Ballrooms and racetracks

History and future of emergency department design

Stephen Bhandarkar, MD, Resurrection Medical Center, Chicago, IL

Have you ever wondered why your emergency department looks the way it does? Despite the same mantra – “any patient, any complaint, any time” – different emergency departments employ vastly different configurations to accomplish this ambitious goal. This article will review both the history of emergency department design as well as more recent trends to clarify the rationale behind these layouts.

History

The first emergency “rooms” were simply that – designated hospital rooms with widely varying capabilities, supplies, and staff. After World War II, annual emergency department volume exploded – increasing nearly 400% from 1940 to 1955. During the 1950s and 1960s, the number of emergency department visits continued to grow, but the attention and resources allocated to these departments lagged. In 1966, the National Academy of Sciences stated that “emergency departments are overcrowded, some are archaic, and there are no systematic surveys on which to base space or staffing for present, let alone future needs.”

Hospitals in this era were accustomed to treating non-urgent patients and were designed accordingly – with private, enclosed treatment areas akin to inpatient wards. Legislation, including the Highway Safety Act of 1966 and the Emergency Medical Services Systems Act of 1973, led to a rapid growth in the availability of emergency medical services during the 1960s and 1970s. Large numbers of critically ill patients were suddenly rolling through emergency department doors. Consequently, the model shifted toward large, open spaces with minimal divisions. This allowed staff to monitor and treat multiple sick patients at the same time. Figure 1 illustrates an example of this design.

During the 1980s, the standard design evolved again to include both open areas for monitoring critically ill patients and individual rooms for less urgent complaints. Specialized spaces within the emergency

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Don’t miss this once-a-year opportunity to exhibit at the largest Job Fair in the specialty. Network with more than 1,300 EM job seekers! EMRA Job Fair will be held October 8 from 5:00pm – 7:00pm at the Colorado Convention Center. Tables are assigned on an as-received basis. Order early for best location and your guarantee of space.

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EM Resident is published six times per year. Ads received by July 1 will appear in the Aug/Sept issue.

EM Resident subscriptions are available only to individuals and institutions that are not considered eligible for EMRA membership as per the EMRA bylaws. For information on how to subscribe please contact Leah Stefanini, 866-566-2492 ext. 3298 or email lstefanini@emra.org.
Every new beginning comes from some other beginning’s end

For our generation – this quote is forever linked to “Closing Time” the late night anthem of Semisonic. A few days ago, “Closing Time” played on the radio and I sung along unabashedly. That is until I hit a red light, when I of course turned down the radio and played it cool (lest I scare other drivers).

Most don’t realize that the chorus of “Closing Time” was originally a quote of Seneca the Younger. Seneca was a 1st century Roman philosopher – who famously tutored the Roman emperor Nero – and was later put to death by said former pupil via forced suicide. While the demise of Seneca is a story for another time, his original quote and the Semisonic chorus strikes a chord with many of us as July 1st approaches.

June and July are months colored by change, beginnings, transitions and endings. Senior residents will soon graduate to new careers or fellowships. Former medical students will begin residency and experience the awkward twinge of being called “doctor.” Rising PGY-2s, 3s, and 4s will assume new roles and responsibilities within their departments. For all, July 1st marks an important transition, and a perfect time for reflection and celebration.

Our graduating residents and fellows deserve the most praise. We’re all proud of you! You’ve persevered through more than 11 years of college, medical school, and residency. You’ve earned the title of being “residency trained” and will certainly add the distinction of being “board certified” in the near future. You have dedicated yourself to learning the craft of emergency medicine. Now, as a practitioner of this craft, you’ll have the sacred honor of caring for patients on your own terms. We at EMRA wish you nothing but the best in your career!

To new residents, we offer a few words of unsolicited advice. Residency will be some of the most exhilarating, challenging, rewarding, and grueling years of your life – *enjoy every moment of it*. Don’t let the grind of long hours, sleep debt, and daunting responsibility dim the passion you bring to your work.

Rising PGY-2s, 3s, and 4s – take on the challenges of the new academic year head-on. May you be a good friend and mentor to those following in your footsteps. Take time to enjoy the fellowship of your co-residents and attendings. May you continue to hone your skills, grow, and challenge yourself to become the best physician your abilities allow.

As you expand your knowledge, EMRA is expanding as well. As we continuously seek new ways to better represent you, in the past year, EMRA has welcomed a new executive director, Michele Packard-Milam. We’ll also welcome a new staff member to manage our publications and the essential role of communicating with you. We have launched a **new website** and published new resources such as our **Research Handbook** and **Critical Care handbook**. EMRA has added over $1,000 of new, free benefits in online access to AHC Media’s **Trauma Reports**, **Pediatric Emergency Medicine Reports**, and **Emergency Medicine Reports**. These few highlights reveal a simple truth – no other organization works harder to serve you!

Seneca the Younger, is also famously credited with saying “You are your choices.” As change envelopes your life over these next few months, it’s important to remember that your decisions and actions will define your success. As the new academic year begins, I hope you choose to be great, take advantage of all your opportunities, and relish your position. From all your friends at EMRA, *best of luck!*
Board Update

- **EMRA has a new website:** If you haven’t been to www.emra.org recently you are in for a pleasant surprise. As part of our goal to better serve you, EMRA has updated its website. The new website is easier to navigate, has improved content and looks much classier than the old version. Please check it out and give us your feedback!

- **EMRA launches two new publications:** During SAEM, EMRA proudly celebrated the launch of two new publications: The EMRA Critical Care Handbook and EMRA Emergency Medicine Research Handbook – both of which are available online at the ACEP Bookstore and on Amazon.com. We congratulate the Critical Care Committee and Research Committees whose hard work made these publications possible and encourage you to join an EMRA committee and continue the work of making our organization great.

- **EMRA announces new executive director:** EMRA is excited to announce its new executive director, Mrs. Michele Packard-Milam, CAE. EMRA’s new executive director boasts a tremendous amount of experience having worked for over 20 years with non-profits including the American Heart Association and most recently Promotional Products Association International. She is a dedicated and visionary leader and looks forward to working with the EMRA board, our Representative Council, EMRA committees and members to advance the education and interests of emergency medicine residents.

- **SAEM Annual Meeting and ACEP’s Leadership and Advocacy Conference:** The month of May saw two major emergency medicine conferences, SAEM Annual Meeting in Chicago and ACEP’s Leadership and Advocacy Conference in DC. EMRA was excited to be heavily involved in both – at SAEM, EMRA helped fund the Emergency Medicine Research Consensus Conference, hosted another exciting edition of Sim Wars, celebrated resident accomplishments during its Award’s ceremony and got down during the always epic EMRA Party. Leadership and Advocacy saw more than 500 emergency residents and attending physicians storm the halls of Washington to advocate for our patients and specialty. EMRA was proud to host a tremendously successful Leadership and Advocacy Essentials Day. We thank all our members who were present at both these great events and encourage all to attend in the future!
The intangibles

It was a mystery. Rumpled, underslept first-year medical students born without the good fortune of a photographic memory; all convinced that they were missing some simple, less time-consuming study method. It must exist!

Piles of color-coded diagrams, textbooks, study guides, and Q-banks amassed, more than any of us had time to use. Pride abandoned, we asked a professor for tips. Dr. Professor leaned over, ready to confide the secret to med school, “Read!”

That is not a tip. Of course we read every waking hour we weren’t flipping through note cards. To the point where all else – social life, haircuts, nutrition – fell to the wayside.

All work and no play…works?
Medical immersion helps test scores, no question about that. To run the gauntlet of 4 years of serial exams, immersion sounds almost practical. Perhaps it’s necessary to retain the sheer quantity of material. And it certainly gets the job done.

If you throw a medical student in the deep end of a pool, they will learn to swim. Perhaps students are dumped in right off the bat to develop valuable psychological endurance. Whether that’s the intention, who knows, but medical culture has evolved as such.

So why reinvent the wheel if all medicine all the time has worked thus far? Unless hypnosis picks up speed, a better way has yet to present itself.

All work and no play makes Jack a dull boy
Prolonged immersion is untenable. After 4 years of medical school, everyone is just tired. Since we’re nothing if not obstinate, we get up (after a 2 month nap) for residency. There’s some studying involved – more interesting this time around – and a lot of work. For some, it’s easy to shrug off the day and go for a run. Others dive back in to what is now a vocation and an avocation. Others fall in.

No matter your work style, at some point in medical school/residency, someone will ask how you’re doing and most of your answer will involve the suffix “-ology.” They’re smiling and nodding, but something here is humming to your prefrontal cortex where social cues are absorbed. Oh… They don’t want to hear about ostomies. Microbiology, cardiology, radiology – once you mention “tetralogy,” you know you’ve gone too far.

Balance
In residency, both the subject and quantity of work is constantly top of mind, consciously or not. Some look askance at those they perceive not doing enough of such-and-such work activity. Common examples: Hours on an off-service rotation, undesirable shifts, research, department conferences, studying, or draining abscesses.

There is the occasional disapproval aimed at those who attend outside learning opportunities, which is puzzling. More so is the belief that residents who don’t work 90 hours per week (but still list 80) or
who don’t attend 7 hours of lecture per week (when only 5 are required) aren’t good doctors.

Medicine is not a game of numbers. The resident who memorizes *Rosen’s* isn’t automatically a better clinician than another resident who only read select chapters, though it would come in handy.

The definition of success in some careers may be appropriately defined by the amount of sales per month, how many cases they’ve won, or the number of world records. Clinicians are wonderfully complex characters, the successful ones identified by their clinical skills, medical aptitude, and self-defined work-life balance. If you insist upon some sort of quantifier, try “the more you know” instead of “read more.”

Besides fulfilling the requirements to graduate medical school or residency, being a good clinician means having a set of intangible, unquantifiable qualities. Many of them simultaneously allow a life free of sociopathy and total awkwardness. Understanding patients, treating their illnesses, and answering their questions are all augmented by life outside the hospital, not in spite of it.

Gleaning unspoken information from patients is learned from 22+ years of interaction with bizarre, uncomfortable, confusing, hysterical, and fascinating people. Add the ability to earn their trust when they’re sick – *that* is rare.
How to unleash your leadership potential

As emergency medicine residents, we’re looked to as leaders every day. Whether it’s running a trauma resuscitation or helping with a code on the floor, our colleagues and patients look to us to bring order out of chaos. Limited resources, time, and information are our norm. In spite of challenges inherent in emergency medicine, time and again we rise to the occasion.

EMRA thrives on the passion, engagement, and leadership of its members – our future as an organization hinges upon maintaining and supporting an active membership. Read more for ways to realize your leadership potential – within EMRA and beyond. This column is for everyone, whether you’re new to EMRA or a seasoned veteran.

You may already be familiar with these opportunities; if so, I challenge you to encourage other residents who’ve demonstrated leadership potential to become as involved as you have.

Program representative
The core leaders within each residency program serve as EMRA’s Program Representatives, who each have a seat at EMRA’s Representative Council (EMRA’s policy-making body). Each residency program elects its own representative and alternate. Elected Program Reps keep their fellow residents aware of EMRA events, benefits, and initiatives.

They can directly impact EMRA policy by writing resolutions to share when the Representative Council meets at the SAEM Annual Meeting and ACEP Scientific Assembly each year. More importantly, Program Reps keep the momentum going between face-to-face meetings. Check with your chief residents or residency director to learn how you can become your residency’s EMRA Program Representative.

Regional representative
At over 10,000 members strong, EMRA needed a way to improve bidirectional communication between the Board of Directors and EMRA members. To help fulfill this need, the EMRA Regional Representative Network was formed. Regional Reps interact with Program Reps and are expected to contribute to EMRA by writing resolutions or submitting articles to EM Resident.

The Regional Representative Network is still evolving. New initiatives like the EMRA Blood Drive at ACEP Scientific Assembly have been the direct result of ideas and work from Regional Reps. If you have been an active EMRA member or Program Rep, consider applying to be an EMRA Regional Rep (terms run from July 1–June 30). Financial support is provided to Regional Reps to attend SAEM and Scientific Assembly each year.

EMRA committees
Joining an EMRA committee connects members with similar interests. Political junkies have the Health Policy Committee. Those seeking new horizons have the International Committee. The writers in our midst have the Editorial Committee.

Committees are designed to help you enrich your interests while sharing your talents. Many popular EMRA resources like the Antibiotic Guide and Advocacy Handbook were made possible because of
active committee members. Once you’ve found a committee that fits your interests and needs, consider applying to be vice chair or chair. Leading a committee comes with greater responsibility; EMRA helps support committee chair travel to national conferences where committees meet.

**Standing committees at ACEP and SAEM**

Feeling overwhelmed balancing your personal life with residency? EMRA creates standing committees each year at ACEP and SAEM – whose term is only the duration of the meeting. Yes, this means you can be involved without a year-long commitment.

Contact the EMRA Speaker or Vice-Speaker if you are interested in serving on the Reference Committee, Tellers and Credentials Committee, or would like to exercise your skills as our Parliamentarian or Sargent at Arms. For those looking to test the waters, this is a great way to jumpstart your leadership career.

**Introducing: The EMRA awards committee**

One of my favorite parts of being involved with EMRA is getting to help select EMRA’s annual Spring and Fall Award Recipients. It’s truly humbling to read the nomination materials for some of EMRA’s awards. Look over the award descriptions on the EMRA website and nominate someone you feel deserves recognition!

New this year, EMRA has created an Awards Committee where prior award recipients are able to play a role in selecting future award recipients. Whether you’re applying for an award, nominating a colleague or mentor, or helping select an award winner, there’s a way to become involved with the Awards Committee.

**EMRA Board of Directors**

The EMRA Board is comprised of 11 individuals, each with a specific role designed to help EMRA continue to fulfill its mission of promoting excellence in patient care through the education and development of emergency medicine residency-trained physicians. Collectively the Board exists to serve EMRA’s membership and ensure the future success of our organization.

Being a Board Member is a large responsibility – but an incredible leadership opportunity. The Board works closely with ACEP and other emergency medicine organizations, and puts substantial time and effort into planning EMRA events nationally and locally.

Contact information for all current members of the Board are on the EMRA website. Contact any Board Member who has a role you are interested in pursuing! Elections take place at ACEP Scientific Assembly each fall. With the exception of President Elect, each Board position is a two-year term.

Take a moment to reflect on what you want out of your EMRA membership and how these opportunities can help you reach that goal. Thank you for keeping our organization strong through your participation and leadership!

**MAKE YOUR VOICE HEARD**

**Call for Fall Resolutions**

Get involved and steer the future of EMRA by writing a resolution. A resolution is a directive for EMRA to take certain action or to form a policy. These resolutions are discussed and voted on at the EMRA Representative Council Meeting at ACEP’s Scientific Assembly in Denver, CO, October 8-11, 2012.

The deadline for submissions is August 24, 2012.

For more information on authoring a resolution or to see recently adopted resolutions, visit www.emra.org or email speaker@emra.org.
Change is good
Emergency medicine, the New Accreditation System, and your residency program

During a recent meeting with the ACGME regarding the changes soon to be instituted, a single statement summed it up: “This is not your grandma’s ACGME.” In February, the ACGME formally announced the New Accreditation System (NAS) that will be phased in starting July 2013. Emergency medicine will be one of seven specialties to pilot this new system in the first year.

As the implementation date approaches – and as the anxiety and trepidation amongst program directors begin to grow – residents will need to know how this new system differs from the current system and how it will affect our daily practice. To explain the new system, as well as the motivation for the change, I will summarize an article published by the ACGME recently in The New England Journal of Medicine.

Evolution of the physician
As the healthcare system in the U.S. continues to evolve, our patients, payers, and the public expect the physician model of self-accreditation to evolve as well. Physicians are no longer accepted as independent members of the healthcare system. Instead, physicians are expected to act as both leaders and members of a healthcare team. We are expected to be able to use information technology efficiently; be proficient at cost-effective care; and involve patients in their own care.

When the ACGME first began in 1981, it was tasked with reducing the variability in quality of resident education and formalizing emerging subspecialty education. Overall, the ACGME has been quite successful – performance on certifying exams has improved and residents have become increasingly prepared to deal with the modern healthcare system. As an unfortunate consequence, program requirements have become quite detailed, even burdensome. Programs have less incentive to innovate; they’re encouraged to simply follow the rules.

The Outcomes Project
The development of a new system began back in 1999. The ACGME had announced The 6 Clinical Competency Domains – beginning the long road toward accrediting programs based upon educational outcomes of individual residents throughout residency, rather than focusing on the administrative processes. The final steps will be the implementation of the NAS and Milestone Reporting.

The NAS and the Milestones have been created to turn our attention back to educational outcomes and innovation among programs. The NAS will end the traditional “biopsy model” of site visits every 3 to 5 years, replacing it with an annual data collection model. Each review committee will follow trends in residency program-reported data, thus allowing extension of site visits up to every ten years.

Data for the annual reports will include the resident and faculty surveys. The NAS will also remove the need for a program information form (PIF). During the ten-
year site visit, programs will instead be expected to perform a “self-study.” Programs demonstrating high quality outcomes will be allowed to innovate by relaxing process standards (i.e., hours spent in conference). For newer programs, as well as those programs having difficulties, the review committees will continue to offer closer guidance.

**Milestones**

An essential component of the NAS will be the institution milestones, which are tailored to each medical specialty. The milestones are a natural progression of the preexisting core competencies; they aim to create a logical trajectory of a resident’s professional development, which will also include effective assessment methods. Programs in the NAS will submit composite milestone data on their residents every six months, which will occur with the semiannual evaluations.

Within emergency medicine, we have 24 milestones that are about to begin a validation study. The final milestones should provide meaningful data to assess an individual resident’s competency prior to starting independent practice.

As site visits for programs extend to ten years, you may notice that a greater emphasis will be placed upon the responsibility of the sponsoring institution to provide a high quality and safe learning environment. After the initial site visit, institutions will undergo periodic site visits to self-compare over time. Eventually, the accumulated data amassed from each medical specialty will highlight those attributes that have a positive impact on the quality and safety of residency training.

**In summary**

- Emergency medicine is about to begin a new model of program accreditation that focuses on educational outcomes rather than processes.
- Programs will be required to provide data annually to have site visits extended to every ten years.
- The progress of each resident (as they meet the emergency medicine educational milestones) will be tracked and provided to the review committee every 6 months.
- As a result, we residents will notice a change in how our programs assess us.

The goal will be to encourage innovation and to demonstrate validly and clearly that residents are gaining the ability to practice independently by the conclusion of training. If you’d like to learn more, a special report on the NAS and Milestones can be found in the article referenced below. Questions and comments are always welcome: RRComrep@emra.org.

**References**

Exciting new opportunities through ACEP

EMRA’s ACEP Chapter Opportunities Database

Did you know that there are 53 Chapters of ACEP Membership comprised of all 50 states – as well as D.C., Puerto Rico, and a Government Services Chapter? And did you know that many of the chapters have ways for residents and medical students to get involved?

Head over to EMRA.org to check out the new ACEP Chapter Opportunities Database. Here you will find a listing of potential opportunities available to residents and medical students at the ACEP Chapter level. Opportunities include:

- Resident board positions
- Councilor or alternate councilor positions
- Funding to attend the ACEP Leadership and Advocacy Conference in D.C.

While EMRA strives to keep the database as current as possible, contact your chapter to learn more about the most up-to-date offerings (www.acep.org/chapters).

ACEP Chapters without an associated residency program are marked with an asterisk (*). Medical student opportunities may still exist with these chapters – contact the chapter directly for information!

ACEP Chapters without an associated residency program or medical school are marked with two asterisks (**).

If you are already involved at the ACEP Chapter level, or are planning to do so, EMRA would love to hear about your experiences! We welcome your questions, comments, or feedback – email EMRA’s ACEP Representative Jordan Celeste at ACEPrep@emra.org.
ACEP’s Emergency Medicine Practice Research Network

ACEP is excited to announce the launch of the Emergency Medicine Practice Research Network, or EM-PRN. EM-PRN is the first emergency care practice-based research network—meaning that it derives data from practicing emergency physicians. This is a network developed by emergency physicians, for emergency physicians.

EM-PRN’s purpose: To improve the practice of emergency care while also demonstrating the value of that care.

EM-PRN explores the variabilities in clinical practice and the factors that drive them. It also allows for the rapid collection of data from across the nation, with the ability to target specific populations. Eventually, the network’s infrastructure will allow for conducting trials, its research findings immediately relevant and applicable to everyday practice.

Phase 1 is currently underway—ACEP is recruiting active emergency physicians for the network who are willing to complete very brief surveys a few times yearly.

Current ACEP members in active clinical practice are encouraged to join—including residents! Unfortunately, medical students and international members are not permitted.

If you’re ready to join now, email your name and ACEP member ID to JOINEMPRN@acep.org (your ACEP member ID can be found on acep.org within My ACEP Account). Once your membership status is verified, you will receive an email with instructions on how to complete your first survey. If you’d like more information first, check out www.acep.org/em-prn.

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“EM-PRN’s purpose: To improve the practice of emergency care while also demonstrating the value of that care.”
On rationing

"Consider that 30% of the Medicare budget is spent on beneficiaries’ last year of life; and half of that is spent in the final two months of life."

Politicians don’t like to talk about it, most physicians are not doing enough of it, and people in general are uncomfortable when discussing it. Yet healthcare rationing is inevitable. Economists of all political stripes agree that rising U.S. healthcare costs need to be controlled within the next two decades – the alternative is healthcare encompassing nearly the entire federal budget as well as an unsustainable portion of the GDP. Since Americans aren’t getting younger or healthier, rationing will have to be part of the solution. To the realists, the question isn’t if to ration, but how.

Let the government regulate it

This can take many forms. A working example is in Great Britain with the National Institute for Clinical Excellence (NICE) that operates under the British National Health Service (NHS). NICE evaluates what drugs, devices, and treatments the NHS will pay for based on their cost-effectiveness, primarily using the Quality Adjusted Life Year or QALY.

Meanwhile, the American political climate isn’t ready for anything resembling NICE. The Affordable Care Act (ACA) passed in 2010 created the Independent Payment Advisory Board (IPAB), charging it with a mission to reduce Medicare spending with a portfolio similar to NICE; but the law also prohibited IPAB from “including any recommendation to ration healthcare, raise revenues or Medicare beneficiary premiums…or otherwise restrict benefits or modify eligibility criteria”. In other words, IPAB was handed an impossible mission. On top of that is the bipartisan push in Congress to repeal this already-handicapped agency.

Solve the malpractice problem & doctors can regulate themselves

To put it mildly, this is a controversial topic. Most health policy experts agree that solving the defensive medicine problem would do little to control overall costs. The non-partisan Congressional Budget Office (CBO) estimates that enacting national tort reform (mainly financial awards caps plus shortening of the statute of limitations) would save $54 billion over 10 years. That’s 0.2% of total federal healthcare costs.

This estimate is mostly based on the estimated reduction of medical malpractice premiums. The CBO also attempted to estimate broader effects of tort reform on use, therefore including these in the final numbers. Many argue, however, that focusing on malpractice premiums grossly underestimates the realities of day-to-day defensive medicine, which even the CBO admits is difficult to measure. Regardless, the political reality is that the Trial Lawyers Association holds powerful sway in the Democratic Party. Unless the Republicans sweep the White House and Congress in the fall, serious tort reform won’t happen soon.

Physician/hospital incentives & bundled payment

Medicare has been using a flat-rate payment for hospital admissions since 1983, when it introduced the Diagnosis-Related Group (DRG) payment system. The problem is that this system still pays much higher “flat rates” when certain procedures are performed – coronary stenting a prime example.

In a recent *JAMA* opinion piece, Zeke Emanuel (a prominent oncologist, ethicist, and health policy expert) pointed to CMS estimates that 64% of healthcare expenditures are spent on 10% of the population. The majority of these patients have chronic conditions like coronary artery disease, congestive heart failure, and diabetes. Emanuel argues that the money lies in these patients. Hospitals currently get paid for each procedure or admission; for those with chronic illnesses, there is little incentive for hospitals or physicians to practice cost-effective medicine.

The Affordable Care Act (ACA) tries to remedy this by introducing Accountable Care Organizations (ACOs) and bundled payment. ACOs are envisioned as large umbrella organizations that would provide all inpatient and outpatient care for a group of Medicare beneficiaries – for a defined cost per patient, per year. If costs for a group of ACO patients are below the “normal” baseline, the savings will be shared by the government and the ACO.

With bundled payments, Medicare will pay a flat rate for an “episode of care.” For example, a hospital would receive a flat rate for all care for a patient with a stroke or heart attack – from three days before the event until 30 days after. To prevent excessive corner cutting, patients will still be allowed to use hospitals/physicians outside their ACO if they are unhappy with their care. Policymakers believe this will promote quality over quantity; in other words, smart rationing. And if ACOs reduce Medicare costs, private insurers will likely want to duplicate the ACO model. Of course, implementation of all these reforms hinge on the June Supreme Court decision on the ACA.
And what about the other half, the privately insured?
Insurance companies and HMOs are already performing much of the current healthcare rationing in the US. Most private insurance plans have “prior-authorization” requirements for expensive, non-emergent procedures and imaging studies (in the emergency department, we are rarely exposed to these limitations). The problem: if Medicare decides to pay for a certain procedure or treatment, even if the evidence shows it is not cost-effective, insurance companies usually follow suit. And if Medicare can’t ration for political reasons, significant spending reductions won’t occur in the private market either.

To fix this, Republicans led by Congressman Paul Ryan of Wisconsin propose privatizing Medicare and Medicaid by having the government pay a yearly flat fee to private insurers for coverage of its beneficiaries, leaving the for-profit insurers to ration benefits and reimbursements to turn a profit. The idea is that “The Market” will control spending via competition.

The healthcare market is far from an ideal supply-and-demand marketplace. So this may or may not work. For many, this represents an outsourcing of rationing – politicians would find it difficult to vote directly for decreases in benefits for the elderly. Flat-fee Medicare could very well result in large spending reductions. Yet politically, it’s a non-starter as long as the Republicans aren’t in control of the White House and both houses of Congress with a filibuster-proof majority in the Senate.

What about the patients?
There is no doubt the American mentality of “more is better” is part of the problem. Consider that 30% of the Medicare budget is spent on beneficiaries’ last year of life; and half of that is spent in the final two months of life. Physicians can ethically and legally refuse to provide futile care, but we have all broken ribs of demented, terminally ill patients because the family wanted “everything done.” American society is not ready to speak openly of death.

This was illustrated in 2009 when the congressional version of the ACA contained a provision to reimburse physicians who discussed end-of-life goals of care with their patients. This led to the infamous “death panel” charge from former Alaska Governor Sarah Palin. While her accusation was widely derided as false, the kerfuffle was enough to strike the provision from the Senate version that eventually became law.

As for cost-sharing incentives to fight the “more is better” attitude, the privately insured already have co-pays, deductibles, and other cost-sharing incentives aimed to reduce and redirect care. Medicare beneficiaries do have some deductibles. Depending on the state, some Medicaid beneficiaries have certain co-pays. Still, cost sharing is nowhere near the scale of private insurance. Increasing cost sharing will reduce use, but it’s unclear whether it would reduce overall costs – since this strategy can also lead to decreased adherence to treatment regimens.

The current political climate at the Department of Health and Human Services is against increasing cost sharing. This is evidenced by HHS’ recent rejection of California’s proposed Medicaid co-pays. California estimated these co-pays would save $600 million. However, the new health insurance exchanges established by the ACA will have a tiered, income-based cost-sharing system.

Looking ahead
Much of what happens during the next decade in healthcare reform depends on the direction and scope of the Supreme Court ruling on the ACA. Given the ACA battle and the hyper-partisan climate in Washington, most analysts think it will be at least another decade before another president takes up landmark healthcare legislation. And even when that happens, government-led or patient-centric rationing is unlikely to pass. More likely it will be physicians who will be under administrative and financial pressures to continue reducing healthcare costs.

To learn more and to add your voice to the mix, visit ACEP’s advocacy website acep.org/advocacy where you can also submit a letter to your representative. Visit emra.org to sign up for the ACEP 911 Network to hear about the latest political developments that will affect your practice.

References
2. Letter from Congressional Budget Office director Douglas W. Elmendorf to Senator Orrin Hatch, October 9, 2009.
From despair to hope: Rebuilding healthcare in Cambodia

A ngkor Wat. Floating villages. Buddhist monks in vibrant orange robes. These are the beautiful images for which Cambodia is known.

However, the state of medicine has been plainly described: “Health care in Cambodia is poor. Even the best hospitals have inadequate facilities… For anything serious, get to Bangkok if you are able to travel”.

How did this one Southeast Asian nation fall so far behind other countries in the region? Khmer Rouge.

Khmer Rouge, a Communist guerrilla group of Cambodians trained by the North Vietnamese army, inflicted years of bloodshed against their own country to create an ideal agrarian society of peasants. The devastation worsened after they gained power in 1975. They intentionally separated families, placed adults in labor camps with inadequate nutrition, and conducted systematic torture and mass executions. Thirty percent of the population perished.

By targeting the intellectuals – doctors, lawyers, monks, teachers – the Khmer Rouge aimed to make everyone equal and without Western influence. From approximately 500 physicians in 1975, fewer than 50 survived and remained in the country. Many of those would subsequently flee.

After four years and three million deaths, the end of the Khmer Rouge rule gave way to 20 more years of civil war and unrest. The country, its families, and its healthcare were left in shambles. Cambodia began rebuilding, but very slowly.

The health system started with the reestablishment of a medical school. Students take an entrance exam after completing high school. The six-years of study is comprised of guest lecturers rather than full-time faculty – there are few experienced physicians left. There is no true clinical curriculum, no exit exam, and no residency training. Rather, upon completion of the medical school, the government places physicians in a government-selected hospital. Then, they’re on their own, sometimes the only physician in the hospital.

I shudder to imagine the feelings of helplessness as these physicians approach their work. There is no bedside teaching; there are no mentors.

This is where I came in. As part of a multi-year collaboration between University Research Co. (a non-governmental organization, or NGO) and Stanford Emergency Medicine International, my role was to provide bedside teaching and lectures to physicians at chosen model hospitals throughout Cambodia. The hospitals I visited ranged from small and remote to large, more advanced centers with a multi-specialty presence. As part of an extensive project to improve the health system in Cambodia, our teaching role is a relatively small step. Yet I quickly realized its importance.

As an intern, I remember the first time I was caring for a critical patient in the emergency department. I spent as much time watching my attending as I did watching the patient. I needed that support, guidance, and reassurance. In Cambodia, I was able to be that teacher and provide that support system.

Using the case of a nine-year-old boy struck by a motorcycle, I taught fundamentals of trauma and demonstrated how to be calm, efficient, and take charge. On stable patients, we discussed history, physical exam, and differential diagnosis. We saw ample cases of abnormal lung findings, heart murmurs, and meningismus that provided excellent teaching opportunities.
The lack of physician and nursing experience is not the only issue facing Cambodians. The country’s health system also suffers from problems commonly seen in the developing world: limited resources, extreme poverty, yearly flooding, and prevalent infectious disease.

Surprisingly, some of the structural problems the country struggles with are similar to those found in the U.S. Incentivizing physicians to work at lower-paying sites rather than in lucrative areas. Avoiding procedure-based payment rather than outcome-related payment. The government affording care for its poor to decrease health disparities. Ensuring emergencies in the indigent population are actually treated.

Currently, NGOs are working with the doctors, nurses, researchers, and public health agents to build a healthcare infrastructure. At some hospitals, physicians are eager to learn. The medical environment may be poor but the physicians and staff work tirelessly toward improvement.

At other hospitals, staff have almost given up. With limited resources, physicians know they cannot adequately care for severe illness. Even at a large hospital, we couldn’t obtain an ECG, serum potassium, or a urinalysis. To prevent a shortage, we avoided using oxygen or antivenom, unless the patient was critical. It took days to get a chest x-ray. To make matters more frustrating, patients typically present late in the disease course; they shunned Western medicine for traditional remedies, often waiting for convulsions or altered mental status before seeking medical attention.

While there are many challenges to overcome, through the support of international organizations and the caring nature of the Cambodian people, healthcare will make great strides. Personally, it was a great and humbling experience to take our medical expertise to aid a country in severe need. And I did not leave empty handed, as Cambodia highlighted something I often take for granted – the importance of a strong community of medicine. We are always here to support each other in times of medical crisis or uncertainty. Although it may not feel like it on a particularly difficult shift, we are never truly alone.

I’m flying home now, back to my life as an emergency medicine resident. I’ll miss the friendly “Hello!” of children on my walk to the hospital. In quiet moments, I’ll be daydreaming about the ancient beauty of Angkor Wat.

References
Pediatric submersion injuries

Editor’s Note: To clarify years of confusion over the medical definition of drowning, international experts finally gathered in 2002 for debate. Though detailed, it implies respiratory distress due to submersion in liquid and subsequent lack of oxygen, resulting in rapid death, delayed death, morbidity... or no adverse effect at all. With that elucidated, the appropriate population could be identified for epidemiologic and pathophysiologic study.

Summer means warm sunlight, blue skies, and green grass; it means vacation, swimming, and... drowning? Drowning is still one of the most prevalent causes of morbidity and mortality in children today. It is also one of the most preventable and most tragic. As summer approaches, it’s time for emergency physicians to prepare.

About ten people die from unintentional drowning each day – 20 percent are 14 years old or younger. In this age group, the CDC identified drowning as the second-leading cause of death in 2011.

The frequency of non-fatal injury is equally heartbreaking – for every child who dies, four receive emergency care for submersion injuries. Hypoxia can result in brain damage and long-term deficits: memory problems, intellectual disability, and permanent loss of basic functioning.

The highest incidence of submersion injuries occurs in males, African-Americans, those with low socioeconomic status, and residents of states with readily accessible pools and beaches (i.e., California, Florida, Arizona). The age distribution is bimodal – the first peak occurs among children less than five years old, who drown in swimming pools, bathtubs, or liquid-filled containers (seven percent attributed to child abuse or neglect). The second peak occurs between 15 and 25 years of age, typically occurring at rivers, lakes, and beaches.

Risk factors
The literature consistently identifies several risk factors – inability to swim, overestimated swimming abilities, inadequate adult supervision, or risk-taking behavior (especially teen alcohol or drug use). Other predispositions include seizures, developmental disorders, and undetected primary cardiac disease.

Less obviously, there is peril in hyperventilation prior to submersion. Swimmers intentionally hyperventilate before jumping in to prolong their ability to stay underwater, which decreases their PaCO₂. As oxygen is consumed by swimming, the PaO₂ falls to dangerously low levels before the PaCO₂ finally climbs high enough to trigger the urge to breathe. The result can be rapid loss of consciousness, as well as cerebral hypoxia and seizures.

Pathophysiology
Prolonged submersion eventually results in reflex inspiration underwater, leading to profound hypoxemia – due to either frank aspiration or reflex laryngospasm as water pours down the trachea. Hypoxemia in turn damages every organ system. Logically, cerebral oxygen deprivation is the major cause of morbidity and mortality in submersion injury.

Previous teachings in medical education have emphasized the distinct physiological changes caused by drowning in saltwater versus freshwater. Studies suggested that the tonicitics have different effects on the body’s electrolytes and fluid balance. However, data was based on canine models of large volume aspiration, requiring more than 11 mL/kg water to cause volume overload, and more than 22 mL/kg to cause electrolyte changes. Recent studies of human cases did not demonstrate any difference between saltwater or freshwater drownings.

“Recent studies of human cases did not demonstrate any difference between saltwater or freshwater drownings. More significant is the effect of water temperature.”
More significant is the effect of water temperature. The chance of neurologically intact survival is dismal after warm water submersion versus cold water. This is due to dramatically decreased metabolic rate – and therefore cerebral oxygen demand – when rapidly immersed in cold water.

**Emergency department management**

Initial management of submersion injury should (as always) emphasize the ABCs: Airway, Breathing, and Circulation. Patients should be rapidly evaluated for associated injuries, such as cervical spine damage and head injuries, which may complicate airway management.

In symptomatic patients who do not require immediate intubation, provide **supplemental oxygen** to maintain oxygen saturation above 94 percent. Noninvasive positive pressure ventilation through continuous positive airway pressure (CPAP) or bi-level positive airway pressure (BiPAP) may also improve oxygenation and decrease ventilation-perfusion mismatch.

Indicators for **intubation** in pediatric drowning include:

- Signs of neurologic deterioration or inability to protect the airway
- \( \text{PaO}_2 \) below 60 mmHg or \( \text{SaO}_2 \) below 90 percent despite use of high-flow oxygen
- \( \text{PaCO}_2 \) above 50 mmHg

Following intubation, **PEEP** is an essential element of your ventilator strategy. It improves oxygenation and ventilation in several ways:

- It shifts interstitial pulmonary water into capillaries
- Prevents expiratory airway collapse
- Improves alveolar ventilation
- Decreases capillary blood flow
- Increases the diameter of small and large airways alike

Treating **volume depletion** and **acidosis** is critical for resuscitation. Intravascular volume depletion is common, secondary to pulmonary edema and fluid shift. If rapid volume expansion is indicated, use isotonic crystalloid (20 mL/kg) or colloid. Despite fluids, inotropic support may be required to maintain hemodynamic stability. Fortunately, most acidoses resolve after correction of volume depletion and oxygenation.

In those with **hypothermia**, remove wet clothing and rewarm them quickly. Persistently low body temperature can exacerbate bradycardia, acidosis, and hypoxemia. Rewarming methods include:

- **Passive** – blankets to reduce heat loss
- **Active external** – warming blankets, radiant heat, forced warm air
- **Active internal** – warm pleural or peritoneal irrigation, continuous arteriovenous rewarming, extracorporeal membrane oxygenation

Poor outcomes are correlated with arterial blood pH less than 7.10, submersion time greater than five minutes, and age less than three years. Yet, there is cause for optimism! Studies have shown that early resuscitative efforts are the **single most important** influence on survival.

**Prevention**

Since early resuscitative efforts have the strongest influence on outcome, parents and caregivers should be trained in CPR. Other simple measures can also be powerful deterrents. Swimming lessons at an early age (around four years old) are extremely effective. Installing four-sided, self-latching fencing that isolates the pool from the house can dramatically decrease the risk of drowning.

Raising awareness is equally important. An alarming number of children drown in a small volume of liquid – in buckets, bathtubs, toilets, washing machines. Adults should know this and be encouraged to take extra precautions: empty a bucket, close a bathroom or laundry room door.

Once we see a submersion victim in the emergency department, it may be too late to preach prevention. Sadly, the next case we see will not be the last. The time to prevent unnecessary future tragedy is now.

**References**

Lean operations: A guide for residents

Editor’s Note: This is the second of the two-part series on the concept of lean operations and its application to the emergency department. In Part I, we discussed why lean is an important tool for continuous process improvement; it identifies what processes add value and eliminate waste. In this article, we discuss how to make a department “run lean” with tools and examples.

“Widely considered the most challenging step, this is when one must resist the urge to return to old ways of doing things while maintaining new the lean improvements.”

Improvement through lean happens via a series of special projects known as kaizen events. Kaizen is a Japanese term meaning “continuous improvement,” where each event is designed to build upon previous work. There are many different types of kaizen events, each with its purpose, yet the very foundation of lean is the 5S kaizen event.

A 5S event begins by forming a team with members who work inside and outside the emergency department, so that multiple perspectives are considered. The team then physically goes to gemba (“the place”) where business and production occur. In our case, it’s the emergency department. There, the lean team observes in real time how the department operates and also learns the intricacies of each of the seven flows: patients, clinicians, meds, supplies, equipment, information, and process (see April/May edition of EM Resident for more on the seven flows).

During gemba, one of the most valuable exercises in lean operations is performed; it’s known as the gemba walk. The first step is to obtain the floor plan of the emergency department. Then a team member walks out the path that a staff member – such as a nurse – has to take to complete a daily task. The number of steps involved are counted and lines are drawn on the floor plan representing the path taken. The result often looks like a mess of spaghetti, and in fact the resulting drawing is called a spaghetti diagram. (Figure 1)

Next, the patterns that emerge are analyzed for opportunities to reduce the number of steps taken, where one “leans out the process” by changing the location of needed items. Questions to ask include, “What would happen if the Pyxis system is moved to the middle of the emergency department instead of the far end?” Or, “How many steps would be saved?” These questions will help guide the rest of the 5S process.

5S literally has five S’s. The first S stands for sort. Here, everything in the emergency department is sorted and itemized into one of three categories.

1. Items used daily, such as gloves, computers, or telephones
2. Items that are only used occasionally, such as a Wood’s lamp or central line kits
3. Items that are not used or are considered trash, such as broken equipment or out-of-date forms.

The second S stands for straighten. Once sorting has identified which equipment needs to be in the emergency department, the optimal storage location is identified by arranging supplies and equipment in such a fashion that those items used the most are stored closest to staff. This reduces wasted movement.

The third S stands for shine, where your work area is cleaned and repaired to maximize efficiency.
The fourth S stands for **standardize**, where each item – and where it is stored – is marked. For example, mark areas on the floor with tape where wheelchairs or the ultrasound machine should always be returned. Then create standard processes for major tasks to ensure precision and consistency. Once the work area is standardized, create **daily checklists** for how to maintain its organization. Finally, communicate these changes to staff.

The fifth S stands for **sustain**. Widely considered the most challenging step, this is when one must *resist the urge to return to old ways* of doing things while maintaining new the lean improvements. Use of the daily checklist documents maintenance and helps staff know what to do at the end of each shift, namely returning the work area to the same condition in which it was found. (See Figure 3 and Figure 4.)

To quantify the impact of the redesigned workspace, perform another spaghetti diagram, and count the steps (Figure 2). The change in steps is a **quantifiable metric** of the redesign impact. As an estimate, assume that each step taken equals one second of time, so 60 steps saved is one minute saved.

If attendings cost about $5 per minute and nurses $2 per minute; and your new process saves 120 steps – or two minutes daily for both – that adds up to savings of over $5,000 per year. Of course, that’s assuming they do that process only once a day! If that same trip is made ten times in the course of 24 hours, that’s more than $50,000 saved. The power of lean is that the aggregate effect of small changes eventually accumulates into large savings.

The last part of any kaizen event is a **report-out**, when the team presents hospital management with the improved processes and newly created standards. This important step creates public accountability and gives the teams a chance to share their progress with other departments, which in turn helps break down operational silos. For the long term, a great way to sustain cross-department collaboration and ensure continuous improvement is to hold brief weekly meetings to share innovations and successes learned from lean.

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**Figure 1:** Spaghetti before at 936 feet.  
**Figure 2:** Spaghetti after 122 feet.  

*Spaghetti diagrams before and after a 5S event. Note the change in the number of steps – a quantifiable metric.*

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**Figure 3**  
Before-and-after scenario of a 5S event for an ED storage space.

**Figure 4**
“At this point in the school year, medical students across the country and around the world are getting ready to transition to the next stage in training.”

Dan Stein, MSIV
Immediate Past Medical Student Governing Council Chair
University of California – Davis
Davis, CA

Starting a new chapter

It’s hard to imagine that I’m writing my last *EM Resident* article as the Medical Student Governing Council Chair. How quickly time flies when we do things we love, wouldn’t you agree? My very first column last year was about the opportunities that transitions in education and life can bring. Well, here we are again.

At this point in the school year, medical students across the country and around the world are getting ready to transition to the next stage in training. Whether you’re starting second year of medical school, looking ahead to your clinical clerkships, thinking about VSAS, ERAS, and interviews, or leaving medical school in the dust for internship – we are all getting ready for some changes.

This is also true of EMRA’s Medical Student Governing Council. This past year’s MSGC has been nothing short of extraordinary. As a team and as individuals, they committed themselves to improving your organization and to making outstanding resources available to students. Here are just a few of this year’s MSGC accomplishments:

- Maintained regular communication with more than 95 percent of medical schools’ Emergency Medicine Interest Groups
- Developed a regional conference for medical students in the Southeast U.S.
- Wrote and edited guides for the EMRA mentorship program
- Contributed numerous articles to *EM Resident*
- Added new sections to the plethora of online articles at emra.org and edited existing sections
- Expanded medical student membership at EMRA
- Reviewed and edited the *Medical Student Survival Guide*, 2nd edition
- Created an interactive introduction to EMRA

By no means is this list comprehensive. Simply put, this past year’s MSGC has been amazing. To the 2011-12 members, thank you for your hard work, enthusiasm, and infectious energy. EMRA is lucky to have had you working on its behalf!

What’s more, there is a new MSGC already prepared to take off running this coming year. The 2012-13 team has a mix of returning and new faces. All are incredibly accomplished medical students from around the country. The new council has many challenges ahead of them, but even more opportunities. I have no doubt they will continue developing fantastic medical student resources and projects.

It has been an absolute honor and pleasure to lead this past year’s MSGC. If you have any questions, concerns, comments, ideas, or anything else, please don’t hesitate to contact me. The MSGC is here to make EMRA work for you. Email: msgcchair@emra.org.
Exiting the microcosm

Editor’s Note: You may have noticed a theme at this point. Within the last few EMRA Student Member columns, as second and third years advance a notch, some advice on what to expect and how to proceed is in order. As a massive change of pace, you’ll see that most advice no longer revolves around memorization, and instead around interaction.

As medical students, we have a tendency to obsess. As first years, we obsessed over test questions, from the wording to the subject matter. From the professor who wrote them, to how many would show up on the exam. In our microcosm, this information is everything – the purpose of our existence, laid in the answer options marked A-F. Read the question, fill in a bubble, and repeat. For two years.

By the end of second year, we turned our attention to more important matters: Boards. We wondered how to best study for them and when to take them. We researched prep courses and analyzed the accuracy of various question banks. Osteopathic students mulled over whether to take the USMLE Step1 in addition to the COMLEX. Which should I take first? How many days apart should I schedule the two exams? And so forth and so on.

Of course, eventually we gathered our data, temporarily deactivated our Facebook profiles and disappeared into the great abyss of boards studying, only to reemerge a month or so later as budding third years, eager to begin clinical rotations.

Now, as we embark on the journey of clerkships, the subject of our new obsession has become very apparent: How to excel in clinical rotations. Success, however, no longer hangs on answer options A-F; it now falls into the subjective hands of our evaluators. With a new rotation nearly every month, this task becomes daunting.

If you’re anything like me, you’re still pretty obsessed with clinical rotations. And when it comes to rotating through the emergency department, the obsession level can be off the charts on the Richter scale. So, to treat my obsession (and perhaps yours), I went to the first person I knew could help: my EMRA Mentor.

Since beginning his training at UT Southwestern three years ago, Trent Stephenson has seen hundreds of medical students rotate through the Parkland Hospital Emergency Department. Now, as Chief Resident, he has accumulated some valuable tips for medical students compulsively seeking the approval of their attendings. In addition to the classic advice of being nice to hospital staff and “show up early and stay late,” Trent shares advice on how to shine.

The most memorable medical students are the ones who:

- **Serve as a walking advertisement for their program.** A rotation is the perfect opportunity to exhibit clinical skills and knowledge. Yes, show us what you know. More importantly, show us how you carry yourself. Programs want residents they can proudly claim as their own, so look the part!

- **Will see any patient, regardless of their chief complaint.** Don’t put a chart back because it sounds boring or involves a rectal exam. Programs want eager, energetic people, and you do not want to come across as lazy or high maintenance.

- **Show honesty, always.** If you did not do part of the exam or ask a certain question then don’t make it up. Attendings know that your clinical skills are developing, but your integrity should already be well-developed.

- **Aren’t afraid to work a shift with the big kids.** Try to work with the leadership from the program at least a few times. It’s important to know who you will be working for during residency and you want to make sure that you can get along with them. It will also be beneficial since they have a huge say in the rank list.

- **Find the right faculty member to work with.** If you want to learn ultrasound, then track down the ultrasound director and do shifts with them. Practice those skills on other shifts as well. This shows your interest within the subspecialties of emergency medicine.

- **Know who they are and stay true to who they are.** Ultimately, emergency medicine is a specialty that values personalities and the “fit” of a person for their residency. You will get great training at almost any program, but you want to make sure that you feel comfortable in a program as well.
Introverts and extroverts, yin and yang

Imagine yourself on teaching rounds, or in a dimly lit lecture hall. The attending/lecturer poses a question to the medical students and waits. No one answers. Seconds pass, edging toward minutes. It is silent long enough for the polar icecaps to finish melting. And still everyone waits as the room fills with frigid water.

You frantically look to your colleagues. You’ve studied with them and know they know the answer because you reviewed it together 5,000 times for Step One. Yet no one’s going to budge. To make matters worse, the attending/lecturer is old school and getting visibly frustrated – she is not going to move on. Will you be the one to liberate everyone from this silent prison? Will you stick your neck out with your best shot at a right answer?

Most of us have been in similar situations. This intentional over-dramatization highlights the complex social interaction that often occurs on rounds. The purpose of this piece is to reveal how exaggerating our personality differences can detract from the true purpose of rounds; it’s intended to be a golden teaching experience yet we belittle the few important minutes we get to spend with attendings.

As an extroverted student, I’m more inclined to take a stab at answering a question – I don’t mind getting it wrong now and then. It’s frustrating knowing that other students have the answer but stay quiet. On the other hand, I also understand the importance of not cutting people off, being respectful, and how painful it is to listen to another student’s verbal diarrhea.

During third year rotations, I’ve heard residents say, “For every wrong answer you need five correct ones to make up for it.” I’ve also read #182 in 250 Biggest Mistakes Medical Students Make, which is “Answering questions incorrectly.” The only time I ran into problems on rotations is when I took #182’s advice. I got nervous that I’d answer incorrectly, subsequently lost confidence, and ironically made mistakes.

I quickly went back to putting my ego (and grade) aside and began appreciating rounds for their teaching moments. Yet in all the MS3 clerkships, I never received feedback or an evaluation that mentioned answering questions incorrectly. Life experience has taught me that both residents and attendings value enthusiasm and participation much more than being right all the time.

To be clear, not everyone needs to be extroverted to participate in rounds or succeed in medical school. As Susan Cain eloquently describes in her March 2012 TED Talk, “The Power of Introverts,” we need more of a yin and yang, a balance between making everyone into an extrovert. Medical school needs introverts (who tend to be immensely creative people with good problem solving skills).

Instead of teaching rounds devolving into a clash of personalities, they should become a place where students collaborate with guidance of the attending. Where the extroverts can listen to the introverts for once. Where it’s not just one guy playing Hungry-Hungry Hippos with pimp questions.

Medical education, especially clinical experience, is geared towards collaborative learning. The paradox is that introverts and extroverts can’t exist without each other. So let’s put personality type aside. Get to know each other, become friends, and be supportive.

To the extroverts, give your fellow classmates a chance. Get your water wings out once in a while and wait patiently for that rush of frozen arctic water. To all those introverts who sometimes don’t feel inclined to participate, I commend you on your self-control not to babble. Take that bold step and give it your best shot. Who knows, maybe you’ll steal the spotlight from that gunner who’s been making your rotation miserable since day one.
The 2012 CORD Academic Assembly: Advancing collaboration in emergency medicine

The Council of Residency Directors (CORD) Academic Assembly was held in Atlanta, Georgia from April 1-4, 2012. The assembly theme was “Advancing Collaboration in Emergency Medicine.” The four-day assembly was a huge success, with nearly 700 registrants. Attendees included emergency medicine residency program directors; associate and assistant program directors; residency faculty; program coordinators; and more than 100 residents.

Each year, to learn strategies for developing an academic career in emergency medicine, Academic Assembly offers an assortment of lectures, courses, and interactive workshops. A moderated poster session and lightning oral research presentations reveals innovations in emergency medicine education research.

The Plenary Session speaker – one Amal Mattu, MD, FACEP – discussed leadership across the millennia in his “Everyday Leadership: Secrets from Great Minds through the Ages” talk. Dr. Mattu lived up to his reputation as an inspirational speaker, detailing how one can adopt traits of centuries of successful leaders for use in everyday life.

Besides networking with distinguished emergency medicine leaders from around the country, as usual Academic Assembly had excellent resident-focused courses and events:

• Negotiation and Conflict Resolution
• Mentorship
• Turning Ideas into Research Projects
• How to Get Published

• RRC Update
• Fostering Resilience in Residency Trainings
• Work-Life Balance for Residents
• Faculty Development Opportunities in Emergency Medicine Without Fellowship Training

One afternoon was dedicated to the Residents as Teacher Workshop. This course provided residents with an opportunity to practice bedside teaching methods such as the One Minute Preceptor and SNAPPS. Residents then received real-time feedback and valuable take-home skills from experienced faculty about how to be more effective teachers in the emergency department.

While discovering how to be an effective bedside teacher (and learner) in emergency medicine, Academic Assembly is a unique event to hear about developing a career in emergency medicine education as well. Understanding that travel costs can limit attendance, each year, EMRA sponsors resident scholarships to attend. This year, four residents were selected: Alina Tsyrulnik, MD (Yale), Melissa Halliday, DO (Indiana University), Sneha Shah, MD (Johns Hopkins), Catherine Patocka, MD (McGill University). The deadline for next year’s travel scholarship applications is January 2, 2013. Visit the EMRA website for more information about how to apply.

Next year, Academic Assembly will be in Denver, Colorado from March 5-9, 2013. Expect to see popular resident courses from 2012 as well as some new ones (as suggested by resident feedback). Mark your calendars!
A 38-year-old woman with abdominal pain

In Bouncebacks, we provide the documentation of an actual patient encounter, discuss patient safety and risk management principles, and then reveal the patient’s “bounceback” diagnosis.

The cases are adapted from the book Bouncebacks! Emergency Department Cases: ED Returns (2006, Anadem Publishing available at www.amazon.com and www.acep.org), which includes 30 case presentations with risk management commentary by Gregory L. Henry, past president of The American College of Emergency Physicians, and discussions by other nationally recognized experts.

In 2012, the second book in the series was printed; Bouncebacks: Medical and Legal which follows the stories of 10 patients from the initial visit to the attorneys desk, including courtroom testimony and settlement decisions. Authors: Michael Weinstock, Kevin Klauer, and Greg Henry, with forward by Mel Herbert.

This case is from the first Bouncebacks! book – a 38-year-old woman with a few hours of new abdominal pain, severe enough that she presents to the ED at 2:49 in the morning. The evaluation begins in a typical fashion, but reaches a critical point when the patient crashes hard; her blood pressure in the 70s, placed in trendelenburg by the nurse. A decision point ensues, with a struggle between the EP and specialists, a decision which can have life or death consequences for the patient. The frustration and desperate plea by the attending EP captures the essence of a concerned physician who cannot get the specialists to recognize a diagnosis which seems clear to him… or does he maintain some doubt? The case unfolds as a tragic play, shedding insight into the psyche of an emergency physician in the throes of a night shift, an overconfident but inexperienced OB resident, and the politics of a busy ED.

First half of ED presentation

<table>
<thead>
<tr>
<th>Vital signs</th>
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<tbody>
<tr>
<td>Time</td>
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<td>02:49</td>
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History of present illness (03:19)

Last night at 19:30 pt had a sudden onset of sharp, RLQ pain. She has had nausea and vomiting 3 times and a syncopal episode. She is currently undergoing fertility therapy. She has never been pregnant. LMP 23 days ago. She had some spotting last week and saw her GYN who did a pelvic. She has a history of endometriosis. No fever, rigors, dysuria, frequency or hematuria. No vaginal discharge or history of STDs. No dyspnea or back pain.

Past Medical History/Triage (02:45)

Allergies: No known allergies.
Meds: None
PMH: Endometriosis
PSH: Herniorrhaphy
continued on page 28

“The case unfolds as a tragic play, shedding insight into the psyche of an emergency physician in the throes of a night shift, an overconfident but inexperienced OB resident, and the politics of a busy ED.”

Exam (03:23)

General: Pale-appearing; well-nourished; awake and alert

Resp: Normal chest excursion with respiration; breath sounds clear and equal bilaterally

Card: Regular rhythm, without murmur

Abd: Non-distended; tender to both LQs, + obturator and heel tap, otherwise soft, without rigidity, rebound or guarding, no pulsatile mass. Negative bilateral Lloyd’s sign

GU: External genitalia normal. Pelvic exam: cervix with blue hue and scant clear discharge at the os but appears to be closed. +CMT. +exquisite R adnexal tenderness. No masses palpated.

Orders (03:12): Dilaudid 1mg IVP, phenergan 12.5mg IVP

Procedures (03:13): Urine pregnancy test (ordered in triage) is positive.

Results

Blood – WBC = 22.5, Hb = 13, plt = 325, lyes/BUN/creat – WNL. Quant HCG 196 – Reviewed and resulted by the physician at 03:58

Urinalysis – WNL except WBC=5-10, bacteria=rare. RBC=0-5 Wet prep: Neg. for trichomonas and yeast

Decision point

Author’s note: What would you do? There are so many issues at play… how confident are you of a diagnosis of ruptured ectopic? Are you confident enough to insist the patient go under the blade, against the specific advice of the OB resident?

There are multiple area of concern:
1. She is undergoing fertility therapy, increasing the chance for ectopic
2. The acuity of onset is concerning for ectopic
3. Syncope is a unlikely (or unheard of) associated symptom with appendicitis
4. The patient is pregnant and OB is called, but where is the ultrasound?
5. The OB thinks this is a general surgery case. You think it is obstetric. Who wins? (Certainly not the patient!)

Where to next? The resident saw the patient at 04:22 and thinks it is appendicitis. In fairness, the patient has RLQ pain and a WBC count of 22,000. How much money would you wager on the accuracy of your diagnosis? How many ruptured ectopics have you seen in the last year? How many cases of appendicitis in the last year? … or the last shift??

Continuation of same ED visit

Results: Ultrasound (radiology ‘wet read’ results at 04:49): No intrauterine pregnancy is seen. There is a large amount of inhomogeneous hypoechoic material in the pelvis, which could represent blood or complicated fluid. This is not specific, but the possibility that this could be related to a ruptured ectopic pregnancy should be strongly considered. Clinical correlation is suggested.

Author’s note: So we finally have our test result, but how about just doing a bedside US on arrival? OK, maybe there was a trauma. Maybe they were in house and just did it quickly. No worries. The patient was sent for an official radiology US and now we have the results. Let’s correlate clinically (love that radiologist advice… thanks!). How is our patient? Vital sign recheck:

Time Temp(F) Pulse Resp  Syst Diast Pos. O2 Sat O2% 
05:12 88 20 79 55 S

Pain Scale
0

Author’s note: Oops!!

Progress notes

• (per MD – time not recorded) The patient’s condition has changed and she is now hypotensive and I have asked the OB house officer to go back into the room to re-examine the patient. They did re-examine and felt that she looked worse, but disagreed about the diagnosis of ectopic as her quant was too low, menses was only 3 weeks ago, and her WBC was too high. They asked for a surgery consultation to evaluate for appendicitis.

• At 05:14 (per RN) – Pt. placed in trendelenburg, is increasing pale, denies lightheadedness but states that she is having trouble staying awake. OB resident is present and aware. Pt. denies pain.

• At 05:26 (per MD) – I spoke with the general surgeon to discuss the case and I spoke with surgical house officer and they will come to the ED to evaluate the patient.

continued on page 28
At 05:28 I spoke with the OB attending to discuss case and told them that the BP had dropped and they recommended recheck CBC and if the Hb has dropped they would take to OR (see below). They felt that she wasn’t tachycardic and Hb wasn’t low enough to be a ruptured ectopic.

At 05:32 (per RN) – Pt. remain in trendelenburg position. Multiple attempts to obtain another IV access have failed. The doctor is aware. Surg. resident here and aware of pt's condition. Husband remains at bedside and updated.

Physician re-exam at 05:39 – Pt. with increased pallor. Abdomen appears normal. Abdomen is firm, tender RLQ and pelvis with some voluntary guarding.

Lab results: WBC – 18.6, Hb 11.2, plt 306

At 06:47 I again spoke with the OB attending and the OB house officer and related my concerns for ectopic or hemorrhagic cyst and the need for lap ASAP. Pt's pain has worsened but her exam is unchanged. Her VS are stable with a room air sat of 100%.

Author’s note: Anyone feel comfortable operating on her in the ED? Nurse…get me a #11 blade, betadine, and…boil some water!! Does the feeling of helplessness come to mind? The physician suspected a ruptured ectopic, but his diagnosis does not reflect his confidence: Diagnosis: Pelvic pain, pregnancy, leukocytosis, anemia. The progress note lists ectopic but also hemorrhagic cyst. The diagnosis is still in play.

The EP has a pregnant hypotensive patient on their side. The OB resident has RLQ pain, leukocytosis, normal heart rate, and ‘no ectopic seen’ on their side. OK. OK, the suspense is too great…Here’s what happened:

The patient is finally assigned to OR bed. She has a lap at 7:15 AM with a post op diagnosis of ruptured tubal pregnancy. She does well post-op and leaves the hospital without complication.

Final diagnosis: Ruptured ectopic pregnancy

Risk management/patient safety questions and answers

1. What historical factors increase the chance of ectopic pregnancy?
   - History of PID, fertility therapy, tubal ligation, previous ectopic… and pregnancy with an empty uterus in hypotensive patients!

2. Does a very low B-HCG exclude ectopic?
   - No. A significant number of ectopic pregnancies will have an HCG less than 100, with the lowest HCG recorded at 13. A very low or very high HCG cannot reliably exclude ectopic. US is mandatory.

3. Does a normal pulse exclude ruptured ectopic?
   - You guessed it: No! In fact, with a ruptured ectopic a ‘paradoxical bradycardia’ can occur due to stimulation of the vagus nerve.

4. How specific is an elevated WBC count for appendicitis?
   - Not 100%... apparently! A study by Snyder and Hayden in the Annals calculated a mathematical model for appendicitis showing that RLQ abd. pain and a WBC count greater than 19,000 significantly increased the risk of appendicitis. However, those were not afebrile pregnant patients on fertility therapy and fluid in the pelvis!

5. What is the best approach when the EP and resident start to duel?
   - OS residents are OB residents – they are not fertility specialists and certainly not EP’s. When there is a disagreement, a call to the attending is mandatory. Going over the head of a resident may be a delicate situation, but a patient who dies an unnecessary death is a bit delicate also…

   As we trace back to the sentinel events of this visit, we see the first disagreement occurred just after 4:30 AM. The doctor was obviously concerned about ectopic, as a call was made to OB and not surgery. When the resident began to consider appendicitis, the doctor waits to collect more evidence. At 5:12 the data is in; not only is there an US with free fluid but the patient is now hypotensive. The resident is again called but does not think this is an ectopic as “the quant was too low, menses was only 3 weeks ago, and her WBC [is] too high”. They call for a surgery consult when they should have been calling for a ‘reality check.’

   With overwhelming evidence for ruptured ectopic the ED attending should have had a direct discussion with the OB attending. Though 5AM conversations are tough, argue your case as if you are the attorney. Repeat the concerning findings (plenty, in this case). If there is still an issue, the department chair or an OB colleague who owes you a favor can be contacted, but this is rarely necessary. In the mean time, type and cross match, ensure there are 2 large bore IV’s, notify the OR of a possible impending case, and
keep communication open with the patient and family.

6. Is ‘lab trending’ helpful?
   o Seems like it. Wouldn’t it make sense that the Hb would drop – unless you consider the fact that she probably ruptured with the syncopal episode the previous evening. IV fluid can dilute the blood. Is a Hb drop from 13 to 11.2 evidence of anything? Seen that double-blind, randomized, placebo-controlled trial of trending hemoglobins in pregnant patients on fertility therapy who are hypotensive? Neither has the resident…

7. Is there a legal risk even though the appropriate diagnosis is made?
   o There is more to this business than just making the right diagnosis. After all, the pathologist almost always makes the right diagnosis at autopsy…just not in a timely enough manner! EP’s are given some legal slack as events happen fast in a busy ED, but reviewing this chart points to a 5 hour ED course, when there are only a few things necessary to know about this patient: She had syncope, she has abdominal pain, she is undergoing fertility therapy, she is pregnant – additional H&P is basically worthless; she needs an ultrasound. All of this can be accomplished without labs or consultants in a timely manner. She presented at 02:49 and within 30 minutes had a positive pregnancy test and physician evaluation. If the blood pressure had gone from 79 to 59 or zero, it would be hard to argue that the definitive therapy was delayed because of the recalcitrant OB resident. Do you really know a lot of OB attendings who would not come in with a confident EP telling them the diagnosis: I have a patient with a ruptured ectopic. I need you now! ■

References

Note: The last Bouncebacks! article erroneously listed Weinstock as the first author: The first author was Emilie Cobert, Weinstock was the second author.

ACEP’s Scientific Assembly
October 8-11, 2012
Denver, Colorado

Visit www.emra.org for full schedule and details on EMRA events at Scientific Assembly.

Visit ACEP website for registration and housing information.
Programs with 100% Membership

The following residency programs have 100% EMRA membership among their residents. EMRA would like to thank these programs and residents for their continued support.
EMRA’s 4th Annual
PHOTO CONTEST
A call for photos: Send us your best shots!

“A great photograph is one that fully expresses what one feels, in the
deepest sense, about what is being photographed.” – Ansel Adams

If you’ve been inspired lately to capture images from an away rotation, the changing of the seasons, or the sights of your city, we want to see! Visit the EMRA website for directions to upload your photo submission by August 1, entries can also be sent to photocontest@emra.org by August 1, 2012. Indicate a title for your photo, your name, School/Program/Hospital, and the category in which your photo belongs.

One winner and one runner-up from each category will be selected and displayed in the October/November issue of EM Resident.

2012 CATEGORIES
Nature & Wildlife
Medical
Travel & Landscapes
Art Photography
Portraits
Sports & Events
Miscellaneous

Submissions will be judged by our editorial staff along with award winning photojournalists: Lisa Bundy, MD, and Giuliano De Portu, MD.

A sample of the 2011 Winners

TRAVEL & LANDSCAPES WINNER
Sunrise Over the Waves
Matthew Hodapp, MSII
Albany Medical College
Albany, NY

NATURE & WILDLIFE WINNER
Alligator Eating Blue Crab
Dan Roberts, MD
Christus Spohn Memorial Hospital
Corpus Christi, TX

SPORTS & EVENTS WINNER
Blue Angel Air Show
Dan Roberts, MD
Christus Spohn Memorial Hospital
Corpus Christi, TX

PORTRAITS WINNER
Mother and Son
Christopher Dang, DO
Maimonides Medical Center
Brooklyn, NY
**EM reflections**

**JEOPARDY!**

We’ll take medical exams for 350...

**OHSU captures the Jeopardy title!**

Left to right: Joshua Russell, MD, Joshua Kornegay, MD, Andy Barnett, MD and faculty advisor, Ross Fleischman, MD.

Left to right: Cameron Berg, MD, Ben Constance, MD and Sundeep Bhat, MD.

Left to right: Michael Koury, MD, Stephen Fromang, DO, and Trey Nichols, MD.

Left to right: Brandon Allen, MD, Mindy Fernandez, MD and Coben Thorn, MD.

Left to right: Christopher Richards, MD, Matthew Pirotte, MD, and Brian Patterson, MD.

Left to right: William Fleischman, MD, Daniel Lakoff, MD and Raashee Kedia, MD.
The 2012 National Emergency Medicine CPC Semi-Final Competition, co-sponsored by ACEP, CORD, EMRA and SAEM, was held this year at the SAEM Annual Meeting in Chicago. Eighty-five EM residency programs submitted cases for consideration in the Preliminary Competition. Cases in the Preliminary Competition were judged on quality of the case, applicability to Emergency Medicine, and solvability. Thirty judges scored the cases and selected 72 of the best submissions for presentation in the Semi-Final Competition.

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

All resident presenters and faculty discussants did a remarkable job. Congratulations to all of the 2012 Semi-Final winners who will compete in the final competition to be held in Denver at the ACEP Annual Scientific Assembly, October 8-11.

**Division 1 Winners:** Resident Presenter Winner: Gina Hurst, MD, Henry Ford Hospital Combined EM/IM/CC; Faculty Discussant Winner: Tara Cassidy-Smith, MD, Cooper University Hospital.

**Division 2 Winners:** Resident Presenter Winner: Katie Sprinkel, MD, Carolinas Medical Center; Faculty Discussant Winner: Anand Swaminathan, MD, NYU Bellevue Hospital Center.

**Division 3 Winners:** Resident Presenter Winner: Frank Fazio, MD, Long Island Jewish Hospital; Faculty Discussant Winner: Claudia Barthold, MD, University of Nebraska.

**Division 4 Winners:** Resident Presenter Winner: Nir Harish, MD, Denver Health. (Not pictured) Faculty Discussant Winner: Pinaki Mukherji, MD, Long Island Jewish Medical Center Combined EM/IM.

**Division 5 Winners:** Faculty Discussant Winner: Patricia Van Leer, MD, St. Luke’s Roosevelt; Resident Presenter Winner: Chen He, MD, St. Luke’s Roosevelt.

**Division 6 Winners:** Faculty Discussant Winner: Charlotte Wills, MD, Alameda County Medical Center/Highland General Hospital. Resident Presenter Winner: Jose Torradas, MD, North Shore University Hospital.

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**Program Participants**

- Maricopa Medical Center
  - Left to right: Eric Katz, MD, Program director; Residents Barron Reyes, MD, Beth Ranney, MD, Anne Klokow, MD, and Brian Kitamura, MD. On the right is Maricopa Simulation Fellow Rianne Page, MD.

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**EMRA SIM Wars Champions!**

Maricopa Medical Center

Naval Medical Center/San Diego
University of Nevada/Las Vegas
University of Mississippi Medical Center

Penn State Hershey Medical Center
Hennepin County Medical Center

Baystate Medical Center
Harvard Affiliated Emergency Medicine Program at Brigham/MGH
Michele Byers, CAE, CMP being honored by Cameron Decker, MD, EMRA’s President-Elect and Don Stader, EMRA’s President for her fantastic job as EMRA’s Executive Director. Thank you, Michele, for all your hard work!

Congratulations to the 2012 EMRA Spring Award Recipients

Jean Hollister EMS Award
Marlow Macht, MD, (r)
Denver Health Medical Center

Academic Excellence Award
Breena R. Taira, MD, MPH, (l) Stony Brook University Medical Center

Dedication Award
Jonel Daphnis, MD, MPH, (l) SUNY Downstate/Kings County Hospital Center

Dr. Alexandra Greene Medical Student Award
Daniel Kemple (l), Ross University SOM

Residency Coordinator of the Year Award
Stephanie Morville, (r)
Johns Hopkins University SOM

Assistant Residency Director of the Year Award
Christian Jacobus, MD, FACEP, (l) Synergy Medical Education Alliance

Residency Director of the Year Award
Allan B Wolfson, MD, FACEP, (l) University of Pittsburgh

Research Grants
Dylan Carney, (m) Harvard Medical School (far left) and Sarah Ashley, (l) UC Davis (at right)
Call for 2012 EMRA Fall Award Nominations

It’s time to nominate yourself or a colleague for an EMRA Award. Visit the website for application instructions. Deadline for submission is August 15. Awards will be presented at the EMRA Award Reception during ACEP’s Scientific Assembly in Denver, CO, Tuesday, October 9, 2012.

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

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

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

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

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

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

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

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

EMRA Elections will be held during ACEP Scientific Assembly in Denver, Colorado, October 9, 2012 for the following positions:

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

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

- **Legislative Advisor**: Candidates for Legislative Advisor must make a two-year commitment to EMRA. Position is responsible for coordinating and running the Residents and First-Timers Track at ACEP Leadership and Advocacy Conference. Generating and updating the EMRA Emergency Medicine Advocacy Handbook. As well as helping foster resident advocacy.

- **ACEP Representative**: This two-year position requires significant travel and interaction with a number of leaders in emergency medicine. In addition to the regular duties of an EMRA Board member, you will attend all ACEP Board of Directors meetings, serve on the ACEP Steering Committee, and be primary liaison with EMRA Representatives serving on ACEP Committees.

- **Member Development Coordinator**: EMRA is proud to announce a brand new position on its board of directors. The Member Development Coordinator is a two-year commitment, and will be charged with adding value to EMRA membership, finding innovative ways to recruit new EMRA members, spearheading the creation of new EMRA regional meetings, increasing EMRA’s organizational presence at the local & regional levels, coordinating the activities of EMRA’s multiple intra-organizational representatives, finding ways to improve resident wellness and serving as the board liaison to EMRA’s Research Committee.

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

If you are interested in running for a position, please email your CV, a statement of interest (200 words or less), letter of support from your residency director, and a photo (jpeg format) to mpackardmilam@emra.org by September 10, 2012. EMRA will post statements and photos received from candidates on the EMRA website. Nominations from the council floor will also be accepted.
Ballrooms and racetracks
History and future of emergency department design

continued from cover

“The emergency department is fast becoming the most visible area of the hospital and the front door for many patients.”

Stephen Bhandarkar, MD
Resurrection Medical Center
Chicago, IL

department emerged, including “fast tracks,” chest pain units, and separate pediatric areas. Many departments took this notion even further in the 1990s, essentially creating multiple separate emergency departments under the same roof. This approach improved patient flow and overall efficiency, but led to additional problems with staffing and space use.

Design configurations and concepts
Every emergency department is unique, designed within certain constraints to serve a specific location and patient population. Nonetheless, a few basic emergency department configurations have emerged over the years, each with its own advantages and disadvantages.

The traditional emergency department of 20 or 30 years ago had a ballroom or racetrack design – a large open space with treatment rooms on the perimeter and a central core area for staff and support (Figures 2 & 3). This design allows for high patient visibility and facilitates staff communication. However, expansion of this design is difficult, with a practical maximum of 16-18 patient rooms. Growth beyond this size hinders patient visibility, requires an exceedingly large central workstation, and can be difficult to staff. For these reasons, this design has become less popular as emergency department censuses continue to grow.

The pod layout is another popular configuration – the emergency department space is broken up into smaller units, typically 8-10 beds, each with its own staff and support workspace. Benefits include increased patient privacy, a quieter environment, and improved staff efficiency, as each pod tends to be self-sufficient.

Pods can be dedicated to specific patient populations, such as pediatrics or cardiovascular disease. Disadvantages include staffing difficulties (particularly if pods are uniquely dedicated to a specific patient type) and inefficiencies in space utilization when changes in patient volume occur. Variations on the pod layout, such as the “interlocking pod” pattern, are intended to retain the advantages of this layout without compromising patient flow.

The linear layout design is characterized by patient rooms arranged in two or more straight lines, with support and work areas in between rows. Advantages of this model include the ability to adjust to changes in patient volume by opening and closing rooms. Unlike other layouts, this design can also be easily expanded to accommodate an increased number of patient care spaces.

The concepts of surge capacity and mass casualty medicine are also being increasingly incorporated into emergency department designs. ER One, an ongoing project initiated in Washington, D.C. in 1999, is designed to handle double capacity in the event of a disaster. Public spaces such as the waiting room can be converted into treatment and triage areas when needed. The parking garage below the emergency department can serve as a triage center and is equipped with mass decontamination showers, a feature also built into the new Tampa General Hospital. This feature is illustrated in Figure 4.

Emergency department design constraints can also lead to innovative solutions. For example, in planning the emergency department at the new Children’s Memorial Hospital in downtown Chicago, the designers found that they had only a small footprint of first-floor space available. This led them to position the emergency room on the second floor. Walk-in patients access the emergency department via a walkway from the parking garage, while ambulances pull up to a ground floor ambulance bay with two dedicated elevators directly servicing the emergency room, operating rooms and ICUs.
The first emergency ‘rooms’ were simply that – hospital rooms with varying capabilities, supplies, and staff.”

Emergency services concepts. Most contemporary emergency services designs are variations of one of these three organizational concepts.

The emergency room is fast becoming the most visible area of the hospital and the front door for many patients. Consequently, hospitals are hoping to enhance patient satisfaction by incorporating elements such as private rooms, more comfortable waiting areas, and increased natural lighting. Senior-friendly or geriatric emergency departments are also popping up across the country. These departments have special features including handrails, slip resistant floors, thicker mattresses, and softer lighting designed to improve the emergency department experience for older patients.

Other modern trends include emergency department observation areas and chest pain centers – separate spaces in which patients can be watched, receive further treatment and assessment, and ideally avoid a lengthy hospital stay. New technologies are also increasingly incorporated, including electronic medical records, enhanced patient tracking technologies, and in-house

ED Configuration Assessment

<table>
<thead>
<tr>
<th>Racetrack</th>
<th>Pods</th>
<th>Interlocking Pods</th>
<th>Linear Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Treatment rooms lining outside perimeter with a central nursing station in the middle</td>
<td>Treatment rooms arranged in small groups around a central nursing station</td>
<td>Treatment rooms arranged in small groups around a central nursing station</td>
</tr>
<tr>
<td><strong>Patient Flow</strong></td>
<td>Patients, staff, and equipment move in space around central nursing stations</td>
<td>Patients, staff, and equipment share same circulation space within pods</td>
<td>Patients, staff, and equipment share same circulation space within pods</td>
</tr>
<tr>
<td><strong>Staff Flow</strong></td>
<td>Staff move in and out of central nursing stations</td>
<td>Direct flow to ED rooms from central nursing station</td>
<td>Direct flow to ED rooms from central nursing station</td>
</tr>
<tr>
<td><strong>Degree of Flexibility for Future Expansion</strong></td>
<td>Relatively flexible, but requires expansion of nursing station or creation of new station</td>
<td>Moderate level of flexibility</td>
<td>Moderate level of flexibility</td>
</tr>
<tr>
<td><strong>Advantages</strong></td>
<td>Simple patient circulation</td>
<td>Permits closer monitoring of patients</td>
<td>Permits closer monitoring of patients</td>
</tr>
<tr>
<td><strong>Disadvantages</strong></td>
<td>Line of sight diminishes as treatment rooms added</td>
<td>Incapable of flexing up/down depending on patient volumes</td>
<td>More flexible than traditional pod arrangement, but still locked into rigid pod formation</td>
</tr>
<tr>
<td><strong>Innovations Center Assessment</strong></td>
<td>A good fix for EDs with fewer than 20 beds, but has significant growth and traffic challenges</td>
<td>Layout promotes specialization at the expense of patient flow</td>
<td>Layout allows specialization, but still the potential for substandard patient flow</td>
</tr>
</tbody>
</table>

Figure 2: Common ED configurations
Source: Zilm F., Designing for Emergencies, 2010

Figure 3: Common ED design configurations. Source: (Advisory Board Company; Health Care Advisory Board, 2007)
Ballrooms and racetracks

History and future of emergency department design

continued from page 37

diagnostic imaging within the department.

The emergency department of the future will look vastly different from the ones we work in today. As annual emergency department volumes continue to increase, creating a space that is efficient, inviting, and safe for patients and staff will continue to be a considerable challenge.

Resources

5. Riggins, L. Emergency Department Design.


Figure 4. Parking zones at Tampa General can be turned in decontamination showers. Source: (Advisory Board Company; Health Care Advisory Board, 2007; Berry, 2009)

Call for Applications!

2012-2013 EMRA-ACEP Health Policy Mini-Fellowship

The EMRA/ACEP mini-fellowship provides a four week experience centered out of ACEP’s Washington, DC office.

This is an intensive, short-term policy curriculum that will provide meaningful advocacy exposure.

Applications for the 2012-2013 Health Policy Mini Fellowship are due July 15, 2012

For more details and to apply online visit www.emra.org
Emergency Medicine in D.C.

Election years present opportunities for advocacy. Politicians of all stripes are in full swing. Congress is trying to finish the work of the current majority before a new order sweeps into power. This year will be more of the same, though with much more judicial drama: The Supreme Court hearings on the constitutionality of the Affordable Care Act (ACA).

As assorted healthcare legislation moves through Congress, ACEP’s Washington, DC office has been positively bustling. The goal? Ensuring key measures involving emergency medicine are added to proposed legislation.

HR 5 – Protecting access to healthcare
In March, just before the Supreme Court heard arguments about the ACA, House Republicans offered their latest version of healthcare reform. They devised a bill built upon HR 5 (the PATH Act, a comprehensive liability reform bill including ways to rein in lawsuits), with added elements from HR 452 (repealing the Independent Medicare Advisory Board, an unpopular cost-control measure in the ACA).

HR 157 – Protection via limited liability
HR 157, also known as the Health Care Safety Net Enhancement Act, would be a major benefit for emergency physicians. It secures limited liability protections for emergency and on-call physicians performing services as mandated by the federal EMTALA law. As is, EMTALA places costly requirements on emergency care.

In a major step for emergency medicine, ACEP worked with Reps. Charlie Dent (R-PA) and Pete Sessions (R-TX) to include the language of HR 157 in the legislation. HR 5 passed the House vote (via a Republican-controlled House largely on party lines). HR 5 must next pass through Senate, where action by the Democratic majority is unlikely. Yet there is an upside: House passage of the amended bill has increased visibility of the need for liability reform.

The definition of a critical drug
Another crucial issue: Drug shortages. Many hospitals have been affected by etomidate and succinylcholine shortages, interfering with quick, safe emergent intubation. Nearly all IV anti-emetics (ondansetron, metoclopramide, prochlorperazine, and promethazine) are in short supply – severely limiting our options for treating intractable vomiting and migraine.

As legislation on drug shortages moved through Congress, initial definitions of “critical drugs” emphasized oncology medications and did not protect those common medications used in emergency departments. After the combined efforts of ACEP with other emergency medicine groups, the definition of critical drugs was revised to include sterile injectable products and drugs used during emergency medical care and surgery.

How to learn and how to help
Emergency medicine advocacy groups and legislative efforts are imperative to protect and improve the quality of emergency healthcare. Toward this goal, all physicians need to become more involved in emergency medicine advocacy and political action. Ways to get involved:

• Join the EMRA Health Policy Committee to engage colleagues on political issues involving medicine & emergency medicine
• Read EMRA’s monthly e-publication “What’s Up” to learn about awards and leadership opportunities
• Sign up for ACEP’s 9-1-1 Network to receive weekly legislative updates
• Call Congressional representatives when crucial legislation is being considered
• Give to NEMPAC or the Emergency Medicine Action Fund
• Attend national conferences – SAEM’s Annual Meeting every spring; ACEP’s Scientific Assembly every fall; and ACEP’s Leadership and Advocacy Conference every May.
• Educate emergency medicine residents about important advocacy issues.
• Vote.
Syncope in the first trimester: The role of transvaginal ultrasound

HPI
A 25-year-old female, about 1 month pregnant by last menstrual period, presents following a syncopal episode. She says she fainted after a pang of sharp abdominal pain. She fell from standing, struck her head, and sustained a small forehead laceration. Since she’s arrived at the ED, she’s noticed moderate vaginal bleeding. She has no significant medical history and had an uncomplicated prior pregnancy.

Physical exam
VS: HR 87, BP 90/49, T 98.9°, RR 16
Gen: Anxious, in no acute distress
HEENT: 1.5-cm superficial laceration to forehead; pupils equal/reactive
Neck: Non-tender C-spine
Cardiopulmonary: Lungs are clear, regular heart rate/rhythm
Abd: Soft, mild suprapubic tenderness
Pelvic: Dark blood in the vaginal vault, closed cervical os, no masses palpated
Neuro: No abnormalities

Questions to consider
1. What is your differential diagnosis?
2. What diagnostic studies would you perform?
3. Would bedside ultrasound be helpful? What are you looking for?

Patient course
After initial evaluation, volume resuscitation is initiated with normal saline. Blood is sent for type and cross, quantitative β-hCG, CBC, BMP, and coagulation studies. Bedside pelvic ultrasound is performed using 5-2 MHz transabdominal and 8-5 MHz transvaginal TV transducers. You obtain the following images:

“Transabdominal ultrasound can spot a gestational sac early in the first trimester; yet transvaginal images have better resolution due to higher frequency and proximity to the uterus/adnexa.”

David C. Pigott, MD, RDMS, FACEP
Co-Director, Emergency Ultrasound Program
University of Alabama Hospital
Birmingham, AL

“Transabdominal ultrasound can spot a gestational sac early in the first trimester; yet transvaginal images have better resolution due to higher frequency and proximity to the uterus/adnexa.”

40 EM Resident
Transvaginal ultrasound (TVUS) reveals a large, 8-week-size ectopic pregnancy in the right adnexa surrounded by free fluid. The empty uterus is on the right side of the image (Figure 1). A hypervascular ring of fire is seen on color Doppler of the ectopic (Figure 2). There’s free fluid in the hepatorenal space (Morison’s pouch) (Figure 3).

Obstetric is called for emergent consultation. Based on ultrasound finding, she’s taken immediately to the OR for diagnostic laparoscopy. You later learn that they had found a ruptured ectopic pregnancy and a 1-liter hemoperitoneum. They performed a right salpingectomy and removed the ectopic pregnancy. The patient received 3 units of packed RBCs, recovered well, and was discharged in good condition 2 days later.

Discussion
Ectopic pregnancy should be suspected in any female of childbearing age with lower abdominal or back pain, vaginal bleeding, pre-syncope, or syncope. High clinical suspicion is always necessary to avoid intraperitoneal hemorrhage due to tubal rupture. Ruptured ectopic pregnancy continues to be the leading cause of first trimester maternal death.

Bedside TVUS can quickly establish an intrauterine pregnancy and decrease concern for ectopic. Transabdominal ultrasound (TAUS) can spot a gestational sac early in the first trimester; yet transvaginal images have better resolution due to higher frequency and proximity to the uterus/adnexa. TVUS can thus display the fetal pole and yolk sac and can even show fetal cardiac activity as early as 6 weeks gestational age. Compare figures 4 and 5, which show a normal first trimester pregnancy.

“In patients with a nondiagnostic ultrasound (including bedside and formal scans) with β-hCG greater than 1000 mIU/ml, obstetric consult is the next step.”

Figure 3

Figure 4

Transabdominal image of the pelvis. The uterus is visible in the middle of the image and a gestational sac is seen (arrow), however, no details are visible.

Figure 5

Transvaginal image of the pelvis from the patient in Figure 4. A fetal pole and yolk sac can be seen.
Ultrasounds in EM

continued from page 41

First trimester ultrasound and \( \beta \)-hCG

The goal of TVUS in a first trimester exam is to distinguish between:

- **Definite intrauterine pregnancy** – yolk sac, fetal pole, fetal cardiac activity, 2 echogenic rings surrounding the gestational sac (double decidual sign) (Figure 5)

- **No intrauterine pregnancy** – empty intrauterine gestational sac, extrauterine gestational sac, free fluid, adnexal mass

Note that an intrauterine fluid collection without a yolk sac, fetal pole, or fetal cardiac activity should not be interpreted as intrauterine pregnancy – this may represent the pseudogestational sac of ectopic pregnancy.

During the first trimester, serum \( \beta \)-hCG rises rapidly. Quantitative measurement can track gestational age. It also bred the concept of a \( \beta \)-hCG discriminatory zone – the level of \( \beta \)-hCG above which an intrauterine pregnancy should be visible on each modality:

- **TVUS** – 1000-2000 mIU/ml
- **TAUS** – 5000-6500 mIU/ml

Though useful, a \( \beta \)-hCG below the discriminatory zone does not rule out ectopic pregnancy. About 40% of ectopic pregnancies present with \( \beta \)-hCG levels less than 1000 mIU/ml; of these, 30-40% will be ruptured at the time of presentation.

Disposition

Patients with intrauterine pregnancy confirmed by bedside ultrasound may be discharged with close obstetric follow-up and bleeding precautions. There is clear TVUS fetal localization in about 75% of first trimester patients presenting to the ED. In conjunction with quantitative \( \beta \)-hCG, TVUS reduces the risk of missing an ectopic pregnancy. Nevertheless, serial \( \beta \)-hCG levels are necessary if TVUS is indeterminate.

Patients with a positive pregnancy test but no evidence of intrauterine pregnancy should undergo formal ultrasound by radiology. Then – if the formal exam is also indeterminate; \( \beta \)-hCG is less than 1000 mIU/ml; and vital signs are normal – the patient may be discharged (with ectopic pregnancy precautions and follow-up with serial \( \beta \)-hCG).

In patients with a nondiagnostic ultrasound (including bedside and formal scans) with \( \beta \)-hCG greater than 1000 mIU/ml, obstetric consult is the next step.

Potential pitfalls in the evaluation of the first trimester pregnant patient include:

1. Failure to consider the diagnosis of ectopic pregnancy
2. Failure to perform ultrasound based on \( \beta \)-hCG level
3. Diagnosis of intrauterine pregnancy in the absence of either a yolk sac or fetal pole

Tips

- First trimester patients with pregnancy-related complaints (vaginal
bleeding, pelvic or back pain) or symptoms suggestive of presyncope, syncope, or hypovolemia require TVUS to rule out ectopic pregnancy.

- TVUS is the preferred method for fetal evaluation during the first trimester
- Note that patients undergoing fertility treatments or in-vitro fertilization (IVF) have increased rates of heterotopic pregnancy (simultaneous intrauterine and ectopic pregnancy) and should receive a formal ultrasound as well as obstetric consultation.

References
Nathaniel R. Schlicher, MD, JD
In this expanded 2nd edition of the handbook, Dr. Schlicher and the chapter authors outline the essential and 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.

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- Achieve central venous oxygenation saturation (ScvO2) of 65 mm Hg. Start vasopressor therapy as required
- Administer broad spectrum antibiotics ASAP, goal <1 hour upon recognition of sepsis
- Acute oliguria (UO <0.5ml/kg/hr for 2 hrs despite adequate fluid resuscitation)
- Temperature: >38.3°C (>101°F) or <36°C (<96.8°F)
- Hemodynamic
  - MAP < 65 mm Hg after 20-40 mL/kg of crystalloid or 300 mL of blood
  - Renal: 60% fall in urine output, oliguria or anuria
  - Cardiac: reduced cardiac output manifested by a systemic arterial pressure <65 mm Hg
  - Respiratory: respiratory rate >20/minute or more
  - Neurological: decreased level of consciousness, increased intracranial pressure, elevated ICP
  - Hypothermia: <36°C ( <96.8°F)
  - Hyperthermia: >40°C ( >104°F)
  - Shock: skin mottling or pallor, cold extremities, diaphoresis, delayed capillary refill, slow heart rate, tachycardia
  - Acute acidosis: lactic acidosis, metabolic acidosis, respiratory acidosis
  - Organ failure: 2 or more organ systems

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**PEER VIII Q&A**

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

1. When assessing brainstem function in an unconscious patient using the oculovestibular response, which of the following indicates an intact cortical response?
   A. Eyes deviate away from stimulus
   B. Eyes deviate away from stimulus, followed by nystagmus and return to midline
   C. Eyes deviate toward stimulus
   D. Eyes deviate toward stimulus, followed by nystagmus and return to midline

2. A 11-month-old boy is brought in by his mother after she noticed a large amount of dark red blood in his diaper. He appears well and has normal vital signs and a benign abdominal examination. Rectal examination is remarkable for blood without an obvious source. Which of the following is needed to confirm the suspected diagnosis?
   A. Abdominal ultrasound examination
   B. Additional history on diet
   C. Apt test
   D. Nuclear medicine scan

3. Which of the following structures is most commonly injured as a result of primary blast injury?
   A. Brain
   B. Lung
   C. Small bowel
   D. Tympanic membrane

4. Which of the following is a common contributing factor in the development of mesenteric ischemia?
   A. Atrial fibrillation
   B. *Campylobacter jejuni* infection
   C. Celiac disease
   D. von Willebrand disease

5. A 62-year-old man with a long smoking history presents coughing up large amounts of blood. He says that it started as flecks of blood in his sputum several weeks earlier. He began coughing clumps of blood earlier in the day and has since filled a coffee cup. Vital signs are blood pressure 180/94, pulse 130, respirations 18, temperature 36.9°C (98.4°F), and oxygen saturation 92% on room air. He has decreased breath sounds. A chest radiograph reveals a right upper lobe mass; Hct is 31%. He coughs up about 5 mL of blood every 15 to 20 minutes. What should be the next step in management?
   A. Arrange outpatient chest CT scanning and followup with oncology
   B. Intubate left mainstem and obtain thoracic surgery consultation for emergent thoracotomy
   C. Obtain pulmonology or thoracic surgery consultation for bronchoscopy
   D. Start transfusion and arrange ICU admission

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**Board Review**

*Board Review* is ACEP’s Gold Standard in self-assessment and educational review. These questions are from the latest edition of *PEER*—*PEER VIII*—which made its debut at Scientific Assembly in October. To learn more about *PEER VIII* or to order it, go to www.acep.org/bookstore.
Risk management pitfalls for cervical arterial dissection

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1. “We did a complete headache evaluation that included a noncontrast head CT and lumbar puncture that had no red blood cells. Her neuro exam is nonfocal. Let’s send her out with tramadol and neurology follow-up.” If the patient has not responded to headache cessation therapy in the ED, consider that a single-center study showed that 20 of 245 (8%) patients with headache or neck pain alone were found to have a cervical arterial dissection in the absence of neurological deficits. One-quarter of the patients with dissection actually had multiple dissections.

2. “She recently started visiting a chiropractor for neck pain. This pain is different from her previous migraines. Her headache sounds like a migraine, with a visual aura, slow onset, and pulsation. She has light sensitivity and is starting to get nauseated. Let’s rule out SAH and see if she gets better with some IV compazine.” Not suspecting cervical arterial dissection in the beginning of the evaluation results in a delay to diagnosis. We have all seen 6 to 12 hours go by while trying to abort the migraine with medications and then an MRI or MRA shows intracranial pathology. At the onset of headache in those found to have carotid dissections, 92% reported an ipsilateral headache, 25% a pulsating headache, and 85% a gradual onset, all classic features of migraine. Migraineurs who develop dissection typically describe a pain that is different from usual, and dissections are found in those who have accompanying aura, nausea, vomiting, photophobia, and phonophobia.

3. “The patient was rear-ended by someone in the grocery store parking lot. We cleared his c-spine, and his collar was removed. He developed a headache and feels “weird.” There is no evidence of seat belt injury or external hematoma on his neck. He had a nonfocal neuro exam, and he has no bruits. The radiology resident is on the phone and wants to cancel the CTA. They are saying he does not meet criteria for requiring a CTA, and since there are no bruits, the study is going to be negative.” Tell radiology that you are not cancelling the CTA order. Although this patient does not have any strong symptomatic indications such as a Le Fort II or III fracture, basilar skull fracture, bruits, or external neck hematoma, and he is awake and alert, his neck was rotated and he may have hit his neck on the seatbelt. Presence of a bruit is not sensitive or specific for carotid stenosis or dissection. Only one-third of patients with carotid dissection have a bruit.

4. “A 14-year-old boy fell off of his bike after hitting a mailbox and then had a seizure. The noncontrast CT head and c-spine were normal. I should do a neurological examination and clear his c-spine.” In pediatric patients, consider a seizure as a manifestation of dissection. If there is clinical suspicion for neck injury followed by a seizure, vascular imaging is warranted.

5. “He had acute onset of right-sided weakness and aphasia. His last known normal time was 2 hours ago. CT ruled out hemorrhage, and CTA showed an extracranial left carotid dissection. I wish we could give IV tPA, but we can’t because that will just extend the hematoma and make things worse.” The patient should be considered for IV tPA as long as he does not have other contraindications to receiving tPA. A few cohort studies have reported that patients with stroke secondary to dissection who received tPA improved compared to those who did not receive tPA. The rate of hemorrhagic complications is low or absent in these studies, and the authors felt the benefits outweigh the potential risks. Alternatively, endovascular therapy has been reported as superior to IV tPA for a proximal carotid dissection with distal MCA occlusion, “tandem lesions.”

6. “The CTA report for the 41-year-old female with Horner syndrome is normal except for a focal stenosis of the extracranial internal carotid artery that is not hemodynamically significant. There is no presence of mural hematoma to suggest carotid dissection, but that cannot be excluded. So her Horner syndrome is probably unrelated.” Not so fast. Sometimes detection of a mural hematoma is missed on either a CTA or MRI T1 fat suppression sequences for various reasons. Further, the resolution of CTA (or especially MRA) limits the ability to clearly see the intimal flap of a dissection. If dissection is suspected on the same side of a patient presenting with Horner syndrome and a focal stenosis is seen, follow-up studies should be obtained. The patient should probably have an MRI of her neck with “fat suppression sequences” or a digital subtraction angiogram.

7. “We should wait to see what interventional radiology says before starting a heparin drip because they may want to place a stent.” Endovascular neurosurgical procedures can be performed if a patient is anticoagulated, on antiplatelet therapy, or both. During procedures, heparin boluses and heparinized saline are used
Risk management pitfalls for appendicitis in children

Pediatric pearls

1. “It’s unlikely that this 2-year-old with persistent vomiting has appendicitis. It’s a more common diagnosis in a teenager.”
Although it is more common for teenagers to be diagnosed with appendicitis, it’s still a possible diagnosis for a 2-year-old child. Since rates of perforation are much higher in this age group, the possibility of appendicitis should always be considered, especially in a child with persistent symptoms.

2. “In order to get a more accurate physical examination, the child should not be given any pain medication.”
Randomized trials have shown that the use of opioid analgesia in children being evaluated for suspected appendicitis does not mask significant findings on abdominal examination or delay diagnosis. It may be easier to have the patient cooperate with the examination if their pain is adequately controlled.

3. “The ultrasound is equivocal and the child’s WBC count is normal. Appendicitis can be ruled out even if the patient has persistent pain.”
A normal WBC count does not rule out appendicitis. An inconclusive ultrasound with persisting symptoms should prompt the emergency clinician to obtain further imaging.

4. “A 16-year-old female with focal right-lower-quadrant pain and guarding has a high pretest probability of appendicitis, so she doesn’t need a pelvic examination.”
In female patients, it is important to keep pelvic infections, ovarian torsion, and other gynecological pathology on the differential. A proper social/sexual history should be obtained, with a complete physical examination as well as pelvic examination.

5. “I shouldn’t involve the surgeon until I’m absolutely sure the child has appendicitis.”
The involvement of a surgical team early on for a child with a likely diagnosis of appendicitis can help streamline diagnostic decisions as well as expedite surgical intervention, if necessary.
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**Nebraska, Omaha:** Excellent compensation, equity ownership, desirable setting. Opportunity for 2013 for BP/BE EM physician at 27,000 volume ED in Council Bluffs, Iowa. This is a highly appealing ED in a suburban town in minutes from Omaha Nebraska. An excellent package is offered with guaranteed hourly rate plus additional incentive, family medical plan, employer-funded pension, CME/experience account, shareholder status at one year with no buy-in, and additional benefits. As Nebraska’s largest city and a leader on many “best cities” lists, Omaha is home to Fortune 500 companies, celebrated jazz and theatre, several universities, and a world famous zoo. For additional informational contact Rachel Kllockow, Premier Health Care Services, (800)406-8118, e-mail rklockow@phcsday.com, fax (954)986-8820.

**Nevada, Henderson and Las Vegas:** Full and part-time opportunities for Pediatric Emergency Medicine Physician. Join an outstanding team of fellowship trained/board certified pediatric emergency medicine physicians at two sites. University Medical Center is a Level I Trauma Center seeing 31,000 pediatric ED pts./yr. with excellent back up, PICU, and 24-hour in-house intensivist coverage. There is also an associated pediatric residency (36 residents). Time will be split with shifts also at St. Rose Dominican Hospital’s Siena Campus, which is situated in an upscale suburban area. EMP offers democratic governance, open books, and excellent compensation/bonus plus shareholder status after one year. Compensation package includes comprehensive benefits with funded pension (up to $28,175 yr.), CME account ($8,000 yr.), family medical/dental/prescription/vision coverage, short and long term disability, life insurance, malpractice and more. Contact Bernhard Beltran at 800.359.9117, e-mail bbeltran@emp.com.

**Nevada, Las Vegas:** St. Rose Dominican Hospitals. Open books, equal profit sharing, equity ownership and no buy-in! Work in modern, highly regarded community hospitals seeing 25,000 – 48,000 emergency patients per year. Emergency Medicine Physicians (EMP) offers democratic governance, open books, and excellent compensation/bonus plus shareholder status after one year. Compensation package includes comprehensive benefits, family medical/dental/prescription/vision coverage, short and long term disability, life insurance, malpractice and more. If you have ever considered living in Las Vegas now is your chance, this rare opportunity will fill quickly, I urge you to contact me, Bernhard Beltran at your earliest convenience directly at 800-359-9117 or email your CV to bbeltran@emp.com for immediate consideration.

**New York, Brooklyn:** Emergency Medicine Physicians Needed. NES Healthcare Group is seeking emergency medicine physicians for Lutheran Medical Center (LMC), Brooklyn, NY. LMC is a Level I Trauma Center and a designated stroke center. Candidates must be BC/BE EM and have current EM experience. Competitive compensation, incentive program, CME allowance and malpractice
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New York, Long Island, Albany area and Cortland: Brookhaven Memorial Hospital is in Patchogue on the southern shore of Long Island and sees 74,000 ED pts/yr. Cortland Memorial Hospital is a modern, full-service facility situated in the Finger Lake Region between Syracuse and Ithaca (34,000 ED pts/yr). Albany Memorial Hospital has a new ED (44,000 pts/yr) and hosts EM resident rotations, while Samaritan Hospital in Troy is a respected community hospital minutes from Albany seeing 46,000 ED pts/yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson, (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

North Carolina, Charlotte: EMP is partnered with 8 community hospitals and free-standing EDs in Charlotte, Gastonia, Lincoln, Pineville and Statesville. A variety of opportunities are available in urban, suburban and smaller town settings with EDs seeing 22,000 -104,000+ pts/yr. EMP is an exclusively physician owned/managed group with open books, equal voting, equal profit sharing, equity ownership, funded pension, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd. NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

North Carolina, Kinston: Located in the center of eastern North Carolina, Kinston is less than 60 miles to the east are some of the most beautiful beaches of the Carolina coast and 35 miles from Greenville. 200-bed full-service community hospital treats 41,000 ED pts/yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact Ann Benson (careers@emp.com), Emergency Medicine Physicians, 4535 Dressler Rd, NW, Canton, OH 44718. 800-828-0898 or fax 330-493-8677.

North Carolina, New Bern: Respected 313-bed regional medical center located at the intersection of the Trent and Neuse Rivers just off the central coast. 74,000 ED pts/yr. Outstanding partnership opportunity includes equal profit sharing, equity ownership, funded pension, open books, full benefits and more. Contact...
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Ohio, Dayton: BP/BC EM physician sought to join solidly established, equity-ownership group at 40,000 volume ED in north Dayton suburb. Enjoy life & work with the appeal of 9-hour shifts, collegial environment and outstanding physical plant. Excellent package includes guaranteed hourly plus additional incentive, malpractice, employer-funded pension, family medical plan, CME, and shareholder opportunity at one year with no buy-in. Premier’s outstanding record of physician and client retention, plus stable risk management program add to the appeal. For additional information contact Greg Felder, Premier Physician Services, (800) 726-3627, ext 3670, e-mail gfelder@premierdocs.com, fax CV (937)312-3671.

Ohio, Findlay: Premier Physician Services announces a new opportunity in 40,000 volume ED. Located 45 minutes south of Toledo, this Level III Trauma Center is a Top 100 Hospital with ED. Located 45 minutes south of Toledo, this Level III Trauma Center is a Top 100 Hospital with annual census 60k. Excellent coverage and great compensation make this opportunity ideal. Package includes guaranteed hourly plus RVU and additional incentives, malpractice, employer-funded pension, family medical plan CME/expense account, and shareholder opportunity at one year with no buy-in. Contact Kim Rooney, Premier Physician Services, (800)726-3627, ext. 3674, krooney@premierdocs.com, fax (937)312-3675.

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Oregon, Salem: Partnership opportunity with independent, democratic, and well established group at 95K annual volume Salem Hospital, Level II trauma center with excellent specialty support. New ER built in 2009, sophisticated EMR, extensive career opportunities. Benefits include scribes, flexible scheduling, CME stipend, malpractice, medical, 401K, and more. Must be EM BC/BE. Salem is located 45 minutes south of Portland, in the

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Pennsylvania, Johnstown: The largest healthcare provider in west central Pennsylvania, Conemaugh Health System is currently seeking an ABEM or AOBEM Board Certified, ATLS, ACLS, and PALS trained Emergency Medicine Physician to practice and teach highly motivated ED residents at one of its flagship hospitals Memorial Medical Center. Memorial Medical Center is located just 70 miles east of Pittsburgh in Johnstown, an area with cultural, recreational and family-friendly opportunities. Memorial Medical Center, ranked nationally in the top 5% for clinical excellence, is a teaching facility with a Level 1 Trauma Center and a Level 3 Neonatal Intensive Care Unit. This opportunity offers a generous salary with full benefits that include paid malpractice insurance and vacation time. Call Mary Lynn Mahla (814) 534-3221 or email her at mmahla@conemaugh.org with interest.

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

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Pennsylvania, Multi Area: Emergency Medicine positions with UPMC Hamot in Erie, Warren, Kane and St. Marys, Pennsylvania. Opportunity in Erie at 412-bed level II trauma center. EM volume over 66,000 patients per year and growing. EM residency onsite. Also rural positions in 30 to 90 bed acute care facilities located in the Allegheny Mountains. Positions in Erie require residency trained Emergency Medicine Physicians. Positions in region will accept experience in other specialties. Excellent compensation and productivity bonus. Contact Sue McCreary at 814-877-3403 or mcerearsy@upmc.edu.

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✓ = Free
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