



2013 SAEM
Annual
Meeting

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the
world

INTERNATIONAL MEDICINE
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Resident

Emergency Medicine Residents' Association

June/July 2013

EM Resident

The Official Publication of the Emergency Medicine Residents' Association

April/May 2013

VOLUME 40, issue 2

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April 16, 2013	EMRA Conference Committee Volunteer Application Deadline
April 26, 2013	2013 ACEP Research Forum Abstract Submission Deadline
May 4-6, 2013	ABEM Spring Oral Certification Exam Nationwide
May 16-19, 2013	SAEM Annual Conference Atlanta, GA
May 16, 2013	EMRA Representative Council Meeting at SAEM Atlanta, GA
May 19-22, 2013	ACEP Leadership and Advocacy Conference Washington, DC
May 19-25, 2013	EMS Week Nationwide
June 15-19, 2013	Annual Meeting of the AMA House of Delegates Chicago, IL
July 10, 2013	Annals of Emergency Medicine Resident Editorial Board Fellowship Application Deadline
July 15, 2013	EMRA/ACEP Health Policy Mini-Fellowship Application Deadline
July 15, 2013	EMRA Travel Scholarships to ACEP Scientific Assembly Deadline
July 15, 2013	EMRA Fall Awards Deadline
August 8-13, 2013	ACEP Teaching Fellowship Dallas, TX

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Thank you very much for your interest in advertising with EM Resident. As the largest organization to represent the needs of the emergency medicine resident, we are able to reach a unique and important niche of our specialty. EMRA's mission statement is to promote excellence in patient care through the education and development of emergency medicine residency-trained physicians. It is our belief that this provides the best patient care in an emergency department setting.

To support our mission and provide the greatest advantage to our residency-trained members searching for jobs, we welcome you to advertise in EM Resident, but require that all positions advertised in our publication be addressed only to board-certified/board-prepared, residency-trained emergency physicians.

For the sake of consistency, the use of the terms "ED," "emergency department," and "emergency physicians" are preferable to using "ER" or any such derivation.

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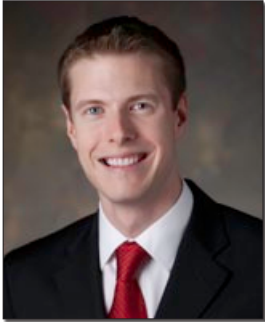
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Cameron Decker, MD

EMRA President
Baylor College of Medicine
Houston, TX

“Perhaps we should not hastily conclude that all of our problems will disappear upon the completion of residency.”

Are we really masters of prioritization?

You are one emergency physician with two hands and three critically ill patients who just rolled into your ED. After rapidly eyeballing them, you know exactly how you will prioritize treatment to maximize the outcome with your limited resources. As residents, we become experts at making these snap decisions about patient care. However, so many of us struggle with a far more important subject of triage – *life*.

During our college, medical school, and residency educations, we learn to be masters of delayed gratification; putting off a once-treasured hobby or a dinner date with a loved one becomes the norm. **It has been a long and trying road – one which most outside of the profession cannot understand.** With so many sacrifices in the “now,” we often look to the future for relief. “It gets better,” we reassure ourselves.

Perhaps we should not hastily conclude that all of our problems will disappear upon the completion of residency. A whole new set of professional “asks” will be thrust upon us, from employers requesting that we pair administrative duties with our clinical requirements, to our colleagues begging us to help staff the new ED around the corner. In residency, as we train to prioritize patients, so must we develop our personal priority schema.

Now is the time to examine your priorities. Decide where your family, loved ones, friends, residency, hobbies, exercise, travel, and other passions rank. Don’t be concerned that you won’t be able to “grade” them; by reviewing what is important, a natural order will develop. **Do it now; don’t wait for that isolated moment at 3 a.m. on an off-service rotation when you bitterly ask, “What the heck am I doing with my life?”** Nothing rational comes from that.

The truth is: *you simply can’t do everything.* Again, you CANNOT do everything. By the simple fact that you are in residency (or medical school), I know you’re an overachiever. You are accustomed to having many different tasks on your plate and accomplishing monumental feats, and you’ve had the great fortune of sampling many opportunities. But, now I challenge you to *focus* your efforts.

One of my mentors often shares an important message: *great things happen at the nexus of what we enjoy doing, what we are good at doing, and what is worth doing.* Notably, there are many nexuses for each individual. **Your mission is to find those confluences and change the world.**

A difficult part is recognizing when to say “no” to opportunities that do not align with your passions. There is nothing worse than being overextended, knowing you are giving less than 100% to projects that deserve every bit of you. Upon identifying an interest that takes priority, surround yourself with like-minded individuals; this community will reinforce the importance of your mission and help you develop a laser focus on that critical nexus.

In addition to the educational and representation components, EMRA excels in developing *communities*. Among our 12,000 members, you will find others who share your same passions. Love austere environments? Join the Wilderness Medicine Division. Want to be an active and informed emergency medicine advocate? Come to the 2013 Leadership and Advocacy Conference, which is only weeks away. **Regardless of what drives you in emergency medicine, EMRA is eager to help channel your enthusiasm to ensure a perfect fit alongside your other priorities.**

As you examine the role of your medical passions in the balance of life, remember it must be a *balance*. Focusing purely on work not only will limit you from sharing with the world an important side of yourself, but also prevent you from discovering other nexuses. Part of becoming a *great* physician involves the happiness that comes from learning life lessons not found in a textbook. Therefore, I leave you with one last message – Bronnie Ware, an Australian palliative care nurse, documented the top five themes of deathbed regrets:

- 1) I wish I’d had the courage to live a life true to myself, not the life others expected of me.
- 2) I wish I didn’t work so hard.
- 3) I wish I’d had the courage to express my feelings.
- 4) I wish I had stayed in touch with my friends.
- 5) I wish that I had let myself be happier.

As you continue through residency, don’t just obtain a medical education. Become a master of *life* prioritization. ■

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Mission Statement

The Emergency Medicine Residents' Association is the voice of emergency medicine physicians-in-training and the future of our specialty.

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Speakerreport



Matt Rudy, MD
Speaker of the Council
Washington University in St. Louis
St. Louis, MO

“Many EMRA members rate LAC as their favorite annual conference, which has a smaller, more personal than many larger educational conferences.”

EMRA past, present, and future

From its relatively modest beginnings in 1974, when the Emergency Medicine Residents' Association (EMRA) was founded by Dr. Joseph Waeckerle, EMRA has grown to more than 12,000 members and proudly represents over 95% of emergency medicine training programs. The organization's considerable contributions to the specialty range from acclaimed EMRA publications like *PressorDex*, to mobile apps like our flagship *Antibiotic Guide*, to nearly \$40,000 in annual awards and scholarships, to the *intangible* (and, in my opinion *invaluable*) benefits of EMRA membership that come from the networking and leadership development opportunities available to all our members.

Our success has been predicated on the dedication and passion of our members and alumni. In turn, the key to our future is EMRA engaging and supporting emergency medicine physicians-in-training by maintaining an active membership base.

Next year will mark EMRA's 40th anniversary; as we approach this milestone in our association's history, I have taken the time to reflect on what EMRA will look like – not next year, but ten years from now and beyond. In past columns I've highlighted many of the current opportunities available through EMRA. Today, I'd like to challenge you to think about what the future of the organization can be, and how we can grow to do even more for our future members.

EMRA's Representative Council meets twice yearly. The meetings give us the opportunity to both review current EMRA policy and vote to enact new policies to guide us in the future. Our **Spring Representative Council Meeting** will take place **May 15-17** in Atlanta, concurrently with the SAEM Annual Meeting (full schedule on www.emra.org). The Representative Council holds true power in shaping the direction of EMRA, and resolutions from the council floor have resulted in larger than life

accomplishments. Most recently, the highly anticipated **EMRA Legacy Initiative** was born to film a documentary preserving the history of our specialty.

EMRA policy also gives us the ability to meaningfully contribute and collaborate with outside organizations such as the AMA and ACEP, aligning us with partners that share our goals of improving emergency medicine, medical training, and the future of our health care system. Perhaps what is most important is that any EMRA member can submit a resolution for consideration, giving all our members a direct way to express their visions for our future.

ACEP's Leadership and Advocacy Conference (LAC) May 19-22 in Washington, D.C. will shift our focus from internal EMRA policy to advocating for our patients on a national level, while connecting with policymakers and thought leaders in health policy. I was first exposed to EMRA five years ago when, as a medical student, I attended LAC. I was hooked! Many EMRA members rate LAC as their favorite annual conference, which has a smaller, more personal than many larger educational conferences.

While going to Capitol Hill and speaking directly with legislators might seem daunting, the opportunity to share patient stories and experiences from our hometown emergency departments is a powerful and compelling way to ensure we're doing all we can to be advocate for our specialty. The friends and connections you make at LAC can last a lifetime and will enrich your careers, while helping you provide better care to patients.

EMRA is OUR organization! Almost 40 years into its existence, it is stronger than ever and doing everything possible to ensure its next four decades are even more promising. Don't pass up your opportunity to be play an active role in shaping our future. ■



Leadership and Advocacy Conference

May 19-22, 2013

Omni Shoreham Washington • Washington, DC

Navigate the halls of Congress to advocate for our specialty with hundreds of emergency physicians!

Play a critical role to play in health care reform. Join emergency medicine leaders from throughout the country in shaping our future at **ACEP's 2013 Leadership and Advocacy Conference**. Thought-provoking, inspiring and challenging sessions by nationally recognized speakers and key decision makers will provide you the inside information and skills you need to maximize your impact as an emergency medicine leader and advocate.

What to Expect

Sunday, May 19 - Leadership and Advocacy Essentials

Monday, May 20 - Thought-provoking and inspiring sessions about Advocacy

Tuesday, May 21 - ACEP National Lobby Day; Visit with members of Congress

What to Wear

Recommended dress is business attire. Average daytime temperature in May is 76°; nighttime average is 52°.

Residents

Remind your program chairs about EMRA's annual Chair's Challenge LAC Scholarship Program!

Your program can give the gift of leadership by sponsoring attendance at LAC, where residents will learn to be effective advocates for our specialty.



Administrative compensation systems *Do the Kiwis and Scandinavians have the answer to medical liability?*



Sarah Hoper, MD, JD
Legislative Advisor
Washington University in St. Louis
St. Louis, MO

Have you ever wondered what the rest of the world is doing about medical liability? What about the enigma of New Zealand and the Scandinavian countries with their no-fault systems and standards of avoidability?

New Zealand developed an administrative injury compensation system, which began in 1967 in response to workers' compensation reforms and included medical errors and medical mishaps.¹ In this no-fault system, injured patients receive government-funded compensation through the Accident Compensation Corporation (ACC), but they do not have the right to sue for damages.

Since 2005, the "system covers all personal injuries suffered while receiving treatment from health professionals," known as a *treatment injury*. There must be a causal link between treatment and injury, but there is no need to find physician fault for compensation.² The ACC also uses a fixed award scheduled to ensure that compensation is fair across claims.³

The ACC is funded through general taxation and an employer levy.⁷ The initial claim is filed by the patient's physician, usually a primary care doctor. The claim is reviewed by a handler with considerable training and clinical experience, typically a nurse. Forty percent of the initial claims are compensated. Patients are able to appeal the initial decision; eighteen percent of patients appeal and only 10% of appeals

are successful. The final appellate process is to a district court.⁴

Sweden and Denmark created associations, the PFF and the PIA respectively, to adjudicate and determine compensation for medical injuries. Patients are able to file a claim on their own; however 60-80% of claims are filed by physicians.⁴

The claim handlers in the PFF and PIA have legal backgrounds and often consult with medical experts who are retained by the association from teaching hospitals.⁵ Total awards have been capped around 1.2 million USD in both countries. Approximately 40% of initial claims are successful, 20% of patients appeal, and 10% of appeals are successful.⁴ Finally, patients may appeal to the courts, however, appellants' awards cannot exceed the amount they would receive under the associations.⁴

Unlike New Zealand, the associations do not operate in a no-fault system. Instead, they operate under the "standard of avoidability," which lies somewhere between no-fault and the American negligence system. The standard of avoidability requires that injuries be compensated if the injury would not have occurred at the hands of the most *highly skilled* physician in the specialty. This is a higher standard for compensation than the American negligence standard of care, which states the patient must prove the physician failed to provide the care of a *reasonable* physician. Therefore, some

“Even with a two-fold increase in the number of compensable injuries, administrative compensation systems appear to be more efficient than the U.S. tort system.”

claims that will get awards in the U.S. will not get awards in Sweden.

Avoidability, however, does not focus solely on the quality of the care; the standard also includes hindsight and alternative treatment rules. With hindsight, information that was not known at the time of the injury – but later comes to light – can be used to consider whether or not the injury was avoidable.

For example, a patient with an unknown drug allergy receives that medication and has an adverse reaction to it. In hindsight, it is known the patient had a drug allergy, therefore the incident was avoidable and compensatable.⁴ In the U.S., this patient would not likely receive compensation because the drug allergy was not known at the time of treatment; the physician was not negligent.

The alternative treatment rule examines the treatment used and whether an alternative treatment would have avoided the injury. If an alternative treatment would have avoided the injury, then the injury is compensable. In Denmark, avoidability also allows for rare events that are severe beyond what a patient should reasonably be expected to endure. So if the patient had a severe drug reaction that lead to intubation and critical care, the patient may receive compensation.⁴ Because avoidability goes beyond the quality of care, it is estimated that there are about twice as many injuries that are eligible for compensation under an avoidability standard than under our negligence system.⁶

Even with a two-fold increase in the number of compensable injuries, administra-

tive compensation systems appear to be more efficient than the U.S. tort system. Administrative systems cost around 17% of the total costs, compared to an estimated 55% to 60% in the U.S.⁸ The average compensation per paid claim is less. In 2009, the average claim in Sweden was approximately \$20,000; in Denmark, \$40,000; in New Zealand, \$4,450; and in the U.S., \$324,000.⁸ This is because the payments for non-economic losses are much lower, and Sweden and Denmark have a total cap. Patients also are compensated in a much more timely fashion; in Sweden, Denmark and New Zealand the majority of claims are decided within seven months, as opposed to the U.S. average of three years.⁸

Could an administrative compensation system work in the U.S.? Our country has small pockets of no-fault jurisdictions now. In Florida and Virginia, birth-related neurological injuries are compensated without a finding of negligence if the providing physician is participating in the compensation program.^{7,8} These programs were funded by an initial grant from the state and continue to be supplemented by participating practitioners and facilities. But could these systems work on a larger scale?

It is important to remember that New Zealand, Denmark, and Sweden are much smaller countries with government-run universal health care, where injured patients have greater access to free medical treatment for their injuries. These countries also have generous social entitlements; injured patients in Denmark and Sweden have better government support after their injuries

than do American patients. It is not clear whether, without these other government entitlements, the compensation received from administrative systems would be adequate.⁹ What do *you* think? ■

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7. The Florida Birth-Related Neurological Injury Compensation Association, www.nica.com.
8. Virginia Birth-Related Neurological Injury Compensation Program, www.vabirthinjury.com.



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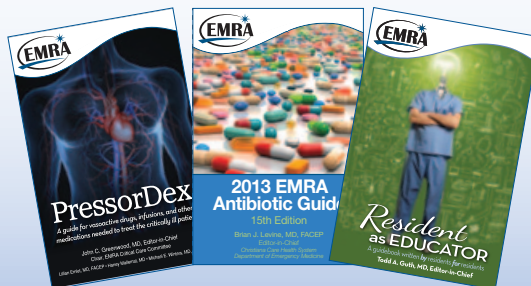
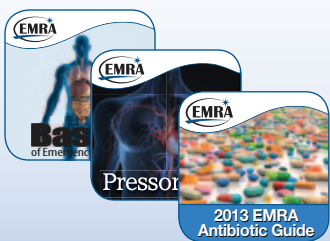
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2013 EMRA Events at SAEM Annual Meeting

May 14-17, 2013

Tuesday, May 14, 2013

9:00 am - 5:00 pm EMRA Board of Directors Meeting

Wednesday, May 15, 2013

9:00 am - 12:00 pm EMRA Board of Directors Meeting
1:30 pm - 2:30 pm EMRA Regional Representative Committee
1:30 pm - 2:30 pm EMRA Committee Chair/Vice Chair Orientation
1:30 pm - 5:00 pm EMRA Medical Student Governing Committee
2:30 pm - 3:00 pm EMRA Conference Committee Orientation
3:00 pm - 4:00 pm EMRA Reference Committee Public Hearing
4:00 pm - 5:00 pm EMRA Reference Committee Work Meeting
4:00 pm - 5:30 pm EMRA Quiz Show Contest

Thursday, May 16, 2013

8:00 am - 8:30 am EMRA Representative Council Welcome Breakfast
8:00 am - 8:30 am EMRA Representative Council Registration
8:30 am - 12:00 pm EMRA Representative Council Meeting/Town Hall
1:30 pm - 3:30 pm EMRA International Committee
1:30 pm - 3:30 pm EMRA Health Policy Committee
1:30 pm - 3:30 pm EMRA Research Committee
1:30 pm - 3:30 pm EMRA Critical Care Committee
1:30 pm - 3:30 pm EMRA Technology Committee
3:30 pm - 5:30 pm EMRA Education Committee
3:30 pm - 5:30 pm EMRA Awards Committee
3:30 pm - 5:30 pm EMRA EMS Committee
3:30 pm - 5:30 pm EMRA Wilderness Medicine Committee
3:30 pm - 5:30 pm EMRA Editorial Advisory Committee
10:00 pm - 2:00 am EMRA Party

Friday, May 17, 2013

8:00 am - 1:00 pm EMRA/SAEM Simulation Academy Resident
Sim Wars Competition
9:00 am - 3:00 pm EMRA Board of Directors Meeting & Committee Updates
6:00 pm - 7:00 pm EMRA Spring Awards Reception



**Westin Peachtree Plaza
210 Peachtree Street
Atlanta, GA 30303**

*Note: schedule is subject to change. Please visit
emra.org as we near meeting date for changes.*



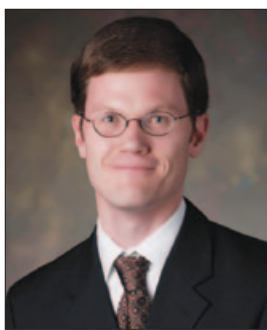
**PARTY
with
EMRA!**

Thursday, May 16
10:00 p.m. to 2:00 a.m.
Check emra.org/saem for details.

**Join us at SAEM for our
annual nightclub event!**

***Bring your dancing shoes, and
leave your troubles at the door.***

RRC-EM Update



Jonathan Heidt, MD

Director-at-Large/
RRC-EM Representative
Washington University
St. Louis, MO

“Congratulations to Western Michigan University, which has the distinction of building the first-ever accredited EMS fellowship program!”

ACGME transitions...in with the new

Over the past couple of years it has been my honor to serve as your representative and to advise the EMRA Board of Directors on ACGME issues. Sadly, I attended my last RRC meeting in February as your **RRC Representative**. Over the next few months we will begin the transition as **Brandon Allen, MD**, prepares to take over this position on July 1. We're lucky to have him!

Brandon received his medical degree from the Florida State University College

of Medicine, where he graduated AOA. He is chief resident at the University of Florida in Gainesville-Shands Medical Center, where he will remain as a faculty member after graduation. He also will serve as an **Advisor to the EMRA Board of Directors**. He is former vice chair of EMRA's education committee. Most importantly, Brandon and his wife, Katie, have two children, Nila and Owen.

Brandon will be taking over during a time of transition for the ACGME. As

New EMS Fellowships

1. Western Michigan University
2. Denver Health
3. Central Michigan University
4. University of California, San Francisco
5. University of Massachusetts Medical School
6. SUNY Upstate Medical University
7. University of Texas Health Science Center at Houston
8. University of Virginia
9. University of New Mexico
10. Washington University
11. Orlando Health
12. Beth Israel Deaconess
13. North Shore – Long Island Jewish Health System
14. Ohio State
15. University of Florida College of Medicine
16. Los Angeles County – Harbor-UCLA
17. Health Partners Institute for Education and Research
18. University Hospital, Inc.
19. University of Texas School of Medicine at San Antonio
20. San Antonio Uniformed Services Health Education Consortium
21. University at Buffalo

“EMRA will continue to work with organizations such as **CORD, ACEP, ACGME, and ABEM** to develop evaluation tools and strategies to ensure that this process continues to improve the quality of training residents receive.”

of July 1, emergency medicine will participate in the new accreditation system and will be required to initiate reporting on the *milestones*. Under the new accreditation system, “PIFs” and “program cycle lengths” will be phased out and replaced by an annual accreditation model based on a program’s *outcomes*, instead of its *processes*.

This change will allow programs more flexibility to innovate, as long as acceptable results in resident training and performance are maintained. The *milestones* will also be implemented – they will be used to describe a resident’s progression through residency to independent practice. EMRA will continue to work with organizations such as **CORD, ACEP, ACGME, and ABEM** to develop evaluation tools and strategies to ensure that this process continues to improve the quality of training residents receive.

During the February meeting, one new core program was approved, **Hackensack University Medical Center**.

This was an important meeting in emergency medicine history, as the first EMS fellowship programs were approved for accreditation! Congratulations to **Western Michigan University**, which has the distinction of building the **first-ever accredited EMS fellowship program!** A total of 21 programs were approved, which is a testament to the growing impact of our specialty.

As a reminder, since the first programs have been approved, the time limit on EMS board certification through the practice pathway has begun. If you or someone you know has completed an EMS fellowship, it is important to not delay in registering for the exam.

Congratulations to the new programs! If you have any questions or concerns, please do not hesitate to contact Brandon or I at **rrcemrep@emra.org**. If you’re interested in serving on the RRC, the next application cycle will begin January 2014. More information to come! ■



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or **jslade@acep.org**

Clinicalcase



Chadd K. Kraus, DO, MPH
EMRA Academic Affairs Representative
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Case study: Meet the PRES

A 50-year-old male presented to the emergency department via EMS as a trauma patient; after not being seen for several days, a neighbor found him minimally responsive at home. His pre-hospital vitals were: BP 170/100, HR 78, Temp 99.3° F, O2 sat 96% on room air. Blood glucose was 95.

On arrival, the patient was noted to have multiple bruises. He was alert, but disoriented and combative; he was immediately intubated for airway protection. Head CT showed evidence of *bilateral posterior white matter changes* – the radiologist suggested the possibility of posterior reversible encephalopathy syndrome (PRES).

The remainder of the patient's trauma and medical work-up were unremarkable. He remained intubated and was admitted to the ICU, where he was evaluated by the neurology team. A subsequent EEG showed no seizure activity. Finally, MRI confirmed the diagnosis of PRES.

Hinchey and colleagues first described this syndrome in a 1996 *NEJM* article, referring to it as *reversible posterior leukoencephalopathy* (RPLS). It's since become more commonly called **posterior reversible encephalopathy syndrome (PRES)**.

PRES is clinical syndrome that includes headache, altered mental status, visual changes, and seizures. It's most commonly associated with hypertensive encephalopathy, eclampsia, renal syndromes, autoimmune disorders, and the use of immunosuppressive drugs. It has also been reported in

children with severe aplastic anemia, nephritic syndrome, Henoch–Schönlein purpura, and acute post-streptococcal glomerulonephritis. The common link between these conditions: *blood pressure*.

Current evidence suggests that PRES occurs with *rapid* increases in blood pressure that overwhelm the auto-regulation of neuro-vasculature. Functional intracerebral vascular changes ensue and the cerebral edema begins.

The classic radiologic findings of PRES are bilateral parietal and occipital subcortical edema. Of course some authors have noted that PRES is not uniformly posterior, often presenting with atypical neuroimaging findings that can include ischemia and/or hemorrhage. One large series describing radiologic abnormalities in patients with PRES implicates vasodilatory changes associated with hypertension, suggesting significant variability in which parts of the brain are affected.

Treat PRES by managing the underlying condition. Decrease blood pressure, address causes of organ dysfunction, and remove offending pharmacologic agents. Most patients fully recover in 5-8 days.^{3,6} In a minority of patients, the imaging abnormalities and neurologic sequelae persist indefinitely.¹⁰

As for the emergency physician, we *must* consider PRES in the differential diagnosis of a patient with altered mental status, seizure, headache, and visual changes. This is especially important in those with a predisposing condition



“As for the emergency physician, we must consider PRES in the differential diagnosis of a patient with altered mental status, seizure, headache, and visual changes.”

like hypertension or in those requiring immunosuppressants. As always, we must keep PRES in the back of our minds (as it were) to understand its pathophysiology and various clinical manifestations. ■

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Interest Group Networking Events

Check emra.org/SAEM for location and details

A networking event specifically geared towards residents, medical students and young physicians.

The chairs or leaders of the SAEM Interest Groups and Academies will be available to network with young physicians who are interested in developing niches within EM, or just looking to get more involved.

For questions, please contact
Chadd Kraus, DO, MPH
at
academicaffairsrep@emra.org



ABEM News

New ABEM examinations coming in 2014 and 2015

ABEM is transforming its examinations to reflect gains in the knowledge base as well as advances in technology.

Emergency Medicine (EM) has rapidly evolved from the time that it was formally recognized as a unique medical specialty in 1979. New approaches to evaluation and treatment for stroke, myocardial infarction, and multi-system trauma have been dramatic. The technology and approach to advanced imaging has also been revolutionary. It should not be surprising then, that changes in what and how emergency physicians practice is going to be reflected in how they are assessed for board certification.

ABEM is transforming its examinations to reflect gains in the knowledge base as well as advances in technology. The changes are based on surveys of all ABEM-certified physicians. The physicians were asked about their clinical practice, including the frequency and importance of the tasks they performed. The results of these surveys were used as the basis for two types of changes to the examinations: (1) changes in content, which will reflect the changes in the standards in the practice of EM, and (2) changes in the format used to present the examinations, to reflect how technological advancements are used in current real-world practice.

New content, standards

The fall 2014 qualifying examination and the spring 2015 oral certification examination will be the first examinations to be based on the new content and standards. In addition to the Listing of Conditions and Components in the EM Model, (changed to Table 4: Medical Knowledge, Patient Care, and Procedural Skills in the 2011 version), these examinations will additionally be based on the knowledge, skills, and abilities (KSAs) that are necessary to the practice of EM. The process of identifying KSAs began in 2010, with the above-mentioned series of surveys sent to all ABEM-certified physicians. Each KSA represents a part of EM practice. The accompanying graphic provides an example of identified KSAs within the “Observation and Reassessment” category.

Also identified were hierarchical performance scales related to each KSA. These scales provide a ranking of competence, with “A” being the highest level of competence. The level that a physician should demonstrate to become board certified is then determined based in part on the importance and frequency of the task. In the “Observation

Observation & reassessment

Hierarchical Levels of Performance

- A. Develop protocols for patients undergoing ED observation to ensure quality of care, and monitor clinical outcomes, admission rates, and other resource utilization.
- B. ***Re-evaluate patients undergoing ED observation and, using appropriate data and resources, determine differential diagnosis, treatment plan, and disposition.**
- C. Treat and reassess appropriate patients undergoing ED observation.
- D. Identify which patients are appropriate for ED observation.

KSAs	QE	Oral
Identify which patients are appropriate for observation in the ED (11.1)	X	X
Monitor a patient's clinical status at timely intervals during observation in the ED (11.2)		X
Evaluate effectiveness of therapies and treatments provided during observation (11.3)	X	X
Consider additional diagnoses and therapies for a patient who is under observation and change treatment plan accordingly (11.4)	X	X
Develop protocols for patients undergoing ED observation to ensure quality of care, and monitor clinical outcomes, admission rates, and other resource utilization (11.5)		



The eOral uses high-resolution imaging via an interactive computerized interface.

and Reassessment” category, a physician would have to demonstrate a level of competence represented by “B” in the hierarchical scales to pass the certification examinations. The task listed at the bottom of the grid represents an “A” level of competence, so although important to the practice of EM, would not be included on the certification examinations.

Enhanced format: How the examinations are presented

The second change to the examinations is how they will be delivered. Both the qualifying examination and the oral certification examination will be “enhanced” to include new types of dynamic stimuli, such as video clips of patients or procedures, moving ultrasounds and rhythm strips, and dynamic vital signs. The enhanced qualifying examination (or “eMCQ”), will begin in 2014. Sample questions, along with corresponding stimuli, are available on the ABEM website. (Go to www.abem.org, and under the Certification header, click on “Qualifying Examination,” and “MCQ Pilot Examination.”) These questions were

tested during the 2011 eMCQ pilot, and will not be used in future examinations.

The enhanced oral examination, or “eOral,” will increase the realism of the examination by using improved high-resolution imaging via an interactive, computerized interface, which will also facilitate examiner-candidate interactions. The eOral was successfully piloted in 2012, and will be gradually phased into the current oral examination format beginning in 2015, when three cases will be presented in the new format.

Additional information

ABEM will provide program directors additional information about the new enhanced examination formats as they become available, so if you will be taking the new examinations, you will have the opportunity to see and experience the new format while you are a resident.

ABEM believes that your residency program provides you with the best way to prepare for the certification examinations. Remember, “It’s not just the test, it’s also the training.” ■

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Spotlight on: The medical education fellowship

“Applicants may feel tempted to take a job right out of residency, but a fellowship allows you to develop a niche and a network of mentors and collaborators that makes the transition to academic faculty much easier.”



David Diller, MD
Education Committee Chair
St. Luke's Roosevelt
New York, NY

At this point in the year, your program director probably has asked you about your career goals. Did you have an answer? Most of us are so exhausted from the residency application process that we haven't allowed ourselves time to think about life *after* residency.

As the scope of emergency medicine fellowships widens, many residents don't have the opportunity for niche mentorship at their own institutions. To address this growing need, several EMRA committees have partnered to produce the **EMRA Fellowship Virtual Mentor Network**, scheduled to commence later this year. Residents will be matched with fellowship directors based on their fellowship interests, allowing residents to learn more about the multitude of career options that exist, earlier in residency training.

In the next few issues of *EM Resident* we will highlight several fellowships. This month, we will focus on **medical education fellowships**. To help answer some of my burning questions, I had the opportunity to conduct a roundtable interview with several leaders in this field. I want to thank Dr. Jeff Druck, *Denver Health*; Dr. Travis Eastin, *Ohio State*; Dr. Susan Promes, *UC San Francisco*; Dr. Rob Rogers, *University of Maryland*; and Dr. Lalena Yarris, *Oregon Health & Science University*, for their participation.

Who should consider a medical education fellowship and why?

Dr. Druck: I would recommend it for anyone who is interested in education as an academic career. An educator's path towards academic advancement will comprise three areas of excellence:

teaching, research, and curriculum development. The purpose of the medical education fellowship is to develop and hone the skills in each of these areas to allow the individual to be successful.

Are all medical education fellowships the same?

Dr. Promes: All medical education fellowships are not created equal. I recommend that you take a close look at the curriculum, the resources and the mentorship available at the programs you are considering, and suggest you also pay close attention to the time you will be expected to work clinically. Remember that, as a fellow, you are there to learn; you need time to read, practice the skills you have learned, and be involved in scholarly projects.

What career options exist for graduates of a medical education fellowship?

Dr. Yarris: A medical education fellowship is great preparation for those who wish to pursue an academic career with an education focus. Existing fellowships can prepare you for a career in education research, or as an education scholar. Prior graduates have gone on to become simulation directors, clerkship directors, and residency program directors. Some have developed leadership roles both within medical schools and nationally, while others have embarked on education research careers.

If I'm not interested in research, is this fellowship still for me?

Dr. Eastin: Absolutely. While an academic career will include some degree of scholarly production -- and research is certainly part of that -- more institutions

are valuing other forms of scholarship, such as curriculum development. Additionally, while you may not like basic science or clinical research, with experience you may find that you like *education* research. Fellowship is the perfect time and place to explore that.

Dr. Rogers: Agreed. You have to love medical education and want to use it to become a better teacher, help others become better teachers, and/or utilize the background in medical education to run educational programs. You don't have to be a researcher to do this fellowship, nor do you need to do research to be successful at teaching. I will say that if you're going to make medical education your niche, you should strongly consider publishing in the field. This doesn't mean you have to do original research, though.

Should I be concerned if a fellowship is not ACGME accredited?

Dr. Promes: Many emergency medicine fellowships are not ACGME accredited, but this does not mean your additional training isn't valued. Doing any fellowship, including a medical education fellowship, helps you acquire valuable skills that can help you in your career.

What are the advantages to doing a medical education fellowship versus working part-time and obtaining a graduate degree?

Dr. Druck: A good medical education fellowship should be more than just a degree; it should also include opportunities to implement teaching, research, and curriculum development in the academic setting.

“Prior graduates have gone on to become simulation directors, clerkship directors, and residency program directors. Some have developed leadership roles both within medical schools and nationally, while others have embarked on education research careers.”

Dr. Yarris: In addition, fellowships provide formal mentoring and protected time for professional development. Applicants may feel tempted to take a job right out of residency, but a fellowship allows you to develop a niche and a network of mentors and collaborators that makes the transition to academic faculty much easier. Most education fellowship graduates seem to advance their careers quickly, having benefitted from their unique fellowship training.

What are medical education fellowship directors looking for in their applicants?

Dr. Yarris: Strong clinicians with a passion for teaching and learning, and

dedication to an academic career. Great interpersonal skills, leadership qualities, and being a team player are desired characteristics. A candidate’s main priority should be obtaining the clinical skills necessary to practice independently as an emergency physician. Although it’s helpful to have been involved in education projects and initiatives as a resident, it is not necessary.

Dr. Rogers: Directors are looking for someone with a clear-cut interest in medical education. Going to meetings and lecturing and leading small groups is evidence that an applicant is committed to medical education. Get involved in medical education and start teaching.

Teach medical students, residents, or anyone who will listen.

Dr. Eastin: I also recommend attending the CORD academic assembly and going through the *Navigating the Academic Waters* track. It not only will give you an honest look into academics and education, but also will allow you a great opportunity to network with some amazing emergency medicine educators. ■

Stay tuned for more “Spotlight On” articles in the coming issues! We look forward to your participation in the EMRA Fellowship Mentor Network.



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Graham Ingalsbe, MSIV
Medical Student Governing Council Chair
University of Miami
Miller School of Medicine
Miami, FL

“Where I see a diagnosis and a prognosis, she’s found humility, grace, and humor – even when battling the tumor on the back of her neck, which she’s named ‘Larry.’”

Life lessons from a friend

You learn a lot in four years of medical school. You’re taught how to diagnose, palpate, auscultate, calculate – everything from glomerulonephritides to milk protein allergies. But for all that you’ve learned – and forgotten – along the way, it’s impossible to measure how much you truly *know*.

When a friend tells you she has cancer – 20 tumors, to be exact – you question it all, and start to learn about medicine all over again. You learn that your friend has to wait for her insurance coverage to kick in until she receives any treatment; that the MRI that identified her brain lesions won’t be covered and she’ll have to pay out of pocket; that the laundry list of potential side effects of her metastatic melanoma really *do* happen, *a lot*. Yet, where I see a diagnosis and a prognosis, she’s found humility, grace, and humor – even when battling the tumor on the back of her neck, which she’s named “Larry.”

In our newfound and ever-expanding role of “almost a doctor,” we medical students become to our friends and families the expert, the scientist, the *physician*. And that’s somewhat terrifying. Hell, we’re some of the biggest hypochondriacs I know! When people come to us for advice, we have a knee-jerk reaction to offer a scientific response; after all, that’s what we’re taught to do. We rationalize, risk-stratify, compartmentalize. Real life, however, sadly is not like *Grey’s Anatomy*; we don’t make out with each other between brain surgeries before calling it a day. It’s more complicated than that.

When we know the prognosis is garbage, how do we break that news to someone we love? Do we admit that applying for a clinical trial is likely to be an exercise in

waiting, coin-tosses, and randomization; do we bring in a Kaplan-Meier and let her know just how futile hope for a return to normalcy may be? Tell her that metastasis from melanoma to three or more organs projects a one percent survival at one year? Tell her not to fight? Oliver Wendell Holmes warns us: “Beware how you take away hope from another human being.”

We’ve all seen things happen that shouldn’t have, seen people survive things that we thought would surely take them down. From the grisly gunshot wound victim who actually makes it through a sloppy ex-lap, to the hopelessly sick kid who recovers and is discharged home, to the septic AIDS patient with about four T cells who bounces back and forth between the unit and the floor – sometimes people really do beat the statistics.

And that, right there, is the true madness of medicine. It’s a conglomeration of facts and research and science and numbers and knowledge; and yet, it’s also the exact opposite of those things – it’s a lot of luck, prayer, happenstance, and hope.

My friend is my age. Ten more tumors were found this past week. No matter how much time I may spend studying or learning or shadowing, I’m not even close to being able to tell her anything at all. Sometimes you really do just have to cross your fingers and hope. Sometimes it’s just better to put the science aside, be a friend, lend an ear, and make fun of “Larry.” Because I’m pretty sure that’s what I’d want any of my friends to do if it were me. ■

“How Are You?” How a simple question may help save a life

Here at Quillen in rural east Tennessee, the 70 students in each class make up a big family. We spend hours and hours together – in and out of the classroom – forming bonds that allow us to know our classmates as if they really were blood relatives. We all take the same exams, wear the same scrubs, and aspire to do the same thing with our lives; we are in this together. I’m sure that each of you feels the same way about your classmates or fellow residents.

So what happens when a classmate commits suicide?

My classmates and I walked into class one morning, expecting a typical day of medical school; instead, we were told that a friend had committed suicide. Feelings of shock, confusion, and grief filled the air. A multitude of questions entered our minds, many without answers. In the blink of an eye, the inconceivable became an earth-shattering reality.

If you Google “suicide statistics,” you will find that more than 38,000 suicide deaths were reported in 2010. **Perhaps more striking to our community of physicians and physicians-in-training is that as many as 400 doctors die by suicide each year.** As I sit here trying to find meaningful objective data, however, I find that the only important number is *one*. One son; one brother; one husband. One classmate who always had an uplifting word for his colleagues. He was my best friend.

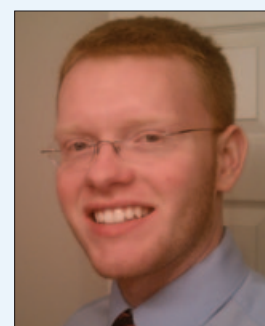
In a recent press conference, Kansas City Chiefs’ quarterback, Brady Quinn said, **“When you ask someone how they are doing, do you really mean it? When you answer someone back how you are doing, are you really telling the truth?”** I reiterate these questions and encourage you to have purposeful and meaningful conversations with all of your friends, family, and

patients. Some conversations may make you uncomfortable; but, beyond these seemingly routine communications, there may not be any other means to save a life. **We cannot let the stigma or perceived shame of mental illness or any other barrier prevent us from helping our fellow man.** Just imagine a classmate, friend, or family member facing difficulties to such a degree that thoughts of suicide enter his or her mind. If you could talk to this person, what would you say? We all are certain to have patients experiencing these issues; how can we handle them? If you are having suicidal feelings, what would you want someone to say to *you*?

When we think of emergency physicians saving lives, images of exciting and invasive procedures often come to mind. Intubation, chest compressions, and violent defibrillations are the marks of a valiant attempt to save life; but what about the simple, yet powerful, question: “How are you?”

It is my hope that this article will urge readers to be more proactive about mental health issues in and out of the emergency department. We cannot afford to think “this can’t happen to me” or “he/she wouldn’t do that.” Sometimes, “Everything is ok” or “I’m ok” may not be true.

As a society, we need to recognize that mental well-being is as important as physical well-being; the mind must be as valued as the heart. As future and current physicians, we also need to recognize that mental illness is not uncommon in health care workers and trainees. **If we are to care for all people regardless of their afflictions, we must maintain our commitments, sharpen our focus, and bring our hands and voices together.** Seek to be a part of mending someone’s life. Begin the conversation now; you may save one life. ■



David Crabtree, MSII
East Tennessee State University
Quillen College of Medicine
Johnson City, TN

“... as many as 400 doctors die by suicide each year. As I sit here trying to find meaningful objective data, however, I find that the only important number is *one*.”



Kylie Conroy, MSIII
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Kansas City, MS

“We must ensure their own basic needs are met before we are able to safely provide assistance to others.”

Fill your tank, fuel your shift

We’ve all heard the same safety briefing before every flight so many times that I’m afraid no one pays much attention anymore. But amongst all of the monotonous marching orders – “fasten your seatbelts...no smoking in the lavatory...turn off all electronic devices” – there is an important piece of advice: “Please secure your oxygen mask before assisting your neighbor.” That “neighbor” often is portrayed as a helpless child, designed to induce feelings of guilt in this hypothetical situation.

The logic behind this mandate is sound, however, and can be directly applied to the practice of medicine: We must ensure their own basic needs are met before we are able to safely provide assistance to others.

Sleep deprivation, poor diet, stress and lack of exercise all are concerning factors that may contribute to inadequate work performance. Emergency medicine poses additional challenges to its practitioners. Sporadic meals; long, intense shifts; infrequent breaks; the constant stress of trauma and codes; an unpredictable patient population; and most of all, SHIFT WORK, can quickly take a toll on the mind and body. Out of all of the factors listed above, *diet is arguably the most easily controlled and can have significant effects on performance, both positive and negative.*

In addition to being a third-year medical student, I am also a fitness competitor. I must admit maintaining a healthy diet was much easier during my didactic years than it has been on rotations, but it is possible. I’d like to share some nutritional tips and tricks I’ve picked up along the way, which are especially applicable to shift work. Altogether the overriding theme is: The better you fuel your mind and body, the better you feel, function, and care for your patients.

A little prep goes a long way

It can be challenging for shift workers to make good nutritional choices. Overnight, food services are often closed, leaving food delivery and vending machines as the only options. Skip this pitfall by bringing healthy snacks and meals to work. On days off, consider “batch cooking” healthy meals for the entire week. Portable snacks, like apples, string cheese and baby carrots, are always good to keep on hand. When purchasing vegetables and out-of-season fruits like berries, consider buying them frozen (they are cheaper and last longer this way, plus freezing does not decrease their antioxidant content)!

Timing

Aim to eat five to six small meals in a 24-hour period, with a minimum of three. Eating every two to three hours will help increase metabolism, decrease fatigue and prevent overeating after your shift ends. Keeping portions small will also fend away the ever dangerous post-prandial “food coma.” An ideal day would consist of three main meals with a small, balanced snack in between each meal.

Tools you can use

Eating at set times in the emergency department can be difficult and rushed. Pack food from home in a cooler which can be easily accessed or opt for a small portable blender in which you can make a quick protein shake or smoothie. In emergencies, a protein bar in your white coat pocket is always your friend, and can save you from making that trip to the vending machine or partaking in those sugar-filled cookies the unit clerk made. There always seems to be some sweet treat lurking around every corner, so come to work prepared.

More protein, less carbohydrates

Protein increases alertness, satiety, thermogenesis and the maintenance of fat-free mass; think of it as your secret weapon. Some examples of protein-rich foods include: lean meats, tofu, tuna, eggs, low-fat cheese, and nuts. Carbohydrates like breads, cereal, and other processed snacks have a relaxing, sedating affect; try to avoid them, especially during evening and night shifts. After work, however, carbs can be used to your advantage. A small carbohydrate-rich meal, low in protein and fat – like a bowl cereal or toast with jelly – actually can help you fall asleep.

Caffeine addiction

When your mind and body are getting properly fueled throughout the day, the urge for quick pick-me-ups decreases, but the need and benefits of caffeine's

stimulating effects cannot be denied. Just remember, caffeine lingers in your system for up to eight hours, so try to avoid consuming it toward the end of your shift, if you will be going to bed shortly after. Instead, try drinking decaffeinated tea or coffee, a small glass of fruit juice, or water. Bonus Tip: Core temperatures drop at night, making us feel more tired, so try drinking hot liquids on overnight shifts to warm up and fight drowsiness.

Liquid gold

During a chaotic shift, basic human necessities like drinking water tend to fall by the wayside. Dehydration promotes hunger and fatigue, so fight it before it starts by drinking at least eight glasses of water a day. Worried about bathroom breaks? For the truly hardcore, a CamelBak combined with a Foley catheter can provide optimal control of ins and outs during your shift. For everyone else, a simple water bottle

and visit to your local water and ice dispenser should suffice. Most importantly, skip the soda and other sugary drinks; they provide empty calories, which may give a short-term boost, but are not worth the crash afterwards or the excess pounds.

Shift workers are more prone to digestive problems, altered appetites, and weight fluctuations. Hopefully, some of this information will help mitigate these risks and lead to an improved sense of well-being. Overall, remember to practice what we preach to our patients by eating a variety of nutritious foods including: plenty of fruits and vegetables, lean protein sources, whole grains, and healthy fats. When all else fails, don't forget that *something* is better than *nothing*. Make the best choice with what you have; your white coat comes with pockets for a reason: *make like a squirrel and fill it with healthy snacks!* ■

Congratulations to our MSC/MSGC Members!

Graham Ingalsbe

Denver Health Medical Center

Joseph Reardon

Duke University

Austin Dennard

UT Southwestern – Dallas

Brandon Stein

New York Hospital Queens

Justin Fuehrer

Long Island Jewish Medical Center

Trine Engebretsen-Labbe

Medical Center of Central Georgia

Justine Nagurney

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UC Davis

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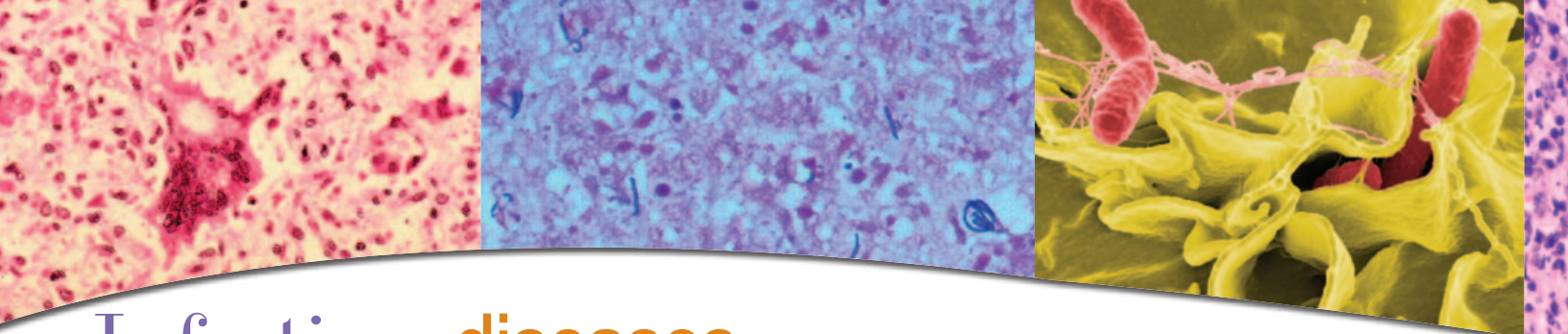
Naval Medical Center Portsmouth

Gregory Wanner

Thomas Jefferson University

Michael Brodeur

Christus Spohn Memorial Hospital



Infectious diseases

Important update on severe sepsis/septic shock management



Melvin Ku, MD, MS
SUNY Upstate Medical University
Syracuse, NY

Introduction

Severe sepsis and septic shock continue to be life-threatening conditions requiring immediate, appropriate care. With approximately 751,000 cases/year in the U.S. and a mortality rate approaching 29%, decisions made within the emergency department have a direct impact on patient outcomes.¹ No pressure!

Started by the Barcelona Declaration in 2002, the *Surviving Sepsis Campaign* released its first-ever guidelines in 2004, detailing evidence-based measures and expert opinion on how to manage severe sepsis and septic shock.^{2e}

New guidelines

The recently released “*Surviving Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2012*” reflect the most recent advances in sepsis care.³ Since the 2008 guidelines, numerous research articles have changed these recommendations and suggestions.

The goal of this article is to summarize key changes and reiterate quintessential points to help guide management in the emergency department.

Updates in initial resuscitation and infection issues

Initial 6-hour goals of resuscitation

The initial resuscitative goals to be achieved within the first six hours in patients with sepsis-induced tissue

hypoperfusion remain unchanged from previous recommendations:

- MAP \geq 65 mmHg
- CVP 8-12 mmHg
- UOP \geq 0.5 mL/kg/hr
- ScvO₂ > 70% or SvO₂ > 65%

Lactate

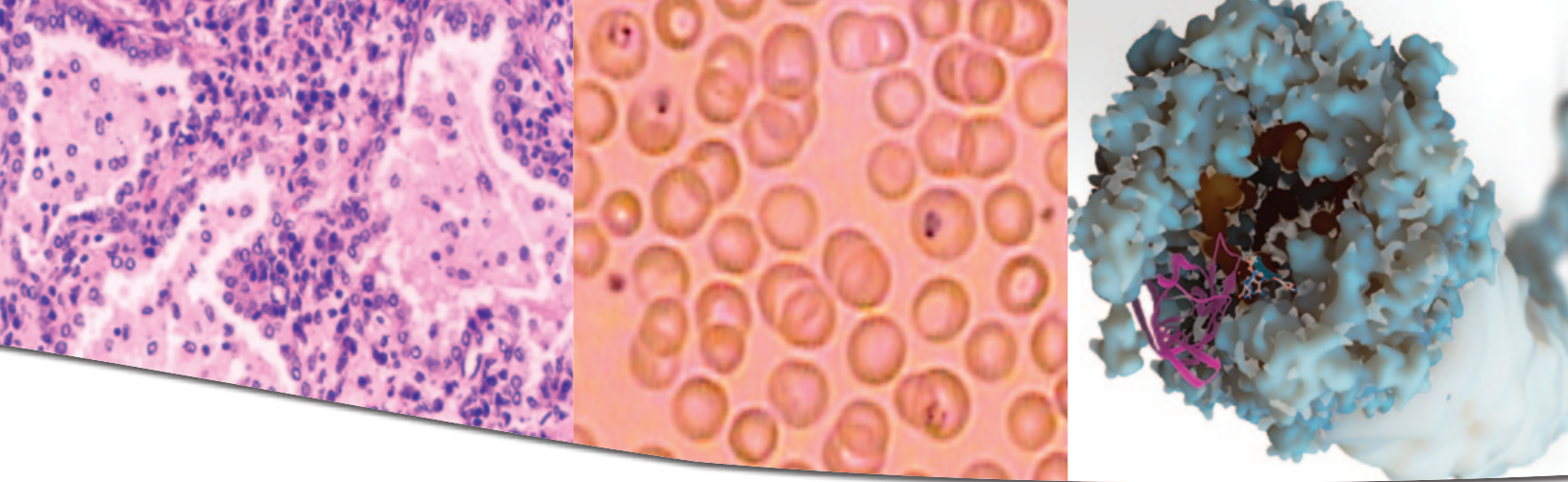
Routine use of ScvO₂ monitoring can be difficult in a practical context. Recent literature has explored lactate as an alternative measure of tissue hypoperfusion. One recent study suggested noninferiority when comparing lactate against ScvO₂ as an initial resuscitative goal for in-hospital mortality rates.⁴ Another study showed in-hospital mortality benefit in the intervention group whereby blood lactate \geq 3 mEq/L prompted intervention against the control group utilizing no serial lactate measures.⁵

The new guidelines suggest that you target resuscitation to normalize lactate in patients with elevated lactate levels as a marker for sepsis-induced tissue hypoperfusion.

Diagnosis/antibiotics (see Figure 1)

The guidelines recommend the collection of at least two sets of blood cultures (both aerobic/anaerobic bottles) and other sites (i.e., chronic indwelling catheter) as indicated; as long as antimicrobial therapy is not delayed (>45 minutes).

Initiation of *appropriate, empiric* antimicrobial therapy within the first hour



DEFINITIONS

SEPSIS	SEVERE SEPSIS	SEPTIC SHOCK
<p>SIRS criteria (need at least 2 of 4)</p> <ol style="list-style-type: none"> 1. Body temperature $>38^{\circ}\text{C}$ OR $<36^{\circ}\text{C}$ 2. Heart rate $>90/\text{minute}$ 3. Respirations $>20/\text{minute}$ or PaCO_2 of >32 mm Hg 4. White blood cell count of $>12,000$ cells/μL or $<4,000/\mu\text{L}$, OR $>10\%$ bands <p style="text-align: center;">AND</p> <p>presence of documented or probable infection</p>	<p style="text-align: center;">Sepsis</p> <p style="text-align: center;">AND</p> <p style="text-align: center;">one of the following:</p> <p style="text-align: center;">sepsis-induced organ dysfunction</p> <p style="text-align: center;">OR</p> <p style="text-align: center;">tissue hypoperfusion (defined as infection-induced hypotension, blood lactate >4 mmol/L, or oliguria)</p>	<p style="text-align: center;">Sepsis-induced hypotension</p> <p style="text-align: center;">(defined as one of the following):</p> <ol style="list-style-type: none"> 1. SBP < 90 mm Hg 2. MAP < 70 mmHg 3. SBP decrease > 40 mm Hg 4. Less than 2 SDs below normal for age in the absence of other causes of hypotension <p style="text-align: center;">AND</p> <p style="text-align: center;">This shock state persists despite adequate fluid resuscitation</p>

The Surviving Sepsis Campaign Bundles represents the single most important set of actions utilized to impact patient prognosis. It reflects recent evidence-based literature that advances our understanding of the importance of fluid resuscitation, vasopressors, lactic acid levels, and the early recognition of severe sepsis.

SURVIVING SEPSIS CAMPAIGN BUNDLES

TO BE COMPLETED WITHIN THREE HOURS

- 1) Measure lactate level.
- 2) Obtain blood cultures prior to administration of antibiotics.
- 3) Administer broad spectrum antibiotics.
- 4) Administer 30 mL/kg crystalloid for hypotension or lactate 4 mmol/L.

TO BE COMPLETED WITHIN SIX HOURS

- 5) Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) 65 mm Hg.
- 6) In the event of persistent arterial hypotension despite volume resuscitation (septic shock) or initial lactate 4 mmol/L (36 mg/dL):
 - Measure central venous pressure (CVP).*
 - Measure central venous oxygen saturation (ScvO_2).*
- 7) Remeasure lactate if initial lactate was elevated.*

*Targets for quantitative resuscitation included in the guidelines are CVP of 8 mm Hg, ScvO_2 of 70% , and normalization of lactate.

(From the 2012 Surviving Sepsis Campaign article by Dellinger et al.)

of recognition of septic shock or severe sepsis remains as a strong recommendation of care. The 2006 Kumar article evaluated the timeliness of appropriate antimicrobial therapy with survival upon hospital discharge for 2154 septic-shock patients.⁶ This graph demonstrates a NNT of five if appropriate antimicrobials are initiated within one hour versus three hours of first documentation of septic shock-associated hypotension.

Updates in hemodynamic support and adjunctive therapies

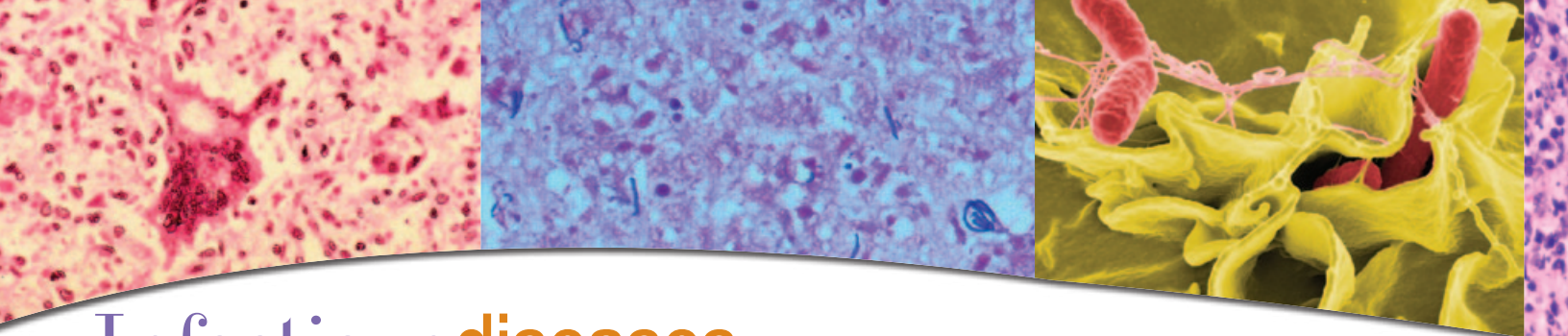
Fluids

Prior guidelines did not specify using crystalloids or natural/artificial colloids as there was no convincing evidence supporting one type of fluid over another.

The choice is now clear: crystalloids are indeed the initial fluid of choice.

Artificial colloids (hydroxyethyl starches, modified gelatins, dextran) should not be used as the evidence has shown an increased mortality and potential increased need for renal replacement therapy.⁹⁻¹² While albumin administration has shown a trend in mortality benefit in septic patients based on recent literature, this should be

continued on page 26



Infectious diseases

continued from page 25

“Target resuscitation to normalize lactate in patients with elevated lactate levels as a marker for sepsis-induced tissue hypoperfusion.”

considered only after substantial amounts of initial crystalloid.^{13,14}

Vasopressors

Previously, one could use either norepinephrine or dopamine as initial choices to maintain a MAP > 65 mmHg in sepsis-induced hypotension despite adequate fluid resuscitation.

Now, however, the initial choice should be norepinephrine. Comparatively, dopamine is more likely arrhythmogenic and causes tachycardia. Evidence shows a significant increase in short-term mortality and supraventricular/ventricular arrhythmias. Recommendations for epinephrine as the first alternative choice, and use of vasopressin to enhance/reduce norepinephrine usage, remain unchanged.³

Inotropes

Dobutamine remains the first-choice inotrope in contexts of myocardial dysfunction, ongoing signs of hypoperfusion despite euvolemia and adequate MAP.

Steroids

Corticosteroids continue to be suggested only when adequate fluid and vasopressor therapies fail to restore hemodynamic stability. The outcome of the CORTICUS trial failed to show mortality benefit.¹⁵ Also, subsequent systematic reviews and meta-analyses demonstrated mixed mortality results affected by variable study quality.

Updates in supportive therapy for severe sepsis

Blood

Blood product administration guidelines remain unchanged. Once tissue hypoperfusion has resolved and in absence of extenuating circumstances (e.g., myocardial

ischemia, severe hypoxemia, acute hemorrhage, ischemic heart disease), RBC transfusion is recommended if Hgb < 7.0 g/dL to target 7.0-9.0 g/dL in adults. The only change is in the prophylactic administration of platelets in patients with severe sepsis at < 10,000 /mm³ in absence of apparent bleeding versus < 5,000/mm³ previously.

Glucose

Previous guidelines targeted glucose < 150 mg/dL with avoidance of hypoglycemia. New guidelines have increased this target to glucose < 180 mg/dL. This strong recommendation is based on the NICE-SUGAR trials showing significant decreases in mortality rates at 90 days, and hypoglycemic episodes when compared to the intensively-controlled group (target glucose 80-110 mg/dL).¹⁶

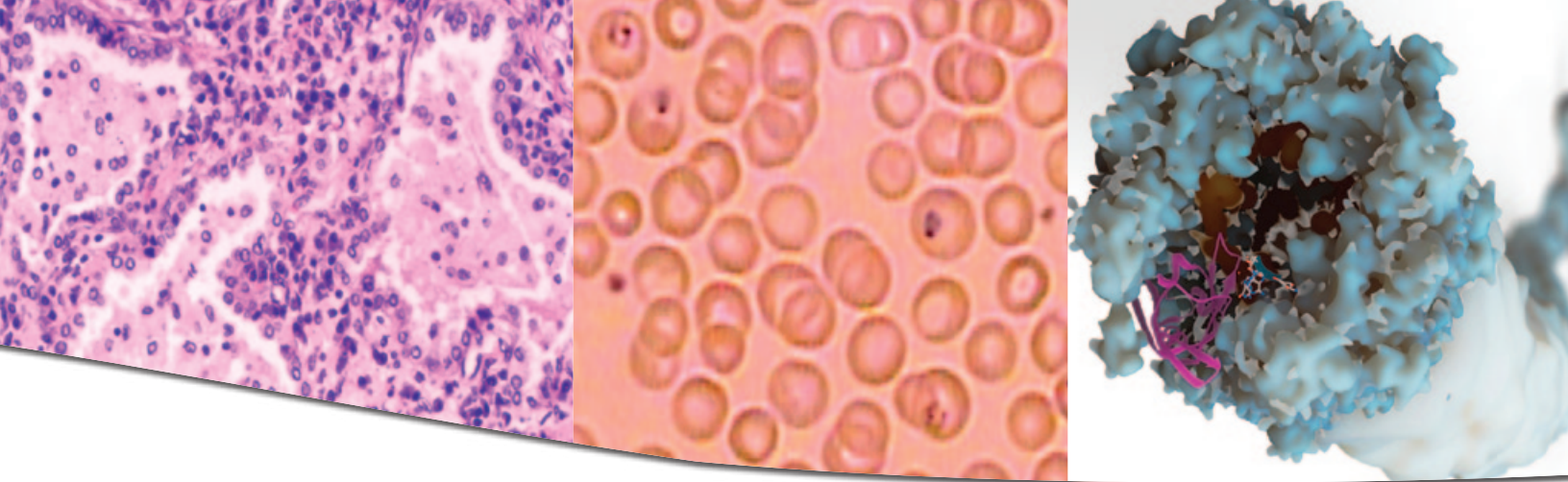
Acute Respiratory Distress Syndrome (ARDS)

Guidelines remain unchanged for targeting tidal volumes at 6 mL/kg in patients with acute lung injury (ALI)/ARDS, and that the initial upper limit of plateau pressures in passively inflated patients be \leq 30 cm H₂O. Provision of positive end-expiratory pressure (PEEP) to avoid alveolar collapse at end expiration continues from prior guidelines.

However, additional suggestions to the guidelines include utilizing strategies based on higher rather than lower levels of PEEP in patients with sepsis-induced moderate-to-severe ARDS, and providing recruitment maneuvers in sepsis patients with severe refractory hypoxemia.

Summary

These key changes in fluids, vasopressors, lactates and other measures will help these



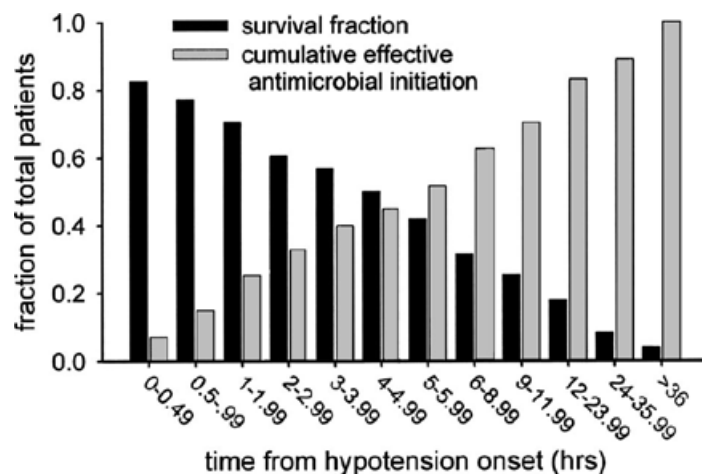
sick, septic patients. When in doubt, just remember to stick to the Surviving Sepsis Campaign Bundles. The admitting team will thank you. ■

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Figure 1.

Black bars reflect fraction of patients surviving to hospital discharge for effective therapy initiated within the given time interval.



Internationalmedicine



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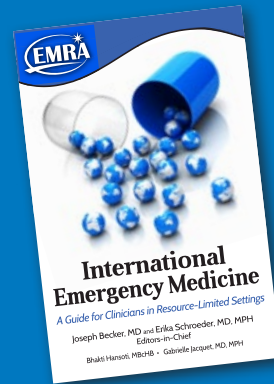
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Career pathways in EMS

EMS research has paved the way, for the use of therapeutic hypothermia in the pre-hospital setting following resuscitation from cardiac arrest.

Although emergency medical services (EMS) has only recently been approved as a boarded subspecialty, careers for physicians in EMS have long existed. So what does an EMS physician *do*? Read on for an overview of the EMS career opportunities available to you!

Medical director

Perhaps the most easily identifiable occupation in which EMS physicians are involved is medical direction. Medical directors provide oversight of various types of EMS agencies: Ground-based, aeromedical, career, volunteer, critical care transport, tactical, etc. Subject to various state laws and regulations, medical directors are responsible for credentialing the providers of their organizations, developing quality assurance and training programs, and creating standard operating procedures.¹

In some systems, medical directors may be responsible for developing the treatment protocols or guidelines by which the EMS providers of their agencies provide care to patients. Medical directors also play a significant role in the development of emergency medical dispatch protocols, which determine the level of providers and types of units (ambulances, fire engines, etc.) dispatched to a scene, based on the 9-1-1 caller's complaint.²

Disaster preparedness and public health

Because disaster preparedness is a natural extension of EMS, physicians involved

in pre-hospital care often are called upon by the community and its hospitals to develop and execute plans dealing with large-scale disasters. Whether it's sitting on local emergency planning commissions or hospital disaster preparedness committees, EMS physicians provide valuable insight.

EMS physicians also are often deployed with rescue or medical teams during disasters. EMS frequently straddles between both public health and public safety sectors.³ During large public health events, such as a severe acute respiratory syndrome (SARS) outbreak, EMS physicians become fundamental to the development of coordinated plans to prevent the escalation of these serious crises.

Education

The development of curricula for the training of pre-hospital providers also is under the purview of EMS physicians.⁴ In addition to didactic lectures, experiential education via simulation and skills-based learning have become standard in instructing EMS providers. On a national level, EMS physicians have been key to creating standardized curricula and core content of BLS and ALS provider classes.⁵

Continuing education of EMS providers also is a vital component of delivering effective pre-hospital care. Most residencies require in-field experience and training in providing online medical command.⁶ Because EMS physicians are at the forefront of pre-hospital care,

they're instrumental in leading the education of EM residents in this setting.

Mass gathering event medicine

Mass gathering medicine is another area in which EMS physicians have taken a significant lead. Predicting the amount of medical resources that are needed to staff large events – such as concerts or sports events – is extremely difficult.⁷ Because EMS physicians frequently interface with pre-hospital providers, public safety officials, event organizers, and hospital staff, they often are called upon to help plan for staffing and resource needs at these events. Physician deployment at these events has even been shown to decrease the number of patients transported to local emergency departments.⁸

Research

Just as with other specialties in medicine, developing evidence-based practice in EMS has become a priority for many physicians. Determining optimum response times, whether certain therapeutic interventions are appropriate in the pre-hospital setting, or even the safe design of ambulances, are areas in which EMS physicians are actively involved. EMS research has paved the way, for example, for the use of therapeutic hypothermia in the pre-hospital setting following resuscitation from cardiac arrest.⁹

Conclusions

EMS physicians have a variety of career options available – it's an exciting subspecialty that allows one to develop



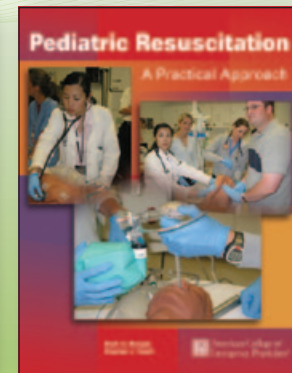
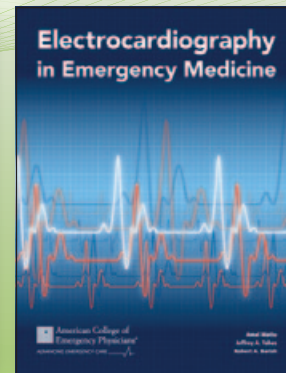
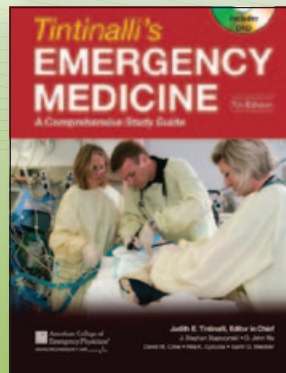
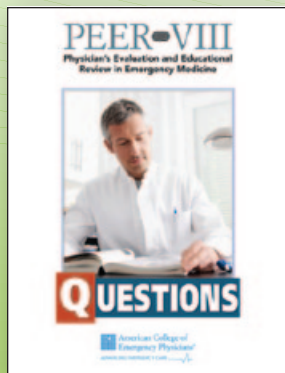
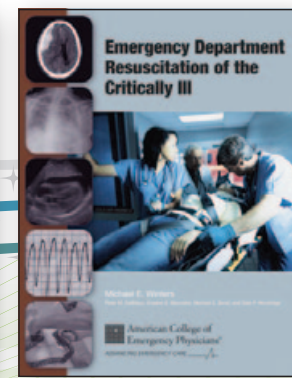
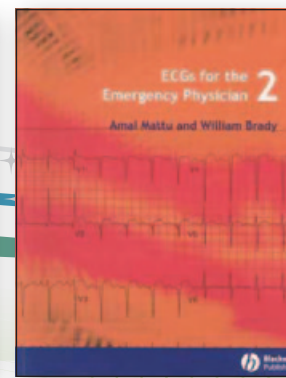
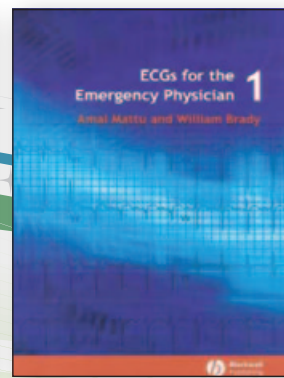
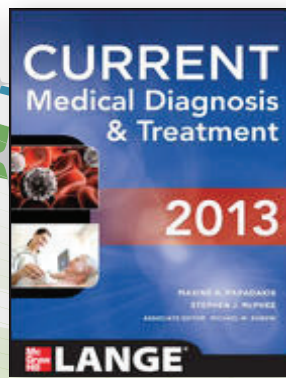
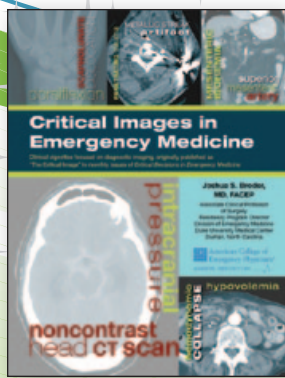
niches in multiple areas. From medical direction to research, physicians can choose their own path and mold a career unique to their interests and talents. ■

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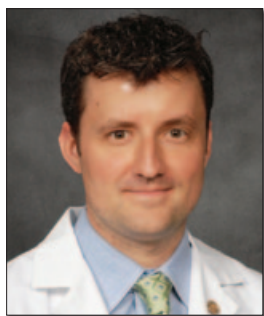
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Highlighting a research pathway: Managing ROAF in the ED

There have been a number of recent publications on the emergency department (ED) management of **recent-onset atrial fibrillation and atrial flutter** (ROAF) that are shaping an evidence-based practice style. Many of these reports are the result of work of Dr. Ian Stiell and his colleagues at the University of Ottawa, and provide an excellent example of a path to explore a scientific question in clinical emergency medicine.

In several studies, Dr. Stiell's group demonstrated the feasibility of the sequential application of two common practice methods currently used to treat ROAF in the ED. The researchers began their trail of publications on the subject with a 2007 study, wherein they utilized intravenous procainamide for the chemical cardioversion of ROAF, a practice that the ED clinicians believed was exceptionally rare outside of their center.¹

This retrospective, single-center review of 341 patients with ROAF demonstrated high rates of chemical cardioversion with procainamide and documented low rates of adverse events associated with this approach.

They expanded this observation with a follow-up retrospective study of 660 patients demonstrating 58.3% chemical cardioversion following the infusion of 1g of procainamide over one hour.² The majority of patients who failed chemical cardioversion had electrical cardioversion attempted, with an overall success rate of 91.7%. In this study, 90.2% of patients in ROAF were successfully converted into sinus rhythm and discharged home with the sequential application of two complementary approaches to cardioversion. This study also examined 7-day outcomes with this approach and found low rates of AF relapse with no documented cases of stroke

or death. This approach was termed the *Ottawa Aggressive Protocol*.

It is important to recognize the relative contribution of different management approaches when attempting to drive practice through novel research. Dr. Stiell utilized this technique in a 2011 report that demonstrated tremendous practice variability in the management of ROAF in Canadian academic emergency departments.³

In this report, the use of electrical cardioversion as the initial management option ranged from 42% to 85% of patients, depending on the emergency department. Independent of the method of management employed, 83.3% of the patients were discharged home, and 43% were scheduled to follow up with a cardiologist.

In a follow-up study in 2012, Dr. Stiell's group examined international practice variability for the ED management of ROAF and found that most centers attempt chemical cardioversion as the initial management approach, a finding that lends precedence to the *Ottawa Aggressive Protocol*.⁴ However, this report documented high variability in the rates of electrical cardioversion if chemical cardioversion fails, with the United States and United Kingdom having the lowest rates of chemical cardioversion – at 30% and 28%, respectively. In addition to highlighting international trends, this study provides clinical relevance to the earlier work by demonstrating areas that may benefit from a novel approach to the ED management of ROAF.

Dr. Stiell's group continues to use data from their patient cohort to explore the nuances of the ED management of the condition



through ongoing scientific review. A 2012 retrospective report refined their protocol by demonstrating that pre-treatment with rate control medications, particularly beta blockers, is associated with decreased rate of successful electrical cardioversion for ROAF in the ED.⁵ This report, while retrospective, challenges the commonly held belief that controlling the ventricular response increases the success of chemical cardioversion for ROAF.

Through clinical observation, description of a protocol, documentation of practice variability and refinement of approach, this group of leading emergency medicine

researchers has highlighted a basic pathway to research in clinical emergency medicine. This example is highly relevant to resident researchers, as all of the data presented in this series of reports is retrospective and accessible to researchers with limited time and resources. ■

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Adam Whiteside, MD
University of Louisville
Louisville, KY

Shall I activate the cath lab?

Raising awareness about the utility of intranasal medication benefits not only patients, but also parents and providers.

All truly emergent complaints have a critical action that needs to be taken in order to save the patient. Of these, there are some that have to be addressed in a timely manner, but their presentations can be easily overlooked. The core task of an emergency medicine physician involves coping with acute presentations of life-threatening events. Many patients present with either a low-acuity complaint, or a chronic problem that could be handled by a primary care physician in an outpatient capacity.

Though important, these encounters not only cloud the water for the sicker patients, but also do not ignite enthusiasm in those enchanted by emergency medicine. The spark lies within the management of a different type of complaint: the active extravasation of trauma patients, the sinking pressure of septic patients, the overdoses looking to buy a tube, or the hidden population of cardiovascular timebombs.

A 66-year-old white man with a history of coronary artery disease, hypertension, and hypercholesterolemia presents to the emergency room complaining of mild chest pain for two hours. He had a single stent placed about 10 years ago, and currently is taking all the right cardiac medications. (Aspirin is the only hemo-effective medication.) The patient quit smoking 35 years ago and has no family history of cardiac disease. The symptoms began while the patient was assisting his wife with some merchandise at a flea market.

Initially, the patient experienced a few minutes of non-radiating, substernal chest discomfort (rated 2/10), and mild nausea.

The pain waxed and waned for two hours with similar episodic duration, but slightly increasing pain. On presentation, the patient appeared uncomfortable and rated the chest pain as 5/10, but his physical exam was otherwise unremarkable.

Vitals: BP 133/87, HR 67, RR 18, 97% on room air.

The ECG on presentation (Figure 1): NSR, rate 66, LAD, upsloping 3mm ST-depression in V2-5 continuing into tall, positive symmetrical t-waves, 1mm elevation in III, and poor r wave progression. [Of note: The slight elevation in III was possibly due to ischemic changes inversely demonstrated (reciprocal finding in LAD MI.)]

The patient's emergency department visit was brief and, at time of transfer, his chest pain had improved to 2/10 while on heparin and nitroglycerin drips.

The repeat ECG (Figure 2) showed continued ST-depression but improvement in III.

The initial troponin was 0.20, and eight hours later had increased to 19. Cardiac catheterization revealed a 99% stenosis just proximal to the previously placed stent in the proximal LAD.

A review of the cardiology literature reveals three types of emergent ECG presentations: ST elevation MI, non-ST elevation MI, and STEMI-equivalents. Dr. Smith points out that the latter carries the highest risk of misinterpretation, since ST depression may be the only obvious feature.⁶ The case reviewed exemplifies the subgroup of cardiac patients with atypical ECG findings, termed "STEMI-

equivalents." These patients are suffering from complete coronary occlusion, or incomplete blockage with poor collateral circulation.⁶

STEMI-equivalents have been in medical literature for many years. One common finding of an acute MI is a new left bundle branch block (LBBB). Before medical records were easily accessible, physicians had to rely heavily on the clinical presentation when deciding to give fibrinolytics in the presence of a LBBB. Now that many hospitals are converting to electronic medical records, previous ECGs can be viewed for comparison, preventing unnecessary thrombolysis.

This leads to the next ECG hurdle: how do you interpret an ECG in a patient with a pre-existing LBBB? Sgarbossa et al. developed a criteria, which has since been modified by Smith et al., that can differentiate ACS patients from other non-emergent chest-painers with LBBB, avoiding the need of a comparison ECG.^{4,5} The objective findings were based on ST segment concordance greater than 1mm in any lead, ST depression of 1mm in V1- V3, and excessive ST discordance greater than 5mm.

More and more STEMI-equivalents have been discovered, with the increase in emergent catheterizations demonstrating vascular blockage when there is not clear ST elevation. The ECG finding in the presented case is similar to the one in an article published by deWinter et al., which defines the pattern as "the ST segment showing a 1- to 3-mm upsloping ST-segment depression at the J point in leads V1 to V6 that



Figure 1.
The ECG on presentation (Figure 1): NSR, rate 66, LAD, upsloping 3mm ST-depression in V2-5 continuing into tall, positive symmetrical t-waves, 1mm elevation in III, and poor r wave progression.

Figure 2.
The repeat ECG (Figure 2) showed continued ST-depression but improvement in III.



Early recognition not only is important due to future decisions ... but also since early management decisions may differ depending on available resources.

continue into tall, positive symmetrical T waves.¹⁷ Additional STEMI-equivalents include severe subendocardial ischemia from three vessel disease or left main coronary occlusion (ST depression in six or more leads and STE in aVR>V1), isolated posterior MI (ST depression in V1-V4), posterolateral MI (ST depression in V1-V3 +/-V4 and in II, III, and aVF), isolated high lateral MI (ST depression in II, III, aVF), and hyperacute T waves (seen early in the evolution of an STEMI).^{3,6} For each of the aforementioned coronary syndromes, placement of leads V7-V9 on the patient's back will help to visualize the injury pattern.

Early recognition not only is important due to future decisions for emergent reperfusion therapy with either thrombolytics or PCI, but also since early management decisions may differ depending on available resources.^{2,3,6} For example, patients with ECG findings consistent with LMCA obstruction or diffuse three-vessel disease may be candidates for CABG, so clopidogrel and

fibrinolytics would be discouraged.⁵ This assumes the hospital has the immediate availability to provide surgical care for the patient, otherwise thrombolysis may still be the only option.

The time-dependant responsibility to activate the cath lab puts increasing pressure on the emergency medicine physician to discriminate possible thrombotic occlusion versus normal variants on ECGs. The clinical presentation and serial ECGs are as – if not more – important than lab work in the acute setting. Relying on computer reads for ECGs will fail us and our patients. There are numerous blogs and podcasts that only require minutes to stay informed, leaving no excuses for falling behind. Most importantly, we as emergency medicine physicians have a responsibility to continually advance our understanding of every aspect of medicine in order to avoid oversight and manage our patients accordingly. ■

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Landmark articles series: Managing septic shock

Welcome back to the second installment of the *EMRA Research Committee Landmark Article* project. We hope you enjoyed last issue's piece on cardiology – and have a *heart* for this month's topic, critical care! This time, we will be looking at some of the most important articles in the care of the septic patient.

We have to begin by discussing the original trial by Manny Rivers, MD, "Early Goal-Directed Therapy in the Treatment of Severe Sepsis and Septic Shock." This trial targeted the first six hours of care of the septic patient, the time when the patient generally is in the emergency department. (Let's face it, when can you get a patient admitted and sent up to the MICU in less than six hours?) In this trial, the experimental group had targets of CVP between eight and twelve with crystalloid or colloid fluids, a MAP between 65-90 with vasopressor agents or dobutamine, and a target hematocrit of 30% with PRBC. The trial found that using these modalities of circulatory monitoring, as well as maintaining central venous oxygen saturation > 70%, to guide therapy in the care of septic patients significantly decreased both organ dysfunction and mortality up to 60 days later. This trial has formed the basis of what is now the standard of care for septic patients.

The next study that is important to mention is "Dexamethasone in adults with bacterial meningitis," which was published in the *New England Journal of Medicine (NEJM)*. It focuses on a topic that has been researched and debated for years, and it has ruled in favor of (drumroll)...the steroids! A dose of 10 mg dexamethasone administered 15 to 20 minutes before antibiotic administration was shown to reduce unfavorable outcomes, such as neurologic damage, and, in the subset of patients with pneumococcal meningitis, significantly reduce mortality.

Finally, I want to talk about vasopressors. Why? The use of vasopressor agents in septic patients has been a topic of conversation for years, with a better choice not clearly defined; however, in recent years, norepinephrine has come to the forefront due to dopamine's pro-arrhythmic characteristics.

A study by Drs. Russell and Walley in *NEJM* involved 778 patients who were randomized to receive norepinephrine *alone* or norepinephrine *plus* low-dose vasopressin. There was no 28 day mortality difference between the groups, and adverse outcomes were the same. However, there was a marginally statistically significant decrease in mortality (26.5% vs 35.7%, $p=0.05$) in the vasopressin group. The study authors classified this as "less severe shock," defined as a norepinephrine infusion less than 14 mcg/min, as opposed to a norepinephrine level > 15 mcg/min. This probably needs to be further validated, but it is an interesting result.

Sepsis, meningitis and vasopressors are three important topics for emergency medicine residents, and these three articles should help you understand on what our current standard of care is based. ■

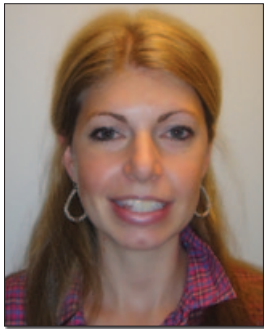
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Thrombolytics in the treatment of massive pulmonary embolism

A 65-year-old man with a history of lung cancer presents to the emergency department with shortness of breath, chest pain, and dizziness. His vitals are HR 110, BP 86/59, RR 24, O2Sat 90%, T 99.0. EKG shows sinus tachycardia with T-wave inversions in the precordial leads. Bedside echo shows an enlarged right ventricle. You are concerned for massive pulmonary embolism (PE) and begin contemplating the role of thrombolytics.

PE remains a vexing entity, as it offers both diagnostic and management challenges and has a high potential for lethality. The mortality rate for PE in hemodynamically stable patients has been estimated as <5%, but when accounting for all patients, the ICOPER registry reports a 90-day mortality of 17.4%.¹

Massive PE: How is it defined?

Massive PE is defined by hemodynamic (HD) instability, which is a function of both embolus size and underlying cardiopulmonary status. American Heart Association (AHA) guidelines require one or more of the following:

- Hypotension (systolic <90 for at least 15 min or the need for inotropic support)
- Pulselessness
- Profound bradycardia

Submassive PE is characterized by normal BP but evidence of either:

- RV dysfunction (RV dilation, elevated BNP, suggestive EKG changes), or
- Myocardial necrosis (elevated troponin).²

What is the significance of massive PE?

The relationship between PE severity and mortality is nonlinear. Initially, increasing severity is associated with an almost constant, low mortality rate. However, as PE begins to cause HD compromise and shock, the

mortality rate begins to rise exponentially (see figure 1). 10% of patients with PE will present with frank shock.¹

Heparin is the mainstay of treatment in PE, but for whom do we consider thrombolytics?

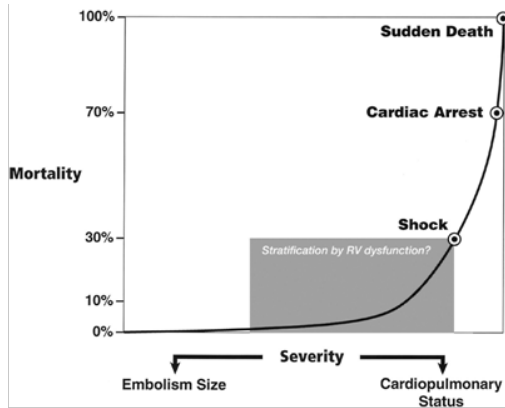
The indications for thrombolytics in PE are less well-defined and more controversial than in MI or ischemic stroke.

ACEP revised its PE practice guidelines last year and advises thrombolytic therapy in HD unstable patients with confirmed PE for whom the benefits of treatment outweigh the risks (level B recommendation). Additionally, it suggests considering thrombolytics in HD unstable patients when PE is suspected but cannot be confirmed (level C recommendation).³

The 2011 AHA guidelines suggest thrombolytics in patients with massive PE and an “acceptable” risk of bleeding complications (level B recommendation). They also suggest considering thrombolytics in patients with submassive PE and evidence of adverse prognoses, such as RV dysfunction, myocardial necrosis, or impending respiratory decline, provided there is low risk of bleeding (level C recommendation).²

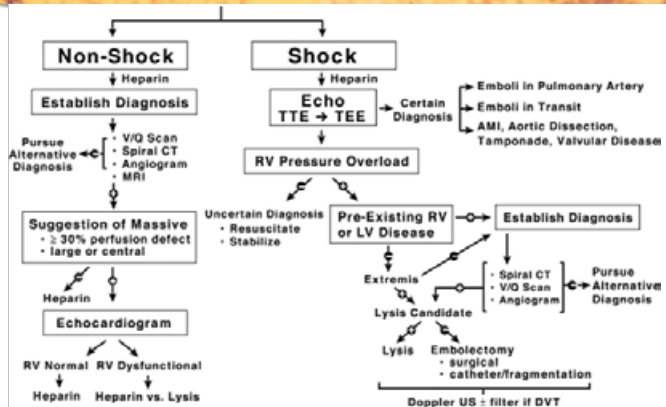
Chest released updated guidelines in 2012, which essentially mirror those suggested by the AHA. The journal offers the following additional recommendations aimed at reducing bleeding risk:

- Administer thrombolytics through a peripheral IV rather than a PA catheter
- Only use short infusion regimens (2-hr infusions versus 12 to 24-hr infusions)
- Hold heparin drips during thrombolytic infusion⁴



Outcomes in Pulmonary Embolism

Figure 1. Source: Wood KE. Major pulmonary embolism; review of a pathophysiologic approach to the golden hour of hemodynamically significant pulmonary embolism. *Chest*, 2002.¹



Major Pulmonary Embolism Diagnostic/Therapeutic Approach

Figure 2. Source: Wood KE. Major pulmonary embolism; review of a pathophysiologic approach to the golden hour of hemodynamically significant pulmonary embolism. *Chest*, 2002.¹

How do we weigh the risks and benefits of thrombolytic therapy?

What we know about thrombolytics in PE is that at 24 hours they achieve reduced pulmonary artery pressures, improved pulmonary perfusion, and decreased RV dysfunction.² How this more rapid angiographic resolution of PE translates to overall outcomes is less certain. There is a paucity of high-quality studies specifically comparing thrombolytics to heparin alone in patients with massive PE. A 2004 meta-analysis showed a 4% vs. 7% rate of recurrent PE, and a 6% vs. 13% rate of death, respectively, for thrombolytics vs. heparin alone in massive PE.⁵ Conversely, submassive PE treated with heparin alone has a significantly lower mortality rate, and thrombolytics have not shown a substantial effect on this rate.² In summary, thrombolytic therapy should be most strongly considered in patients with HD compromise because they are the most likely to benefit from treatment.

The risks of thrombolytic therapy should not be underestimated. In the ICOPER registry, intracranial bleeding occurred in 3% of patients who received thrombolytics vs. 0.3% in those who did not. The incidence of any major bleeding was 22% vs. 9% in these groups.⁶

How are thrombolytics dosed?

The most extensively used and studied regimen is rt-PA (alteplase) 100 mg over 2 hrs; however, equivalent doses of different thrombolytics appear to have comparable efficacy. In impending or definite cardiac arrest, thrombolytics should be bolused.⁴

Is there a time-frame within which thrombolytics should be given?

Just as in MI and ischemic stroke, there is a “golden hour” in severe PE. In fatal cases of PE, two-thirds of patients die within one hour of presentation. Furthermore, thrombolytics are thought to be more effective in achieving reperfusion when administered early.¹

Other treatment options

Absolute and relative contraindications to thrombolysis are the same as for ST-elevation MI. Catheter or surgical embolectomy may be indicated for patients with such contraindications, as well as for patients who remain HD unstable despite medical treatment or for those noted to have an RV thrombus on echo.¹ Extracorporeal membrane oxygenation has shown promise as an adjunct in treating massive PE, especially for surgical candidates with a high risk of bleeding.⁷ ■

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Disproportionate Share Hospital Payments



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The Supreme Court decision on the Affordable Care Act (ACA) validated the individual health insurance mandate; but in its secondary rulings on Medicaid expansion, it opened the door to another area of contention that will directly affect safety-net hospitals nationwide. By a seven to two margin (extrapolated from the justices' individual opinions), the justices found the government's plan to withhold all federal Medicaid funds from states that don't expand their Medicaid programs "unduly coercive." This destroyed one of the pillars on which some of the ACA's funding cuts were based, specifically those cuts to the disproportionate share hospital (DSH) payments.

I'll briefly review the Medicaid program before delving into DSH payments. Medicaid is jointly financed by the federal government and the states. Costs are incurred by states, which make payments to service providers and perform administrative activities. The federal government reimburses states for a share of the costs, which are calculated via the federal medical assistance percentage (FMAP). This is inversely related to each state's per capita income.

Medicaid eligibility generally has been limited to low-income children, pregnant women, parents of dependent children, the elderly, and individuals with disabilities. The ACA lowers eligibility thresholds so people with incomes up to 138% of the federal poverty level qualify for coverage. Combined with the individual mandate and insurance-market regulations guaranteeing access to coverage, ACA-related reforms are projected to result in additional coverage for about 30 million people by 2022.¹

The Medicaid statute also requires states to make disproportionate share hospital payments to hospitals treating large numbers of low-income patients. Because low-income patients are more likely to be uninsured or Medicaid enrollees, these hospitals are often unpaid or underpaid, given Medicaid's payment rates are significantly lower than the rates paid by Medicare and private insurance. The DSH payments are, in essence, a subsidy to keep these hospitals in business. Unlike most federal Medicare and Medicaid funding, which is provided on an open-ended basis, DSH funding is capped. Each state receives an annual DSH allotment, which is the maximum amount of FMAP that each state can claim for Medicaid DSH payments. Medicaid DSH payments are the largest source of federal funding for uncompensated care, with fiscal year 2011 allotments totaling nearly \$11.3 billion.²

Under the original bill, the ACA was expected to significantly reduce the number of uninsured, starting in 2014; based on these projections, the ACA included a provision directing the Secretary of the Department of Health and Human Services (HHS) to make aggregate reductions in Medicaid DSH allotments, totaling \$18 billion between 2014 to 2020.³

While the aggregate DSH reduction amounts are specified in statute, HHS is responsible for determining how to distribute the aggregate DSH reductions among the states using statutory guidelines, which mandate larger reductions on states that have the lowest percentage of uninsured individuals or do not target their DSH payments to hospitals with high volumes of Medicaid patients and uncompensated care.

How the ACA Affects Safety Net Hospitals

With the Supreme Court decision that states are not *required* to participate in the Medicaid expansion, part of the premise for these cuts is gone. Since the ruling (President Obama's reelection), 11 governors have decided to forgo Medicaid expansion, with five states also leaning toward foregoing expansion; nine states remain undecided.⁴ The states are basing their decisions on a variety of factors, including cost and political ideology. Still, certain states' rejection of Medicaid expansion could have negative implications on other states which *do* participate; by expanding Medicaid, these states will decrease their uninsured population, precipitating larger overall cuts to their share of DSH funding.

For example, in 2011 about 9% of DSH expenditures went to Texas, while California got 13%.⁵ California is planning on participating in the Medicaid expansion and Texas will not, thus Texas will likely have relative higher numbers of uninsured, netting a larger share of DSH funding. However, California safety net hospitals still will be treating large numbers of uninsured in addition to the newly underinsured Medicaid patients, so hospital net income might not budge. Because the state's number of uninsured will have decreased, DSH funding will be cut. In essence, there is a perverse incentive not to decrease a state's uninsured population.

In summary, the Supreme Court decision leading to a variable nationwide Medicaid expansion can potentially negatively impact many safety net hospitals, and may impact major centers of emergency care and the training of many future emergency physicians. CMS recently announced

that HHS soon will release a modified DSH allotment reduction methodology for public comment, but it's unclear how much flexibility HHS has to change allotment algorithms. Emergency physicians should take an active role in facilitating an equitable solution to the DSH problem created by the Supreme Court decision.

To get updates on pending legislation and active policy issues, and to get involved in the EMRA/ACEP health policy circles, visit emra.org > resources > advocacy. We also welcome your thoughts and opinions on Facebook. [com/EMRA.Health.Policy](https://www.facebook.com/EMRA.Health.Policy). ■

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What is a Safety Net Hospital?

A safety net hospital or health system provides a significant level of care to low-income, uninsured, and vulnerable populations. Safety net hospitals are not necessarily distinguished from other providers by ownership – some are publicly owned and operated by local or state governments and some are non-profit. Rather, they are distinguished by their commitment to provide access to care for people with limited or no access to health care due to their financial circumstances, insurance status, or health condition.

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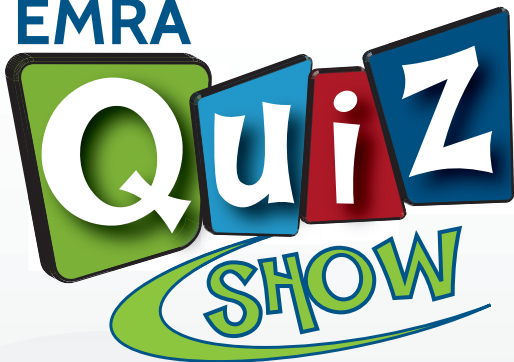
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Risk management pitfalls for atrial fibrillation

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1. "The patient denied any chest pain, so I sent her home after she spontaneously cardioverted."

Unfortunately, the patient was a 62-year-old female with diabetes who had a prior history of myocardial infarction. Had you compared her prior ECG, you would have noted new ischemic changes. Although she spontaneously converted, ECG changes and significant cardiac risk factors should have prompted an admission to further evaluate for ischemia.

2. "The ibutilide worked great. The patient felt much better and wanted to go home immediately."

While ibutilide works to convert AF/AFL approximately 40% to 50% of the time, it has significant risks—most notably an 8% risk of torsades de pointes and other ventricular tachyarrhythmias, which may be mitigated by pretreatment with IV magnesium sulfate. Use of this drug requires a 4-hour period of monitoring after administration.

3. "The QRS complexes looked a little bizarre, but I figured she had an underlying bundle branch block. I didn't think a 20-mg diltiazem bolus would cause her to go into cardiac arrest."

Wide, bizarre QRS complexes with very rapid ventricular rates up to 300 beats per minute should lead you to suspect preexcitation such as Wolff-Parkinson-White syndrome, as should prior ECGs with delta waves, history of an accessory pathway, or very young patients with new-onset AF. Urgent electrical cardioversion should be performed for patients who are hemodynamically unstable with AF/AFL involving conduction over an accessory pathway, while IV procainamide, ibutilide, or amiodarone may be considered for hemodynamically stable patients.

4. "She was hypotensive, so I gave calcium gluconate before giving the commonly quoted starting dose of diltiazem: a 20-mg bolus. It is unfortunate that she became profoundly hypotensive and went into cardiac arrest, but I did nothing wrong."

Pretreatment with calcium may potentially

help blunt the hypotensive effects of diltiazem; however, had you started with a lower dose and titrated it slowly, you may have been able to prevent the hypotension and cardiac arrest. You can also consider using vasopressors, cardioversion, or an amiodarone drip to minimize hypotension and prevent decompensation.

5. "When the diltiazem didn't give a good response, I decided to try metoprolol. I believe her complete heart block was from the acute coronary syndrome she was having, not what I did."

Combining IV beta blockers and calcium channel blockers can result in hypotension and can precipitate dysrhythmia and complete atrioventricular nodal blockade. It is safe to give 1 of these 2 classes of drugs intravenously—cautiously—if the patient is on an oral version of the other class, but giving both intravenously in a short time period could potentially lead to decompensation.

6. "I thought the patient might be having acute coronary syndrome, so I used a beta blocker for its beneficial effects. I was not expecting the patient to decompensate around that same time."

While there are advantages to using a beta blocker in new-onset AF in the setting of acute coronary syndromes or thyrotoxicosis, it is important to remember any contraindications to specific drug classes. Had you asked the patient about a history of asthma and her recent increased use of home nebulizers you might have considered a short-acting beta blocker such as esmolol or a calcium channel blocker instead.

7. "Sure, her AF was 1 week old, but I obtained a transesophageal echocardiogram that showed no left atrial clot, so I cardioverted the patient and sent her home. She was just one of those unfortunate people who had a thromboembolic event."

Although there is some suggestion in the literature that the method you used might be reasonable, the data suggest that anticoagulation would be required

even with a negative transesophageal echocardiogram in this situation. If someone has been in AF for more than 48 hours, transesophageal echocardiogram may not show a clot, but there may still be as high as a 2% incidence of thromboembolism after conversion due to atrial stunning and dysfunction after cardioversion.

8. "She didn't look bug-eyed to me."

In the elderly, thyrotoxicosis can present very atypically, without the common findings that usually occur in younger patients. A thyroid-stimulating hormone screening is a reasonable test in patients > 55 years of age with new-onset AF.

9. "The patient was hypotensive, so I tried cardioversion. I couldn't get him to cardiovert after multiple attempts with 200 J, so I gave IV metoprolol to slow the heart rate down in hopes that the decreased rate would improve ventricular filling and increase his blood pressure. I couldn't believe that it worsened his blood pressure and he ended up going into cardiac arrest."

Failed cardioversion may occur in patients with long-standing AF/AFL, and pretreatment with an antiarrhythmic such as amiodarone may decrease the defibrillation threshold and improve success of cardioversion. Atrioventricular nodal blocking agents may slow the rate down, but this does not increase the "atrial kick" contribution to ventricular filling; thus, atrioventricular nodal blocking agents will likely only exacerbate the hypotension.

10. "She was altered and couldn't tell me how long she had been in AF. I didn't want to cardiovert her and cause a stroke, so I gave diltiazem."

The patient was showing evidence of poor perfusion with altered mental status, cool, clammy skin, and hypotension, and she needed immediate electrical cardioversion. Heparin should be started as soon as possible after cardioversion unless there is a significant contraindication. ■

Risk management pitfalls for febrile infants

From the February 2013 issue of Pediatric Emergency Medicine Practice, "Evaluation Of The Febrile Young Infant: An Update." Reprinted with permission. To access your EMRA member benefit of free online access to all Emergency Medicine Practice, Pediatric Emergency Practice, EM Critical Care and EM Practice Guidelines Update issues, go to www.ebmedicine.net/emra, call 1-800-249-5770, or email ebm@ebmedicine.net.

- 1. "The neonate had a fever, but he was so well-appearing, I couldn't justify doing the full sepsis workup. There was little chance he had a serious infection."**
The febrile neonate is at high risk for an SBI; nearly 1 in 5 febrile neonates will have an SBI. This rate of infection is too high to defer testing in this age group. The well-appearing febrile young infant aged 29 to 56 days is also at risk for an SBI, with 8.8% of these patients testing positive for an SBI in a study by Baker et al.
- 2. "The baby was bundled, so we thought the rectal temperature of 38°C was probably environmental and that we didn't need to perform the sepsis workup."**
While temperatures can be falsely elevated from excessive external heat, the febrile young infant is a high-risk population, and a rectal temperature of 38°C should be assumed to be true and the full sepsis workup performed. It is unclear how to manage infants with fever by axillary or ear thermometers, which are less accurate than rectal thermometers. The guiding principle is that, due to the high incidence of SBI in this age group, strong consideration to performance of the full sepsis workup should be given.
- 3. "The febrile baby was 61 days old, which was beyond the upper age limit of both the Philadelphia and Rochester criteria. We didn't have to do any testing."**
The Boston criteria extend the upper age limit for performance of the full sepsis workup through 89 days. While the Philadelphia and Rochester criteria have upper age limits of 56 and 60 days, respectively, the febrile young infant does not become low risk for SBI when he becomes 61 days old. The incidence of UTI is still high, and, at minimum, a urinalysis and urine culture should be performed. Consideration should be given to performance of a CBC and blood culture, and, if the infant is ill-appearing or has a high serum WBC, CSF studies should be ordered.
- 4. "The CBC was normal in the ill-appearing febrile young infant, so the risk of meningitis was very low, and I didn't perform the lumbar puncture."**
In a retrospective study of 5353 febrile infants aged 3 through 89 days, 22 of whom had bacterial meningitis, the WBC was normal (between 5000 and 15,000 WBC/mm³) in 41% of patients with meningitis. The CBC alone is not an adequate screen for meningitis in this age group; therefore, a lumbar puncture should be performed.
- 5. "The urinalysis, CBC, and CSF cell count were all normal in my febrile 10-day-old patient, so he met the low-risk criteria. I felt comfortable sending him home for his pediatrician to follow up the cultures."**
The low-risk criteria do not perform as well in neonates, as demonstrated by 2 retrospective studies that showed a lower NPV of the criteria in neonates, with potential to falsely classify up to 1 in 10 febrile neonates as low risk. Therefore, neonates should be admitted on empiric antibiotic therapy pending culture results.
- 6. "While the 40-day-old febrile baby was very fussy on my examination, the laboratory tests were normal, so he met the low-risk criteria, and I discharged him home."**
All the low-risk criteria require the baby to be well appearing on physical examination. Even with normal laboratory studies, if the infant is ill appearing or has a focal infection, the baby should be hospitalized on empiric antibiotic therapy.
- 7. "The mother denied any history of HSV, so her 12-day-old baby who looked ill likely had a bacterial infection and did not have neonatal HSV."**
The highest risk for transmission of neonatal HSV is to babies born to mothers who have a primary infection at the time of delivery. The infection may be subclinical, so the mother may not know she had HSV when the baby presents to the ED. While the incidence of neonatal HSV is low, HSV testing and empiric acyclovir therapy should be performed in the ill-appearing, hypothermic, or seizing neonate or in the presence of vesicles.
- 8. "Acyclovir is a toxic drug, so we waited for HSV testing to result in 24 or 48 hours before starting acyclovir therapy."**
In the landmark neonatal HSV therapy study by Kimberlin et al, the only adverse effect directly attributed to acyclovir was transient neutropenia. Elevated creatinine and low hemoglobin occurred in the sickest babies with disseminated HSV infection, so the abnormalities were possibly related to the HSV and not to the acyclovir. Additionally, in a retrospective study by Shah et al, each day's delay in acyclovir initiation was associated with increased mortality in neonates with HSV. Therefore, empiric acyclovir therapy should accompany HSV testing in the neonate.
- 9. "I checked a bag urine sample in my febrile 70-day-old patient. The urinalysis was negative, so I didn't perform a catheterization for urine culture."**
In infants aged ≤ 90 days, the urinalysis is not as sensitive as in older infants and children, with a cross-sectional study by McGillivray et al reporting a sensitivity of 77% (95% CI, 54% to 100%) for urinalysis from bagged specimens in this age group. The American Academy of Pediatrics' 2011 UTI clinical practice guideline recommends that catheterized or suprapubic aspiration be utilized to obtain both urinalysis and urine culture in febrile children age 2 to 24 months in whom UTI is being evaluated.
- 10. "The neonate was in shock. I gave antibiotics, which should have treated the sepsis."**
While bacterial sepsis is a likely diagnosis in the neonate in shock, other etiologies include neonatal HSV, ductal-dependent congenital heart disease, and inborn errors of metabolism. In addition to antibiotic therapy and hemodynamic support, consideration should be given to initiation of acyclovir therapy, prostaglandin infusion, and testing with an ammonia level. ■

BOARD REVIEW

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Q & A

For a complete reference and answer explanation for the questions below, visit www.emra.org.

PEER (Physician's Evaluation and Educational Review in Emergency Medicine) is ACEP's Gold Standard in self-assessment and educational review. These questions are from the latest edition of PEER—PEER VIII—which made its debut at the 2011 Scientific Assembly. To learn more about PEER VIII or to order it, go to www.acep.org/bookstore.

- Which of the following clinical features is associated with vasovagal or neurocardiogenic syncope?
 - Absent prodrome
 - Confusion
 - Nausea
 - Orthostatic hypotension
- A 57-year-old man with a history of cirrhosis presents with acute renal failure. He denies recent illness and is not taking any nephrotoxic medications. He is well hydrated; his urinalysis is negative. Which of the following is the definitive treatment?
 - Hydration
 - Liver transplant
 - Renal transplant
 - Transjugular intrahepatic portosystemic shunt
- A 23-year-old woman presents 1 hour after being hit in the eye with a baseball bat. She has severe pain, marked periorbital swelling, and ecchymosis and significant proptosis. Which of the following statements describes appropriate management?
 - Definitive treatment is administration of mannitol and acetazolamide
 - Definitive treatment is lateral canthotomy to release the globe
 - Needle aspiration of the hematoma is indicated
 - Surgical procedures should be delayed until an ophthalmologist is available
- A 70-year-old man presents with sharp substernal chest pain and shortness of breath. Vital signs include blood pressure 180/110, pulse 85, respirations 18, and oxygen saturation 99% on room air. Physical examination is unremarkable. The ECG shows ST-segment elevation in leads II, III, and aVF. Which of the following conditions, if part of his past medical history, is an absolute contraindication for thrombolytic therapy?
 - Atrial fibrillation treated with warfarin and an INR of 1.5
 - Fall with head injury 2 months earlier
 - Hemorrhagic stroke 6 months earlier
 - Renal insufficiency
- An 82-year-old man presents with respiratory distress with a systolic blood pressure of 80/30 and oxygen saturation of 82%. He is successfully intubated but is still hypoxic on a ventilator with FIO₂ of 100%. Chest radiography reveals bilateral and alveolar infiltrates. He has been taking levofloxacin to treat a urinary tract infection. What is the next step in management?
 - Administer steroids
 - Broaden antibiotic coverage with vancomycin
 - Increase the positive end-expiratory pressure
 - Increase the tidal volume



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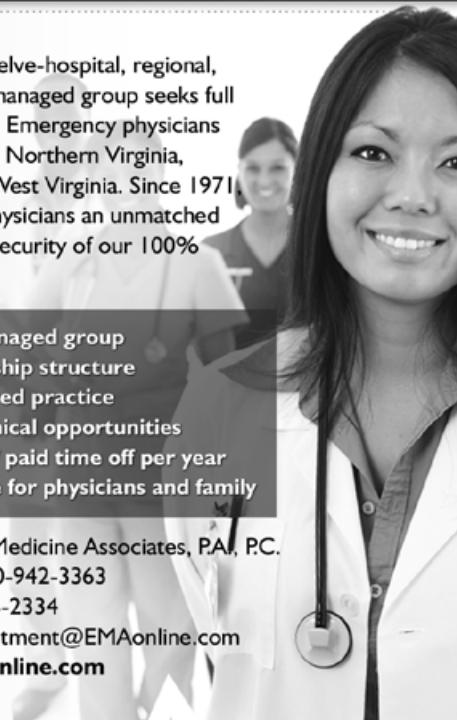
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includes comprehensive benefits with funded pension (up to \$33,000 yr.), CME account (\$8,000/yr.), family medical/dental/prescription/vision coverage, short and long term disability, life insurance, malpractice (occurrence) and more. Contact Bernhard Beltran at 800.359.9117, e-mail bbeltran@emp.com. ■

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New York, Long Island, Albany and Cortland: Brookhaven Memorial Hospital Medical Center is in Patchogue on the southern shore of Long Island and sees 74,000 ED pts/yr. Cortland Regional Medical Center is a modern, full-service facility situated in the Finger Lakes Region between Syracuse and Ithaca (34,000 ED pts/yr). Albany Memorial Hospital has a new ED (44,000 pts/yr) and hosts EM resident rotations, while Samaritan Hospital in Troy is a respected community hospital minutes from Albany seeing 46,000 ED pts/yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson, (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

North Carolina, Charlotte: EMP is partnered with eight community hospitals and free-standing EDs in Charlotte, Gastonia, Lincolnton, Pineville and Statesville. A variety of opportunities are available in urban, suburban and smaller town settings with EDs seeing

22,000 -104,000+ pts./yr. EMP is an exclusively physician owned/managed group with open books, equal voting, equal equity ownership, funded pension, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

North Carolina, New Bern: Respected 313-bed regional medical center sees 74,000 ED pts./yr. located at the intersection of the Trent and Neuse Rivers just off the central coast. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson, (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Ohio, Cincinnati: Excellent opportunity with established equity-ownership group north of Cincinnati. BP/BC EM physicians are sought for newer hospital with state-of-the-art ED seeing approximately 63,000 patients annually. Very good coverage of 61 physician and 44 MLP hours daily. Generous package includes family medical plan, employer-funded pension,

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Ohio, Cincinnati: New Hospital Opens Soon! Mercy West, a 250-bed hospital will be opening in 2013 with an anticipated ED volume of 50,000-60,000. Located in the western suburbs, this will be a state-of-the-art facility with great opportunities for BP/BC EM physicians. Premier Physician Services provides an outstanding model offering equity-ownership at one year with no buy-in; giving you a voice and ownership in your company. Excellent package includes guaranteed rate plus additional incentives, family medical plan, employer-funded pension, CME/expense account and additional benefits. For additional information contact Kim Rooney (800)726-3627, ext 3674, e-mail krooney@premierdocs.com, fax (937) 312-3675. ■

Ohio, Columbus: A very appealing opportunity 30 minutes south of downtown Columbus. Enjoy working in the environment of a rural community hospital with easy access to all the amenities of Columbus. This ED has an annual volume of 34,000 and 40 hours of physician daily coverage. Excellent package offers guaranteed hourly rate plus additional incentive as well as malpractice, family medical plan, employer-funded pension, CME/Expense Account plus equity-ownership at one year with no buy-in! For additional information contact Amy Spegal, Premier Physician Services, (800)726-3627, ext. 3682, e-mail aspegal@premierdocs.com, fax (937)312-3683. ■



Wexner Medical Center

Ohio, Columbus: The Ohio State University Wexner Medical Center's Department of Emergency Medicine is offering the following **Fellowship** positions beginning in July 2013: **ACGME Accredited:** EMS, Toxicology. **Non-ACGME Accredited:** Ultrasound, Education, Administration. All fellows will receive

appointments at The Ohio State University College of Medicine. Non-ACGME fellows will receive an auxiliary faculty appointment and ACGME fellows will receive a PGY-4 appointment. Fellows must have successfully completed an Emergency Medicine residency program and be eligible to obtain an Ohio medical license. We offer a competitive salary with a full university benefit package. A CME allowance and tuition assistance are also provided. Complete descriptions of all fellowship programs can be found at www.osuem.com. Send CV and cover letter to Mark G. Angelos, MD, Professor and Interim Chairman, Department of Emergency Medicine, The Ohio State University Wexner Medical Center; mary-jayne.fortney@osumc.edu; 614-366-8693. AAEOE. ■

Ohio, Dayton: BP/BC EM physician sought to join solidly established, democratic group at 42,000 volume ED in northern suburb. Enjoy working in a collegial environment and outstanding physical plant. Excellent package includes guaranteed hourly plus incentive, malpractice, employer-funded pension, family medical plan, CME, and more. Contact Greg Felder, Premier Physician Services, (800)



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726-3627, ext 3670, e-mail gfelder@premierdocs.com, fax CV (937) 312-3671. ■

Ohio, Findlay: Premier Physician Services announces a new opportunity in 40,000 volume ED. Located 45 minutes south of Toledo, this Level III Trauma Center is a Top 100 Hospital with an appealing environment and excellent support services. Enjoy the benefits of an outstanding model offering equity-ownership at one year with no buy-in; giving you a voice and ownership in your company. Terrific benefits include family medical plan, employer-funded pension, malpractice, expense account & additional benefits including loan repayment opportunity; plus the advantage of guaranteed rate AND additional incentive. For additional information contact Amy Spegal, Premier Physician Services, at (800)726-3627, ext 3682, e-mail aspegal@premierdocs.com, or fax CV to Premier at (937)312-3683. ■

Ohio, Lima: Meet your financial and practice goals. Named among Top 100 Hospitals, this 57,000 volume, level II ED will complete an expansive, state-of-the art renovation in 2012. Excellent coverage and great compensation make this opportunity ideal. Package includes guaranteed hourly plus RVU and additional incentives, malpractice, employer-funded pension, family medical plan CME/expense account, and shareholder opportunity at one year with no buy-in. Contact Kim Rooney, Premier Physician Services, (800)726-3627, ext. 3674, krooney@premierdocs.com, fax (937)312-3675. ■

Ohio, Marion: Appealing opportunity 45 miles north of Columbus in 48,000 volume ED. State-of-the-art facility has excellent coverage of 62 physician & 18 PA hours daily. Equity-ownership model provides guaranteed hourly plus additional incentive, family medical, employer-funded pension, shareholder status with no buy-in and more. Contact

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Ohio, Springfield: EMP is pleased to announce one of our newest sites – Springfield Regional Medical Center. The area's only full-service hospital, Springfield Regional is situated 45 miles west of Columbus and 25 miles northeast of Dayton, with 75,000 emergency patients treated annually. EMP is an exclusively physician owned/managed group with open books, equal voting, equal equity ownership, funded pension, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Ohio, Toledo: New Opportunity – Premier Physician Services announces new opportunities in suburban Toledo college town. This ED has an annual volume of 26,000; excellent coverage includes resident and MLP support. A director opportunity is also available. Highly appealing compensation package includes guaranteed rate plus RVU and additional incentive; family medical plan, employer-funded pension, expense account and more including shareholder status at one year with no buy-in. For additional information contact Amy Spegal,

Premier Physician Services, at (800)726-3627, ext 3682, e-mail aspegal@premierdocs.com, fax (937) 312-3683. ■

Ohio, Urbana: EMP is pleased to announce another of our newest sites – Mercy Memorial Hospital. Servicing the SW Ohio region's residents in Urbana and Champaign counties, the facility treats approximately 18,000 emergency pts./yr. EMP is an exclusively physician owned/managed group with open books, equal voting, equal equity ownership, funded pension, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Ohio, Medina and Wadsworth: Combined two-site position at a brand new free-standing ED (~11,000 pts/yr) and established community hospital (20,000 pts/yr). Nice communities are near Akron and the area's most desirable residential communities. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Ohio, Parma: Parma Community General Hospital is situated in the SW Cleveland suburbs. State of the art physical plant and equipment serve 48,000 patients per year. Outstanding partnership opportunity includes weekend shift differential, performance pay, equal equity ownership, equal voting, funded pension, open books, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Oklahoma, Tulsa: Modern 971- bed regional tertiary care center sees 84,000 ED patients per year. Broad pathology, high acuity, modern facilities and supportive environment. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

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Pennsylvania, Pittsburgh: Allegheny Valley Hospital in Natrona Heights boasts a brand new ED seeing 36,000 emergency pts./yr. Forbes Regional Hospital is a respected facility in Monroeville seeing 48,000 ED pts./yr. Both sites are proximate to Pittsburgh's most desirable residential communities; areas afford easy access to abundant outdoor recreation and nationally ranked schools. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension,

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Pennsylvania, Sharon: Sharon Regional Health System has an extremely supportive administration/medical staff, newer ED, and full service capabilities making this a great place to work, with 35,000 patients treated annually. Small city setting offers beautiful housing and abundant recreation less than an hour from Pittsburgh and Cleveland. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Pennsylvania, York: Memorial Hospital is host to a respected osteopathic residency program and is situated less than an hour from Harrisburg, PA and Baltimore, MD. This sites has a new ED and sees approximately 40,000 ED pts./yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency

Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

Pennsylvania, New Castle: EMP is pleased to announce one of our newest sites – Jameson Hospital. This respected facility is situated between Pittsburgh, PA and Youngstown, OH with easy access to the amenities and residential options of each. Recent major renovations include a new ED with 30 private rooms; 36,000 emergency patients are treated per year. EMP offers outstanding partnership opportunity, including performance pay, equal equity ownership, funded pension, open books, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■

West Virginia, Charleston: BP/BC EM physician opportunity within EM Residency. Ideal for a physician who enjoys teaching, this three-hospital system has 100,000 annual ED visits and includes a Level 1 facility. In addition to Emergency Medicine, there are numerous allopathic & osteopathic residencies; as well as rotating medical and allied health students. Equity-ownership group provides outstanding package including family medical, employer-funded pension, CME, malpractice,

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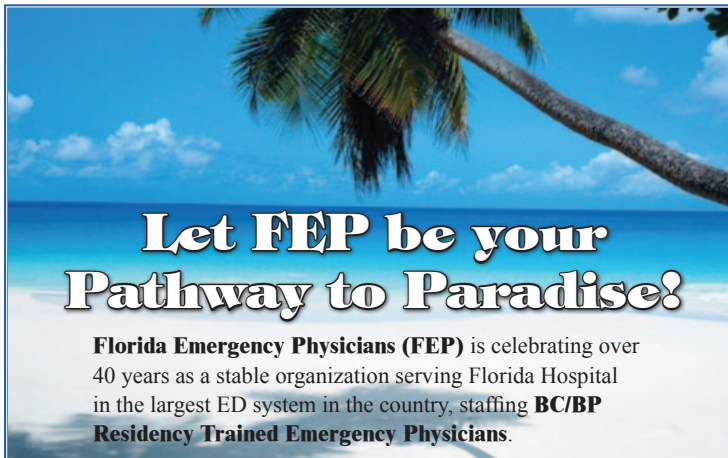


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West Virginia, Huntington: Work in 2 locations – Top Compensation – Equity Ownership – Why choose between lifestyle and compensation? Established group has very appealing position working between 72,000 volume ED in Huntington, and affiliated free-standing low volume ED in Ironton, Ohio. This opportunity will allow you to earn superior compensation while spending significant time within a slower-paced ED. The busier Huntington ED offers the support of 66 physician hours, 48 MLP hours as well as scribe support. Package includes guaranteed hourly plus RVU, family medical plan, malpractice, employer-funded pension, additional incentive income, shareholder opportunity at one year with no buy-in and additional benefits. A sign-on bonus is also available. Contact Rachel Klockow, Premier Physician Services, (800) 406-8118; e-mail rklockow@premierdocs.com; fax (954) 986-8820. ■

West Virginia, Wheeling: Ohio Valley Medical Center is a 250-bed community teaching hospital with a brand new-ED under construction. AOA approved Osteopathic EM and EM/IM residency programs. Enjoy teaching opportunities, full-specialty back up, active EMS, and two campuses seeing 29,000 and 24,000 pts./yr. Outstanding partnership opportunity includes performance pay, equal equity ownership, funded pension, open books, comprehensive benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718, 800-828-0898 or fax 330-493-8677. ■



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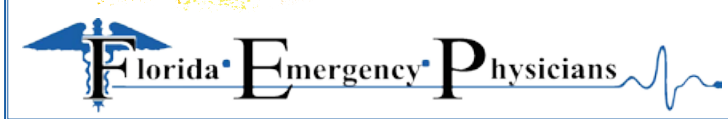
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Department of Emergency Medicine
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The Department of Emergency Medicine at The Ohio State University Wexner Medical Center is seeking physicians for **clinical and academic faculty positions** (rank based on credentials). Teaching opportunities for medical students, residents, fellows and others are abundant as are research and scholarship opportunities. Clinical responsibilities include patient care activity in an Emergency Department (71k annual visits) designated as a Level 1 Trauma Center, Burn Center, Cardiac Center and Stroke Center and/or a Community-based Emergency Department (50k annual visits).

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