

Industry Trends

Treating TBI: Assessing Tell-Tale Signs in Combat Veterans

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This article is based on the experiences of Elisabeth Moy Martin, MA RN-BC; Wei C. Lu, MS BSN; Katherine Helmick, MS CNRN CRNP and AANN board member; Louis French, PsyD; and Deborah L. Warden, MD. They are authors of "Traumatic Brain Injuries Sustained in the Afghanistan and Iraq Wars," published in the April 2008 American Journal of Nursing, and they serve at the Defense and Veterans Brain Injury Center (DVBIC) headquartered at Walter Reed Army Medical Center, Washington, DC.

It is no wonder that traumatic brain injury (TBI) is considered the signature wound of U.S. troops serving in Afghanistan and Iraq, because a survey of 2,525 returning soldiers published early this year in the *New England Journal of Medicine* finds that nearly 15% of U.S. troops have suffered mild TBI in the Iraq War (Hoge et al., 2008).

Hoge and colleagues stressed that "the strong associations between mild TBI, post traumatic stress disorder, depression, and physical health symptoms in combat veterans reinforce the need for a multidisciplinary approach centered in primary care."

Although that may be true, questions about blast-related TBI still linger. First, its pathophysiology is not fully understood, even though it is thought that rapid ambient pressure changes create shear and stress forces that lead to trauma such as concussion, subdural hematoma, and diffuse axonal injury. Some experts also believe that these pressure changes cause gaseous embolisms to form in the brain and lead to infarction. In addition, there is a school of thought related to the role cerebral vasculature plays in blast brain injury.

Moreover, little is known about TBI's longer-term effects; there are few descriptions of the clinical characteristics of patients with blast-related TBI that can be found in literature, but common complaints include severe headaches, difficulty sleeping, and mood swings, which may or may not be related to concussions.

Screening and Interventions

It is, therefore, imperative that nurses know how to effectively screen and assess TBI and implement appropriate evidence-based interventions. DVBIC defines *TBI* as a traumatically induced physiologic disruption of brain function that is indicated by at least one of the following:

- any period of loss of consciousness
- any loss of memory of events immediately before or after the accident
- any alteration in mental state at the time of the accident
- focal neurologic deficits that may or may not be transient.

To determine the severity of the injury, nurses should ask patients directly about their loss of consciousness and posttraumatic amnesia. Such questions include the following:

What is the last thing you can remember clearly before the event? Do you remember hearing an explosion or seeing or smelling smoke? Did you feel dazed or confused during the event? Did you lose consciousness? Were you told by others that they could not wake you? What is the first memory you have after the event?

Once a patient is determined to have suffered TBI, he or she is assessed at the bedside for common postconcussive symptoms using the Post Mild TBI Symptom Checklist, a 22-item questionnaire. Symptoms may include headache, dizziness, irritability, mood changes, fatigue, sleep difficulties, memory impairment, and disordered thinking.

Martin and colleagues suggest that nurses review post-TBI symptoms with patients and their families and counsel patients on how to gradually resume their normal activities. Early intervention is best, and early education is key. One study of people with mild TBI found that those who received a booklet on post-TBI coping strategies within a week of injury had fewer symptoms 3 months later than those who did not (Ponsford et al., 2002). An educational intervention after concussion is vitally important to facilitate the anticipated full recovery course.

Overall treatment should include symptom monitoring and management; referrals for counseling or peer support; pharmacologic treatment as appropriate; and periodic follow-up after discharge. Coordinating care is important for all patients, but it is particularly important for TBI patients who have cognitive difficulties, emotional issues, or both. TBI patients are prone to fall through the cracks when it comes to follow-up with providers because of their cognitive difficulties in remembering appointments and medications.

More than 215,000 U.S. troops and several thousand civilian and contract employees are serving in Iraq and Afghanistan. Upon their return home, will you stand ready to evaluate for TBI and provide follow-up care?

For more information, contact Katherine Helmick at Katherine.helmick@amedd.army.mil.

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Telemetry Unit Staffing Ratios: It's Time to Speak the Same Language

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Recent American Association of Neuroscience Nurses (AANN) Listserv(R) discussions have addressed a hot topic in nursing practice: staffing ratios. Listserv participants are reporting telemetry unit ratios as low as 1:3 and as high as 1:10. But are AANN members really speaking the same language when the ratio topic comes up, and can information about these variations translate into potential benefits for individual telemetry units?

Synapse E-News talked to nurses in California (where nurse-patient ratios are mandated) and elsewhere to get a feel for staffing issues on telemetry units. The consensus: Look beneath the hard numbers to assess staffing adequacy.

Behind the Numbers

California's staffing ratio law mandates a 1:5 medical-surgical ratio and a 1:4 ratio for telemetry/step-down units. No ratio in any area is higher than 1:6. These numbers include all licensed nurses (registered nurses [RNs] and licensed practical nurses [LPNs]) but not unlicensed assistive personnel, unit directors, clinical nurse specialists, or unit educators (unless they provide direct patient care). The ratios may be lowered, as well, to accommodate patients who require a great deal of care.

"I believe nurses are satisfied with these ratios," says Norma McNair, MSN RN, clinical nurse specialist at Ronald Reagan UCLA Medical Center. "They have more time to care for their patients, get to know them a little bit, and attend to family needs. Ratios here are necessary as the patients tend to be much sicker than those in the community. Many community hospitals also provide care to increasingly ill patients, and ratios help them to do so in a way that is best for meeting the patients' needs."

Lehigh Valley Hospital and Health Network is a three-campus hospital system in Pennsylvania. Patient turnover is high and the length of stay is short on the neuroscience medical/surgical unit at its largest campus in Allentown, PA; the 35-bed unit discharges 250–300 patients per month on average. Nurse-patient ratios at the facility reflect variations in levels of care, according to Claranne Mathiesen, MSN RN CNRN, stroke coordinator, and Holly Tavianini, MSHSA RN CNRN, medical/surgical neuroscience unit director.

"On a Listserv, the exact type of unit being discussed is not always clear," Mathiesen says. "Some people might be talking about a Level 1 ICU with patients on respirators, and somebody else could be discussing a progressive care or low-level area. If somebody is talking about a less-acute unit, an appropriate ratio may be 1:5 or 1:8 instead of 1:4." The ratio on Tavianini's unit during the day and evening shift is 1:5. Ratios may change based on census and patient acuity.

"Patients are sicker than ever before, but with our advancing technologies, we are getting them healthier quicker and are able to transition them to home or another facility for their aftercare sooner," Tavianini says. "I have been able to flex our nurse staffing to meet the needs of our patients while maintaining our budgetary targets. A few years ago, staff nurses and senior nursing leadership completed a research study that analyzed staffing ratios and the impact on quality outcomes and patient and nursing satisfaction. This study confirmed our staffing ratios for days and evenings were appropriate and prompted additional budgeted nursing positions on the night shift." The ability to manage staffing based on patient needs has helped Tavianini

improve quality outcomes and decrease return visits to critical-care areas. As a Magnet facility, Lehigh Valley also has an edge in attracting high-quality nurses.

Mathiesen and Tavianini offer these suggestions to colleagues who need to make a case for maintaining or increasing ratios:

- Monitor for events that indicate quality-related issues that may be attributable to a staffing mismatch. Channel this information constructively through your organization to initiate appropriate change.
- Have clear expectations for nurses who work with monitoring equipment (such as on telemetry units) and for the management team. Nurses who work with stroke populations, for example, should consult with cardiac colleagues to confirm expectations and define the staff's educational needs. If monitoring equipment is new to your area, draft a transition plan for training.
- Provide or advocate for backup expertise for novice nurses who work evening or night shifts. Lehigh Valley employs clinical resource nurses between 7 pm and 7 am daily; these nurses make rounds on all medical/surgical units to provide an extra layer of knowledge when questions arise. If a telemetry nurse is not sure about how to interpret what he or she sees while observing a cardiac rhythm, for example, the clinical resource nurse can provide assistance.

Looking Ahead

As they look to the future, Mathiesen and Tavianini believe the anticipated, more detailed stratification of the National Database of Nursing Quality Indicators (NDNQI) may help neuroscience nurses more accurately benchmark their colleagues across the country on crucial issues such as staffing.

“The application of neuroscience-specific data points abstracted from NDNQI-like units may allow for better planning to ensure the correct allocation of nursing resources to best meet the needs of our patients,” Mathiesen says.

In California, maintaining ratios when primary RNs are on break has become a priority issue in the last year, according to McNair. Consequently, many areas are now hiring “break relief” nurses. On McNair’s unit, nurses voluntarily sign up for 4-hour break relief slots. She describes this scheduling as a work in progress at her hospital and others throughout the state.

McNair suggests that nurses who want to explore ratio development refer to the work of Linda Aiken, PhD RN FAAN FRCN, a nursing professor and director of the Center for Health Outcomes and Policy Research at the University of Pennsylvania School of Nursing in Philadelphia. “Linda Aiken’s work addresses the issues of ratios and outcomes very well,” McNair says. “Hospitals worry about the expense of lowering ratios to mandated levels, but if there are fewer complications and patients are happier, it is well worth the cost. Aiken’s work takes into consideration not just bedside nurses but administrative concerns as well.