

## ACEP Clinical Policy:

***Critical Issues for the Evaluation and Management of Adult Patients Presenting With Seizures***

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## Session Objectives

- Discuss ACEP's Clinical Policy Process
- Present the ACEP 2004 Guidelines on Seizures
- Discuss the Application of the Guidelines and their Limitations

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## Global Objectives

- Improve pt outcomes in seizures and SE
- Answer clinically relevant questions for practicing emergency physicians using existing scientific evidence
- Assist in decisions when to use diagnostic testing in patients with seizures and SE
- Facilitate useful disposition, documentation
- Assist in delineating clinical practice and areas in need of research

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## First ACEP Sz Guideline, 1993

- Seizures are a medical emergency
- Few hospitals utilized a SE protocol
- No guidelines existed to facilitate clinical practice
- These efforts improve patient care, minimize risk, and enhance clinical practice while reducing unnecessary testing

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## A Clinical Case

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## Patient Clinical History

- 25 yo male
- EMS to ED
- Generalized seizure at a bar
- Spontaneously resolved
- Hx of ETOH induced seizure etiology
- On Dilantin and Non-compliance in past
- No recent illness

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## ED Presentation

- Patient Returned to Neurological Baseline in ED
- Non-focal neurological exam
- No evidence of trauma or toxicity

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## Clinical Policy: Key Questions

- Who created them and why?
- What process was followed?
- Are the recommendations adequately supported by the scientific evidence presented?

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## What was the Process Used for the 2004 ACEP Seizure Guideline?

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## Evidence Based Guideline

- Specific Critical Clinical Questions
- Medical Literature Search
- Grading of Evidence Using an Defined Analytic Approach
- Committee Recommendations Based on the Strength of the Evidence
- Multi-specialty and Peer-Review

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## Strength of Evidence

- Level 1: Randomized, double-blind interventional studies for therapeutic effectiveness; prospective cohort for diagnostic testing or prognosis
- Level 2: Retrospective cohorts, case control studies, cross-sectional studies

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### Strength of Evidence

- **Level 3: Observational reports; consensus reports**
- **Strength of evidence may be downgraded based on methodologic flaws, size and bias**

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### Recommendation Strength

- **Strength of recommendations:**
  - **A (Standard): High degree of certainty based on Class I studies**
  - **B (Guideline): Moderate clinical certainty based on Class II studies**
  - **C (Option): Inconclusive certainty based on Class III evidence, consensus**

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### ACEP Clinical Policy

1. **What lab tests are indicated in the otherwise healthy adult patient with a new onset seizure who has returned to baseline normal neurologic status?**

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### ACEP Clinical Policy

2. **Which new onset seizure patients who have returned to a normal baseline require neuroimaging in the ED?**

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### ACEP Clinical Policy

3. **Which new onset seizure patients who have returned to normal baseline need to be admitted to the hospital and / or started on an AED?**

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### ACEP Clinical Policy

4. **What are effective phenytoin strategies for preventing seizure recurrence in patients who present to the ED with a subtherapeutic serum phenytoin level?**

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## ACEP Clinical Policy

5. What agent(s) should be administered to a patient in status who continues to seize despite a loading dose of a benzodiazepine and a phenytoin?

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## ACEP Clinical Policy

6. When should an EEG be performed in the ED?

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## 2004 ACEP Clinical Policy: *New Onset Seizures*

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## Laboratory testing

- Outcome Measure: abnormal test that changes management
- Level 2: literature to support serum glucose and sodium levels on patients with a first time seizure
- Level 2: literature supporting pregnancy testing
- Level 3: evidence for a LP in HIV patients

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## Laboratory Testing

- Level A Recommendation: None
- Level B Recommendation:
  - Determine a glucose and serum sodium in new onset seizure patients without co-morbidities
  - Obtain a pregnancy test in women of child-bearing age
  - Perform an LP after a head CT in immunocompromised patients

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## Neuroimaging

- Outcome Measure: Abnormal CT
- Level 2: Evidence on CT findings

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## Neuroimaging

- **Level A Recommendations:** None
- **Level B Recommendations:**
  - When feasible perform a CT
  - Deferred outpatient neuroimaging when reliable follow-up is available

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## Admission and/or AED?

- **Outcome Measure:** short term morbidity or mortality
- **Level 3:** the rate of seizure recurrence in patients with normal neurologic exams is low
- **Level 3:** Structural lesions have higher rates of seizure recurrence

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## Admission and/or AED?

- **Level A Recommendation:** None
- **Level B Recommendation:** None
- **Level C Recommendation:**
  - Patients with a normal neurologic examination can be discharged from the ED with follow-up
  - Patients with normal neurologic exams and no structural abnormalities do not need to be started on AEDs

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## Phenytoin Loading

- **Outcome Measure:** short-term seizure recurrence
- **Level 3:**
  - IV and/or oral phenytoin
  - IV or IM fosphenytoin

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## Phenytoin Loading

- **Level A Recommendation:** None
- **Level B Recommendation:** None
- **Level C Recommendation:** Administer any of the loading regimens and restart oral maintenance dosing

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## SE: Rx After Benzos, Phenytoin

- **Outcome Measure:** cessation of motor activity
- **Level 3 Evidence:**
  - “high-dose” phenytoin, phenobarbital, or valproic acid infusions
  - midazolam, pentobarbital, or propofol continuous infusions

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### SE: Rx After Benzos, Phenytoin

- Level A Recommendations: None
- Level B Recommendations: None
- Level C Recommendations: Administer one of the following agents: “high-dose” phenytoin, phenobarbital, valproic acid, midazolam, pentobarbital or propofol

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### EEG Monitoring

- Outcome Measure: abnormal EEG that changes treatment
- Level 3 Evidence: nonconvulsive status epilepticus, subtle convulsive status epilepticus and patients seizing after treatment with long-acting paralytics may be proven to be seizing

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### EEG Monitoring

- Level A Recommendations: None
- Level B Recommendations: None
- Level C Recommendations: Consider an EEG in patients with suspected nonconvulsive status, subtle convulsive status epilepticus, or in those receiving long-acting paralytics or drug induced coma

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### Summary

- Evidence based clinical; policies are useful tools in clinical decision making
- Clinical policies do not create a “standard of care” but do provide a foundation for clinical practice at a national level
- The current literature on seizure management does not support the creation of any “level A” recommendations
- Research should focus on recurrence rates and effective treatment

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### Questions??

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