: In addition to changes in terminology, can you describe some of the specific plans Kessler has put into practice to minimize restraints?

Brigante: One aspect that we have emphasized is the importance of getting patients out of restraints as soon as it’s safe to do so. For example, in the past, there has been wide variation among clinicians in weaning a patient from an enclosure bed restraint. Staff would often ask other employees about when to start removing or reducing the enclosure bed, but no formal process was available. It was very subjective. We corrected this by creating an enclosure bed reduction flow sheet, which gives staff members objective guidelines and behavior monitoring instructions to help them decide whether the patient is capable of adhering to safety principles and can be gradually removed from restraints.

Focus: Can you offer insights into how other rehabilitation hospitals can strive to reduce their reliance on restraints? Are there unconventional or creative solutions that might not be so obvious?

Brigante: Our goal at Kessler is to be as restraint-free as possible, and I’d encourage other settings to adopt a similar philosophy. One way we embody that is to emphasize with staff that restraints are not something to be taken lightly. They are not just a routine type of treatment, and are a very serious issue—from a safety standpoint as well as from an ethical and moral perspective. We should only implement them following a thorough assessment and consultation for each and every patient, each and every time.

One-to-one monitoring can be extremely effective, for example, with patients who continually attempt to remove their tracheotomy or feeding tubes. The staff member is available to prevent the patient from tugging or pulling at the devices. This can be a challenging approach if the facility does not supply sitters. For instance, Kessler does not have a sitter pool. However, because there is a commitment from the CEO on down to reducing restraint use, we have been able to address this by reorganizing staff duties. I would certainly encourage other facilities to consider taking a similar approach.

Some common alternatives to restraints include low beds, which make fall injuries less likely, or frequently reorienting the patient to his or her environment to reduce confusion and agitation. I would also suggest all health care facilities practice thinking outside the box. At Kessler’s West Orange campus, select patients who may be at risk for being restrained, such as those who have brain injuries with behavioral problems, are enrolled in a newly created Safety Coach Program. Instead of possibly sitting in their room, bored or confused or agitated between therapy sessions, individuals have diversion activities to provide a distraction while keeping them active and stimulated. This in turn allows staff to continually monitor patients. Although we’re still collecting data on this program, anecdotally there is a reduction in falls, improved sleep patterns and fewer behavioral problems at night for these patients. Both the Chester and Saddle Brook campuses will be assessing this program for implementation in the future.

Focus: There seems to be a perception among some facilities that managing patient restraints is primarily a problem for nurses to address. Have you found this to be the case at Kessler, or have you managed to make restraint use a multidisciplinary issue?

Brigante: One of the most important keys to our success at Kessler has been taking a team approach, and I would advise other hospitals to begin by integrating the entire treatment group in making decisions about restraints. This is not simply a nursing issue. The nursing staff, the physicians, the therapists, the dietary team, housekeeping personnel—everyone here is on alert to look out for the patients and make safety a priority. To have favorable outcomes, one discipline cannot do it alone. Even though restraints are an issue that resides largely in nursing, it has to be a team effort.

Mary Ann Brigante, R.N., MSN, CRRN, is the director of nursing at Kessler’s Chester campus. She holds a bachelor’s and a master’s in nursing and is a certified rehabilitation registered nurse. Brigante is also a member of the American Organization of Nurse Executives and the Association of Rehabilitation Nurses. She can be reached at mbrigante@kessler-rehab.org.
NOW AND AGAIN

What can the field of physical medicine and rehabilitation do to decrease readmissions of patients to acute care hospitals?

BY BRUCE M. GANS, M.D.

RECENT STUDIES have shown that as many as 20 percent of Medicare patients are readmitted to an acute care hospital (ACH) within 30 days of discharge. Many of these readmissions are thought to be avoidable if proper care had been provided; therefore, preventable rehospitalizations are seen as an enormous, unnecessary cost to the system. This issue is now a major focus of those seeking to lessen overall Medicare expenditures.

How is this relevant to today’s inpatient rehabilitation hospital or unit (IRH/U), especially in the current political and fiscal environment? Information from eRehabData shows that the national rate of rehospitalization from IRH/Us is about 14 percent of discharges and slowly increasing. What percent of these transfers is avoidable? Which strategies can IRH/Us utilize to reduce this rate? Will the Centers for Medicare & Medicaid Services target these readmissions for quality monitoring or financial penalties?

Action Steps
To respond to these and other related concerns, IRH/Us should track their rate of transfer back to acute care. To reduce readmission rates, of course, it is first necessary to establish baselines and to determine which were potentially preventable.

The available data suggest that acute care hospital transfer rates from other competing sectors of the post-acute continuum (in particular, skilled nursing facilities) are dramatically higher than the corresponding rates of transfer from IRH/Us. This fact may be important for helping to identify which individuals should be transferred from the ACH to the IRH/U rather than to other post-acute care settings.

Furthermore, as fiscal policy moves toward holding providers responsible for the total episode of care, not just what happens in their building, IRH/Us should monitor subsequent health and functional status of their patients for at least 30 days post-discharge. Ultimately, the rehabilitation facility should be able to modify and improve its care and services to positively impact the longer-term consequences that individuals experience.

While there is no reimbursement motivating the collection of these post-discharge data, if we anticipate the development of ACOs, then it is incumbent on us to learn these facts ourselves before economics drive us there.

Why should IRH/Us focus on this, especially when the effort is neither required nor reimbursed? Knowing these data likely will help us learn more about how to improve the immediate health and functional outcome of patients, as well as the performance metrics for our facilities. Also, reducing transfer rates will reduce costs for the health care system, an important goal in itself. Lastly, by knowing the longer-term outcomes, we can refocus rehabilitation programs to benefit the durability and relevance of the care provided.

Questions Remain
Facilities may be determining the post-discharge status of their patients (30-day or longer) routinely to satisfy requirements of the Commission on Accreditation of Rehabilitation Facilities, but do the data include health care utilization as well as functional status, and is the information truly being fed back to the clinical staff to drive program improvements and changes? Also, is it being captured effectively for all individuals, and for how long? Some facilities may be collecting these data with internal resources, and others may be outsourcing this activity to contractors. It would be important for all IRH/Us to assess their effectiveness in this arena and to achieve very high follow-up rates for all their patients.

While there is no reimbursement motivating the collection of these post-discharge data from our rehabilitation patients, if we anticipate the development of ACOs, then it is incumbent on us to learn these facts ourselves before economics drive us there.

These types of data also can be used as tools when marketing our institutions to insurers and other payers. More importantly, it is the right thing to do clinically to learn in more detail what happened after discharge. The IRH/U that leads the way in securing this information will be more equipped to work with the medical homes and ACOs that are coming our way, and positioned to provide higher-quality care and better outcomes for its patients.
TIMING IS EVERYTHING
(continued from page 1)
to advancing the field of rehabilitation medicine. In today’s evolving health care arena, all providers must continually demonstrate the value of their services. For example, primary goals for someone who has had a neurological event typically include returning to and remaining in the home environment and participating in the community. Unless facilities and physicians collect supporting data over weeks, months or even years, they cannot speak to this achievement.

Finally, post-discharge tracking is of interest to oversight groups and other stakeholders. This information is one of the criteria for obtaining and keeping program certification from organizations such as The Joint Commission, the Commission on Accreditation of Rehabilitation Facilities, insurance companies and other groups. Long-term follow-up is a criterion under which Kessler maintains its federal designation as one of only six Model Systems in the country for treatment and research of spinal cord and brain injuries.

Tracking Methods
Developing a comprehensive, cross-specialty discharge plan is the first step toward being able to follow patients after they leave the hospital. Ensuring communication with caregivers in the home or other settings also will help in monitoring progress.

At present, Kessler uses an outside vendor with expertise in this area. The company’s staff telephones a random sample of patients three months after discharge and collects information about the level of satisfaction with their care. They also inquire regarding functional status and degree of independence; these data can be utilized to analyze progress by comparing responses to FIM evaluations administered while patients are at Kessler. The FIM instrument measures variables that include health-related quality of life, activity levels, self-care, and safety events such as falls and readmissions.

Centers can use the data collected to examine care overall and by diagnostic group, not only for the given hospital but also compared with others included in the vendor’s database. Although telephone surveys have limitations (sampling error, low response rates), providers can use the findings to inform and enhance inpatient and outpatient management.

Kessler and other institutions are contemplating the best way to expand follow-up efforts to as many patients as possible to improve the robustness of the data collected. Some facilities will continue to contract with an outside entity to achieve this goal, whereas others will choose to move this activity in-house. In all cases, it is desirable to use validated, clinically relevant instruments and sampling methods so that the information will be representative, reliable and standardized. This will ensure that the findings can be used to compare care over time and across facilities, with the ultimate goals of informing the field of rehabilitation medicine and thereby improving outcomes.

FOLLOW-UP & RECENT LEGISLATION
The Affordable Care Act includes provisions that are relevant to post-discharge tracking. These requirements will result in increasing partnerships between acute medical and rehabilitation providers and facilities. Those that demonstrate a data-driven record of providing high-quality, efficient care will have more to offer to potential collaborators.

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| 2012 | • Accountable care organizations that meet quality benchmarks while holding down costs for Medicare recipients will be eligible to share in the resultant savings. Status after discharge from acute rehabilitation might be included in criteria.  
• Hospitals are eligible for bonuses based on value of care provided, not volume. Determination weighs quality of care furnished, including outcomes, versus cost. A similar measure will apply to physicians beginning in 2015. |
| 2013 | • National pilot program on payment bundling goes into effect. Under this partial-capitation provision, providers are paid a flat (bundled) fee per “episode” of care, covering three days before admission through 30 days after discharge. |

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A COMPLEX COMBINATION

MTBI in patients with spinal cord injury presents challenges in reaching accurate diagnoses and developing effective treatment plans

BY RADHIKA BAPINEEDU, M.D.

MILD TRAUMATIC BRAIN injury (MTBI) is characterized by a brief loss of consciousness, loss of memory, alterations in mental functioning or focal neurological deficits. MTBI may occur concomitantly with spinal cord injury (SCI), particularly in cases of motor vehicle accidents and recreational and sports traumas. For patients with both conditions, proper diagnosis and treatment become doubly important—and doubly complex.

While the exact incidence of MTBI in SCI populations is unknown, reported rates vary widely from 15 to 60 percent, reflecting the difficulty in achieving an accurate diagnosis. Standard computed tomography and magnetic resonance imaging (MRI) are often not sensitive enough to detect the telltale signs of microstructural axonal injury in the brain. Other modalities such as MRI utilizing diffusion tensor imaging are under investigation and not readily available. Additionally, cognitive changes following SCI can be related to many factors, of which MTBI is only one. These include prior traumatic brain injury, medication side effects, history of chronic alcohol or substance abuse (prevalent in about 50 percent of the SCI population), and premorbid learning disabilities and mood disorders.

Proper diagnosis requires clinical and neuropsychological testing of cognitive performance, including visual and verbal learning, visual organization, attention, working memory, judgment, new learning and problem-solving. Assessment of MTBI also considers behavioral and emotional symptoms, such as mood lability and impulsivity. In patients with dual diagnosis, the test battery needs to be adapted to the individual’s level of endurance and decreased or absent upper extremity strength.

Considering the volume and complexity of new information that an SCI patient must absorb, it is not surprising that a concomitant MTBI may slow recovery and increase length of stay. SCI rehabilitation often involves a significant amount of education and new learning. Cognitive changes in memory, attention, language skills and knowledge acquisition resulting from MTBI, however, can limit a person’s ability to learn and retain content. Emotional dysregulation, depression and poor coping can disrupt progress similarly.

Dually diagnosed individuals benefit from treatment plans that include compensatory training, behavioral or environmental modifications, remediation, and more. For instance, patients may require greater time and repetition to process new information. Simple rehabilitation tasks reduce overstimulation while addressing limitations in attention span. Without specialized plans, there is significantly greater risk for depression, urinary tract infections, hospital readmissions and noncompliance with care. Timely referral for assessment and improved understanding of how MTBI and SCI jointly impact rehabilitation can allow patients to begin the journey to restoring functioning as well as quality of life.

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