


Edward P. Sloan, MD, MPH, FACEP

SeizureStat®
A PDA Software for Seizure/SE Therapeutics and the 2004 ACEP Seizure Clinical Policy

Edward P. Sloan, MD, MPH, FACEP


Professor
Department of Emergency Medicine
University of Illinois College of Medicine
Chicago, IL



Objectives

- Present clinical cases
- Examine the medical use of PDAs
- Discuss the use of the 2004 ACEP Seizure/SE Clinical Policy
- Discover how to use SeizureStat®
- Improve patient care


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Key Learning Points: PDAs

- Increasing use in clinical medicine
- Access to patient data
- Clinical care data source
- Data collection tool
- Personal organization
- Effectiveness is being established


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Key Learning Points: ACEP Sz Policy

- New onset seizure patients
 - Lab testing
 - Neuroimaging
 - Admit/AED loading
- Ongoing seizures/SE patients
 - Phenytoin loading
 - SE Rx after benzodiazepines
 - EEG Monitoring


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Key Learning Points: SeizureStat®

- FERNE software
- Provides various data
 - Written seizure/SE information
 - Therapies for urgent ED use
 - ACEP clinical policy recommendations
- Free from www.ferne.org website


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Clinical Case Presentations

- A paramedic in the field calls in a request for rectal diazepam in a two year old child. What is the correct dose?
- In the ED, a child is actively seizing and has no IV access. What is the best IM benzodiazepine for use in pediatric SE? What alternate routes could be used to treat this patient?
- An ED patient continues to seize despite the administration of lorazepam. What options exist for the EM physician in treating this seizing patient?
- A patient presents to the ED with a new onset seizure and has a normal neurological exam. What are appropriate options for the evaluation and disposition of this patient?

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PDA: Medical Settings

- Radiology PACS system
- Inpatient and outpatient settings
- Medical student, resident education
- Pharmacy practice
- Acute pain management service

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PDA: Medical Indications

- Radiology interpretation
- Anticoagulation care
- Procedure and patient logs
- Patient education
- Reduce medical errors
- Biomedical database access

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PDA: Proven Effectiveness

- Shorter patient encounter time
- More encounters logged
- Fewer errors in data logs
- Fewer acute procedures logged

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PDA: Some Names

- PalmCIS internet access software
- BioWAP bio database access
- LexiComp Platinum
- Mobile enterprise software channels

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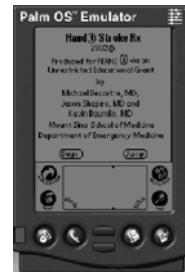
PDA: Some Numbers

- MD Use (PriceWaterhouse)
 - 2000 26% MD use
 - 2001 60% MD use
- Tarascon's Pharmacopoeia
 - 3.3 screens to get to requested info
- PDA Software Costs
 - Free to \$129.95

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FERNE's Stroke PDA

- Handistroke®
- Shapiro, Baumlin
- Mt Sinai Dept EM NY, NY
- NIH Stroke Scale
- tPA Administration



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ACEP 2004 Sz/SE Clinical Policy

- Two clinical areas, six questions
- New onset seizure patients
 - Lab testing
 - Neuroimaging
 - Admit/AED loading
- Ongoing seizures/SE patients
 - Phenytoin loading
 - SE Rx after benzodiazepines
 - EEG Monitoring

Acute Seizure/SE Therapies

- How do we manage new onset seizure patients in the ED?
- How do we rapidly terminate SE?
- What drugs in what doses are used?
- What guidelines govern our care?

Building SeizureStat®

- Satellite Forms
- MobileApps Designer
- Version 5.2.1
- Effective, laborious
- Need a roadmap
- Need clinical info



Satellite Forms Screen



Properties & Links

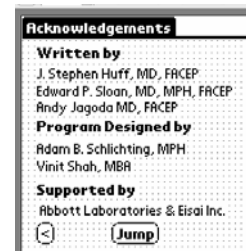
Page List

SeizureStat®

- Written seizure/SE information
 - 9 Seizure/SE topic areas
- Therapies for urgent ED use
 - 10 Therapies highlighted
- ACEP clinical policy recommendations
- Stat SE Treatment Protocol: 0-120 min

Acknowledgements

- Contributors
- Designers
- Supporters
- Thanks to all!!



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SeizureStat® Home Page

- Two intended uses
- Written info/learning
 - Text info
 - ACEP Clinical Policy
- Therapy info/Rx
 - Urgent Rx meds info
 - SE Protocol
 - Calculator



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Urgent Seizure Medications Page

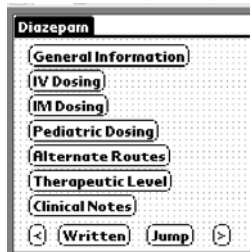
- 10 Therapies
- 6 Pages for each
 - General info
 - IV, IM doses
 - Therapeutic level
 - Alternate Routes
 - Clinical notes



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Urgent Seizure Meds: Access Page

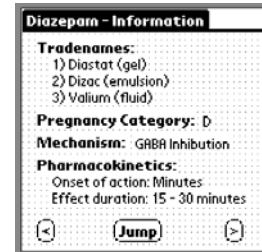
- Access thru 1st page
- Leads to six pages
- Specific med info
- Access to written info
- What's the dose?
- What to know?



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Urgent Seizure Meds: General Info

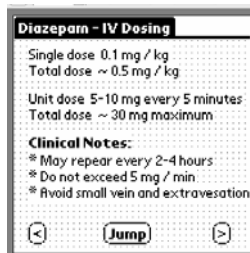
- Trade names
- Pregnancy class
- Mechanism
- Pharmacokinetics
 - Onset of action
 - Duration of action



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Urgent Seizure Meds : IV Dosing

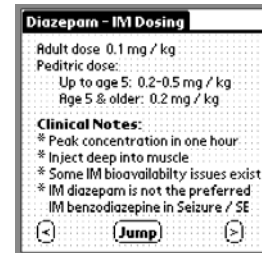
- Single and total dose
- Unit doses
- Clinical notes



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Urgent Seizure Meds: IM dosing

- Adult, pediatric doses
- Clinical notes

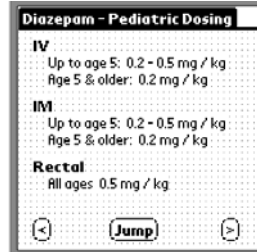


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Urgent Seizure Meds: Pediatric Dosing

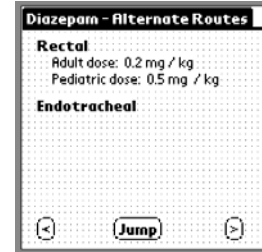
- IV, IM doses
- Rectal dose
- Age-specific doses



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Specific Seizure Meds: Alternate Routes

- Rectal dose
- Endotracheal use
- Other routes
 - Sublingual
 - Intranasal
 - Buccal



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Specific Seizure Meds: Therapeutic Level

- Therapeutic level
- How does level change with dosing?
- Can level be exceeded? When?
- Clinical notes



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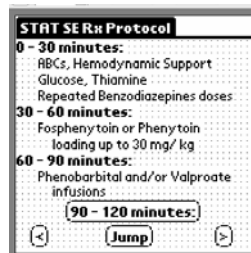
Specific Seizure Meds: Clinical Notes

- The oral tradition in writing
- What are the relevant issues?
- How can the Sz med best be used?
- What problems can be encountered?
- How are problems treated?

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Stat SE Treatment Protocol: 0-90 Min

- Four 30 min periods
- 0-30 ABCs, Benzos
- 30-60 Phenytoins
- 60-90 Phenobarb, Valproate
- 90-120 Next page



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Stat SE Treatment Protocol: 90-120 Min

- 90-120 Continuous AED infusion
- Further Dx, Rx
- CT, neuro consult
- ICU Disposition
- EEG Monitoring

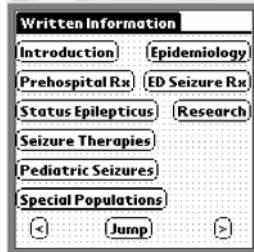


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Written Information

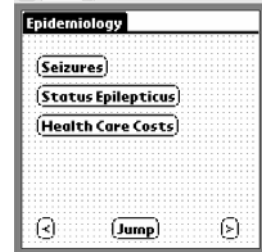
- 9 Topics addressed
- Supports specific dosing data
- Assists in clinical decision-making



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Epidemiology

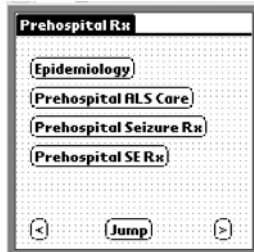
- 3 Topics
 - Seizures
 - SE
 - Health care costs



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Prehospital Rx

- 4 Topics
 - Epidemiology
 - ALS care
 - Seizure and SE Rx



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ED Seizure Rx

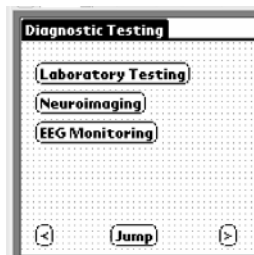
- ED seizure info
- New onset seizure: ACEP policy info
- Written info
- Stat SE Rx protocol



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Diagnostic Testing

- 3 Sections
 - SE patient focus
 - Augments clinical policy info



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Seizure Therapies

- 6 Sections
 - 5 Main therapies
 - Written info
 - Supports specific dosing data
 - Accessed from Urgent Sz Meds pages

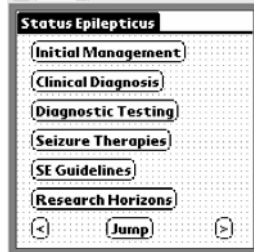


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Status Epilepticus

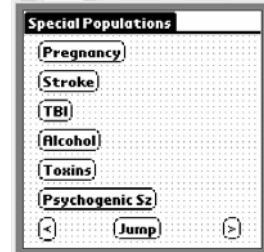
- SE overview
- Written info
- Supports the SE Rx Protocol



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Special Populations

- 6 Patient types
- Unique clinical diagnosis or Rx
- Written info



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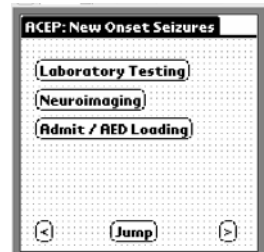
2004 ACEP Seizure/SE Clinical Policy

- Methodology addressed
- How does the user interpret the recs?
- What are the caveats of these recs?

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ACEP Policy: New Onset Seizures

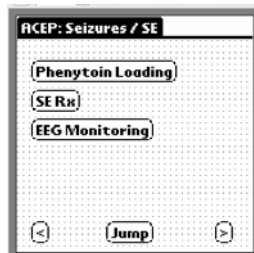
- 3 New onset sz topics
- Question stated
- Answer contains specific level A, B, C recommendations



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ACEP Policy: Seizures/SE

- 3 Seizure/SE topics
- Question stated
- Answer contains specific level A, B, C recommendations



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Other Clinical Information/Tools

- Research Issues
- Pediatric Seizures
- IM Rx
- No IV Access Rx
- Alternate Routes
- Calculator

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First Jump Page

- Access to relevant points within SeizureStat®
- Best way in which to navigate thru software



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Second Jump Page

- Access to more specific sites within SeizureStat®



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How to Use SeizureStat®

- Download from FERNE website
- Install on PDA
- Push many buttons
- Go frequently to the jump page
- Become familiar with protocol, meds
- In urgent need, get specific med data via *Home, Urgent Sz Meds* pages

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Clinical Case Outcomes

- In a 2 yo, the rectal diazepam dose is 0.5 mg/kg.
- Midazolam is the most reliably absorbed and effective IM benzodiazepine.
- Directed labs, a non-contrast CT, and close outpatient follow-up are appropriate.
- Options include fosphenytoin or phenytoin infusions up to 30 mg/kg, infusions of valproate and/or phenobarbital, or continuous infusions of propofol, midazolam, or pentobarbital.

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Conclusions

- Medical PDA use on the rise
- ACEP Clinical Policy upcoming
- Seizures/SE is a medical emergency
- Many seizure therapies are useful
- SeizureStat® addresses these topics
- Useful in the clinical setting

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Recommendations

- Know about seizures and SE
- Know the ACEP Clinical Policy
- Know how to use seizure therapies

- Get a PDA
- Download SeizureStat® (April 1, 2004)
- Learn, improve patient care

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SeizureStat®

A PDA Software for Seizure/SE Therapeutics and the 2004 ACEP Seizure Clinical Policy

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Edward P. Sloan, MD, MPH, FACEP



Questions?

edsloan@uic.edu

ferne@ferne.org

www.ferne.org

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