

## Expanding the Scope of Staff Education: Brain Injury to Polytrauma

Sandra K. Janzen, MS RN NEA-BC • Alice Naqvi Mugler, MS RN



Staff members who care for the polytrauma population need diverse educational programs even if they have many years of experience working in the brain-injury rehabilitation field. This article explores key concepts that help guide rehabilitation nursing practice, strengthen clinical skills, increase family involvement, and identify educational resources.

The transition from a Commission for Accreditation of Rehabilitation Facilities-designated traumatic brain injury (TBI) program to a polytrauma rehabilitation center (PRC) requires enhanced education and verification of new competencies. The purpose of this article is to describe nursing staff educational needs during the evolution of a PRC and the educational strategies and methods that can enhance staff knowledge. Examples from the PRCs demonstrate the strategies and methods that were developed. Polytrauma care is a new concept that officially was described by the Department of Veterans Affairs in 2005. *Polytrauma* is defined as "injury to the brain in addition to other body parts or systems resulting in physical, cognitive, psychological, or psychosocial impairments and functional disability. Injury to the brain is the impairment, which guides the course of the rehabilitation. TBI frequently occurs in polytrauma and in combination with other disabling conditions such as amputation, auditory and visual impairments, spinal cord injury, posttraumatic stress disorder (PTSD), and other mental health conditions" (Department of Veterans Affairs [DVA], 2005). Blast injury was a concept that until recently was not fully understood because, fortunately, U.S. health care had little exposure to this kind of injury (Centers for Disease Control and Prevention [CDC], 2003). Blast injuries are the result of exposure to an explosion's violent force. They result in a wide, but somewhat predictable, pattern of injuries (DVA) and they are the leading cause of TBI for active duty personnel in war zones (Defense and Veterans Brain Injury Center, 2005). Blast injuries frequently are caused by improvised explosive devices (CDC, 2003). Exposure to *Acinetobacter baumannii* is pervasive in the combat zones; open wounds become contaminated, and patients are at risk for numerous immediate complications postinjury (CDC, 2004). New lists of words and abbreviations have been created to describe war injuries and routinely are used by clinicians at PRCs.

To care for these unique patients, cultural and practice changes had to be implemented in the PRCs. Specific education regarding blast injury and the various types of injuries related to explosions was provided to all clinical staff in the PRCs as polytrauma patients began arriving. Understanding the similarities and differences between mild TBI and PTSD was a critical focus for staff education. With increasing exposure to explosion casualties from the war zone, it is important for nursing and clinical teams to pay special attention to crucial behavioral observations such as sleep disturbances and dissociative symptoms of acute stress disorder (Litz & Orsillo, 2004). In this population, slight behavioral changes or regression in patient progress may signal an emotional crisis or a life-threatening infection that requires rapid intervention. Rehabilitation nurses are astute observers of small, incremental changes in behavior that signal rehabilitative progress; consequently, strengthening physical and mental health-assessment skills is a priority in developing PRCs.

### Core Concepts for Care of Patients and Families

Care of the polytrauma patient is complex because of the nature of the injuries, the unknown potential for recovery, and multifaceted family dynamics. Although the conceptual model of rehabilitation is the basis of care, it needs to be further defined to take the family into account. Concepts of patient centeredness must include family involvement because nearly all emotional care and teaching may be directed solely at the family. The concepts of resilience and ambiguous loss are useful for patients and families and can be used to support staff, as well. Staff should be trained to care for patients with injuries that are observed infrequently in this setting (for example, burns in these units are rare) as the need arises.

### Stages of Rehabilitation

The underpinnings of rehabilitation nursing as described by Nelson (2001) consist of four key

### KEY WORDS

*ambiguous loss*  
*blast injury*  
*patient centeredness*  
*polytrauma*  
*posttraumatic stress disorder*  
*rehabilitation*  
*traumatic brain injury*

concepts: buffering, toughening, launching, and transcending. *Buffering* consists of the nurturing and protective processes that help the patient and family gather physical and emotional strength to participate fully in rehabilitation. Most needed at admissions, buffering also is crucial in times of crisis and when a patient is experiencing something for the first time. *Toughening* is the process of physically and emotionally preparing a patient and family for community reentry. This phase includes physical strengthening, psychological toughening to learn to live with a disability, and determining the material needs for surviving in a changed world. *Launching* is readiness for discharge as defined by the staff, patient, and family. The goal is for everyone involved to be able to effectively manage most situations outside of the inpatient unit, function day to day, and plan for relationships, leisure activities, and family reintegration. Noted by Nelson to be a fourth phase, but more realistically overarching the other three phases, is transcending. *Transcending* is defined as accepting cultural stereotypes and rising above them without using disability to secure special favors or attention.

### *Patient and Family Centeredness*

“Nothing about me, without me” is a *Transforming Care at the Bedside* (Rutherford, Lee, & Greiner, 2004) mantra that best describes the necessary philosophical basis for educating nursing staff who work with families and patients in the polytrauma field. This inclusive approach, usually centered on the patient, also is centered on family members. Becoming patient centered requires the involvement of family and friends. This means involving them in decision making, supporting them as caregivers if they want to take on that role, making them feel welcome in the rehabilitation setting, and recognizing their needs and contributions to the rehabilitation plan (Institute of Medicine, 2001). For example, creating and presenting certificates of achievement to family members when they master a specific procedure and are deemed competent to perform that procedure (e.g., suctioning) independently serves two functions: family members validate new skills and learn to respect the detailed nursing knowledge employed in the care of their loved one.

Historically, visiting hours have limited family involvement in rehabilitation centers during treatment times unless otherwise directed by the treatment team. Family involvement with polytrauma patients is more intense and frequently takes place 24/7 with family members rotating days and nights. This degree of family involvement requires advanced communication skills. The educational goal is to enable

staff to speak fluently with families on a wide variety of issues while demonstrating confidence when symptoms are unclear and to set limits to foster the rehabilitation goal.

Family members are an integral part of the treatment team; many have been through life-and-death events at military treatment facilities, so they are knowledgeable about day-to-day routines. When a patient transitions to a rehabilitation setting with different goals, securing family trust is paramount. Large interdisciplinary teams require consistency of message that incorporates all 24/7 nursing staff. Nurses must clearly articulate the ever-evolving plan of care to sustain the patient and family’s trust. Engaging families in caregiving education is another critical competency for nursing staff. A nurse must be able to understand and describe a procedure and also provide its rationale to the family. Studer (2005) describes this as “key words at key times” (p. 88), which requires effective communication and assessment of caregiver ability to apply learning in a safe manner. For example, all staff must be comfortable explaining treatment rationale to families regarding modifying infection-control parameters, deviations from protocol, and pain management.

In addition, nurses should understand the needs and differing perspectives of the millennium generation and its parents. For example, the active military service member usually is passionate about physical fitness and strives to work hard in therapy. Aggressive therapy, however, may have to be tempered if another injury, such as a penetrating wound, needs to heal. Conversely, hovering millennial parents may want to be too cautious and attend every therapy session, assisting their child completely rather than guiding and encouraging self-reliance. Such behavior compromises full achievement of the rehabilitation goal.

Astute assessment of family dynamics and expertise in assisting families in crisis are skill sets that develop with experiential education, effective feedback, and engaged learning activities. Providing staff time to discuss their feelings, successes, and failures regarding difficult situations is supportive and allows experimentation and role play of various communication strategies.

### *Ambiguous Loss*

Two descriptions of ambiguous loss have been defined by Boss (2006) that are applicable to the family of a patient with brain injury. *Ambiguous loss* is defined as a situation in which a loved one is perceived as physically present while psychologically absent. When the loss is ambiguous, the result is family paralysis. Decisions and events such as family rituals and celebrations are put on hold.

Affected families are more likely to experience helplessness, depression, anxiety, and relationship conflicts. Nursing staff need specific education about family hostility related to the loss of the patient-family relationship. Knowledge of the concept of ambiguous loss helps staff understand family dynamics and provide more effective interventions, including learning when not to intervene and when to turn to experts.

It is the authors' experience that several approaches are needed to provide education on the concept of ambiguous loss. It may be helpful to have several books regarding the concept available to a unit's staff (Boss, 1999, 2006). In one case, a unit used a structured educational conference with continuing education credits that emphasized experiential learning. Each PRC had staff develop their own case study on different scenarios, such as a family with multiple life crises (injured service member and new baby), a protective family with complaints about care, and the impact of post-deployment stress reaction. Nursing staff participants and faculty provided feedback on the case studies presented by polytrauma nurses.

### **Resilience**

Resilience is a useful concept for patients, their families, and staff. Individual *resilience* "is the ability to stretch or flex in response to pressures and strains of life" (Boss, 2006, p. 48). Resilience is more than recovery from an event or trauma because equilibrium is maintained (Bonanno, 2004). Healthy functioning can be continued with growth and positive emotion, suggesting a focus on individual and family strengths for best recovery. It is crucial to have current information on stress and resilience because the science about both physical and mental resilience is changing. According to Boss's (2006) summary of research on resilience, resilience is more than recovery; more common than previously believed; and there are multiple, and at times unexpected, paths to resiliency. In addition, young, fit patients are likely to physically and cognitively recover beyond expectations. Because of the changing parameters of resilience and pathology, staff awareness of the potential for resilience in both patients and families should be a focus for staff education.

### **Millennium Generation**

Cultural competency includes an understanding of the millennium generation (born between 1982 and 2001; Howe & Strauss, 2000). Characteristics of this generation are the high involvement of spouses and parents (this is the most-watched generation), the need for engagement after injury, and the expectation for instant communication and feedback. This

## **Key Practice Points**

1. Blast injuries are the result of exposure to violent forces from explosions, resulting in a wide, but somewhat predictable pattern of injuries that are the leading cause of TBI for active-duty personnel in war zones.
2. In the polytrauma patient population, slight behavioral changes or slight regression in patient progress may signal an emotional crises or a life-threatening infection, requiring rapid intervention.
3. For the family of a brain-injured patient, *ambiguous loss* is defined as the situation in which a loved one is perceived as physically present while psychologically absent.
4. Characteristics of the millennial generation are the high involvement of spouses and parents, the need for engagement with the treatment team and friends after injury, and the expectation for instant communication and feedback.

generation usually is open to multiculturalism and may have a wide variety of friends. Understanding the extent of technology in use by this generation is pivotal in the nursing staff's relationship with service members. In a survey of millennial college students (Howe & Strauss), 97% owned a computer, 94% owned a cell phone, and 76% used instant messaging. Members of this generation maintain strong ties with military buddies. They miss being around people who understand what they have been through (Zayas, 2007). Access to the Internet, fast food, and physical activities are expected basics. Nurses need to know how to navigate the Internet and identify for patients the difference between opinions and validated findings that appear on the Web.

### **Practical Strategies to Enhance Staff Education**

#### **Sharing Experiences with Colleagues**

Biweekly conference calls provide a positive learning forum that help nurses share experiences, identify resources, and communicate with other PRCs across the country. The value of sharing experiences helps nursing staff leadership become proactive in addressing issues that emerge in other centers. Storytelling lessens the feeling of "learning through the school of hard knocks."

#### **Innovative Educational Strategies**

Nurses can gain a better understanding of the dynamics of family experience by reading books, media stories, family narratives on Web sites, or family journals. Internet-based family journal narratives

such as those posted on the CaringBridge® Web site provide complex situations that can be used for case study and analysis. Small groups of staff analyze and address the issues of the case study, such as family concerns and dynamics, questions about healthcare providers, and strengths and support systems.

To help address the complexity of patient care, an advanced practice nurse can provide daily consultation for staff on new and unique patient-care issues and just-in-time education on the treatment of the multiple complications of blast injuries. This nurse also can provide insight into infrequent syndromes such as paroxysmal autonomic instability with dystonia or burns, or offer expertise on devices such as unusual external fixators or prosthetics. Consultation topics may include system-focused assessments, specialized wound care, and ethical issues and strategies to help staff cope with difficult family dynamics. In one case, a mental health nurse liaison developed an educational tool for psychosocial competencies to help staff cultivate enhanced communication skills. The three competencies were team effectiveness, conflict management, and emotional support for patients and families (B. Dunbar, personal communication, April 14, 2007). This learning module was used as a discussion tool and for independent study with a 20-question posttest.

### *Nontraditional Sources*

Formal feedback from the VA Office of the Inspector General (OIG) reports become public information and can be accessed through the Internet. OIG reports may be initiated by a variety of sources including Congressional inquiry, an anonymous complaint, or as a result of an adverse incident or negative media. For example, a service member died while enrolled in a rehabilitation program. Although all interventions were clinically appropriate, the need to review and strengthen critical assessment skills was initiated and completed before release of the final report. The critical clinical information identified was the rapid potential for sepsis leading to death, a significant factor for deployed service members exposed to bacteria frequently found in country. OIG reports may be used to improve care if they are included in staff or family education programs or used to create and modify clinical and administrative practices.

### *Certification Courses*

With the increased number of complicated TBIs, a neuroscience clinical nurse specialist who is a certified brain injury trainer can provide brain injury certification classes to all clinical staff. Certification

by the American Academy of Brain Injury Specialists Association is not restricted to any profession but is designed for anyone who delivers services to brain injury (American Academy for the Certification of Brain Injury Specialists, 2005). In addition to the educational dynamic, these certification classes strengthen interdisciplinary team relationships. Rehabilitation nursing certification also is highly encouraged with educational sessions provided by a local consortium in the community. Certificates should be framed and displayed on the nursing unit to recognize staff accomplishment and demonstrate clinical expertise.

### *Identification of Resources*

A number of books written by family members and individuals experiencing TBI are available to nurses to help them understand the family experience (Table 1). Although these books are appropriate to share with the families, they also help nurses increase their understanding of the family experience. With the exception of the work by L. Woodruff and E. Woodruff (2007), the books did not address the multiple assaults on the brain, frequent comorbidity, or PTSD.

Online education is effective for providing selected content and is available as a resource within the VA system. National Centers for PTSD and Ethics are the DVA online resources for staff. TBI education is centrally mandated for most clinical staff within the DVA and is a minimal expectation for all nurses working with polytrauma patients. Many public Web sites provided by the DVA, CDC, and Department of Defense provide excellent information for clinicians on blast injuries, infections, and current research. These references are listed in Table 2. It is useful to look beyond the United States for professional resources and experiences. International speakers from Israel and Lebanon have provided insightful information regarding their experiences with blast injuries.

When working with the combat-exposed population, the issue of PTSD is of major concern. Repeated deployments, extended tours of duty, and multiple exposures to blasts in combat areas dramatically increase the likelihood of PTSD (Lew et al., 2006). Injury while in a war zone also increases the likelihood of PTSD. Education and resources to understand the similar and overlapping symptoms are a necessary competency for nurses. Interdisciplinary team conferences held with medical, neurologic, infectious disease, and psychiatric staff members provide an opportunity for nurses to gain an understanding of the complexities of a differential diagnosis. Concurrent patient assessment with these teams requires a systematic education process.

**Table 1. Books Written by Families on Living with Polytrauma**

<p>Crimmins, Cathy. (2000). <i>Where is the Mango Princess?</i> Alfred A. Knopf Publishers. Cathy Crimmins' husband was hit by a speedboat and sustained traumatic brain injury. In this memoir, she effectively describes her experience and frustrations with the difficult and long rehabilitation process and the healthcare system.</p>
<p>McClellen, Connie. (2008). <i>My Miracle Marine</i>. Divine Word Publishing. This is a mother's perspective of her son's three injuries while deployed in Afghanistan and Iraq (his third injury was a sniper shot through his head). Through e-mails, the events are revealed from the time of injury through the rehabilitation process. This story illustrates how a mother's incredible faith and prayers are answered throughout her son's recovery.</p>
<p>Swanson, Kara L. (1999). <i>I'll Carry the Fork! Recovering a Life After Brain Injury</i>. Rising Star Press. This book details a woman's experience with her brain injury after an auto accident. It is written in lay terms to help people understand the process of recovery from brain injury and is recommended for brain injury survivors and their supporters.</p>
<p>Weisskopf, Michael. (2006). <i>Blood Brothers</i>. Henry Holt and Company. This book offers a description of the adjustment to amputation after injury in Iraq for the author and several others. The book also describes rehabilitation in a military treatment facility and life as an outpatient who must adjust to various prosthetic devices.</p>
<p>Woodruff, Lee, and Woodruff, Bob. (2007). <i>In An Instant: A Family's Journey of Love and Healing</i>. Random House. Bob Woodruff was the ABC News anchor embedded in Iraq when an improvised explosive device exploded near the tank in which he was riding. This is the story of Lee Woodruff and her husband, their life together, and the impact of this severe injury on their lives.</p>

**Table 2. Web Resources in the Public Domain**

Topic	Resource
<i>Acinetobacter baumannii</i>	<p><a href="http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5345a1.htm">www.cdc.gov/mmwr/preview/mmwrhtml/mm5345a1.htm</a> A report on <i>Acinetobacter baumannii</i> infections among patients at military treatment facilities that treated injured U.S. service members between 2002 and 2004.</p>
Blast Injuries	<p><a href="http://www.bt.cdc.gov/masscasualties/explosions.asp">www.bt.cdc.gov/masscasualties/explosions.asp</a> This is a bioterrorism site that discusses the unique pattern of injury created by bombs and explosions. Site content describes the four basic mechanisms of blast injury and their impact on body systems.</p>
Posttraumatic Stress Disorder	<p><a href="http://www.ncptsd.va.gov/ncmain/ncdocs/manuals/nc_manual_iwcguide.html">www.ncptsd.va.gov/ncmain/ncdocs/manuals/nc_manual_iwcguide.html</a> A comprehensive guide for clinicians addressing psychiatric issues of military personnel, assessment guidelines, and treatment of returning Iraq War veterans. The guide addresses topics including military sexual trauma, anger in combat-related PTSD, traumatic grief, substance abuse, and impact of deployment on military families.</p> <p><a href="http://www.ncptsd.va.gov/ncmain/ncdocs/manuals/GuideforFamilies.pdf">www.ncptsd.va.gov/ncmain/ncdocs/manuals/GuideforFamilies.pdf</a> <i>Returning from the War Zone: A Guide for Families of Military Members</i> addresses homecoming expectations, explains combat stress reactions, describes experiences in the war zone, and provides information on combat stress reaction/PTSD and ways to access help.</p>

Finally, staff members must acknowledge their own trauma as they work with young service members and their devastating injuries. They must have access to resources and an environment in which they can self-modulate and recognize when their psychological limit has been reached. A *self-modulating strategy* is the ability to self-identify stressful situations. Staff must be in tune to others' observations to identify potential warning signs (behaviors and statements) that may indicate an inability to adjust to stress. Assistance from psychological experts or a more formal assessment such as Maslach's Burnout Inventory (Maslach & Leiter, 1997) may be indicated. Time to meet with psychological experts must be built into the plan for nursing staff and other caregivers. Nurses must be able to convey hope to each other, their patients, and families as they remain open to unlimited recovery possibilities.

**About the Authors**

Sandra K. Janzen, MS RN NEA-BC, is an associate director of patient care/nursing services at James A. Haley VA Hospital in Tampa, FL. Address correspondence to her at [sandra.janzen@va.gov](mailto:sandra.janzen@va.gov).

Alice Naqvi Mugler, MS RN, is a Magnet project coordinator at Santa Clara Valley Medical Center and former nurse executive and chief nurse of Rehabilitation VA Palo Alto Health Care System in Palo Alto, CA.

**References**

American Academy for the Certification of Brain Injury Specialists. (2005). *Certified brain injury specialist*. Retrieved June 4, 2009, from [www.aacbis.net/level1.html](http://www.aacbis.net/level1.html).

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20–28.

Boss, P. (1999). *Ambiguous loss: Learning to live with unresolved grief*. Cambridge, MA: Harvard University Press.

*continued on page 199*

- Pervin, L. (2008). Polypharmacy and aging: Is there cause for concern? *ARN Network*, 25(1), 6–7.
- Samuel, N. (November, 2007). The vitamin myth. *Reader's Digest*, 85–91.
- Shiel, W., & Hecht, F. (2004). Herbs: Toxicities and drug interactions. Retrieved January 16, 2008, from [www.medicinet.com/script/main/art.asp?articlekey=7506&pf=3&page=1](http://www.medicinet.com/script/main/art.asp?articlekey=7506&pf=3&page=1).
- The National Women's Health Information Center. *Aging well, living well: Drugs and alternative medicine*. Retrieved January 10, 2007, from [www.womenshealth.gov/ow/drugs/?style=module](http://www.womenshealth.gov/ow/drugs/?style=module).
- U.S. Food and Drug Administration, Center for Drug Evaluation and Research. (2005). *Medicines and you: A guide for older adults*. Retrieved October 13, 2006, from [www.fda.gov/cder/consumerinfo/medAndYouEng.htm](http://www.fda.gov/cder/consumerinfo/medAndYouEng.htm).
- Wooten, J. (2006). Don't let supplements fall off your radar. *RN*, 69(12), 55.

## Expanding the Scope of Staff Education: Brain Injury to Polytrauma

*continued from page 185*

- Boss, P. (2006). *Loss, trauma, and resilience: Therapeutic work with ambiguous loss*. New York: W. W. Norton.
- Centers for Disease Control and Prevention (2003, May 9). *Explosions and blast injuries: A primer for clinicians*. Retrieved June 4, 2009, from [www.bt.cdc.gov/masscasualties/explosions.asp](http://www.bt.cdc.gov/masscasualties/explosions.asp).
- Centers for Disease Control and Prevention (2004). *Acinetobacter baumannii infections among patients at military medical facilities treating injured U.S. service members, 2002–2004*. Retrieved June 4, 2009, from [www.cdc.gov/mmwr/preview/mmwrhtml/mm5345al.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5345al.htm)
- Defense and Veterans Brain Injury Center. (2005). *Blast injury FAQs*. Washington, DC: U.S. Department of Defense. Retrieved June 16, 2009, from [www.dvbic.org/blastinjury.php](http://www.dvbic.org/blastinjury.php).
- Department of Veterans Affairs, Veterans Health Administration. (2005). *VHA Directive 2005–024: Polytrauma Rehabilitation Center*. Washington, DC: Author.
- Howe, N., & Strauss, W. (2000). *Millennials rising: The next great generation*. New York: Vintage Books.
- Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington, DC: National Academy Press.
- Lew, H., Poole, J., Guillory, S., Salerno, R., Leskin, G., & Sigford, B. (2006). Persistent problems after traumatic brain injury: The need for long-term follow-up and coordinated care. *Journal of Rehabilitation Research and Development* (43)2, vii–x.
- Litz, B., & Orsillo, S. M. (2004). Background issues and assessment guidelines. In P. P. Schnurr & S. J. Cozza (Eds.), *Iraq war clinician guide* (2nd ed., pp. 21–32). Retrieved June 4, 2009, from [www.ncptsd.va.gov/ncmain/ncdocs/manuals/nc\\_manual\\_iwcguide.html](http://www.ncptsd.va.gov/ncmain/ncdocs/manuals/nc_manual_iwcguide.html).
- Maslach, C., & Leiter, M. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it*. San Francisco: Josey Bass.
- Nelson, A. L. (2001). Rehabilitation. In A. L. Nelson, C. P. Zejdlik, & L. Love (Eds.), *Nursing practice related to spinal cord injury and disorders: A core curriculum* (pp. 409–422). Jackson Heights, NY: Eastern Paralyzed Veterans Association.
- Rutherford, P., Lee, B., & Greiner, A. (2004). *Transforming care at the bedside: IHI Innovation Series white paper*. Retrieved June 4, 2009, from [www.ihl.org/IHI/Results/WhitePapers/TransformingCareattheBedsideWhitePaper.htm](http://www.ihl.org/IHI/Results/WhitePapers/TransformingCareattheBedsideWhitePaper.htm).
- Studer, Q. (2005). *Hardwiring excellence*. Gulf Breeze, FL: Fire Starter Publishing.
- Woodruff, L., & Woodruff, B. (2007). *In an instant: A family's journey in love and healing*. New York: Random House.
- Zayas, A. (2007, April 22). Growing together. *St. Petersburg Times*, pp. 1A, 14A–16A.

### Earn nursing contact hours

*Rehabilitation Nursing* is pleased to offer readers the opportunity to earn nursing contact hours for its continuing education articles by taking a posttest through the ARN Web site. The posttest consists of questions based on this article, plus several assessment questions (e.g., how long did it take you to read the article and complete the posttest?). A passing score of 88% on the posttest and completion of the assessment questions yield one nursing contact hour for each article.

To earn contact hours, go to [www.rehabnurse.org](http://www.rehabnurse.org), and select the "Education" page. There you can read the article again, or go directly to the posttest assessment by selecting "RNJ online CE." The cost for credit is \$10 per article. You will be asked for a credit card or online payment service number.

The Association of Rehabilitation Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation (ANCC-COA).

