I’m going to tell you a tale. A tale involving a Robot, a Monkey and a Tater…it’s not a joke, no, and they haven’t walked into a bar, YET.

This story begins with the residency application process at the start of fourth year. At that time, I had no clue that my intern year would simultaneously be one of the busiest and best years that I had ever known.

In December of that year, my wife and I found out that we were going to be parents, which completely caught us off guard. Obviously, this would require adjusting our plans, but we knew plenty of other people who had infants during intern year.

No big deal.

Furthermore, we had plenty of time for any changes that may come between then and the beginning of residency…or so we thought.

On her second visit, my wife’s OB/GYN got a worried look while performing her ultrasound and blurted out, “Um…I think I’m going to need a stool.”

Looking back, I’m sure the pause only lasted a few seconds, but in my mind it was an eternity…

What is it?!? How many?!? What could be wrong?!?

continued on page 8
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This month’s article is not about our economy, or our finances.

It’s about the lifestyles of the esteemed emergency physician that are not always recognized.

When I was a medical student, I became good friends with some residents at my school’s emergency medicine program. One would always say that the best asset of an EM resident is the unemployed friend. He would brag about its merits, how fun they are, etc. I didn’t quite understand the concept, but essentially this is how he explained it:

As an emergency medicine resident your schedule is constantly in flux, four days on, one off, and so on. Your days, and, more importantly, your nights off change at the drop of a hat. You lose touch with the working world routine of going out on the weekends, and that is where your unemployed friend comes in handy.

Its mid-week, you just woke up post-night shift, and have the night free. You call up your unemployed friend to see what they’re doing. Bingo, you’ve got plans.

Sure, you can call your schoolteacher friend, but they have to go to bed early because they have a lesson to teach tomorrow, your law school friends need to study about suing you after they take the bar, and everyone else is busy. But your unemployed friend is always available.

I thought it was a little crazy when I first heard it. However, when I started my fourth year of medical school, I caught a glimpse of this theory. My friend quit her job and all of a sudden, I had a go-to person for those strange mid-week adventures motivated by my rapidly changing schedule. “It’s Wednesday night, what are you doing, nothing? Perfect.”

As I enter my final year of residency and wake up post-call on trauma on a Tuesday night, I wish I had access to that unemployed friend again. Many of my classmates are busy with shifts, and my “normal” friends have jobs to get to in the morning, but that unemployed friend would be ready for an instant adventure, no holds barred.

I write this month’s column as a thought provoker for our new interns. At about one month into your residency, you have just started to learn the overwhelming responsibility of being someone’s physician.

EM residency is not an easy life, as during each shift you are required to know everything, from cardiac to liver failure to transplant surgery complications. You don’t spend a month at a time on the cardiac service, or the urology service, and get to focus your efforts. When you’re on, you have to be on your A-game, all the time.

It’s important that you do not lose sight of the big picture. Try to maintain your hobbies and stress-busting activities that are important to you, that helped you cope thus far. What you learn at work will take time and patience, but what you learned before residency shapes you as a physician.

To our new senior residents, provide the new interns with the kind of guidance and advice that inspired you at that stage. It’s easy to recall that resident who made you feel small and unimportant early on, but the memory of that motivating senior who made you feel tall and essential is also crucial. Concentrate your efforts on the latter and be an integral part of your new interns’ growth and development. Good luck with your transition to the new academic year.
Board Update

• EMRA’s State Tour Continues! This year marked the second year of the EMRA state tour, visiting regional ACEP chapters to talk with residents. Be on the lookout for EMRA representatives coming to your area, or contact us and invite us to your state’s assembly! We recently attended the Southern Chapters meeting (TN, MS, KY, LA and AR) and we will be visiting Virginia ACEP Summer Conference, August 17-19, 2009.

• EMRA’s Regional Medical Student Symposium! The first annual regional symposium is occurring on August 8 in Baltimore, MD. It is aimed at bringing all the great programming you have come to expect from the national symposium to a more intimate regional level. Expect specific representation from programs in the Mid-Atlantic region along with didactic sessions on ultrasound and computed tomography for the fourth year medical student. Topped off with a residency director panel, this event is FREE for medical students!

• Future of Emergency Medicine Summit – EMRA continues to play a pivotal role in our specialty sustainment. Two board representatives recently attended this intra-collegial summit to discuss the future of our specialty and our place within the health care system.

• Needs Assessment Survey Complete – Thanks to all that completed our needs assessment survey. We appreciate the time you took. Your feedback will provide direction for this organization for the next three to five years. Thank you!

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Run for a seat on the EMRA Board of Directors
See page 17 for details!
So. This is it. My last year. Thank freaking God.

But with this seniority, comes a responsibility to my new little baby ducks, er, baby docs.

Have you ever seen those posters with the baby ducks following the mama duck around, hanging on her every move? Well, that’s what I feel like: A mama duck, and I have my own little baby “docs.” Maybe I should call them “doclings.”

I was doing a little reading about baby ducks, and, amazingly, they are a lot like baby docs, or, as we know them, interns.

The baby duck will imprint on the first living being it sees and thinks it’s their mama. It will follow that thing, be it cat, dog, duck or cow, ’til the ends of the earth.

Now, the baby doc will kind of do the same thing. Luckily, we at UAB have an orientation month, like a lot of programs do. So, the first interaction they have with senior residents and attendings in the hospital are OUR senior residents and attendings. So we like them to “imprint” on us, see us as their mamas and daddies, and look to us for advice and protection.

The baby duck is also very vulnerable in its own habitat. Alligators and predatory fish will swim into their nests and attack the little ones.

I’ve seen this happen several times with our little baby docs (this is totally amazing how much like real ducklings they are!). Predatorial senior surgical residents and exhausted night float internal medicine seniors will swoop into the emergency department and try to take advantage of the little docling. They will try to talk the intern out of the consult or the admission. It is our job to protect them and keep them from getting eaten alive in this new world of theirs.

It is our job, too, to protect them from getting into trouble with some of the attendings and consultants. They are pretty much still trying to figure out where the bathroom is, much less the appropriate

Lisa Bundy, MD
University of Alabama at Birmingham
Birmingham, AL
EM Resident Editor/Secretary

Quack, quack, quack:
Being a mama duck
dose of diltiazem for fibrillation with RVR. They don’t know always how to treat that code stroke patient regardless of our teaching rounds.

And the consultants may get upset with them for their occasional lapses. I have found myself very nicely reminding the consultant that I will talk to the intern, but they are just a little baby doc in this big new world and they themselves were once a petrified newbie, too. Usually the consultant will smile and say, “Ohhh. OK. Thanks for letting them know.”

I’m actually enjoying my new role. And I’m really enjoying seeing our EM2s racing ahead and helping them out as well. I’m proud of them, as it seems that the minute the clock ticked over to July 1, they were ready to take on their new responsibilities as a resident.

I think some of my maternal instincts have emerged, because not only am I a 4th year, senior resident, but at 35 years old, I’m probably 8 or 9 years older than our interns. I could have babysat for them when I was in high school.

Mostly though, I know the tough road they have ahead of them, and I see the fear in their eyes. I mean, the only two things I cared about the first month of my internship was where the bathroom was and where the nearest “exit” was in case I wanted to make a run for it.

As I look back on my own cluelessness, I realize that I’m at a point now I never thought I’d be. Usually the attending hangs out in the pod with me, sees all the patients, but doesn’t really challenge me except to help me expand my differential or remind me of a detail. I make my own plans, my own dispos. And, honestly, there were times that I never thought that would happen.

To all my little baby docs, I want to say, not to worry. You will get there. That’s why residency is three years long. We just expect you come with a good attitude, work hard and ask questions. If you don’t know something, ask a senior resident or attending. Ask a nurse. We are here to help.

To all the seniors out there, I know you want all of this to end soon. Remember to not only teach your interns well, but protect them from the big bad world. The only way we got to where we are now is because someone didn’t let the alligators eat us.
Ok, so it’s a “how many,” but JUST HOW MANY IS IT?!?

She braced us for the news, and told us that she would no longer be our doctor, because with triplets we needed to see a specialist.

TRIPLETS?!?

I needed a seat as well. I thought that I was prepared for one, but three? I wasn't so sure.

The pregnancy went very quickly. Early contractions led to bed rest, and then hospitalization for the last third of the pregnancy.

My wife did her best, but after 28 weeks, the boys decided they were ready, and in a flurry of bodies and movement, Rowan, Elliott and Finn were brought into this world.

All under 3 pounds at birth, I was amazed that humans that small could survive, but they did. And with only a few hiccups in their stay, they did well.

My intern year began rather unceremoniously amidst the daily NICU visits. I started the year on my two hardest rotations. This seemed terrible at first, but I could not have been luckier. Both my Trauma and OB rotations required long hours at the hospital, yet had a lot of free time due to the nature of the work.

Being at the hospital all of the time gave me the opportunity to be around for the late night feedings, diaper changes and special moments that most parents of NICU grads miss out on. It all went so fast, and after a little over two months the boys started coming home one by one, and with that brought more change.

Throughout medical school, I had always tried to study at the university to protect my home time. I tried to save home for rest and relaxation, but with the first child coming home it quickly became a second place of work. There was so much to do for both of us. Due to the rapid progression of the pregnancy we had yet to finish the nursery. Then came the feedings, baths and diaper changes.

Admittedly, things were tough. Between my intern schedule, and a lack of family nearby, it seemed that my wife and I were always passing each other at the door. Daily errands required either the boys going shopping or waiting until someone could stay home.

It wasn’t long before we realized that to enjoy things we needed to prioritize. The boys sleeping and eating habits were at the top of the list, where-as spotless clothing or a spotless house was not.

Minimalism became important. We
“Outside of all the diaper changes, numerous feedings, and being outnumbered by your kids, Rowan, Elliott and Finn have been incredible.”

learned which toys and products were essential and reduced the travel bag to just those items. We even did the unthinkable: we bought a mini-van. With these changes we found ourselves relaxing and enjoying life more.

By December we had a very strong routine in place, and in February, my wife decided that she wanted to return to her previous job as a clinical research coordinator (I'm not sure which pull was greater...getting out of the house, or more income).

The time crunch that comes with two working parents and three babies only strengthened our priorities and helped us truly value the time we have together.

More importantly, we were finally able to settle in and enjoy the blessings that come with triplets.

Outside of all the diaper changes, numerous feedings, and being outnumbered by your kids, Rowan, Elliott and Finn have been incredible. Their personalities stand in contrast to one another.

Rowan (Ro-bot) is my little intellectual, always observant and calculating, not to mention of super human strength.

Elliot (Monkey) is all limbs, impossible to hold still and, possibly by default of his nickname, is very competent with animals. Lastly, Finn (Tater), once a dictator with 3 a.m. screaming sessions, became my little sweet tater with his cherubic smile and affable demeanor.

This past week marked the boys' first birthday, which stood for us as a reminder of how far we have come. To remind us how much there is left to come, on the day following their birthday, one of the boys began pulling up to reach stuff which was once unreachable.

Where I once had trepidation, I find myself looking forward to these new changes, as each step gives me another opportunity to re-experience life through the eyes of these three little boys.
After my return from the SAEM Annual Meeting in New Orleans, I spent some time reflecting on my last visit to the region. It was in late August of 2005, and I was in Biloxi, Miss. In lieu of a deluxe hotel room with air conditioning and nightly dinners of crawfish, muffulettas and gumbo, I was sleeping on a cot and eating MREs. My biggest luxury was access to cool running water. It came straight from a garden hose, had a funny odor and high coliform bacteria counts. This was three days after Hurricane Katrina made landfall and I was working as a physician assistant on deployment with the New Jersey Disaster Medical Assistance Team.

A Disaster Medical Assistance Team, commonly referred to as a DMAT, is a group of medical personnel supported by logistic and administrative staff deployed to provide medical care during times of a natural disaster or mass-casualty incident.

A Disaster Medical Assistance Team, commonly referred to as a DMAT, is a group of medical personnel supported by logistic and administrative staff deployed to provide medical care during times of a natural disaster or mass-casualty incident.

DMAT teams operate within the National Disaster Medical System (NDMS) and under the supervision of the Department of Health and Human Services (HHS). Teams are deployed to U.S. states and territories after a disaster event overcomes the local health and medical infrastructure.

There are more than fifty teams across the U.S. Each month one team is on call for occurrences east of the Mississippi and one team reserved for occurrences to the west. When activated, each team deploys with enough personnel, supplies and equipment to operate as a self-sustaining medical facility for a 72-hour period.

In mass-casualty incidents, DMAT responsibilities include patient triage, basic medical care, and when injuries are too severe to treat locally or onsite, patient evacuation. In addition to standard first aid supplies, teams are equipped with life packs, ACLS drugs, ventilators and a mobile pharmacy.

In addition to caring for “the walking wounded” and minor injuries, DMAT teams can manage critical care patients as well. DMAT teams supplement local medical care until other federal and/or contract resources can be mobilized or until the disaster situation has resolved.

Members of DMAT teams are volunteers, but become paid federal employees once their respective team has been activated. Teams hold bi-monthly meetings and mobilize at least once a year for field training exercises (FTX) in preparation for active deployments.

Those members with specialized knowledge or training are often asked to participate in special missions and deployments with other than their native jurisdiction.
homes teams. Recently the New Jersey team has been combining their training efforts with other regional teams and the U.S. military. Currently training is being focused on such disaster scenarios as pandemics and mass terrorist attacks.

Each team recruits members independently and has openings at different times throughout the year. Although there are at least 50 active DMAT teams, there is not one located in every state and some states, such as California, have up to five teams.

Physicians, physician assistants, paramedics, and nurses are often in high demand. Every DMAT would benefit from the experience, training and leadership of more emergency medicine physician participation.

In August 2005, after Hurricane Katrina devastated the Gulf Coast, I deployed with the New Jersey DMAT to provide relief in Gulfport and Biloxi, Miss. At the time I was a licensed physician assistant, and I had previously completed my second year of medical student at UMDNJ – School of Osteopathic Medicine. I was also on leave working on my Juris Doctorate.

I had been involved with the New Jersey-1 DMAT since early 2002. The events of 9/11 sparked my interest in disaster response and prompted me to join the team. Through my participation with the NJ-1 DMAT, I have had the pleasure of serving my country and putting my medical training to good use at times of natural disaster and great need.

I have received advanced training in mass casualty triage, patient evacuation, terrorism response, and disaster medicine. Over the past seven years I have had the honor and privilege to participate in the last two presidential inaugurations and attend several presidential events and speeches.

While in residency I have been fortunate enough to schedule my vacations during our scheduled training exercises and deployments. I intend on staying active with the team as an attending and I encourage any resident physician interested in volunteering with the National Disaster Medical System and DMATs to visit www.oep-ndms.dhhs.gov, www.dmat.org, and/or www.nj1dmat.org for more information.

Brian Kloss, DO, JD, PA-C is a second year EM resident at SUNY Upstate in Syracuse, NY who graduated from University at Buffalo School of Law in 2007 and UMDNJ-School of Osteopathic Medicine in 2008. Prior to and during medical and law school he worked as a physician assistant in emergency medicine and for the New Jersey Disaster Medical Assistance Team. He currently serves as Vice-Chairman of the EMRA Health Policy.
I recently completed one of the best rotations of my residency, and I never once even set foot in a hospital for the entire month.

Rather than spend another month in the emergency department, I was graciously granted the opportunity to spend a month working in ACEP’s Washington, D.C. office as part of the EMRA/ACEP mini-fellowship in Health Policy. Offered each year to two emergency medicine physicians who are either currently in residency or less than five years out of residency, I feel truly honored to have been selected as a recipient.

After rearranging my resident rotation schedule for the year, I prepared for my month-long D.C. experience. Having been interested in health policy and the political side of medicine since I first began medical school over twelve years ago, I anxiously awaited all that my month in D.C. would bring.

With a new president in office, a newly-elected democratic Senate and House of Representatives, and the topic of health care reform a leading headline on an almost daily basis, it was sure to be an exciting time to be in Washington.

So, with my car loaded up, I headed down to D.C., anxious to see what the month would have in store. I was looking forward to the opportunities to be present as the ever-important topic of health care reform was debated amongst our nation’s leaders.

With the help of Lupe, Gordon, and the rest of the staff in ACEP’s D.C. office (to whom I am eternally grateful!), I was presented with many unique opportunities that I would likely never have otherwise been given.

Granted, I know some of you are wondering why anyone would look forward to sitting in on various budget meetings, congressional committee meetings, and advisory panel meetings. (If my guess is correct, most of you probably fall into that category!) And if you do, then the health policy fellowship is probably not for you. But if you are interested in seeing, experiencing, and even influencing health policy and the politics of medicine, you may be the perfect candidate for this year’s fellowship.

Throughout the course of the month, I was immersed into the D.C. scene. I attended several interesting panels on health care reform, focusing on the benefits of either a single-payer system or universal coverage mandates.

I was there in the Dwight Eisenhower Executive Office Building, adjacent to the White House, for the budget roll-out and discussions on how the billions of dollars should be spent and distributed as part of the American Recovery and Reinvestment Act. I sat through several House of Representatives and Senate committee meetings, including Senator Edward Kennedy’s finance committee meeting when he was discussing health care reform in the context of plans, such as the Massachusetts plan which provides mandated universal coverage and how such plans do and don’t work.

April was also an exciting time within ACEP itself. The annual Leadership and Advocacy conference was held in Washington at the end of the month, and I had the opportunity to assist in the planning and preparations for this exciting event. Additionally, there was a lot to learn as I saw how Laura Gore, ACEP’s Public Relations Director, drafted responses to various events and news pieces from around the country. From responding to the situation that arose at the University of Chicago to providing information to CNN for their piece titled “But is it really an emergency? When to take a child to the ER,” there is a lot that happens each and every day.

As I mentioned earlier, the annual Leadership and Advocacy conference also took place in April, so my month culminated by attending this event.

If you are even remotely interested in being an advocate for emergency medicine, I strongly encourage you to attend this conference next year. It is by far one of the best conferences that I have ever attended over the past 12 years, with both excellent lectures and the opportunity to go to Capitol Hill to meet with local senators and congressmen and to advocate for our cause. And not only is it an excellent conference, it is also free!

If you’re still reading, then hopefully I’ve captured your attention, and perhaps you are even thinking of applying for this fellowship. Applications are due July 15 each year, and additional information can be found on the website at www.emra.org/emra_about.aspx?id=35054, or by emailing me at aceprep@emra.org.
More than one phone out there

So I’m currently finishing an off-service month in the ICU, and a funny thing happened to me. I was on the admitting team, the board was packed with pending admissions, our nurses were nagging us to get beds opened, and then the ICU director pulled me aside.

He asked me “Do you expect any of your patients to code in the next five minutes?” When I said no, he told me to put my clinical work aside and give him a tour of my new smart phone that he’d heard about.

For the next thirty minutes or so he proceeded to shoo away all the nurses that came to speak to me and enjoyed a tour of my phone. Since then I’ve had countless people from ICU attendings, nurses, residents, transporters, and X-ray techs ogle my new phone. By happenstance I’ve found my new topic to talk about.

Now a lot of you are probably assuming that I am packing a new iPhone 3G S, and you would be wrong. I got what many are describing as Palm’s “last hope” and the new flagship phone for the Sprint network: the Palm Pre. So what’s the big deal?

Since its announcement earlier this year at the tech convention CES, there has been a flurry of blogging and dedicated websites that well preceded the June 6 launch of the device. I haven’t seen a device get this much attention since the introduction of the original iPhone.

The hardware of the phone is nice, but nothing to brag about. After all it has become more common place for cell phones to have brilliant touch screens, slide out keyboards, and megapixel cameras with flash, etc.

What Palm and Sprint are banking on making the phone is the operating system, WebOs, to make the Pre a success (and possibly future phones). WebOs is a novel web-based operating system that has a strong emphasis on Internet connectivity. So what does that really mean in plain English?

The most noticeable difference is what Palm has coined as “synergy.” Rather than just syncing with your home computer, the Pre uses “cloud” syncing. Cloud syncing means the Pre pulls contact information, calendar events, and to do tasks from sources like Facebook, Gmail, Microsoft Exchange, and this list should expand with time (Yahoo synergy is in the works). As it stands the Pre has had a nice start with the Integration of Facebook, Gmail, and its “apps” expand the phone to integrate sites like Fandango, Twitter and Pandora.

Another point of appeal is the ease to develop applications for the WebOs in conjunction with the Palm brand should hopefully mean that the Pre’s application store will be populated in the same exponential manner the iPhone’s application store has enjoyed.

I find it interesting that a few years ago when I first started to rotate in the hospitals as a medical student, everyone was carrying either a Treo or a Palm pilot. Now you would be hard pressed to find a resident that is not sporting an iPhone. I think that this blanket uniformity is a bad thing for us. Companies become complacent when there is no competition and this discourages innovation.

Although there are “fanboys” out there that that throw out terms “iPhone killer,” I disagree with this description of the Pre. I would say that it is more realistic to view the Pre as a viable alternative. The more “hot phones” out there, the more we the consumers will benefit from innovation.

Please note this article represents my personal opinion and not an endorsement by EMRA for any product.
**Advocacy corner**

It’s open season on doctors

Do you ever feel like the hits keep coming? They start with the left jab in the form of higher taxes, lower deductions, less pay, and more Medicaid. Then comes the right hook, the “leave it be” philosophy, to keep the uninsured and non-paying patients visiting the emergency department.

Then the knock-out blow from the courts outlawing balanced billing and increasing the scope of EMTALA. Ever feel like your chosen “noble” profession is taking it in the shorts most days?

This unfortunately is the reality we confront. With Medicare bankrupt in under a decade, there is tremendous pressure to save the economy by fixing the healthcare system.

Remember, it was the irresponsible doctors and hospitals that brought down our economy; the banks, stockbrokers, and runaway real estate markets were merely casualties of our carelessness. By the time this hits press, this may be the spin we hear to spur reform.

It is true that medicine as a whole is accounting for an evergrowing percentage of our GDP, but also an increasing number of jobs? As Americans demand the highest levels of healthcare, the cost of healthcare will continue to grow.

Yet the root of this problem lies not with the physicians who orders or prescribe the therapy, but with our society. We believe that it is the American Dream to live for every day possible, no matter the cost to the system or the pain to the patient. This imbalance of expectation and ability is one of the fundamental problems that must be addressed in any reform. In other countries that have brought their costs under control, they have done so often by limiting therapies or balancing competing needs for a defined set of dollars.

The source of much of the reform that is taking place is targeted at the rich. You may not feel like it now or even as a new attending, but YOU are rich - at least by the IRS standards.

Remember those student loans do not count; they stop being tax deductible the first day you become an attending. You make too much. The child tax credit is same thing. First time home-buyer? Sorry, you are out of luck. The AMT may just greet your first tax return.

The list goes on. After 12 years of training, $120K in debt, delayed personal activities, deferred families, and many other sacrifices, you now make too much to take advantage of these common deductions that you were too poor to use before.

The administration has already begun proposing more changes targeted at you. The taxes on the upper five percent (yes you), will roll back to their Clinton-era levels of 36 and 39.6 percent. Most probably would agree this is reasonable since 95 percent of the dollars of tax breaks went to that five percent.

The new options though to close the funding gap is to increase the amount of your salary exposed to FICA taxes, currently capped at $108K, to unlimited. That would be a 12.4 percent increase for the independent contractor physicians or 6.2 percent for employed physicians.

If you were a 30-year-old fresh graduate top tax bracket member with $200K in student loan debt, working in an independent contractor job, your net tax rate would be 54.9 percent.

To add insult to injury, the administration is also talking about reducing many tax deductions that remain for the wealthy. This includes primary home mortgage and charitable donations, two of the bigger line items for many physicians. One could imagine that this might have a few adverse consequences, but let’s not worry about that…

Things have become so untenable in California that emergency medicine physicians, supported by CalACEP and ACEP, have taken to suing the state of California and the Medi-Cal System. They were seeing less payment from their “insured” Medi-Cal patient than the uninsured! Add on to this the recent ruling outlawing balanced billing and the system in California could become the poster child for defunct medical systems.

We spend much of the debate talking about the effects on our patients, but rarely talk about the effect on the providers. The reality is that as the stresses increase on physicians, this will affect choices of specialty, practice location, and duration.

I hope with all of these challenges to you and your specialty, personally and professionally, you feel motivated to be involved in the healthcare reform debate.”

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**Nathaniel Schlicher, MD, JD**
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Legislative Advisor
Is a surge at our doorsteps?

On June 15, President Barack Obama addressed the American Medical Association’s House of Delegates regarding escalating health care costs in the United States.

“Make no mistake about it… It’s a ticking time-bomb for the federal budget,” said the President, recognizing that today we are spending more than $2 trillion per year on health care – a steadily rising number that is daunting and unsustainable.

Opening to this energized assembly of physicians, he outlined his plan for comprehensive and systematic reform. However, it seemed to focus heavily on increasing the number of Americans with health insurance coverage rather than addressing the overall lack of access to care. This is concerning to those who recognize that we can insure everyone, but without improving access to the primary physicians, patients are bound to end up at the doorsteps of our emergency departments. Is a surge looming on the horizon?

Take Massachusetts for example, they adopted near-universal health coverage in 2006 and now boast the lowest rates of uninsured in the country at 2.6 percent. Despite this achievement however, many primary physicians are not able to accept any new patients. Current wait times to see them are getting longer.

Why does this matter to us? Because there has been a 7 percent increase in emergency department visits in Massachusetts since the law took effect. This has translated into a 17 percent increase in the cost of treating patients in the emergency department.

Decreasing the number of uninsured alone does not equal increased access to care, and emergency physicians understand this well. In our routine care for patients, we interact with the broadest spectrum of the health care team within the hospital, medical and nonmedical staff. We see all patients with all illnesses at all times, no matter their ability to pay. Unable to get a timely appointment with your physician? Lacking insurance? Having a massive heart attack? Need a refill? To all of these questions and more, we collectively answer “no problem.”

We can offer this administration a unique and unparalleled view into our current system. Yet, at the Obama Health Care Summit on March 5, the invites included roughly 150 elected officials and representatives from numerous medical organizations, except emergency medicine. Was this an oversight? Perhaps. One thing is for sure though – in order to have the most constructive dialogue regarding the challenges and disparities of our health care system, emergency physicians must be at that table as well.

We work in the trenches serving as this nation’s safety net. In many instances we are the patient’s primary physician. So Mr. President, the next time you convene with the largest stakeholders and providers of our nation’s health care system, can we play in the sandbox too? I am quite confident we have some input that may be valuable to you. ■

Edwin Lopez, MD
Loma Linda University
Medical Center
Loma Linda, CA
President-Elect/Speaker

“…in order to have the most constructive dialogue regarding the challenges and disparities of our health care system, emergency physicians must be at that table as well.”
Every June, program directors across North America eagerly await the arrival of new residents. Orientation sessions are planned, welcome dinners are organized and much sleep is lost over new resident training.

Overall, training residents is a pleasure. Most Program Directors are in a rare and enviable position; we have jobs that pay us well to do something that we enjoy. Few people in the world have such a luxury. There are a few significant downsides to the job, however.

The difficulties arise from our task of integrating a variety of personality types and skill levels, helping them develop into outstanding residents.

In my opinion, the difficulties of resident education fall into three broad categories: arrogance, ignorance and laziness. While the ACGME has broadly framed education into six different core competencies, my experiences limit the list to three. It is far easier for me to understand the problem of arrogance than it is to comprehend the nuances of “systems based practice,” or “problem based learning and improvement.”

The deficiency that residents are most troubled by is ignorance, a general lack of knowledge, and many will study diligently to remedy this. From a program director’s perspective, however, this is the easiest problem to correct.

The majority of academic emergency physicians have chosen this field because they enjoy teaching. Most residents are eager to learn and this makes for an enjoyable working relationship. Typically, our residents are more concerned about knowledge deficit than I am. The darkened circles under a program director’s eyes usually arise from problems in the other two categories.

Residency programs do all they can during interview season to screen out those who are difficult to work with. However, anyone who has made it through the fourth year of medical school with an underlying Axis II diagnosis has, out of necessity, become adept at disguising the disorder.

More than one program director has mused that seeing an applicant’s grades from kindergarten would be more helpful than those from the first year of med school. We would preferentially recruit those who received an A in “plays well with others,” over those with an A in biochemistry.

Arrogance and laziness are problems that are more insidious than ignorance and are difficult to remediate. This should come as no surprise, but success in residency is tied more to who you are than to what you know. A resident willing to work diligently, and approach work with a positive, humble attitude will be an
automatically candidate for chief resident. A new intern that believes that nurses should grovel before them because they made a 270 on the USMLE will be a constant source of pain for the program director.

Our specialty, arguably more than any other, requires individuals to put egos aside and function as a part of a larger team. The emergency department will be ineffective if any of the component parts cease to function. Logically this means that the staff that cleans patients’ rooms between encounters are as necessary to the life of the emergency department as you are. Our relationship is truly symbiotic, and if any portion of it fails, we all fail.

It is critical to bear this in mind as you interact with everyone in the emergency department. Relationships with nurses, staff, registration clerks, housekeeping and off-service residents must be fostered. It is difficult to think of something more detrimental to your success than to scuttle these relationships through laziness or arrogance.

In summary, I would like to include a few practical points of advice.

If you have difficulty playing well with others, put down your copy of *Tintinalli*, and focus your energy toward developing humanistic qualities. This is far more crucial to your success as an emergency physician than memorizing Ransom’s Criteria for the fifth time.

Show up early. There is little that impresses faculty and colleagues more than showing up before your shift starts asking what you can do to help. This costs you only fifteen minutes and will solidify your reputation as a team player.

Have the humility to ask for help. Nurses, fellow residents and faculty members all want you to succeed. They are willing to assist, but usually have to be asked.

Do not lie. Do not guess. When asked if you looked at a patient’s EKG, or corrected a low potassium level it is far better to say, “No, I didn’t. I’ll do that now,” than to make up an answer and try to cover your mistake.

Practice saying “thank you” after a nurse brings something to your attention. If the nurses in your department view you as approachable, your life will be much easier. Many of the nurses have more experience than you do, and will be a valuable ally in the upcoming years.

After each shift focus on one thing that you learned, then spend a few minutes reading about it. If you are not learning something new every day in residency you are wasting your time.

The education that occurs in residency is far more than medical knowledge. During your first months you will make a name for yourself, and will reap either the benefits or detriments of this reputation for the next three or four years. Making the most of this opportunity is not difficult, but requires discretion and diligence on your part.

EMRA elections will be held during ACEP’s *Scientific Assembly* in Boston 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.
- **Academic Affairs Rep:** 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: 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.
- **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.

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 photo (jpg format) to mbyers@emra.org by **September 6, 2009**. EMRA will post statements and photos received from candidates on the EMRA Website. Nominations from the council floor will be accepted.

For full position descriptions please visit www.emra.org.
Almost everyone has had their share of the economic downturn.

But with the possibility of losing the 20/220 pathway for loan deferments, this hardship may only worsen for residents. Through all this, I have learned to appreciate my position as a government employee and military resident.

I didn’t come from a military family. We didn’t have a recruiter at school. I just saw a guy walking around in a dress white uniform on the way to class one day and I followed him to a free lunch.

And that’s how my lexicon has become ingrained with “Sir” and “Ma’am” even with my civilian colleagues.

Whether it’s Air Force, Army, or Navy, you can join the Medical Corps through the **Financial Assistance Program (FAP)**. As you work to complete a civilian residency, you receive an annual grant of more than $45,000 plus a monthly stipend of more than $1,900. It’s open to U.S. citizens. For two weeks of the year you will receive full pay and allowances and privileges of an officer as you serve on active duty.

**Inservice** residency at one of the military hospitals places you on active duty through a separate military match process outside of the NRMP. All of our training facilities are large tertiary centers:

**Navy**
- Naval Medical Center San Diego, San Diego, CA – PGY 2-4
- Naval Medical Center Portsmouth, Portsmouth, VA – PGY 2-4

**Army**
- Madigan Army Medical Center, Fort Lewis, WA – PGY 1-3
- Darnall Army Community Hospital, Fort Hood, TX – PGY 1-3

**Air Force**
- Wright-Patterson Medical Center, Wright-Patterson Air Force Base, OH – PGY 2-4

**Combined Programs (Army-Air Force)**
- Brooke Army Medical Center, Fort Sam Houston, TX & Wilford Hall Medical Center, Lackland Air Force Base, TX – PGY 1-3

Your pay depends on where you live and whether you have dependents (spouse or children). For example, as a typical single resident without prior military experience and starting out in San Diego, you start as Lieutenant in the Navy (O3 equivalent to a Captain in the Air Force or Army). Your basic monthly pay (based on Military Pay Chart from January 1, 2009) would be $3,540.

As an intern you would receive $100/mo as special pay or $417/mo for residents. Then add a nontaxed $2085 for housing and $223 for subsistence. This would be $75,181 a year. And some would also add the less tangible benefits of free health and dental benefits, tax free shopping and gasoline, and other military benefits.

During residency there are opportunities to practice overseas, participate in special operations, critical care transport and courses in combat medicine. And after completing residency there are the same opportunities for fellowship training in
For medical students, there is the Health Professional Scholarship Program (HPSP). You may be eligible for a full-tuition scholarship, a $20,000 sign-on bonus, plus a monthly stipend of more than $1,900. You must be enrolled in or have a letter of acceptance from an accredited medical school and be a U.S. citizen.

Personally, I have thoroughly enjoyed my time in the military. But it’s not for everyone. You do have to stay physically fit (although some may say this is a benefit).

There is the possibility of deploying after you graduate (you are protected during residency). But with the advent of technology like Skype, a trend has developed where living overseas with your family in places like Naples, Italy and Tokyo, Japan, have become highly sought after.

After my internship, I chose to serve with the Marine Corps as a general medical officer in Japan. I have traveled extensively, rode on helos and jets, made lasting friendships, and of course blown a lot of things up.

These unique experiences are what led me back to complete residency in the military. And I’m never short of stories to share.

For more information please go to these websites or feel free to contact me at rrcemrep@emra.org.

- http://airforce.com/healthcare
24 year-old-male is brought in by EMS due to decreased responsiveness on a summer day. They report that he and his friends had run about six miles, when he became more and more confused, passed out, and is now less responsive than normal.

On arrival to the ER, he is as reported and hot to the touch. You notice that he is sweating profusely. Per his friends, he has not been ill recently, but recently moved to this warmer area. They do not know his medical history, medications and do not know if he has been taking any supplements.

Physical exam
Blood pressure 90/65, pulse 122, respiratory rate 24, O2 sat 99% on room air, rectal temp 105.5F. He cannot answer your questions but can perform some simple commands. Physical exam is only remarkable for tachycardia, confusion and hyperthermia.

What is in your differential diagnosis at this point? What labs are you going to order? How are you going to treat this patient?

Initial workup
Two IVs are established, and he is placed on a cardiac monitor. You spray him down with tepid water, and place large fans by his side. Your team also places ice packs on his axilla and groin area. A foley catheter is placed to measure urine output and continuous temperature monitoring. An ECG, chest X-ray, CBC, electrolytes, Magnesium, Calcium, Phosphorus, BUN and creatinine, LFTs, lipase, urinalysis, urine culture, blood cultures, acetaminophen, salicylate and ETOH levels, thyroid studies and urine drug screen were ordered. Tests reveal the following results:

CBC: normal
Chemistry Panel: Na 133, BUN 35 Cr 1.8
LFTs: AST 450 ALT 487 Alk Phos normal
Urine drug screen: normal
Acetaminophen/salicylate/ETOH levels: negative
ECG: sinus tachycardia
CXR: normal
TSH and Free T4: normal
Coags: normal
Urinalysis: +myoglobin

Your differential diagnosis for this patient is large, and should include drug overdose, heat stroke, thyroid storm, serotonin syndrome, malignant hyperthermia, CNS hemorrhage, meningoencephalitis and delirium tremens. This patient though is suffering from exertional heat stroke. Heat illness is a spectrum of conditions ranging from very mild to life-threatening. Problems arise when there is an imbalance between heat production and dissipation. Several factors can predispose one to heat illness including dehydration, restrictive clothing, beta blockers, diuretics, anticholinergic medications, dehydration, cocaine, amphetamines, ephedrine and thermogenic diet supplements.

Although typically a frightening episode, but usually benign, is heat syncope. The syncope usually occurs in someone who is standing in a hot environment, and is caused by dehydration and vasodilatation. It is usually self-limited and preceded by a prodrome. It can be prevented by flexing leg muscles and sitting down if prodromal symptoms occur. If the patient has experienced more systemic symptoms, the syncope could be part of heat stroke.

Heat exhaustion is a more serious condition in the heat illness spectrum, characterized by vague malaise, headache, and fatigue. Patients may experience
nausea, vomiting, and heat cramps as well. The core body temperature is usually not elevated, and if it is, will usually be 104 degrees F or less.

Except for possible impaired judgment, mental function is essentially intact; seizures and coma do not occur. These individuals should be removed from the heat, their clothes should be loosened, and they can often be given oral hydration. If their temperature is elevated though, active cooling measures should be initiated.

The most severe type of heat illness is heat stroke, and it occurs when the body’s thermoregulatory mechanisms fail. The core body temperature is elevated over 105 deg F, and often over 106 deg F. It can produce multisystem tissue damage and organ dysfunction. Heat stroke is not usually caused by the ambient temperature itself, but a combination of factors, including the ambient temperature, exposure time, workload, individual risk factors (medications/recent illness/etc), and tissue perfusion.

Patients with heat stroke will usually develop hepatic damage, CNS dysfunction, have a hyperdynamic CVS system, right-sided heart failure and elevated CVP, lactic acidosis, respiratory alkalosis, coagulopathies, and diarrhea. Their CNS dysfunction can range from ataxia (which is usually the first sign) to confusion, combativeness, seizures, and coma. Hepatic damage is very common, however if the patient survives, liver function will most likely return to normal.

Heat stroke can typically be separated into two categories, exertional heat stroke (EHS) and classic heat stroke (CHS). EHS usually occurs in young, healthy people whose heat dissipating mechanisms are overwhelmed by endogenous heat production. They will have diaphoresis and possibly hypoglycemia, rhabdomyolysis, acute renal failure, hypocalcemia, and DIC.

On the other hand, CHS victims are elderly, often with multiple predisposing factors (chronic diseases, alcoholism, schizophrenia, medications that impair toleration of heat stress), are sedentary, and it occurs during a heat wave. Victims will often experience oliguria, anhidrosis, mild coagulopathy, and mild acidosis.

Multiple medical problems and the necessity for intubation on arrival at the ED predict a poor outcome despite successful cooling measures.

Heat stroke patients must be removed from the warm environment, and their clothes must be removed. Continuous thermometry is necessary, and active cooling should take precedence. Evaporative cooling is one of the quickest methods. It is performed by using water at about 104 deg F, and spraying the patient with it, then fanning the patient with large standing fans.

For patients with EHS, ice/cold water immersion is still the gold standard. This consists of literally placing a patient in a large tub of cold and preferably ice water. Technical difficulties often prevent health care providers from using this method though, especially if other resuscitative methods are being performed.

As you can imagine, the common diarrhea of these patients could cause less than ideal working conditions if it happened in the water. Prior controversy existed about whether the cold water causes counteractive shivering, but studies have shown that shivering usually does not occur in these heat stroke patients, and if it does it is not enough to counteract the cooling measures.

Case reports have used a central venous catheter (the icy catheter) for cooling, though no formal studies have been done on this. Adjunctive methods include placing ice packs on the axillae and groin and a cooling blanket. Active cooling should continue until the patient reaches 102.2 degrees Fahrenheit, and then should cease to avoid hypothermia.

Resuscitative measures should occur in conjunction with the active cooling. As always, assess the ABCs. Aspiration and seizures are common in patients with heat stroke, therefore airway control is essential. Aspiration and/or hemorrhage can cause hypoxemia.

Hypotension is usually due to peripheral vasodilation, and will resolve with cooling. Vasopressors should be avoided as they counteract the cooling process. Young healthy patients will rarely endure dysrhythmias requiring cardioversion. If they do develop tachyarrythmias, cooling will usually cause them to subside. As for medications such as antipyretics and dantrolene, they are ineffective.

The diagnosis might not always be clear in these patients, as the differential for hyperthermia is somewhat broad, and thus studies should be ordered to workup other diagnoses. Cooling a patient should not be delayed though in order to determine a diagnosis.

References


Bright lights and seven-pound burritos

If you are looking for fast rides, seven-pound burritos and penetrating trauma, then look no further than an experience with a pre-hospital crew through your Emergency Medicine Interest Group, or as part of a clinical rotation during your third or fourth year of medical school.

These “ride alongs” provide valuable insight into the first stages of emergency medicine and help reinforce the team-based practice that enhances patient care from stabilization in the field to definitive care in the hospital.

EMS experience is an essential component of graduate medical education in emergency medicine and part of every emergency physician’s clinical practice. As such, you can get involved at an early stage of your career by participating in one of these experiences.

If your school does not already have an EMS elective in place, or your EMIG does not have a ride along program, consider setting one up on your own. You can set something up for yourself, or even better, create and establish an experience for other students at your school.

Most EMS organizations have a protocol for having extra personnel in the field, such as EMT students, and many are happy to have future EM physicians involved. Many medical students are former medics or EMTs, and the pre-hospital crew might be interested in your advice on pursuing additional training.

However, remember that EMS providers are far more experienced and have more knowledge about pre-hospital care than a medical student, and as such can be a great resource for learning.

For more information and ideas on getting on a fast ride with flashing lights that does not involve personal harm to yourself check out the pearl “Emergency Medical Services and your EMIG,” at the EMRA website (www.emra.org).

Oh, and if you are still wondering about the seven pound burrito — while I was with a paramedic crew early one Saturday morning, we stopped in at a little hole-in-the-wall restaurant in West Denver. I never would have found it on my own, but medics seem to have a knack for finding well-kept culinary secrets.

The challenge on the sign was clear, “Eat the whole burrito and it’s free!” Like most medical students I know that there is no seasoning quite as delicious as free.

Luckily it was a slow morning and I had plenty of time to test my fate, but my stomach was not quite big enough. I managed to hold down the three or so pounds that I did eat, and I think I earned a little respect, as the medics let me start quite a few lines for the rest of the shift.

At any rate, an EMS experience is a fun and exciting way to learn from our pre-hospital colleagues (and perhaps test your competitive eating skills).
Tube thoracostomy: A student-to-student guide

It was late one Saturday night during the trauma block of my third-year surgery rotation, when the trauma team received a call that a motor vehicle accident victim was en route.

The patient was an unrestrained driver and had been found unresponsive at the crash scene. He was intubated and had been needle decompressed in the field with a Heimlich valve in place.

Minutes later, the patient was wheeled into the trauma resuscitation unit, fully sedated and paralyzed. During the primary survey, the resident with whom I was working turned and asked me a question that I had been longing to hear: “Do you want to put in the chest tube?”

Of course, my immediate response was, “Yes,” followed by the obligatory, “but I’ve never done that before.” I was familiar with the basic techniques, but still felt pretty naïve since I had not yet done a formal emergency medicine rotation.

Fortunately, my resident was more than willing to teach me, and I successfully placed my first chest tube. The experience motivated me to provide a review of tube thoracostomy for the medical student.

Preparation
The arm on the side where the tube is to be placed should be raised above the patient’s head and restrained. The skin surface should be sterilized with povidone-iodine and then draped with sterile towels.

Tube location
A chest tube is usually placed in the fourth or fifth intercostal space on the mid- to anterior axillary line. The site should be lateral to the pectoralis major muscle as well as to any breast tissue. When unsure, it is best to err on the side of placing the tube too high, as the diaphragm can be higher than you think in a patient who is not fully inspiring. Estimate tube length by holding the tip at the clavicle, and making sure that all drainage holes will be inside the pleural space.

Anesthesia
Because the patient in our case was already sedated, additional anesthesia was not used. However, it is important to remember that the procedure can be very painful for the patient. As for local anesthetics, you can inject up to 5 mg/kg of 1% lidocaine with epinephrine (1:100,000). A small-bore needle can be used for the subcutaneous tissues, but a large-bore needle may be necessary to adequately infiltrate the muscle, periosteum and the parietal pleura.

Incision
Select the rib that you want to pass the tube over. One rib below the selected rib is where you will make your skin incision (See Figure 1). It is hypothesized that guiding the tube up in this fashion helps minimize air leaks.

continued on page 24
Use a No. 10 blade and make a transverse incision through the skin and subcutaneous tissues. Of note, make sure that the incision is large enough for adequate tissue dissection and tube passage. Use a large Kelly clamp to enter the skin incision.

While traveling up to the next rib and to the pleural entry site, use the clamp to spread the subcutaneous tissue to create an opening for the tube to be inserted. Remember to stay on top of the rib in order to avoid the neurovascular bundle.

Once at the pleural entry site, close the tips of the clamp and push through the remaining muscle and parietal pleura that stands between you and the pleural space. You might need to use more force than expected to accomplish this, and there is a fine balance between gaining access and jamming your instrument into lung tissue.

You will know you are in the pleural space when you hear a pop, and hopefully note air (or possibly fluid) exiting. Now with the clamp tips inside the pleural cavity, spread them again to make an adequate opening.

**Insertion**

There are several methods to accomplish tube insertion. Some prefer to place the tube in a curved clamp and introduce it into the pleural space. Others are proponents of placing your finger inside the pleural space and using it as a guide along which to pass the tube.

Regardless of method, you should confirm that all of the holes on the tube are inserted into the pleural cavity. The tube can then be rotated 360 degrees to help prevent kinking. Before removing the clamp, the tube should be attached to water seal or suction.

**Confirmation**

Immediately after placing the tube, you can insert your finger to confirm placement. If the patient is awake, you can ask them to cough and look for bubbles in the water seal chamber. In our case, we looked for condensation in the tubing system. Finally, a chest X-ray can confirm correct placement, and can help to demonstrate therapeutic benefit.

**Securing the Tube**

The tube can be secured by several methods. One method is to take large silk sutures (as nylon tends to slip on chest tubes) and use a “stay” suture technique – where the same suture used to close the skin is then wrapped around the tube to hold it in place. In addition, you can also add a loosely tied horizontal mattress stitch to the stay suture. This method allows for the mattress stitch to be retied to close the incision after the tube has been removed.

**Dressings**

Petrolatum-impregnated gauze should be placed where the tube enters the skin, regular gauze with slits is placed on top of that, and then it is all taped to the skin. Again, there are many methods to do this.

From my first experience placing a chest tube I learned four very important lessons. First, it is important to take advantage of opportunities to learn.

Second, it is our responsibility as medical students to ask for guidance if we are being asked to perform a procedure that we are not completely comfortable performing alone. The resident with whom I was working provided me the guidance needed to gain confidence placing a chest tube properly.

Third, I learned the utility of reading about procedures before performing them so that I am prepared when the opportunity to perform a procedure presents itself.

Finally, and specific to tube thoracostomy, I learned that confirmation of chest tube placement is necessary before securing the tube, because proper placement of the tube is critical to the therapeutic benefit of the procedure.
The emergency medicine match

Top 10 list for success

1. **Do well on Step 1 of the USMLE.**
   Based on a recent survey of program directors by the National Residency Matching Program (www.nrmp.org/data/programresultsbyspecialty.pdf), your score on Step 1 is a crucial ingredient for success when trying to match in emergency medicine. While it isn’t the most important factor, keep in mind that as a student’s first milestone in medical school this score has a special significance.

2. **Do well in your required clerkships.**
   The grades you earn in your core clerkships and the narrative descriptions of your performance during these clerkships are extremely important for your success. A summary of your performance during your third year constitutes the bulk of your medical school performance evaluation (MSPE), which also influences your chances of being selected for an interview.

3. **Seek out mentors in the department or division of emergency medicine at your school and meet with them regularly.**
   Having advocates who are invested in your success throughout this process is crucial. Not only can mentors offer you good advice, but the more involved they are in your career development and the better they know you, the stronger their letters of reference are likely to be. When you are going through the match, these mentors can also call residency directors at other programs to “put in a good word.”

4. **Do well in your emergency medicine rotations.**
   A strong performance in your emergency medicine rotations is essential. In reviewing your application and deciding where you should be ranked, emergency program directors consider the grades you earn on your emergency medicine rotations the most important. And, doing well in your emergency medicine rotations helps guarantee excellent letters of reference.

5. **Get the right letters of recommendation.**
   Letters from academic faculty, residency leadership, department chairs or clerkship directors are best. Try to have a least two letters of reference from emergency medicine faculty. Letters from community physicians do not carry as much weight. Program directors like reading letters from people they know and trust, though predicting and thus achieving this may be out of your control. If possible, get a letter from the clerkship director of at least one of your emergency medicine rotations – especially if you received an honors grade in that rotation. As you may know, emergency medicine faculty use a standard letter of recommendation form (SLOR) (www.cordem.org), but these letters also have space for a narrative.

6. **Communicate your interest in your specialty in your personal statement.**
   Program directors must be convinced of your commitment and interest in emergency medicine. They will glean some of this from your choice of elective rotations and letters of reference, but use your personal statement to communicate your interest in emergency medicine. A well-written personal statement that engages the reader’s interest is essential to obtain an interview. Do not regurgitate your CV in your personal statement. Consider writing different statements for different types of programs. For example, a community based program does not want an applicant who hopes to make research a major part of his or her residency training and future career.

7. **Should you do an away elective?**
   Doing well on an away elective can only help your chances of matching at that program. Program directors would much rather rank someone with whom they have worked and think will be a strong resident than take a risk on someone whom they don’t know. Depending on the pool of applicants that season, it sometimes is safer for program directors to rank someone who had a mediocre elective performance. Emergency medicine program directors consider performance on “audition electives” very important when ranking applicants.

8. **Do you need research?**
   In the 2008 NRMP survey of program directors, only 54% of those surveyed considered research important when ranking applicants. While having research experience may help you, it is not a deal breaker if you haven’t done research.

9. **Practice, practice, practice for interviews.**
   Believe it or not, talking about yourself isn’t so easy. Interviewing confidently requires practice. Emergency medicine interviews are generally very relaxed but, that said, you must still be prepared. You don’t want to memorize responses to questions, but you should be comfortable talking about who you are and why you want to pursue a career in emergency medicine.

10. **Be energetic, attentive, and personable and smile on your interview days.**
    Your interactions with faculty, staff and residents on the day of your interview are a crucial component of your success. Emergency medicine is a “people specialty” unlike any other, so outstanding interpersonal skills are essential; if you are not amicable, your ranking may suffer. Be personable, friendly and act like someone who would be a positive addition to the residency. Be respectful and appreciative of everyone involved in this process. Residency coordinators, residents and staff are influential in this process, so it is important to treat them respectfully.

11. **Be courteous throughout this process.**
    I always suggest that applicants write thank you notes to their interviewers (and the residency coordinator) because this is good manners. Everyone you meet throughout this process has influence. Interestingly, the NRMP survey results indicated that following up with programs and “second looks” were not important factors when ranking applicants.
Into Africa: Reflections on six weeks in Zambia

Joining the bandwagon of senior medical students using elective time for international travel, I spent six weeks on rotation at the Macha Mission Hospital (MMH) in a remote part of Zambia’s Southern Province earlier this year.

MMH is an approximately 200-bed hospital and a referral center for many of the small rural health centers in the Choma district. Also affiliated with MMH, are a malaria research initiative and a large antiretroviral therapy clinic.

With few cars and no paved roads, emergency medical services are non-existent in the Macha area. There is no formal emergency department at MMH, so urgent cases are treated as they arrive, often hours or days after the injury or onset of symptoms. Further complicating matters, some patients are initially seen and treated by a traditional healer, only seeking care at a rural health center or at MMH when those traditional treatments fail.

“I caught a glimpse of another way of life, and worked with some very committed individuals who are making a big difference in the community, all with limited resources and little outside recognition.”
Although life in southern Africa is generally more laid back than in North America, my time in Macha was busy. Morning report, rounds on the various wards, a steady stream of patients in the outpatient department (OPD) and a busy operating theatre (OT) schedule left little time to be bored.

At least two mornings per week the “major room” in the OT was kept busy with exploratory laparotomies, bilateral tubal ligations, and herniorrhaphies among other procedures. Meanwhile, the two minor rooms were filled with a flurry of dressing changes, wound debridement, incision and drainage, dilation and curettage, and fracture reduction and casting.

Daily OPD hours also promised variety with a mixture of chronic diseases, acute illnesses, and injuries in a wide range of patients, from children to expectant mothers.

Medical students like me, rotating at MMH, took turns on call with one of the attending physicians every fourth night. Nights on call typically consisted of evening rounds at 8 p.m. on all wards and dealing with any urgent needs that came up in the remainder of the night.

Occasionally, these nights involved short-and-sweet evening rounds followed by uninterrupted sleep with the medical student phone lying silently nearby. Other nights were less than peaceful, punctuated by back-to-back C-sections, breech or twin deliveries, fevers, anemia, hematemesis, fractures, lacerations and sometimes death.

I had spent time in southern Africa before, so I found the cultural and environmental adjustments easier the second time around, but this was my first time working internationally in a clinical capacity.

The work seemed overwhelming at times. It took a while to feel effective and efficient communicating with patients through an interpreter (who was likely to be helping others simultaneously).

It took even more time to get used to an increased level of autonomy and the fact that diagnostic and therapeutic options were almost always limited. I relied heavily on the experience and clinical judgment of the physicians (both Zambian and North American) with whom I worked.

Despite its challenges, this experience was very rewarding. My time in Macha was short. Still, it was a unique learning opportunity. I caught a glimpse of another way of life, and worked with some very committed individuals who are making a big difference in the community, all with limited resources and little outside recognition.

If you are considering an international elective during medical school be sure to do your homework well in advance of your trip. If you have not lived or worked outside of your home country before, take time to speak with someone who has international experience. Be sure to read about the area where you will be working, especially regarding culture, language and way of life.

Explore the many resources available online, including EMRA’s Medical Student Pearl “International Rotations for the Medical Student 101,” which provides some basic information and resources for planning an international rotation.
TCA poisoning challenging to diagnose and treat

Of all the overdose patients that EM residents are called upon to treat, few present as challenging a task as that of tricyclic antidepressant poisoning.

The American Association of Poison Control Centers reports that antidepressants are second only to analgesics as a cause of overdose related death. TCAs are prescribed for use in a multitude of psychiatric and pain disorders and account for up to 70 percent of antidepressant overdose fatalities.

Even though TCA poisoning is pharmacologically similar to anticholinergic toxidromes, the standard treatment is ineffective and can actually be harmful to the patient. Understanding how to best incorporate the recommended treatment requires an understanding of how TCAs function.

At the cellular level, tricyclics affect presynaptic neurotransmitter reuptake. They also inhibit cardiac fast sodium channels, central and peripheral muscarinic acetylcholine receptors, peripheral alpha-1 adrenergic receptors, histamine receptors and GABA –A receptors.

As a result of these cellular processes, the observable physiologic signs of TCA overdose may include arrhythmias, seizures, hypotension and symptoms similar to anticholinergic toxicity (hyperthermia, flushing, dilated pupils, ileus, urinary retention, sinus tachycardia). CNS effects include confusion, delirium and hallucinations that can change quickly to psychomotor agitation progressing to obtundation and coma. Frequent neurological assessments are thus required.

Generalized seizures that occur in approximately 10 percent of TCA overdoses, may be short-lived or prolonged and refractory to treatment. Refractory seizures without QRS widening are commonly associated with amoxapine overdose.

TCAs inhibit the fast sodium channels of the heart, thereby decreasing conduction velocity and prolonging the refractory period. Common EKG manifestations include sinus tachycardia and widening of the PR, QRS and QT intervals. Right ventricular activation is delayed due to intra- and interventricular conduction delay. This creates a rightward shift in the terminal 40 ms frontal plane QRS vector manifesting as a deep slurred S in lead I and AVL and an R wave in AVR.
Lethal arrhythmias such as ventricular tachycardia and fibrillation occur in 4 percent of overdoses and are more commonly seen in severe poisonings complicated by acidosis, hypotension and extreme QRS prolongation.

The risk of seizures and ventricular arrhythmias increases as the QRS complex exceeds 100 ms. In one study by Boehnert and Lovejoy, QRS widening less than 100 ms was associated with lack of seizures and ventricular arrhythmias. With QRS widening over 100 ms, there was a 34 percent incidence of seizures and a 14 percent incidence of ventricular arrhythmia.

Diagnosing TCA overdose depends on a good history and a high index of suspicion together with the presence of characteristic clinical features. Measuring serum TCA levels has limited therapeutic utility since serum concentrations do not correlate well to systemic toxicity. Confirmation of exposure is available by urine toxicology screening.

Due to the large volume of distribution, hemodialysis, hemoperfusion, peritoneal dialysis and forced diuresis are unproductive. For patients presenting within 2 hours of ingestion, single dose activated charcoal 1 gm/kg is recommended.

Although TCAs possess anticholinergic properties, use of physostigmine may worsen cardiac function, even causing cardiac arrest. Serum alkalization remains the mainstay of therapy. Hypertonic sodium bicarbonate is indicated for QRS widening over 100 ms. Initial dose is 102 meq/kg (2 to 3 50 ml vials) given as a rapid IV push through a large bore IV. It is helpful to run a continuous 12 lead EKG during infusion to demonstrate narrowing of QRS and a decrease in R wave amplitude. Obtain frequent arterial pH measurements with a goal of 7.50 to 7.55. If the sodium bicarbonate decreases the QRS widening, start an infusion of 132 meq in D5W at 250 ml/hr.

While sodium bicarbonate is the mainstay of antiarhythmic therapy, lidocaine is the drug of choice in an overdose complicated by refractory ventricular arrhythmias. Class 1A and 1C agents, in particular, are contraindicated as they inhibit the rapid sodium channels. Class III agents are poorly studied. Class 1B agents are also not advocated for routine use, although recent studies have shown encouraging results.

Vasopressors such as norepinephrine or phenylephrine are indicated for hypotension refractory to fluids and treatment to sodiumbicarbonate. Benzodiazepines are first line drugs for seizures. Phenytoin (because of its sodium channel blockade) and deep sedation with propofol are reserved for refractory cases. Experimental therapies include glucagon and monoclonal antibodies to TCAs.

Lethality from TCA overdose lies in its cardiotoxicity, and tends to occur in the first 24 hours of presentation. Most patients acquire symptoms in the first 6 hours after ingestion. Patients with altered mental status, seizures, hypotension, metabolic acidosis and cardiac arrhythmias require ICU admission and should remain there for up to 12 hours after discontinuation of therapeutic measures. Prior to transfer, patients should be asymptomatic and demonstrate a normal EKG and arterial pH.

Recently, SSRIs have replaced tricyclic use, and their morbidity and mortality is on the decline. It is incumbent upon the EM resident to be vigilant of this still too common and lethal overdose.

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“Although TCAs possess anticholinergic properties, use of physostigmine may worsen cardiac function, even causing cardiac arrest.”
A four year old female was brought in by parents for five days of vomiting, diarrhea and decreased appetite with vague, diffuse abdominal pain. The child was seen by her pediatrician four days prior, started on Pedialyte™ in small, frequent amounts, which she tolerated well for two days without vomiting. She resumed non-bilious, non-bloody vomiting the day prior to presentation, continuing through day of presentation. Stools have been watery-green without blood through out the five days, greater than four times per day.

Review of systems was otherwise negative.

Prior medical history included a potassium absorption problem for which she has not required replacement in the past two years. Vaccinations were up to date.

Vital signs on presentation were 98.1°F rectally, HR 145, RR 20, BP 95/53, spO2 97% on room air, and weight 14 kg.

Physical exam revealed a thin, small for given age, ill-appearing, moderately dehydrated, and highly irritable child. Cardiac exam revealed tachycardia with no murmurs. Lungs were clear with good air movement. The abdomen had hyperactive bowel sounds, was soft, non-distended, non-tender, and without palpated organomegaly. All extremities moved spontaneously and were without edema. Skin was without rash or petechiae. Neurologically the child was awake, responsive, without gross defect.

Intravenous access was obtained and bloods were sent for diagnostics. Result of finger stick glucose was 101 mg/dL. Normal saline was started as boluses of 20 mL/kg times two doses. After boluses completed, D5 1/2NS was started at one times maintenance per weight. Cultures for stool and rotavirus screen were ordered, but child had no stools in ED.

First chemistry results were: Na 120 mmol/L, Cl 61 mmol/L, K 1.9 mmol/L,
During in-patient evaluation it was discussed that the child had congenital chloridorrhea previously diagnosed at another county institution. It was intended the child receive both potassium and sodium salt replacement supplements daily, even when well.

Congenital chloride diarrhea, or chloridorrhea, is a rare congenital autosomal recessive trait with defect in ileal and colonic epithelial chloride/bicarbonate exchange, first described by Gamble et al. (1945) and Darrow (1945).1,2,3.

While the condition is not fully understood, it is known that it allows for retention of bicarbonate while chloride and sodium remain elevated in gut and passes in feces secondary to believed poor uptake and also possibly by an excretory mechanism. These increases in luminal ions cause an osmotic pull adding to the profuse diarrhea. Stool chloride greater than 90 mmol/L is diagnostic3,4.

The hypokalemia is often attributed to this severe diarrhea and the alkalosis. All these mechanisms together give us the complicated picture of hypochloremia, hyponatremia, hypokalemia, and alkalosis3,5,6.

Treatment includes potassium chloride, sodium chloride salt supplementation for life at levels to overcome losses, as well as proton pump inhibitors to decrease electrolyte losses in the gut. As losses decrease or equalize, diarrhea often subsides to manageable levels5,6.

Further course for this child in the hospital was without complication and child was noted to be at baseline function on discharge. This child was discharged with instructions to continue potassium and sodium chloride salt supplementation, as well as omeprazole. The child was to follow up with her previous pediatric gastroenterologist at the county hospital.

This case was reviewed in retrospect to assess for proper management in the ED. It is believed that the initial fluid resuscitation was appropriate as well as the one and one half times maintenance with potassium. Some have maintained that possibly potassium could have been more aggressively replaced, although at the point-in-time it is believed the correct decision was made considering the alkalosis and an otherwise normal EKG. Addition of a magnesium level would have been indicated, especially after the first low potassium result. The pediatric ICU was a better choice for admission in light of the persistent and severe hypokalemia.

The rapid correction (8 mmol/L in 2 hours) of what may have been a chronic hyponatremia could be argued was the reason for the seizure. Considering the concomitant deficits and the dehydration, it would have been difficult to maintain a slower rate of increase utilizing normal saline, which is the treatment of choice.

The focus upon admit was slow deliberate correction at a rate that did not exceed 12 mmol/L in the first 24 hours or 18 mmol/L in the first 48 hours. The outcome however was favorable. There were no other signs, symptoms or findings of central pontine myelinolysis.

References
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October 3-7, 2009

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They say Boston is at its best in the fall...so are the EMRA Activities at Scientific Assembly

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**Medical Student Events**

**Saturday, October 3**

1:00pm–5:00pm  
EMRA Medical Student Governing Council Meeting  
(Marriott Copley)

5:30 pm–7:30 pm  
EMRA MSGC/EMIG Representative Mixer  
(VOX Populi American Bistro & Martini Bar, 755 Boylston Street)

**Sunday, October 4**

8:00 am–8:50 am  
EMRA Medical Student Forum (Westin Waterfront)  
Which Type of Residency is Right for Me?  
Stephen Wolf, MD, FACEP*–Denver Health Medical Center

9:00 am–9:50 am  
Common Mistakes Made When Applying to EM & How to Avoid Them  
Robert Rogers, MD, FACEP–University of Maryland

10:00 am–10:50 am  
Getting into the Residency of Your Choice  
Peter DeBlieux, MD, FACEP*–University Hospital, LSUHSC

11:00 am–11:50 am  
Interview Day Tips  
Peter Erik Sokolove, MD, FACEP–University of California/Davis

12:00 pm–1:00 pm  
Panel Discussion/ Roundtable Networking Luncheon with Program Directors (Westin Waterfront)

3:00 pm–5:00 pm  
EMRA Residency Fair (Boston Convention & Exhibition Center)

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**Residency Events**

**Monday, October 5**

EMRA Resident Forum  
(Boston Convention & Exhibition Center)

8:00 am–8:50 am  
EMRA Welcome Reception & Bloody Mary Breakfast  
Financial Planning for Young Physicians  
M. Shayne Ruffing, CLU, ChFC, AEP – The Benefit Planning Group

9:00 am–9:50 am  
Taking Care of Business: What You Should Know About Fair Business Practices & Contracts  
Todd Taylor, MD, FACEP* and Joseph Wood, MD, JD, FACEP

10:00 am–10:50 am  
The Mechanics of the Job Search  
Chris Krubert, MD, MBA

12:00 pm–1:00 pm  
Resident Networking Lunch  
Been There Done That: Tips from EMRA Alumni on Life After Residency

1:00 pm–1:50 pm  
Regional Job Market Breakouts  
North: Kathleen Cowling, DO, FACEP*  
South: Angela Silber Fisher, MD, FACEP and Jeremy Rogers, MD*  
East: Andy Jagoda, MD, FACEP and Jon Fisher, MD, FACEP  
West: Peter Erik Sokolove, MD, FACEP and Paul Kivela, MD, MBA, FACEP

5:00 pm–7:00 pm  
EMRA Job Fair  
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!

**Tuesday, October 6**

1:30 pm–4:30 pm  
EMRA Resident SimWars  
Sponsored by FERNE (Westin Waterfront)

3:30 pm–4:00 pm  
Resident Tour of Research Forum Posters  
(Boston Convention & Exhibition Center)

*Invited

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**Representative Council Meetings**

**Monday, October 5**

All Rep Council Meetings will take place at the Westin Waterfront

9:00 am–5:00 pm  
EMRA Representative Council Conference  
Committee Orientation

2:00 pm–3:00 pm  
EMRA Regional Representative Meeting

3:00 pm–4:30 pm  
EMRA Representative Council Reference Committee Public Hearing

6:00 pm–8:00 pm  
EMRA Reference Committee Work Meeting

**Tuesday, October 6**

EMRA Representative Council Welcome Breakfast & Candidate Forum

9:00 am–9:30 am  
EMRA Representative Council Registration

9:30 am–12:00 pm  
EMRA Representative Council Meeting and Town Hall

12:00 pm–1:00 pm  
EMRA Representative Council/Resident Luncheon Sponsored by FERNE

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**EMRA Committee & Business Meetings**

**Friday, October 2**

9:00 am–5:00 pm  
EMRA Board of Directors Meeting  
(Marriott Copley)

**Saturday, October 3**

6:00 pm–10:00 pm  
EMRA Board of Directors Meeting  
(Marriott Copley)

**Sunday, October 4**

1:00 pm–2:00 pm  
EMRA Representatives to ACEP Committees Meeting (Marriott Copley)

**Tuesday, October 6**

12:30 pm–2:00 pm  
EMRA New Board Member Orientation  
(Westin Waterfront)

2:00 pm–3:00 pm  
EM Resident Magazine Editorial Advisory Board  
(Westin Waterfront)

**Wednesday, October 7**

10:00 am–12:00 pm  
EMRA Board of Directors Meeting  
(Westin Waterfront)

12:00 pm–1:00 pm  
EMRA Leaders Transition Luncheon  
(Westin Waterfront)

1:00 pm–3:00 pm  
EMRA Committee Meetings (Westin Waterfront)

**EMRA Board of Directors Meeting & Committee Update**  
(Westin Waterfront)

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**Other FUN Stuff**

**Tuesday, October 6**

5:00 pm–6:00 pm  
EMRA Fall Awards Reception  
(Westin Waterfront)

6:00 pm–7:00 pm  
EMRA 35th Anniversary Alumni Reunion  
(Westin Waterfront)

9:00 pm–?  
EMRA Party  
(The Estate, One Boylston Place)
Neonatal cardiac failure with a twist

Case

A 4-day-old female presented to a rural Indiana emergency department for evaluation of rapid breathing and poor feeding. On physical exam, the patient had weak peripheral pulses with delayed capillary refill, severe respiratory distress, and a hyperdynamic precordium. She was promptly intubated and further resuscitative efforts were initiated.

The patient was born full term to a G1P0 mother via an uncomplicated vaginal delivery with normal APGAR scores and maternal serologies. She had an uneventful hospital stay and was discharged on day of life No. 2. The mother and family noticed her “breathing fast” on day of life No. 3. She began to have difficulty feeding on the day of presentation.

Initial vital signs revealed a heart rate of 180, respiratory rate of 50, temperature of 97.6 and oxygen saturation 90% on room air. After intubation for respiratory distress, she continued to have tachypnea, diminished peripheral pulses and a capillary refill of 5 seconds. A grade III/VI systolic ejection murmur was evident on exam. A chest radiograph showed cardiomegaly and mild pulmonary edema.

Milrinone and prostaglandin (PGE1) infusions were initiated out of concern for cardiac failure and suspicion of coarctation of the aorta per echocardiography. As the infant required higher level of care, she was transferred to Riley Children’s Hospital.

Upon arrival to Riley, she was critically ill, with evidence of multiple organ failure. She had a metabolic acidosis (pH 7.0), a severe coagulopathy (INR >12, plt 24,000, aPTT >225), shock liver (transaminases >1000), and acute renal failure (creatinine 2.5).

Repeat echocardiography revealed: pulmonary hypertension with enlargement of the right ventricle, minimally diminished systolic function; no evidence of coarctation, but a mildly hypoplastic distal aortic arch with diastolic flow reversal in the proximal aorta, and significantly enlarged brachiocephalic vessels with turbulent flow.

On physical exam, a loud bruit was audible over the anterior fontanelle. A suspected cerebral arteriovenous malformation (AVM) was noted on head ultrasound. An MRI confirmed the presence of a large Vein of Galen malformation with anastomoses from multiple arterial vessels originating in the posterior fossa circulation (Figure 1).

After several tenuous days of resuscitation, a series of three embolization procedures were performed to occlude the large AVM. As a result, the patient’s heart failure
improved significantly, the milrinone and prostaglandin infusions were discontinued and the infant was extubated. She was discharged from the hospital one week after the last procedure on a small dose of furosemide and nasogastric feeds. Since discharge, she has advanced to all oral feeds and is developmentally appropriate.

Discussion

The vein of Galen aneurysmal malformation (VGAM) is a rare congenital arteriovenous malformation with an incidence of 1 in 25,000 deliveries. The malformation is thought to result from the development of an arteriovenous connection between primitive choroidal vessels and the median prosencephalic vein of Markowski.2

In the neonatal period, VGAMs classically present with high-output cardiac failure and an audible cranial bruit. Other neonatal presentations include macrocephaly and dilated orbital veins. Seizures, hydrocephalus and subarachnoid hemorrhage may be seen later in infancy.3

Treatment of VGAM emphasizes improving cardiac function by reducing flow through the arteriovenous fistula. Recent advances in neurointerventional procedures have significantly decreased the morbidity and mortality associated with these treatments. For example, arterial embolization of cerebral AVMs has demonstrated improved cardiac function with decreased neurological deficits in comparison to older more invasive procedures.4

The significance of this case goes beyond the rare and interesting final diagnosis, to the critical steps taken to manage a neonate in shock. Although the initial diagnosis of congenital heart disease missed the primary lesion, the prostaglandin infusion to open the ductus arteriosis proved to be life-saving.

In actuality, the patient had high-output cardiac failure due to a VGAM. The VGAM served as a low-resistance shunt that compromised systemic perfusion. Closure of the ductus precipitated shock by reliance on a poorly functioning left ventricle, resulting in multiple organ failure. In retrospect, ensuring the patency of the ductus allowed for the right and left ventricles to work together to supply sufficient cardiac output until the fistula was closed.

Congenital heart disease remains the most common cause of cardiac failure in neonates. However, it is important to consider the diagnosis of a cerebral arteriovenous malformation in infants that present with cardiac failure and shock. In this case, the prostaglandin infusion and prompt recognition of the VGAM facilitated definitive endovascular therapy, resulting in a good outcome for this neonate.

References


“Although the initial diagnosis of congenital heart disease missed the primary lesion, the prostaglandin infusion to open the ductus arteriosis proved to be life-saving.”
Toxicologycorner

Antidotes: A handy guide for the EM Resident

“T"he cornerstone for the poisoned patient is good supportive care with the proper application of the indicated antidote.”

With the start of a new year for incoming interns and medical students doing their emergency medicine rotation, I thought a topic of interest would be a discussion of antidotes for various toxicological poisons. Although board questions often stress knowing the correct antidote for the right poison, the cornerstone for the poisoned patient is good supportive care with the proper application of the indicated antidote.

The use of antidotes in the history of toxicology has a rich history. For many decades, if not centuries, the use of a substance to antagonize the effect of a poison has often come before good supportive care. From the use of strychnine to “stimulate” patients who are opioid-toxic, to the use of rabbit brains for Amanita phalloides ingestions, many of these “antidotes” have never been objectively examined.

Although it is important to stress good supportive care, the application of certain antidotes in the correct scenario certainly has its place in toxicology. Antidotes such as naloxone and pyridoxine certainly can alter management, and can be life-saving. There are other antidotes that can actually do more harm than good such as flumazenil, so their benefit must carefully be weighed against their downside.

To keep all the antidotes straight along with relevant information, I included a list of important antidotes. I also included relevant dosing, but it is always important to double check the dose before their administration (as the dosing may vary in certain situations).
<table>
<thead>
<tr>
<th>Antidote</th>
<th>Indications</th>
<th>Dose*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N-acetylcysteine</strong></td>
<td>Acetaminophen</td>
<td>150 mg/kg over an hr&lt;br&gt;50 mg/kg over 4 hrs&lt;br&gt;100 mg /kg over 16 hrs</td>
<td>Anaphylactoid reaction if given too fast</td>
</tr>
<tr>
<td><strong>Atropine</strong></td>
<td>Organic phosphorus compounds&lt;br&gt;Carbamates</td>
<td>2-4 mg IV, can double every 5 mins (resolution of bronchorrhea)</td>
<td>Anticholinergic poisoning</td>
</tr>
<tr>
<td><strong>Carnitine</strong></td>
<td>Valproic acid</td>
<td>100 mg/kg (max 6 g),&lt;br&gt;15 mg/kg every 4 hrs</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Cyanide antidote kit</strong></td>
<td><strong>Amyl Nitrite</strong>&lt;br&gt;<strong>Sodium Nitrite</strong>&lt;br&gt;<strong>Sodium Thiosulfate</strong></td>
<td>Cyanide</td>
<td>Nitrites induces methemoglobin, avoid with suspected CO</td>
</tr>
<tr>
<td><strong>Dantrolene</strong></td>
<td>Malignant hyperthermia</td>
<td>2-3 mg/kg IV bolus&lt;br&gt;Repeat every 15 min up to total dose of 10 mg/kg</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Deferoxamine</strong></td>
<td>Iron</td>
<td>15 mg/kg/h (limit to less than 24 hr infusion)</td>
<td>Hypotension (rate-related) ALI&lt;br&gt;(&gt; 24-hours) Infection</td>
</tr>
<tr>
<td><strong>Dimercaprol</strong></td>
<td>Lead&lt;br&gt;<em>Arsenic and mercury (dosing differs from one used for lead)</em></td>
<td>75 mg/m2 IM every 4 hr for 5 days, the first dose of dimercaprol should precede the first dose of CaNa2EDTA by 4 hr for lead</td>
<td>Peanut allergy</td>
</tr>
<tr>
<td><strong>Digoxin antibodies</strong></td>
<td>Cardioactive steroids</td>
<td>Amount of vials varies on clinical scenario (i.e. acute versus chronic)</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Edetate calcium disodium</strong></td>
<td>Lead</td>
<td>1500 mg/m2/d continuous IV infusion</td>
<td>Related to release of lead</td>
</tr>
<tr>
<td><strong>Folinic acid</strong></td>
<td>Methotrexate</td>
<td>100 mg/m2 every 3 hours</td>
<td>Possible anaphylactoid reaction</td>
</tr>
<tr>
<td><strong>Fomepizole</strong></td>
<td>Methanol&lt;br&gt;Ethyleneglycol</td>
<td>15 mg/kg IV, next 4 doses 10 mg/kg every 12 hrs, then 15 mg/kg every 12 hrs if needed</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Flumazenil</strong></td>
<td>Benzodiazepine</td>
<td>Up to 1 mg IV</td>
<td>Special caution in use, especially in chronic users or mixed ingestions</td>
</tr>
<tr>
<td><strong>Glucagon</strong></td>
<td>Beta-blockers and calcium channel blockers</td>
<td>2-5 mg IV bolus followed by 2-10 mg/hr IV</td>
<td>Nausea, hypotension, hypoglycemia</td>
</tr>
<tr>
<td><strong>Hydroxocobalamin</strong></td>
<td>Cyanide</td>
<td>70 mg/kg IV (max 5 gm)</td>
<td>Allergic reaction, red discoloration</td>
</tr>
<tr>
<td><strong>Methylene blue</strong></td>
<td>Methemoglobinemia</td>
<td>1-2 mg/kg IV</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Naloxone</strong></td>
<td>Opioids</td>
<td>Typically start low such as 0.05 or 0.4 mg IV</td>
<td>Opioid withdrawal if too much given</td>
</tr>
<tr>
<td><strong>Octreotide</strong></td>
<td>Sulfonyurea</td>
<td>50 ug IV/SQ every 6 hrs</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Physostigmine</strong></td>
<td>Anticholinergic syndrome</td>
<td>1-2 mg IV</td>
<td>Avoid in any TCA overdose or QRS prolongation</td>
</tr>
<tr>
<td><strong>Protamine</strong></td>
<td>Heparin</td>
<td>1 mg for every 100 units</td>
<td>Allergic reaction</td>
</tr>
<tr>
<td><strong>Prussian blue</strong></td>
<td>Thallium/Cesium</td>
<td>Total dose of 150-250 mg/kg/d PO in 2-4 divided doses</td>
<td>Dissolve in mannitol</td>
</tr>
<tr>
<td><strong>Pralidoxime</strong></td>
<td>Organic phosphorus compounds&lt;br&gt;Carbamates</td>
<td>1-2 gm IV followed by 500 mg/hr infusion</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Pyridoxine</strong></td>
<td>Isoniazid, OD up to 5 gms</td>
<td>Gram for gram in INH</td>
<td>Well-tolerated</td>
</tr>
<tr>
<td><strong>Succimer</strong></td>
<td>Lead</td>
<td>10 mg/kg PO every 8 hrs for 5 days followed by every 12 hrs for 14 days</td>
<td>Well-tolerated</td>
</tr>
</tbody>
</table>

*Dosing is for only for adults. For more detailed use, please refer to a major textbook or call your regional poison center. Important to note there may be variation in dosing depending on the situation or textbook used.*
A 56-year-old white male with a history of diabetes and an olfactory groove meningioma presents to the emergency department complaining of headache, nausea, and vomiting. The patient states that over the last several days he has been having worsening headaches associated with increasing amount of nasal drainage.

The headache is diffuse, throbbing in nature, and feels like a pressure sensation. He states that he has not ever had a headache this severe. The nasal drainage is clear and continuous. The nausea and vomiting started today. He has not had any fevers or abdominal pain.

Of note, the patient is two weeks status post craniotomy for resection of an olfactory groove meningioma. He was discharged from the hospital three days ago. He has had rhinorrhea since his operation, but was told that it was not coming from CSF. However, the volume of the nasal drainage has increased markedly over the last two days.

On physical exam, the patient is pale, chronically ill-appearing, diaphoretic, in no acute distress. He is afebrile and vitals are stable. There did appear to be a scant amount of clear drainage in bilateral nares. Neurologic exam was nonfocal. Otherwise, his physical exam was within normal limits.

Diagnostic studies included basic labs and a CT scan of the head, which is shown.

**Question:** What is this finding on CT scan? What other conditions can cause this same or similar finding? What life-threatening condition is important to differentiate from this one?

**Answer:** The finding on this pt’s CT scan is called pneumocephalus, which is the presence of air or gas in the cranial cavity. In this patient, the ethmoid sinus was unintentionally entered during his craniotomy for resection of the olfactory meningioma, leaving a defect there.

There are two possible mechanisms proposed for why pneumocephalus then develops. One theory is that air passes through a dural tear through a ball-valve mechanism. When there is a rapid increase in intrasinus pressure, which occurs during coughing or sneezing, then air is forced in and then trapped intracranially. The other theory is that CSF leakage permits air to enter the intracranial cavity because when the CSF leaves the space, a negative pressure is created.

Headache and altered mental status are the most common symptoms of pneumocephalus. As little as 2 mL of subarachnoid air has been reported to
cause headache, as subarachnoid air causes significant irritation.

Pneumocephalus, although not commonly seen in the emergency department setting, has several causes. In a review of the literature by Kuo, et al, the majority of the cases of pneumocephalus were caused by head injury and cranial surgery, followed by infection by a gas-forming organism (most of these patients had a predisposing factor such as trauma, paranasal sepsis, or otitis media). More rarely, pneumocephalus was found to be caused by frequent Valsalva, skull bone invasion by nasopharyngeal cancer, or other idiopathic causes.

Before the advent of CT, pneumocephalus was thought to be a rare entity. However, with current CT technology, as little as 0.5 mL of air can be detected, and is therefore discovered more frequently. Pneumocephalus is not always clinically significant and often times following craniotomy, a small amount of pneumocephalus is expected and the air will be absorbed spontaneously.

It is important to differentiate nontension pneumocephalus from a tension pneumocephalus on CT. Nontension pneumocephalus is not a neurosurgical emergency, while tension pneumocephalus is. Tension pneumocephalus behaves much like a tension pneumothorax. The intracranial air causes mass effect, increased intracranial pressure, and compression of the brain against the skull. This can result in altered mental status, seizures, focal neurological deficit, and if not treated, death.

The appearance of tension pneumocephalus on head CT has been dubbed “The Mount Fuji sign.” In a tension pneumocephalus, one will often see bilateral subdural collections of air that cause compression and separation of the frontal lobes which has the appearance of the silhouette of Mount Fuji. A tension pneumocephalus is most often seen after craniotomy or craniectomy; however, spontaneous cases have been reported.

In the case of our patient, his pneumocephalus was nontension in nature. He was seen by neurosurgery, admitted to the hospital, and taken to the operating room for repair of the ethmoid sinus defect. A repeat head CT several months later showed resolution of the pneumocephalus.

References
When you break financial success down to the most consistent, lowest common denominators, you will find three things:

- Effective cash management
- Appropriate risk management
- Effective retirement planning

The first two are easy to justify. If you don’t have cash on hand, there are immediate ramifications; if you don’t have adequate risk protection (insurance/cash) it becomes brutally obvious with the first crisis. Retirement planning is different. For many reading this article, retirement is practically a lifetime away. It may be hard to justify retirement funding when there are so many ongoing demands for your money, particularly during PGY 1 & 2.

Take heed

There are two types of retirement: You either have the resources to make your own decisions or you have your decisions dictated by your financial, health or other constraints. From my perspective, the second is simply unacceptable.

As residents and even new attendings, you have opportunities that you need to understand and try to take advantage of. Specifically:

Taxes

Understand that our tax system is a graduated tax scale. This means that the more you earn, the higher the percent of your income you pay in tax. As residents, you are in the lowest income tax bracket you will ever be in again (I hope!). In addition, recognize that retirement funding has three distinct phases of taxation. You can get an advantage on two out of the three. The phases are:

- When you contribute – can be pre-tax or after tax
- While you hold the money – commonly tax-deferred (not taxable each year)
- When you withdraw or spend the money – can be taxable or not

I encourage you to use your low current income as an advantage, pay tax on retirement funding whenever you can and qualify for tax-free income in retirement when you will be in a much higher income tax bracket. (The IRS defines retirement as age 59 1/2.)
The most common types of retirement plans that you should consider, in my preferred order of priority, are:

**Roth IRA**
A Roth IRA allows you to contribute up to $5,000 per tax year (Jan. 1st – April 15th of the following year) to an account in your name. If you are married you can each do this. You must have earned income of at least $5,000 in the calendar year to qualify. Money is contributed after taxes, grows without taxation and is ultimately tax free when withdrawn. It is a limited opportunity. Your attending income will make you ineligible your first full year in practice.

**403(b)**
Most house-staff programs offer a 403(b) retirement plan to residents. This allows you to contribute up to $16,500 per calendar year, (Jan. 1st – Dec. 1st) to a plan. Contributions must be made through payroll deduction and are pre-tax. Every dollar contributed reduces your actual income tax for the year! As an additional bonus, you can use contributions to a 403(b) to make yourself eligible for a Roth IRA in some cases, depending on your overall taxable income. Money is not taxable while in the account and is taxable as ordinary income when taken out in retirement. Look to convert this money to a Roth IRA if possible, once you complete residency.

**SEP IRA**
A Simplified Employee Pension plan is a retirement plan for independent contractors, moonlighters and anyone who has 1099 income that is not taxed as received. A SEP will allow you to contribute up to +/- 20% of this income to an account and it is tax deductible. In other words, the tax advantage will be received when you file your taxes, not as contributed. Money grows without ongoing taxation and is taxable as income when taken out. A SEP is great for additional reasons: It allows you to offset the significantly higher self-employment tax you pay on 1099 income and you can contribute up to the time you file your taxes, including any extensions!

One additional tax tip to consider
If you have been max funding your Roth IRA during residency and will soon lose the ability due to increased income, consider max funding a non-deductible traditional IRA. In the year 2010 you can convert any funds in that IRA in to your Roth IRA (Paying taxes on any gains) and ultimately end up being able to get two or three more years of Roth Funding! Consult your tax advisor or financial planner for planning strategies.

Planning for retirement is not an expense; it is a decision to be in control of your future. As emergency physicians, the demands of your daily routine are often unpredictable and reactionary. Take the time now to make sure that the chaos of the ED does not carry over in to your personal life and your future!

Shayne Ruffing, CLU, ChFC, AEP is the creator of the Confident Transition Plan™ for medical residents, the Physician Disability Income Analyzer™ and the Physician’s Financial Navigator™. Shayne specializes in executive benefit planning for physicians and medical practices. He can be reached at 800.225.7174, or via e-mail at shayne@mybpginc.com or on the web at www.IntegratedWealthCare.com.

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Interested in research? Not sure how to start? At the EMRA Research Committee meeting this year, we thought that many likely feel this way. Here is my experience of research motivation and application for the EMF/SAEM Medical Student Research Grant in hope it helps you.

As a third year student, I knew I wanted to go into emergency medicine, and also interested in clinical research. However, I was not sure how to go about doing research.

As a chemistry major, I spent hours in the laboratory. While the process of research was fun: forming a hypothesis, finding creative ways to troubleshoot, and having a finished product, lab work did not suit my personality. I went to medical school, but did not forget what I enjoyed in the lab. That, plus an internship working on several clinical research studies in the emergency department, developed my interest in clinical research.

For me, the idea of a research question rising from the need to answer a clinical question is appealing. Also, the results of a study can often be applied immediately.

Through my medical school, I became involved in my residency’s research associate program and met two faculty who became my mentors. As a third year student, my mentors, James Miner and Michelle Biros, encouraged me to apply for an EMF/SAEM Medical Student Research Grant.

The idea of applying for a grant as a student was formidable. While I was excited to apply, I had little formal research experience and no publications. However, the experience of completing a grant application and working closely with a mentor was invaluable.

Dr. Miner and I worked together to come up with and refine a research question. I completed the application with his help, which was the first time I had ever seen a grant proposal. Our grant was funded and provided us with funds for our study and also a stipend for a poor student.

Fundamentally involved in our study from start to finish, I was educating research associates about the study, collecting data, fixing unforeseen problems that arose, participating in data entry and statistical analysis, presenting our abstract at national meetings, and helping prepare the manuscript for publication. Ultimately our study was published, which was extraordinarily satisfying.

In preparation for this article, I asked both Drs. Miner and Biros to write some words of advice for students and residents.

**What is your motivation to do clinical research?**

**Dr. Miner:** When I was a resident I saw how many unanswered questions there are in emergency medicine and started planning all the projects I wanted to do. I’ve gotten to about 1% of the them so far, but I’ve narrowed...
The Emergency Medicine Foundation (EMF), the research and educational 501(c)3 arm of American College of Emergency Physicians (ACEP), and the Emergency Medicine Residents’ Association (EMRA) are pleased to announce one of the EMF/EMRA Resident Research Grantees for the 2009-2010 year, Francesca Beaudoin, MD, MS. She was awarded a $4,597 grant to study an alternative method for pain control in elderly patients. Dr. Beaudoin’s project, entitled, “Ultrasound-guided Femoral Nerve Blocks in Elderly Patients with Hip Fractures: A Randomized Controlled Trial” will be studied at the Rhode Island Hospital in Providence, Rhode Island. Dr. Otto Liebmann, MD will serve as her mentor.

Dr. Beaudoin thanks EMF and EMRA for creating this stepping stone in her academic career. As a fourth year resident, this grant was the avenue which allowed her to serve as the PI, while at the same time gaining valuable knowledge of federal grant processes.

If you are interested in applying for an emergency medicine research grant, please go to www.emfoundation.org or contact the Emergency Medicine Foundation by calling (800) 798-1822.
1. “The total white blood cell count was normal, so I didn’t think the patient was neutropenic.”
   Too often CBCs are ordered, but the differential count is not fully examined. Focusing on the total WBC might lead the emergency clinician to miss a potentially important diagnosis. To evaluate for neutropenia, the clinician must always calculate the ANC.

2. “I’ve diagnosed this patient with neutropenia, but my colleagues tell me the ANC might be normal for this patient.”
   Normal values for ANC vary not only with age, but also with race. An emergency clinician should consult a reference manual for normal values.

3. “My neutropenic patient is irritable and febrile and is refusing oral medications. I have ordered rectal acetaminophen to treat the fever.”
   Obtaining rectal temperatures or administering medications by the rectal route may disrupt the mucosa and introduce bacteria. These seemingly minor occurrences can cause a potentially life-threatening infection.

4. “I did a quick examination of a patient who is neutropenic, but I didn’t find the source of any infection.”
   The practitioner must ensure that a thorough examination is completed on every patient who is febrile and neutropenic. This examination must include an inspection of mucosal surfaces such as the oral mucosa and perirectal area.

5. “A CBC shows that my patient has an ANC of 1200/µL. I’ve initiated broad-spectrum antibiotics and admitted this patient to the hospital.”
   Although fever and neutropenia can represent a potentially life-threatening infection, a previously healthy patient who is well appearing with normal vital signs may be discharged to home if adequate follow-up can be obtained. Please note this does not include any patient with chemotherapy-induced fever and neutropenia.

6. “A patient who is neutropenic needs an immediate referral to a specialist.”
   Although some episodes of neutropenia may represent severe underlying illnesses, a thorough history with careful attention to recurrent infections, cyclic fevers, or current medications may help to elucidate a diagnosis requiring follow-up with a general pediatrician.

7. “My patient has a fever, neutropenia, and a cough. However, results of the chest radiograph are normal, so the patient cannot have pneumonia.”
   A patient with neutropenia may not have the same radiographic findings as a child with a healthy immune system. Neutropenia may affect the patient’s ability to mount an inflammatory response, resulting in an infiltrate visible on radiograph.

8. “A patient who has chemotherapy-induced neutropenia and is well appearing can be admitted to the hospital for observation, but he or she doesn’t need to have antibiotics initiated.”
   Infection in chemotherapy-induced neutropenia is a significant cause of morbidity and mortality. Prompt initiation of broad-spectrum antimicrobials can significantly improve the outcome in these patients. Empiric parenteral antibiotic therapy (eg, ceftazidime, cefepime, or meropenem with or without vancomycin) should be initiated to cover S aureus, P aeruginosa, E coli, and Klebsiella organisms.

9. “My patient has cancer and received chemotherapy 2 weeks ago. I should wait for the laboratory results to make sure she is neutropenic before starting antibiotics.”
   Early initiation of antibiotics has drastically reduced the mortality rates related to infectious complications in patients with chemotherapy-induced fever and neutropenia. Prompt institution of broad-spectrum antibiotics such as cefepime or meropenem is recommended and should not be delayed while awaiting laboratory results for patients with suspected neutropenia.
Subarachnoid hemorrhage

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1. “Even though she said her headache was worse than usual and felt different, I thought it was just a migraine, so I didn’t get a head CT.”
   A head CT should be considered even in patients with a primary headache disorder, like migraine, if the characteristics of the headache are substantially different from their usual symptoms.

2. “I thought she just had the flu.”
   Emergency clinicians should be aware of the wide spectrum of clinical symptoms that may present as SAH. Patients may have nonspecific symptoms including neck pain, myalgias, and mild headache that may be misdiagnosed as a viral syndrome. Consider working up these patients with CT and, if negative, LP.

3. “But the patient’s pain completely resolved with prochlorperazine, so I just didn’t think it could be an SAH.”
   Patients with SAH may have symptoms that completely resolve with narcotic or nonnarcotic medications and sometimes even without treatment. The decision to work up a patient for SAH should not be solely influenced by response to pain medications.

4. “But he was just an old confused nursing home patient; I thought he had delirium from a urinary tract infection.”
   Patients with delirium or change in mental status should be carefully evaluated, as SAH may be in the differential. Studies have shown that psychiatric diagnoses and delirium are common misdiagnoses for SAH.

5. “I thought he had had a heart attack.”
   Patients with SAH may have abnormal ECGs and/or positive cardiac markers due to effects of a catecholamine surge from brain injury. Focusing on these cardiac findings may distract the provider from diagnosing the underlying etiology, which may be SAH.

6. “But the head CT was negative, symptoms resolved, and the patient didn’t want to stay for the LP.”
   CT may be negative in 2% to 7% of patients with SAH, and sensitivity is highly time dependent. In a patient with suspected SAH, LP is required to rule out the diagnosis regardless of other circumstances.

7. “I did not check coagulation tests and the patient did not tell me he was taking warfarin.”
   Basic laboratory tests including INR/PT and PTT should be checked in all patients with intracranial hemorrhage. Some patients may not be able to provide an accurate history. When patients on therapeutic anticoagulants are diagnosed with SAH, the clotting deficiency should be reversed quickly with IV vitamin K and clotting factor.

8. “There were only 400 RBCs in the fourth tube and it cleared from 4000 in the first tube, so I assumed it was a traumatic tap.”
   There is no cutoff for the minimum number of RBCs required to diagnose SAH, and it has been reported with even a few hundred cells. Despite serial clearing of red cells, if there is ambiguity between traumatic tap and possible SAH, further neuroimaging and neurosurgical consultation should be obtained to rule out the diagnosis. Also, remember that the number of RBCs diminish with time after onset of headache.

9. “I didn’t transfer the patient because...”
   Any patient whose condition is diagnosed as SAH should be transferred to a facility with neurosurgical, endovascular, and advanced neuroimaging capabilities. Data show better outcomes for patients treated quickly at these specialized centers.

10. “I diagnosed the SAH, but the patient became disoriented all of a sudden.”
    Patients with SAH should have careful cardiorespiratory monitoring and serial neurological examinations. They are at risk for developing complications such as rebleeding, vasospasm, and hydrocephalus. Intubation may need to be performed if the patient is unable to protect her or his airway. Repeated head CT should be considered because clinical deterioration from acute hydrocephalus can be reversed with treatment.

Pitfalls to avoid

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by Dr. Carol Rivers

From Medical Services & Emergency Department Administration

1. The major role of the Police Department during a disaster operation is:
   (a) Triage, stabilization and transportation
   (b) Control of fires and other environmental hazards
   (c) Securing the scene and assuring the safety of emergency personnel, victims and bystanders
   (d) Search, rescue and extrication of victims

2. The State Department of Health mandates reporting all of the following except:
   (a) Cases of venereal disease
   (b) Victims of gunshot and stab wounds
   (c) Births that occur in the Emergency Department
   (d) Victims of child or sexual abuse

3. On average, what percentage of hospital admissions come from the Emergency Department?
   (a) 8%
   (b) 16%
   (c) 24%
   (d) 30%

4. Which of the following pieces of information need not necessarily be documented in the Emergency Department log?
   (a) Name of the admitting and treating physician
   (b) Name and age of patient
   (c) Time and arrival and discharge
   (d) Diagnostic impression

5. Which of the following radio bands can transmit telemetry?
   (a) Very high frequency low band – 32 to 50 MHz
   (b) Very high frequency high band – 150 to 174 MHz
   (c) Ultra high frequency – 450 to 470 MHz
   (d) None of the above


For a full review of Board Questions, please visit www.emeeinc.com.
by Dr. Carol Rivers

EM reflections

2009 National Emergency Medicine CPC Semi-Final Winners
Co-Sponsored by ACEP, CORD, EMRA and SAEM

Congratulations to all of the semi-final winners who will compete in the final competition to be held in Boston at 2009 Scientific Assembly.

Winners will be announced at the EMRA Awards Reception on Tuesday, October 6.

Best Discussant: Brian Lin, MD; Stanford/Kaiser; Best Presenter: Catherine Tubridy, MD, SUNY Downstate/Kings County EM/IM.
Best Presenter: Elizabeth Balazich, MD, Temple University; Best Discussant: Erin Lareau, MD, Northwestern University.
Best Discussant: Preeti Jois, MD, University of Florida—Gainesville; Best Presenter: Anita Bangale, MD, George Washington University.
Best Discussant: J.D. McCourt, MD, University of Nevada; Best Presenter: David Rankey, MD, University of Nevada.
Best Discussant: Ayim Darkeh, MD, SUNY Downstate/Kings County Hospital; Best Presenter: Matt Schreiber, MD, Baystate University.
Best Presenter: Brian Baker, MD, NYU/Bellevue; Best Discussant: Christopher Stromski, MD, St. Luke’s Hospital.
Training in Policy Studies (TIPS) Program provides unique experience to osteopathic residents

Tim Cheslock, DO, Saint Vincent Health Center, Erie, PA

The AOA offers a unique program to osteopathic residents in Health Policy Studies. Nicknamed TIPS, which stands for Training in Policy Studies, this mini fellowship is held over four weekends during the course of the year in conjunction with the Health Policy Fellowship program co-sponsored by the AOA and NYCOM/NYIT, and ACCOM. In addition to the weekend programs, independent studies, reading and preparation encompass an additional 10-20 hours per month.

Each weekend is centered on a particular topic related to health policy. Speakers from the AOA government affairs office, the department of Health and Human Services, Centers for Medicare and Medicaid Services, Washington political think tanks such as the Brookings Institute and many others provide high level overviews of current policy and introduce the participants to the process of health policy development and implementation.

Participants are able to observe a meeting of the AOA Bureau of Federal Health Programs during the first weekend, taking in how the AOA engages the many facets related to health policy.

Residents are mentored through the process of developing a health policy brief on a piece of current legislation. The presentation of the brief is a requirement for graduation and is critiqued by several experts in the health policy arena.

Functioning as an advocate and resource to elected officials is also promoted. This portion of the training culminates with a visit to Capitol Hill to meet with the participants elected officials to establish a relationship as a potential resource for health policy information.

Throughout the year the major focus is to view health policy efforts from the “high ground,” in that we limit our bias as physicians and focus on the overall issues of Access, Quality, and Cost.

In 2008-2009 there were ten participants in TIPS, four of which were emergency medicine residents. More information can be found at the TIPS website http://iris.nyit.edu/nycom/tips.

The Training in Policy Studies (TIPS) program was created to provide a yearlong experience for osteopathic physicians in training (residents) to become familiar with health care issues as they relate to federal and state policies and to equip them with the skills to participate in policy discussions and committee work.

Graduates of the program join a cadre of health policy experts that may serve on committees and task forces at the federal and state levels, testify on issues relevant to osteopathic medicine/education, and develop policy positions.

Adebimpe (Bimpe) Alfolabi, DO, PGY-1 IM Heart of Lancaster Regional Medical Center; Lindsay Tjiattas-Saleski, DO, PGY-1 EM/ FM Frankford Hospital; Tim Cheslock, DO, PGY-2 EM and Patricia Smolter, DO, PGY-2 EM Saint Vincent Health Center; and Randi Kodroff, DO members of the 2008-09 TIPS and Health Policy Fellowship prepare to visit legislators on Capitol Hill.
EMRA Publications

Available online at www.acep.org/bookstore

Emergency Medicine Advocacy Handbook

In this clear, well-thought-out handbook, Dr. Schlicher and the chapter authors outline the essential advocacy issues surrounding emergency medicine today. Not just for the politically-minded, this resource is useful for the student, resident, physician, healthcare worker, patient or concerned citizen to help understand the important issues affecting all aspects of emergency care.

Gus Garmel, MD
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Department of Emergency Medicine Fellowship Programs

The Department of Emergency Medicine at the George Washington University is inviting applications for Fellowship positions beginning in the Summer of 2010. The Department offers Fellows a common interdisciplinary curriculum, focusing on research methodologies and grant writing. Tuition support for an MPH or equivalent degree is also provided.

International Emergency Medicine: Fellows actively participate in the implementation of new educational, clinical and prehospital emergency medicine systems throughout the world. Pursuit of an MPH degree and collaboration with the Department of Global Health in GW’s School of Public Health is emphasized.

Director: Katherine Douglass, M.D., MPH (kdouglass@mfa.gwu.edu)

Ultrasound: Fellows gain expertise in clinical applications of bedside ultrasound, learn aspects of US program administration, participate in an active training curriculum and perform research. Fellows work toward RDMS certification during fellowship.

Director: Keith Boniface, M.D. (kboniface@mfa.gwu.edu)

Health Policy: Fellows pursue a didactic fellowship curriculum while rotating through an individualized series of externships in Legislators’ Offices and Federal Regulatory Agencies and will work on a variety of policy-related contracts and research projects. Fellows may pursue a Master’s degree, as appropriate.

Director: Jennifer Lee, M.D. (jlee@mfa.gwu.edu)

Research: Fellows will work on NIH, CDC and industry sponsored research projects. They will be guided in the art of grant writing and will assist with the teaching of an undergraduate clinical research course. Fellows will be advised by faculty with RO1 and NIH support and will be mentored so that they will be ready to assume a role as research director at the completion of the program. Fellows will have the opportunity to pursue an MS or an MPH degree.

Director: Jeremy Brown, M.D. (jbrown@mfa.gwu.edu)

Toxicology: In this ACGME accredited program, fellows provide telephone and bedside consultations through the National Capital Poison Center and several area hospitals. Course work in research and policy aspects of toxicology is offered through the NIH and GW’s Schools of Public Health and Law.

Director: Cathleen Clancy, M.D. (cat@poison.org)

Travel and Transport: This program focuses on the special health needs of travelers in our increasingly globalized society. Fellows have practical experience in the cruise and travel assistance industries, while pursuing coursework in GW’s School of Business.

Director: Sol Edelstein, M.D. (sedelstein@mfa.gwu.edu)

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Connecticut, New London and Stamford: Lawrence & Memorial is on the coast near Mystic and sees 40,000 pts./yr. The Stamford is 45 min. from NYC near Greenwich and sees 42,000 pts./yr. Both are Level II Trauma Centers. 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 Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

Florida, Orlando: THE BEST OPTION FOR PEDIATRIC EMERGENCY MEDICINE PHYSICIANS! Florida Emergency Physicians is interviewing for Peds EM Fellowship or EM/Peds EM Fellowship-Trained positions to fill our Children’s Emergency Medical Department. We are celebrating our 40th year as a stable organization and are proud to announce our Emergency Medicine Residency Program that began in July 2008. Children’s ED sees in excess of 15,000 visits annually. Florida Hospital Orlando is currently building a new ED, and expanding its pediatric inpatient services. Orlando is a growing and rapidly expanding city, with many attractions, proximity to beaches, and ideal easy living! FEP offers a very attractive compensation package with excellent benefits; including an EXCEPTIONAL RELOCATION PACKAGE. Contact Brian A. Nobie, MD, FACEP at 800-268-1318. Send CVs to: Susan Yarcheck, Recruitment Coordinator, e-mail syarcheck@psrinc.net or by fax 407-875-0244.

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**Illinois, Chicago area and Kankakee:** EMP manages EDs at 3 community teaching hospitals with a combined ED census of over 100,000, 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 Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

**Illinois, Marion:** Democratic group has newer ED with many state-of-the-art systems, great on-call services, and excellent opportunity at 23,000 volume ED in southern Illinois. Appealing package of $300,000 including employer-funded pension, family medical plan, stable malpractice, CME and more. Single physician plus 10-12 PA hours daily. Contact Rachel Klockow, Premier Health Care Services, (800) 406-8118, rklockow@phcsday.com, fax (954) 986-8820.

**Indiana, Evansville:** Level I Trauma Center sees 54,000 ED pts./yr. St. Mary’s Medical Center is a 490-bed tertiary care center serving southwestern Indiana, southern Illinois and western Kentucky. 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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August/September 2009 51
Indiana, South Bend: Very stable, Democratic, single hospital, 15 member group seeks additional BC/BP Emergency Physicians. Newer facility. 52K visits, Level II Trauma Center, double, triple and quad physician coverage. Equal pay, schedule and vote from day one. Over 350K total package at 150 hours per month with qualified retirement plan, disability insurance, medical and CME reimbursement, etc. Very favorable Indiana malpractice environment. Home of University of Notre Dame and full four year Indiana University School of Medicine at South Bend campus, low cost of living, good schools, 90 minutes to Chicago, 40 minutes to Lake Michigan. Contact Michael Blakesley MD at 574.299.1945 or send CV to blakesley.1@nd.edu.

Iowa, Des Moines: Health System Emergency Physicians (HSEP) is a well-established, physician-owned group. With expected growth, HSEP invites BC/BP Residency-trained EM physicians to join their group in providing continued notable service to Iowa Lutheran Hospital (ILH) and Iowa Methodist Medical Center (IMMC). ILH is a Level III trauma center that houses a 23-bed ED with an annual patient volume of 24,000. Located in downtown Des Moines, IMMC is a Level I trauma center, 15-bed ED with a patient volume of 34,000. Physicians are employees and receive an industry competitive, guaranteed hourly rate, and a comprehensive benefits package including a 401(k) and profit sharing retirement program, and malpractice with tail coverage. Physicians provide coverage daily. Enjoy numerous outdoor activities, or college sports for your enjoyment. Iowa is well known for its quality of affordable public education, and takes pride in the academic success of our students. Contact Teri Geen at (800) 346-0747 ext. 3168 or email tgeen@psrinc.net.

Maryland, Cumberland: SIGNIFICANT SIGN-ON BONUS. MEP, a privately owned and physician managed group with more than 11 years of service to the Maryland/Metro DC area, is now providing service in Cumberland, MD. Physicians will provide service on behalf of Western Maryland Health System (WMHS) at the Memorial Hospital and Braddock campuses. MEP currently has opportunities for BC/BP EM Residency-trained physicians. J1 and H1B visas accepted. MEP offers a total compensation and benefits package in excess of $310,000 annually, with benefits including malpractice with tail coverage. Leadership and partnership opportunities are available to qualified physicians. WMHS has an annual combined total volume of 64,000. Emergency services are provided at both campuses, with Memorial Hospital serving as the designated area wide Level III Trauma Center. Physicians will work at both campuses. Designed to consolidate services in one location, a new $268 million dollar state-of-the-art hospital with 275 inpatient beds, will open in Fall 2009. Contact AC McEwan at (301) 944-0049 or acmcewan@EmergencyDocs.com.
**Maryland, Hagerstown:** $20,000 Sign-on Bonus! MEP, a privately owned physicians group, has expanded to Hagerstown, MD. Within an hour from Washington DC and Baltimore, greater Hagerstown is the fastest growing metro area in Maryland with affordable housing and numerous outdoor activities. It is a friendly, family-oriented community. We are seeking BC/ BP Emergency Medicine Residency-trained physicians to serve Washington County Hospital (WCH). WCH has a 35-bed ED with an annual volume of 66K, an 8-bed Fast Track, and is a Level III Trauma Center. Physicians’ coverage is 56 hours. MEP offers an exceptional compensation and benefits package, in excess of $310,000 annually including malpractice with tail coverage. Leadership and ownership opportunities are available to qualified physicians. **Contact AC McEwan at (301) 944-0049 or email CV to acmcewan@meped.net.**

**Michigan, Grand Blanc:** FT/PT, EM, BC/BP physicians for two 20,000 volume satellite ED’s and/or FT/PT, EM, BC/ BP physicians for 64,000 volume main ED. Genesys Regional Medical Center is a beautiful 400 bed state-of-the-art hospital built in 1997 with a 26-position EM Residency and most specialty residencies. Our EM physician corporation offers employee status with full benefits, including CME allowance, dues coverage, first year Profit Sharing, malpractice coverage, and very competitive hourly compensation. Applicants please call or send CV to: Michael J. Jule, DO, FACEP, Director Emergency Services, One Genesys Parkway, Grand Blanc, Michigan 48439-1477, or email to mjule@genesys.org., or call (810) 606-5951.

**Michigan, Battle Creek:** BC Emergency Medicine physician sought for democratic group in 50,000 volume ED. Excellent package offers shareholder status at one year with no buy-in! Benefits include pension, family medical plan, CME, incentive income, malpractice, more. Stable group with outstanding physician retention record. Contact Kim Avalos Rooney, Premier Health Care Services, (800) 726-3627, ext. 3674, krooney@phcs day.com, fax (937) 312-3675.

**New York, Albany, Cortland and Kingston:** Albany Memorial Hospital, Samaritan Hospital in Troy, Cortland Memorial Hospital near Syracuse and Ithaca, and Benedictine Hospital in Hudson Valley see 25,000-43,000 EM 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 Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

**North Carolina, Charlotte:** PEMA, a local dynamic democratic group practicing for 25+ years seeks BC/BP EM physicians. PEMA is comprised of young, progressive, and innovative providers. Five contracts in award winning hospitals offer opportunities

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Physicians should be residency trained in Emergency Medicine. University faculty rank will be commensurate with experience. Review of applications will continue until all positions are filled. Please submit CV by mail to Robert Shesser, MD, Chair, Department of Emergency Medicine, George Washington University Medical Center, 2150 Pennsylvania Avenue NW, Suite 2B-417, Washington, DC 20037 or by email at: rshesser@mfa.gwu.edu.

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North Carolina, New Bern: Respected 313-bed regional medical center located at the intersection of the Trent and Neuse Rivers just off the coastal east. 65,000 ED pts./yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

Ohio, Barberton: Barberton Citizens Hospital is a full-service community hospital in southern suburban Akron with 38,000 ED visits/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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Ohio, Cincinnati: Opportunity for BC/BP EM physician with democratic group. 60,000 volume ED is located in a desirable suburb and has 58 hours of daily physician coverage plus additional PA coverage. Excellent package includes incentive income, malpractice, employer-funded pension, family medical plan, CME, more. Contact Kim Avalos Rooney, Premier Health Care Services, (800) 726-3627, ext. 3674, krooney@phcsday.com, fax (937) 312-3675.

Ohio, Dayton area: EM physician opportunity with Democratic group at 27,000 volume ED in Greenville - a family-oriented town commutable from Dayton. Excellent package includes malpractice, family medical plan, employer-funded pension, expense account, incentive income plus shareholder opportunity at one year with no buy-in. Contact Michele Wilkerson, Premier Health Care Services, 800-726-3627, ext. 3672, mwilkerson@phcsday.com, fax (937) 312-3673.

Ohio, Dayton area: EM physician opportunity with Democratic group at 27,000 volume ED in Greenville - a family-oriented town commutable from Dayton. Excellent package includes malpractice, family medical plan, employer-funded pension, expense account, incentive income plus shareholder opportunity at one year with no buy-in. Contact Michele Wilkerson, Premier Health Care Services, 800-726-3627, ext. 3672, mwilkerson@phcsday.com, fax (937) 312-3673.
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Ohio, Lima: Outstanding package with democratic group. Level II, 57K volume ED has separate pediatric ED and hospitalist support. Features shareholder status without buy-in, loan repayment, pension, family medical, and more. Full benefits included and not deducted from outstanding clinical compensation. Contact Kim Avalos Rooney, Premier Health Care Services, (800) 726-3627, ext 3674, krooney@phcsday.com, fax (937) 312-3675.

Ohio, Lodi: Fully accredited 30-bed hospital with acute and skilled care facilities is part of the Akron General Health System. Brand new 12-bed ED has 12 private rooms including cardiac and trauma. 10,000 ED pts./yr. with 12 and 24 hr. shifts. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

Ohio, Marion: Appealing Columbus area opportunity. Enjoy equity ownership with democratic group in 48,000 volume ED,
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Washington, Olympia: Full-time opportunity for residency trained BC/BP emergency physician. Established, independent, fee-for-service democratic group. Annual volume 65,000+. Full partnership after one year. State-of-the-art department located on the scenic Puget Sound. Send CV to Kathleen Martin, 413 Lilly Rd. NE, Olympia, WA 98506 or kathleen.martin@providence.org.

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West Virginia, Huntington: Top notch EM physician sought for Democratic group. 70,000 volume, Level II facility is 45 miles from Charleston. Newer ED with excellent coverage of 66 physician and 36 PA hours daily. Package includes family medical plan, malpractice, employer-funded pension, incentive income, equity ownership opportunity, more. Contact Michele Wilkerson (800) 726-3627, ext 3672, email mwilkerson@phcsday.com, fax (937) 312-3673.

West Virginia, Wheeling: Ohio Valley Medical Center is a 250-bed community teaching hospital with a brand new ED under construction. AOA approved Osteopathic EM and EM/IM residency program. Enjoy teaching opportunities, full-specialty back up, active EMS, and two campuses seeing 26,000 and 22,000 pts./yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Steve Rudis, MD, (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.
West Virginia, Weirton: Excellent position for summer 2010 at this full-service community hospital 40 miles from Pittsburgh, PA. 40,000 EM 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 Steve Rudis, MD (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

Wisconsin, central & northern area: Ministry Medical Group - Ministry Health Care is expanding its services in central and northern Wisconsin. We are currently seeking BC/BP Emergency Medicine Physicians to join our team. At Ministry Health Care you’ll have a chance to share your ideas and shape the future of an organization respected for innovation and compassion in the care it delivers. All of our facilities have state-of-the-art practices, many using PACS and ultrasound technology. Our providers enjoy flexible scheduling options, competitive salary, CME allowance, loan repayment, and excellent retirement packages. Leadership potential is available for qualified candidates. Ministry Health Care offers excellent malpractice coverage with “tail coverage” and low malpractice risk. Located in Merrill, Rhinelander, and Weston—communities that value health care, education, culture and recreation, yet offer their own unique professional practice environments and personal lifestyles. For more information call Cole Marschke, Physician Recruiter, at 800.420.2622 ext. 65624 or email: mmgrecruitment@ministryhealth.org, fax: 715.343.3331.

Wyoming, Cheyenne: Join a dynamic emergency physician team in beautiful, historic Cheyenne, Wyoming. Frontier Emergency Physicians (FEP) is seeking an energetic and enthusiastic team member, a physician who is board certified/board prepared in emergency medicine. He or she would fill a position at Cheyenne Regional Medical Center, which hosts a level II trauma center, operated by FEP that sees about 35,500 patients a year. FEP offers a competitive salary, benefits, and partnership opportunities. Interested physicians should send a cover letter and a copy of their curriculum vitae by email to tlong@seriolc.com or by mail to SERIO Physician Management, Attention: Teresa Long, 1241 W. Mineral Ave., Suite 100, Littleton, CO 80120. Or, call Dr. Mike Means at (307) 633-7550.
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If you’ve been in the EM arena, you know it can get rough. Scrubs come under attack and suits throw them under the bus to protect their bottom line. Not on our playing field. At Emergency Medicine Physicians, scrubs always win. We’re owned by emergency physicians that are dedicated to delivering the best in emergency medicine— and watching your back. If you’re looking for a democratic organization that offers guaranteed malpractice insurance, including tail coverage, equal equity, competitive benefits, and locations that fit your lifestyle, check out EMP. Visit emp.com or email us at careers@emp.com today.