Thursday, October 29, 2009

To: Judge Rotenberg Educational Center (JRC)

Subject: Safety of the Graduated Electronic Decelerator (GED) and GED-4

I have been asked to make this report of my opinion of the safety of the GED and GED-4 as used at the Judge Rotenberg Education Center. In preparing this report, I have reviewed the following:

- The JRC GED Quality Assurance Documentation
- The JRC Policy “Procedures and Rules for GED Applications and Approvals” dated 7/15/2009
- The JRC Policy “JRC Policy on GED Rotation” dated 11/20/2008
- The JRC Policy “JRC Policy on Battery Changing” dated 10/13/2009
- JRC document “Changes Made and Planned in order to Improve Supervision and Staff Performance” October 2, 2007
- Report from John Bruner MD concerning the output and safety of the GED and GED-4 devices
- Report from David A Durfee concerning the GED conformance with standards
- Letter from Robert E. von Heyn to John Daignault, PsyD, concerning GED spontaneous activations and misapplications

In addition, on October 6th, 2009, I met with Dr. Nathan Blenkush, Glenda Crookes, and several other members of the JRC staff, including the JRC Nursing staff who examine on a regular basis JRC students receiving frequent GED or GED-4 applications. During this meeting, I had an extensive tour of the facilities, observed students in their classrooms, and observed an incidental application of the GED device to a student. I also had a detailed discussion about the use of the device and its parameters. In addition, I have reviewed the literature on this subject, and have reviewed several informational documents and published reports of the use of the GED, including (accessed from www.judgerc.org):


Introduction

The GED and GED-4 are devices used to apply an aversive electrical stimulus to a person undergoing behavioral modification treatment. These devices are battery-operated and worn by the subject, and controlled by a trained attendant in the same room as the subject and in direct visual contact with the subject. The purpose of the stimulus is to interrupt or to modify actual or incipient self-destructive or retrogressive behavior on the part of the subject.

The stimulus is delivered by two electrodes applied to the subject’s skin on their arms, legs, stomach, bottom of hands or feet. The electrodes are in two configurations. The first consists of a dime size metal button (one electrode) surrounded by a narrow ring (the other electrode). These are pressed to the skin on the subject’s body in places other than the chest, top of the feet, hands, genitals, or the spine. The second configuration consists of two metal probes mounted on a fabric harness ~10 cm apart. The distance between the probes cannot be changed on the device without disassembling it. These probes are applied to the subject’s skin as described above using the fabric harness to secure it around the limb.

When the device is discharged, an electrical current passes between the electrodes through the subject’s skin. The devices deliver a 2 second pulse which was described to me to have a 25% duty cycle (3 ms on, 9 ms off), and the peak output was described as 30 mA for the GED and 91 mA for the GED-4. The RMS current for the GED was reported to be 15 mA and 45 mA for the GED-4. As it passes through the skin, the electrical current directly stimulates nociceptors and sensory receptors, creating a painful sensation. I experienced this discharge at my request during my tour of the JRC on 10/6/2009, and found the brief exposure to me moderately painful, and to only last as long as the exposure. There was no pain or abnormal sensation after the exposure ended, nor were there any skin changes during the exposure.

Tour of the Facility

On October 6, 2009 I spend several hours at the JRC in the company of Dr. Nathan Blenkush and Glenda Crookes. I handled and examined GED and GED-4 devices, reviewed operating principles of the devices, reviewed JRC policies and procedures concerning the use of the device, and discussed the history of its
use at the JRC. I also reviewed the monitoring processes used at JRC and safety procedures. I interviewed several of the JRC staff concerning their use of the GED, their perceptions of its use, the safety procedures, and response procedures to emergencies. I also observed students in their classrooms and toured the facility. During this tour, I observed a student undergoing a GED exposure. I observed the staff acknowledging the behavior, confirming with a second staff, locating and confirming the subject’s remote GED control, and the application of the stimulus. During this time, due to the subjects’ agitated behavior, and overhead call was made, and I observed the quick response of a large number of staff to assist the two care givers present initially. I also observed a student wearing holsters which are attached to GED remote controls and deliver GED applications automatically when either hand is removed from a holster and applications continue until the hands are returned to the holsters.

Safety of the GED and GED-4

There has been a great deal of investigation into the effects of exposure to electricity. Most of this work concerns high voltage and large amounts of power from industrial and environmental exposures. Recently, there have been more investigations into the safety of electrical exposures with the advent of conducted electrical weapons, which employ very high voltage exposures of very low power. These devices represent much higher voltage than the GED and GED-4 and likely represent a situation in which the GED and GED-4 is likely as safe as or safer than findings for conducted electrical weapons.

In general, electrical exposure causes muscular contraction between the exposure points due to direct stimulation of motor neurons and pain due to direct stimulation of nociceptors. In addition, tissue resistance to the current as it passes through a person causes the generation of heat, which is directly proportional to the amount of power that passes through a person (voltage x amperage). In a large enough exposure to electricity, this can lead to burns. In addition, very large amounts of electricity can cause seizures, and can cause ventricular fibrillation when applied to the heart. Ventricular fibrillation is the usual mechanism of death associated with exposure to electricity.

To account for direct motor nerve stimulation, attendants are trained in the location of major motor nerves, and instructed to avoid placement of the electrodes in these locations. Direct stimulation of a motor nerve causes contraction of the muscles and tetany that resolves when the current is stopped. Over prolonged periods this can cause muscle injury, including rhabdomyolysis, but that typically requires much longer exposures than the GED and GED-4 exposure. Current exposures of brief duration are not typically associated with muscle injury, although they have been associated with markers of muscle exertion (similar to exercise).[1-5] This typically does not represent a risk to an individual who is normally active and who is able to breathe normally.

Seizures may be produced with electricity, but only if the electrical current is passes directly through the head. The GED and GED-4 are not placed on the subject’s head. The amount of power employed by the GED and GED-4 devices is not likely to be sufficient to cause as seizure if it was accidentally placed there, but the device is not used in this way to ensure there to ensure this complication does not occur.
Skin burns are possible with an electrical exposure. The likelihood of a burn is related to the current that passes through the skin, the resistance of the skin, and the exposure’s duration. A single exposure from the GED or GED-4 does not appear to create sufficient heat to cause a burn. It is possible that multiple exposures over a short period could cause this. In order to address this, the JRC policies require that the electrodes position is changed after every exposure and the subject’s skin is checked for injury.

The most concerning complication from electrical exposure is ventricular fibrillation (VF). For VF to occur, current must pass through the heart. This means that in order to cause VF, the electrodes must be configured in such a way that the current passes through part of the heart muscle. The spacing of the electrodes precludes that possibility. In addition, the electrodes are not placed over the subjects chest, further excluding the possibility of VF due to current passing through the heart after and exposure from a GED or GED-4. Furthermore, the lower boundary of the threshold of ventricular fibrillation is generally considered to be 50-75 mA, higher than the RMS current for the GED and the GED-4.

Electricity passes through the path of least resistance, which is typically the shortest distance between the probes. As current passes through a greater volume, the current density tends to decrease and it spreads out through the conductor volume. This has been studied in other electrical exposures from the skin. The current does not, however, travel outside of areas that is not between the points of application of the current. Furthermore, as the distance from the heart increases, the density of the charge decreases. It is for this reason that this device is not placed on the thorax. Even though it is unlikely to contain enough power to cause VF even at the shortest skin to heart distance from the chest to the heart, avoiding placement of the probes on the chest reduces this theoretical risk. The placement of the probes on this device on the skin <10 cm apart avoids allowing the current to pass through the heart or the brain.

Conclusions

Operated in accordance with the protocols established by the JRC, the use of the GED and GED-4 appears to be safe, delivered by automated device or by command from the transmitter. It is not configured in such a way as to cause seizures or VF. There are adequate safety measures in place to avoid burns or skin injury. The brief nature of the exposure and close proximity of the probes makes muscular injury unlikely. There is an adequate response plan if a subject were injured during exposure. The use of these devices causes brief moderate pain that does not appear to present significant risk to the subjects.

Qualifications of the Author of the Report

My CV is attached. I have done research in the safety of electrical exposures on both animals and humans, specifically in the cardiac and metabolic effects of electrical exposures. This research has left
me well qualified to evaluate and comment on the safety of this device. I am not, however, and electrical engineer, and cannot comment on the specific function of the device in terms of reliability and specific output characteristics. Information from previous reviews by engineers was provided to me and I have made my recommendations based on these reports. Furthermore, I am not a psychologist, and cannot comment on the therapeutic efficacy of the device.

Personal Data

James R. Miner, MD FACEP
SSN# 061-60-7732
Citizenship USA

Address
Department of Emergency Medicine
Hennepin County Medical Center
701 Park Avenue South
Minneapolis, MN
55415
Phone (612) 873-8791
Fax (612) 904-4241
Email: miner015@umn.edu

Education
9/88-6/92 BA Dartmouth College
Hanover, NH

7/92-6/96 MD Mayo Medical School
Rochester, MN

6/96-6/99 Residency in Hennepin County Medical Center
Emergency Medicine Minneapolis, Minnesota

Postdoctoral Training
4/2000 Emergency Medicine Basic Research Skills Course
American College of Emergency Physicians, Dallas, TX

Academic Appointments
6/1999 Research Investigator
Minneapolis Medical Research Foundation

6/2000 Assistant Professor of Emergency Medicine
University of Minnesota Medical School

6/2000 Clinical Faculty
Augsburg College PA Program

6/2006 Associate Professor of Emergency Medicine
University of Minnesota Medical School

Academic Administrative Appointments
6/2001 Assistant Research Director
Department of Emergency Medicine
Hennepin County Medical Center

2001
Assistant Course Director, Basic Clinical Research
Bachelor of Emergency Health Services Program
University College, University of Minnesota

10/2007
Research Director
Department of Emergency Medicine
Hennepin County Medical Center

Clinical/Hospital Appointments
6/1999
Faculty Physician
Department of Emergency Medicine
Hennepin County Medical Center

5/2001
Medical Director for Quality Assurance
Department of Emergency Medicine
Hennepin County Medical Center

5/2009
Physician Regulatory Analyst
Office of the Medical Director
Hennepin County Medical Center

Scientific Activities
2002-present
Reviewer, Annals of Emergency Medicine

2002-present
Reviewer, Academic Emergency Medicine

2004-present
Reviewer, Clinical Neurophysiology

2004-present
Editorial Board, Academic Emergency Medicine

2005-present
Associate Editor, Academic Emergency Medicine

2005-present
Reviewer, American Journal of Emergency Medicine

2005-present
Reviewer, Pain

2008-present
Senior Associate Editor for Electronic Publications, Academic
Emergency Medicine

Grant Support
Unrestricted Research Grant from Glaxo Smith Kline, Principle
Investigator, Sumatriptan for the Treatment of Benign Headaches
in the Emergency Department James R. Miner, principal
investigator, 2% effort, Award, $51,430.44, no salary support
2/2003 – 12/2004  Research Grant from Ortho-McNeil, Site Principle Investigator A Comparison of the Efficacy and Safety of Tramadol HCl/Acetaminophen Versus Hydrocodone Bitartrate/Acetaminophen Versus Placebo in Subjects with Acute Musculoskeletal Pain James R. Miner, principal investigator, 2% effort, Award, $106,410.00, no salary support

5/2004-5/2005  EMF Resident Research Grant, Advisor to Dr. Mark Danahy, Etomidate vs. Propofol for Procedural Sedation in the Emergency Department James R. Miner, principal investigator, 2% effort, Award, $5000, no salary support

6/2005-6/2008  Trauma/Burn Award from Minneapolis Medical Research Foundation Oral Oxycodone vs. IV Morphine for the Treatment of Pain from Musculoskeletal Injuries in the Emergency Department James R. Miner, principal investigator, 2% effort, Award, $14,921 no salary support

6/2005-6/2008  Trauma/Burn Award from Minneapolis Medical Research Foundation Assessment of the Prevalence, Risk Factors, and Natural History of Trauma in the Emergency Department James R. Miner, principal investigator, 2% effort, Award, $14,880, no salary support

6/2005-6/2006  EMF Medical Student Research Grant from the Emergency Medicine Foundation Johanna Moore MS, Oral Oxycodone vs. IV Morphine for the Treatment of Pain in Children Mentor to Johanna Moore and Principal Investigator, 2% effort, award $2,496, no salary support

6/2006-6/2007  EMF Medical Student Research Grant from the Emergency Medicine Foundation, Daniel Hubbard MS, Capnographic Waveform as a Measure of Hypoventilation During Procedural Sedation to Daniel Hubbard and James Miner, principal investigator, 2% effort, award $2,485, no salary support

7/2007-present  Unrestricted Grant from TASER International Comprehensive Evaluation of the Physiologic Effects of TASER Application on Healthy Adult Volunteers to James Miner, principle investigator, 2% effort, $63,400, $37,600 salary support

11/2008-present  Unrestricted Grant from Hutchinson Technical Near Infrared Spectroscopy as a Measure of Perfusion and Undifferentiated Shock 2% Effort, $38,112, no salary support
11/2008-present Unrestricted Grant from TASER International *Assesing the Cardiac Effects of TASER Conducted Electrical Weapon Device Application in the Presence of Methamphetamine Abuse* 2% Effort, $205,619, $72,000 salary support

1/2009-present Unrestricted Grant for the US Department of Defense *Cardiac Safety and Muscle Stimulation Effects of the TASER 40mm Projectile Circuit* 2% effort, $48,917, $16,180 salary support

5/2009-present Unrestricted Grant from Hutchinson Technical *Near Infrared Spectroscopy in Patient Presenting to the Emergency Department Triage Effort*, $39,878, $12,800 salary support

7/2009-present Unrestricted Grant from NewCardio, *EKG Changes in Acute Coronary Syndromes* $5,960, no salary support

**Certification and Licensure**

1998 Advanced Pediatric Life Support (APLS) Provider, Instructor
1998 Advanced Cardiac Life Support (ACLS) Provider, Instructor
1999 Medicine, Minnesota, 41018
1999 DEA registered, Minnesota
1999 Advanced Trauma Life Support (ATLS) Provider, Instructor (recertified 2002)
2000 Board Certified, Emergency Medicine
2000 Emergency Medicine Basic Research Skills Course
2002 Fellow, American College of Emergency Physicians

**HONORS AND AWARDS**

2001 Outstanding Clinical Educator Award, Augsburg College, Department of Physician Assistant Studies

2003 Ernest Ruiz Faculty Teaching Award, Department of Emergency Medicine, Hennepin County Medical Center

2004 Outstanding Peer Reviewer, Academic Emergency Medicine


5/2004 Semi-finalist for Medical Student Presentation Award at the Society for Academic Emergency Medicine Annual Meeting
Miner JR, Beltram M, Hubbard D *Demographic Assessment of Pain in the Emergency Department* SAEM Annual Meeting, Orlando FL, May 2004 Research Advisor/Project Director to M. Beltram.

5/2004 2004 Semi-Finalist for Medical Student Presentation Award at the Society for Academic Emergency Medicine Annual Meeting Gaetz A, Miner JR, Biros M *Breath Alcohol, Bispectral Index, and a Standardized Scale as Predictors of Observation Time for Intoxicated Patients* SAEM Annual Meeting May, 2004 Research Advisor/Project Director to A. Gaetz

5/2006 Top Peer Reviewer, Annals of Emergency Medicine


**MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES**

<table>
<thead>
<tr>
<th>Year</th>
<th>Society</th>
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<tr>
<td>1992</td>
<td>American Medical Association</td>
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<td>1996</td>
<td>Hennepin Medical Society</td>
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<td>2001</td>
<td>American Pain Society</td>
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**TEACHING AND MENTORING ACTIVITIES**

Research Mentor/Project Advisor To:

1999 Sarah Fish, MD *Droperidol vs. Prochlorperazine for the Treatment of Benign Headaches in the ED*

2000 Christopher Rhead, MD *End Tidal Carbon Dioxide Monitoring of Procedural Sedation*

2001 Karen Ross, MD *Procedural Sedation in the Emergency Department*

2001 Ryan Fringer MD, *Risk Factors for the Failure of Outpatient Treatment of Cellulitis*

2001 Jenny Thacker, MD, *Droperidol for the Treatment of Nausea*
2001 Christopher McCoy, MD, *A Standardized Scale for the Assessment of Intoxicated Patients in the ED*

2002 Todd Seigel MS *Serial Bispectral EEG Analysis of Overdose Patients in the ED*

2002 Eric Haug MD, *Bispectral EEG Analysis of Head Injured Patients in the ED*

2002 Scott Friewald MD, *Bispectral EEG Analysis of Paralyzed Patients in the ED*

2002 Susan Krieg MD, *Propofol vs. Methohexital for Procedural Sedation in the ED*

2002 Peter Currie MS, *A Standardized Scale vs. Breath ETOH for the Assessment of Intoxicated Patients in the ED*

2003 Andrew Bachman MD, *The Onset and Persistence of Amnesia During Procedural Sedation with Propofol in the ED*

2003 Madeline Meyer MD, *The Sedation of Critically Injured Patients in the ED*

2003 Shawn Kruse MD, *The Perception of Drug Seeking Behavior Among Patients Treated for Pain in the ED*

2003 Lindsay Kosman *Propofol Sedation in the ED*

2003 Scott Nichols MS *Moderate vs. Deep Procedural Sedation in the ED*

2003 Benjamin Bursell MS, *Sumatriptan for the Treatment of Benign Headaches in the ED*

2004 Cindy Kasak, *Association Between Serum Bicarbonate and Urinalysis Findings in Dehydrated Children*

2004 Darren Huber MD, *Moderate vs. Deep Procedural Sedation in the ED*

2004 Maryam Beltram MS, *The Demographics of Pain Treatment in the ED*

2004 Daniel Hubbard, *The Relationship Between Headache Taxonomy and Pain Relief for Patients with Headaches in the ED*
2004 Andrea Gaetz MS, *Bispectral EEG Analysis vs. Breath ETOH vs. A Standardized Scale for the Assessment of Intoxicated Patients in the ED*

2005 Johanna Moore MS, *Oral Oxycodone vs. IV Morphine for the Treatment of Pain in Children*

2005 Mark Danahy, MD *Propofol vs. Etomidate for Procedural Sedation in the ED*

2005 Matt Prekkar MD, *The Prevalence and Natural History of Trauma in the ED*

2005 Joseph Mayerle, *The Incidence of In Custody Deaths in the United States*

2005 Lisa Skinner, *Oral Oxycodone vs IV Morphine for the Treatment of Pain in Adults*

2005 Kate Stirling, *The Association of Pain Treatment and Physician Perception of the Patient-Physician Interaction*

2006 Daniel Hubbard, *Capnogram Waveform as a Measure of Hypoventilation During Procedural Sedation*

2006 Joseph Mayerle *Capnogram Waveform as a Measure of Hypoventilation During Procedural Sedation*

2006 Elizabeth Plocher *The Association of Healthcare Perceptions and Socioeconomic Status with Insurance Status*

2006 Jeff Pinnnow *Drinking Patterns of Chronic Alcoholics in an Urban County Hospital*

2006 Christopher Vu *Time Series Analysis of Critical Care Treatment in the Emergency Department*

2006 Heidi Flashinski *The Prevalence of Alcohol Use in Patients Presenting to the Emergency Department with Pain and Minor Trauma*

2007 Zabrina Warzonek *Capnographic Analysis of Agitated Patients in the Emergency Department*

2007 Nathaniel Scott *Capnographic Analysis of Patients Undergoing Treatment for Shock in the Emergency Department*

2008 Chris Ward *Use of an Airway Model to Compare Mask Ventilation Techniques*
2008  Gregory Peterson  *Near Infrared Spectroscopy of Patients Undergoing Resuscitation for Shock*

2008  Chandler Hill  *Prospective Observational Study of Airway Management in Critically Ill Patients in the Emergency Department*

2008  Julie Hottinger  *The Utility of Capnographic Monitoring During Procedural Sedation in the Emergency Department*

2008  Joe Lai  *Assessment of Airway Management in Emergency Department Critical Care*

2008  Jill Crosby  *Assessment of Two Bag Valve Mask Techniques Using and Airway Simulation Model*

2008  Ahmed Udin  *End-Titled Carbon Dioxide as a Measure of Carboxyhemoglobin in Carbon Monoxide Poisoning*

2008  Andrew Duren  *Prevalence of Adequate Healthcare Literacy among Patients Presenting to the Emergency Department*

2009  Karen Terwe  *Predictive Value of End-tidal CO2 for Clinical Interventions during Procedural Sedation*

**Residency Advisees**

2000-2003  Ryan Fringer, MD
2002-2005  David Ladmer, MD
2004-2007  Katie Vogt, MD
2006-present  Matthew Prekkar, MD
2007-present  Valerie Johnson

**Medical Student Advisees**

2004  Todd Seigel
2005  AJ Hegg
2005  Johanna Moore
2005  Abby Moch
2006  Christopher Vu
2006  Joseph Williams
2006  Zubaid Rafique
2007  Joseph Mayerle
2007  Jodi Renner
2008  Greg Peterson
2008  Daniel Falve
Faculty Sponsor to Undergraduates with Undergraduate Research Awards
2007       Julie Hottinger
2007       Laura Grancer
2007       John Muzie
2007       Amanda Hinrichs
2007       Carly Burd
2008       Daniel Groth
2008       Ahmed Uddin
2008       Joe Lai
2008       Megan Turak
2008       Caylin Crawford
2008       Andrew Duren
2008       Ahmed Uddin
2009       Jill Crosby
2009       Joe Lai

Lectures

Procedural Sedation in the Emergency Department
HCMC EM Residency Core Content Lecture, 2000-2008

Pediatric Procedural Sedation

Pain Management in the Chemically Dependent Patient
Cornerstones in Pain Management Conference, HCMC, May – September, 2002
HCMC All Resident Conference, August 2002
HCMC EM Residency Core Content Lecture, 2002, 2004

Using Statistics in the ED

Research Design in Emergency Medicine

Evaluating the Validity of Research Studies
The Research Question

Getting the Most From Your Computer; Database management in the ED

Pain Management in the ED

Pediatric Pain Management

Alcohol Related Diseases
HCMC EM Residency Core Content Lecture, 2000, 2002, 2004

Acute Renal Failure

Vaginal Bleeding
HCMC EM Residency Core Content Lecture, 1999, 2002

Electrolyte Disorders

Weakness

Analgesia and Sedation
HCMC EM Residency Core Content Lecture, 2002, 2004

Aspiration Pneumonia
HCMC EM Residency Core Content Lecture, 2000, 2005

EXTRAMURAL INVITED PRESENTATIONS

Original Research Presentations

Miner JR, Walz H, Biros MH The Prevalence and Characteristics of Patients Reporting Alcohol Use at an Urban Level 1 Trauma Center ACEP Research Forum, Chicago IL, October 2008


Miner JR, Gray R, Biros M, Randomized Clinical Trial of Procedural Sedation with Propofol with and without the Ultra-short acting Opioid Alfentanil SAEM Annual Meeting, Chicago, IL, May 2007


Miner JR, McClain Caraolyn, Biros Michelle Time to Administration of Pain Medications as a Marker for Overcrowding ACEP Research Forum, New Orleans, LA October 2006

Miner JR, Moore J, Biros M Oral Oxycodone Versus Intravenous Morphine in Pediatric Patients for the Treatment of Pain Due to Acute Musculoskeletal Injury in the Emergency Department ACEP Research Forum, New Orleans, LA October 2006


Miner JR, Hubbard D, Rockswold E *The Relationship Between Headache Taxonomy and Pain Relief for Patients with Headaches in the ED* ACEP Research Forum Oct 2005


Miner JR, Martel M, Meyer M, Reardon R *Procedural Sedation of Critically Ill Patients in the Emergency Department* SAEM Annual Meeting, Orlando Fl, May 2004

Miner JR, Beltram M, Hubbard D *Demographic Assessment of Pain in the Emergency Department* SAEM Annual Meeting, Orlando Fl, May 2004


Miner JR, Hick J, Kasak C *Association Between Serum Bicarbonate and Urinalysis Findings in Dehydrated Children* ACEP Research Forum, Boston, Ma, October 2003

Miner JR, Bachman A, Kosman L, Plummer D, Heegaard W, Biros M *Assessment of the Amnestic Effects of Propofol During*
Procedural Sedation ACEP Research Forum, Boston, Ma, October 2003

Miner JR, Kruse S, Biros M Physician Perception of Drug Seeking Behavior and Ethnicity ACEP Research Forum, Boston, Ma, October 2003


Miner JR, Heegaard W, Mapes A, Biros M, 10 year Experience of Bacterial Meningitis at an Urban County Medical Center ACEP Research Forum, Oct. 1998

**Lectures**

**Prescription Drug Abuse**
Grand Rounds, Portage Health, Hancock, Michigan
April 2009

**The Ethics of Pain Management**
Student Committee of Bioethics Winter Lecture Series, University of MN Medical School, March 2009

**Procedural Sedation and Pain Management**
ProEM Educational Conference
Statewide Campus System
Michigan State University
College of Osteopathic Medicine
Troy, Michigan, February 2009

**Master Clinician Series: The Approach to Difficult Pain Management**
American College of Emergency Physicians Scientific Assembly, Chicago, IL, October 2008

**No Pain, No Gain: Effective Pain Management**
American College of Emergency Physicians Scientific Assembly, Chicago, IL, October 2008

Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain CO, February 2009

**Moderate Procedural Sedation: The Nuts and Bolts**
American College of Emergency Physicians Scientific Assembly, Chicago, IL, October 2008

**Reviewing for Medical Journals**

**Pain Medication in Patients undergoing evaluation for Abdominal Pain**
Emergency Medicine and Trauma Update, Minneapolis, MN, November 2006
Research in Procedural Sedation: The State of the Art

Procedural Sedation for Cardioversion

Cardiac Toxicology

Pediatric Procedural Sedation
Cornerstones in Emergency Nursing, Minneapolis, MN, October 2002


Trauma Management Review
University of MN, Department of Oral/Maxillofacial Surgery Core Content Lecture
January, 2003

Pain Management in the Critically Injured Patient
Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2004

Pain Management in the ED
Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2005
Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2007
Winona Medical Center Grand Rounds, Winona, MN, April 2007

Headache: A Simplified Paradigm for ED Taxonomy
Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2005

Procedural Sedation in the Emergency Department
Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2008
Grand Rounds, Allina Hospital, Hutchinson, MN, February, 2006

Rocky Mountain Winter Conference on Emergency Medicine, Copper Mountain, Colorado, Feb, 2006

Grand Rounds, Fairview Northland Hospital, Princeton, MN June, 2005

Core Content Lecture, William Beaumont Hospital Department of EM, Royal Oaks, MI, Jan., 2005

Minnesota Emergency Medicine Foundation, September 2002

Grand Rounds, Ridgeview Hospital, Waconia, MN July, 2002

**COMMITTEE AND ADMINISTRATIVE SERVICE**

2000-present Assistant Course Director, Research in Emergency Medicine, University of MN Medical School
2001-present Assistant Course Director, Basic Clinical Research, Bachelor of Emergency Health Services Program, University College, University of Minnesota

**Institutional**

2000-present Human Subjects Research Committee, HCMC
2002-Present Research Surveillance Subcommittee
2000-present Infection Control Committee, HCMC
2002-present Procedural Sedation Policy Committee, HCMC
2001-present Performance Measurement and Improvement, HCMC
2006-present Medical Staff Quality Committee
2007-present Chair, Core Measure Committee-Pneumonia
2007-present Chair, Procedural Sedation Policy Committee

**Departmental**

2000-present Medical Director for Quality Assurance, Department of EM, HCMC
2001-present Assistant Director of Research, Department of EM, HCMC
2001-present Co director, Summer Research Associate Program, Department of EM, HCMC
2007-present Research Director, Department of Emergency Medicine, HCMC

**Regional**
1994  Delegate, Minnesota Medical Association
1995-1996  Chair, Minnesota Medical Association – Medical Student Section
2000  AHA Stroke Think Tank
2005  Delegate, Minnesota Medical Association
2006  Delegate, Minnesota Medical Association

National

2001-2003  Research Committee, Society for Academic Emergency Medicine

ANNOTATED BIBLIOGRAPHY
Peer-Reviewed Publications

**Miner JR** Randomized Double-blind Placebo Controlled Crossover Study of Acetaminophen, Ibuprofen, Acetaminophen/Hydrocodone, and Placebo for the Relief of Pain From a Standard Painful Stimulus Academic Emergency Medicine, Vol 16, No. 9, pp. 911-914, September 2009 (Guarantor of integrity of entire study, Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Data Analysis, Manuscript preparation, Manuscript editing, Manuscript review)

**Miner JR, Gray RO, Stephens D, Biros MH** Randomized Clinical Trial of Propofol with and without Alfentanil for Deep Procedural Sedation in the Emergency Department Academic Emergency Medicine, Vol 16, No. 9, pp. 825-35, September 2009 (Guarantor of integrity of entire study, Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Data Analysis, Manuscript preparation, Manuscript editing, Manuscript review)

Prekkar ME, **Miner JR, Rockswold EG, Biros MH** The Prevalence of Injury of Any Type in an Urban Emergency Department Population The Journal of Trauma, Vol. 66; No. 6 pp.1688-1695, June 2009 (Guarantor of integrity of entire study, Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Data Analysis, Manuscript preparation, Manuscript editing, Manuscript review)
Ho JD, Heegaard WD, Dawes D, Natarajan S, Reardon R, **Miner JR** *Unexpected Arrest-Related Deaths in America: 12 Months of Open Source Surveillance* Western Journal Of Emergency Medicine, Vol X, No.2, May 2009 (Guarantor of integrity of entire study, Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Data Analysis, Manuscript preparation, Manuscript editing, Manuscript review)

Safdar B, Heins A, Homel P, **Miner JR**, Neighbor M, DeSandre P, Todd K *Impact of Physician and Patient Gender on Pain Management in the Emergency Department* Pain Medicine, Vol. 10, No. 2, pp364-372, March 2009 (Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Manuscript editing, Manuscript review)

**Miner JR**, More J, Gray RO, Skinner L, Biros MH *Oral versus Intravenous Opioid Dosing for the Initial Treatment of Acute Musculoskeletal Pain in the Emergency Department* Academic Emergency Medicine, Vol. 15, No. 12, pp 1234-1239 December 2008 (Guarantor of integrity of entire study, Developed Study concept, Developed Study design, Defined intellectual content, Conducted literature research, Conducted experimental studies, Data acquisition, Data Analysis, Manuscript preparation, Manuscript editing, Manuscript review)

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Articles Accepted for Publication

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Miner JR Propofol with and without Alfentanil for Procedural Sedation in the Emergency Department Academic Emergency Medicine, accepted for publication April 2009

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Chapters in Books


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