

Title: Examining the Impact of an Intensive, Multi-day Immersion Educational Activity in Epileptology on the Confidence and Knowledge of Neurology Residents and Child Neurology Fellows

Authors: Bryan C. Taylor, PharmD (Creative Educational Concepts); Patricia E. Penovich, MD (Minnesota Epilepsy Group); David M. Spencer, MD, FAAN (Oregon Health and Science University); Joan B. Fowler, PharmD, BCPP (Creative Educational Concepts); Ashley C. Lilly, MHA (Creative Educational Concepts)

Rationale:

- Epilepsy encompasses a complex multiplicity of neurological disorders and is associated with substantial morbidity and clinical intractability. With almost three million Americans presently affected by epilepsy, it is also a condition of robust prevalence.
- Despite the immense clinical gravity of epilepsy, important gaps still exist in the current treatment paradigm. A 2012 Institute of Medicine (IOM) report identified thirteen specific recommendations to improve epilepsy care; among the most prominent was the need to optimize health professional education focused on epilepsy, with a particular emphasis on adaptive educational initiatives targeted to neurology residents/trainees.
- Included in the Healthy People 2020 goals is the need to increase the number of epilepsy patients with uncontrolled seizures who receive appropriate care, thereby illustrating that the time to advance epilepsy care through the provision of timely and impactful educational activities is now.

Methods:

- In continuing the foundational vision of Dr. John Gates of the Minnesota Epilepsy Group, Creative Educational Concepts (CEC) has developed and delivered a multi-day resident/fellow immersion training in epilepsy for fifteen consecutive years; the activity is widely known as the Neurology Residents Scholar Program (NRSP).
- The NRSP is designed in accordance with American Academy of Neurology (AAN) curricular standards and Accreditation Council for Graduate Medical Education (ACGME) core competencies.
- Educational outcomes data are gathered from pre- and post-test questions, intra-activity audience response questions, and activity evaluations.

Results:

- The 2019 NRSP achieved meaningful advances in neurology resident/child fellow confidence, knowledge, and intention to change practice.
- Improvements in confidence
  - Identifying seizure etiology (96% post-activity vs. 77% pre-activity)
  - Interpreting EEGs (63% post-activity vs. 41% pre-activity)
  - Managing seizures with genetic etiologies (58% post-activity vs. 48% pre-activity)
  - Managing antiepileptic drug therapies (88% post-activity vs. 82% pre-activity)
  - Integrating novel/newly-approved agents for pediatric epilepsy (64% post-activity vs. 56% pre-activity)
- Improvements in knowledge
  - Seizure etiology in special populations (98% post-activity vs. 84% pre-activity)
  - Managing psychiatric comorbidities (94% post-activity vs. 45% pre-activity)
  - Treating epilepsy in pregnancy (90% post-activity vs. 81% pre-activity)
- 98% of attendees said the information presented would enable them to make practice changes

Conclusions:

- Epilepsy is a prevalent, morbid condition for which crucial treatment and knowledge gaps exist. The provision of responsive educational initiatives targeted to neurology trainees has been identified as an essential tool for advancing epilepsy care.
- As evidenced by NRSP outcomes, a multi-day, resident/fellow epileptology immersion activity is an effective educational format for improving neurology trainee confidence, knowledge, and clinical practice.