Editor’s forum

Therapeutic hypothermia: A different degree of critical care

Carson Penkava, MD, Secretary/EM Resident Editor-in-Chief, University of Alabama, Birmingham, AL

Case

When Eldrid Primm woke up short of breath, he figured it was just bronchitis. After his dyspnea prevented him from lying down, however, he called EMS. The rest of his day remains hazy after this, with only flashes of memory remaining.

En route to UAB Hospital, Eldrid blacked out, only to awake again as emergency department staff rushed him into the medical resuscitation room. “When I saw about 20 people in the room, I realized this wasn’t going to be a two-hour ER visit for bronchitis.”

Dr. Marty Vander Noot, an assistant professor of EM, and Dr. Scott Irvine, an EM3 resident, rushed to Primm’s bedside. “I remember Dr. Vander Noot telling someone in the room, ‘We witnessed his heart stop, and if we have the ability to treat the cause, we’re not going to let him go.’” Then, Eldrid coded.

“I think in my dictation note I used the word countless to describe the number of times he coded,” Vander Noot says. “But he kept coming back. That’s why we thought we could save him.”

Dr. Irvine recalls, “We coded Eldrid for about two hours. As you go along, you start ruling things out. We didn’t have a CT or a d-dimer, but we thought it was a pulmonary embolism. He was going to die if we didn’t try something else. It was pretty scary, but we decided to push TPA.”

After he received thrombolytics, Primm stabilized. A CT scan confirmed Vander Noot and Irvine’s clinical suspicion. Primm had a massive pulmonary embolism.

Now, the physicians faced another problem. Although Eldrid’s vitals were improved, he remained unresponsive.

Therapeutic hypothermia: A different degree of critical care

Simulation of a TH patient with cooling pads.

continued on page 6
Be prepared for your epistaxis procedures with Rapid Rhino®, the product with the widest range of sizes for the widest range of epistaxis events.

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Upcoming events

- February 23, 2011: ABEM In-Training Exam
  - Nationwide
- February 24-26, 2011: SAEM Western Regional Meeting
  - Keystone, CO
- February 25, 2011: EMRA Resident Track at SAEM Western Meeting
  - Keystone, CO
- March 1, 2011: Medical Student Governing Council Interest Letters
  - Deadline
- March 1, 2011: EMRA Reps to ACEP Committees Spring Reports
  - Deadline
- March 2, 2011: EM Resident Appreciation Day
  - Nationwide
- March 3-5 2011: CORD Academic Assembly
  - San Diego, CA
- March 4, 2011: Resident Track at CORD Academic Assembly
  - San Diego, CA
- March 10-13, 2011: AMSA 61st Annual Convention
  - San Diego, CA
- March 15, 2011: EMRA Spring Award Application
  - Deadline
- March 15, 2011: EMRA Travel Scholarship to SAEM Annual Meeting
  - Deadline
- March 17, 2011: ACGME Match Day
  - Nationwide
- March 31, 2011: ACEP Leadership and Advocacy Conference Abstract Submission
  - Deadline
- April 1, 2011: EMIG Advisor Certificate of Appreciation Nomination
  - Deadline
- April 15, 2011: EMRA Committee Volunteer Applications
  - Deadline
- April 20, 2011: Resolutions for EMRA Representative Council Spring Meeting
  - Deadline
- April 20-24, 2011: Student National Medical Association (SNMA) Annual Medical Education Conference
  - Indianapolis, IN
- April 26-30, 2011: ACOEP Spring Seminar
  - Ft. Lauderdale, FL
- April 29, 2011: AACEP Scientific Assembly Abstract Submission
  - Deadline
- April 30, 2011: EMRA’s 3rd Mid-Atlantic Emergency Medicine Student Symposium
  - Baltimore, MD
- April 30-May 3, 2011: ABEM Spring Oral Certification Exam
  - Nationwide
- May 7, 2011: EMRA’s Greater Chicago Emergency Medicine Student Symposium
  - Chicago, IL
- May 22-25, 2011: ACEP Leadership & Advocacy Conference
  - Washington, DC

Advertising guidelines

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A change in the weather

If you have spent anytime along the gulf coast, you are no doubt familiar with the seasonal changes, where the weather turns from hot and humid to hotter and even more humid. This was the climate to which I was accustomed before heading north to Chicago for residency.

During the winter months, I have had the opportunity to become familiar with an array of new seasonal activities. If you live in a similarly cold climate, you may be acquainted with activities such as scraping thick sheets of ice off of your windshield and trying to pry open your frozen car door. You might also be familiar with accepting that, despite multiple layers and many extra pounds of clothing, you are still going to lose sensation in your extremities.

It was on a particularly cold and uninviting night in Chicago that I braved the elements and arrived to the emergency department to begin my night shift. The next patient on the board had presented with a perennial favorite chief complaint of “medical evaluation.” During the interview and exam, I found that this pleasant gentleman was homeless and had come to the emergency department in hopes of securing a warm place to stay overnight.

This interaction reminded me that the patients we treat come to the emergency department for a collection of reasons and that we, as emergency physicians, play many roles. We may diagnose the STEMI and rush the patient to the cath lab or provide relief for the relentless progression of cancer pain. We may also find ourselves providing a pregnancy test for a worried 17-year-old, reassurance for the first-time mother whose child has a URI, or a warm bed and an inviting face for someone who has nowhere else to turn.

More than the intellectual or technical challenges that present themselves during a standard shift, these situations often provide an emotional challenge for us as healthcare providers. It is understandable to be frustrated when your diabetic patient returns because he cannot afford his insulin or to be angry when the 6-year-old girl is brought in with a stray bullet wound from the ongoing gang fight.

During your next shift, take a step back for a moment to observe the climate in your emergency department. Have the last few patient encounters left you and your colleagues with a sense of frustration and anger? Or have a smiling face and a “thank you” made it all worthwhile? Finding the time to linger on the positive moments may very well provide the emotional recharging that we need to take on the challenges we face each day.
**Visiting the TMB –** EMRA Board members testified to the Texas Medical Board, alongside ACEP, ABEM and others, supporting the requirement of residency training to advertise board certification.

**Program Requirements for EM Residencies –** EMRA is collaborating with the EM Residency Review Committee (RRC-EM) of the ACGME regarding new program requirements for emergency medicine residencies.

**EMRA Advocacy Handbook, 2nd ed –** Editing efforts continue on the 2nd edition of the EMRA Advocacy Handbook to be released at the 2011 ACEP Leadership and Advocacy Conference in May.

**AMA-RFS in San Diego, CA –** Had a successful trip to the AMA meeting in November as the EMRA council officers worked with the Resident and Fellow Section.

**Committee Activity –** The board seeks to continue to work closely with its committees and task forces, heading up new projects and improving the already stellar educational activities at national conferences.
Therapeutic hypothermia: A different degree of critical care

continued from cover

TH Background
Each year in the US, there are approximately 400,000 out-of-hospital cardiac arrests. Approximately 100,000 of those are resuscitated, and 40,000 survive to hospital admission. Those making it past the emergency department, however, have many further obstacles; only one third of those admitted ultimately survive to discharge.

Although initial resuscitation may have been successful, the return of spontaneous circulation (ROSC) is an unnatural state. Physicians not only have to treat whatever incited the cardiac arrest, but they also have to tackle the repercussion of prolonged, whole-body ischemia, known as post-cardiac arrest syndrome (PCAS).

PCAS has four essential components. First, physicians still have to address the persistent precipitating pathology. Common causes of cardiac arrest include disease of the heart, lung, or brain, thromboembolism, toxic ingestions, sepsis, and hypovolemia. Secondly, patients experience post-cardiac arrest myocardial dysfunction, usually presenting as global hypokinesis.

Another component of PCAS is a profound systemic ischemia/perfusion response, responsible for a catastrophic constellation of pathology. Patients exhibit SIRS, dysfunctional vasoregulation, and impaired oxygen delivery and utilization. Other problems include adrenal suppression, increased coagulation, and decreased resistance to infection.

The final component of PCAS is brain injury, including impaired cerebrovascular autoregulation, cerebral edema, and post-ischemic neuro-degeneration. This neurologic injury tends to be most devastating for the patient with PCAS. Approximately 80 percent remain comatose for more than one hour after resuscitation. More significantly, fewer than half admitted have good neurologic recovery, as measured by the ability to live independently and work at least part-time.

Pathophysiology
What’s the pathophysiology behind this brain injury? In animal models of cardiac arrest, oxygen is lost in seconds, and glucose and ATP are depleted within five minutes. This hypoxia and substrate depletion lead to loss of transmembrane electrochemical gradients and sequential failure of synaptic transmission, axonal conduction, and action-potential firing.

Causing further insult, excitotoxic cell death occurs secondary to glutamate release and intracellular calcium accumulation. The brain regions most sensitive to these effects tend to be the hippocampus, neocortex, cerebellum, corpus striatum, and thalamus.

Reperfusion and reoxygenation after ROSC can also bring about its own set of neuronal insults, termed reperfusion injury. First, cerebral microcirculation, although experiencing an initial transient hyperemia, ultimately suffers prolonged hypoperfusion. Reoxygenation also produces reactive oxygen species, causing lipid peroxidation and other oxidative damage. An inflammatory response leads to endothelial activation, leukocyte infiltration, and further tissue injury.

How does TH prevent post-arrest brain injury? TH causes a reduction in brain metabolism, including reduced consumption of oxygen and ATP. These effects, however, do not appear to fully explain the protective nature of TH.

Reduction in calcium overload, glutamate release, and oxidative stress, along with induction of antiapoptotic Bcl-2 and suppression of proapoptotic factor BAX, all contribute to decreased apoptosis from TH. Furthermore, TH decreases inflammation caused by cerebral ischemia. TH also combats reperfusion injury by reducing early hyperemia and delaying hypoperfusion.
Data
Although the exact mechanism is unclear, the data support TH. Two pioneer studies come from Australia and Europe. In the Australian study, 77 comatose survivors experiencing cardiac arrest from ventricular fibrillation or pulseless ventricular tachycardia were studied. The experimental group (n=43) were enrolled on odd-numbered days and cooled to 33° C for 12 hours using ice packs. At hospital discharge, 21/43 (49 percent) of the experimental group had a favorable neurologic recovery, compared to 9/34 (26 percent) of the control. The odds ratio for a favorable recovery with TH was 5/25 (95 percent CI, 1.47-18.76, P=0.01).

A European, multicenter trial enlisted 275 comatose patients with cardiac arrest caused by ventricular fibrillation or pulseless ventricular tachycardia. Patients were randomly assigned to the control or experimental group, in which patients were cooled to 32-34° C for 24 hours using cold air. In the experimental group, 74/136 (55 percent) of patients had a favorable neurologic recovery at six months compared to 54/137 (39 percent) of patients in the control group. The risk ratio for favorable outcome with TH was 1.40 (95 percent CI, 1.08-1.81).

Implementation of TH
TH is started when a patient has ROSC after cardiac arrest and remains unconscious. All patients must be intubated and mechanically ventilated. Any other medical issues—such as antibiotics for infection, hemodialysis for kidney failure, or hemodynamic support for hypotension—are addressed and managed. Animal models suggest that any delays in initiation of TH may diminish its benefits. For patient comfort and to prevent shivering, however, sedation, analgesia, and paralysis (if necessary) are started before TH. Shivering is not only counterproductive to cooling, but also causes increased oxygen consumption, marked tachypnea and tachycardia, and a general stress-like response.

Multiple mediums exist to cool patients. Methods include ice packs, cold-air mattresses, water-circulating cooling pads, refrigerated cooling pads, intravascular cooling catheters, or intravenous infusion of cold fluids.

To ensure the desired level of hypothermia, esophageal monitoring with a multipurpose temperature probe or central venous monitoring with a Swan-Ganz catheter both provide an accurate assessment of core body temperature. Bladder and rectal temperatures are also options but may be somewhat slower to reflect a change in core body temperature.

TH itself causes multiple adverse events. Cold diuresis leads to multiple electrolyte abnormalities, including decreased potassium, magnesium, and phosphate. Additionally, hyperglycemia, leukopenia, and thrombocytopenia add to the frequent lab burden. If paralytics become necessary to prevent shivering, EEG monitoring should be considered due to increased seizure risk.

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In a review of 41 clinical trials between 1997 and 2010, only 1 percent of TH patients experienced adverse events related to the cooling device (29/3133), which included cases of bleeding, infection, pulmonary edema from cooled IV fluids, and DVT’s from catheter-based cooling devices. A review of adverse events not related to a cooling device occurred in 74 percent of TH patients (223 events in 300 patients) compared to 71 percent of standard therapy patients (201 events in 285 patients, P=0.31). Thus, there does not appear to be any significant increase in adverse events among TH patients.

After TH, patients must be rewarmed slowly, usually at rates of 0.5°C per hour. Additional care must be taken to keep the patient normothermic for at least 24 hours after rewarming; for example, in cases of infection, fever could negate the benefits of TH.

Patient outcome

If Eldrid’s cardiac arrest was from a PE, why did they initiate TH? Although there is minimal data to support TH in an adult with cardiac arrest not due to ventricular fibrillation or pulseless ventricular tachycardia, the pathophysiology of brain damage is the same. Thus, it follows that TH is of benefit to all patients with PCAS. In fact, the current research has prompted the International Liaison Committee on Resuscitation, the European Resuscitation Council, and the American Heart Association to endorse the use of TH following cardiac arrest, regardless of the cause.

In Eldrid’s case, this endorsement made all the difference. According to Henry Wang, associated professor of EM and director of UAB’s therapeutic hypothermia program, “It’s not about the data—it’s the right thing to do for the patient. This is being practiced throughout the country in many academic centers like ours.”

Eldrid awoke during his TH treatment. He remembers waking up completely disoriented. “I couldn’t talk or move, but the nurse saw me looking around. I still remember the surprise on her face. I felt like there were heavy blankets on me, but I was freezing. I wanted to tell her to turn the AC down.”

After his TH, Eldrid still faced numerous obstacles. “It was a surreal moment, waking up and not being able to move. It took three days before I could move my hands and ten days before I could walk.”

Twenty days after admission, Eldrid Primm was ready to go home, but not before he made a few stops around the hospital. “I just wanted to thank everyone who took care of me,” Eldrid recalls. “The first place I went to was the ER. I remember seeing Dr. Vander Noot. We hugged. Tears were shed.”

Dr. Irvine, who visited Eldrid several times during his hospital stay, remembers the final reunion, “He thanked me for not stopping—for not giving up and trying everything possible to bring him back.”

“I can’t emphasize enough how much this was a total team effort from everyone in the room, and everyone who cared for him in the moments and days after,” Vander Noot says. “Mr. Primm is why we do what we do.”

A year later, Eldrid now struggles with heart dysrhythmias, hypertension, and decreased stamina. As a trade off, Eldrid sees the world differently. “It’s hard to explain,” he says, “but I have a deeper sense of reality. I’m really able to listen and understand people on a different level.”

“We need to get therapeutic hypothermia at more facilities, not just at big, university hospitals,” Primm asserts. Dr. Wang agrees, “Once upon a time, people like Mr. Primm were written off as hopeless, destined to die in the hospital or to live life with major brain injury. However, therapeutic hypothermia has given us a new treatment and new hope.”

References

2011 ACEP Leadership and Advocacy Conference

May 22-25, 2011

Washington, DC

For complete conference schedule and registration, visit www.acep.org. Registration deadline: May 6, 2011

Be sure to ask your academic chair about participating in the EMRA Chair’s Challenge.

EMRA/YPS Residents and First Timers Track Leadership and Advocacy Essentials

May 22, 2011
11:00 am-12:00 pm
EMRA Health Policy Committee Meeting
(All EMRA and ACEP Young Physician Section Members invited to attend)

12:30 pm - 12:40 pm
Welcome and Introduction
Andy Sama, MD, FACEP
ACEP Vice President;
Nathan Deal, MD, EMRA President

12:40 pm - 1:20 pm
Introduction to Advocacy
Alison Haddock, MD,
EMRA Legislative Advisor
and ACEP-EMRA Mini-Fellowship Alumna

1:20 pm - 2:00 pm
Current Issues in Health Policy
Nathaniel Schlicher, MD, JD,
Immediate Past EMRA Legislative Advisor

2:00 pm - 2:40 pm
Health Economics
Ethan Booker, MD, FACEP, YPS Member

2:50 pm - 3:50 pm
Roundtable Discussion
Facilitated by EMRA Board of Directors and YPS Leaders

4:00 pm – 6:00 pm
Delivering Powerful Presentations
Presented by The Communications Center

1:20 pm - 2:00 pm
Resident and Young Physician Section Reception
Underwritten in part by Team Health and Ortho-McNeil

Chair’s Challenge Leadership and Advocacy Conference Scholars Program

Support the development of our specialty’s future leaders and patient advocates

What the ACEP Leadership and Advocacy Conference does for Emergency Medicine Residents:

✓ Exposes them to the legislative process
✓ Fosters in them the advocacy spirit
✓ Teaches them the skills needed to effectively communicate issue-related messages
✓ Empowers them to actively use these skills as leaders

The experience culminates with the residents, along with the other conference attendees, meeting with their U.S. Senators and Representatives on Capitol Hill to discuss the most important health policy issues. For complete schedule and registration form, please visit www.acep.org.

Chair’s Challenge commitment deadline: May 1, 2011

For more information and sponsorship forms, please visit www.emra.org
Medicare: The hottest topic in healthcare reform

Throughout the health care reform debate, one federal program has played a starring role: Medicare. From the multitude of acronyms which have sprouted to describe new methods of medical care compensation (PQRI, ACOs, EOCs, VBP) to the perennially problematic SGR, Medicare is the primary laboratory for experimentation in cost control techniques. As emergency care providers, we are obligated to understand how Medicare works so we can continue to provide the highest quality care while maintaining fair compensation for our profession.

How big is Medicare?
Medicare is a federally-funded program which pays for the health insurance of 47 million individuals in the United States—39 million people age 65 and over and 8 million younger people with permanent disabilities. It covers both inpatient and outpatient services and was expanded to include prescription drug coverage in 2003. Medicare benefit payments will cost the federal government $504 dollars and constitute 12 percent of all federal spending in 2010.

The expense of this massive program has become a significant concern for the federal government as annual deficits and the federal debt grow. Due to their high rates of voter participation and the effective lobbying efforts of organizations like the AARP, seniors have historically been able to protect the program from any significant cuts. According to the latest CDC statistics, 17.2 percent of emergency department visits nationwide are paid for by Medicare.

Is health care reform gutting Medicare to expand health coverage to the uninsured?
Over the first ten years since the passage of the Patient Protection and Affordable Care Act (PPACA), the Congressional Budget Office projects that a net savings of $428 dollars will occur through cuts to Medicare.

The most significant change in spending is the reduction in payments to Medicare Advantage Plans. The Medicare Advantage program—also known as “Part C”—allows beneficiaries to enroll in privately run health insurance plans such as HMOs and PPOs, instead of traditional fee-for-service Medicare. While Part C was initially expected to slow health care cost growth through the use of managed care, the government currently pays 13 percent more for beneficiaries enrolled in Medicare Advantage plans than those covered by traditional Medicare.

Under health care reform, payments to Medicare Advantage plans will be reduced so that Medicare no longer pays more for beneficiaries enrolled in Medicare Advantage. This change is projected to save $136 dollars over 10 years without substantially reducing the benefits provided to Medicare enrollees. PPACA is projected to save millions more by decreasing payments to non-physician providers and establishing a variety of new programs intended to increase quality while decreasing costs. The formula currently used for calculating physician payments, the sustainable growth rate (SGR), was not modified by the PPACA.

What is the IPAB?
The Independent Payment Advisory Board (IPAB) is one of the most controversial elements of PPACA. The IPAB is a 15 member board, appointed by the President and confirmed by the Senate, that will be tasked with developing coverage decisions to reduce Medicare spending if projected spending exceeds targeted growth rates. The Secretary of Health and Human Services is required to
implement the Board’s recommendations unless Congress has already passed alternative legislation projected to achieve the same level of savings. Implementation of IPAB recommendations would not be subject to the approval of any elected body. The Board is not allowed to submit policies which would ration care, increase taxes, change Medicare benefits or eligibility, or increase beneficiary premiums and cost-sharing requirements.

With this long list of restrictions, the only remaining option to allow IPAB to cut costs is to reduce Medicare provider payment rates. These cuts are projected to save $16 dollars over 10 years. Providers, including physicians, are concerned about the exclusive focus of the IPAB on cutting provider payments, but it is possible the IPAB will be eliminated before it is fully formed. One of the lawsuits challenging the constitutionality of the PPACA in Arizona questions whether the IPAB can be legally allowed to change Medicare payments without the approval of Congress. In addition, a group of Republican Senators has already introduced a bill, the “Health Care Bureaucrats Elimination Act,” which would repeal the IPAB. The odds of successful passage of such legislation significantly increased after the midterm elections brought a Republican majority to the House of Representatives and increased Republican representation in the Senate.

**What is the SGR?**

The SGR is one component of a complex formula created by Congress to determine reimbursement rates for physician services provided under Medicare. It was passed as part of the Balanced Budget Act in 1997. The goal of the SGR is to prevent spending on physician’s services to grow any faster than the per capita growth in gross national product (GNP) and thus to keep Medicare growth within America’s ability to pay.

For the first few years, spending stayed within these limits and physicians experienced small increases in payment rates. Since 2003, the SGR has dictated a cut in reimbursements to physicians since healthcare costs have risen faster than GNP, and Congress has acted to avert this cut by passing legislation to either freeze or slightly increase rates each year.

Congress has never permanently changed the underlying formula for calculating reimbursement, so the need for a “doc fix” is a recurrent debate in Congress. The latest fix will last through January 1, 2012 and represents the fifth time Congress has acted to avert the cuts in the past year.

Unless a permanent solution is reached, a 40 percent reduction in physician reimbursement will be scheduled for 2014. Physicians hope that legislators will use the time provided in 2011 to develop a permanent replacement to the flawed SGR system. Replacing the system, however, will be very expensive and a bipartisan agreement on an appropriate replacement may be difficult to achieve.

**Want to learn more?**

Mark your calendar for ACEP’s Leadership and Advocacy Conference in Washington D.C., May 22-25, 2011. Seek out sponsorship for travel expenses from your residency program or state chapter as part of EMRA’s 7th Annual Chair’s Challenge! The second edition of EMRA’s Advocacy Handbook will be released at the conference. The new edition will include many details about the Medicare programs and much more.

Also, consider joining EMRA’s Health Policy Committee and enrolling in ACEP’s 9-1-1 Advocacy and Legislative Network. Further information about all of these opportunities is available at emra.org.

**Recommended reading and references** include Medicare: A Primer by the Kaiser Family Foundation and Health Policy Brief Series by Health Affairs and the Robert Wood Johnson Foundation.
Arm yourself with the facts

Ladies and gentlemen, the story you are about to read is true. Only the names and identifiers have been omitted to protect the under-informed.

A high-ranking, state-government official (who was also a physician, although not an emergency medicine physician) was speaking to an emergency medicine residency one morning. During the course of the discussion, the speaker mentioned that if you took away the 70 percent of visits that don’t belong in the emergency department, there would be fewer problems with crowding. Immediately, numerous residents’ hands shot into the air, eager to correct this false statistic: “Actually, only 12 percent of emergency department visits are considered non-urgent. And those aren’t our numbers, those numbers are from the CDC.”

Although both disturbing and true, the preceding vignette is certainly not an isolated incident. In this heated era of health care reform, it is crucial for emergency medicine residents to be armed with the facts in order to ensure that our specialty is seen in the appropriate light. Knowing your message is important for advocacy efforts, but having key facts about common topics in emergency medicine at the ready is crucial for day-to-day interactions with those outside the specialty.

The following table is designed to serve as a quick reference for the resident or student in emergency medicine. It contains many facts about topics that are likely to come up on a frequent basis. It can be cut out, slipped into a pocket, and drawn whenever you need that extra bit of ammunition.

References
## Hot topics in emergency medicine – just the facts

### What you’re likely to hear...  
**F A C T**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Fact</th>
</tr>
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| Emergency medicine is inefficient and expensive                      | Emergency care treats over 120 million people a year, but comprises less than three percent of U.S. health care expenditures<sup>1</sup>  
The emergency department offers many options and services in one place and is open 24/7 to all comers.<sup>2</sup> |
| Most people don’t even need to be in the emergency department        | Less than 12 percent of emergency department visits are classified as non-urgent by the Centers for Disease Control and Prevention<sup>3,4</sup> |
| Non-urgent patients clog the emergency department                    | 2007 Annals of Emergency Medicine study:  
  - Low-complexity emergency department patients do NOT significantly increase the time it takes for the doctor to see other emergency department patients, and they do NOT significantly increase other patients’ overall length of stay in the emergency department.  
  - So reducing the number of these low-complexity emergency department patients will NOT reduce wait times for other patients or crowding.<sup>5</sup> |
| If something is non-urgent, that means that it does not have to be seen in the emergency department | Non-urgent is defined by the CDC as requiring care in 2-24 hours—it does NOT say anything about the visit being "unnecessary."<sup>1,4</sup> |
| Most patients in the emergency department are uninsured               | 83 percent of emergency patients have some type of insurance—either government or private.<sup>1</sup>  
  Furthermore, the uninsured are NOT more likely to use the emergency department for non-urgent visits.<sup>3</sup> |
| Most patients in the emergency department don’t have anywhere else to go for medical care | 2006 Annals of Emergency Medicine study: the majority of frequent emergency department users have insurance AND a usual source of care.<sup>6</sup>  
National Center for Health Statistics: people with a usual source of medical care were just as likely to have used the emergency department at least once as those without a usual source of care.<sup>3</sup> |
| Health reform will solve emergency department crowding               | Not if Massachusetts has been an example – emergency visits rose seven percent after they provided universal coverage for their citizens.<sup>2</sup>  
Plus, the population is aging, disasters are always possible, and EVERYONE is only one step away from an emergency.<sup>2</sup> |
| I’m paying for the patients who don’t pay anything                   | Uncompensated care is an important issue, but the cost is shared by many:  
  - Uninsured patients get charged the highest rate for their care  
  - The average emergency physician provides over $135,000 in uncompensated care every year  
  - Uncompensated care has closed hospitals – hundreds – across the U.S.<sup>1</sup>  
2008 Annals of Emergency Medicine study:  
  - Less than half of all emergency department charges were reimbursed  
  - Uninsured patients paid 35 percent of charges, while Medicaid visits paid 33 percent<sup>2</sup> |
| I will always have access to an emergency department if I need one    | Over the past decade, emergency visits have increased by about 3 million patients – PER YEAR...  
  PLUS  
  Hundreds of emergency department’s have also closed during that time...  
  PLUS  
  Boarding causes 30 percent of emergency beds to be unusable...  
  **SO THIS EQUALS**  
  That access might not be as easy as you think<sup>2</sup> |
Resident life

As residents and medical students, we are always looking for ways to improve. The path to board certification in emergency medicine is a long and challenging one, and it is nice to know how we are progressing. Monitoring our progress on the inservice exam and seeking regular feedback from our peers and supervisors provides some information; however, there is more that we need to know. Specifically, how do we measure up as budding emergency medicine physicians?

The ACGME (Accreditation Council for Graduate Medical Education) describes six areas of focus on which all residents, regardless of specialty, must be evaluated during their training. These Six Core Competencies can be adapted for evaluation of medical students and practicing physicians. They are the guideposts by which emergency medicine residents, who hope to call themselves board certified one day, are measured.

Many students and residents are evaluated on how well they understand medical knowledge and perform on standardized exams. Knowledge is certainly important, but there is so much more that goes into capturing the essence of a well-rounded physician. The ability to communicate with patients, an understanding of the health care system, and the way in which we present ourselves, all play into our worth as physicians.

The six core competencies span the spectrum of abilities and talents that a physician must possess to be a complete practitioner. They capture both the art and science of medicine in describing the necessary qualities every emergency physician must possess. Let me introduce you to each of the six core competencies.

The ACGME 6 core competencies

1. According to the ACGME, Medical Knowledge is an understanding of the established and evolving biomedical, clinical, and cognate sciences, as well as the application of this knowledge to patient care. Emergency medicine residents and our evaluators easily understand this core competency, as it is the most readily identifiable and quantifiable. Without this solid foundation, we are unable to generate differentials, to understand pathophysiology, or to effect treatments for our patients. Medical knowledge is the factual bedrock that serves as the basis of our worth as emergency physicians.

2. The second core competency focuses on Patient Care that is compassionate, appropriate, and effective in the treatment of health problems and the promotion of health. This encompasses the practical application of our medical knowledge to patients. Implementing appropriate diagnostic and treatment plans that are sensitive to the values and
wishes of patients is the cornerstone of excellent patient care. Procedural skills represent another important component of this core competency.

3. **Practice-Based Learning and Improvement** involves the investigation and evaluation of clinical questions, appraisal and assimilation of scientific evidence, and improvements in patient care. This is really evidence-based medicine in action. Emphasis is placed on our need to understand the latest in the scientific literature and the skills to explain the science to our patients in a way that makes sense to them.

4. **Interpersonal and Communication Skills** is an absolute necessity in the team-based specialty of emergency medicine. Effective information exchange and teaming with patients, their families, and fellow physicians is paramount to the practice of our specialty. Communication with nurses, consultants, and pre-hospital colleagues is just as important to our future success.

5. **Professionalism** covers a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population. Attributes such as work ethic, commitment to excellence, integrity, honesty, and appearance all comprise this competency. The practice of medicine will always be grounded in professionalism, as our patients place an immense amount of trust in us for their safety, privacy, and wellness.

6. **Systems-Based Practice** is the final, and sometimes least understood, core competency. It focuses on awareness of, and responsiveness to, the larger context and system of health care in which we work. True systems-based practice is the ability to utilize system resources to provide optimal and efficient care. At the crossroads of much of medicine, we must appreciate the integration of clinic and hospital-based services, as well as understand how patients access care based on their insurance status and ability to pay. Systems-based practice necessitates appropriate use of resources, efficient diagnostic workups, and fair billing practices.

The next time that you work a shift, think about your education and how you practice in the context of these six core competencies. Focus on one of them during the shift, and try to make a noticeable improvement in that competency. Better yet, ask an attending or co-worker to give you directed feedback on one of the six, to better focus your energy.

Now that you have a basic understanding of the six core competencies on which you will be assessed and evaluated, you are better equipped to assess your own education and to determine your worth as an emergency physician.

**References**

First, let me start off by wishing everyone a happy New Year. I hope everyone had a greater holiday season and is looking forward to an even better 2011. In early November, I attended the American Medical Association Resident-Fellow Section (RFS) interim meeting in San Diego, California, along with Amber Sabbatini, MD, delegate from the University of Chicago, and Angela Fusaro, MD, EMRA’s Speaker of the Council. Allow me to mention a few of the many highlights.

Emergency medicine residents elected to positions
Several emergency medicine residents were elected to the RFS delegation to the AMA. Amber Sabbatini, was elected as AMA-RFS Alternate Sectional Delegate. Erick Eiting was elected as an AMA Sectional Delegate, and Carlos Zapata was elected as an Alternate Sectional Delegate. Reid Orth was nominated and will most likely be elected to the AMA Council on Science and Public Health. This will be the first time that an emergency medicine physician will serve on this council. Congratulations to all elected!

These strides are quite exciting—join me in supporting our fellow emergency medicine residents serving in these positions. I encourage other emergency medicine residents to pursue leadership positions within the AMA.

Three biggest issues within RFS
There were three issues that were discussed within the RFS that are relevant to us as residents, as well as physicians in emergency medicine.

As we all know, there have been some new recommendations to the ACGME about resident work hours. One significant recommendation is that interns will work no more than 16 hours consecutively. Another will require more time off between night shifts for residents. There was quite a bit of concern, especially from our surgical colleagues, about how detrimental this would be to their training.

Overall, there was support from the AMA-RFS, AMA-YPS, and AMA Council on Medical Education for ACGME regulation of duty hours. Please see the new duty hour standards that were issued in September 2010.

The second area of contention dealt with health care reform. We all know about the bill that was passed last spring; however, there was a large amount of concern about resisting progress to what has been accomplished. Although there weren’t any specific details discussed, RFS members were encouraged to support the hard work that has been attained thus far.

The last of the major issues concerning the RFS was increasing membership. It has been publicized that the AMA has...
“It has been publicized that the AMA has not supported and defended the concerns of the future of medicine. This concern may be valid; however, the only way to be heard louder is to increase membership, which will strengthen our voices as emergency physicians as well as young residents.”

EMRA resolution taken to AMA
In June, 2010, at the SAEM annual meeting, EMRA Speaker Angela Fusaro submitted a resolution advocating for increased resources to combat violence in the emergency department. This was presented in October, during ACEP’s Scientific Assembly in Las Vegas, and passed as a resolution within the ACEP Council. It did not stop there.

A report was presented in San Diego, California, and has now become an initiative of the AMA. Congratulations to Angela as well as to EMRA for leading the way on this very important issue. This is a great example of the progress that can be made on issues presented at our meetings.

Going forward
There is no way to inform the membership of everything that occurred in San Diego. For this reason, I encourage more representation from emergency medicine residents and medical students. Visit www.ama-assn.org for more details. Go see, and experience it for yourselves!

Increased representation within U.S. House and Senate
On November 2, many new members of the U.S. House of Representatives and Senate were elected to office. There were six physicians elected to the House and one physician to the Senate for their first terms. In all, 80 physicians ran for House and Senate positions. AMPAC used $1.3 million to support these candidates to help win elections and serve the citizens of our country. This is encouraging and will certainly increase the voice of physicians in Washington, D.C.

Call for EMRA Rep Council Resolutions
Deadline
April 20, 2011

Want to make a difference in EMRA or the specialty of emergency medicine?

Then author a resolution.

A resolution is essentially a directive for EMRA to take a certain action or to form a policy. Resolutions submitted will be deliberated and decided at the EMRA Representative Council meeting to be held during the SAEM Annual Meeting in Boston, MA.

Visit the EMRA website for more details, examples, and to submit your resolution online.

You can always request more information from the Speaker of the Council at speaker@emra.org.

Get involved!
As a senior resident, I am in the midst of an intense job search. At first, the process seems familiar. Throughout my medical education, every four years has culminated in the purchase of a new dark suit, a series of interviews, and preparation for another standardized test. This year seems no different – I’m the proud owner of a new suit, and I’ve got several interviews lined up.

However, one key difference exists. I have to make the choice of how to start my new career – without any handholding or anyone else to blame.

When applying to medical school, we simply applied, then attended the best school to which we were accepted. For residency, that mystical computer program (i.e., the MATCH) decided for us on that fateful spring day. This time, I must decide where to work without the security of deadlines and recruitment rules.

How many interviews should I attend? Do I want to go academic or private? Should I work for an independent group, for a corporate group, or as a hospital employee? When my anxiety kicks in after not hearing back from a job immediately after an interview, how long do I wait to call them? After getting some advice on these issues, I wanted to share some key recommendations and provide further resources.

The first and most important step in the job search is to know your options. The percentage of recent residency graduates who will switch jobs within their first two years after residency is estimated to be as high as 70 percent! Why does this occur? Many graduates did not fully understand the type of environment that they agreed to work in or were not aware of other practice models that existed. There are essentially four group types in emergency medicine:

- Contract management companies – a regional or national corporation that supplies physicians to staff emergency departments. The physician is an independent contractor with the management company which then contracts with the hospital.
- Independent groups – corporations, partnerships, or associations that have a contract with a hospital to provide emergency coverage.
- Hospital employee – contract directly with the hospital.
- Hybrid – similar to an independent group but has contracts for several hospitals.

There are advantages and disadvantages to each type. Understanding these differences is vital to understanding which model would best be aligned with your career goals.

After developing a framework for your “ideal” job, the search begins! How do you find open jobs? Several resources exist, including contacting prior graduates, classified ads, “cold calling” emergency departments, and regional and national conferences (i.e., EMRA job fair at Scientific Assembly). Remember that the best jobs usually do not have to be advertised and will avoid using recruitment firms, as they cost considerable amounts to find future employees. As you prepare your CV and cover letter, make sure the tone is professional, assertive, and well proofread.

After eliciting your interview offers, preparation is key. Before your interview, make sure to research the group with whom you are meeting. Remember that you are well trained and well prepared for a career in emergency medicine.
As a result, you have a high value and have the privilege to interview different groups that you are considering joining. Similarly to interviews for residency and medical school, dark conservative clothes are important, as first impressions are difficult to change. During the interview, be enthusiastic, but remain professional and not over eager.

The interview process commonly takes one or two days, consisting of meetings with emergency department physicians, hospital administrators, and nursing leadership. Do not be afraid to ask questions during this process.

After the interview, a short thank you note is appropriate. Phone calls can be made if you have any lingering questions. Most practices will give you a timeframe for their response; only call for follow-up if they haven’t made an offer within that window.

Once you’ve decided which job is best for you and your family, contract negotiations begin. The art of this process is an entire discussion by itself, and resources are provided at the end of this article for reference. However, several key elements in every contract are important to mention:

- **Compensation** – Will you be paid on an hourly basis? Is this number fixed, based on patients per hour, or based on RVUs per hour? What happens to excess revenue?
- **Medical Director** – How is your medical director chosen, and how are they compensated?
- **Resignation** – Your method of departure should be clear.
- **Termination** – The process of forcing a physician to leave involuntarily should be stipulated.
- **Workload** – Make sure the number of shifts you are expecting to work coincides with the group’s expectations.
- **Noncompete clauses** – These clauses prohibit physicians from opening a practice in the same locality or prohibit the physician from working at the same hospital if the group loses its contract.
- **Malpractice** – Who will pay for your malpractice insurance? Is the coverage claims made or occurrence based? Who will be responsible for covering the tail?

The process of starting your career after residency can be an anxiety-provoking and confusing process; however, with the proper preparation and planning, you will find a job! Remember, focus on searching for a job that is best aligned with your career goals and not just the one that offers the most money.

**Resources**

**DON’T MISS EMRA’S 3rd Mid-Atlantic Emergency Medicine Student Symposium**

- Dynamic Lectures
- Hands-on Didactic Sessions
- Networking Lunch
- Regional Residency Fair

Registration is FREE for all medical students interested in emergency medicine.

Don’t delay! Register online by April 15.

*Please visit [www.emra.org/studentsymposium.aspx](http://www.emra.org/studentsymposium.aspx) for a full schedule of events and to register.*
Congratulations on finishing another semester of medical school! My fourth-year colleagues have been napping in airports across the country and are now busy counting down the days until Match Day. Third-year students have completed their first clinical rotations, and perhaps the nerves of actually being in the hospital have dissipated. Now, you can find your way to the call room and the cafeteria and don’t have to call the help desk every time you sit down to write a note. First and second years are one step closer to…

the next test (sorry guys, it gets better).

As the spring semester gets rolling, it might be a good time for all of us to do a spring-cleaning assessment of our skills. Medical school – and really medicine – is such a fluid experience. As soon as you think that you’ve made a giant accomplishment, you should realize that you still have a lot of learning to do and that there is always something you can do better.

If you have spent any time in the emergency department as a medical student, you may have witnessed the residents and attendings flying through the emergency department like they are wearing capes and flames coming off their shoes. You might wonder, “How do I get from here to there—from stumbling through my history and physical to capes and flames?”

First, it’s important to recognize that you are in the infancy of your learning. Your more immediate goal should be completing a thorough and accurate history and physical with a succinct and coherent presentation. Eventually, we want the capes and flames—we want to go fast, but we all have to start somewhere.

As with the development of any new skill, the beginning often involves simply dressing the part. We all have that bulky white coat with lots of pockets, so put some thought into how you fill those pockets. There are a variety of pocket cards and tiny books that fit nicely in your coat without causing additional strain on your back. You should have the valuable essentials, including an H&P guide, clinical references for your rotations, and an excellent snack. When you have downtime, read your pocket cards. I challenge myself to memorize some of them; unlike the loads of information we have memorized up to this point, I have found knowing these clinical pearls to be most helpful.

It is important to establish your own pattern with patients and approach each patient the same way every time. As you progress in your training, there will be a point when you have a better understanding of what portions of the exam can be left off or aren’t as pertinent to your patient’s chief complaint. But even as a fourth-year medical student, it can be difficult to know when you should or should not have asked a particular question.

One of the tricky things about being an emergency medicine physician is being fast without being careless. You don’t want to miss a crucial piece of information because you were thoughtless with your questions or didn’t do a portion of the physical exam. So during your time in medical school, ask all of the questions and complete a full exam with every patient.

The additional benefit, as a medical student, to performing a complete exam is the amount of normal physical findings you will encounter. The more exams you do, the more likely you are to be able to recognize a normal variant versus something pathologic. I remember the first truly positive Romberg sign I saw and thought, “So that’s what it’s supposed to look like!” The repetition of the questions, the auscultation, and the palpation are essential to developing a sense of comfort in your role as a physician.

You will be able to return to that well-established sense of comfort when you are juggling multiple patients in the chaos of the emergency department. Be assertive about establishing your own approach to patients, performing exams, and developing your own assessment and plan. Be observant of the residents and attendings with whom you work. While they don’t really have super powers, they have been engaging in years of methodical, deliberate practice of their craft. Now is the time to develop your routine, and with practice and persistence, someday you will surely rush by medical students as they stand in awe.
While performing my customary, end-of-rotation house cleaning, I felt particularly motivated to purge my files of unnecessary clutter. It was there that I discovered my long-lost, med-school personal statement. Being in the mood for a good laugh, I began to read what I thought would be an essay full of medical misconceptions and ignorant philosophizing. On the contrary, I was actually impressed by the depth of my own non-judgmental and patient-centered desire to help others. I stood there thinking, “I wrote that?”

That experience got me thinking about how the legitimate passions and convictions I recorded in that personal statement have dwindled under the onslaught of academic and clinical demands.

After several months of Q-4 calls, medication non-compliance, and innumerable “stolen” Vicodin scripts, it’s hard to remain true to the values that I once so boldly declared in my personal statement. Nevertheless, I hold myself accountable to what I wrote. After all, it is supposedly who I am. In a sense, applying to medical school is like applying for a job. I filled out an application and was basically hired because I was able to convince the admissions committee that I was more than a straight-A student. In fact, I convinced them I was a humanitarian.

It is all too easy to become obsessed with striving for honors and looking good in front of our attendings—even at the expense of our patients. We drop a quick joke about the patient who cares more about pizza than dialysis. Or we let out a gripe about draining the same abscess on the same IVDU, again. Most of us will do anything to get into the good graces of our colleagues and superiors, right? And some patients just seem to be asking for the abuse.

I have often asked myself whether the care that I provide to patients is affected by this behavior. What will happen when I’m the resident or the attending? Like many, I may unconsciously perpetuate this type of behavior among my subordinates unless I make a conscious choice to stay true to the values and principles that I once espoused just a few years ago.

If you are ever in need of a reality check, I highly recommend rereading your own personal statement. Read it with the intention of highlighting areas of old passions that now lie dormant. Review the personal statement with your advisor or with your dean. In fact, some medical schools have already established this as a yearly reminiscence. Again, the goal is not to point out current faults or to re-invent the wheel—it is a reminder of where you began.

Please do not interpret this article as a criticism of medical students or of residents and attendings. Rather, I am hoping that these reflections will encourage and empower others to help protect the dignity of our patients. After all, that’s why we got into this field— to help people. It’s important as medical students and will be even more important when we’re in charge.

James Luz, MSIV
Mentorship Coordinator
Case Western Reserve University
Cleveland, OH

“Remember your roots”

“The goal is not to point out current faults or to re-invent the wheel—it is a reminder of where you began.”
Enthusiasm is contagious, and if October’s Northeast Emergency Medicine Student Symposium is any indication, Northeastern medical students are full of it. Held on the Harvard Medical School campus in Boston, this Symposium drew over 65 participants from six area states. Participants enjoyed lectures, participated in resident and faculty panel discussions, engaged in a simulation and workshops, and of course, networked with like-minded students. Students from Albany Medical College, Boston University, Brown, Dartmouth, Harvard, Tufts, University of Connecticut, University of Massachusetts, University of New England, and Yale attended.

The event opened with an energetic exhortation by Ron Walls, MD, a Massachusetts College of Emergency Physicians “Hero of Emergency Medicine” and chair of emergency medicine at Brigham & Women’s Hospital. Dr. Walls invited participants to further explore the specialty “because we’re ‘Real Doctors’”—emphasizing the broad diagnostic and interventional demands of the specialty.

Students then engaged with residents and faculty from across the Boston area, tackling serious issues like encroachment of other specialties, time management, and involvement in international and disaster medicine. Faculty speakers included Carlo Rosen, MD and Jon Fisher, MD of Beth Israel Deaconess Medical Center; Michael Cole, MD and Daniel Pallin, MD of Brigham & Women’s Hospital; and James Gordon, MD, MPA of Massachusetts General Hospital. Resident panelists included Jonathan Fleurat, MD of Boston Medical Center; Dan Henning, MD and Louisa Canham, MD of Beth Israel Deaconess Medical Center; and Erik Antonsen, MD, Munirih Qualls, MD, MPH and David Young, MD, MS of the Partners / Harvard-Affiliated Emergency Medicine Residency. Workshops led by Dan Henning, MD and Jessica Klausmeier, MD, residents from Beth Israel Deaconess Medical Center, focused on emergency radiology and splinting, while a perplexing simulation case challenged participants.

The day finished with a keynote on “Horizons in Emergency Medicine” by Peter Rosen, MD, a founder of the specialty, originator of Rosen’s Textbook of Emergency Medicine, and senior lecturer at Beth Israel Deaconess Medical Center. Dr. Rosen recounted the extreme resistance he found with the first use of succinylcholine in the emergency department for intubation—now a standard of care. Dr. Rosen and colleagues shifted the paradigm for this previously OR-based drug by showing that emergency medicine residents and physicians could safely use it and reduce failed RSI attempts. Reflecting on his experience, Dr. Rosen identified future challenges in patient volume and reimbursement for services. He highlighted a particular opportunity for emergency medicine physicians in catheter-based procedures, observing that there will not be enough subspecialists to provide urgent catheter-based procedures for decades to come. Emergency physicians may increasingly be called upon to fill the gap.

Students were excited to network with colleagues and mentors. Graham Brant-Zawadzki, MSII at Tufts University School of Medicine, noted: “The conference was a great chance to see the world of emergency medicine from every angle.”
with fellow medical students.” Justin Etter, MSII at the University of New England College of Osteopathic Medicine, agreed and felt re-energized: “The conference also re-established the ‘why,’ to be able to treat anyone at any time.” The event also galvanized momentum for future collaboration between Emergency Medicine Interest Groups (EMIG) at Northeast area medical schools.

Are you interested in hosting a regional emergency medicine symposium at your medical school? EMRA offers great resources to help your event get off the ground. The resource “Plans for Game Day” at emra.org provides a great step-by-step overview of conference planning. Division of labor is key—use a conference as an incentive to mobilize more EMIG members and create new leadership positions. Funding may be available from your student activities office, an EMRA local action grant, or your ACEP state chapter. Contact potential speakers and residency programs well in advance. Make sure that key elements like food, audiovisual equipment, room reservations and supplies don’t trip you up.

Conference Co-organizers Joseph Reardon, Jesus Fajardo, and Daniel Barkhuff add their own perspective, noting that planning need not be as daunting as it seems. “It’s remarkable how much support we encountered from faculty members and residents once we proposed an event of this size,” observed Fajardo. While the Northeast conference was free of charge, the vast majority of participants indicated that they would also be willing to pay a small registration fee if necessary. Don’t be afraid to seek hospital sponsors who may have extra workshop supplies or promotional materials to offer.

EMRA is enthusiastic about helping medical students who want to create symposia in every region and is enthusiastic about partnering with local EMIGs. “We hope to trade notes on best practices for running such a symposium with other regions in future years,” says Reardon. The Northeast event benefited from EMRA support in organizing participating schools and providing resources for attendees. The organizers urge other EMIGs planning such a conference to contact their local EMRA Medical Student Council Representative for assistance. Participants are already excited to plan future symposia in the Northeast and hope to see more regions following suit.

Reference
http://www.emra.org/emra_articles.aspx?id=29670
Reflecting on the initial months of my fourth-year, I am incredibly thankful for the education and experiences I have had thus far. As I have recently discovered, away rotations offer significant potential and are undoubtedly worth the time and commitment in scheduling. As a student without a ‘home-based’ emergency medicine institution, I was required to complete all of my emergency medicine rotations at outside institutions. Though sometimes challenging to accommodate, these rotations offer a rich educational experience and can be an influential component in residency application.

Scheduling away rotations requires a significant degree of planning and research. As I discovered early in my third-year, many competitive programs begin accepting clerkship applications six months in advance. Many online resources are available, including EMRA Match (www.emramatch.org) that provides specifics about program location, size, setting, patient volumes, and more. Detailed information regarding rotation specifics and requirements are generally listed online at each program’s website.

Early understanding about program specifics such as community vs. urban/university settings can maximize your educational and clerkship experience. Additionally, certain residency programs prefer applicants who complete an ‘audition’ rotation at their institution. According to the NRMP 2010 Program Director Survey, completing an audition was ranked a 3.9 out of 5 importance in the residency application process.

In addition to developing an intimate understanding of a program, you can diversify your general understanding of emergency medicine as a visiting student. On away rotations, one gains an understanding of different emergency medicine settings and patient demographics. Each program has a unique format to lectures and clinical training that can be influential to your style of learning. Broadening your emergency medicine training to outside institutions increases appreciation for the varied pathology in different geographic and demographic zones. Emergency medicine undoubtedly is becoming an increasingly competitive specialty. In preparation for your residency application, it is important to cultivate and strengthen your personal attributes early in medical school. Irrespective of where your emergency medicine rotations take you, understanding the significance of emergency medicine-based evaluations (Standard Letters of Recommendation, or S.L.O.R.) and rotation performance evaluations is vitally important. Always understand that evaluations/recommendations from home and away institutions can be significantly influential in your residency application. According to the NRMP 2010 Program Director Survey, the value of letters of recommendation, grades, and honors in desired specialty were rated as 4.7, 4.8, and 4.7 out of 5 respectively.

While an important part of your fourth-year curriculum, emergency medicine rotations should certainly be a memorable part of your medical education. Have fun and maximize the potential of your education and residency application on away rotations.

Resources
2. Research Reports: Results of 2010 NRMP Program Director Survey
Don’t worry, be happy

Residency. Its intangible mystique looms above us as we advance through medical school. Whether we’re in our first year—memorizing biochemical pathways, or in our fourth year—traveling the country on away rotations and interviews, we are forever cognizant of the next step in becoming a doctor.

As interview season draws to a close, we are faced with one of the biggest decisions of our lives—the rank list. Countless hours of studying, rounding, note writing, test taking, and interviewing have lead to this moment. Now, our future is left to a few dozen keystrokes and a computer algorithm.

Residency is more than just the next three to four years of our lives: it is the foundation upon which the rest of our careers will be built. The people we meet, the training we receive, and the philosophies imparted to us will remain with us for the rest of our lives. With such a weighty decision at hand, it’s no wonder that we agonize over which programs should top our rank lists.

As my own interview season draws to a close, I now appreciate the fundamental truth that great training can be found at a multitude of residency programs. This is true, despite all of the differences in length of training, location, patient population, and educational philosophy.

So how are we supposed to decide which program is the best match? Some of us will create multivariable spreadsheets in an attempt to quantify the decision. Others will consult their faculty advisors, trusted mentors, and friends. While factors like geography and academic opportunity may help to narrow our choices, the decision will ultimately be left, in large part, to our own intuition.

Knowing which residency program offers the best fit for our personal interests is challenging, but we can rely upon our medical school experiences to help guide our judgment. Think back to when you applied to medical school. What factors governed your decision? How did you ultimately make your choice? History repeats itself, and without self-reflection, we are destined to make the same potentially unfortunate decisions that we made four years ago.

If you were happy with your medical school experience, what were the reasons? If not, how would you approach things differently knowing what you know now? Looking back at my own medical school experience, it was all about the people. Sure, the curriculum was attractive and the facilities were inviting. But more importantly, medical school provided teachers who inspired me, mentors who guided me, and friends who I will never forget. The personal connections fostered in medical school were the root of my happiness, and happiness is truly the key to success.

When creating your rank list, think about what will make you the happiest. Which residents can you envision being friends with? Which faculty members will inspire you to realize your greatest potential? Residency programs are as unique as the medical students who apply to them, and finding the right match to your goals and personality is the first step towards career success and personal satisfaction. Be eager and enthusiastic in your residency search. Above all else, listen to your intuition. Happiness awaits…

“Residency is more than just the next three to four years of our lives: it is the foundation upon which the rest of our careers will be built.”

Calling all Medical Students!

Apply now for the EMRA Medical Student Council. Applicants must send letters of interest and CV to emra@emra.org. The deadline is March 1st. For information on position descriptions, responsibilities and how to apply, please visit www.emra.org.

Medical Student Council positions include

- Chair
- Vice-Chair
- Student Section Editor
- Technology Coordinator
- East Regional Coordinator
- West Regional Coordinator
- 8 Regional Representatives (4-East and 4-West)
- Mentorship Coordinator
- International Coordinator
- Osteopathic Coordinator
Myasthenic crisis

Case

**Time 14:42**

**HPI:** 34-year-old, white female with a history of myasthenia gravis and malignant thymoma presents having been referred by her neurologist for admission after an outpatient clinic visit for dyspnea and diplopia. She reports a two to three day history of increasing shortness of breath and proximal muscle weakness. She complains of palpitations, but denies chest pain, syncope, traveling long distances while immobilized, or the use of oral contraceptives.

Her neurologist requested that we perform a CT of the chest with contrast to rule out recurrence of and/or metastatic lesions of previous malignant thymoma. She has been compliant with her myasthenia meds, which include pyridostigmine. The patient was diagnosed with myasthenia gravis six months ago after having successfully completed chemotherapy for malignant thymoma, which was thought to have caused the myasthenia. The patient received five cycles of intravenous immunoglobulin four months ago for myasthenic crisis, but did not suffer respiratory failure or require intubation.

On exam, her vitals were as follows: blood pressure 147/80, pulse 87, respirations 20 per minute (confirmed by resident during exam), oral temperature 98.1, and oxygen saturation 99 percent on room air. The patient appeared in no acute distress and was alert and oriented. She had left eyelid ptosis, which patient and father state is baseline. The patient was tachypneic, but breath sounds clear to auscultation bilaterally. The rest of her exam was unremarkable. Our differential diagnosis at this time included myasthenic crisis, PE, thymoma metastases, PNA, cardiac dysrhythmia, pleural effusions, and pulmonary edema. Her labs and ECG, overall, were normal.

The CT of the chest was ordered, and the patient had great difficulty lying flat on the CT table, with increasing dyspnea and respiratory fatigue. The patient was able to complete the study adequately, but returned to our pod much more uncomfortable.

**Time 17:19**

At this time, the patient had the following vital signs: blood pressure 142/75, pulse 101, respirations 18 per minute, and oxygen saturation 94 percent on 2L. BiPAP was then ordered, which temporarily provide needed relief. Still, our patient was clearly becoming more fatigued from a ventilatory standpoint.

The CT showed mild cardiomegaly, an elevated right hemidiaphragm, and basilar atelectasis. There was no evidence of metastatic lesions, pulmonary edema, effusion, or consolidation.

“**My attending sent me into the room with a sheet of paper, and said, ‘Have her blow this as forcefully as she can while you hold it vertically, and that will serve as our poor man’s FVC!’**”

Source: [http://www.nature.com/nrn/journal/v4/n5/fig_tab/nrn1101_F1.html](http://www.nature.com/nrn/journal/v4/n5/fig_tab/nrn1101_F1.html)
The patient began to appear more uncomfortable, with respirations 24 per minute and oxygen saturation 90 percent on BiPAP. We ordered pulmonary function tests, including FVC measurements, but there was a delay because respiratory therapy was overwhelmed by other sick, intubated patients in the trauma bay. My attending sent me into the room with a sheet of paper, and said, ‘Have her blow this as forcefully as she can while you hold it vertically, and that will serve as our poor man’s FVC!’”

Sure enough, our patient was not able to force out much air on expiration, and the sheet barely deviated from the vertical orientation. At this time, we made the decision to electively intubate this patient as she was having more episodes of desaturation and becoming more somnolent. The patient and father signed an informed consent for intubation and arrangements were made to admit this patient to the NeuroCritical Care ICU.

Orotracheal intubation was successful, using Etomidate 30mg IV and Fentanyl 100mcg IV. Paralytics were intentionally withheld by mutual agreement with the admitting team. She did very well on mechanical ventilation (SIMV with PS 12, PEEP 6) and was effectively sedated with propofol. Vital signs following intubation were as follows: blood pressure 115/60, pulse 82, respirations 20 per minute, and oxygen saturation 100 percent on FiO2 40 percent. The patient was transferred to the Neuro ICU in stable condition.

**Discussion & disposition**

Myasthenic patients who present stable and ventilating with minimal dyspnea can rapidly deteriorate over minutes to hours in the ED. If they require intubation, withhold neuromuscular blocking/paralytic agents (Succinylcholine, Rocuronium, etc). Neuromuscular blockade agents act by antagonizing acetylcholine (Ach) binding at receptors of the post-synaptic membrane at the neuromuscular junction and can result in exacerbation of the pathophysiologic state in myasthenic patients.

In myasthenia gravis, the immune system inappropriately produces antibodies to the native post-synaptic Ach receptors. Adding a paralytic that occupies the few remaining functional post-synaptic Ach receptors in the myasthenic patient could significantly prolong general muscular dysfunction (including the diaphragm) and the need for invasive respiratory support. Clinical experience has shown well-known adverse events associated with the use of neuromuscular blockade in this patient population (prolonged time necessitating mechanical ventilation leading to ventilator associated pneumonia, as well as respiratory muscle deconditioning and venous thrombosis from immobility).

Multiple trials have demonstrated that the use of propofol (2-2.5 mg/kg bolus IV) and fentanyl (2mcg/kg IV) provide adequate sedation and analgesia necessary for successful and humane orotracheal intubation. Be prepared for vocal cord movement on intubation as the paralytics are withheld.

The above patient was treated for myasthenic crisis/exacerbation in the ICU with five rounds of plasma exchange and was extubated two days after admission. The patient was discharged thirteen days later. According to our hospital records this patient has not presented to our ED or been admitted since the events listed above.

**References**

A sore throat and allergic reaction?

History and physical exam

A 23-year-old male with a history of asthma presents with a chief complaint of “my throat hurts.” He states that he has had significant throat pain over the last week. He presented to an outside hospital three days ago at which time he was diagnosed with “strep throat” and given a prescription for amoxicillin.

The patient states that since that time he does not feel as though his symptoms have improved and is concerned about an increasing sensation of posterior tongue and oropharyngeal swelling which he attributes to a possible allergic reaction to amoxicillin. The patient complains of increased difficulty with swallowing and also notes some difficulty breathing, particularly when lying flat. He reports subjective fever, but denies nausea, vomiting, or diarrhea. He does report decreased oral intake due to throat pain and swelling. The patient denies any other associated symptoms. The patient denies smoking, alcohol, or drug use.

• Physical exam reveals a patient who appears mildly uncomfortable
• Vital signs are: heart rate 71 beats per minute, blood pressure 138/76, temperature of 98.9 degrees, respiratory rate of 16 and oxygen saturation of 95 percent on room air.
• Oropharyngeal exam reveals marked erythema and swelling of the left posterior oropharynx and peritonsillar area without uvular deviation. The right tonsillar area appears unremarkable. He does have some degree of “hot potato voice” present. There is no drooling; however, mild trismus is present. There is no tongue swelling noted.
• Neck is supple without evidence of meningismus. There is mild tenderness to palpation of the left lateral neck near the angle of the mandible.
• Lungs are clear and cardiac exam is unremarkable.
• Abdomen is benign.
• Extremity exam is unremarkable.
• Neurological exam is nonfocal.

Questions to consider

1. What is your differential diagnosis?
2. What diagnostic studies would you perform?
3. What are potential complications of this clinical entity?
4. Do you think point of care bedside ultrasound would be helpful in this case, and if so, what are you looking for?

Patient course and bedside ultrasound

After initial evaluation, complete blood count and electrolytes were ordered, and intravenous normal saline was started. Intraoral bedside ultrasonography was performed using a sheathed endocavity 5-8 MHz ultrasound transducer after topical anesthesia with benzocaine spray. Images 1 and 2 were obtained.

• What do these images show?
• What is the appropriate emergency department management of this condition?

What important findings do you see in these images?
Ultrasound examination revealed a focal fluid collection in the left peritonsillar area consistent with peritonsillar abscess, measuring approximately 2 cm in diameter. The abscess was drained at the bedside using an 18-gauge needle, yielding approximately 3-4 cc of purulent material. The patient tolerated the procedure well and was discharged in good condition on cephalexin and metronidazole after receiving intravenous clindamycin and dexamethasone. Wound culture subsequently demonstrated normal oropharyngeal flora.

**Answers and discussion**

The diagnosis of peritonsillar abscess is generally a clinical one, with findings of unilateral peritonsillar swelling, fever, and pharyngitis suggesting the diagnosis. The disease progression is typically from tonsillitis to peritonsillar cellulitis to peritonsillar abscess. The differential diagnosis of unilateral peritonsillar swelling, as in our patient, includes peritonsillar abscess and peritonsillar cellulitis, as well as infectious mononucleosis and retropharyngeal abscess. The distinction between peritonsillar cellulitis and peritonsillar abscess, however, is difficult to make without further diagnostic imaging. Blind aspiration of a suspected peritonsillar abscess may provide a false negative result (as high as 10-24 percent) if the area of abscess is not correctly localized. The use of bedside ultrasonography allows clear visualization of a focal fluid collection in the area of interest, facilitating appropriate bedside drainage often without the need for further diagnostic evaluation.

A retrospective review of patients who underwent bedside intraoral ultrasonography for suspected peritonsillar abscess confirmed a diagnosis of peritonsillar abscess in 81 percent of patients. The remaining patients, those without a focal fluid collection noted on ultrasound, were diagnosed with peritonsillar cellulitis. Other diagnostic studies traditionally used in the evaluation of peritonsillar abscess include contrast-enhanced computed tomography (CT) of the neck.

Potential complications of peritonsillar abscess include progression of infection along fascial planes into the deep spaces of the neck and mediastinum, leading to necrotizing mediastinitis, rupture into the oropharynx, cervical or cerebral abscess, or carotid artery rupture or necrosis. Iatrogenic carotid artery injury has also been reported from incision and drainage or needle aspiration. In Figure 2, the left carotid artery was identified approximately 2 cm deep to the abscess cavity. Bedside ultrasound can help you find “big red” and avoid it!

The localization and characterization of superficial fluid collections such as soft tissue abscesses is a function ideally suited to bedside ultrasonography. As in using ultrasound to identify soft tissues abscesses elsewhere in the body, a high-frequency transducer is ideal, as the increased ultrasound frequency translates into greater image resolution (at the expense of limited depth).

The transducer used for this patient was a 5-8 MHz endocavity transducer that provides excellent visualization of superficial soft tissue detail, while still allowing easy access to the posterior oropharynx. The use of the endocavity transducer for this indication also provides the emergency physician the additional option of draining the abscess under real-time dynamic ultrasound guidance, i.e., watching the needle enter the abscess cavity under ultrasound guidance and watching the abscess cavity diminish in size as drainage is performed.

As previously noted, a rubber sheath transducer cover should be used for this procedure with gel inside the sheath to ensure an air-free interface between the area of interest and the transducer. The patient’s posterior oropharynx should be anesthetized with a topical anesthetic to reduce gagging and discomfort and the transducer should be inserted on the patient’s affected side with the transducer marker pointed towards the patient’s right to allow a transverse or axial view of the posterior oropharynx including the peritonsillar area. As noted above, the carotid artery should also be identified, if possible. The unaffected side should also be imaged, as bilateral peritonsillar abscess has been reported.

Once a peritonsillar abscess has been identified, needle aspiration can be performed, either under real-time ultrasound guidance or via ultrasound localization of the abscess. After abscess aspiration, therapy should include a 10-day course of antibiotics active against Group A streptococcus species as well as oral anaerobes, such as amoxicillin/clavulanic acid or penicillin VK plus metronidazole. In penicillin-allergic patients, clindamycin can be used. The use of intravenous steroids has been shown to reduce pain and duration of symptoms. Close follow-up should be arranged for patients diagnosed with peritonsillar abscess.

Special thanks to Dr. Blayke Gibson, UAB Emergency Medicine Residency Program for her assistance in the evaluation and management of this patient.

**References**

A group of Navy emergency medicine residents and staff recently travelled to Santo Domingo, Dominican Republic (DR), as part of a biannual arrangement to teach emergency medicine, ultrasound, and trauma to Dominican medical students, residents, and emergency medicine providers. Our residency program has provided this training for the past three years. The course involved several days of morning lectures, followed by break-out sessions. Ultrasound topics included FAST, early pregnancy ultrasound, RUQ scans, and others.

Since this was my first time participating and presenting lectures in a different language, I required the use of a translator. I found the language and cultural barrier not only challenging, but also rewarding; it pushed me to go beyond common verbal explanation and forced me to more readily engage the audience in an active manner.

Emergency medicine is a developing field in the DR, with only a handful of resident classes graduated so far. There exists no formal trauma system, curriculum, training, or organized EMS. Only recently, ultrasound has come to the bedside.

Unfortunately, trauma is one of the leading causes of death in adults 18 to 45 years old in the DR. The majority of these patients are managed by orthopedic and general surgeons who are called to the emergency department. In response to the recent earthquake in neighboring Haiti, there has been a significant re-evaluation of trauma management in the DR, directed at better handling individual trauma patients and mass casualties.

Our local contact was a board-certified, emergency-medicine-trained physician who is spearheading the development of these systems. He champions the importance of educating all new residents in the burgeoning fields of trauma and ultrasound. He was also able to wrangle an extra ultrasound machine for the course.

Each morning, we made our way to the hospital’s lecture hall via taxis in various forms of disrepair. I have used different modes of transportation internationally; as long as you can compromise on things like seatbelts, working brakes, and drivers who look like their licenses, they are universally the same.

The first thing we noticed was that the taxis had rusting propane tanks bolted down in the back. As natural gas is much cheaper than gasoline or diesel in the DR, this conversion is commonly performed in a number of back-alley, mechanic shops. Thus, every taxi is the equivalent of an explosion-prone ’77 Ford Pinto.

“...and noted how this would ultimately change their practice.”

Scott Koehler, LT MC USN
Naval Medical Center Portsmouth
Portsmouth, VA

Echocardiogram demonstration to the class, Dr. Scott Koehler.
Drivers seem cognizant of this fact, knowing that if they rear-end someone, both cars will face a fiery death. That’s what I call a nuclear deterrent. Fortunately, the country has a first-class Burn Center in Santo Domingo, which we had the privilege of visiting on prior trips. The heart-stopping taxi rides alone demonstrated the immediate practicality of our courses.

What impressed me the most was the overwhelming enthusiasm students had for the subject matter. They never missed an opportunity to ask questions, volunteer, or offer their own stories of handling cases similar to ours. Most students had never handled an ultrasound probe before, but easily picked up the skills. The groups also quickly grasped the physics and functionality of the ultrasound machines, asking detailed questions about gain, depth, and the M-mode. I’ll admit it is somewhat embarrassing to watch someone you just taught actually do the FAST exam better than you can.

After running through multiple scenarios, they began teaching themselves how to streamline the trauma workup, based on local experience. For many, this was the first opportunity to practice ultrasound outside of the radiology department. The students consistently remarked on the utility of physician-performed, bedside scans and noted how this would ultimately change their practice.

The breakout sessions allowed me the golden opportunity to chat with my Dominican counterparts about their residency experiences. It was interesting to compare the transition from medical student to intern to resident. Their programs incorporate clinical rotations earlier than ours, with less formalized didactics, supplemented by their own on-the-job training. The total years spent training was nearly equivalent, with most students opting for a slightly longer residency after medical school.

Many of the students were anxious to discuss their ongoing involvement in the care of Haitian earthquake victims, which had appeared as a smaller second wave within the local hospitals. As aid groups pulled out, the understaffed Haitian system became overwhelmed with a glut of late-presenting injuries and illnesses, distinct from the initial bolus of patients. Many of the Dominican emergency physicians and residents had been the first to arrive in the disaster zone, making the most impact with the existing infrastructure, thanks to years of previously established contacts.

A learning point for all of us visiting Navy residents was that pre-planning for these disaster episodes is absolutely crucial; moreover, foreign involvement is exponentially more efficient and effective when done in concert with established contacts, utilizing existing relationships.

This was evidenced by the tremendous cooperation between Dominican emergency medicine directors, central government, military, and the badly damaged Haitian central government.

Overall, I am fortunate to have been a part of our country’s effort through the Navy to bolster the development of the Dominican emergency medicine, trauma, and ultrasound training experience. Continued humanitarian and co-education projects that build sustainable skills and working relationships are the lynchpin of successful International Medicine programs. As a member of the US Military, I’m sure I will have the opportunity for these experiences again. Next time, I will just have to be more mindful of which taxi I take.
The role of ketamine in rapid sequence intubation

Ketamine is a phencyclidine derivative anesthetic used around the world because of its safety and low cost.\(^1\,^2\) It provides analgesia and dissociative anesthesia while allowing patients to maintain their blood pressure, spontaneous breathing, and laryngeal reflexes.\(^3\)

Ketamine’s pharmacologic profile makes it an excellent induction agent for rapid sequence intubation (RSI) in certain subgroups of patients—particularly those with sepsis, traumatic head injury, or acute asthma exacerbation.

Role in sepsis and critically ill patients

There has been much debate over the use of etomidate as an induction agent for RSI in patients with suspected sepsis. Even after a one-time induction dose, the cosyntropin stimulation test shows that etomidate reversibly suppresses adrenal function by inhibiting 11-beta-hydroxylase.\(^4\,^5\) Some physicians have become reluctant to use etomidate in septic shock despite the fact that no study has been appropriately designed or powered to determine whether this transient adrenal suppression causes a difference in morbidity or mortality.

Ketamine is a sympathomimetic that increases heart rate, arterial pressure, and cardiac output.\(^6\) This hemodynamic profile makes it a reasonable alternative for induction in hemodynamically compromised patients. Jabre and colleagues compared induction with etomidate versus ketamine in critically ill patients who needed sedation for emergency intubation.

This study included a diverse group of patients including those with trauma, sepsis, cardiogenic shock, stroke, acute respiratory failure, and drug poisoning. They found no statistically significant difference between the two drugs in their primary endpoint during the first three days in the ICU and also noted that the number of patients with adrenal insufficiency was lower in the ketamine group. These findings suggest that ketamine is a safe alternative to etomidate in critically ill patients including those with sepsis.\(^7\)

Role in traumatic head injury

It is has been traditionally taught that ketamine should be avoided in patients with acute head injury. This teaching is based on human studies from the 1970s, which demonstrated a significant increase in intracranial pressure (ICP) and a decrease in cerebral perfusion pressure (CPP) with intravenous ketamine use. However, these studies were nonrandomized and unblinded investigations performed in patients with intracranial masses and obstructed CSF pathways and not on those with acute traumatic head injury.\(^8\,^9\)

Recent literature suggests that ketamine may in fact be beneficial in patients with traumatic head injury. Patient outcomes in head trauma depend greatly on management of increased ICP and on maintenance of CPP.\(^10\) Ketamine increases arterial pressure, which helps to maintain CPP. A study of head-injured patients under propofol sedation who received ketamine in 1, 3, or 5 mg/kg boluses showed that it caused a reduction in ICP.\(^11\)

Bourgoin and associates compared ketamine and midazolam to sufentanil and midazolam infusions for ICU sedation in
patients with severe head injuries and found no significant differences between the two groups in the mean daily ICP or CPP. They also noted a trend for decreased use of vasopressors in the ketamine group.\textsuperscript{12}

Another study compared ketamine and midazolam to fentanyl and midazolam for ICU sedation in moderately or severely head injured patients and found a lower catecholamine requirement, a higher CPP, and a slightly higher ICP in the ketamine group but no difference in outcome at six months.\textsuperscript{13} This data seem to suggest that in patients with head injuries who are under controlled ventilation and sedation, ketamine does not increase ICP and maintains a greater CPP.\textsuperscript{14} A randomized controlled trial assessing ketamine as an induction agent in traumatic head injury is necessary.

In addition to maintaining ICP and improving CPP, in vitro and animal studies show that ketamine’s role as an NMDA receptor antagonist also gives it potential neuroprotective effects. In rodent models of cerebral ischemia, an increase in glutamate activates the NMDA receptor, which leads to the accumulation of intracellular calcium and thereby triggers cellular apoptosis pathways. Ketamine prevents glutamate from binding to the NMDA receptor therefore interfering with neuronal cell damage.\textsuperscript{15} It is unclear, however, how long these effects last, and there is no human data yet to support these findings.

**Role in acute asthma exacerbation**

Ketamine’s role as an induction agent in the management of status asthmaticus comes from its properties as a bronchodilator. Numerous case studies have demonstrated that ketamine decreases bronchospasm in both pediatric and adult patients with acute asthma exacerbations who failed conventional therapy and can often be used to prevent intubation.\textsuperscript{16,17} By preventing norepinephrine reuptake, ketamine creates elevated catecholamine levels. This increased catecholamine leads to beta-2 adrenergic stimulation. Additionally, ketamine inhibits vagal pathways, which cause smooth muscle relaxation.\textsuperscript{18,19}

**Summary**

In summary, ketamine has sympathomimetic, bronchodilatory, and NMDA receptor antagonistic properties making it an ideal induction agent for patients with hemodynamic compromise and bronchospasm. Recent data also suggest that it is safe and valuable for patients with traumatic head injury. It should be avoided in patients with cardiovascular or psychiatric disease.

**References**

Electronic resources for today’s emergency medicine physician

The current pace of scientific discovery continues to enhance our understanding of disease processes and to improve our ability to take care of patients. Unfortunately, this relentless pursuit of scientific truth also doubles the quantity of medical knowledge every two years.

Given the exponential growth of medical knowledge, it is becoming more critical to know when and how to look for information, rather than be able to recall it from memory directly. At first, I was concerned about what my patients would think if they found out I was Googling their disease right after leaving their room. I quickly learned that this was an unfounded fear. By continuously searching for knowledge, I was able to make clinical decisions with the best possible evidence, a fact not unnoticed or unappreciated by patients. Such knowledge-searching behavior promotes life-long learning and ensures my knowledge base is current.

Nowadays, I’ll often search for information while talking with the patient on my iPad®. I thought I’d share some of the resources I use regularly to search for evidence quickly at the bedside.

eMedicine  http://www.eMedicine.com
I’m sure eMedicine is not new to anyone. It is a collection of peer-reviewed articles written by a variety of authors. Articles are well maintained and often reflect the most current evidence, specifically for emergency medicine. What you may not know is that search engines like Google® are free to crawl and index individual pages. Therefore, if you Google eMedicine and the search term, you can get a quick list of the most relevant pages as well as a direct link to the article without having to login or register for an account.

Best Bets  http://www.bestbets.org/
Best Bets is a repository of systemic reviews based out of the Manchester Royal Infirmary. It uses a formal critical appraisal process to provide rapid evidence-based answers to common clinical questions. The topics are often more relevant to emergency medicine practice than other systematic review repositories such as the Cochrane Collaboration.

theNNT  http://www.thennt.com
theNNT is a website created by our colleagues at St. Lukes Roosevelt in NYC which provides a concise review of the literature pertaining to benefit versus harm of treatments as expressed by the Number Needed to Treat (NNT). The design and usability of the site is well thought out, and its content is ever expanding.

EMCrit  http://text.emcrit.org
EMCrit is an online textbook of critical care by Scott Weingart at Mount Sinai Hospital. It provides short, practical blurbs of the supporting literature. EMCrit also hosts a critical care podcast by the same name.

Pubmed / Google Scholar
Any list of evidence search website would not be complete without at least mentioning Pubmed. It is the article indexing service of the National Library of Medicine, and if it’s not in Pubmed, it doesn’t exist. The Google Scholar interface, however, often produces more relevant results. Google Scholar uses Google’s proprietary algorithms to search the Pubmed index as well as other academic indexes. I find that Google’s search algorithms will provide more relevant results than the native Pubmed search algorithms. Instead, most medical librarians would suggest using MESH terms instead, a controlled vocabulary of keywords that group similar concepts together. Therefore, instead of searching for a particular word, you would search for a concept.

There are many other valuable electronic resources out there, but I tend to find these resources have the right balance of detail and practicality that make them useful at the bedside. Of course, there are uses for other resources, such as online versions of standard emergency medicine textbooks, as well as mobile applications, but I often find these resources to provide too much or too little detail. I’d be interested to find out what other resources people are using—feel free to send me a quick email at techcoordinator@emra.org. Your feedback is always valued.

Steven Horng, MD
Technology Coordinator
Beth Israel Deaconess Medical Center
Boston, MA

“...this relentless pursuit of scientific truth also doubles the quantity of medical knowledge every two years.”
1. Contraindications to nasotracheal intubation in a trauma patient include:
   A. Apnea
   B. Cervical spine fracture
   C. Depressed mental status
   D. Hypotension
   E. Pneumothorax

2. In which of the following patients would a Kleihauer-Betke test be most helpful?
   A. 8 weeks pregnant, with spotting, Rh-negative
   B. 30 weeks pregnant, with proteinuria and blood pressure of 160/110
   C. 32 weeks pregnant, with frequent contractions
   D. 32 weeks pregnant, with twin gestation, to determine fetal lung maturity
   E. 36 weeks pregnant, involved in a high-speed motor vehicle crash

3. A 23-year-old man is brought in by ambulance after falling off a roof. He is moaning and has sonorous respirations; he will not open his eyes to pain but withdraws to pain when tested. What is his Glasgow Coma Scale score?
   A. 4
   B. 5
   C. 6
   D. 7
   E. 8

4. A 24-year-old man presents after being struck on the left side by a pickup truck while crossing a street. Initial vital signs are blood pressure 130/78, pulse rate 110, and respiratory rate 18. He is alert and oriented and had no loss of consciousness at the scene. Paramedics have established two large-bore peripheral lines and are infusing normal saline; he has received less than 500 mL on arrival. Abdominal examination reveals tenderness in the left upper quadrant and suprapubic region. Plain radiographs reveal a pelvic fracture. What would be the best diagnostic test in this scenario to definitively diagnose the etiology of the patient’s abdominal pain?
   A. Abdominal CT
   B. Diagnostic peritoneal lavage
   C. Exploratory laparotomy
   D. FAST exam
   E. Retrograde urethrography

5. Which of the following patients could be safely managed in a community emergency department, thereby avoiding transfer to a burn unit?
   A. 4-year-old boy with 10% BSA superficial partial-thickness burns to his arms after pulling a pan of boiling water off a stove
   B. 12-year-old boy with 26% BSA superficial partial-thickness burns to his chest and arms from setting a blanket on fire
   C. 38-year-old man with 3% BSA full-thickness burn to his hand from a mechanical injury
   D. 42-year-old woman with diabetes with 5% BSA superficial partial-thickness burns to her feet from scalding bathtub water
   E. 75-year-old man with 5% BSA superficial partial-thickness burn to his back from a heating pad
EMRA seeking residency teams to participate in annual Jeopardy competition!

The time has come again for the Annual EMRA National Emergency Medicine Jeopardy Competition to be held during the SAEM Annual Meeting in Boston. The EMRA Board of Directors would greatly enjoy having your program represented in this collegial competition.

We are looking for 6 interested teams of three residents from programs across the country to participate. To be considered please send an email of interest to academicaffairsrep@emra.org or rrcemrep@emra.org. Within the context of your email of interest, please provide the name the names, addresses, and contact information of the three resident competitors and your program director.

The deadline for the email of interest is April 1st.

The EMRA National Emergency Medicine Jeopardy Competition is tentatively scheduled for Saturday, June 4th. Additional details will be forthcoming for programs selected to participate.

Please feel free to contact us via e-mail if you have any questions. We look forward to seeing you there!

Mark your calendars for the new EMRA committee application deadlines this spring!

Apply by April 15, 2011 to serve on the Health Policy, International, Technology, Research, or Critical Care committee and take on projects as determined by the Board of Directors.

Feeling really passionate? Apply by March 7, 2011 to be considered for the position of Vice Chair. The Vice Chair of each committee for 2011-2012 must accept a two-year commitment, as they will continue as Chair for the 2012-2013 year.

All applicants must be EMRA members and must submit a Letter of Intent stating their interest in serving on the committee (and express their interest in running for Vice Chair, if applicable), as well as their Curriculum Vitae.

Apply online at www.emra.org/committeeapp.aspx or by emailing your application materials to committees@emra.org.

Alphabet Soup  Benjamin Lawner, DO, University of Maryland

The good news is your cough and headache sound like viral symptoms. However, I don’t want to risk forgetting about cough measures. So let’s start with antibiotics, an EKG, Blood cultures.
Call for 2011 EMRA Spring Award Nominations

It’s time to nominate yourself or a colleague for an EMRA Award. Visit the website for application instructions. Deadline for submission is March 15th. Awards will be presented at the EMRA Award Reception, Friday, June 3, during the SAEM Annual Meeting in Boston.

**EMRA Travel Scholarships to SAEM**
EMRA will sponsor three $500.00 travel scholarship for active resident members to attend the 2011 SAEM Annual Meeting.

**Robert J. Doherty, MD, FACEP, EMF/Acep Teaching Fellowship Scholarship**
This scholarship provides tuition for the ACEP Teaching Fellowship, an intensive course in faculty development.

**Dr. Alexandra Greene Medical Student Award**
The Dr. Alexandra Greene Medical Student Award recognizes a student who displays a significant dedication to emergency medicine.

**Residency Director Award**
This award recognizes a residency director who serves as a role model for residents and exemplifies those qualities residents value in a mentor.

**Assistant Residency Director Award**
This award recognizes an assistant or associate residency director who serves as a role model for residents and exemplifies those qualities residents value in a mentor.

**Jean Hollister EMS Award**
This award recognizes a resident who has made valuable contributions to pre-hospital care and emergency medical services.

**Academic Excellence Award**
This award is given to a resident who has done outstanding work in research or other academic pursuits.

**Dedication Award**
This award recognizes an EMRA member who has demonstrated significant dedication in promoting the goals and objectives of EMRA at local, state and national levels.

**Residency Coordinator Award**
This award is given to the residency coordinator who regularly goes above and beyond the call of duty for the good of the program and its residents; supports resident endeavors in extracurricular activities like community service, research, etc.; and actively supports resident involvement in their specialty organizations.

**Local Action Grant**
This grant is awarded to promote the involvement of emergency medicine residents in community service and other activities that support the specialty of emergency medicine.

For more information visit www.emra.org.

**AMPA Research Grant Opportunities**
AMPA (Air Medical Physicians Association) is offering a $2500 research seed grant to a resident, fellow, or medical student for transport medicine-related research.

More information is available at http://www.ampa.org/content/view/100/1/.

The deadline for the application is March 1, 2011.

**Not getting your EMRA Publications?**
If any of your contact information needs to be changed, log in to www.emra.org or create a web account for the first time by going to www.emra.org/createaccount. This is where you will access your contact information. If possible, please list your home address, as this is usually the most reliable location to receive mail, rather than at your school or hospital.
You’re working a busy overnight shift when EMS brings in an 11-month-old male following a seizure. Upon arrival, you learn that he had developed a fever, cough, and runny nose earlier that evening. His parents describe a five-minute episode, during which the child became unresponsive, with his eyes rolling back in his head and alternating episodes of full-body shaking and stiffening.

He returned to baseline prior to EMS arrival. His past medical history is unremarkable, and he is appropriately immunized.

In the emergency department, you observe the child cruising around the crib, babbling, and drinking a bottle of formula. He has no appreciable findings on physical exam other than a runny nose. His vital signs are only notable for a temperature of 38.5°C. Your staff feels a lumbar puncture is the appropriate next step given the AAP guidelines. But is it?

You recall recent literature that children with simple febrile seizures have an extremely low risk for serious bacterial infection (SBI), but did this child have a simple febrile seizure? What is your pre-test probability that he has meningitis or another SBI?

Simple versus complex febrile seizures
This distinction is key to determining your management and disposition in the emergency department. Simple febrile seizures are generalized, tonic-clonic in nature and occur in children six months to six years of age. They last no longer than 15 minutes and do not recur in a 24-hour period.1

Seizures that do not meet the above criteria are classified as complex. Additionally, febrile seizure cannot be classified as simple if the child is known to have neurologic disease or a previous afebrile seizure.1,7

Current recommendations
In 1996, the American Academy of Pediatrics (AAP) published guidelines for acute evaluation of a child with his first febrile seizure, based on literature review and expert opinion.

Recommendations grew from the consensus that: seizures are a common presenting symptom of bacterial meningitis; a wide range of clinical skill exists amongst providers; signs and symptoms of meningitis can be very difficult to appreciate in this age group.4

The current indications for lumbar puncture (LP):
• In infants 6 to 12 months, an LP should be “strongly considered.”
• In children 12 to 18 months, an LP should be “considered.”
• In children 18 months and older, an LP is not routinely necessary but may be considered after clinical assessment.
• In any infant or child with prior antibiotic treatment and a febrile seizure, an LP should be “strongly considered,” as the antibiotic may be masking signs and symptoms of bacterial meningitis.1

The AAP does not recommend additional neurodiagnostic evaluation such as EEG, lab studies, or neuroimaging. Obtaining blood glucose level is not routinely recommended but should be considered in some cases.1

Since 1996, no modifications have been made to these recommendations despite new research suggesting they should be revisited.

Recent literature
In children who present with simple febrile seizure, studies completed before and after 1996 have shown an almost negligible incidence of concurrent invasive bacterial disease. Unfortunately, almost all of these
studies are retrospective and therefore uncertain in their conclusions.  

In 2001, Tranior and colleagues performed a retrospective review of all children 6 to 60 months with their first febrile seizure. They found that rates of SBI in patients with a febrile seizure approximated rates of SBI in febrile children without seizures.6

Another study in 2001 reviewed 503 cases of meningitis in children aged 2 months to 15 years. They found that those who presented with a seizure also presented with another significant indication for LP.3 They concluded it is uncommon for a simple febrile seizure to be the sole manifestation of bacterial meningitis.3

In 2002, Carroll and Brookfield performed a systematic review of 15 articles addressing LPs in the setting of children with febrile seizures.2 They concluded that the risk of bacterial meningitis is extremely low in the absence of other clinical signs, while the current recommendations are “unjustified and potentially hazardous.”

Most recently, in 2009, Kimia and associates performed a retrospective review of simple febrile seizures in children 6 to 18-months, reflecting the age range of the AAP guidelines. Of 704 children, none were diagnosed with bacterial meningitis.4

What next?
Febrile seizures affect up to five percent of children prior to their sixth birthday and account for approximately one percent of all emergency department visits under 18 months of age.5 They are also the most common form of convulsive occurrence in children under five, making the acute management a very important consideration.

As many of the above studies have suggested, there needs to be a shift in our practice paradigm for simple febrile seizures. This is even more important after observing the dramatic decline in bacterial infection following publication of the AAP H. influenza and S. pneumoniae immunization recommendations.5

Ultimately, these conclusions do not replace the utility of a thorough history and physical examination, but it may shift your clinical decision-making for a child with a simple febrile seizure.

References
Planning for 2011

From early December through late February, we focus on a few consistent issues—solutions that we develop and planning that we do. In the interest of being proactive, this article will outline those primary considerations, provide a framework for understanding them, and offer next steps so that you can find your own way.

Briefly, the following are the most pertinent issues and opportunities that every emergency medicine resident, fellow, or recent graduate is probably giving consideration to right now!

**Tax planning in reverse for 2010**

As you prepare to reconcile with Uncle Sam for 2010, you may find that last year’s moonlighting is causing issues with your tax liability. If that income was paid to you as 1099 Income—meaning there were no taxes withheld—you have an additional tax liability! 1099 Income is considered self-employment, subject to higher taxes than your house staff earnings.

How do you fix it after the fact?

Consider a SEP IRA (Simplified Employee Pension Individual Retirement Account). This type of retirement account is cheap and easy. More importantly, if created before you file your 2010 return, a SEP IRA allows you to defer around 20 percent of that moonlighting income into a pre-tax account!

**Disability insurance**

Residents and fellows graduating in 2011 have an unprecedented opportunity: there are currently five excellent specialty-specific disability contracts available for emergency physicians in most states. Some timely details:

- Residents are now able to purchase up to $6,500 of monthly specialty-specific/own-occupation coverage and lock-in the ability to increase by up to another $8,500 in the future. You must be within six months of completing training to be eligible for this benefit.
- Three of the five major disability companies now limit the amount of disability insurance a resident can get if they have a signed contract that will have group long-term disability benefits. Obtain disability insurance before you sign your contract!
- Conversion options can often provide great benefits if you have medical history and are not able to purchase individual disability coverage or if you have medical history that would lead to an undesirable contract. Consult your GME or human resources department for information.
- If you have adverse medical history, it is critical that you do this before you finish your training!
- The EMRA Disability Program provides you with an independent analysis of the most competitive contracts in your state, recommends the most competitive plan, and does
“As you prepare to reconcile with Uncle Sam for 2010, you may find that last year’s moonlighting is causing issues with your tax liability.”

all the work for you! For more info, complete the EMRA questionnaire at www.integratedwealthcare.com/financialeducation **

New tax law
On Friday, December 17, 2010, an 11th hour tax bill was rushed through Congress to be signed into law. Some pertinent provisions that may impact you:

- The 15 and 25 percent tax brackets are extended for another two years.
- Capital gains tax rates are zero percent if you fall—or can fall—within the 15 percent bracket.
- In 2011, the Social Security tax will be reduced by 2 percent so that your payroll tax will only be 4.2 percent (plus 1.45 percent to Medicare). In addition, the self-employment tax for moonlighting (1099 Income) is reduced to 10.2 percent from the current 12.2 percent.

For 2011 planning purposes, make note of the nominal extra income that you will have, as well as the extension of our current low income tax rates. Regardless of your PGY status going in to the new year, it will be an opportune time to pay taxes—meaning that the Roth IRA is an even better value than it has been!

Roth IRA
You have until April 15, 2011 to fully fund your Roth IRA for 2010. If you have not taken advantage of this and have the money to put towards retirement, this is a great opportunity. The contributions provide no current income tax benefit, but the growth over time is not taxable and the ultimate withdrawals are 100 percent income tax-free! This is a significant opportunity for every resident and fellow to pay taxes on future money in the lowest tax bracket that you will probably ever be in!

I wish you a great start to 2011. ■

M. Shayne Ruffing, CLU, ChFC, AEP® is the creator of the Confident Transition Plan™ for medical residents, the Physician Disability Income Analyzer™ and the Physician’s Financial Navigator™. Shayne is the Director of Physicians WealthCare with the North Carolina based firm, the Benefit Planning Group. He can be reached at 800.225.7174, via e-mail at shayne@mybpginc.com or on the web at www.IntegratedWealthCare.com.

Shayne is an Financial Advisor offering Securities and Advisory Services through NFP Securities, Inc., a Broker/Dealer, Member FINRA/ SIPC and Federally Registered Investment Advisor. The Benefit Planning Group is not an affiliate of NFP Securities, Inc.

Emergency Medicine Foundation Call for Proposals

EMF is pleased to announce a call for proposals due April 1, 2011

Ultrasound Grant proudly underwritten by Siemens
The goal of this $20,000, one-year grant is to gain a better understanding of the comparative effectiveness of emergency ultrasound as performed by emergency physicians.

EMF/EMPSF Patient Safety Grant
The goal of this $10,000, one year grant is to identify ways and means to improve patient safety in emergency medicine.

EMF/Baxter Grant on Rehydration
The goal of this $50,000, one year grant is to study subcutaneous rehydration for pediatric and/or adult patients in the emergency department.

EMF/ENA Foundation Team Grant
The goal of this $50,000, one year grant is to have physician and nurse researchers combine their expertise to develop, plan, and implement clinical research in emergency care.

All grants will be funded July 1, 2011–June 30, 2012
**Introduction**

We present a case of a snowboarder who sustained a splenic injury from a typical snowboarding fall. We review the pathophysiology, diagnosis, and management of splenic injuries.

**Case**

The patient is a 32-year-old male who presented with left-upper-quadrant abdominal pain following a snowboarding accident. He fell hard on his left flank after he caught “an edge.” He ambulated down the hill after the fall. He denied any head trauma or loss of consciousness. Initially, he had only some mild abdominal pain, but his pain increased over the ensuing hour after the accident. In the emergency department, he complained of severe left-upper-quadrant abdominal pain and left rib pain. Movement and deep inspiration worsened the pain. He denied shortness of breath, dizziness, vomiting, neck pain, or back pain.

His past medical history was unremarkable. He did not take any medications and denied use of tobacco, alcohol, and illicit drugs.

On examination, his vitals were as follows: blood pressure 124/65, pulse 80, respirations 24/minute, and oxygen saturation of 98 percent on room air. He appeared uncomfortable and exhibited significant discomfort with changing positions. His abdomen was soft, non-distended, and bowel sounds were absent. His abdomen was diffusely tender which was severe in the left upper quadrant. There was no guarding or rebound. The remainder of his physical examination was unremarkable.

A bedside FAST exam revealed fluid in Morrison’s pouch (Figure 1). Next, an abdominal CT was completed since the patient was hemodynamically stable. The study showed splenic rupture with active contrast extravasation and hemoperitoneum (Figure 2).

**Figure 1. FAST exam showing fluid in Morrison’s pouch.**

**Figure 2. CT with contrast of the abdomen shows active extravasation of contrast in the spleen and the base of the liver surrounded by blood.**

**Splenic injury**

The spleen is the most commonly injured organ in blunt abdominal trauma. Even though the ribs provide some protection, splenic injuries still occur due to rapid deceleration forces as seen from motor vehicle accidents, direct blows, falls, and sporting injuries. The medical literature is replete with reports of splenic injuries from snowboarding. Interestingly, snowboarders are six times more likely to sustain a splenic injury than skiers.

Some illnesses—such as infectious mononucleosis, malaria, and other hematologic abnormalities—lead to splenic enlargement and thinning of the capsule, making the spleen more susceptible to injury. A highly vascular organ, the spleen filters an estimated ten to fifteen percent of a person’s blood volume every minute, and trauma to the spleen can lead to significant blood loss and hemorrhagic shock.

**Clinical presentation**

Patients with splenic injury typically present with left upper quadrant abdominal pain and tenderness. Left shoulder pain may occurs as a result of subdiaphragmatic nerve root irritation (Kehr’s sign). As intraperitoneal blood accumulates, diffuse abdominal pain, peritoneal irritation, and rebound tenderness can occur.

When blood loss exceeds 15 percent of blood volume, early signs of shock may develop—evidenced by tachycardia, tachypnea, decreased pulse pressure, and decreased capillary refill. Ongoing blood loss from the injured spleen eventually results in hypotension, decompensated shock, and death.
**Diagnosis of splenic injury**
The Focused Assessment by Sonography in Trauma (FAST) exam is a quick bedside ultrasound examination to determine the presence of intra-abdominal fluid. Historically, diagnostic peritoneal lavage (DPL) has been used to identify intraabdominal hemorrhage. However, this method is being supplanted by the equally sensitive, noninvasive, and less time-consuming FAST exam.

Unstable patients with suspected splenic injury and a positive FAST exam should be taken to emergently to the operating room for exploratory laparotomy. More definitive testing with computed tomography (CT) is reserved for patients with stable vitals and evidence of intraabdominal hemorrhage on FAST exam. CT has the ability to identify and characterize any intraabdominal injuries. Table 1 shows CT-based grading of splenic injuries.

**Management of splenic injury**
Two basic management strategies exist for splenic injuries: operative or nonoperative. However, a somewhat controversial third category exists when active contrast extravasation is present on CT.

In the past, nearly all splenic injuries were treated operatively; however, this management has evolved over the past few decades. Today, greater than 70 percent of stable patients with isolated splenic injuries are managed nonoperatively. This strategy involves admission to the ICU, serial hematocrits, and frequent abdominal examinations. Patients who remain stable for 48 to 72 hours can be transferred to a lower level of care. Repeat CT evaluation is indicated for increased symptoms, hemodynamic instability, or downtrending hematocrits.

Clearly, operative management requires a surgeon’s involvement. Indications for surgery include: hemodynamic instability, ongoing blood loss, requirement of more than two units of blood, increased bleeding risk, and advanced age.

Controversy exists regarding the management of stable patients with contrast extravasation on CT. Contrast extravasation, a “blush” during the arterial phase of IV contrast administration on abdominal CT, indicates ongoing bleeding. Some experts argue for angiographic embolization, others for mandatory splenectomy, and others for conservative management in hemodynamically stable patients.

**Complications**
Short-term complications of splenectomy include inadequate hemostasis, coagulopathy, pancreatitis, intra-abdominal abscess, and infection. Postsplenectomy sepsis syndrome (PSS) is a long-term complication which occurs when splenectomized individuals cannot mount an adequate response to infection. PSS is estimated to occur in 0.6 percent of children and 0.3 percent of adults. The mortality rate is high, estimated at 50 to 80 percent. As a result, all postsplenectomy patients must receive polyvalent pneumococcal vaccine prior to discharge. They require close follow-up and should be counseled about their elevated risk of serious infection. Even minor infections may require antibiotic treatment.

**Conclusion of case**
Despite fluid resuscitation, our patient began to exhibit some hemodynamic instability. General surgery was consulted and took the patient emergently to the operating room for splenectomy. He had an uneventful recovery and was discharged home.

**References**

**Table 1. Spleen Injury Scale developed by Organ Injury Scaling Committee of the American Association for the Surgery of Trauma.**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description of Injury</th>
</tr>
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<tbody>
<tr>
<td>I</td>
<td>Subcapsular hematoma of &lt; 10% of surface area</td>
</tr>
<tr>
<td>II</td>
<td>Subcapsular hematoma of 10-50% of surface area</td>
</tr>
<tr>
<td>III</td>
<td>Subcapsular hematoma of &gt; 50% of surface area or expanding subcapsular or parenchymal hematoma</td>
</tr>
<tr>
<td>IV</td>
<td>Laceration involving segmental or hilar vessels with devascularization of &gt; 25% of spleen</td>
</tr>
<tr>
<td>V</td>
<td>Shattered spleen or hilar vascular injury</td>
</tr>
</tbody>
</table>

“The Focused Assessment by Sonography in Trauma (FAST) exam is a quick bedside ultrasound examination to determine the presence of intra-abdominal fluid.”
Risk management pitfalls to avoid in the treatment of influenza in the pediatric emergency department

From the November 2010 issue of Pediatric Emergency Medicine Practice. Reprinted with permission. To access your EMRA member benefit of free online access to all EM Practice, Pediatric EM Practice, and EM Practice Guidelines Update issues, go to www.ebmedicine.net/emra, call 1-800-249-5770, or email ebm@ebmedicine.net.

1. “There is a clear source of infection. This infant’s fever is due to a cold.” Most children presenting with an ILI will have a viral illness. Yet, the emergency clinician must stay vigilant in order to identify other potential sources of infection such as bacterial pathogens that may cause serious illness. Meningitis, sepsis, UTI, and bacterial pneumonia are the most common SBIs. The emergency clinician must try to rule out these infections in children of all ages, while recognizing that patients under 3 months of age are at highest risk.

2. “This child presented with nausea and vomiting, so she is unlikely to have influenza.” The presenting signs and symptoms of influenza infection in children are nonspecific and can include gastrointestinal tract symptoms such as nausea and vomiting. Although fever is a symptom in almost all children with seasonal influenza infection, cough and rhinitis may be presenting symptoms in only 80 percent. The presenting symptoms and the height of fever may also vary by age. In younger children, a cough is a frequent presenting sign, whereas in adolescents, headache and muscle pain are common.

3. “The only way to differentiate those patients with influenza from those with another viral/bacterial illness is with a rapid influenza test.” No rapid tests can replace the clinical judgment of an experienced clinician. Despite improvements in their availability and their quick turnaround time, these tests can result in false-positive or false-negative results in the emergency department.

4. “In my emergency department, rapid influenza testing is done in triage. By the time I see the patients, if the results are negative, I can send them home.” The quality of the assay used and the skill of the provider performing the test are factors that should be considered in the interpretation of rapid test results. Rapid diagnostic tests can help guide emergency clinicians in their immediate management decisions, especially in sick children who are likely to be admitted to the hospital, but viral culture and RT-PCR are still the criterion standard tests.

5. “There is no point in spending time and money on a radiograph. If there is pneumonia, it will likely be from a viral illness.” Common influenza-related complications include otitis media, bronchiolitis, and bacterial pneumonia. Early treatment that addresses these complications is important in order to avoid further complications. A diagnosis of influenza as the primary illness does not necessarily rule out the need for imaging of the chest or possible antibacterial treatment for children of all ages.

6. “I learned my lesson from the swine flu; now every child with an ILI receives antiviral medications on my shift.” Every year, different strains of influenza appear and affect communities at slightly different times during the influenza season. Chemoprophylaxis as well as treatment of influenza in the emergency department should follow the guidelines for antiviral therapy published annually by the CDC. Treatment recommended during the novel influenza A (H1N1) pandemic may no longer be applicable in the coming year.

7. “I understand that we can now treat young children, even those under one year of age, with antiviral medications.” Use of antiviral medications is currently not indicated for children under one year of age because of potential adverse events and the lack of research on safety in this age group. During the influenza A (H1N1) pandemic, emergency use was temporarily authorized for children under one year of age, but the approval has since expired.

8. “Influenza vaccines are very safe; everyone should have them.” Vaccination is the best method for preventing influenza. Vaccines change every year, according to international surveillance and estimations of the types and strains of viruses that are expected to circulate in a given year. Emergency clinicians should advocate for vaccinations but must be aware of the current recommendations and contraindications for their use.
Risk department infections in the era of community-acquired MSRA

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1. “I incised and drained the abscess; it should have done well.” Avoid making assumptions and provide all patients treated in the emergency department with follow-up. In the majority of patients with an abscess, incision and drainage without the addition of antibiotics is sufficient; however, exceptions do occur, and follow-up is key to early recognition. Of particular note, patients with comorbidities such as diabetes mellitus are at increased risk for complications, and clear instructions on when to follow up should be a critical component of their care.

2. “I incised and drained the abscess. That should have been sufficient.” It is sufficient only if it is done correctly. Inadequate incision and drainage is the most common cause of treatment failure. All abscesses require careful exploration for loculations, which must be treated so the infection can drain properly. Failure to open loculations places the patient at risk for progression of the infection.

3. “I thought it was just a cellulitis.” Deep abscesses can be difficult to identify. The advent of bedside ultrasound in the emergency department has provided a new tool for avoiding misdiagnosis. Ultrasound should be used liberally in patients with cellulitis since the infection will not be treated unless the abscesses are drained.

4. “The patient had a cellulitis, and since I was concerned about MRSA, I treated it with TMP-SMX.” MRSA is a concern in patients with a cellulitis complicating an abscess; however, in an uncomplicated cellulitis, S pyogenes is still the most common organism and it is not treated with TMP-SMX. In this patient, a first-generation cephalosporin would have been a better choice.

5. “I didn’t cover for MRSA because the patient didn’t have any high-risk factors.” TCA-MRSA is the most frequently isolated pathogen from SSTI in the emergency department. Two studies have demonstrated that risk factors and clinical judgment are unreliable at distinguishing between MSSA and CA-MRSA.

6. “The patient was just released from the hospital so I suspected MRSA and treated with TMP-SMX.” HA-MRSA is very different from CA-MRSA; it has a multi-resistant pattern and requires aggressive coverage with vancomycin or linezolid.

7. “The patient had a lesion on his ankle; we were so busy and the emergency department was so crowded, I didn’t undress him.” Too bad for the patient – the cellulitis extended up the leg and was associated with crepitus, hemorrhage, and blistering. The patient was sent home on oral antibiotics and returned within 12 hours, septic.

8. “I never send cultures on the abscesses I drain. It’s too expensive.” A complicated abscess requiring hospitalization should be cultured, because the results may ultimately alter the patient’s management, but sending cultures routinely for all simple abscesses is controversial.

9. “I thought it was just a bad case of community-acquired pneumonia.” Turns out, it was a really bad case and the patient died. CA-MRSA CAP has a high mortality and should be considered in any patient presenting during an influenza outbreak or with a preceding flulike illness and rapid progression to severe illness.

10. “The patient was allergic to TMP-SMX and the cultures showed MRSA sensitive to rifampin, so it seemed like a good choice.” Seeming like a good choice and being a good choice are two different things! Although CAMRSA often demonstrates susceptibility to rifampin in vitro, resistance develops rapidly during treatment, so it should never be used alone.
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John D. Anderson, MD and Todd Guit, MD with contributions from the EMRA Medical Student Council (Tom Becker; Alexo Benzer, Jordan Crecente; Sarah Dubbin; Brian Geary; Kevin Jones; MD; and Shari Polynski). Additional contributions from Chris Scott, MD

A great reminder of commonly-used prediction rules for the ED. Perfect for medical students and interns and an indispensable prompt for these guidelines until they become like second nature: Level of evidence rating; Ottawa Ankle/ Foot/Knee; Nexus Criteria/c-spine; Canadian c-spine; Center Criteria for Acute Pharyngitis; Canadian CT Head; Wells Criteria/Pulmonary Embolism; Wells Criteria/IVFPE Rule-out criteria, and PORT Score/Pneumonia.

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Arizona, Cottonwood and Sedona: EMP is pleased to announce our expansion in Arizona and our affiliation with Verde Valley Medical Center in Cottonwood and Sedona. These state-of-the-art facilities see approximately 26,000 and 7,000 emergency patients respectively per year. Situated in a beautiful, scenic area in North Central Arizona, Cottonwood combines the charm and friendliness of a small community with easy access to the metropolitan areas of Phoenix and Las Vegas and the charming college town of Flagstaff. Sedona is a beautiful tourist community located in Arizona’s “Red Rock Country,” this outdoor paradise is surrounded by mountains, forests, creeks and rivers. Full-time/partnership opportunities are available for Emergency Medicine residency trained and Board Certified Physicians. EMP offers democratic governance, open books and bonus plus shareholder status after one year. Compensation package includes comprehensive benefits with funded pension (up to $28,175 yr.), CME account ($8,000/yr.), and more. Contact Bernhard Beltran directly at 800-359-9117 or bbetrnan@emp.com.

California, Sacramento: Mercy General Hospital is a 300-bed urban community hospital that has one of the busiest, most highly-regarded tertiary cardiovascular referral centers for Northern CA and the west coast. 36,000 emergency patients are treated annually, and are supported by a full specialty medical staff of over 900. State-of-the-art imaging includes 64-bit spiral CTs/MRI/color Doppler plus bedside ultrasound in the ED. The location provides for easy commutes from the area’s most desirable communities and recreation options. Contact Bernhard Beltran at 800-359-9117 or bbetrnan@emp.com.

California, San Andreas: Mark Twain Hospital serves Calaveras and Alpine counties in the Sierra foothills between Yosemite and Lake Tahoe. Made famous by Mark Twain, Calaveras County is 133 miles east of San Francisco in the Gold Country. The annual volume of 10,000 has a high acuity level and admission rate. This is a modern hospital with an excellent nursing staff and specialty back-up. The hospital recently received a JCAHO rating in the top 3% of all hospitals in the country. 12- or 24-hour shifts and a manageable workload provide for a high quality of life and plenty of free time. Contact Bernhard Beltran at 800-359-9117 or bbetrnan@emp.com.

California, Southern, Emergency Medicine: Outstanding opportunity for Emergency Medicine in Southern California. Partnership opportunity in growing area and dynamic medical community. Emergency Physicians Medical Group is seeking Physicians to join our group at Community Hospital of San Bernardino. The current ED sees approximately 44,000 pts/yr. Emergency Medicine Physicians (EMP) has been providing outstanding partnership opportunities since 1973. EMP offers democratic governance, open books, and excellent compensation/bonus plus shareholder status after one year. Compensation package includes comprehensive benefits with funded pension (up to $28,175 yr.), CME account ($8,000/yr.), family medical/dental/ prescription/vision coverage, short and long term disability, life insurance, malpractice and more. Contact Bernhard Beltran directly at 800-359-9117 or bbetrnan@emp.com.

Connecticut, Meriden: EMP is pleased to announce our newest site – MidState Medical Center. Built in 1998, this modern community hospital has a brand new ED and sees 55,000 emergency patients annually. Proximate to Hartford, New Haven and coastal residential options, MidState is also just 2 hours from New York City and Boston. EMP is an exclusively physician owned/managed group with open books, equal voting, equal profit sharing, equity ownership, funded pension, 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.

Connecticut, New London: Lawrence & Memorial is on the coast near Mystic and sees 40,000 pts./yr. and an affiliated freestanding ED seeing another 30,000 pts./yr. Level II Trauma Center has supportive medical staff/back up. EMP is an exclusively physician owned/managed group with open books, equal voting, equal profit sharing, equity ownership, funded pension, 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.

Indiana, East Chicago: NEW CONTRACT! EPMG is seeking BC/BP EM physician at St. Catherine Hospital – located 30 miles from Chicago! EPMG offers paid family health, prescription, vision, dental, life, LTD, flexible scheduling, 401(k) employer contribution, paid malpractice, and much more. Contact Ann Benson (careers@emp.com). EPMG manages 4 community teaching hospitals seeing 30,000 – 50,000+ pts./yr. with Level I and Level II trauma center designation and EM residency teaching options. EPMG offers paid family health, prescription, vision, dental, life, LTD, flexible scheduling, 401(k) employer contribution, paid malpractice, and much more. Contact Ann Benson (careers@emp.com).

Indiana, Michigan City: EPMG is seeking BC/BP EM physicians at Saint Anthony Memorial Hospital. EPMG offers paid family health, prescription, vision, dental, life, LTD, flexible scheduling, 401(k) employer contribution, paid malpractice, and much more. Contact Ann Benson (careers@emp.com). EPMG manages 4 community teaching hospitals seeing 30,000 – 50,000+ pts./yr. with Level I and Level II trauma center designation and EM residency teaching options. EPMG offers paid family health, prescription, vision, dental, life, LTD, flexible scheduling, 401(k) employer contribution, paid malpractice, and much more. Contact Ann Benson (careers@emp.com).

Illinois, Chicago area and Kankakee: EMP manages EDs at 4 community teaching hospitals seeing 30,000 – 50,000+ pts./yr. with Level I and Level II trauma center designation and EM residency teaching options. We are an exclusively physician owned/managed group with open books, equal voting, equal profit sharing, equity ownership, funded pension, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians.

EMP is pleased to announce our expansion in Arizona and our affiliation with Verde Valley Medical Center in Cottonwood and Sedona. These state-of-the-art facilities see approximately 26,000 and 7,000 emergency patients respectively per year. Situated in a beautiful, scenic area in North Central Arizona, Cottonwood combines the charm and friendliness of a small community with easy access to the metropolitan areas of Phoenix and Las Vegas and the charming college town of Flagstaff. Sedona is a beautiful tourist community located in Arizona’s “Red Rock Country,” this outdoor paradise is surrounded by mountains, forests, creeks and rivers. Full-time/partnership opportunities are available for Emergency Medicine residency trained and Board Certified Physicians. EMP offers democratic governance, open books and bonus plus shareholder status after one year. Compensation package includes comprehensive benefits with funded pension (up to $28,175 yr.), CME account ($8,000/yr.), and more. Contact Bernhard Beltran directly at 800-359-9117 or bbetrnan@emp.com.

EMP is proud to announce our expansion in Arizona and our affiliation with Casa Grande Regional Medical Center. The hospital has an annual volume of 40K emergency patients and offers excellent services and back up including 24 hour hospitalists. A multi-million dollar ED expansion is planned to increase the department to 32 beds. Casa Grande is located just south of Phoenix and north of Tucson. Beautiful weather year round, unlimited outdoor activities and major metro areas a short distance away make this an ideal setting. Excellent compensation and benefits are available. For more information please contact Bernhard Beltran directly at 800-359-9117 or bbetrnan@emp.com.

EMP is pleased to announce our expansion in Arizona and our affiliation with Verde Valley Medical Center in Cottonwood and Sedona. These state-of-the-art facilities see approximately 26,000 and 7,000 emergency patients respectively per year. Situated in a beautiful, scenic area in North Central Arizona, Cottonwood combines the charm and friendliness of a small community with easy access to the metropolitan areas of Phoenix and Las Vegas and the charming college town of Flagstaff. Sedona is a beautiful tourist community located in Arizona’s “Red Rock Country,” this outdoor paradise is surrounded by mountains, forests, creeks and rivers. Full-time/partnership opportunities are available for Emergency Medicine residency trained and Board Certified Physicians. EMP offers democratic governance, open books and bonus plus shareholder status after one year. Compensation package includes comprehensive benefits with funded pension (up to $28,175 yr.), CME account ($8,000/yr.), and more. Contact Bernhard Beltran directly at 800-359-9117 or bbetrnan@emp.com.
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CA. Lompoc/Santa Barbara County. Employee. FT/PT. Physician. 8-bed ED w/ Walk-in Track. 18,500 visits/yr. 12-hr shifts. BC/EMP. Call Jackie Foster at (805) 563-3033.
CA. Santa Ynez/Santa Barbara County. Santa Barbara Cottage Health System. Employee. FT/PT. Physician. 4-bed ED. 6,000 visits/yr. 12-hr shifts. BC/EMP. Call Jackie Foster at (805) 563-3033.
FL. Brandon/Tampa Bay. Employee. Physician. Level I. 45-bed ED/6-bed Fast Track. 85,000 visits/yr. Weekdays, weekends, 9-10, 11-hr shifts. AHEM/ABEM. Call Carrie Aubry at (727) 507-3656.
FL. Hudson. Employee. Physician. Level II. 22-bed ED. 34,000 visits/yr. 12-hr shifts. AHEM/ABEM. Call Kristie Gardner at (727) 507-2509.
FL. Orlando/Kissimmee. Independent Contractor. Physician. Level II. 16-bed ED/6-bed Fast Track. 60,000 visits/yr. 12-hr shifts. BC/EMP. Call Sabrina Kanic at (727) 507-2509.
FL. Sarasota. Employee. Physician. Level III. 11-bed ED. 19,000 visits/yr. 8-hr shifts. AHEM/ABEM. Call Kristie Gardner at (727) 507-2509.
FL. Tampa Bay area. Independent Contractor. Physician. Level IV. 12-bed ED/3-day Fast Track. 35,000 visits/yr. 12-hr shifts. BC/EMP w/ED exp. Call Frances Miller at (727) 507-2509.
GA. Thomson. McDuffie Regional Medical Center. Independent Contractor. Physician. 13,000 visits/yr. 12-hr shifts. BC/EMP w/ ED exp. Call Angie Austin at (850) 437-7720.
FL. Ocala. Employee. Physician. Level II. 47-bed ED. 56,000 visits/yr. 9-, 10-, 11-hr shifts. AHEM/ABEM. Call Esther Aguilar at (727) 507-3656.
GA. Bremen. Higgins General Hospital. Independent Contractor. Physician. FT/PT. MLP backup on each shift. 18,000 visits/yr. 12-hr shifts. BC/EMP w/ED exp. Call Angie Austin at (850) 437-7720.
OH. Cleveland Area. Lake Health. Independent Contractor. Multiple Opportunities. 23-bed ED w/ ThruCare. 36,000 visits/yr. 12-hr shifts. AHEM/ABEM. Call Craig Bieder at (216) 442-5165.
PA. Carlisle/Carlisle PA. Employee. Physician. 25-bed ED. 33,000 visits/yr. 4-, 8-, 9-, 12-hr shifts. BC/EMP. Call Melissa Sanko at (215) 442-5052.
TX. San Antonio/Westover Hills. Christus Santa Rosa Healthcare System. Medical Director & Physician. Level IV. 16-bed ED/6-bed Fast Track. 33,000 visits/yr. 36 hrs of phys cov daily w/20 hrs of MLP cov. BC/EMP. Call Ron Jackson at (214) 712-2416.
WA. Sunnyside. Independent Contractor. Physician. 8-bed ED. 25,000 visits/yr. 12-hr shifts. BC/EMP. Call John Torres at (805) 563-3025.
NJ. Paramus. Bergen Regional Medical Center. Independent Contractor. Physician. Level II. 8-bed ED. 13,000 visits/yr. 8-hr shifts. BC/EMP or EM. Call Adam Schwierget at (850) 444-2525.
NV. Las Vegas. Employee. FT/PT. Physician. 8-bed ED w/Fast Track. 12,000 visits/yr. 9-hr shifts. BC/EMP PED. Call Jamie Weaver at (805) 563-3004.
NV. Mesquite. Independent Contractor. FT/PT. Physician. 9-bed ED. 5,700 visits/yr. 12-hr shifts. BC/EMP or PEDS. Call Jamie Weaver at (805) 563-3004.
NV. Pahrump. Independent Contractor. FT/PT. Physician. 11-bed ED. 12,000 visits/yr. 12-hr shifts. BC/EMP w/ED exp. Call Jamie Weaver at (805) 563-3004.
PA. Lancaster. Employee. Medical Director. 16-bed ED. 12,000 visits/yr. 12-hr shifts. BC/EMP. Call Craig Bieder at (215) 442-5165.
PA. Muncy. Employee. Physician. 5-bed ED. 14,000 visits/yr. 12-hr shifts. BC/EMP. Call Craig Bieder at (215) 442-5165.
TX. San Antonio. Independent Contractor. Medical Director & Physician. Level III. 40,000 visits/yr. 36 hrs of phys cov daily w/24 hrs of MLP cov. BC/EMP. Call Ron Jackson at (214) 712-2416.

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EMS & DISASTER FELLOWSHIP
Fellows will develop leadership skills in field operations, communications, training, research and administration in a variety of settings. The Fellow will be prepared to lead their institutions and/or EMS services in all EMS activity and disaster planning.

EM ULTRASOUND FELLOWSHIP
Fellows will learn to perform and apply bedside ultrasonography, for basic and advanced applications in the Emergency Department allowing for skill development of both performing and accurately interpreting bedside ultrasonography in a busy urban Emergency Department setting.

Additional Information
- 4 weeks paid vacation
- On-site parking
- Child care services
- Paid tuition to ACEP
- PGY-5 pay scale
- Health Benefits

Affiliation: Administrative Fellows will complete a significant number of credits toward a MPH, MBA with Montclair State University

For more information or an application, please contact Sharon Eitel, Emergency Services Administrative Assistant, 973.754.2240.

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Additional Information
- 4 weeks paid vacation
- On-site parking
- Child care services
- Paid tuition to ACEP
- PGY-5 pay scale
- Health Benefits

Affiliation: Administrative Fellows will complete a significant number of credits toward a MPH, MBA with Montclair State University

For more information or an application, please contact Sharon Eitel, Emergency Services Administrative Assistant, 973.754.2240.

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EMS Fellowship Program
The Fellowship is designed to give graduates of ACGME recognized residencies in Emergency Medicine a broad introduction to all aspects of EMS and EMS Medical Direction including ground EMS (both fire-based and private), air medical transport, tactical medicine and disaster medicine. Depending on specific interests and long-term goals fellows may focus on any one of these areas. Curriculum includes orientation, didactics, research, Assistant Medical Directorships with excellent mentoring, electives, limited ED shifts and an active EMS Physician Field Response Program.

Darren Braude, MD, EMT-P
EMS Fellowship Director
DBraude@salud.unm.edu

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This is one a year-long educational experience in various wilderness and austere conditions, and if the fellow chooses, overseas work. This program gives the Fellow experience in pre-hospital, disaster, tactical, wilderness/urban search and rescue, leadership, and emergency medical educational situations. Fellows will be exposed to harsh environments with limited or unfamiliar resources. The fellow will have access to our university’s experts in wilderness, austere, disaster and international EM benefiting from long-standing relationships with other countries and programs that have been cultivated by UNM.

Darryl Macias, MD
Wilderness, Austere & Intl. EM. Fellowship Director
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- Suspected cholinesterase inhibitor poisoning among children
- A mystery illness characterized by severe hepatic dysfunction
- Mass poisoning from diethylene glycol contaminated cough syrup
- Potential occupational exposures to manganese
- Aflatoxicosis from contaminated maize
- And others....

This two-year program offers you affiliations with the Emory University School of Medicine, CDC, the Agency for Toxic Substances and Disease Registry (ATSDR), and the Georgia Poison Center. The Georgia Poison Center is among the 50 Poison Centers nationwide serving the Atlanta metropolitan area.

These outbreaks and investigations have included:

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- Suspected cholinesterase inhibitor poisoning among children
- A mystery illness characterized by severe hepatic dysfunction
- Mass poisoning from diethylene glycol contaminated cough syrup
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Michigan, Battle Creek: BC Emergency Medicine physician sought for democratic group in 50,000 volume ED. Excellent package offers shareholder status at one year with no buy-in! Benefits include pension, family medical plan, CME, incentive income, malpractice, more. Stable group with outstanding physician retention record. Contact Kim Rooney, Premier Health Care Services, (800)726-3627, ext. 3674, krooney@phcsday.com, fax (973)312-3675.

Michigan, Grand Blanc: Full Time/Part Time EM or EM/MM BC/CP physician for 60,000 volume ED and Obs. Unit. Genesys Regional Medical Center is a beautiful, 400 bed, state-of-the-art hospital built in 1997 with a 27-position EM Residency and most specialty residencies. Our EM physician corporation offers employee status with full benefits, including CME allowance, dues coverage, first year Profit Sharing, malpractice coverage, and very competitive hourly compensation. Applicants please call or send CV to: Michael J. Jule, DO, FACEP, Director Emergency Services, One Genesys Parkway, Grand Blanc, Michigan 48439-1477, or email to mjule@genesys.org, or call (810) 606-5951.

Nebraska, Omaha: BC/CP EM physician sought for stable group at suburban ED. Excellent package with shareholder opportunity at one year plus family medical plan, employer-funded pension, malpractice, expense account and more. As Nebraska’s largest city, Omaha provides both metropolitan amenities and friendly, Midwestern charm. Contact Kim Rooney, Premier Health Care Services, (800)726-3627, ext. 3674; e-mail krooney@phcsday.com; fax (973)312-3675.

New Hampshire, Manchester: Democratically governed emergency medicine group serving population of 37,000 visits yearly seeks BC/CP physician. We are located near the ocean, Boston and the White Mountains. New members share same night/weekend/holiday mix as other group members and are eligible for shareholder status in one year. Email response to KZaffino@CMC-NH.org or mail to Kathleen Zaffino MD 100 McGregor St. Manchester, NH 03102.

New Hampshire, Portsmouth: Portsmouth Emergency Physicians PC in Portsmouth NH is looking for a full-time BC/CP physician for 2011. PBP physicians that have interest in working in a Level II hospital [Level I] receives transfers-in for cardiac and neurosurgery and is strong in virtually all call categories. The ED volume is 28,000 with ca. 20% admission rate, and we have double and triple coverage. This fee-for-service group has an excellent compensation package including health and liability insurance plus retirement, etc. On the coast of NH, Portsmouth is a very desirable community to live in, has a long maritime history and is approx 1 hour from the mountains and Boston. Contact Dr. Don Albertson by email at donalbertson@comcast.net.

New York, Brooklyn: Maimonides Medical Center, Department of Emergency Medicine is seeking full-time teaching staff, ABEM/AABOM prepared or certified. Maimonides, a nationally recognized teaching hospital and research center, 705 bed tertiary medical center with an annual Emergency Center census of 110,000. Our Emergency Medicine residency program, Podiatric Emergency Medicine fellowship, Emergency Ultrasound fellowship, Clinical Operations research, Pre-hospital services and other activities diversify career development for academically-minded emergency physicians who enjoy living in or around New York City. Contact John Marshall MD, Chairman, Department of Emergency Medicine, Maimonides Medical Center, 4802 Tenth Avenue, Brooklyn, NY 11219. Or phone (718) 283-6028; fax (718) 635-7274; E-mail jmarnar@maimonidesmed.org.

New York, Long Island - East Patchogue: Brookhaven Memorial Hospital Medical Center is a Level II Trauma Center serving 71,000 ED pts./yr. Quaint coastal community is host to this full-service facility. 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 6 community hospitals in Charlotte, Lincoln, Pineville and Statesville. A vast partnership opportunities are available in urban, suburban and smaller town settings with EDs seeing 20,000-70,000 pts./yr. EMP is an exclusively physician owned/managed group with open books, equal voting, 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, Kinston: Located in the center of eastern North Carolina, Kinston is less than 60 miles to the east are some of the most beautiful beaches of the Carolina coast and 35 miles from Greenville. 200-bed full-service community hospital treats 39,000 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, New Bern: Respected 313-bed regional medical center located at the intersection of the Trent and Neuse Rivers just off the central coast. 65,000 ED pts./yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

Ohio, Cambridge: Southeastern Ohio Regional Medical Center is a 177-bed, full-service facility and Level III Trauma Center treating 34,000 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.
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For additional information, contact Mark Douyard at 800-563-6384 x.258 or careers@medexcelusa.com

The Department of Emergency Medicine at The Ohio State University is seeking EM residency trained or Board certified candidates for a competitive two year Fellowship in Administration starting July 2011. Fellows will learn operational and financial skills necessary to lead any Emergency Department and develop key executive skills to become future leaders in the health care industry. Fellows also earn a fully funded MBA at the prestigious OSU Fisher College of Business. Contact: Mark Moseley, MD, MHA, Administrative Fellowship Program Director, at 614-293-8305 or via email at Mark.Moseley@osumc.edu. AAEOE. ■

Ohio, Toledo: Opportunity for solid EM physician within democratic group. This Level III facility has an annual volume of 42,660 visits with outstanding physician coverage plus PA coverage. Appealing package includes equity ownership eligibility, employer-funded pension, family medical plan, malpractice CME and more. Contact Amy Spegal, Premier Health Care Services, (800)726-3627, ext. 3682, e-mail aspegal@phcsday.com, fax: (937) 312-3683. ■

Ohio, Wadsworth and Barberton: SUMMA Health System-Barberton Hospital is a full-service community hospital in southern suburban Akron with 38,000 ED visits/yr. WRH Health System in Wadsworth sees 21,000 patients per year. Work at one site or combination of both. 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. ■

Oklahoma, Tulsa: Modern 800+ bed community hospital sees 75,000 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. ■


Pennsylvania, Greenville/Sharon: UPMC Horizon, with hospital sites in Greenville and Farrell, PA, serves the Mercer County region in northwestern PA and offers a wide range of services at both campuses. The Greenville Campus ED sees 17,000 patients.
annually with 24 hours of physician coverage (12 hour shifts) and 10 hours of mid-level provider coverage. The Shenango Valley Campus ED sees 15,000 patients annually with 12-hour physician shifts. The cost of living is low, the patient population is pleasant, outdoor activities are plentiful, and the amenities of Pittsburgh are easily accessible. We offer an excellent salary with full benefits including: paid malpractice insurance with tail, employer-funded retirement plan, paid health insurance, CME allowance, and much more. Board certification/prepared in EM is required. Call Dr. Robert Maha at 888-647-9077/Fax 4124327480 or e-mail mahar@upmc.edu. ■

Pennsylvania, Pittsburgh: Alle-Kiski Medical Center in Natrona Heights is currently building a brand new ED to see 34,000 emergency pts./yr. The Western Pennsylvania Hospital-Forbes Campus sees 40,000 EM pts./yr. in Monroeville. Both are proximate Pittsburgh’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. ■

Pennsylvania, Sharon: EMP is pleased to announce our new affiliation with Sharon Regional Health System. Extremely supportive administration/medical staff, new ED, and full service capabilities make this a great place to work. 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, Uniontown: Outstanding financial opportunity with Emergency Resource Management. Uniontown Hospital is a full service community hospital with a modern ED and excellent physician and mid-level provider coverage. The surrounding community offers a great lifestyle with plentiful outdoor activities, a low cost of living and the amenities of Pittsburgh are easily accessible. We offer an outstanding compensation/benefit package including: paid malpractice insurance with tail, employer-funded retirement plan, paid health insurance, CME allowance, and much more. Board certification/prepared in EM is required. Call Dr. Robert Maha at 888-647-9077/Fax 412-432-7480 or e-mail mahar@upmc.edu. ■

South Carolina, Waynesboro: NES HealthCare Group is seeking a full-time emergency medicine physician to staff newly renovated Emergency Department of Burke Medical Center. Candidates must be BC/BP EM and have current ACLS and PALS. Competitive compensation, physician education and incentive program offered. This 40-bed facility has an annual ED volume of 12,000, and has been caring for the citizens of Burke County since 1951. Burke Medical Center is located 40 minutes south of Augusta and just west of South Carolina. Waynesboro offers small town charm with the conveniences of a “big city.” Contact: Megan Evans, Physician Recruiter, 1-800-394-6376, mevans@neshold.com or fax CV to 631-265-8875. ■

West Virginia, Bluefield: EM physician opportunity with democratic group. This 36,000 volume ED is on the WV/VA border. Excellent coverage of 36 physician hours plus 20 PA/NP hours daily. Benefits include shareholder opportunity, family medical plan, malpractice, pension, incentive income. Scenic location with appealing sports/recreational opportunities. Contact Rachel Klockow, Premier Health Care Services, (800)406-8118, e-mail rklockow@phcsday.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 program. Enjoy teaching opportunities, full-specialty back up, active EMS, and two campuses seeing 26,000 and 22,000 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. ■

Wyoming, Cheyenne: Join a dynamic emergency physician team in beautiful, historic Cheyenne. Frontier Emergency Physicians (FEP) is seeking an energetic and enthusiastic team member, a physician who is board certified/board prepared in emergency medicine. He or she would fill a position at Cheyenne Regional Medical Center, which hosts a level II trauma center, operated by FEP, that sees about 35,500 patients a year. FEP offers a competitive salary, benefits, and partnership opportunities. Interested physicians should send a cover letter and a copy of their curriculum vitae by email to long@seriole.com or by mail to SERIO Physician Management, Attention: Teresa Long, 1241 W. Mineral Ave., Suite 100, Littleton, CO 80120. Or, call Dr. Mike Means at (303) 633-7550. ■

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Mercy is located in Des Moines, Iowa, which has been ranked as one of America’s top ten cities by *Forbes Magazine* and has been named one of “America’s Best Cities to Raise a Family” by *Kiplinger’s*. Mercy offers an excellent compensation package – including a competitive salary, pension plan, paid malpractice, a generous relocation allowance and a sign-on bonus.

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“If we had no winter, the spring would not be so pleasant: if we did not sometimes taste of adversity, prosperity would not be so welcome.”

—Anne Bradstreet

“There’s no place like home!”

One’s home is like a delicious piece of pie you order in a restaurant on a country road one cozy evening – the best piece of pie you have ever eaten in your life – and can never find again. After you leave home, you may find yourself feeling homesick, even if you have a new home that has nicer wallpaper and a more efficient dishwasher than the home in which you grew up.

—Lemony Snicket

Even if you’re a home-body, there is great potential for your away rotations in emergency medicine. Don’t let homesickness get in the way of making the most while you’re in your new environment. Read Kevin Hardiman’s article on pg 24 for some reasons why.

Money Saving Tips

Request a reduction in the interest rate on your credit cards. As with home equity loans, credit card companies sometimes are willing to reduce the interest rate. It can’t hurt to ask.

Get your books and DVDs from the library! Simply put, it’s hard to beat free.

Drive your car longer. The buy new versus used debate often overlooks the most important factor—how long you own your car. Drive it as long as you safely can for substantial savings.

Eat out one less day a week than you do now. A small change that keeps money in your pocket.

Use flexible spending accounts (FSAs). FSAs allow you to pay certain medical, dental and child care expenses using pre-tax dollars. You just have to make sure you follow up and turn in receipts!

See Shayne Ruffing’s Planning for 2011 on page 40 to invest some of the money you save!

How do you plan to get hired?

Even when long interviews and contract negotiations have you stressed to the max, don’t pull these actual, creepily creative stunts...

Applicant put up posters of himself in the company parking lot.
Applicant announced his candidacy with a singing telegram.
Applicant rented a billboard, which the hiring manager could see from his office, listing his qualifications.
Applicant delivered prepaid Chinese food, including a fortune cookie with his name and phone number.

Looking for a more realistic approach to Life After Residency?
Check out Todd Guth’s article on page 14.

http://www.rd.com/clean-jokes-and-laughs

FACT
After perusing Jordan Celeste’s Arm Yourself with the Facts article on page 12, find yourself craving some (potentially) useful factoids?

1. Beetles taste like apples, wasps like pine nuts, and worms like fried bacon.
2. What is called a “French kiss” in the English speaking world is known as an “English kiss” in France.
3. Human thigh bones are stronger than concrete.
4. There is a city called Rome on every continent.
5. Right handed people live, on average, nine years longer than left-handed people.
6. The first known transfusion of blood was performed as early as 1667, when Jean-Baptiste, transfused two pints of blood from a sheep to a young man.
7. Women blink nearly twice as much as men.
8. Honey is the only food that does not spoil.
9. Coca-Cola would be green if coloring weren’t added to it.
10. More people are allergic to cow’s milk than any other food.
11. The longest recorded flight of a chicken is 13 seconds.
12. Owls are the only birds that can see the color blue.
13. A man named Charles Osborne had the hiccups for 69 years!
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