Our primary goal is to listen—which is probably the most important skill we carry into residency and the one that requires the most practice.”

Over the counter and into the community: EMRA Local Action Grant at work

Jenn Hissett, MA, MSIV, University of Colorado School of Medicine, Denver, CO

Tucked away in the back room of a downtown community center, a discarded bread rack is stacked with a hodgepodge of baskets full of donated medical supplies. There is a bustle of activity as guests enter and medical students fill requests: fish oil and fiber, an ace bandage and some ibuprofen, a new pair of reading glasses, and a week’s worth of multivitamins. It’s another Thursday night at the Broadway Assistance Center, and like many people, I look forward to it all week.

Since 1975, the Broadway Assistance Center (BAC) has been providing a weekly hot meal and safe haven to anyone who needs it. The rest of the week, the BAC functions as a food and clothing bank, provides employment assistance and free haircuts, and helps the underserved of Denver make ends meet. Five years ago, Dr. Chris Colwell, an emergency physician at Denver Health, came to volunteer at the weekly soup kitchen with his family. Seeing the need for basic medical care was great, he and Dr. Leslie Armstrong (then a third year med student) purchased supplies, collected donations, and set up a makeshift clinic. Since then, the clinic has continued to evolve.

Last spring, the BAC received a $1,000 EMRA Local Action Grant that has helped us meet many of our needs. We have purchased blood pressure cuffs, a glucometer and test strips, an otoscope and ophthalmoscope, wound care supplies, and containers for dispensing medication. Now known as the BAC health resource center, it is organized and staffed by medical student volunteers who have dual interests in emergency medicine and serving the poor.

continued on page 24
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President’s message

Entering the greater landscape

We are now a couple of months into the new academic year, and for the interns, I am sure it has been a whirlwind beginning. July brings a host of new responsibilities with emergency room patients relying on your capable hands for their care. Apart from the challenges of practicing medicine, you must also discover how to navigate your hospital’s EMR, learn the names of all your nursing staff, and fulfill many other requirements of starting a new job.

For the senior residents, a new year brings added responsibility. You must polish your clinical skills as well as teach and supervise the medical students and junior residents on your service. With the many responsibilities of training, there is without a doubt little free time left on a resident’s schedule; however, I would encourage you to add one more activity to your list. Your tenure in residency is the ideal time to become involved in organized medicine.

Participation in organized medicine provides the forum for us to join our voices and advocate for our patients and our specialty. In state legislatures and in Washington, D.C., laws and regulations are being drafted that affect the way emergency care is provided. Now, more than ever, our voice is needed in these discussions.

Many organizations exist within the landscape of emergency medicine, each with their own focus and mission. At first, this can seem somewhat daunting with so many different names and acronyms to learn. It is also a concern of many that the number of organizations serves to fracture our specialty and weaken our voice. However, in a showing of unity, many of the emergency medicine organizations were able to partner this July in the creation of the Emergency Medicine Action Fund. This Action Fund serves as a catalyst for our specialty to pool our resources and campaign for federal regulatory change that will benefit emergency medicine.

Apart from the policy discussions in Washington, organized medicine also serves to influence many other aspects of our specialty. From collaborating on residency education, guiding research, and arranging continued education for practicing physicians, our national and local organizations help to ensure the continued advancement of our profession. Wherever your interests lie, opportunities are available. Become involved in EMRA by running for a seat on the board of directors or by serving on one of our committees. National organizations like ACEP and SAEM are looking for energetic residents to serve on a variety of committees and task forces. State and regional chapters also have openings designated for residents.

Take the time to look into these organizations and find the role that fits your interests. Your participation not only affords you with invaluable experience but will also provide many more opportunities in the years to come.

“In state legislatures and in Washington, D.C., laws and regulations are being drafted that affect the way emergency care is provided. Now, more than ever, our voice is needed in these discussions.”

Nathan Deal, MD
EMRA President
University of Chicago Medical Center
Chicago, IL
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On April 27, 2011, a record-setting 173 tornados ravaged the midwestern and southeastern U.S. In Alabama alone, 55 twisters caused the worst natural disaster in the state’s history, leaving 246 dead.

One of the hardest-hit cities was Tuscaloosa, Alabama. This EF-4 tornado was 1.5-miles wide and travelled over 80 miles, ending north of Birmingham.

Dr. Jeremy Pepper—a graduate of LSU Baton Rouge Emergency Medicine in 2006 and the interim medical director for Tuscaloosa’s Druid City Hospital (DCH) at the time—was there for it all. Having worked the night of April 26, he was present when the first two tornados hit early in the morning. He stayed late, assisting until noon to disposition this first wave of patients.

After several hours of sleep, his wife woke him to tell him another tornado was coming. He and his family went to their basement. Watching the tornado snap trees, Dr. Pepper’s heart sank when he realized where the tornado was going—through the center of Tuscaloosa.

Within minutes of the EF-4’s departure, Dr. Pepper was back at DCH. Although the hospital’s disaster plan was still in effect from earlier in the day, nothing could have prepared them for what came next.

His first three patients, all young children, were DOAs. He returned to triage to find masses of patients needing to be assessed. From 5:30 pm to 12:00 am, 642 patients were triaged.

“None of this could have been done without an extraordinary team effort,” Dr. Pepper reports. As you would expect, orthopedic and trauma surgeons were working side-by-side with the emergency physicians, but in this time of strained resources, over 75 physicians from the community came to help.

Radiologists were down in the emergency department, providing live readings of the imaging. Internists assessed non-traumatic complaints and provided rapid admissions. Retired physicians came in as well. All the medical students and family practice residents were there, either assisting their attendings or lending a hand around the emergency department. Dr. Pepper even recalled a cardiologist suture a large, but incidental, laceration on the back of a patient who presented with chest pain.

The emergency physicians primarily treated critical patients and worked
Doppler radar shows the rotation tracks of the April 27 tornados.

Scene of tornado damage in front of hospital. PHOTO COURTESY OF ANDREW LEE

with their most-experienced nurses to run triage from the ambulance bays, where for hours, patient delivery was incessant. The Tuscaloosa Emergency Management Agency building—which normally provides communication and direction for EMS—had been completely destroyed; nonetheless, EMS provided life-saving care and was crucial to helping bring the appropriate patients, sometimes three at a time, to DCH. State troopers, police, and private vehicles brought additional injured, even using doors as backboards.

After triage, the DCH staff faced the difficult problem of placing patients, as a 52-bed emergency department couldn’t come close to handling this type of volume. Dr. Pepper and his staff became rather creative in their efforts, utilizing all parts of the hospital. “Any place that had a bed, we used it. We had patients everywhere—in the cath lab, outpatient surgery, even in the cafeteria and auditorium.”

Keeping track of all these patients, particularly those with minor injuries, posed one of the largest obstacles. For example, a patient who had been sent off to X-ray may return to find their hallway bed taken. Other problems included losing power and water. Despite having a generator, electricity was still limited, so many electrical outlets, lights, and computers were not connected. Also, without water, instruments had to be shipped to a different part of town to be sterilized.

Despite the problems, Pepper described this scene as “controlled chaos.” All 642 patients were dispositioned by 8:00 a.m. Even more remarkably, none of the patients seen in the emergency department were charged. As Dr. Pepper explains, “Tuscaloosa has never seen anything like this. Our only concern was about helping these people—about us taking care of the community.”

**Image sources**
The Alexandria Plan’s 50th Anniversary
The first full-time emergency physicians

“What are we going to do about this stupid emergency room?”

This question was raised during a staff meeting at Alexandria Hospital in 1960. The hospital was having problems staffing their emergency room—a result of both inadequate supply as well as increased demand. In addition, the administration was receiving more and more complaints about the emergency room. Fortunately, a forward-thinking physician was able to come up with an innovative solution which came to be known as the Alexandria Plan. On June 24, 2011, a ceremony was held to commemorate the 50th anniversary of the idea that forever changed the face of American medicine.

Prior to 1960, the supply of physicians for the Alexandria Hospital emergency department had mainly been interns—who worked in the emergency department unsupervised. Their availability began to decrease as medical and surgical specialties came into vogue. The next logical step was to staff the emergency room with senior medical students. Not surprisingly, this led to some complaints. Further exacerbating the staffing situation was the fact that in 1958 the Education Council for Foreign Medical Graduates (ECFMG) exam was instituted, which made it harder for foreign physicians to get intern and resident positions.

Concurrently, emergency room demand was increasing. In 1961, the Alexandria Hospital was seeing 18,000 visits a year—a significant amount, considering the emergency room was made up of three rooms in the basement of the hospital, a space totaling 450 square feet. (And if you think that’s bad—radiology was on the fifth floor!)

As the population of Alexandria grew, people began using the emergency room with more frequency. New government workers and staff were moving into the area, and the practices of most general practitioners and internists were already saturated. Add onto that the small portion of the population at that time who did not have medical coverage, and the tiny emergency room was starting to become more and more crowded. Alexandria Hospital administrators also knew that in nearby Fairfax, Virginia a new hospital was under construction, readying to take their patients as well as their revenue.

In 1960, James Mills, Jr. became president-elect of the Alexandria Hospital Medical Staff and formed a committee to address the problem in the emergency room. Mills had grown weary as a busy general practitioner, and he liked working in the emergency room. He thought that if he could recruit three others to join him, “we could provide top-notch treatment...
at all hours, and each of us would have reasonable free time to keep up with medical advances and spend time with our families.”

The three others who joined him were John McDade, William J. (Jack) Weaver, Jr., and C.A. (Babe) Loughridge. Together, they developed sixteen rules for the emergency room; and their plan was approved in June 1961. Next, they signed a formal contract(s) with the hospital, in which they interestingly decided to use the term “emergency department.”

Notoriety soon followed, and other physicians began to make the trip to see what had been done in Virginia.

On June 24, 2011, leaders in emergency medicine, current and former hospital staff, EMTs, hospital administrators, community members, and local politicians all gathered in the auditorium of the new Inova Alexandria Hospital to commemorate the 50th anniversary of the Alexandria Plan. The CEO of Inova Alexandria Hospital, Christine Candio, RN, FACHE as well as the President of the Inova Health System, Mark Stauder, both spoke. Multiple certificates were awarded to the hospital—a Congressional Resolution from Congressman James Moran, a Commending Joint Resolution presented by members of the Virginia General Assembly, and Commendations from the City of Alexandria presented by William Euille, the Mayor of Alexandria.

The history of the Alexandria Plan was reviewed by Brian Zink, MD, author of Anyone, Anything, Anytime: A History of Emergency Medicine. This was followed by an entertaining video featuring Jane Pinson, RN, a former nurse at Alexandria Hospital, and Vince Whitmore, a former EMT for the City of Alexandria. Leaders in emergency medicine—representing ACEP, EMRA, SAEM, CORD, AACEEM, and ABEM—emphasized in their remarks the importance of the Alexandria Plan for modern emergency medicine. The ceremony was honored by the attendance of Babe Loughridge, MD—one of the original Alexandria Four—who was seated in the front of the auditorium, smiling during the entire ceremony.

These pioneering physicians were not afraid to distinguish themselves from the establishment. In doing so, they turned an area of the hospital that used to be avoided into a fully functional emergency department. This single idea changed the landscape of medicine.

Today, emergency medicine has become one of the most popular and most competitive residency choices. Those who start their training today might even take for granted the facilities and infrastructure that greets them when they enter residency—assuming that it has always been so. It is therefore important to remember and commemorate the Alexandria Plan, which allows us to take the time to recognize the physicians, nurses, EMT’s, staff, administrators, and community leaders who made it a reality.

The historical information in this article was obtained from Anyone, Anything, Anytime: A History of Emergency Medicine by Brian Zink, MD. EMRA would like to thank the coordinators of the event for the invitation to attend and to speak at the ceremony.
Updates from the advocacy front

The EMRA health policy committee has been especially busy over the past few months! Here are a few of this year’s highlights:


A completely updated version of the Advocacy Handbook has been released!

The 2011 edition provides updates to every chapter, taking into consideration the impact of the Affordable Care Act. In addition, new content was added on a variety of current issues, including new methods of payment, new delivery organizations (such as Accountable Care Organizations), balanced billing and regionalization. Earlier this summer, each resident EMRA member received a copy in their mailbox. We hope you will use your copy as a resource to learn more about the many crucial advocacy issues that we face as a specialty.

ACEP’s Leadership and Advocacy Conference

This May, 130 residents attended the annual ACEP Leadership and Advocacy Conference in Washington, D.C. Many were sponsored by their department chairs and program directors through EMRA’s “Chair’s Challenge.” At the conference, residents and other “first-timers” attended an EMRA-sponsored series of lectures and activities specifically tailored to young physicians. A particularly energized group of residents met for a Health Policy Committee meeting, planning projects for the next year.

Many outstanding speakers, including Dr. Steven Stack, FACEP — and now the Chair-Elect of the American Medical Association—delivered updates on the healthcare situation in Washington, D.C. Joe Heck, MD, FACEP (R-NV) provided an especially exciting insider’s perspective as both a recently elected Congressman and an emergency physician.

ACEP members lobbied their congressional representatives in groups organized by state, holding more than 318 meetings in Capitol Hill offices with legislators from 47 states. Due to the Republican predominance in the house, our main concern on Capitol Hill was advocating for medical liability reform.

Legislative News – Medical Liability

EMRA and ACEP are currently tracking two major pieces of legislation that would improve the liability climate for emergency physicians. The first bill is HR 5—the HEALTH (Help Efficient, Accessible, Low-cost, Timely Healthcare) Act. This bill would place limits on noneconomic and punitive damages, set a federal three-year statute of limitations, limit attorney’s contingency fees, and consider each party’s liability in direct proportion to responsibility, along with other measures.
The HEALTH Act has 134 co-sponsors in the House as of this writing and is likely to pass the House; however, a companion bill in the Senate is considered much less likely to pass. ACEP supports this legislation, which would improve the medical liability climate for all providers. Given that versions of this bill have failed to pass Congress in many prior legislative sessions, another bill has been introduced which would provide special protections for physicians from all specialties who provide care under EMTALA’s unfunded federal mandate.

HR 157 (the Health Care Safety Net Enhancement Act) was introduced by Pete Sessions (R-TX) and Charlie Dent (R-PA) and currently has six co-sponsors from both parties. This bill would deem a physician (or physician group of a hospital or emergency department) to be an employee of the Public Health Service for purposes of any civil action that may arise due to providing emergency and post-stabilization services. Under this legislation, both emergency physicians and specialists seeing patients during emergencies would have increased liability protection due to the unique circumstances of providing care.

In 2008, the EMTALA Technical Advisory Group, a committee of experts committed to improving EMTALA, advised that HHS work to provide liability protection for those providing care under EMTALA. This law would finally accomplish that goal and could significantly improve access to care for patients by increasing the number of specialists willing to take emergency call.

ACEP’s advocacy efforts at LAC were specifically focused on promoting this piece of legislation, and as a resident member of ACEP, you are encouraged to contact your Congressional Representative to state your support for HR 157.

Please visit the EMRA website for health policy committee updates and as always, contact me with any further thoughts or questions at legislativeadvisor@emra.org.

**Advocacy Week**

**October 24-28, 2011**

EMRA’s Health Policy Committee is hard at work finding ways to expand advocacy education in residencies nationwide. While we anticipate that the *Advocacy Handbook* will expand interest in these important issues, we have decided to hold a nationwide “Advocacy Week” from October 24-28, 2011.

Further details will be announced in the next issue of *EM Resident*!

If you’re interested in hosting an advocacy event at your residency, please contact me at legislativeadvisor@emra.org.

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Interested in research? Mark your calendars for the EMF/EMRA Resident Research Grant, due January 9, 2012. To learn more about the requirements and to download your copy of the Request for Applications, visit emfoundation.org
“As technology continues to advance at incredible speeds, medical education continues to lag behind.”

My iPhone can do some pretty amazing things. It can tell me the dose of Xigris to give in septic shock patients circling the drain. It can tell me what antibiotic to use for ehrlichiosis. It can even ask a Russian-speaking patient in their native tongue whether they are experiencing hallucinations or paranoid delusions. And that’s just a fraction of its abilities.

As technology continues to advance at incredible speeds, medical education continues to lag behind. Most emergency medicine residencies employ a combination of lecture-based didactics and thick encyclopedic textbooks to supplement bedside teaching to grow the fund of knowledge of its residents. This wonderful tried-and-true, low-tech solution has been available since ancient times. The Library of Alexandria is said to have had more than a dozen lecture halls capable of sitting thousands of eager learners. One can hardly argue against using such a seasoned teaching methodology—especially one that has produced increasing numbers of competent, knowledgeable emergency physicians. But just as there is no one-size-fits-all management for the patients who are wheeled, stretchered, or ambulate into our emergency departments, there is similarly no uniform teaching method that appeals to all students of emergency medicine.

With the proliferation of Web 2.0 sites and applications, as well as increasingly ubiquitous technologies like smart phones and tablets, emergency medicine educators have started taking advantage by adapting these technologies in order to promote interactive and customizable learning.

One such example presented at CORD’s Academic Assembly this year was the use of Web 2.0 technology to promote asynchronous and self-directed learning. Residents from different training programs demonstrated their respective resident-editable websites, which had features such as a sortable and searchable spreadsheet of all recorded residency lectures, a resident-generated collection of interesting cases, images, ultrasounds and EKGs, and forums that rate professionally-generated emergency medicine lectures. Furthermore, these sites also incorporate Amion and Google Docs/Calendars directly into the website itself, allowing for a one-stop destination for all things logistic, as well as educational.

Beyond just administrative uses, Google Docs has resulted in educators finding new ways of utilizing conference time. Dr. Michelle Lin of UCSF/SFGH and blogger-in-chief of Academic Life in Emergency Medicine described in a post how she used a collaborative, crowd-sourced teaching method to teach the topic of septic arthritis. She separated the residents into small groups with each group having a laptop and access to a shared, largely blank presentation document (think large Powerpoint slide, the kind you use to make a poster). Each group received a different question regarding septic arthritis and had 10 minutes to research the
“Nonetheless, simulation can be done in an inexpensive and less time-consuming manner when implemented electronically.”

question before populating their portion of the Google Doc. The final result was an impressive concept map.

There are other, less radical ways to incorporate technology in conference times to make a lecture more interactive and engaging. One such example from the CORD conference was during the session on Web 2.0 – the audience was able to ask questions and make comments via text messaging, twitter, or email through a website called PollEverywhere. The questions were answered live, and anonymity was preserved. Such technology incorporated into weekly didactics could help lecturers tailor their presentation to the audience’s knowledge gaps and interests.

This idea of delivering more personalized and targeted education is driven by the principle of asynchronous learning, which at its root aims to have student-driven and customized curriculum that is not bound by constraints of time, place, and methodology. In theory, this should work out great.

Students choose to watch lectures, listen to podcasts, and read articles and chapters in areas where they need remediation during a time most conducive to their individual learning. The implementation of asynchronous learning, therefore, requires a database of material that the student can use. There are different ways of implementing this in residency; however, this discussion is outside the scope of this article.

On an individual basis, there are many free/inexpensive resources that can be utilized for learning. For one thing, emergency medicine doctors sure do like their podcasts. Examples include, but certainly are not limited to EMCrit, EM:RAP, EM:RAP Critical Care Edition, EM:RAP Educators’ Edition, SmartEM, and Annals of Emergency Medicine podcast.

For those who are more visual learners, there are sites like EMPACS, which features an extensive database of radiology studies with labels and reports to brush up on imaging. Then, there are sites for recorded lectures such as Free Emergency Medicine Talks, USC Essentials, and CMEDownload. These sites have lectures from distinguished faculty from all over the country about an extensive array of topics.

While lecturing is still the default method of presenting information, simulation is rapidly growing in popularity as a practical, realistic teaching modality. Limitations include the necessity of staff to operate the sim center, expensive mannequins, and the preparation to set up flexible cases that adapt to participants’ choices.

Nonetheless, simulation can be done in an inexpensive and less time-consuming manner when implemented electronically. For example, my smart phone has an app that simulates ACLS cases. Another great example—that is free and public—is the Clerkship Directors in Emergency Medicine (CDEM) curriculum website, which has a section devoted to simulation called Digital Instruction in Emergency Medicine. It has cases for medical students where they can simulate caring for emergency department patients with common complaints.

As technology continues to advance, emergency medicine educators will have to keep pace and apply these new innovations to teaching the next generation of emergency physicians. This will be difficult as education methods are slower to change than the adoption of new technology. Who is better than emergency physicians—who adapt to difficult situations on a daily basis—to rise to the challenge? If not, I’m sure there will be an app to do that soon enough. When that happens you’ll find me tweeting about it.
Fever and neutropenia in the emergency department

While cancer remains a leading cause of death in the United States, second only to heart disease, earlier diagnosis and treatment has led to increased survival for a significant portion of the population. Chemotherapy and radiation for solid organ and hematologic malignancies, once the exclusive province of inpatient oncology, has become ever more common in ambulatory care settings including hospital-affiliated infusion centers, oncology clinics, and even patients’ homes.

Emergency departments form a vital link in the medical care of these patients, providing timely evaluation and treatment for a host of chemotherapy-related side-effects and complications, ranging from nausea and vomiting to severe mucositis and dehydration. Cytotoxic chemotherapy regimens frequently cause myelosuppression, resulting in neutropenia, anemia, and thrombocytopenia. White blood cell (WBC) counts reach their nadir between 10-14 days after a cycle of chemotherapy, rendering these patients highly vulnerable to life-threatening infections. Fever and neutropenia in a cancer patient presenting to the emergency department is a medical emergency that requires not only rapid evaluation, but also prompt empiric antimicrobial therapy.

Neutropenia is present when the ANC is less than 500 cells/mm$^3$ or less than 1,000 cells/mm$^3$ with a decline below 500 cells/mm$^3$ anticipated over the next 48 hours. Neutropenia in the presence of a single oral temperature greater than 38.3°C (101°F) or a persistent temperature greater than 38.0°C (100.4°F) for more than one hour is termed neutropenic fever or febrile neutropenia. In one study, almost half of all patients presenting with neutropenic fever to an urban emergency department were found to have an infection.

The risk of infection is especially high with profound neutropenia (ANC less than 100 cells/mm$^3$) expected to last greater than seven days. Hospitalized patients receiving induction chemotherapy for acute myelogenous leukemia or conditioning chemotherapy prior to allogeneic hematopoietic stem cell transplantation fall into this severely immunocompromised subset.

Chemotherapy targets both rapidly dividing malignant and normal host cells. The resulting neutropenia leads to impaired host immune responses—particularly to bacteria. Mucositis compromises the oropharyngeal and gastrointestinal epithelium, permitting translocation of gut and oropharyngeal flora into the bloodstream. In many cases, fever may be the only sign of an occult bacteremia. While Gram-negative bacilli (Pseudomonas aeruginosa, Escherichia coli, Enterobacter and Klebsiella species) remain common and potentially lethal pathogens associated with neutropenic fever, Gram-positive organisms (Staphylococcus aureus, coagulase-
negative staphylococci, *Streptococcus* species) have become increasingly significant as well. Vascular access devices including tunneled catheters and implantable ports offer additional avenues for bloodstream infection.

Neutropenic patients can develop skin and soft tissue infections with minimal erythema or suppuration due to their lack of circulating or functional neutrophils. A thorough skin evaluation must include an inspection of the perineal region, as perianal and perirectal abscesses are common. A digital rectal examination, however, should not be performed out of concern for inducing bacteremia through further mucosal trauma. Other common infections encountered in neutropenic patients may include pneumonia, meningitis, encephalitis, sinusitis (beware of mucormycosis), and necrotizing periodontal disease. Frequent exposure to broad-spectrum antimicrobials places cancer patients at heightened risk for *Clostridium difficile* infection.

Fever and right lower quadrant abdominal pain mimicking appendicitis may signal neutropenic enterocolitis (typhlitis). Marked by transmural necrosis and infection of the terminal ileum, cecum, and ascending colon, neutropenic enterocolitis can progress rapidly to bowel perforation and sepsis.

Blood cultures should be the first priority of any diagnostic evaluation of neutropenic fever in the emergency department. At least two sets should be obtained from separate sites. If the patient has a vascular access device, one set should be drawn from each catheter lumen as well as from a peripheral site. Other cultures (e.g., sputum, urine, cerebrospinal fluid, and stool) may be acquired based on clinical suspicion. For patients with pulmonary complaints concerning for pneumonia, chest radiography may not reveal infiltrates given the paucity of neutrophils. Generally speaking, computed tomography (CT) is preferred over radiography for most emergent radiological evaluations in this high-risk population. Patients with headache or altered mental status may require lumbar puncture, though this can be problematic if severe thrombocytopenia is also present. Furthermore, the absence of cerebrospinal fluid pleocytosis cannot be relied upon to exclude a diagnosis of meningitis in a severely neutropenic patient.

Empiric antimicrobial therapy should be started as soon as vascular access and adequate blood cultures have been acquired. Updated clinical guidelines on the use of antimicrobial agents in neutropenic patients with cancer have recently been published by the Infectious Diseases Society of America (IDSA), which recommends initiation of therapy within two hours of presentation. Initial empiric monotherapy should consist of an anti-pseudomonal β-lactam such as cefepime, a carbapenem (e.g., meropenem, imipenem-cilastatin), or piperacillin-tazobactam. When available, institutional antibiograms describing local antimicrobial susceptibility patterns for *P. aeruginosa* can aid in selecting the most appropriate agent. In the unstable, critically-ill patient, the addition of an aminoglycoside is reasonable if Gram-negative bacteremia or pneumonia is suspected. Gram-positive coverage with vancomycin or another agent is not indicated as part of empiric therapy except in cases of catheter-related infection, skin or soft-tissue infection, pneumonia, or sepsis.

Empiric antifungal therapy in the emergency department is not recommended unless an invasive fungal infection—such as mucormycosis, oropharyngeal thrush, or *Candida* esophagitis—is suspected or fungemia has been documented. Empiric antiviral therapy, typically with acyclovir, is warranted if the patient has skin findings consistent with herpes simplex virus or varicella-zoster virus infection or if a viral encephalitis is suspected and further laboratory diagnostics are pending.

Neutropenic fever should always be considered infectious in origin until proven otherwise. Even in the absence of fever, it is prudent to keep infectious diseases high on the differential of any neutropenic cancer patient presenting with an acute illness. Prompt evaluation and empiric antimicrobial therapy are the key to reducing mortality and improving outcomes in patients with fever and neutropenia in the emergency department.

**References**

If you’re going to San Francisco…

I am no Brooke Burke (isn’t she gorgeous!), but for those of you who heeded my advice and visited the top five most underrated experiences while in Las Vegas last Scientific Assembly, you know this is not my first travel column rodeo. In keeping with this longstanding tradition, I would like to offer my humble opinion about the top five ten most underrated experiences at ACEP Scientific Assembly in San Francisco.

1. Exploratorium for the Tactile Dome at the Palace of Fine Arts – This is an interactive excursion through total darkness, where you can further investigate the concept of good touch versus bad touch.
2. Tour the hill landscape in a scooter buggy or Segway – It’s like Europe meets The Jetsons!
3. Dim Sum in Chinatown – There are very few places where one can order both pork buns and shrimp balls for breakfast.
4. **EMRA Bloody Mary Breakfast, on Sunday, October 16, from 7:30am-8:30am** – Eye-openers—friend or foe? Discuss.
5. Kabuki Springs communal baths in Japan Town – In the great tradition of Japanese public baths, Kabuki’s communal bath is designed to encourage harmony and relaxation. You even get a full-time bathing attendant! Check out the website for the gender-specific, daily admission schedule.
7. The Castro Theatre – Built in 1922 by the Nasser brothers, this antique movie theatre shows classics from all genres. They recently had a tribute to the summer of 1984 and showed *Gremlins, Cloak and Dagger*, and *The Karate Kid*.
8. **ACEP Representative Council Meeting** – Every year there is at least one resolution discussing the role of medical marijuana in Emergency Medicine. To prepare for debate, you may want to read the clearly, evidence-based best seller, *Marijuana is Safer: So Why Are We Driving People to Drink*. Other controversial topics—almost certain to come up—are treatment of chronic pain in the emergency department, parameters for procedural sedation, and CT scans for the non-thunder clap headache.
9. Follow your nose to The Stinking Rose, a restaurant in Little Italy, famous for serving 3,000 pounds of garlic each month. Vampires beware!
10. **EMRA Representative Council Meeting** – Clearly I am biased, but I don’t think you will find a legislative body that accomplishes more, has more fun, or is better looking than the EMRA Rep Council. Making the rep council meeting productive and fun is contingent on our program reps, who always bring their parliamentary procedure A-game, while the resolutions—written by our members—generate interest and enthusiasm.
In order to write a stellar resolution,
• Pick something that is germane to you and your colleagues. The next time you complain at work, turn that complaint into a resolution!
• Do your research before you come—the more detail and information you can offer the Council, the more convincing you will be. As you know, we are an evidenced-based people: statistics and case reports resonate with us. Use that to your advantage to accomplish your goal.
• Check our policy compendium to see if this topic has been brought before the Council before. You don’t want to invest your time and emotional energy in a topic that has been done and done, many years over.
• Email your resolution to the Council Officers beforehand. We will format your resolution appropriately and can also help edit your content if you are experiencing writers block.
• Be prepared to advocate for your cause. If you don’t feel strongly that your resolution is important, who will? John Adams and the rest of his revolutionary entourage had some serious arguments while in session. While we discourage yelling and demand professionalism at all times, we want you to feel invested—your passionate dialogue should reflect such.

As always, email speaker@emra.org if you have any questions.

As this is my last column during my term as Speaker, I would like to thank each of you for this opportunity. Honestly, serving as a Council Officer has been a great adventure, and it has really shaped my residency experience.

MAKE YOUR VOICE HEARD
Call for Fall Resolutions
Get involved and steer the future of EMRA by writing a resolution. A resolution is a directive for EMRA to take certain action or to form a policy. These resolutions are discussed and voted on at the EMRA Representative Council Meeting at ACEP’s Scientific Assembly in San Francisco, California, Monday, October 17, 2011.

The deadline for submissions is September 2, 2011.

For more information on authoring a resolution or to see recent adopted resolutions, visit www.emra.org or email speaker@emra.org.
The evolution of board certification

While my fellow senior residents and I finish our last two weeks of residency, one of our tasks has been to complete our application for the American Board of Emergency Medicine (ABEM) initial certification exam. I have been asked on several occasions, “What does certification really mean, and where did it come from?” To explain how board certification has come to define independent medical specialties, we will look back at how the very concept of medical specialty boards came into existence.

The growth of the medical specialty board movement can be traced back to the early 1900s. The movement was associated with a rapid evolution in medical science that resulted in significant advances in the delivery of medical care. During this growth, there was not a system in place that could guarantee to the public that a physician was qualified to practice in their specialty.

Prior to the board certification process, each individual physician was the only assessor of his or her qualifications. At this time, specialty societies and medical education institutions began to form, bringing with them a more rigorous and organized approach towards demonstrating physician competence. These institutions spurred the development of “boards” that would define specialty qualifications and issue specialty-specific credentials.

The first specialty board was formed in 1916 as the American Board for Ophthalmic Examinations. In 1917, the board was officially incorporated and in 1933 was renamed to the American Board of Ophthalmology. The second specialty board, the American Board of Otolaryngology, was founded in 1924. The third and fourth boards, The American Board of Obstetrics and Gynecology and the American Board of Dermatology and Syphilology, were established in 1930 and 1932, respectively.

Representatives from these four original boards met with the American Hospital Association, the Association of American Medical Colleges, the Federation of State Medical Boards, the American Medical Association, and the National Board of Medical Examiners to form an advisory committee to aid in the development of a certification process for medical specialists. This advisory committee later became known as the American Board of Medical Specialties (ABMS).

ABMS is now comprised of 24 medical specialty boards that develop and implement credentialing standards for physicians. As the 23rd specialty member of ABMS, the American Board of Emergency Medicine began with the initial conception of emergency medicine in the 1960s. During this time, the American public began to demand improved quality of care in hospital emergency departments; previously, few resources had been dedicated to the delivery of emergency services.

In response to this need, hospitals designed full-time emergency services around physicians developing the practice of emergency medicine. In order to support this growing physician group, the American College of Emergency Physicians (ACEP) and the University Association for Emergency Medical Services (UA/EMS)—which is now the Society for Academic Emergency Medicine (SAEM)—formed.

At that time, however, emergency medicine was not yet accepted as an independent specialty board. In the early 1970s, ACEP members began to work towards recognition as a new specialty. In response, ABEM was incorporated in 1976. Concurrently, ACEP developed a voluntary membership assessment program to assist in the construction of a high-quality certification examination. In 1977, ABEM administered the first full-scale test comprised of written items and a case simulation oral examination.

The initial application for primary board status was submitted by ABEM in 1976. Unfortunately, it was rejected by ABMS. After lengthy negotiations, emergency medicine was finally recognized as the 23rd medical specialty in 1979 as a conjoint board. However, not until September 22, 1989 did ABMS finally recognize ABEM as a primary board.

During most of my training, I took the recognition of emergency medicine as an independent specialty for granted. As new graduates, we can proudly state that residency training and board certification is the standard for guaranteeing high-quality, emergency medical care to the American public. I am thankful for the opportunity to become board-certified in the specialty of emergency medicine.

Resources
2. The American Board of Medical Specialties (ABMS). http://www.abms.org/
As emergency physicians, we have all been faced with situations where we are forced to make clinical decisions for a patient who is unable to communicate their own desires. While we do our best to provide care concordant with their preferences, often there may be little available to guide us in such pursuits. Without family or surrogate decision makers present, many different mechanisms such as advanced directives and living wills are utilized to the best of our ability; however, at times, these documents are filled out far in advance and may be too broad or difficult to interpret for quick clinical decisions. An emerging system to tackle these issues is known as the POLST paradigm or “Physician Orders for Life-Sustaining Treatment.”

The impetus behind POLST began with concern that despite advanced directives, patients’ preferences for life-sustaining treatments were not consistently honored. The idea of creating medical orders to enact such preferences was first developed in Oregon in 1991, later enacted as the POLST form in 1995. The basic premise is to provide concise translation of patient’s preferences into portable and direct medical orders. It is recommended for all patients with severely advanced or terminal illness and is best created with use of a palliative care or primary care physician who knows the patient well.

Advanced directives serve as legal documents to convey a patient’s wishes, are encouraged for all individuals to complete, and may often be completed years in advance of serious illness. POLST forms, on the other hand, serve as medical orders signed by the patient’s physician and are often signed by either the patient or the patient’s proxy. They are aimed at patients with advanced disease in whom prognosis is measured within a few years.

The forms communicate yes or no answers to predictable clinical situations, such as CPR, vasopressor or ventilatory support, use of antibiotics, artificially administered nutrition, and a summary of goals and/or medical conditions leading to these decisions. By supplying specific answers for common decision points, the POLST forms provide timely and clear directions for physicians to follow.

As part of the mission of the paradigm, portability of POLST forms is highly desired. In Oregon, a POLST registry was created for easy access across healthcare settings, including EMS services. In addition, POLST forms remain as part of the patient’s medical record.

Another advantage to POLST in many states is the provision of liability protection for physicians following the forms orders as prescribed. In California, a law signed in 2009 requires health care professionals to use valid POLST forms. Even without specific liability protection, one may postulate physicians would feel more comfortable instituting clear orders signed by the patient’s own physician.

Following its inception in Oregon, the paradigm has been gaining in popularity now with ten statewide programs endorsed and many more states with programs in development. As emergency physicians, we will continue to be faced with clinical situations requiring us to make decisions for our patients without consent on a regular basis. With an ever-aging population and a desire to provide appropriate care concordant with patient’s desires, the POLST paradigm is a promising advancement.

Visit [www.ohsu.edu/polst](http://www.ohsu.edu/polst) to determine if your state participates or is in development of POLST. Increasing awareness and advocating for use of programs such as POLST may enable us to improve our quality of care and adherence to patient preferences in critical situations.

References
1. POLST.ORG-Physicians Orders for Life-Sustaining Treatment Paradigm, [http://www.ohsu.edu/polst](http://www.ohsu.edu/polst)
2. POLST Offers Next Stage in Honoring Patient Preferences, Meier and Beresford Journal of Palliative Medicine Vol 12, No 4, 2009
4. A Catalyst for Culture Change in End-of-Life Care, Mark Smith, California Healthcare Foundation, 2/2011
Transitions of medical school

“Nothing is secure but life, transition, the energizing spirit.” – Ralph Waldo Emerson

Emerson’s quote has been ringing true to me for the past few months. Transitions are energizing and, for me, help me to find excitement in the newness and opportunity of change. While always exciting, transitions are not always easy. This time of the year is often full of transitions. First-year students are arriving on campus. Second-year students are running almost all the extracurricular groups. Third-year students are finding their way around the hospital and the EMR. Fourth-year students are putting together their residency applications.

Many of us have also been through or have close friends who have been through big life changes (good, bad, or neutral). We are all in the midst of transition. So, in honor of transitions and energy for these transitions, let me reflect on a few of the things that medical students go through and how our lives change over the course of medical school.

Transition #1
Things change quickly when we begin medical school. For me, the day before I started medical school, I was out kayaking on the American River with friends. Before medical school, I would spend a lot of time reading novels, backpacking, baking breads, playing music, and just hanging out. I knew medical school would be tough and that some of those hobbies would probably take a hit. I never imagined, however, that the day I began medical school, I would already be three chapters behind in my reading (in just one class). Those hobbies, they took more than a hit. The last novel I read was during my summer vacation between my first and second year of medical school. The last extended backpacking trip was that same summer. I don’t even really bake any more. Many medical students go through similar changes, and in many ways, we are different once we start medical school.

Transition #2
Those hobbies and times we spent with old friends are usually exchanged for other interests and opportunities that we find in medical school. For me, medical school swept me off my feet, and I started getting involved in student-run clinics, our EMIG, AMSA, and many other student-run organizations. I also joined EMRA, now becoming the new MSGC chair (which explains why writing articles has also become a new hobby).

For others, perhaps that passion is research, or advocacy, or other community-based projects. As first-year students, we mostly show up and help. By our second year, we are not only volunteering with these organizations, but also are running many of them. It’s a big change with a lot of added responsibilities. And in that big change, there is a real opportunity to create projects and lead fellow medical students.

Transition #3
We all know the challenges of transitioning from the pre-clinical years to the clinical years, from studying for Step 1 to pre-rounding on our patients and pending orders for the morning. Early hours, pagers, very sick patients, busy interns and residents, presentations during rounds, figuring out who our patient’s nurse is, learning how to wake up our patients at 5am without getting punched, the list goes on. Extracurricular activities? Not so much. Life outside school? Well, let’s just say the hospital becomes our beloved home away from home; we learn which call rooms have the most comfortable beds, what day of the week is best for cafeteria food, and the fastest way from the medical student lounge to the vending machines. But we also learn about the human condition and how to care for our patients’ illnesses, how to engage them and talk with them and their families, and how to communicate and work with all the members of the healthcare team. Slowly, we start learning how to be physicians. Again, opportunity and excitement!

Transitions are thrilling, and at EMRA, we recently transitioned to a new Medical Student Governing Council. Last year’s MSGC accomplished incredible things and has set bar high for the 2011-2012 team. Dr. Shae Sauney, outgoing chair, has been a true inspiration to me and many members of last year’s MSC. I am deeply thankful to her for her guidance and leadership, and I wish her the best as she continues into residency.

The transition to a new MSC has been smooth, and the coming year abounds with opportunities. I am looking forward to working with year’s medical student council. We have an incredibly talented, motivated, and engaged team of medical students from across the country on the MSC. We also have a lot of work ahead of us, and I’m confident that we’ll be able to accomplish great things this year.

Finally, I would like to encourage any of you reading this column to contact me if you have any questions, concerns, ideas, or if you just want to say, “Hi.” We are here for you, so please don’t hesitate to let me know how we can serve you better.
Shattered Dreams – educating teenagers about drinking and driving

“Shattered Dreams” is a program sponsored by Ben Taub General Hospital, in Houston. It is designed around the idea that high school students should learn the results of drinking and driving—with emphasis on the word “learn.” This is not a program where the students get a lecture and look at a few pictures. The program is centered around a group of students who participate completely in the information being provided.

Initially, the students conduct a reenactment of a car collision that happens right outside of their high school. They are victims of a crash that is played out in the parking lot of their school. The scene includes EMS, the Jaws of Life, and hysterical parents screaming about the loss of their children. The arrival of the coroner finishes the story.

After this scenario is completed, the students are transported to Ben Taub Hospital for an overnight stay. Throughout the night, they listen to lectures given by the police and victims of drunk driving experiences. Most importantly, an individual who was involved in a drunk driving accident and responsible for the loss of a close friend presents the students with a firsthand perspective of what it is like to be in that situation. While all of this is happening, the students are interrupted every time a trauma gets called into the trauma bay. It is a difficult night, but if that had been the end of the story, it would not have had such a profound impact on me.

Since Ben Taub is an urban hospital, the students involved in the program generally attend high schools near the hospital. Their lives are different from those of most of the medical students who are involved in the program. Most of us have not had to deal with abusive parents, homelessness, or losing loved ones to drugs, alcohol, gun violence, and car crashes. These students are the strongest of the strong. They know they have problems and are reaching out for help.

As medical students, we often become jaded over time. We see pain, suffering, and death on a daily basis and become used to dealing with it in a detached manner. We see the problem, determine a solution, and then attempt to fix it. These students live their problems daily. We, as medical students, think we are strong; we no longer fear the things that cause us discomfort. I thought I was strong because I moved away from my family, dealt with my own serious illness, and handled the unique challenges in medical school. But I have not been tested as these students have been all their lives. When these participants open up about their personal abuse, their incomprehensible responsibilities, and the losses of both friends and dreams, I realize what real strength is.

“The “Shattered Dreams” program provides powerful lessons about the decision to drink and drive through reenactments, trauma exposure, and personal accounts. The true value, however, lies in the opportunity for these young people to find a safe haven where they can express their frustrations. They are able to realize their merit and discover they are not alone. They learn that, while their decisions have consequences, they do not have to be made alone.

I find myself humbled as I think about this valuable program. The participants gain valuable insight into their decision making processes, and those of us who are privileged enough to sit and listen, learn that empathy and compassion can be the most valuable tools available to us as physicians. We can often heal wounds we cannot see by listening and caring.
Emergency medicine off the beaten path – Latin American opportunities

With the recent surge in global health involvement among U.S. healthcare providers, medical students now have unprecedented opportunities to learn the art and science of caring for patients in widely different medical and social settings. Although international rotations are usually taken late in the fourth year, there are great ways to incorporate emergency medicine experience earlier in your medical education, particularly between the first and second years.

Planning such an experience, however, can seem daunting, especially for students interested in emergency medicine. Many low-resource settings have poorly developed emergency medical systems and very few recognize emergency medicine as a specialty. Latin America is an ideal place for study and service, being in the intersection of both global health and emergency medicine. How can you start planning a successful project?

Your first step is to define your goals. Do you want to better understand the language and culture of your immigrant patients in U.S. emergency departments? Are you looking for a place abroad where you can set down roots for future involvement in health care and social justice? Do you need to learn skills for treating diseases less common in the U.S.? Make sure your rotation will help you grow as a future provider as well as benefit the people at your destination.

The easiest option for study is a rotation arranged by your medical school. Most pre-arranged rotations are not in emergency medicine per se, but can provide you with many emergency medicine-relevant skills through the outpatient or urgent care clinic setting. The benefits of a preset rotation include a better understanding of what’s expected of you and what you can expect, as well as more straightforward institutional approval.

David Diller, MSIV, observes that his affiliation with the University of Vermont made study in Costa Rica a snap. Diller’s main objective in study abroad was improving language skills, and he found just that through his local preceptor. He recounts, “We assisted [the preceptor] in seeing patients and performing minor office procedures. Over the course of the month my ability to both speak and comprehend medical Spanish improved dramatically, and this undoubtedly will serve me well next year in residency.” Diller strongly recommends such experiences for those students who have a strong background in Spanish but still need to build confidence in communicating.

What if your school’s rotations abroad focus on only low-acuity patients? Designing or finding your own rotation for transfer credit might be an even more rewarding process. Adalberto Amaya, MD, of Javeriana University in Bogotá, Colombia, has collaborated with many North American educators and points out that Latin American universities are eager to accept US medical students on rotations with an inter-institutional academic agreement. Dr. Amaya outlines the process: “It’s important that the North American university understand what our program can offer to the student, that they are in agreement...”
with it and we certify their study, their procedures, and their academic performance.” Consider the partner university and patient population. Dr. Amaya notes that in addition to medical emergency cases like acute coronary syndromes, his emergency department sees large volumes of arms-related puncturing trauma, which students and residents become highly trained to treat.

If your vocation lies in working with the most underserved populations, you may put in extra effort to arrange a rotation directly with a hospital. Rosa Praccedes López, MD, Emergency Department Director at the Oscar Danilo Rosales Argüello Teaching Hospital (HEODRA) in León, Nicaragua, also invites rotating students to her emergency department, which sees over 100,000 patients per year. Although HEODRA is affiliated with the Autonomous University of Nicaragua, foreign students arrange rotations by submitting a rotation proposal directly to the hospital administration. Opportunities exist both for students in the clinical years to rotate in the emergency department, and for pre-clinical students to work in research.

Dr. Praccedes emphasizes that the most important preparation for rotating in a hospital like HEODRA is in communication skills. She observes that U.S. rotators “have great devices, great medicine, but sometimes don’t understand our culture. [The students] don’t have to change anything other than learn the language.”

Ultimately, the value of your experience will extend far beyond the skills and diagnoses you learn and can cement relationships for a lifetime. Dr. Praccedes particularly invites students “to observe and share with us their experiences. We have our doors open to the world.”

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Medical Student Professionalism and Service Award

One award available for each medical school OR emergency medicine residency program based on selection by school or residency program.

Selection process
Select one medical student per medical school or EM residency program for student who:
- gives outstanding care to patients in professional/humanistic manner;
- has active leader service to medical organizations and community;
- grades and board scores are NOT a requisite

Submission process
Only one nominee per medical school or EM residency program. Submit name of local award recipient to ACEP using online submission form.

Application deadline
October 21, 2011

Awards
- a certificate from ACEP
- reception at ACEP’s annual meeting
- any monetary award to be decided at the local level

Announcement
- publication of names in an ACEP publication.
- encourage presentation of award at your medical school’s award ceremony or graduation ceremony.
“I am humbled by the gratitude our patients show and privileged to serve such a thankful group of people.”

The health resource center serves approximately 70 guests every Thursday evening. Many are homeless, though some are not. Some are healthy, while many have chronic health conditions, mental illness, or drug and alcohol addiction. Typical requests are for blood pressure checks, wound care, vitamins, sunscreen, or a supply of OTC medication; others seek advice about available healthcare resources or ask questions following a recent doctor’s visit or hospital stay. For many guests, this is an opportunity to talk to someone they can trust. As a result, our primary goal is to listen—which is probably the most important skill we carry into residency and the one that requires the most practice.

Under the supervision of an attending physician, students get the opportunity to evaluate and triage patients. If the complaint is life threatening, an ambulance is called, and the guest is immediately taken to Denver Health. More often, we are able to utilize basic emergency medicine skills to develop a differential and find creative ways to meet patients’ needs with the resources available.

As one of our attending physicians related, “This reminds me of why I went into medicine. I get to practice in the purest form, no paperwork or red tape, just taking care of patients and listening to their problems. I am humbled by the gratitude our patients show and privileged to serve such a thankful group of people.”

Guest and medical student volunteer do a blood pressure check.
The process of medical school fundamentally changes us: while we have gained a lot, we may have lost something too. Somewhere in the journey, as we were cramming facts, learning new systems, and trying to remember to take care of ourselves, we may have forgotten how to take care of others as well as neglected the importance of listening.

Whether you are a guest or a volunteer, spending time at a place like the BAC can change your life. For volunteers, this is an opportunity to connect with a unique population, without the typical administrative barriers or time constraints of clinical medicine. Like all of us, guests want to be respected and to have their story heard. They want to know that someone cares about them and to be seen as a unique individual.

Are we solving the problem of homelessness or healthcare for the underinsured? Definitely not. We are, however, doing our small part to reduce the burden of emergency department overcrowding by connecting people with primary care services, providing cost-effective preventative interventions, and building relationships between young clinicians and a vulnerable population in need of care.

Our ability to provide compassionate treatment in the emergency department will forever be shaped by our ability to understand our patient’s lives outside of the hospital. This is one place where that lesson can be learned.

Make a difference in your community and the specialty of emergency medicine. Apply today for an EMRA Local Action Grant.

www.emra.org
Deadline: August 15

Student volunteers fill vitamin requests while guest chooses reading glasses.
Reflections on emergency medicine in South Africa

I am writing from somewhere over the Atlantic Ocean after six weeks in Cape Town, South Africa. I spent my time there working in an emergency department at Jooste Hospital, and my experience was nothing short of amazing.

Jooste is a busy public hospital and trauma center serving residents of Cape Town’s underdeveloped living areas, also known as townships. Nearly all of the patients are poor minorities living in temporary housing (read shacks) in the townships. Patients are sick in ways I have never seen in my limited experience. They present in extremis almost hourly. The complications of diseases like HIV and Tuberculosis, which I saw on a routine basis, are things I thought I would only read about in textbooks. A combination of densely populated areas, poor access to healthcare, and poverty all contribute to create this environment.

High acuity and tragic pathology at Jooste is compounded by very limited access to the diagnostic modalities we are accustomed to in the United States.
The laboratory closes each night for eight hours, leaving a blood gas as the only available lab. X-rays and bedside ultrasound are available around the clock, but CTs are very difficult to come by. MRIs are non-existent all together. Often, pneumonia is diagnosed with a stethoscope, intracranial pathologies with a thorough neurological exam, and pulmonary emboli with a thorough history. I found this style of medicine both challenging and rewarding.

While working at Jooste and living in Cape Town, I struggled with the blatant disparities between the townships and the rest of the city. Apartheid ended over 15 years ago, but the city remains segregated according to skin color and social status. The segregation forces the vast majority of the population to live in townships. These communities have some of the highest population densities in the world, a staggering prevalence of tuberculosis and HIV, and rates of violence exponentially higher than our own. Many people in these communities live on less than three dollars a day.

The disparities also bring to mind inequalities in healthcare. I can assure you that patients in these private institutions do not experience the same shortage of diagnostic modalities and therapies that my patients did at Jooste. It is common for public hospital patients, such as the ones I saw, to spend between 24 and 48 hours for a standard emergency department visit, which is not the case with patients at private hospitals. It is unfortunate that these inequalities are somewhat reminiscent of our own healthcare system, albeit on a different scale.

After living and working in these blatant disparities for the past few weeks, I am reminded that one of my responsibilities as a physician is to provide a high standard of care to every patient in the emergency department, regardless of social status or skin color. As a provider in emergency medicine, I will need to advocate for my patients, especially the poor, as they often lack the resources to advocate for themselves in accessing healthcare.

In the specialty of emergency medicine, we are all in a unique position to meet these responsibilities. We take care of patients, who cannot access healthcare, especially without emergency departments. It then becomes our duty to help them navigate the mess that is our healthcare system. If not us, then who?
Critical care

Treatment of transfusion-related acute lung injury

At 6:30 pm one of your nurses notifies you that the GI bleeder admitted by the previous attending is complaining of shortness of breath. When you go to evaluate him you see a patient with a respiratory rate of 24, temperature of 101°F, and an O₂ saturation of 92 percent. He is retracting and speaking in short sentences. His exam is significant for diffuse crackles bilaterally. As you reach for a non-rebreather, you notice the unit of blood hanging from his IV pole.

Transfusion Related Acute Lung Injury (TRALI) usually occurs during the first four hours of transfusion and is believed to be mediated by antibody and granulocyte deposition, causing a non-cardiogenic pulmonary edema. Radiographically, the lungs have diffuse, bilateral patchy infiltrates. Clinically, TRALI presents like ARDS. Its mortality rate ranges from five to eight percent versus 30-50 percent in ARDS. A few points are important to remember when considering TRALI in your differential diagnosis and management for the third most common cause of transfusion related death:

1. Don’t jump to TRALI
   Though this may be the likely cause, the differential diagnosis includes cardiogenic pulmonary edema, allergic and anaphylactic transfusion reactions, transfusion of bacterially contaminated blood components, classic ALI, sepsis, or volume overload.

2. It’s not just RBC’s
   All plasma-containing blood products have been implicated in TRALI, with the majority of cases linked to whole blood, packed RBCs, platelets, and fresh-frozen plasma.

Making the diagnosis
Clinical signs of TRALI include dyspnea, hypoxemia, cyanosis, pulmonary edema, cough, fever, chills, and either hypotension or hypertension. If the patient is intubated, you may see copious frothy secretions and elevated airway pressures. Auscultation of the lungs may not coincide with total “white out” of lungs you can see on chest radiography.

Once volume overload is excluded as the reason for respiratory distress, echocardiography may be helpful in characterizing cardiogenic from non-cardiogenic causes of hypoxia and pulmonary edema.

There are no lab tests that are helpful in the diagnosis of TRALI. BNP, once believed to be useful, may be elevated in cases of TRALI with normal cardiac function.

Management of TRALI
Management of TRALI focuses on supportive care and is similar to the management of ALI. However, special attention should be paid to airway and fluid management.

Airway management
While oxygen is the mainstay of treating the hypoxia caused by TRALI, you may choose to use bilevel positive airway pressure for improved oxygenation and alveolar recruitment. The degree of hypoxemia, shunting, tachypnea, and increased work of breathing may require the patient to be intubated to maintain adequate oxygenation and ventilation. Lung protective strategies should be used as discussed in the ARDSNET protocol.

Fluid management
Conservative fluid management represents a central concept to the management of TRALI. These patients have increased microvascular permeability making them particularly susceptible to pulmonary edema resulting from increased pulmonary hydrostatic pressure. Cautious fluid boluses should be administered to reverse hypotension but early use of vasopressor agents may be required. For most patients...
with TRALI, diuresis should be avoided, as the pulmonary edema is not the result of fluid overload. Diuresis is contraindicated for patients who are hypotensive, recently received vasopressors, have a low central venous pressure (<4mm Hg), or are oliguric with a CVP of 4-8mm Hg.

**Non-ventilatory strategies in ARDS**

A number of non-ventilatory strategies have been proposed for further management of TRALI in the ICU. However, with longer stays in the emergency department for ICU patients, it is critical that the emergency physician know the benefits of these tactics. The following strategies have shown decreased ventilator times but only minimal, if any, survival benefit.

Administration of a neuromuscular blocking agent (NMBA) for 48 hours to eliminate spontaneous breathing resulted in sustained improvements in oxygenation. It’s important to keep in mind that prolonged use of these agents, especially in the setting of corticosteroid use may lead to neuromuscular blocking induced myopathy.

Ventilation in the prone position has been shown to improve refractory hypoxemia and increase alveolar recruitment. One post hoc analysis demonstrated survival benefit. Though there is increased potential for ET tube dislodgement, pressure sores and central line displacement, several studies have shown it to be safe. This seems to be an appropriate strategy for the subgroup of patients with severe refractory hypoxemia with high FiO₂ requirements and high plateau pressures.

**New areas of research**

Inhaled Nitric Oxide (iNO) dilates pulmonary vasculature and improves ventilation/perfusion mismatch and hypoxia, thus decreasing shunting. This modality demonstrated only modest increases in oxygenation and thus is reserved for rescue therapy in refractory hypoxemia.

Small studies demonstrated improvements in refractory hypoxia with intravenous phenylephrine with iNO, inhaled prostacyclines, avoidance of systemic vasodilators, and the use of almitrine—a selective pulmonary vasoconstrictor. In conclusion, it is critical to consider and recognize TRALI in any dyspneic patient being transfused. Any ongoing transfusion should be immediately discontinued. Aggressive airway management should begin with non-invasive ventilation strategies with early escalation to intubation and mechanical ventilation as patients become more hypoxic. Fluid boluses should be given cautiously for hypotension and vasopressor therapy should be instituted early.

**References**

1. A 78-year-old woman is transferred from a long-term care facility with vomiting and increased confusion. She has a history of dementia, hypertension, type 2 diabetes mellitus, and mild chronic renal insufficiency. Vital signs are blood pressure 106/45, pulse 75, respirations 24, temperature 38.9°C (102°F), and oxygen saturation 95% on room air. On physical examination, the patient is frail, confused, and minimally cooperative with the examination. The skin is intact without rash. Which of the following tests is most likely to reveal the diagnosis? 
   A. Abdominal and pelvic CT 
   B. Blood culture and WBC count 
   C. Chest radiography and urinalysis 
   D. Head CT with lumbar puncture 

2. Which of the following patients requires oral fluconazole treatment? 
   A. 17-year-old girl with both dysphagia and odynophagia refractory to acid suppression therapy who also has multiple allergies 
   B. 27-year-old man with chest pain and severe odynophagia who also has asthma and is HIV positive 
   C. 47-year-old man with transport dysphagia for solids initially and now liquids who also smokes 
   D. 55-year-old man with halitosis, transfer dysphagia, and neck fullness 

3. Which of the following statements regarding multiple trauma is correct? 
   A. All critically ill trauma patients should be transported to the nearest facility 
   B. Mechanism of injury is not related to severity of injury 
   C. Overtriage leads to waste and exhausts valuable resources and should be avoided 
   D. Patients older than 55 years are at increased risk of death 

4. What is the medication of choice in the initial treatment of acute aortic dissection without shock? 
   A. Diltiazem 
   B. Esmolol 
   C. Nitroglycerin 
   D. Sodium nitroprusside 

5. A 50-year-old man presents with fever, dry cough, headache, and loss of appetite with nausea, vomiting, and watery diarrhea. He has been taking amoxicillin for 4 days but says he is feeling worse. Past medical history is unremarkable. Laboratory analysis reveals hyponatremia and elevated liver enzymes. Which of the following is the most likely diagnosis? 
   A. Legionnaire disease 
   B. Psittacosis 
   C. Q fever 
   D. Tularemia 

For a complete reference and answer explanation for the questions below, visit www.emra.org.
Ain't no party like the EMRA Party!

Sponsored by Emergency Medical Associates

Private event
Open to all Conference Attendees
No Cover/No Lines!

Sunday Oct 16
9:30PM-2:00AM

Temple Nightclub
540 Howard Street
San Francisco, CA 94105

4 Full Bars
3 Separate Dance Floors!

Drink Specials all night

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**EMRA Activities @ ACEP’s Scientific Assembly**

**Medical Student Events**
Friday, Oct 14
1:00 pm – 5:00 pm  
EMRA Medical Student Governing Council Meeting
5:30 pm – 7:30 pm  
EMRA MSCG/EMIG Representative Mixer

Saturday, Oct 15
8:00 am – 2:00 pm  
**EMRA Medical Student Forum**
- Hot Topics in Emergency Medicine
- Career Opportunities in EM – Discussion Panel
- Medical Student Breakout Sessions:
  - MSIV – Interview Day Tips
  - MSIII – Taming the Application Process
  - MSII/II – Opportunities for EM during Preclinical Years
- Application and Interview Advice – Intern Discussion Panel
- Networking Luncheon with Program Directors/Roundtable Discussion
- Managing Student Loans Sponsored by GL Advisor

3:00 pm–5:00 pm  
**EMRA Residency Fair**
Attend the EMRA Residency Fair to help you scout out more than 100 residency programs exhibiting from around the country. Medical students cannot afford to miss this terrific opportunity to network with program directors, coordinators, and chief residents.

**Resident Events**
Sunday, Oct 16
7:30 am–8:30 am  
**EMRA Welcome Reception & Bloody Mary Breakfast**
8:30 am–2:30 pm  
**Resident Forum: Life after Residency**
- Refreshment Breaks Sponsored by Hospital Physician Partners
- Mechanics of the Job Search
- Business of EM: Contracts/Malpractice
- Financial Planning for Young Physicians
- Resident Networking Lunch: Been There Done That – Tips from EMRA Alumni on Life After Residency
- Resident Breakouts:
  - CV Workshop
  - Advocacy 101
  - Resident as Educator
  - Leadership in Residency

5:00 pm–7:00 pm  
**EMRA Job Fair**
Refreshments Co-Sponsored by Florida Emergency Physicians & TeamHealth
Looking for that perfect job? EMRA is here to help! All EM job seekers need to attend the largest and best Job Fair in the specialty of Emergency Medicine. With more than 150 companies expected to participate in this year’s event, you are bound to find the job that is just right for you!
### October 14-17, 2011

All EMRA Events will be held at the Hilton San Francisco Union Square, 333 O’Farrell Street, San Francisco, CA 94102

#### EMRA Committee & Business Meetings

**Wednesday, Oct 12**
- 9:00 am – 5:00 pm  EMRA Board of Directors Meeting

**Thursday, Oct 13**
- 6:00 pm – 10:00 pm  EMRA Board of Directors Meeting

**Sunday, Oct 16**
- 7:30 am -8:00 am  EMRA Representatives to ACEP Committees Meeting

**Monday, Oct 17**
- 1:00 pm – 2:00 pm  EMRA New Board of Directors Orientation
- 2:00 pm – 4:00 pm  EMRA Technology Committee Meeting
- 4:00 pm – 6:00 pm  EMRA Board of Directors Meeting and Committee Updates

#### Other FUN Stuff

**Saturday, Oct 15**
- 12:00 pm – 4:00 pm  EMRA Resident Sim Wars Competition
- 5:30 pm – 7:00 pm  EMRA Fall Award Reception

**Sunday, Oct 16**
- 9:30 pm – 2:00 am  EMRA Party, Temple Nightclub, 540 Howard Street

Sponsored by Emergency Medical Associates

#### Representative Council Meetings

**Sunday, Oct 16**
- 1:00 pm – 1:30 pm  EMRA Representative Council Conference Committee Orientation
- 1:30 pm – 2:30 pm  EMRA Regional Representative Meeting
- 2:30 pm – 4:00 pm  EMRA Reference Committee Public Hearing
- 4:00 pm – 6:00 pm  EMRA Reference Committee Work Meeting

**Monday, Oct 17**
- 7:30 am- 8:00 am  Representative Council Welcome Breakfast & Candidate’s Forum
- 7:30 am- 8:00 am  EMRA Representative Council Registration
- 8:00 am – 12:30 pm  EMRA Representatives Council Meeting and Town Hall
- 12:30 pm – 1:30 pm  Representative Council Luncheon

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*EMRA Board of Directors Meeting*

*EMRA New Board of Directors Orientation*

*EMRA Technology Committee Meeting*

*EMRA Health Policy Committee Meeting*

*EMRA International Health Committee Meeting*

*EMRA Critical Care Committee Meeting*

*EMRA Research Committee Meeting*

*EMRA Education Committee Meeting*

*EMRA Board of Directors Meeting and Committee Updates*

*EMRA Resident Sim Wars Competition*

*EMRA Fall Award Reception*

*EMRA Party, Temple Nightclub, 540 Howard Street*

*Sponsored by Emergency Medical Associates*
Clinical case

“43 year old male patient with long standing history of substance abuse and depression, was brought in by EMS due to altered mental status.”

Found on the kitchen floor –
A case of Rhabdomyolysis

**HPI**

43-year-old male with long standing history of substance abuse and depression with recent exacerbation, was brought in by EMS due to severely altered mental status. Per initial report, the patient was found on his linoleum kitchen floor, notably disoriented, lethargic, and shivering. He appeared to have been in that state for a prolonged period of time. According to the family, the patient had been unreachable for the last two days, and there was no answer at the door when his mother went to check on him. The family called in the police who were able to enter the house where the patient was found in the above described state. A bottle of Valium 10 mg filled 6 days prior and missing 50 pills was found in the apartment. In addition, bottles of Simvastatin 20 mg and Prevacid 50 mg were recovered. Additionally, per family, the patient also takes Vicodin ES and Flexeril; however, the police did not recover these. Due to a suspicion of opiate overdose, the patient was given 0.4 mg of Narcan en route—shortly after which, he became severely agitated, combative, and uncooperative while remaining severely disoriented.

**Past medical history**

Severe Depression/Angiety, Substance abuse, Chronic LBP, PUD, GERD

**Past surgical history**

Laminectomy, Perforated peptic ulcer repair, Tonsillectomy, Colonoscopy

**Medications**

Prilosec 20mg, 1 tab Daily, Vicodin ES, 1 tab PO q 4h prn, Flexeril 10 mg, 1 tab PO, TID, Valium 10 mg, 1 tab PO TID prn

**Allergies**

NSAID’s

**Review of systems**

Unobtainable due to the patient’s mental state.

**Social history**

Two pack per day smoker; Occasional Alcohol; Currently unemployed – worked as a truck driver; Divorced; lives alone; 10 y/o daughter.

**Physical exam**

VS: T 99.4, HR 120, RR 18, BP 134/65, Pulse Ox 100% on 3L per nasal cannula

General: Alert, disoriented, severely agitated, and combative well-nourished, well-developed male patient wearing a paper mask and trying to spit at staff.

Skin: Warm, dry, and intact

HEENT: Atraumatic, large swelling with redness over right jaw with involvement of upper neck. Trachea midline. Pupils PERRLA at 3mm. EOMI. Moist mucous membranes

Neck: Supple, no signs of nuchal rigidity, and atraumatic

CV: Tachycardic, RRR, S1/S2 present, no murmur or gallop noted

Lungs: Scattered bilateral wheezing with decreased breath sounds in bilateral bases—right greater than left

GI: NT/ND, positive bowel sounds

Neurological: No cranial nerve palsy noted, A&O x 1 (recognizes family),
moving all extremities/equal strength, no contractures, no posturing.

**Diagnostic work up**

Due to the patient’s severely altered mental state and suspicion of suicide attempt, the usual substance abuse screening labs were ordered (urine drug screen, alcohol level, tylenol level, salicylate level, and osmolality in addition to standard basic metabolic panel, CBC, UA, troponin-I, and CK-MB). Based on the patient’s home medication profile and the high suspicion of acetaminophen overdose, liver function panel was also ordered.

As history indicated that the patient may have potentially spent the last two days passed out on the floor, the clinical suspicion of a life-threatening rhabdomyolysis was also high; thus, CK, urine and serum myoglobin, lactic acid, and an ABG were also checked. Additionally, an ammonia level as a potential source of clinically significant encephalopathy in view of suspected acetaminophen-induced liver injury was ordered.

Urine and stool cultures as well as two sets of blood culture were also ordered. Finally, a chest X-ray, non-contrast head and maxillofacial CT studies (to check for any signs of brain injury and evaluate the right facial tissue swelling noted on exam) were performed.

**Significant findings**

- ABG: pH 7.34, pCO2 36, pO2 97, HCO3 18.6, Base deficit 6.1
- Na 147; K 5.3; Cl 110; BUN 70, Cr 2.2, BG 72, AG 18
- Alk Phos 163; ALT 3,356; AST 6,562, tBili 0.5, dBili 0.1
- Lactic acid 6.2; Ammonia 112; CK 39,867; Osmolality 338
- Tylenol 0.3; Benzo (+); Opiate (+)
- WBC 24.1; Hgb 13.2/Hct 39.3, Plt 167K, PT 12.3/INR 1.20/aPTT 27.2
- Urine – tea color, SpGr 1.020, Blood-
Large, Protein-Large
- EKG: 92 bpm, NSR, No ectopy, QT 364/QTc 450
- CXR – Interstitial pneumonia with bibasilar atelectasis, no pneumothorax
- CT head – normal
- CT maxillofacial – marked enlargement of the right parotid gland and associated structures w/out fluid collection.

**ED course**

Patient was brought in as a high priority case, and thus was immediately evaluated by a resident and an attending physician. SpO2 and cardiac monitor leads were attached to the patient upon arrival. Two large bore IV’s were placed in his arms and a 2 L NS bolus was started. Oxygen continued to be given via nasal cannula at 3 L/min. Labs and cultures were immediately drawn. As initial lab and study results started to come back and the suspicion that the patient will require an ICU admission was confirmed, the ICU team was contacted and the patient admitted. Furthermore, consults to GI and ID specialists on call were initiated.

Prior to being transferred to ICU, the patient received approximately 3 L NS. Subsequently, the patient also received 1 L of 0.45 NS containing 76 mEq of NaHCO₃. In addition, he was also treated with Lactulose (rectal), Mucomyst (IV), and started on empiric antibiotic therapy comprised of ceftriaxone, azithromycin (later changed to Vancomycin per ID), and clindamycin. A formal liver ultrasound was also ordered.

**Hospital course**

The patient was admitted to the step-down ICU unit under intensivist with specialization in nephrology. Subsequent consults to ENT and psychiatry in addition to the initially consulted GI and ID specialists were obtained.

**Initial Working Diagnoses:** Acute rhabdomyolysis secondary to prolonged immobilization versus statin use; encephalopathy secondary to narcotic use, meningitis, seizure, or hepatic failure; acute kidney failure secondary to hypovolemia, hypoperfusion, rhabdomyolysis; liver injury secondary to hypoperfusion, tylenol overdose, or rhabdomyolysis; sepsis from suspected aspiration pneumonia.

Subsequent radiographic studies revealed increasing alveolar disease with lingular as well as extensive left lung infiltrates. An ultrasound of the abdomen revealed an abnormally distended eight millimeter common hepatic duct without visible obstructing stones. Blood cultures obtained during initial assessment in the ED yielded non-resistant coagulase negative staph aureus on day three (two out of two bottles). Stool and urine cultures were negative. The patient was started on IV unasyn per infectious disease and all other antibiotics were discontinued. The patient continued to improve slowly through the next several days. On day six of his admission (approximately two days after his mental status returned to baseline), the patient left AMA despite discouragement of his physicians.

continued on page 36
Found on the kitchen floor – A case of rhabdomyolysis

continued from page 35

Pre-departure studies
Na 149, K 3.3, CO₂ 29, BUN 9, Cr 0.9, GFR 97.9,
Alkaline Phosphatase, ALT 452, AST 124, tBili 0.7, dBili 0.2,
Ammonia 28, CK 2,785, WBC 11.3, Hgb 10.6/Hct 31.8,
PT 12.2/INR 1.10/aPTT 29.1
Repeat Blood Cultures – no growth in three days
CXR – Small left-sided pleural effusion
with bilateral lower lobe airspace disease
showing interval improvement

Discussion
Rhabdomyolysis is broadly defined as a
multifactorial disease state resulting from
the breakdown of skeletal muscle and the
associated systemic pathologic effects
carried by the cellular contents that find
their way into the blood stream after the
destruction of the sarcolemma (muscle
cell membrane). Key players among the
pathogenic substances eluted from the
broken down muscle cells are myoglobin,
potassium, phosphorus, uric acid, creatine
kinase, and various other sarcomeric
enzymes. Even though the pathognomonic
symptoms of rhabdomyolysis are
typically described in terms of the muscle
weakness, swelling, and pain triad, only
about 50 percent of patients tend to
present with all three elements (7).

As in the patient above, the diagnosis
may be further complicated by a
broad spectrum of presentations and
precipitating factors varying from
trauma to the more insidious etiologies
associated with common medication use
and genetic errors in metabolism. Thus,
a thorough history and a high clinical
index of suspicion, especially in the
patients presenting with an altered mental
state, are invaluable tools in uncovering
rhabdomyolysis, initiating early goal-
directed treatment, and potentially making
the difference between life and death.

Rhabdomyolysis was first formally
identified as a distinct entity in airplane
crash victims during WWII; however,
descriptions of its signs, symptoms, and
ultimate outcomes can be found as far back
as the Old Testament (5,7). In recent years,
the main source of data has been collected
through observation of crush victims found
in large-scale disasters. Throughout the
years multiple etiologies of rhabdomyolysis
have been identified, the most common
of which are trauma (especially involving
compression injuries), alcohol, prescription
medications (e.g. statins, colchicine),
eliciting drugs (e.g. cocaine), exercise,
infections, and seizures (4,7). As in the
patient described above, however, multiple
etiologies should be considered and
treatment adjusted accordingly. In this
patient, there were at least three potential
triggers, which individually or in concert
may have precipitated his fulminant
rhabdomyolysis. Most prominent of these
likely is the prolonged period of immobility
spent lying on a hard floor. In addition,
the patient was known to be taking a statin
medication and to have a severe bacterial
respiratory infection, all of which may have
contributed to his condition.

As mentioned earlier, a thorough H&P are
paramount in diagnosing rhabdomyolysis.
By virtue of the relative complexity of the
inciting etiology, the patient may present
with a wide spectrum of symptoms that
cold or may not include muscle pain or
weakness. The diagnosis is generally made
through the detection of elevated serum
and urine creatine kinase and myoglobin.
Patients also typically present with
dark – “tea-color” or brown – urine
which is strongly positive for blood on
standard dipstick but shows few or even
no RBC’s on microscopic analysis. This
discrepancy occurs because the urine
dipstick test does not distinguish between
myoglobin and hemoglobin and thus
interprets the typically elevated levels
of myoglobin as hematuria (3). It is
also worth mentioning that serum CK is
cleared much slower than myoglobin in
comparison to serum myoglobin (half-
life one to three hours); therefore, it is a
far more reliable finding in the diagnosis
of acute severe rhabdomyolysis.

On the other hand, due to the rapid
excretion of myoglobin in the urine,
myoglobinuria greater than 5 ng/mL is
considered defining in the diagnosis of
rhabdomyolysis (5,7).

The mainstay of rhabdomyolysis
management is early aggressive fluid
resuscitation. Studies show that the earlier
aggressive fluid treatment is started, the
greater the chance of reversing or even
preventing major morbidity and mortality
events, not least of which is acute intrinsic
renal failure from acute tubular necrosis
in these patients (5,7,10). Urine output
goals of 200 to 300 mL/hr may be used as
a guide for fluid infusion regimens (9).

Another important component of the
treatment of rhabdomyolysis is urine
alkalization. Animal studies have shown
that nephrotoxicity due to myoglobin
binding and subsequent formation of
brown casts is notably increased in low
urine pH. In fact, these studies show
that volume depletion and decreased
urine pH work in concert to precipitate
renal failure by decreasing myoglobin
solubility leading to impeded clearance (1). Thus, urine alkalization is a mainstay of Rhabdomyolysis treatment and can commonly be achieved by adding one to two amps of HCO₃ to a liter of ½ NS (7,10).

Even though diuretics were not used in this patient, their role in rhabdomyolysis treatment is significant and warrants discussion. Specifically, mannitol has been found to be of great potential benefit. Besides its obvious ability to enhance diuresis and act as an intravascular volume expander, mannitol has also been found to minimize formation of casts and their intratubular deposition, act as a free-radical scavenger, and decrease water sequestration in injured muscles which can help prevent compartment syndrome (7,10). Mannitol, however, should not be used in anuric or oligouric patients due to the risk of hyperosmolality (as was the case in this patient), volume overload, and hyperkalemia (10).

This discussion would not be complete without a brief mention of some of the additional considerations that were incorporated in the overall approach and treatment of this patient. One of the most notable aspects of this case is the significantly elevated aminotransferase values. There is well-documented evidence that rhabdomyolysis patients often present with elevated ALT, AST, and LDH. These lab values are often erroneously attributed to liver injury when, in fact, their increase is due to muscle breakdown (7).

Since as many as 20 percent of patients receiving IV N-acetylcysteine may develop an anaphylactoid reaction, the risks and benefits as well as whether the elevated aminotransferase values are due to true acetaminophen-induced liver injury should be carefully considered (2). In the patient described above, treatment was initiated due to a known history of vicodin abuse and suspicion of a suicide attempt in which the drug may have played a role. In view of the fact that the patient’s acetaminophen level was low (0.3 μg/mL), his AST and ALT were already significantly elevated, and the time and amount of last ingestion was unknown, it could be argued that the N-acetylcysteine treatment window had probably passed. One can also argue that since the patient had other risk factors (e.g. statin intake, CBD dilation with potential obstruction, suspected hypoperfusion, prior history of acetaminophen-induced liver damage) which may have caused elevation in his liver enzymes, N-acetylcysteine may have also been futile; nonetheless, in view of the patient’s obvious hepatic failure (a hepatic injury with evidence of encephalopathy), IV NAC – a relatively safe drug therapy for a potentially treatable cause of a serious condition – was undertaken.

References
**EMRA Membership has its benefits!**

ACEP-EMedHome.com

EMRA + ACEP-EMedhome.com = Awesome New Benefit for EMRA Members! ACEP-EMedHome is the most comprehensive database for EM video lectures, podcasts and written content on the web, one of the best emergency medicine educational websites and is seamlessly adopted for iPhone and iPad platforms for learners on the go! EMRA is proud to announce that a new collaboration between EMRA and ACEP-EMedhome will make this educational resource available to EMRA members at only $30 a year, a 70% discount from regular price! Can’t fork up $30 bucks? Then EMRA and EMedHome will still provide you Amal Mattu’s monthly EMCast free of charge! Take advantage of this new member benefit visit emra.org/memberbenefits.

**GL Advisor** offers a unique service designed to assist medical residents with lowering the cost of their student loan debt and improving their financial net worth. To get started, sign up at [https://clientportal.gladvisor.com/registration.aspx](https://clientportal.gladvisor.com/registration.aspx) to receive a FREE student debt assessment. Additionally, EMRA members can retain GL Advisor for a discounted annual fee.

**EMRA Advocacy Week**

**October 24–28, 2011**

EMRA’s Healthcare Policy Committee is proud to announce EMRA’s Advocacy Week 2011.

This is an opportunity for your residency to set aside conference time to explore healthcare policy issues through:

- lectures from interested residents on policy and advocacy topics
- presentations from local leaders in Emergency Medicine on current advocacy issues in EM
- holding a joint Advocacy Conference with other programs in your area
- inviting a local elected official to speak
- lobbying activities at your state capitol

Downloadable Powerpoint presentations on advocacy topics will be available on the EMRA website starting in September.

Please contact Sarah Hoper, Health Policy Committee Vice-Chair, at hopers@wusm.wustl.edu with any questions about Advocacy Week.

**CANDIDATES AND EMPLOYERS**

Connect through EM Career Central at ACEP Scientific Assembly in San Francisco, CA October 15-18

www.emcareercentral.org

- Visit the EM Career Central booth during ACEP’s Scientific Assembly to search the most comprehensive online listing of emergency medicine positions.
- Use the EM Career Central Event Connection Tool to connect with prospective employers at the 2011 Scientific Assembly and EMRA Job Fair.
- Sign up for the Event Connection and get a chance to win $100 gift card.
- Ask an EM Career Central representative for a demonstration of the redesigned and enhanced website features.
- Visit www.emcareercentral.org today to find the ideal position!

Located in the ACEP Resource Center in the Moscone Convention Center

Saturday, Oct 15 9:30am-3:30pm

Sunday, Oct 16 9:30am-3:30pm

Monday, Oct 17 9:30am-3:00pm

EMRA Advocacy Week

American College of Emergency Physicians®

ADVANCING EMERGENCY CARE®
EMRA elections will be held during the EMRA Representative Council meeting at ACEP’s Scientific Assembly in San Francisco, CA, October 17, 2011 for the following positions:

President-Elect: Candidates for President-Elect must make a three-year commitment to EMRA. The first year serving as President-Elect. The second year in the term is as the President. The third and final year is spent as Immediate Past President/Treasurer.

Vice Speaker of the Representative Council: This two-year term with the first year serving as Vice Speaker and the second as Speaker, assists Speaker as Parliamentarian for the Representative Council, acts as director of all Representative Council taskforces, and is the EMRA Delegate to the AMA Resident and Fellows Section at the annual and interim AMA meetings.

Academic Affairs Representative: Candidates for Academic Affairs Representative must make a two-year commitment to EMRA. Position responsibilities include: Representing EMRA to the ACEP Academic Affairs Committee, acting as EMRA liaison to the Council of Residency Directors (CORD), and serving as EMRA board liaison to the Medical Student Governing Council.

Secretary/EM Resident Editor: Candidates for Secretary must make a two-year commitment to EMRA. Position responsibilities include: Recording minutes at the Representative Council and Town Hall meetings. Editing EM Resident. This position carries full responsibility for content, production and publication of EMRA’s bi-monthly magazine that educates and informs EMRA members.

Technology Coordinator: Candidates for Technology Coordinator must make a two-year commitment to EMRA. Position responsibilities include: Editing the EMRA Website. This involves procuring, reviewing, and approving content for the website, as well as developing implementation plans for content organization. Advising the board on matters of technology, and ensuring that the membership’s technology needs are being adequately addressed.

For full position descriptions please visit www.emra.org.

If you are interested in running for a position, please email your CV, a statement of interest (200 words or less), letter of support from your residency director, and a photo (jpeg format) to mbyers@emra.org by September 2, 2011. EMRA will post statements and photos received from candidates on the EMRA Website. Nominations from the Council floor will also be accepted.

It’s time to nominate yourself or a colleague for an EMRA Award. Deadline for submission is August 15. Awards will be presented at the EMRA Award Reception during ACEP’s Scientific Assembly in San Francisco, CA, Saturday, October 15, 2011.

Augustine D’Orta Award: Bestowed upon a resident physician who demonstrates outstanding community-minded, grass-roots oriented political involvement in health policy or community issues.

Excellence in Teaching Award: Given to an outstanding faculty member who has served as a unique role model for residents.

Joseph F. Waeckerle Founder’s Award: Honoring a physician who has made an extraordinary, lasting contribution to the success of EMRA.

Clinical Excellence Award: Recognizes a resident who has done outstanding work in the clinical aspect of emergency medicine.

Local Action Grant: Promoting the involvement of emergency medicine residents in community service and other activities that supports the specialty of emergency medicine.

EMRA Mentorship Award: This award recognizes an EMRA alumnus who has demonstrated exceptional service as a mentor for medical students and/or residents in Emergency Medicine. The dedicated recipient is an outstanding role model for future emergency physicians.

Leadership Excellence Award: Presented to a resident who has demonstrated outstanding leadership ability.

EMRA Travel Scholarship to Scientific Assembly: These $500 scholarships assist a resident or student member of EMRA in the costs associated with attendance of Scientific Assembly. Up to three applicants may be chosen based on financial need and academic pursuit.

For information and application instructions please visit www.emra.org.
SAEM Annual Jeopardy!

Stanford/Kaiser captures the Jeopardy title!

We’ll take medical imaging for 500...

Left to right: Ben Constance, MD, Philip Harter, MD, Program Director, Sundeep Bhat, MD Cameron Berg, MD and Paige Sokolsky, MD.

Left to right: Eric Schenfeld, MD, Zac Kahler, MD and Brittany Murray, MD.

Left to right: David Nguyen, MD, Ben Mahon, MD and Henry Young II, MD.

Left to right: Ravi Murthy, MD, Whitney Holmer, MD, and Meaghan Nitka, MD.

Left to right: Jill Ward, MD, Paul Passafiume, MD and Javier Gonzalez, MD.
Congratulations to the 2011 EMRA Spring Award Recipients

Back row pictured left to right: Joel Schofer, MD; Britney Anderson, MD; Anas Sawas; Cameron Decker; Joshua Jauregui, MD; Elizabeth Goldberg, MD; Daniel Nelson, MD; and Joseph Reardon, MSII. Front row left to right: Priya Kuppasamy, MD; Peggy Herring; Stacy House, MD; Shae Sauncy, MD; and Amal Mattu, MD, FACEP.

Christiana Care, DE
Program Director: Neil Jasani, MD, MBA, FACEP. Melissa Leming, MD; Dr. Daniel Hess, MD, Alon Payenson, MD, and Kathryn Walters, MD.

Emory University, GA
Program Director: Philip Shayne, MD, FACEP. Miriam Fisher, MD, Rebecca Wurster, Scott Kurpiel, MD, and Carolyn Overman, MD.

Florida Hospital
Program Director: Dale Birenbaum, MD, FACEP. Javier Gonzalez, MD, Paul Passafiume, MD, Vu Nguyen, MD, and Jill Ward, MD.

Naval Medical Center, VA
Program Director: LTC James Barry, MD, FACEP. LT Shannon Reeve, MD, LT Diana Macian, MD, and LCDR Eric Draper, MD.

SUNY Upstate, NY
Program Director: Gary Johnson, MD, FACEP. Katherine Dougher, MD, Nicole Gero, MD, Long Nguyen, MD, and Kelsey Stack, DO

William Beaumont Hospital, MI
Program Director: Ryan Fringer, MD, FACEP. Payal Shah, MD (team captain), Joel Ascher, MD, Evan Green, MD, and Jessica Triest, MD.
2011 CPC Semi-Final Competition

The 2011 National Emergency Medicine CPC Semi-Final Competition, co-sponsored by ACEP, CORD, EMRA and SAEM, was held this year at the SAEM Annual Meeting in Boston, Massachusetts. Eighty-five EM residency programs submitted cases for consideration in the Preliminary Competition. Cases in the Preliminary Competition were judged on quality of the case, applicability to Emergency Medicine, and solvability. Thirty judges scored the cases and selected 72 of the best submissions for presentation in the Semi-Final Competition.

Each resident presented their institution’s case to a designated faculty member from another residency program. Residents were judged on various aspects of their presentation including quality, organization, style and clarity. Faculty members were judged on the thoroughness of the differential diagnosis, diagnostic reasoning, and presentation skills. A correct final diagnosis yielded additional points, however, was not a requirement to win.

All resident presenters and faculty discussants did a remarkable job. Congratulations to all of the 2011 Semi-Final winners who will compete in the final competition to be held in San Francisco at the ACEP Annual Scientific Assembly, Saturday, October 15, 2011.

Resident Presenter Semi-Final Winners
Joseph Pare, MD, Boston Medical Center
Nadine Himelfarb, MD, Warren Alpert Medical School of Brown University
Kevin Koehler, MD, Naval Medical Center Portsmouth
Jenna MB White, MD, University of Michigan
Juliana Wilson, DO, University at Buffalo
Melissa Marinelli, MD, Northwestern University

Faculty Discussant Semi-Final Winners
Daniel Egan, MD, St. Luke’s-Roosevelt Hospital
Amber Richards, MD, Maine Medical Center
Tim Barcomb, MD, Albany Medical Center
Tala Elia, MD, Baystate Medical Center
Christopher Wolcott, MD, LSU Health Sciences Center, Shreveport

When you attend ACEP’s Scientific Assembly, you know that you will receive the most compelling educational content, presented by top faculty in the specialty. This year, we would like to add to that experience by offering a cadaver lab, as well as a simulation lab – providing you with even more hands-on experience.

Start planning now! This year’s Scientific Assembly gives you a chance to enjoy the best of both worlds – the most comprehensive emergency medicine education available and a world-class destination.

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Available online at www.emra.org/emra_bookstore.aspx
Risk management pitfalls to avoid in endocrine emergencies

1. “I forgot to give ‘stress-dose’ corticosteroids to my critically ill patient on chronic corticosteroid therapy.” Failure to give hydrocortisone 100 mg/m²/d (approximately 7 mg/kg) IV or IM to these children may result in refractory hypotension or worse. Even children with simple febrile illnesses such as streptococcal pharyngitis should take double or triple their usual daily dose for the duration of the illness.

2. “My patient just has a headache. She’s a child, I don’t need to check her blood pressure.” This step is automatic for most emergency clinicians when caring for adults with this complaint, but in children it is often overlooked. Although pheochromocytomas are rare in children, headache is their most common chief complaint.

3. “We don’t have time to get the blood and urine for adrenal insufficiency testing. Just give the steroids now and they can do confirmatory testing later.” These tests will be of little value if they are carried out after treatment has begun.

4. “The child has classic symptoms of new-onset diabetes.” Her blood sugar is probably in the normal range right now because she hasn’t eaten recently. Although the vast majority of children with polydipsia and polyuria will indeed be found to have diabetes mellitus of new onset, a significant minority will have diabetes insipidus — and you’re not going to make that diagnosis until you check their electrolytes.

5. “His sodium is 172. We should give a bolus of quarter normal saline until we at least get that down below 150.” Lowering the serum sodium faster than 0.5 mEq/L/hr in these children can cause cerebral edema, resulting in seizures, coma, permanent neurologic injury, and death. A steady, controlled lowering of serum sodium levels can be achieved with any hypotonic fluid, and the details for accomplishing this should be discussed with a pediatric intensivist.

6. “His sodium is 118. We should give a bolus of 3% sodium chloride to get that serum level up before he seizes.” Only those children with signs of cerebral edema (ie, altered mental status or seizures) require 3% sodium chloride. In these symptomatic children, serum sodium levels should be raised at a rate no faster than 2 mEq/L/hr. Correcting these levels too rapidly can cause cerebral osmotic demyelination, resulting in permanent neurologic disabilities and death.

7. “I don’t know why he’s so hyponatremic. He’s not on any meds that would cause that.” Plenty of children are taking desmopressin for either hemophilia or bed wetting. Perhaps because this drug is given intranasally many parents won’t list this as a “medication.”

8. “She has pretty nonspecific complaints; the physical exam probably won’t reveal much.” As with a goiter, the majority of children with either hypothyroidism or hyperthyroidism will have an abnormal TSH level. This is a nice screening tool for such illnesses, in which symptoms are notoriously vague.

9. “With such nonspecific symptoms, screening tests are of little value.” As with a goiter, the majority of children with either hypothyroidism or hyperthyroidism will have an enlarged thyroid. This may be your only diagnostic clue in these children who otherwise often have nondiagnostic findings on history and physical examination.

10. “As sick as she is, we should start both the methimazole and Lugol’s solutions now.” While iodine solutions are key to prevent the release of preformed thyroid hormones, they also will increase the production of new hormone unless the antithyroid drugs have had adequate time to halt this process.
Risk management pitfalls for therapeutic hypothermia in postcardiac care

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1. “A patient has arrived from a nursing home with ROSC after being found unresponsive during the morning shift change. The patient is nonverbal and noninteractive, with little apparent cognitive ability secondary to a prior stroke. Am I obligated to induce hypothermia?”
   This practice is not the standard of care at this time; thus, the emergency clinician reserves the right to decide on a case-by-case basis which patients may or may not benefit from this therapy. The emergency clinician reserves the right to decide when clinical and/or extraclinical factors (such as resource allocation) make the application impractical.

2. “I was treating a patient with chest pain and a very concerning history when she suddenly arrested. After several minutes, we were able to bring her back. An ECG taken after the arrest showed lateral wall myocardial infarction. I activated the cath team, but should I have waited until the patient was cooled before letting her go for the procedure?”
   Treating a patient with induced hypothermia should not delay or inhibit the application of any other emergent procedures or investigations (eg, cardiac catheterization, surgical intervention, interventional radiology) related to the underlying pathology of cardiac arrest. Most times, the interventions can be performed simultaneously.

3. “As an emergency clinician, I’m excited about the prospect of having an additional therapy for my postcardiac arrest patients. I have all of the tools in my ED and would like to get started right away. What else do I need to do?”
   Therapeutic hypothermia is a multidisciplinary treatment modality; before initiation of any hypothermia protocol, all potential services that may be caring for the patients should be involved in the discussion. These services may include neurology, intensive care medicine, emergency medicine, and EMS.

4. “I’m called to the bedside by the nurse because the most recent ECG of a patient receiving therapeutic hypothermia appears to have a lot of artifact that she can’t seem to get rid of. On close inspection, the patient appears to have a fine tremor. The nurse asks if I would like to administer another dose of paralytic.”
   Paralysis should be used only as a last resort for shivering control, as masking seizure activity may result in worsening of neurologic status despite any benefits gained by therapeutic hypothermia. Sedation and analgesia should be used first.

5. “While working medical control for my local EMS system, I received a call about a patient postcardiac arrest with ROSC. The EMS providers stated that they had been training to perform hypothermia and asked if they should begin therapy before my assessment of the patient.”
   Emergency medical services are a vital part of the hypothermia care paradigm, as the therapy has been shown to be more effective when delivered early. The initial cooling process can be started easily in the field with ice or cooled saline. If the receiving emergency clinician does not feel that hypothermia care is warranted, then there is no obligation to continue it.

6. “The patient receiving therapeutic hypothermia suddenly went into atrial fibrillation. I decided to attempt cardioversion, and the first shock converted the patient to normal sinus rhythm. After several minutes, however, the atrial fibrillation returned. Then the patient’s blood pressure started falling.”
   The development of a life-threatening arrhythmia is a contraindication to hypothermia care. The patient should be rewarmed to normothermia.

7. “When using therapeutic hypothermia I continue to have difficulty maintaining a constant temperature. Every time I adjust the device or add saline to recool the patient, I end up overshooting my goal.”
   First and foremost, check the patient for shivering. Wide temperature swings are not the norm and may be a sign of occult or fine shivering. Second, consider a different placement for the particular feedback device. If possible, esophageal placement should be attempted.

8. “After several hours of stability during therapeutic hypothermia, my patient became gradually more tachycardic. Although she was initially weaned from pressors, her blood pressure started falling again. I used ultrasound only to find her IVC had collapsed, and her heart was pumping vigorously.”
   Cold will cause a diuresis. Although all patients may require some form of maintenance fluid, hypothermic patients should have urine output monitored closely and subsequently matched in return.

9. “While beginning to rewarm the patient, I noticed a change in the T wave morphology on the monitor. A subsequent ECG showed peaked T waves. Did I miss renal failure in the patient?”
   A too-rapid rate of rewarming will cause severe electrolyte shifts, particularly hyperkalemia. The rate of rewarming should not exceed 1°C (2°F) per hour and ideally should be more toward 0.5°C (1°F) per hour.

10. “A patient who has undergone hypothermia care is neurologically devastated several days after rewarming. I am asked why it did not work.”
    Hypothermia care offers no guarantees. Efforts should be made to explain to providers and family that this therapy will increase the patient’s chances for attaining a good neurologic outcome; however, it is difficult to predict which patients will fully recover on the basis of the available data.”
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Maryland: Is variety the spice of your life? Join the MEP Travel Physician Team! Variety is just one benefit of this unique position. Enjoy working at our 6 Maryland campuses, earn top-of-the-market compensation, and be part of the most dynamic Emergency Medicine practices in the mid-Atlantic! MEP is seeking ambitious, experienced BC/BE Emergency Medicine Residency-Trained Physicians to join the MEP Travel Physician team. Candidates must have 2 years of ED experience to be considered, and willing to travel to our various sites. MEP offers a generous guaranteed hourly rate and benefits package totaling in excess of $340k. Sign on bonus, per diem and additional quarterly performance bonuses are also provided for this position. Only 120 hours of clinical work per month required. MEP Travel Physicians are cross credentialed and work at all MEP Maryland campuses. From the mountains of Western Maryland to the Chesapeake Bay, you will be an integral part of each MEP campus. MEP sees more than 350,000 patients per year in our EDs, from smaller community hospitals to Level III Regional Trauma Centers. If you crave something different, and have the experience and cultural fit we seek, this is the job for you! Visit EmergencyDocs.com to learn more about MEP and our 6 facilities. For more information and to apply, contact Amy-Catherine McEwan at 301-944-0049 or e-mail CV to ACMcEwan@EmergencyDocs.com. Visit us on Facebook! http://www.facebook.com/pages/MEP-Medical-Emergency-Professionals/78328874408.

Maryland, Cumberland: Small Town Lifestyle, Big City Compensation in Scenic Cumberland, MD. MEP is seeking experienced BC/BP Emergency Medicine Residency-Trained Physicians to join our team at the Western Maryland Regional Medical Center (WMRMC) in Cumberland, MD. MEP offers an exceptional productivity based compensation plan, a significant sign-on bonus, and a comprehensive benefits package including malpractice with tail coverage. Total compensation package of over $310,000. Leadership and ownership opportunities are available. WMRMC has an annual volume of over 55,000 with 40 hours physician coverage, and is the designated area-wide Level III Trauma Center. WMRMC offers a comprehensive range of general and specialty services in a new $268 million state-of-the-art hospital with 275 inpatient beds. Scribes assist physicians with charting, and a Rapid Medical Evaluation (RME) unit, increases throughput. Only a short driving distance from Pittsburgh, Baltimore and the Washington, DC Metropolitan area. MEP physicians are cross credentialed and work at all MEP Maryland campuses. MEP pays medical benefits, prescription, malpractice, 401(k), CME, relocation, dental, vision, life, LTD, performance bonus, and much more. MEP manages EDs at 7 community teaching hospitals seeing 32,000 – 55,000 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, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.
area, Cumberland is an ideal area to enjoy award-winning dining and local attractions. Affordable housing, great schools and year-round recreation, Cumberland has it all! MEP is a privately owned and physician owned and managed group. Contact AC McEwan at (301) 944-0049 or ACMcEwan@EmergencyDocs.com.

Maryland, Hagerstown: MEP, a privately owned Emergency Medicine physicians group, has an outstanding opportunity for BC/BP EM Residency-trained physicians at the brand new Meritus Medical Center in Hagerstown, MD. An hour from Washington, DC and Baltimore, greater Hagerstown is the fastest growing metro area in Maryland with affordable housing and numerous outdoor activities. Meritus is a not-for-profit hospital, opened in December 2010. The 500,000-square-foot, 267-bed regional medical center has an ED volume of 70,000. The hospital offers acute general inpatient services in addition to a regional Level III Trauma Center, an intensive care unit, a progressive care unit, a coronary care unit, and a pediatric unit. The emergency department features 52 beds with 4 trauma/code beds. Scribes assist physicians with charting, and a Rapid Medical Evaluation (RME) unit, increases throughput. Physicians’ coverage is 53 hours. MEP offers an exceptional compensation and benefits package, with above market compensation, and malpractice with tail coverage. Leadership and ownership opportunities are available to qualified physicians. A substantial sign on bonus is available. Contact AC McEwan at (301) 944-0049 or email CV to ACMcEwan@EmergencyDocs.com.

Michigan, Battle Creek: As an equity-ownership group with an outstanding record of physician retention and satisfaction, Premier Health Care Services offers physicians a highly appealing model including shareholder status at one year with no buy-in! This is an excellent opportunity for an Emergency Medicine physician in a 50,000 volume ED with excellent physician/MLP coverage. Terrific benefits include employer-funded pension, family medical plan, expense account, guaranteed hourly plus incentive income and more. Located 25 miles east of Kalamazoo, Battle Creek offers an appealing community with excellent amenities for families. Contact Kim Avalos Rooney, (800) 726-3627, ext. 3674, krooney@phcsday.com, fax (937) 312-3675.

Michigan, Grand Blanc: Full Time/Part Time EM or EM/IM BC/BP 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. Julie, DO, FACEP, Director Emergency Services, One Genesys Parkway, Grand Blanc, Michigan 48439-1477, or email to mjule@genesys.org, or call (810) 606-5951.

Michigan and Ohio: Academic Track - EPMG is proud to be affiliated with 5 EM residency programs in MI and OH. BC/BP EM physicians are encouraged to apply for combination teaching/clinical opportunities. EPMG physicians are employed partners and enjoy paid family medical benefits, life, LTD, performance bonus, paid malpractice, 401(k), CME, relocation, and much more. Physician owned and operated for 35 years, EPMG offers a variety of career paths (academic, clinical, administrative), as well as a work and
Exciting Academic Opportunity, Get in on the Ground Floor!

The Baylor College of Medicine, a top medical school, has recently developed an Emergency Medicine Program & Residency in the world’s largest medical center. We are recruiting stellar Emergency Medicine BC/BE Clinician Educators and Clinician Researchers at all academic ranks who will be an integral part of building the future of Emergency Medicine at BCM. We offer a highly competitive academic salary and benefits.

The program will be based out of Ben Taub General Hospital, a busy Level 1 trauma center in the heart of Houston that sees more than 100,000 emergency visits per year. BCM is affiliated with eight world class hospitals and clinics in the renowned Texas Medical Center. These affiliations along with the medical school’s preeminence in research will help to create one of the strongest emergency programs/experiences in the country.

Those interested in the position or further information may contact Dr. Hoxhaj via email hoxhaj@bcm.tmc.edu or by phone at 713-873-2626.

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Nebraska, Omaha: Ideal opportunity offers excellent compensation, equity ownership and desirable setting! BC/BP EM physician sought for 25,000 volume ED in suburban Omaha. This appealing facility has 9-hour physician shifts plus additional MLP coverage. Excellent package includes shareholder opportunity at one year with no buy-in! Also included is guaranteed rate plus additional incentive; as well as family medical plan, employer-funded pension, malpractice, expense account and additional benefits. As Nebraska’s largest city, Omaha provides both metropolitan amenities and friendly, Midwestern charm. Home to several Fortune 500 companies, Omaha is a thriving city with something for everyone including the U.S.’s largest community theatre, 11 colleges and universities and a world famous zoo. With its rich jazz history and reputation as the heart of the Midwest, there is also great cultural appeal. For additional information please contact Kim Rooney, Premier Health Care Services, (800)726-3627, ext. 3674; e-mail krooney@phcsday.com; fax (937)312-3675.

New Hampshire, Derry: Emergency Physicians of Derry in Southern NH is looking for a RT BC/BP EM MD. ED volume is 26,000 with double PA coverage. This fee-for-service group has an excellent compensation package with health, liability insurance, CME, and retirement benefits. Derry is a very desirable community, approx 1 hour from the mountains, the seacoast, and Boston. Contact Dr. Thomas Scott at Thomas.Scott@HCAhealthcare.com or phone 603-421-2225.
VIRGINIA

Emergency Physicians of Tidewater (EPT) is a progressive, democratic group serving 7 hospitals in the Virginia Beach/Norfolk area. The practice includes level 1 and 2 trauma centers, as well as diverse community settings. EPT provides faculty for and directly supervises an EM residency program. Great niche opportunities in U/S, EMS, administration, tactical medicine, forensics, and hyperbarics. Well-staffed facilities. Competitive financial package leading to full partnership and profit sharing. Great, affordable coastal area with moderate year-round temperatures and beaches minutes away. Only EM BC/BP candidates accepted. Send CV to Emergency Physicians of Tidewater, 4092 Foxwood Dr., Ste. 101, Virginia Beach, VA 23462  Phone (757) 467-4200  Fax (757) 467-4173  E-mail cherccasp7@aol.com

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New Hampshire, Portsmouth: Portsmouth Emergency Physicians, PC in Portsmouth, NH is looking for a full-time RT BC/BP physician for 2011. Portsmouth Regional Hospital [Level II] 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, Albany area and Cortland: Cortland Memorial Hospital is a modern, full-service facility situated in the Finger Lake Region between Syracuse and Ithaca (35,000 ED pts/yr). Albany Memorial Hospital has a new ED (39,000 pts/yr) and hosts EM resident rotations, while Samaritan Hospital in Troy is a respected community hospital minutes from Albany seeing 45,000 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.

New York, Brooklyn: Emergency Medicine Physicians Needed. NES Healthcare Group is seeking emergency medicine physicians for Lutheran Medical Center (LMC), Brooklyn, NY. LMC is a Level I Trauma Center and a designated stroke center. Candidates must be BC/BE EM and have current EM experience. Competitive compensation, incentive program, CME allowance and malpractice coverage provided. Contact: Megan Evans, Physician Recruiter, 800.394.6376, fax 631.265.8875, mevans@neshold.com.

North Carolina, Charlotte: EMP is partnered with 7 community hospitals in Charlotte, Gastonia, Lincolnton, Pineville and Statesville. A variety of 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, 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 41,000 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. 73,000 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.
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North Carolina, Wilmington: Physician opportunity with a stable, independent, and respected, multi-location urgent care in beautiful Wilmington, North Carolina. Established in 1984, Medac Health Services has built a reputation for providing convenient, high quality health care to the greater Wilmington community. We are seeking a physician committed to providing excellent patient care. Southeastern North Carolina embodies coastal living at its finest. Local beaches offer warm waters, boating, and fishing. Wilmington’s historic downtown town features shopping, galleries, and restaurants. Our close knit community offers the amenities of a city with a small town feeling. Physicians practicing with Medac Health Services, P.A. receive competitive pay rates and an excellent benefits package. For more information about employment opportunities please contact J. Dale Key, Administrator, Medac Health Services, P.A. 4402 Shipyard Blvd. Wilmington, NC 28403. Phone: 910-452-1400. Fax: 910-791-9626. Email dkey@medachealth.com.

Ohio, Barberton and Wadsworth: SUMMA Health System-Barberton Hospital is a full-service community hospital in southern suburban Akron with 44,000 ED visits/yr. WRH Health System in Wadsworth sees 20,000 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.

Ohio, Cambridge: Southeastern Ohio Regional Medical Center is a 177-bed, full-service facility treating 31,000 ED pts./yr. Outstanding
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✓ Earn up to $165/hour (depending on the site)
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MedExcel USA, Inc. is a quality-driven physician owned emergency medicine management group. We offer many innovative programs, including a “no-Wait ED” and a “Pain Sensitive ED” as well as unparalleled career opportunities and professional development. We offer a nurturing, physician friendly environment in which to develop your future. Career development opportunities are available for those interested in an administrative career track.

For additional information, contact Mark Douyard at 800-563-6384 x.258 or careers@medexclusa.com

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**Oregon, Salem:** Physician partnership opportunity in independent, democratic group in Salem, Oregon. Salem is a wonderful city centrally located in the beautiful wine country of the Willamette Valley, only one hour from the ocean, mountains and Portland. Must be BC/BP in Emergency Medicine. New 55-bed ED/hospital. Full benefits. Competitive salary. Great lifestyle. Send CV, cover letter and recent photo to sepspc@salemhospital.org. Qx? 503-561-5634.

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.
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EPMG is currently seeking EM physicians for the following emergency department opportunities:

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- **Hayes Green Beach – Charlotte, MI**
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- **Southern Ohio Medical Center – Portsmouth, OH**
  ~ Staff Physician opportunities

- **Wheeling Hospital – Wheeling, WV**
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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.

For more information, contact:
Roger McMahon  
Director, Physician Employment Services  
P: (515) 643-8323  F: (515) 643-8943  
rnmahon@mercydesmoines.org

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**Texas, Odessa:** EM Opportunity in Odessa, TX. Wonderful immediate opportunity for a BC ER physician who desires to live in Odessa, Texas and succeed in a busy Emergency Room (24,000 annual visits). This would be a hospital-based employment arrangement. Hospital offers Level IV Trauma, Novarad PAC System, Level III Nursery and 10 Operating Rooms along with an active Hospitalist program. Physician coverage is 24/7 with 12 hours of mid level coverage outside winter months – 2 mid levels during peak winter season. Admission rate is low for most ERs (11-15%) including observations. There is a high pediatric volume, although there is a Pediatric After Hours Clinic which attempts to capture non-emergent Pediatric volume. Facility recently obtained Chest Pain Accreditation and should have Stroke Accreditation soon. Intensivist coverage will be added effective September, 2011. The Hospital has earned a 5-star rating from HealthGrades for three straight years. The faculty is located in the beautiful “Open Sky” country of Odessa/Midland in west Texas. Enjoy the great sense of community, excellent schools, and reasonable cost of living in this quality medical community. Area has a wide variety of cultural and sporting events. Odessa is known for its diversity, contrasts and hospitality. Please e-mail CV: gsoule@aiasishealthcare.com, fax: 615-467-1293 pr call Gary Soule at 615-467-1216.

**West Virginia, Bluefield:** Enjoy East River Mountain’s breathtaking views along the WV/VA border. Ideal for recreation lovers with hiking,
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**West Virginia, Huntington:** Great lifestyle & income. Top notch EM physician sought for equity-ownership group. This 73,000 volume, Level II facility is 45 miles from Charleston in an appealing college town. Newer ED with very good coverage of 66 physician and 48 PA hours daily. An excellent package is offered including family medical plan, malpractice, employer-funded pension, expense account, guaranteed hourly plus additional incentive and RVU, and shareholder opportunity at one year with no buy-in. Contact Rachel Klockow (800)406-8118, e-mail rlockow@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 29,000 and 24,000 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.
Check out these and other events and activities at ACEP Scientific Assembly!

- **Open Mic Talent Night** by the ACEP Medical Humanities Section, October 16. This is a fun opportunity for residents to network with other ACEP physicians by sharing their music and talent!
- **EMF Party**, October 15 from 6pm-7:30pm at the San Francisco Hilton Union Square. The must attend party BEFORE the ACEP Opening Party!
- **ACEP Wellness Booth**, Moscone Convention Center. The Wellness Booth offers services to ACEP members including a burnout questionnaire, blood pressure check, blood chemistry, body fat screening, flu shot, and wellness-related resource materials.
- **ACEP Section meetings**, the College’s 30 Sections of Membership hold their annual meetings during Scientific Assembly. The meetings provide an excellent opportunity to interact with colleagues who share similar interests. If you are considering joining a section, this is a great time to see what the section is all about.
- Check with your **ACEP Chapter** for their events schedule.
- For more information and a complete list of ACEP events visit www.acep.org and see pages 32-33 for the list of EMRA activities.

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- Albert Schweitzer

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Technology plays such an important role in our daily lives. It’s no wonder that it is at the forefront of medical education, from apps for smart phones to simulation training. Although simulation will never take the place of traditional medical training with real patients in a clinical setting, its benefits has reduced the safety risks for actual patients. Simulation allows students to learn, practice and repeat procedures as often as needed.

For more information on technology in medicine, see David Chiu’s article on page 12.

Source: www.psqh.com/marapr05/simulation.html

To see simulation in action, don’t miss the EMRA Resident SimWar Competition at the 2011 ACEP Scientific Assembly in San Francisco!
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