NURSING EDUCATION IN THE EPILEPSY MONITORING UNIT

By Cynthia Phillip, RN, MS, CCRN, CNM and Mohamad Koubeissi, MD, FAAN

Nursing education in the epilepsy monitoring unit (EMU) is of utmost importance to prevent injury and other monitoring complications, to maximize the harvesting of important data from monitoring, and to provide psychological support and education for monitored patients. Proper nursing care will help prevent deep venous thrombosis, status epilepticus or seizure clusters, and falls and injury. A properly conducted interview by a trained nurse during and after a seizure can help shed light on motor, memory, and language impairment, among other semiological features that may not be apparent on video inspection alone. Such information will assist in defining the seizure semiology, which is crucial for lateralization and localization of the seizure focus. Additionally, compassionate nursing care is helpful for epilepsy patients during a vulnerable time when patients have to be monitored for days, their medication dosages are changed, and they are more prone to have seizures, let alone those with intracranial electrodes who have to deal with postoperative pain and electrocortical stimulation mapping.

Most patients who are admitted to the EMU undergo tapering of their antiseizure medication dosages in order to increase the chances of capturing their habitual events. Nurses must, therefore, maintain strict seizure precautions in order ensure patient safety during monitoring. Seizure precautions include maintaining oxygen and suction setup, ensuring bedside rails are up and padded at all times, encouraging patients to call for assistance for bathroom needs, and other activities that require ambulation. In addition, maintaining intravenous access for rapid administration of medications must be ensured. In addition to nursing care, continuous monitoring by trained EEG technologists is important, so that they identify ictal patterns on the EEG and notify the nurses as soon as they suspect a seizure.

Decreased mobility in monitored patients places them at risk for developing deep venous thrombosis (DVT). In addition, some medications, such as carbamazepine, fosphenytoin, phenobarbital, and phenytoin, have been associated with increased DVT risks. DVT prophylaxis is therefore initiated in all EMU patients. This can be done pharmacologically, such as with enoxaparin or heparin, and mechanically with sequential compressive devices. Daily physical examination is also important for screening.

Status epilepticus and seizure clusters are risks when antiseizure medications are tapered and withdrawn. EMU protocols often include intravenous administration of a benzodiazepine, such
as lorazepam, after any generalized tonic-clonic seizure or if focal dyscognitive seizures recur within a relatively short period, e.g., four hours or less. Therefore, early identification of seizures and prompt administration of medications and physician notification are crucial in preventing life-threatening events. Nursing care also entails supporting the patient to prevent respiratory distress and airway obstruction, and assisting in arranging for transfer to the ICU for intubation and sedation, if needed.

Accurate documentation of the seizure onset, the presence of an aura, the duration of the seizure, noticing and documenting any physical or cognitive changes, and conducting a focused assessment are extremely important. This, coupled with the video and EEG recordings, will provide the epileptologist with the needed information to classify the seizure and assist in identifying brain regions affected by the seizure.

The seizure interview provides specific information about visual, verbal, motor, and cognitive—including memory and language—abilities during and after a seizure. The interview must be initiated immediately after identifying the seizure is occurring. As such timeliness is a priority, the interview may, at times, be initiated by the EEG technician if a seizure discharge or behavior is noted and the nurse is not readily available.

Examples of interview questions during the seizure include, “How old are you?” and “What are you feeling?” This may be followed by commanding to repeat a brief statement, such as “apples are red” and to remember a word, such as “house.” Assessment of reading, by showing the patient a word printed with large font on a card, such as “CAT,” and of naming a picture (e.g., picture of a pen) can shed light on language impairment. Motor commands also assess general cognition, language comprehension, and motor deficits; for example, asking the patient to stick out his/her tongue or raise his/her left arm or right arm and, in case of no response, to do the movements and see whether the patient will mimic them.

Postictal assessment is similar. First, language is checked by asking the patient to repeat a sentence and read a sentence from a card. Then, naming is assessed by showing pictures of two or three objects. If the patient cannot answer these questions, then language assessment could continue by commanding to repeat different phrases, name objects, and read sentences. When language is intact, further assessment is made. For example, motor commands are given (e.g., sticking out the tongue, raising the left or right arm). Then the patient’s awareness of the seizure is assessed and details about his/her subjective experience are inquired. Then memory is checked by asking if he/she remembers the word given during the seizure and by showing him/her word and picture stimuli to pick ones seen ictally (i.e., recognition assessment) if he/she fails to freely recall the stimuli.

Finally, education is part of proper nursing care in the EMU. Education is required upon discharge in all patients. Family or caregivers must be included in this education in order to improve the chances of adhering to antiseizure medication regimens and follow seizure precaution measures. Patient education must include safety at the home, medication education, and lifestyle changes. Additionally, postoperative patients must be educated about the recognition of signs and symptoms of incision site infection and restrictions of activity.
EPILEPSY CARE IN DEVELOPING COUNTRIES

By William Theodore, MD

We gathered information on the field work in developing countries being done by Epilepsy Section members via a query sent to all members on the section list serve. We found a wide range of projects and very high enthusiasm for international activities but inevitably, and unfortunately, must have missed some participants, so the list should only be considered representative of projects that have shown some sustainability. In this report we decided not to include international study consortia or activities mainly in developed countries.

The countries involved vary widely in resources and level of development. In some, epilepsy surgery programs are being developed; in others, the challenge is to make an epilepsy diagnosis and provide patients with phenobarbital or to distinguish generalized from focal epilepsy and choose valproic acid rather than carbamazepine.

Many of the countries where projects are being carried out have very few neurologists or even none at all. What epilepsy care is available is provided by nonphysician health workers, primary care physicians, or in some cases psychiatrists. The World Health Organization has recently increased its emphasis on noncommunicable diseases, including epilepsy, but national health budgets generally are focused on communicable diseases. Resources for seizure treatment, including access to “routine” laboratory studies, EEG, imaging, and antiepileptic drugs are very limited. The “treatment gap” remains very high in most developing world environments, and stigma against people with epilepsy is strong. Traditional cultural beliefs and practices may conflict with “evidence-based” medicine, leading to delay in care and diversion of patient and family resources.

Epilepsy research can be performed in the developing world and is an excellent path to improve health worker training, as well as patient care. Special organizational challenges, such as poor transportation infrastructure, as well as ethical issues, must be confronted. For example, prospective participants may have even poorer understanding of the difference between research and standard care, or placebos, than those in the US. Financial compensation, if provided, may be high in relation to wages, IRB review limited, and research participation the only way to get care in some environments. Inclusion of local investigators at all stages of project design, initiation, and implementation is essential.

US neurology departments increasingly recognize international neurology as an important academic endeavor and career path. The National Institutes of Health (NIH) funds epilepsy research in several African and Latin American countries. Epilepsy as a consequence of communicable diseases like cysticercosis and malaria has attracted the attention of nongovernmental organizations like the Gates Foundation. Some of the section members listed along with projects below are devoting the majority of their efforts to work in the developing world, while others have taken “mini-sabbaticals” of several weeks or months to participate in clinical care, teaching, and research. Moreover, residency programs are encouraging and providing support for electives in developing countries.
Teaching neurology and providing patient care in resource-poor environments can be a humbling experience; you realize how much you have come to depend on imaging, EEG, and other investigations that are difficult or impossible to obtain. Many of the residents will know much more than you about the special features of neurologic disorders in their environment. It’s important neither to feel helpless, even when the drugs you usually use are unavailable, nor to imply that practicing neurology is impossible without advanced technology.

We have listed one contact person for each project below (with a few exceptions), although many people are involved in each of them.

- Bhutan Epilepsy Project: Farrah Mateen, MD, PhD, Harvard University
- There are several research projects related to aspects of cysticercosis in Latin America: Hugo Garcia, MD, PhD, Institute of Neurological Sciences Lima; Dawn Eliashiv, MD, FAAN, UCLA; Ted Nash, MD, NIAID
- Peru Epilepsy Surgery program: Jorge Burneo, MD, MSPH, FAAN, University of Western Ontario
- Epilepsy Surgery in El Salvador: Angel Hernandez-Mulero, MD, Cook Children's Health Care System, Fort Worth Texas
- Foundation for African Medicine and Education Karatu, Tanzania: Danielle Becker, MD, University of Pennsylvania
- English Speaking Caribbean: Amza Ali, MD, FRCP, FAAN, University of the West Indies.
- Epilepsy Medical Mission to Tena, Ecuador: Patricio Sebastian Espinosa, MD, MPH, Boca Raton, Florida
- Malawi. Treatment of acute seizures in pediatric cerebral malaria: Gretchen Birbeck, MD, MPH, DTMH, FAAN, University of Rochester
- Haiti: Lionel Carmant, MD, Universite de Montreal
- Zambia. There are several adult and pediatric projects in progress: Omar Siddiqi, MD, Harvard University; Gretchen Birbeck, MD, MPH, DTMH, FAAN, University of Rochester
- Initiative to address the issue of arranged marriages in people with epilepsy in south Asian communities: Gagandeep Singh, MD
- Nodding syndrome in Africa is the subject of a variety of projects: Peter Spencer, Oregon Health and Science University; Avindra Nath, MBBS, FAAN, NINDS
- Pediatric Epilepsy Monitoring Unit at Lady Ridgeway Hospital Sri Lanka: Sandy Waran, MD, FAAN, Morristown, New Jersey

THE EPILEPSY SECTION AND YOU

Rethinking Member Engagement

By Gregory Cascino, MD, FAAN

Improving member engagement within AAN sections and the 9,000 unique section members has been the cornerstone of a major AAN research and planning initiative to evaluate the effectiveness of AAN sections in 2015. One of the major recommended areas of improvement involves governance changes to align AAN sections with the Member Engagement Committee. The Executive Council on Sections and Subspecialties (ECOSS) has been repositioned as the
Sections Subcommittee, chaired by Ann Tilton, MD, FAAN. The Sections Subcommittee now reports to the Member Engagement Committee. Such realignment allows sections to capitalize on the synergies between current AAN communications and membership best practices. Most importantly, the governance change positions sections to become communities that members can count on. Section members are a part of a vibrant network of neurologists and neuroscience professionals in shared areas of interest. They should engage in conversation and community and exchange their scientific, practice, and professional insights.

Section leadership structure dates back to 1993 when the Committee on Sections was formed to oversee 13 sections. In 2007, with 30 sections in place, the Committee on Sections Executive Committee (COSEC) was formed. In 2010, the AAN President changed the name and charge of COSEC to encompass responsibility for relationships with subspecialty organizations. COSEC became ECOSS.

In 2014, an ECOSS work group recommended changes to improve the engagement of section members. As a result of this report, the AAN agreed to centralize staffing of sections under the Membership, Communications, and Publications division and develop a plan to better engage section members. There are currently 33 sections with a combined membership of more than 22,000 that includes more than 9,000 unique members.

In 2015, staff embarked on a four-phase initiative to develop a plan to improve section engagement, including research, planning, implementation, and evaluation phases. As a result, the AAN Board of Directors has approved these key recommendations and section members will begin to notice these changes over the coming months:

- ECOSS to become “Sections Subcommittee” reporting to Member Engagement Committee
- Section Chairs to participate in an annual Section Chair Summit at the Annual Meeting
- Committee on Sections to dissolve
- Introduction of online communities to personally engage section members, increase section activity, and aid in retention and recruitment (Early 2016)
- Clear charge for sections and clear roles for section leadership, including accountability for member engagement and reporting to Section Subcommittee
- Clear navigation of proposals to and from sections, via appropriate section leadership, staff, and committees, to include method for feedback to initiating party
- Marketing plans to recruit and retain section members

The overall goal is to help facilitate a better section member experience and improve engagement of AAN members with the Academy and with each other.
UPCOMING EVENTS

2016 American Academy of Neurology Breakthroughs in Neurology
January 15-18, 2016
Omni Orlando Resort, Orlando, FL
Includes a session by Executive Committee Vice Chair, Joseph Sirven, MD, FAAN, on new onset epilepsy

International Epilepsy Day
February 8, 2016
Learn more.

2016 American Clinical Neurophysiology Society (ACNS) Annual Meeting
February 10-14, 2016
Hilton Orlando Lake Buena Vista, Orlando, FL
Registration Ends January 18, 2016

2016 American Academy of Neurology 68th Annual Meeting
April 15-21, 2016
Vancouver Convention Centre, Vancouver, BC, Canada.

11th Asian and Oceanian Epilepsy Congress
May 13-16, 2016
Hong Kong

12th European Congress on Epileptology
September 11-15, 2016
Prague, Czech Republic

2016 American Neurological Association Annual Meeting
October 16-18, 2016
Baltimore Waterfront Marriott, Baltimore, MD

Upcoming Deadlines

American Board of Psychiatry and Neurology Certification Exam Schedule

Clinical Epilepsy Initial Certification
Applications available: January 5, 2016
Deadline: March 29, 2016
Late application deadline: May 24, 2016
Choice of dates: October 24-28, 2016

Clinical Neurophysiology Initial Certification
Next applications available: 2017 – TBD
Clinical Neurophysiology Maintenance of Certification
Applications available: October 2015
Deadline: December 1, 2015
Late application deadline: January 5, 2016
Choice of dates: May 2-6, 2016

American Board of Clinical Neurophysiology Certification Exam Schedule

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