

Industry Trends

The Rare But Valuable Neurointensivist

Recently, much discussion was sparked regarding the presence of—or desire for—neurointensivists on the Neurotrauma LISTSERV[®]. Many members noted the value of the ability for neurointensivists to operate between specialties to provide quality care, particularly for patients with traumatic brain injury (TBI), when neurosurgery residents are not available. To sign up for the Neurotrauma LISTSERV or to read this discussion thread, please log in to the Members Only page on the AANN Web site.

In May, the Neurosciences Intensive Care Unit (NSICU) at the Medical University of South Carolina (MUSC) published an article in the Neurocritical Care Society's quarterly newsletter featuring the many roles neurointensivists play in their program. When space vacated by the medical intensive care unit was allocated to the neurosurgery department, the NSICU was created. Neurointensivists collaborate with neurosurgical or house staff to provide all neurocritical and general critical care services in the NSICU. Tasks include open and percutaneous tracheostomies—with neurosurgery staff and attending ENT surgeon, respectively—participating in the stroke call, and providing telemedicine stroke coverage with stroke neurologists. Neurointensivists are also involved in evaluating patients in other ICUs requiring neurological consultations with neurology residents. To read more about the function of the neurointensivist at MUSC's NSICU, see page 5 of *Currents* (www.neurocriticalcare.org/files/public/NCSVolume4Number2.pdf).

LISTSERVs are a great resource for AANN members to share best practices and exchange ideas. Groups are arranged according to clinical practice areas. Learn more about LISTSERVs and special focus groups, one of this issue's featured member benefits, by visiting Association News.

A Neuroscience Nursing Perspective on Bed Safety

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Many of the conditions that increase the risk for falls are neurological in nature: epilepsy, stroke, dementia, disorders of gait and balance, Parkinson disease, peripheral neuropathy, and head or brain injury, to name a few. Consequently, among all specialty nurses, neuroscience nurses are most likely to be tasked with the challenge of preventing falls before they occur. The best way to circumvent falls is a topic of great debate, especially when it comes to falls from bed. Dangers posed by bed-side rails, especially, have forced a rethinking of methods to keep patients safely in their beds.

A Sordid History of Sleepless Nights

Between 1995 and 2002, the Joint Commission received reports of seven deaths or injuries related to bed rails. Among the five deaths that occurred in hospitals and long-term care facilities, all resulted in death by asphyxiation in people ages 65 and older. Side-rail protector pads were not used in four of the cases. No particular bed-rail configuration was implicated in these cases, but all five organizations at which incidents occurred cited a communication

breakdown among facility staff. The Joint Commission subsequently recommended staff orientation and retraining on entrapment dangers and risk assessment for entrapment. The Joint Commission also recommended re-evaluation of beds for entrapment potential.

The U.S. Food and Drug Administration (FDA), the medical bed industry, national healthcare organizations, patient advocacy groups, and other federal agencies have partnered to form the Hospital Bed Safety Workgroup, whose goal is to reduce the risk of side rail entrapment in hospital beds. Between January 1, 1985, and January 1, 2008, the FDA received notification of 772 incidents of patients caught, trapped, entangled, or strangled in hospital beds. The reports included 460 deaths, 136 nonfatal injuries, and 176 cases in which staff needed to intervene to prevent injuries. The efforts of the FDA and the Hospital Bed Safety Workgroup culminated in the FDA's release of *Hospital Bed System Dimensional and Assessment Guidance to Reduce Entrapment*. The Hospital Bed Safety Workgroup released its own document, *Clinical Guidance for the Assessment and Implementation of Bed Rails in Hospitals, Long Term Care Facilities, and Home Care Settings*.

The American Academy of Neurology also recently released its article "Practice Parameter: Assessing Patients in a Neurology Practice for Risk of Falls (an evidence-based review): Report of the Quality Standards Subcommittee of the American Academy of Neurology."

Bed-Side Rail Dangers Persist

Synapse E-News recently interviewed several AANN members to learn about how they protect their patients against falls from bed. Karen Gilbert, MS ARNP CNRN, nurse practitioner/coordinator at Dartmouth Epilepsy Program at Dartmouth-Hitchcock Medical Center in Lebanon, NH, admits that bed rails can be both helpful and harmful. Gilbert, who also serves as AANN's Epilepsy SFG facilitator, says the use of rail padding can help reduce potential dangers.

"Limbs can be caught in rails during a seizure," she says. "It is important to have padding on the rails if a patient is at risk for generalized tonic-clonic seizures, regardless of age. If a limb gets caught in between the bed rails during a tonic-clonic seizure, the patient can become so stiff that they can break a limb. Without padding, a patient also can shake and hit the hard rails, which can cause injury. A patient who is admitted with only absence seizures should not be restricted with rail padding, however. We need to individualize care to each patient's particular situation."

At the National Institutes of Health (NIH) Clinical Center in Bethesda, MD, all patients are assessed at admission with the facility's standard "Falls Assessment Tool." Patients determined to be high risk for falls have a falling star symbol placed on their door, on the front cover of their unit chart, and on the assignment board. Fall-risk interventions are divided into low- and high-risk categories. Mary Elizabeth Price, MSN RN CNRN, neuroscience clinical nurse specialist at Neuroscience Program of Care, says two upper bed rails are up at all times for patients at high risk for falls. She says, "The side rails on the beds we use in the NIH Clinical Center have been designed to reduce the risk of patient entanglement. We use side-rail pads specifically designed for these beds and we use side-rail pads for all patients with epilepsy because they protect patients during seizure activity."

Height-Adjustable Bed and Mat Options

Height-adjustable beds, also called low-rise beds, are viewed favorably in many neuroscience units. At Price's facility, patients assessed as high risk for falls are assigned to height-adjustable beds that are maintained in the lowest position with the wheels locked. At Dartmouth-Hitchcock, Gilbert agrees, "Bed height is important; the closer to the ground the bed is, the less risk of serious injury if there is a fall out of bed."

Bedside mats (also known as high-impact mats), on the other hand, are not viewed positively in neuroscience units. They especially pose a danger when used with patients who have gait disorders. The mats are not used in the Dartmouth Epilepsy Program or the NIH Clinical Center. Says Price, "We do not use bedside floor mats on the adult neuroscience unit. The use of these mats would represent a trip hazard for patients, visitors, and staff, and, if bedside mats were used in lieu of seizure side-rail pads, a patient may well fall onto the floor, landing on the mat. The patient's EEG electrodes and connecting wires and cables may represent an entrapment risk to the patient during the fall to the floor."

"In addition, if the patient fell out of bed landing on the mat because no side rail pads were installed, the EEG electrodes could be dislodged causing skin and scalp injury," Price continues. "Another important point—if the surface-EEG electrodes became disconnected, the seizure would not be captured on the EEG video monitor."

Observation the Best Intervention

Because patients with neurological conditions are at heightened risk for falls, neuroscience nurses concede their most reliable fall prevention intervention is good, old-fashioned continuous observation.

At the NIH Clinical Center, patients with epilepsy undergoing continuous-surface EEG video monitoring and antiepileptic drug taper are assessed for safety at least every 30 minutes. Patients with epilepsy undergoing invasive EEG video monitoring using subdural or depth electrodes are monitored by nurses 24/7 with direct eye contact continuously in the critical care unit. Bed alarms also are used with these patients. Patients assessed as high risk for falls who are cognitively impaired or not compliant with fall-prevention interventions have their nursing needs supplemented with a patient care technician who provides 24/7 continuous safety observation.

During evening hours, patients assessed as high risk for falls may require safety rounds more frequently than every hour. These patients are assessed more frequently for toileting assistance (urinal and commode at bedside), personal needs, and safety. Says Price, "It is paramount to ensure these patients' personal items, assistive devices, and nurse call button are within easy reach. Patients assessed as high risk for falls are placed in rooms as close as possible to the nurses' station to enhance their visibility by the nursing and supportive staff."

At Dartmouth-Hitchcock, bed alarm use has resulted in the ability to "catch" patients before they completely get out of bed. Technology aside, however, nothing beats the effectiveness of the human touch.

"Absolutely, human observation is best," says Gilbert. "Using video access to see the monitoring patients at the nurses' station has also been helpful for us. Use of alarms connected to monitoring equipment has been the most helpful on our unit. I know that some epilepsy monitoring units (EMUs) don't utilize alarm systems, and I think this is very dangerous. Although there are the occasional false alarms, it is better to observe too frequently than not

frequently enough. Using video monitors at the nurses' station, nurses are required to assess patients frequently in person and by looking at the monitors.”

Data in Short Supply

Janice Buelow, PhD RN, associate professor at the Indiana University School of Nursing in Indianapolis, acknowledges that AANN's membership includes active, highly trained nurses who want to do the best they can for their patients. However, when it comes to “best” solutions regarding bed safety for neuroscience patients, Buelow contends the verdict is still out. “I'm not saying it's wrong to use side rails and side pads—I just don't think we know the answers,” she says. “We really need to start looking at the evidence. The question is why are we using side rails and seizure pads? What is the rationale?”

Buelow and colleagues recently developed two surveys—one for nurses and one for physicians—that were funded by the American Epilepsy Society (AES) and Paul M. Levisohn, MD. The surveys were designed to help identify current practice consistency in EMUs nationwide. These results have been accepted for near-future publication in *Epilepsy & Behavior* in an article titled “A Description of Current Practice in EMUs.” After this study was completed, Buelow and fellow AES members coordinated a multidisciplinary effort throughout 2008 to identify important concepts related to the topics of seizure observation, seizure provocation, emergency treatment, and environments and activity. These four concepts are now the subjects of a Delphi study.

“We need to ask why we are doing the things we do,” Buelow says. “No intervention stops injury and falls—instead it's the analysis of each patient's risk that helps. Something we recommended in our AES work group was to keep a clear and uncluttered room. In addition, you can't really distinguish the right interventions across disease processes.

“This is the basis for all of the quality improvement studies we are doing,” Buelow continues. “The one thing that reduces risk is giving nurses the opportunity to take an accurate assessment of each patient. The problem is nurses have to complete so many online tasks to record activity that this keeps them from breaking away to assess patients. Assessment requires a team that includes everyone from the cleaning crew to nurses, doctors, and the actual patient. If you can put solutions in place for each patient instead of using specific interventions for everyone, this is better. A nurse's thought process needs to be ‘We're doing this task in this way for this patient *because...*’”