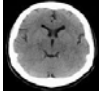



Edward P. Sloan, MD, MPH, FACEP


**Putting it All Together with
Seizure Clinical Policies:
*Making Good Clinical
Decisions & Improving ED
Seizure Patient Care***



Edward P. Sloan, MD, MPH, FACEP 

**FERNE/EMRA
Session**


**Chicago, IL
May 18, 2007**

Edward P. Sloan, MD, MPH, FACEP 

Edward P. Sloan, MD, MPH

Professor


***Department of Emergency Medicine
University of Illinois at Chicago
Chicago, Illinois***

Edward P. Sloan, MD, MPH, FACEP 

**Attending Physician
*Emergency Medicine***

***University of Illinois Hospital
Our Lady of the Resurrection Hospital***

Chicago, IL


Edward P. Sloan, MD, MPH, FACEP 

Disclosures

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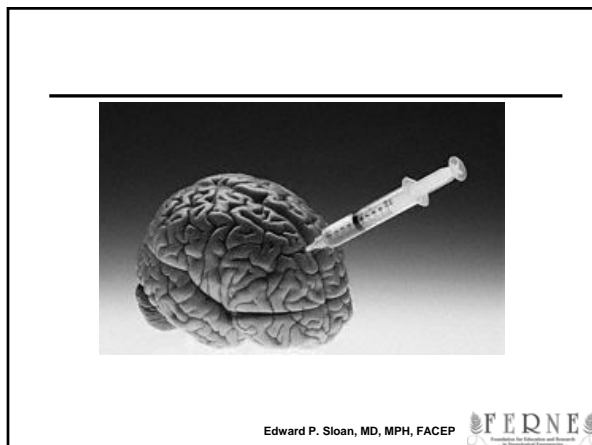
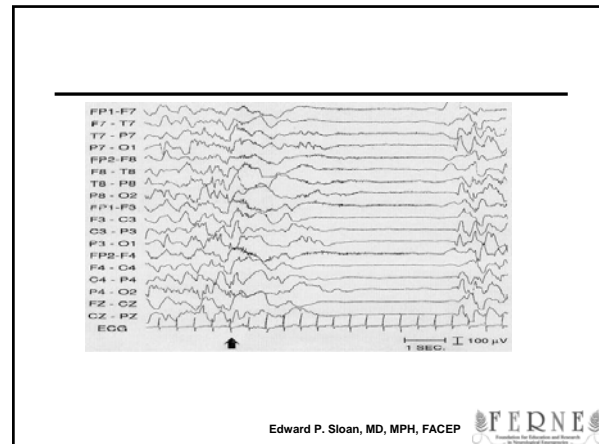
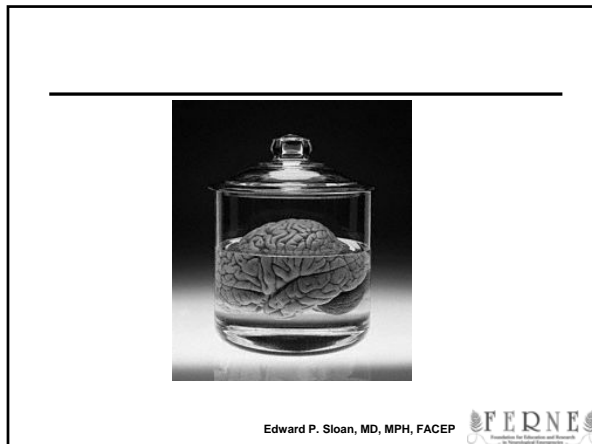
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**Foundation for Education and Research
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- ### Global Objectives
- Maximize patient outcome
 - Utilize health care resources well
 - Practice good medicine
 - Optimize evidence-based medicine
 - Enhance Emergency Medicine practice
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- ### What Do We Have?
- Two clinical policies
 - Policies address clinical issues
 - Limited conclusive recommendations
 - A search for clinical relevance
 - A need to know
 - People who care
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What Do We Know?

- We learn by the oral tradition
- We know what someone has told us
- On the job training maximized
- Do one, see one, teach one

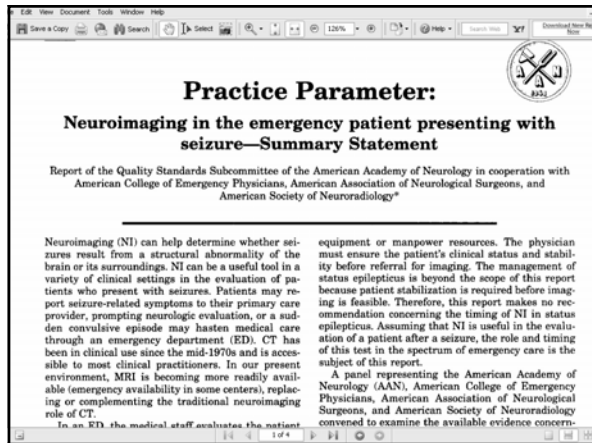
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What Do We Know?

- Our references are Internet-based
- Google is not always the answer
- Evidence-based medicine is standard
- Knowledge transfer (KT) is in
- Profound limits to these efforts exist

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First Time Seizure

- Emergent Neuroimaging:
 - Suspect structural lesion
 - New focal deficits, Persistent altered mental status, fever, trauma, headache, cancer, anticoagulation, HIV/AIDS
 - Age over 40
 - Partial-onset seizure

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Epilepsy with Recurrent Seizure (s)

- Emergent Neuroimaging :
 - Suspect structural lesion
 - New focal deficits, Persistent altered mental status, fever, trauma, headache, cancer, anticoagulation, HIV/AIDS
 - New seizure type or pattern
 - Prolonged postictal confusion
 - Worsened mental status

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What Do You Need to Know?

- Liberal cranial CT neuroimaging is key
- There may be instances where this is not the standard or indicated in order to improve ED seizure patient care
- This is of limited importance clinically

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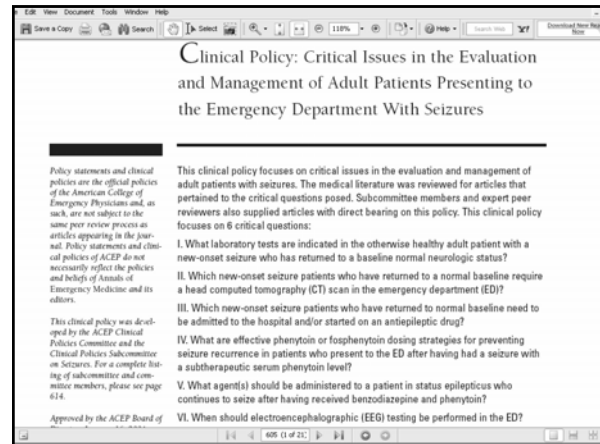


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What Do We Need?

- Not much related to cranial CT per se
- No clinical policy will change clinical practice for this clinical question

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What Lab Testing?

Level A recommendations. None specified

Level B recommendations.

1. Determine a serum glucose and sodium level....
2. Obtain a pregnancy test if a woman is of childbearing age
3. Perform a LP, after a CT, either in the ED or after admission, on immunocompromised pts

Level C recommendations. None specified

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What Do You Need to Know?

- Liberal lab testing is useful in the ED
- We determine problem etiologies for the patient, the consultants, and the primary care providers
- Casting a net widely is our standard
- This is not the place to “save money”

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What Do We Need?

- Not much
- No new information will likely change clinical practice for this clinical question

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CT Neuroimaging?

Level A recommendations. None specified

Level B recommendations

1. When feasible, perform neuroimaging of the brain in the ED on pts with a first-time seizure
2. Deferred neuroimaging may be used when reliable followup is available.

Level C recommendations. None specified

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What Do You Need to Know?

- Liberal cranial CT neuroimaging is key
- This policy protects you if a cranial CT must be delayed and follow-up is secured
- Must document that acute CT neuroimaging is NCI “not clinically indicated”

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What Do We Need?

- More information on MRI indications
- This test will be requested and will increase health care costs
- It is uncertain whether this increased expenditure will improve patient care

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Admission, AED Initiation?

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

1. Patients with a normal neurologic examination can be discharged from the ED with outpatient followup.
2. Patients with a normal neurologic examination, no comorbidities, and no known structural brain disease do not need to be started on an AED in the ED.

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What Do You Need to Know?

- When in doubt, admit +/- start an AED
- You do not have to admit unless the patient’s clinical evaluation is not likely or there is significant SE risk
- AEDs are initiated in order to reduce SE risk and to manage potential long-term seizure complications
- This is a complex issue

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What Do We Need?

- More information on short-term seizure recurrence risk and SE risk
- More guidance on those situations that increase risk such that admission and/or AED use in of benefit
- A greater working knowledge of how neurologists address this issue

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Phenytoin Loading?

Level A recommendations. None specified

Level B recommendations. None specified

Level C recommendations.

Administer an intravenous or oral loading dose of phenytoin or intravenous or intramuscular fosphenytoin, and restart daily oral maintenance dosing.

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What Do You Need to Know?

- What is the risk of your pt population?
- How does your ED system work best?
- Can you use phenytoin safely?
- What are the particulars of the use of fosphenytoin in seizure and SE patients?

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What Do We Need?

- Studies that address the different phenytoin loading strategies
- Information of fosphenytoin use in SE
- More education regarding optimal fosphenytoin use

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Status Epilepticus Rx?

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

Administer one of the following agents intravenously: “high-dose” phenytoin, phenobarbital, valproic acid, midazolam infusion, pentobarbital infusion, or propofol infusion.

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What Do You Need to Know?

- How to provide the SE AED drugs?
- What is your institutions SE protocol?
- How does your ED system work?
- Can you quickly order and administer a series of AEDs?
- Which AEDs might work best for which SE patients?

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What Do We Need?

- Studies that address the different AEDs that could be used in SE
- More education regarding optimal SE protocols and AED use in SE patients

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ED EEG Testing?

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

Consider an emergent EEG in patients suspected of being in nonconvulsive SE or in subtle convulsive SE, patients who have received long-acting paralytic, or patients who are in drug-induced coma.

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What Do You Need to Know?

- What is subtle SE and when must it be detected clinically?
- Can you get an EEG in your ED?
- When is it the standard of care regarding EEG use in order to maximize SE patient outcome?
- Could you identify SE on a two channel or full EEG ?

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What Do We Need?

- Studies that address the use of EEG patients with AMS and suspected subtle SE
- Studies that examine EEG caps, telemetry, and two channel EEGs
- More information on optimal EEG utilization in the ED

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Conclusions

- Despite our best efforts and intentions, the medical literature, KT, and evidence-based medicine are not the major drivers of clinical practice and the standard of care
- We must be skilled and current
- We must know what we need to know

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Recommendations

- Read every clinical policy you can get your hands on from www.acep.org
- Use www.guidelines.gov
- Ask every clinically useful question you can think of to every person with whom you work
- Answer these questions in order to improve ED seizure pt care, outcome

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Conclusions

ACEP practice parameter defines role and timing of emergency management of seizures
Largely based upon Class II and III evidence
Many simple questions without answers

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Questions?

www.FERNE.org

edsloan@uic.edu
312 413 7490

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Edward P. Sloan, MD, MPH, FACEP

