Body System: Neurologic

Session Topic: Seizure Update

Educational Format		Faculty Expertise Required
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. Please describe your interest and plan for teaching a PBL on your proposal form.

Professional Practice Gap	Learning Objective(s) that will close the gap and meet the need	Outcome Being Measured
• Patients have misunderstandings about when marijuana is a reasonable therapeutic option. • Physicians are often unfamiliar with synthetic cannabinoids.	1. Evaluate children presenting with febrile seizure in accordance to current AAP guidelines. 2. Develop individualized treatment plans for adult patients with an unprovoked first seizure, in accordance with current AAN/AES guidelines. 3. Establish protocols to routinely screen cognition, mood, and behavior in patients with new-onset epilepsy. 4. Evaluate the available evidence on the use of medical marijuana as a viable treatment option for seizures.	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.

ACGME Core Competencies Addressed (select all that apply)

X	Medical Knowledge		Patient Care
	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism		Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
    - Visit http://www.aafp.org/journals for additional resources
    - Visit http://familydoctor.org for patient education and resources
- Provide recommendations for evaluate children presenting with febrile seizure in accordance to current AAP guidelines.
- Provide recommendations for developing individualized treatment plans for adult patients with an unprovoked first seizure, in accordance with current AAN/AES guidelines.
- Provide strategies for establishing protocols to routinely screen cognition, mood, and behavior in patients with new-onset epilepsy.
- Provide an overview of the available evidence on the use of medical marijuana as a viable treatment option for seizures.

Needs Assessment

*Note: the intent of this topic is to provide practicing physicians with an overview of practice changing updates with regard to the treatment and management of seizures.

Up to 50,000 American die each year from seizures and related causes.[1] About 2 to 5 percent of Americans experience an afebrile seizure, and seizures account for approximately 1 to 2 percent of all emergency department visits.[2]

Data from a recent American Academy of Family Physicians (AAFP) CME Needs Assessment survey indicate that family physicians have statistically significant gaps in the medical knowledge necessary to optimally manage patients who experience seizures.[3]

A review of the literature suggest that physicians have knowledge and practice gaps with regard to seizures:

- The American Academy of Neurology (AAN) and the American Epilepsy Society (AES) release new guidelines on the management of unprovoked first seizure in adults.[4]
- The International League Against Epilepsy (ILAE) release a new report recommending routine screening of cognition, mood, and behavior in new-onset epilepsy.[5]
- Persons with persistent seizures, who are uninsured or receiving Medicaid or Medicare benefits, have significant gaps in access to specialized epilepsy care.[6,7]
- Only 52.8% of adults with active epilepsy reported seeing a neurologic specialist in the preceding 12 months.[8]
- Immediate treatment is warranted in patients at risk of developing epilepsy, but identifying these patients can be challenging.[9]
- Young adults of childbearing age, who are patients of a pediatric epilepsy center, may not be receiving counseling regarding epilepsy specific safety issues.[10]

- The American Academy of Pediatrics (AAP) has issued updates to guidelines for evaluating simple febrile seizures in children; however, a diagnostic approach for febrile seizures is still routinely performed, despite (AAP) recommendations not to.[11,12]
- Parents of children with new-onset epilepsy require counseling to help manage stress, fears/concerns, and perceived stigma, in order to improve child epilepsy-specific HRQOL.[13]

Additionally, as more and more state legislatures approve the use of medical marijuana, physicians are presented with new treatment options. However, physicians are frequently unaware of evidence-based information regarding the efficacy, risks, and benefits of cannabis for therapeutic purposes (CTP).[14] In the United States, cannabis is an illicit drug either to possess or trade. However, since 1997 more than 14 states have already have amended their state laws to allow the use of marijuana by persons with debilitating medical conditions as certified by licensed physicians; as such, family physicians need to be cognizant of such changing landscapes with a practical knowledge on the pros and cons of medical marijuana, the legal implications of its use, and possible developments in the future.[15] Additionally, as the use of medical marijuana expands, physicians will need to consider the implications for the patient-physician relationship.[16]

Physicians are often challenged to keep up to date on clinical practice guidelines. Physicians may improve their care of patients who experience seizures by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:[2,4,9,11,12,17-19]

- Routine laboratory tests, electroencephalography, and neuroimaging are not recommended in patients with simple febrile seizures.
- Parents should be reassured after a simple febrile seizure that there is no negative impact on intellect or behavior, and no increased risk of death.
- Use of long-term continuous or intermittent antiepileptic medication after a first simple febrile seizure is not recommended because of potential adverse effects.
- Use of antipyretic agents at the onset of fever is not effective at reducing simple febrile seizure recurrence.
- Lumbar puncture should be performed in children with febrile seizures and signs and symptoms of meningitis (e.g., neck stiffness, Kernig sign, Brudzinski sign), or if the patient history or examination suggests the presence of meningitis or intracranial infection.
- An emergency CT may be considered in adults with first seizure
- An emergency CT may be considered in children with first seizure.
- An emergency CT should be considered in patients presenting to the emergency department with seizure who have an abnormal neurologic examination, a predisposing history, or focal onset of seizure.
- Head computed tomography is recommended in the emergency setting for all patients with a first seizure.
- Adults who present to the emergency department after a first seizure and who have normal neurologic findings, no comorbidities, and no known structural brain disease may

be discharged after they have returned to their baseline neurologic status if outpatient follow-up can be ensured. They do not need to be started on an antiepileptic drug.
- Neuroimaging (preferably magnetic resonance imaging) is recommended in the outpatient setting after a first unprovoked seizure for all adults and for children with specific risk factors.
- Serum glucose and sodium levels should be measured in all adults with a first seizure, and pregnancy testing should be performed for all women of childbearing age after a first seizure.
- Lumbar puncture should be performed in all immunocompromised patients with a first seizure.
- Electroencephalography is recommended in all patients with a first unprovoked seizure, and should be performed no later than 24 to 48 hours after the event.

Physicians can improve patient satisfaction with the referral process by using readily available strategies and tools such as, improving internal office communication, engaging patients in scheduling, facilitating the appointment, tracking referral results, analyzing data for improvement opportunities, and gathering patient feedback.[20,21]

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- Evaluation of a first seizure[2]
- ANN/AES Guideline: Management of an unprovoked first seizure in adults[4]
- Evaluation of first nonfebrile seizures[9]
- AAP Neurodiagnostic evaluation of the child with a simple febrile seizure.[11]
- Febrile seizures: risks, evaluation, and prognosis[17]
- ACR Appropriateness Criteria - seizures and epilepsy[18]
- Absence seizures in children[19]
- Adding health education specialists to your practice[22]
- Envisioning new roles for medical assistants: strategies from patient-centered medical homes[23]
- The benefits of using care coordinators in primary care: a case study[24]
- Engaging Patients in Collaborative Care Plans[25]
- The Use of Symptom Diaries in Outpatient Care[26]
- Health Coaching: Teaching Patients to Fish[27]
- Medication adherence: we didn't ask and they didn't tell[28]
- Encouraging patients to change unhealthy behaviors with motivational interviewing[29]

- Integrating a behavioral health specialist into your practice[30]
- Simple tools to increase patient satisfaction with the referral process[20]
- Febrile Seizures | Overview (patient education)[31]
- Epilepsy | Overview (patient education)[32]

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