In previous decades, the therapies for congestive heart failure (CHF) were limited both with respect to options and their ability to modify the underlying disease process. Recent advances in mechanical assist devices and cardiac transplantation have increased the outlook and longevity of patients suffering from CHF. Over 9,000 continuous flow left ventricular assist devices (LVADs) were implanted between 2006 and 2013.1 An unavoidable result of these advances is an increasing incidence of their complications. This review will address the initial approach and management to a patient who presents with a cardiac mechanical assist device in the emergency department.

Patients with refractory advanced heart failure who have failed medical therapy qualify for consideration of a LVAD as a bridging therapy while they undergo evaluation for cardiac transplant.
EXERTIONAL HEAT STROKE

WHEN THEIR BODY TEMPERATURE RISES TO DANGEROUS LEVELS, IT CAN QUICKLY BECOME A LIFE-THREATENING SITUATION.

Exertional heat stroke (EHS) is a hyperthermic and hypermetabolic crisis that creates an immediate cascade of CNS and other serious complications. If core body temperatures remain elevated, EHS has been shown to cause long-term neurologic damage and death. 1-3

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Exertional heat stroke (EHS) is a hyperthermic and hypermetabolic crisis that creates an immediate cascade of CNS and other serious complications. If core body temperatures remain elevated, EHS has been shown to cause long-term neurologic damage and death.¹⁻³

LEARN THE SIGNS. DIAGNOSE IN TIME. VISIT WWW.FIGHTTHEFIREINSIDE.COM
An Alternative to Benzos and Chill

Regarding the article “Benzos and Chill” in the December 2016 ACEP Now, I believe that Dr. Trafficant and Dr. Kashani failed to make some crucial points regarding toxin-induced hyperthermic disorders. Buried at the end of the article was a suggestion that “…paralysis with a non-depolarizing paralytic agent alone with mechanical ventilation for better control of muscle hypermetabolism” represents an option for severe toxicity in patients who do not respond to agents such as benzodiazepines.

I think this neuromuscular blockade option should be considered early, and not late, when patients present with severe hyperthermia, which may be medication-related.

The cases presented by the authors were illustrative and the mechanisms stated for hyperthermia due to malignant hyperthermia (MH), neuroleptic malignant syndrome (NMS), and serotonin syndrome (SS) were consistent with current knowledge.

However, in the emergency department, patients often cannot provide data to allow us sufficient clarity to determine which of these three problems are in play when hyperthermic patients present for treatment. Often these patients are obtunded due to their illness. Indeed, their helpful summary, Table 1 on page 8, noted that altered mental status is to be expected for all three conditions. Further, the muscle symptoms they accurately listed in Table 1 may be difficult to sort out for some emergency practitioners.

Therefore, it is often totally unclear whether to try medications such as dantrolene for possible MH, dopaminergic agents such as bromocriptine for NMS, or cyproheptadine or chlorpromazine for SS.

Further, drugs such as prochlorperazine, which have antiserotonergic properties of potential use for SS, can exacerbate the dopamine deficiency of NMS due to the dopaminergic action of prochlorperazine.

I submit that the most useful way forward when presented with a severely hyperthermic patient in whom a drug is a suspected cause is to immediately proceed with a neuromuscular paralytic with a non-depolarizing neuromuscular blocker once a dose or two of a benzodiazepine fails, an event that is not uncommon.

This is how I have handled several hyperthermic emergencies in my 28-year emergency medicine experience, with no adverse effects, with the cause for hyperthermia was unclear.

With neuromuscular blockade, one immediately stops the source of the hyperthermia, and it does not matter what mechanism is in play. The search for the mechanism may be successful in the emergency department, but often does not become solved until after admission to an intensive care unit. Thus, to try drugs to stop the hyperpyrexia can be rather like playing darts while blindfolded.

Further, one can liken stopping the hyperthermia due to MH, NMS, and SS to a firefighter trying to extinguish a fire due to a ruptured gas main. One can spray fire retardant at the gas main in an attempt to stop the fire. However, if the gas flow is too great or if the wrong agent is used to try to extinguish the fire, failure will ensue.

On the other hand, if the firefighter simply turns the gas valve to “closed” for the ruptured gas line, the fire will stop.

Similarly, when we reach for rapid sequence or delayed sequence endotracheal intubation and non-depolarizing neuromuscular blockade, we stop the heat production at the source, rather than trying to guess which “extinguisher” drug will actually be effective.

The best way to put out a fire is to shut off its source. The best way to shut off hyperthermia is to eliminate its source by chemical paralysis.

Thank you for considering my views.

- Gary M. Gaddis, MD, PhD
  St. Louis, Missouri

Taking Responsibility for Blood Cultures

I feel that your article “[Admit or Not?”, May 2017] in ACEP Now was a bit too kind toward physicians who order blood cultures on patients and discharge them from the ED. Your case example was a poor one on which to take your stand, and the plaintiff expert in this case was a terrible witness.

In my opinion, ordering a blood culture and discharging a patient to home care is a recipe for disaster. I’ve been involved in at least two cases resulting in serious disability from staphylococcal spinal epidural abscess in patients whose back pain was the trigger for ordering a blood culture. As usual, other factors also played a role, but had either patient been admitted, the diagnosis would have been made while there was still time to do something about it.

But the bigger problem is that physicians must 1) know the risk entitled in sending a patient home with a pending blood culture, and 2) document one’s rationale for discharging a patient with pending blood cultures. It’s okay to be wrong—as in the case you presented—but not to document your medical decision making in a risky situation like this is below the standard of care.

- Charles A. Pilcher, MD, FACEP
  Kirkland, Washington

ACEP Now Wins Award

ACEP Now has received an APEX Award of Excellence for writing for “In The Aftermath of Gunfire” (January 2016), a profile of an emergency physician who was called on to treat victims of a mass shooting in his hometown. You can read the award-winning article at www.acepnow.com/article/emergency-physician-recounts-caring-for-oregon-mass-shooting-victims.

The annual APEX Awards are given by Communication Concepts to recognize excellence in writing, digital content, graphic design, social media, public relations, and marketing.
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THE ACCIDENTAL NEGOTIATION

Poor national maternity leave policies required me to negotiate my own

by SARAH HOPER, MD, JD, FACEP

W

ile I was pregnant, my husband and I decided to move closer to family. My due date was February 2017. I had planned to use my six weeks of paid maternity leave from Vanderbilt University (where I was an attending), complete the academic year, and start my new job in July of 2017. Then I had a miscarriage...

After the miscarriage, it was impossible to conceive again, deliver a baby, and complete maternity leave before July 2017. However, I already had two job interviews set up with that timeline in mind. If I took a new job and was pregnant, I would give birth before working a full year. That would mean no Family and Medical Leave Act (FMLA) protection for unpaid maternity leave, and forget paid leave. I called to cancel both of the interviews. I believed it would be better to stay at Vanderbilt, where I had already earned paid maternity leave.

The first job interview was at a community shop that did not offer benefits. I called and tried to explain I could not leave my job with paid maternity leave for a job with no benefits and no maternity leave. I thought my reason for cancelling the interview was clear, but my contact asked me to further explain my concerns. The conversation went something like this: “I cannot come pregnant to a job that is going to pay me $50,000 less while I make partner, that will cost an extra $13,000 per year for health insurance, and leave behind six weeks of paid maternity leave, which is a $30,000 benefit.”

Now they understood the dollars-and-cents of the situation. I doubt this predominately male group had ever been confronted with these issues before and therefore had never thought about them or needed to address them.

The second job interview was at another academic institution. Again, it would be a pay cut, but I would have fantastic health insurance. I would get six weeks of paid leave, but there was a catch. There, women accrued paid sick days for maternity leave. It takes about one year to accrue six weeks of leave. I would be allowed to use sick time I had not yet accrued. Then as I earned sick time, it would be used to pay back my maternity leave debt. However, if I got sick after the baby was born and needed paid leave, there would not be any available.

Inadvertently, I negotiated for paid maternity leave at the community shop. I was asked several times when I would be able to start, and I consistently answered I could not leave my job with paid maternity leave and health insurance while I was planning to get pregnant, so I did not know when I could start. This resulted in a contract offer with an increased signing bonus and six weeks of paid maternity leave.

Lease Policy in the United States

Did you know that the United States is one of only six countries out of 193 in the United Nations that do not mandate paid maternity leave? We see in the company of Papua New Guinea, Suriname, and a few South Pacific Islands. Unfortunately, only 12 percent of US workers in the private sector can get paid leave through their employers.1 Currently, women are the primary breadwinners in 40 percent of US households with children.2 As a result, 25 percent of surveyed women in 2012 reported taking two weeks or fewer off because they could not afford to take more time.3

After World War II, with the devastation of the European workforce and infrastructure, United Nations representatives agreed to a minimum of 14 weeks of paid leave at two-thirds of a worker’s salary. Now, 50 countries provide six months or more of paid leave.3 Most countries are financing paid leave through employment-related social insurance, similar to Social Security or unemployment, but others require the employer to pay the benefit.4

In 1993, the United States implemented FMLA, which provides 12 weeks of unpaid leave if you have worked more than 1,250 hours (one year full-time) at a company with at least 50 employees. Forty percent of American workers do not meet these requirements.5 Some states and cities have taken matters into their own hands. California’s Paid Family Leave provides six weeks of leave at 55 percent of a worker’s wage if the worker is eligible for disability.6 San Francisco has mandated that employers pay the remaining 45 percent of an employee’s salary capped at $20 per hour of the statewide average weekly wage. New Jersey and Rhode Island have similar programs offering partial paid leave for six weeks.7 Paid maternity leave is linked to better health for mothers and babies. A 2014 study showed that women who received 12 weeks or more of paid maternity leave had lower rates of postpartum depression.8 The Centers for Disease Control and Prevention reports that women with 12 weeks of paid leave are more likely to breastfeed for six months.9 Paid maternity leave is also linked to a lower infant mortality rate.10

Emergency medicine remains a male-dominated specialty with a majority of male leadership. I believe most men have never thought about these issues. Likewise, women often believe it is their choice to have children and, therefore, children are solely their burden to bear. But the birth of the next generation is essential to the survival of our society and economy. The birth of children is a burden that must be carried on the shoulders of both men and women. As such, we should support paid maternity leave and paternity leave.

Fathers who take paternity leave have higher satisfaction with parenting and increased engagement in caring for their children.11,12 Children with engaged fathers have fewer behavioral problems and better mental health outcomes. Also, longer paternity leave and increased time spent with fathers caring for very young children are associated with higher cognitive test scores in children.12,13

We should all be enabled to take part in the birth and early days of our children’s lives—for our health and the health of the next generation.

References


DR. HOPER is an emergency physician at East Central Iowa Acute Care at UnityPoint St. Luke’s Hospital in Cedar Rapids, Iowa.
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MEET THE PRESIDENT-ELECT CANDIDATES

Vidor Friedman, MD, FACEP (Florida)
Current Professional Positions: Florida Emergency Physicians, Maitland
Internships and Residency: Emergency medicine residency, Michigan State University, East Lansing
Medical Degree: MD, University of Cincinnati College of Medicine (1986)

Candidate Response
✓ Over the past five years, the President’s activities have focused on being the Chief Advocacy Officer for the College. This advocacy can be seen both in the political realm and in increased collaborative efforts with other entities in the health care space. Alliances with other specialties within the house of medicine led to the recent American Medical Association resolutions regarding out-of-network care and the opioid crises. Partnerships with organizations, including the West Health Foundation and the John A. Hartford Foundation, have supported our engagement in geriatric emergency medicine. In all of these efforts, the President of the College has been both content expert and public spokesperson for the College.

I have been a staunch advocate for emergency medicine for over 15 years, this is not new territory for me. As Governmental Affairs Chair for the Florida College of Emergency Physicians, and as President of the chapter, I led our advocacy efforts in Florida for almost a decade. I was the Federal Governmental Affairs Committee Chair during the Affordable Care Act deliberations, and was one of the architects behind the creation of the Emergency Medicine Action Fund (EMAF). EMAF was created to increase resources for regulatory lobbying in response to the passage of the ACA and is essential as we face current and future health care reform initiatives. The increased collaboration from having diverse elements from within our community all sitting at the table and discussing our collective needs was as important a win to me as the success that EMAF has become.

As President, I would work to improve the feedback loop from our chapter leadership and the Council by engaging our social media platforms and enhancing our survey feedback tools. This will help to align ACEP’s initiatives with our members’ priorities.

✓—Vidor Friedman, MD, FACEP

Hans House, MD, FACEP (Iowa)
Current Professional Positions: Professor, emergency medicine, University of Iowa; vice chair for education, Department of Emergency Medicine, University of Iowa, Iowa City
Internships and Residency: Combined internal medicine–emergency medicine residency, Olive View–UCLA Medical Center, Sylmar, California
Medical Degree: MD, University of Southern California (1997)

Emergency Physicians, and as President of the chapter, I led our advocacy efforts in Florida for almost a decade. I was the Federal Governmental Affairs Committee Chair during the Affordable Care Act deliberations, and was one of the architects behind the creation of the Emergency Medicine Action Fund (EMAF). EMAF was created to increase resources for regulatory lobbying in response to the passage of the ACA and is essential as we face current and future health care reform initiatives. The increased collaboration from having diverse elements from within our community all sitting at the table and discussing our collective needs was as important a win to me as the success that EMAF has become.

As President, I would work to improve the feedback loop from our chapter leadership and the Council by engaging our social media platforms and enhancing our survey feedback tools. This will help to align ACEP’s initiatives with our members’ priorities. As your President and Chief Advocacy Officer, I will ensure that those priorities become results.

✓—Hans House, MD, FACEP

William Jacobi, MD, FACEP

JoHN J. ROGERS, MD, CPE, FACEP

Platform-Statements

The following are candidates for the office of President-Elect. They responded to the following questions:

How has the role of ACEP President evolved over the past five years, and how will your abilities help in that role? What will you do as President to ensure that your initiatives meet member needs?
Candidate Response

The ACEP President is the spokesperson of the college. Over the last five years, ACEP’s media relations team has done an incredible job of increasing the number of on-camera media interviews. The Washington, D.C., office has greatly increased the opportunities for in-person small group meetings with politicians. As the face and voice of the College, the President must be an articulate and effective public speaker. I am an experienced, dynamic, and charismatic speaker who can convey the energy and enthusiasm of our diverse specialty.

As President, I will focus on reducing burnout in our members by addressing system changes in our workplace. As work environments, emergency departments are dangerously prone to normalizing conditions that radically deviate from what is acceptable. The constant frustrations generated by enduring the sense of powerlessness and dysfunction in today’s health care system are cutting short the careers of brilliant and caring physicians.

—Hans House, MD, FACEP

William Jaquis, MD, FACEP (Maryland)

Current Professional Positions: Chief, integrated services, LifeBridge Health (emergency medicine, radiology), Baltimore; chief, emergency services, LifeBridge Health; regional medical director, EmCare Internships and Residency: Emergency medicine residency, Mt. Sinai Hospital, Cleveland Medical Degree: MD, Medical College of Ohio (1989)

Candidate Response

The past five years have brought significant change in health policy, market consolidation, and the role of social media to emergency medicine. The role of the President has changed to meet those needs in two major areas. First, responding promptly to issues that would dramatically alter care is paramount, and teams led by the Presidents have adjusted accordingly. Failure to address prudent layperson and fair coverage issues would otherwise lead to broad-based changes to access to care. Second, many of the current issues occur at a state level, and the presidency has needed to assist those states with national resources to mitigate state-based regulatory and legislative challenges.

My 25 years of EM experience has been clinical and in leadership. At the local level, leading four different departments in two states has advanced my ability to listen, learn, and move forward to outcomes. At the national level, my broad-based experience in ACEP’s many committees, sections, and task forces has engaged a wide range of members, and I have both learned from them and established relationships that will assist me in the presidency. My learning has also been formal as I work through a degree in health care quality and safety. Listening and learning are the tools that will help me regard less of what the needs are.

As President, my initiatives are those of the members, expressed individually, through the Chapters, and through the Council. My experience through

“Responding promptly to issues that would dramatically alter care is paramount, and teams led by the Presidents have adjusted accordingly. Failure to address prudent layperson and fair coverage issues would otherwise lead to broad-based changes to access to care.”

—William Jaquis, MD, FACEP

John J. Rogers, MD, CPE, FACEP (Georgia)

Current Professional Positions: Co-department medical director, Coliseum Northside Hospital, Macon, Georgia; staff ED physician, multiple locations throughout Georgia Internships and Residency: Internship, Department of Surgery, University of Iowa, Iowa City; residency, Department of Surgery, Medical Center of Central Georgia (now Mercer University), Macon Medical Degree: MD, University of Iowa (1978)

Candidate Response

The President’s primary duty is to speak for the College. The other main responsibility is to organize the work of our committees and appoint a task force when needed. It has been so since the founding of the College. What has changed, especially recently, is the scope of these duties.

The issues, problems, and unexpected crises that arise over a President’s term have expanded both in number and complexity, often requiring a rapid response. In addition, the number of committees and work of the College has grown exponentially. Being President requires constant attention and action.

My ability to speak, to persuade, and to inspire, as well as my skills at organizing and directing the work of others, should be self-evident by my service in multiple positions of leadership, as a member of the ACEP Board, Chair of the ACEP Board, EMP Chair, Chapter President, Delegate to the Medical Association of Georgia, and multiple terms as the President of the medical staff of my hospital. These are skills for which I am known and can only be confirmed by those who have witnessed them.

The President’s initiatives should match the concerns expressed by our members, the Council, and our Strategic Plan, as established by the Board. Wisdom is not always found in the majority. It is often first revealed by the minority, and has always been so. Thus, the importance of listening to and seeking out their opinions.

—John J. Rogers, MD, CPE, FACEP
K-TASTIC

Low dose: a new era for ketamine

by REID K. SMITH, MD; ANNE MESSMAN, MD, FACEP; AND JOHN WILBURN, MD, FACEP

Amid a national opioid epidemic, there is a search for other effective analgesics in the emergency department, both to avoid providing a “fix” as well as to avoid the dangerous side effects of opioids. Recently, ketamine has begun to answer this need. When used at doses greater than 1 mg/kg IV, ketamine has amnestic, sedative, and profound analgesic properties. However, recent research indicates that ketamine’s analgesic properties remain at significantly lower doses. In fact, one review of combat analgesia in the US military characterized ketamine as “an almost ideal analgesic because of its profound pain relief, its potentiation of opioids, its role in preventing opioid hyperalgesia, and its large margin of safety.” This article explores the evidence for low-dose ketamine (LDK) for analgesia in the emergency department.

Efficacy of Analgesia

LDK has been shown to decrease pain scores, both in conjunction with morphine and as a stand-alone treatment. It is non-inferior to morphine at 0.3 mg/kg, with some studies using a uniform 10 mg or 15 mg dose. Most controlled studies dose ketamine at 0.15 or 0.3 mg/kg as these doses are well-studied in the postoperative anesthesia literature, and this dose range is appropriate for ED use. Whether weight-based dosing is required or a uniform dose is acceptable remains unclear. Ahern and colleagues followed initial doses with a 20 mg/hour infusion, which appeared to be superior to push-dose-only LDK, although there was no control group.

Ketamine is sometimes used as a street drug, and recreational effects traditionally start around 0.4 mg/kg, so higher dosing runs the risk of placing your patient in a psychedelic state, where they may experience some hallucinations or even a partially dissociated state that can be quite distressing to those not seeking that experience. A large-scale, double-blind, randomized, controlled trial is still needed to effectively determine an optimal dose, whether weight-based dosing is required, and what rate of continuous infusion should be used.

Side Effects

There is a major disconnect between physicians’ perceptions of LDK side effects and reality. In fact, anticipation of emergence reactions is the number-one reason physicians fear the use of LDK in the emergency department. However, emergence reactions are nearly impossible with properly dosed LDK, and no true emergence reactions were reported in any study evaluating LDK. Another common fear of ketamine use is evaluation of intracranial pressure (ICP). However, ketamine does not increase ICP even at dissociative doses. Furthermore, it does not inhibit respiratory drive to the point of apnea at analgesic doses and only rarely in procedural sedation doses. Up to hundred-fold (50 mg/kg) overdoses have been reported with no adverse events other than prolonged, otherwise typical sedation. The two most common side effects that do occur are dizziness and mild dysphoria, sometimes referred to as psychotomimetic reactions. Mild dysphoric events are far shorter and less severe than true emergence reactions. The incidence of these ranges from 3 percent to 15 percent, depending on the study’s definition, reporting, and dose.

Dosing

Given the markedly different effects between ketamine dosed at dissociative and analgesic doses, attention to dosing is crucial. LDK has been studied from 0.15 to 0.3 mg/kg, with some studies using a uniform 10 mg or 15 mg dose. Most controlled studies dose ketamine at 0.15 or 0.3 mg/kg as these doses are well-studied in the postoperative anesthesia literature, and this dose range is appropriate for ED use. Whether weight-based dosing is required or a uniform dose is acceptable remains unclear. Ahern and colleagues followed initial doses with a 20 mg/hour infusion, which appeared to be superior to push-dose-only LDK, although there was no control group.

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Occasional tendency to cause brief feelings of unreality has, anecdotally, reduced the incidence of dysphoric reactions. This is likely because patients who expect such feelings are far less alarmed when they do occur and view them as a brief side effect rather than an unexpected effect that could portend an unintentional overdose. Interestingly, a recent study compared LDK intravenous push over 5 minutes to a 15-minute short infusion in 100 mL of normal saline; dysphoria was significantly reduced in the short infusion group, while no differences were seen in analgesia. This would seem to confirm the anecdotal experience that slower administration decreases side effects.

Dizziness is, by far, the most common adverse drug event, reported in roughly 20 percent of patients in randomized controlled trials polling patients about side effects. Generally, this incidence increases in a dose-dependent fashion in the literature. However, this may have as much to do with differing trial designs as it does with drug effects.

In one large (n=30), retrospective, consecutive case series, 6 percent of patients experienced an adverse event documented in the chart. Seven patients (1.5 percent) developed transient hypoxia. Four of those also received hydromorphone, and all but one (chronic obstructive pulmonary disease requiring bilevel positive airway pressure) resolved with 2 L of oxygen via nasal cannula. Eighteen patients (3.5 percent) developed psychiatric disturbances, but only three received benzodiazepines. The disposition was unalterable in all. Five patients (1 percent) experienced emesis. While this study was limited by its retrospective design, its strength is that, presumably, only clinically relevant adverse drug events were documented. Most important, any incidents of true emergence phenomenon, laryngospasm, apnea, or cardiac arrest would certainly have been detected if they occurred. None were detected in this or any other study.

Discussion

A comprehensive review of the literature reveals that LDK is safe to use. It is most efficacious between 0.15 and 0.3 mg/kg as an intravenous push, but slow infusions show promise. More than 10 studies, not all reviewed here, uniformly demonstrate that LDK is noninferior to morphine when compared head-to-head. Benign side effects are common and include dizziness and dysphoria, as opposed to the nausea and respiratory depression seen from morphine. LDK is indicated any time patients are in pain but is especially appropriate for opioid-tolerant patients, recovering addicts, or patients with a tenacious respiratory status or hypotension. Because of LDK’s opioid-potentiating effects, it is also appropriate and safe to use in patients with acute pain refractory to opioid treatment.

References

The questions I get asked most are, “How do you treat cellulitis? Do I need to cover methicillin-resistant Staphylococcus aureus (MRSA)?”

With the emergence of community-associated MRSA as the most common cause of purulent skin infections in the United States, treatment of cellulitis (without a wound or discharge) has veered toward combination therapy of patients with a drained skin abscess (most caused by MRSA) was associated with better outcomes among patients followed for four to six weeks. Five-hundred mostly adult patients with cellulitis were randomized to receive either oral cephalexin (500 mg QD) plus placebo or cephalexin (500 mg QD) plus TMP-SMX (2 DS BID) for seven days. This was “pure” cellulitis without a wound or drainage. As you can see from Table 1, outcomes were similar between the groups in terms of initial cure rates, recurrent infections, and additional drainage procedures. Of interest was that among the minority who failed in each group, some developed abscesses or wounds that grew MRSA. This suggested that MRSA played a role in some cellulitis cases, but overall, adding an antibiotic with MRSA activity did not improve outcomes.

I am now most frequently asked, “Do you really work with Dr. Greg Moran?” Yes, so for this article, I interviewed Gregory J. Moran, MD, at the department of emergency medicine and division of infectious diseases at Olive View–UCLA Medical Center, David Geffen School of Medicine at UCLA in Los Angeles, who was the paper’s first author.

BT: Greg, is it true that after your landmark 2006 New England Journal of Medicine article describing the emergence of MRSA, people started calling you “Mr. SA”?

GM: That’s one of the nicer things they call me. I prefer that to, “Vo, Pus-Dawg!”

BT: What made this new study so awesome that people will frequently quote you?

GM: There aren’t many studies of commonly used generic antibiotics because pharma only funds trials of newer and more expensive drugs, so props to the NIH. Unlike one previous similar trial by Dr. Dan Pallin, this study was large enough to answer the question with some confidence. Also, we defined specific failure criteria rather than leaving it to the clinician’s judgment and allowed up to a 25 percent increase in erythema size in the first 48 hours since many successfully treated patients may initially worsen before improving.

BT: How should this trial’s results affect ED practice?

GM: Cephalexin alone for cellulitis? No need to routinely add a second (MRSA) antibiotic. We hope that this study will lead to a reduction in unnecessary antibiotic use.

BT: Finally, what do you make of the MRSA cases among the failures? Are there any exceptions when you might cover for MRSA?

GM: This study does not exclude the possibility that there’s a minority of patients who could benefit from MRSA treatment. About 9 percent of all participants had treatment failure due to MRSA, but this occurred in the same proportion in each treatment group and thus was not prevented with TMP-SMX treatment. We suspect some participants had small abscesses, undetected by ultrasound, which required drainage. While I use cephalexin alone for most cellulitis, I add TMP-SMX for patients with any purulent drainage (excluded from this trial), a history of recurrent abscesses and what looks like folliculitis (commonly caused by MRSA), and patients who are very ill.

BT: Thanks, Pus-Dawg! That means one fewer antibiotic prescription to write and one fewer for my patient to take.

References

DR. TALAN is professor of medicine in residence (emeritus) at the David Geffen School of Medicine at UCLA, chairman emeritus of the department of emergency medicine, and faculty in the division of infectious diseases at Olive View–UCLA Medical Center in Los Angeles. Illustration by ADAM TALAN. Dr. Talan’s son, who obtained his degree in illustration from Academy of Art University in San Francisco and currently works in Los Angeles. See more of his work and contact him at adamtalan.com.

Table 1: Effectiveness of Adding a MRSA-Targeting Antibiotic to Cellulitis Treatment

<table>
<thead>
<tr>
<th>OUTCOME</th>
<th>CEPHALEXIN PLUS TMP/SMX (N=218)</th>
<th>CEPHALEXIN PLUS PLACBEO (N=193)</th>
<th>DIFFERENCE</th>
<th>95% CI OF DIFFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical cure (no new antibiotics) 7–14 days after treatment</td>
<td>83.5%</td>
<td>85.5%</td>
<td>-2.0</td>
<td>-9.7 to 5.7</td>
</tr>
<tr>
<td>Composite cure (no new antibiotics or drainage procedures) 7–14 days after treatment</td>
<td>73.4%</td>
<td>77.2%</td>
<td>-3.8</td>
<td>-12.6 to 5.0</td>
</tr>
<tr>
<td>New infection through 4–6 weeks after treatment</td>
<td>6.0%</td>
<td>9.3%</td>
<td>-3.4</td>
<td>-9.0 to 2.3</td>
</tr>
</tbody>
</table>
High Impact at the Team Ryan Fundraiser

ACEP and NEMPAC create opportunities for leaders to meet with key legislators, regardless of party affiliation—as when we recently shared ACEP’s vision with Speaker Ryan.

by REBECCA PARKER, MD, FACEP

The value of access to legislators cannot be understated, and a strong political action committee (PAC) provides such access. NEMPAC was a co-chair of a May 19, 2017, fundraiser for Speaker of the House Paul Ryan (R-WI), held in Lake County, Illinois. Our role as co-chair provided us access to all three stages of the event.

1. First was a closed event for the co-chairs only, with Speaker Ryan and 15 others in a boardroom for 45 minutes. Co-chairs represented a very broad range of business interests, including health care. Health care and taxes were the key topics discussed. The American Health Care Act (AHCA) had just been passed by the House and was awaiting consideration by the Senate.

2. The second stage was a reception with Speaker Ryan and several Republican Illinois House members: Congressmen Mike Bost, Rodney Davis, Randy Hultgren, Adam Kinzinger, Darin LaHood, Peter Roskam, and John Shimkus. In total, there were about 60 attendees.

3. Finally, there was a dinner with the Speaker and the House members, along with about 45 people. This was set up in a square with active discussion and an invitation to participate, all facilitated by Speaker Ryan.

In the first meeting, we covered the AHCA, and I individually spoke to Speaker Ryan about the prudent layperson standard controversy in Missouri and the importance of emergency services as essential health benefits in any health care plan. He was aware of these issues as ACEP’s Washington, D.C., staff had already briefed his staff.

In the second and third meetings, I was able to discuss the importance of coverage and Medicaid and also the opioid crisis, including our solutions such as the Alternatives to Opioids (ALTO) program. I was proud to serve and represent our membership and specialty. However, access comes before an opportunity to influence. I was impressed by NEMPAC’s ability to gain access at a high level with such high impact. I was impressed that Speaker Ryan was very familiar with the prudent layperson standard issues in Missouri. Although there are many important issues raised by many constituents, our outstanding D.C. staff and our strong voice of many, represented by NEMPAC, make today’s issues of emergency medicine the priorities of Washington law-makers.

UP NEXT
September issue: Jon Mark Hirshon, MD, MPH, PhD, FACEP, bends the ear of U.S. Senator Ben Cardin (D-MD).

DR. PARKER is President of ACEP, an attending emergency physician with West Suburban Medical Center in Oak Park, Illinois; senior vice president of Envision Healthcare; and president of Team Parker LLC, a consulting group. She is also a clinical assistant professor at the Texas Tech El Paso department of emergency medicine.
The patient's presentation needs to match the coagulation. The interpretation isn't enough. Exercise patience when considering the use of anticoagulation leading to overdiagnosis, we must recognize the limitations of CTPA. Conventional wisdom and current evidence have informed us that without proper risk stratification for low-risk patients, PE is pursued when it should not be. Just with shopping, when you look, you find, and when you find, you buy. With CTPA, when we look, we find, and when we find, we treat. Thus, we know we need to be looking less often.

Conventional wisdom has also led us to the practical question of whether all diagnosed PEs (especially isolated subsegmental PEs) are clinically relevant and worthy of anticoagulation. However, Hutchinson et al have taken this discussion to a new level. They set aside the concept of clinical relevance to answer the question of whether such radiographic PEs are truly PEs at all.

The authors performed a retrospective review of 174 patients with CTPAs positive for PE. They performed blinded reviews of these studies by chest radiologists, comparing them to initial readings by general radiologists. The overall discordance rate was 25.9 percent. In other words, one-quarter of the PEs diagnosed on CTPA were overinterpretations and not even radiographic PEs. When the discordance rate was broken down further, the story gets even better. For solitary PEs, the discordance rate was 46.2 percent, but for multiple PEs, it was 13.1 percent. This implies that an elderly patient with a CT pulmonary angiogram showing PE may have a lower rate of PE than one reporting multiple PEs.

Myth 1: CTPA Is the Incontrovertible Standard for PE

Today’s imaging standard for pulmonary embolism (PE) is CT pulmonary angiogram (CTPA). However, in the context of overinvestigation leading to overdiagnosis, we must recognize the limitations of CTPA. Conventional wisdom and recent evidence have informed us that without proper risk stratification for low-risk patients, PE is pursued when it should not be. Just with shopping, when you look, you find, and when you find, you buy. With CTPA, when we look, we find, and when we find, we treat. Thus, we know we need to be looking less often.

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Myth 2: Plain Films Are Good Enough for Blunt Pelvic Trauma

What is good for the goose is good for the gander, excluding the elderly trauma patient.

Plain radiographs have been notoriously insensitive for posterior pelvic ring and sacral fractures. In the elderly, there is a high mortality rate associated with prolonged immobilization for pelvic fractures. Furthermore, recent advances in orthopedics have expanded the potential treatment options for sacral fractures, which makes their detection that much more important.

Schicho et al performed a retrospective review of 233 consecutive patients (75 years or older) who presented to a level I trauma center with symptomatic blunt pelvic trauma. Only six plain films showed a sacral fracture compared to 56 of CTs performed. The sensitivity, specificity, negative predictive value, and positive predictive values of plain films for sacral fractures were 10.5 percent, 99.4 percent, 77.8 percent, and 85.5 percent, respectively, and for public bone fractures they were 63.7 percent, 90.3 percent, 76.8 percent, and 84.3 percent, respectively. Sacral fractures were associated with pubic bone fractures in 75 percent of cases and with acetabular fractures in 23.3 percent. The average age for those with sacral fractures was 83 years, and 88 percent were women.

Especially in the elderly with symptomatic blunt pelvic trauma, CT may be high-yield and very useful. Those at greatest risk were women in their 80s. In high-risk symptomatic patients, the insensitivity of plain films questions their use at all. When it comes to the elderly pelvis, CT may be the single most important test to order.

References

DR. KLAUER is an ACEP Board member; chief medical officer–emergency medicine, chief risk officer, and executive director–patient safety organization at TeamHealth; ACEP Now medical Editor-in-Chief; and clinical assistant professor, University of Tennessee and Michigan State University College of Osteopathic Medicine.
LVAD acts as a pump that receives blood from an internal cannula in the left ventricle (LV) and ejects the blood via an outflow cannula through the ascending aorta (see Figure 1). The LVAD (see Figure 2) poorly mimics the native cardiac cycle as it pumps continuously through systole and diastole with limited variation in flow. The net effect is an obliteration of pulse pressure and the ability to palpate a pulse, which makes initial assessment in the emergency department challenging. The most frequent complications physicians will encounter include infection, thrombosis, hypotension, bleeding, dysrhythmias, and device failure.

### Initial Assessment

LVAD patients should immediately be assessed for signs of poor perfusion and volume resuscitated as appropriate. Auscultate for a precordial/epigastric “hum”—absence of this indicates pump failure. LVAD patients are supported and followed longitudinally by a multidisciplinary team. Early involvement of a patient’s LVAD coordinator should be considered once a patient has been stabilized. Next, obtain a blood pressure. You will need to calculate their mean arterial pressure (MAP) (normal: 60–90 mm Hg). Afterwards, double-check that the external controller device connections are secure and take note of the pump speed (rpm), flow (L/min), power (watts), and battery life on the external controller (see Table 3). Finally, get an ECG in all of these patients. Now let’s troubleshoot!

### Battery Dead or Low

If the battery power is low, the batteries need to be replaced immediately. Whatever you do, don’t disconnect both batteries at once. If the controller is disconnected from both batteries at the same time, the LVAD will lose power and stop working, so the batteries must be replaced one at a time.

### Hypotension (ie, MAP <60)

The LVAD is highly preload dependent, which makes it sensitive to alterations in volume status (eg, dehydration, bleeding, thrombosis, diarrhea, and vomiting). Volume resuscitation is a mainstay in therapy. Another cause of hypotension is a suction event in which the LV is not filling but the pump continues to attempt to pull blood from it (see Figure 3). During the event, the LVAD sucks down the walls of the LV to an abnormally small size, leading to a right to left ventricular septal shift. This phenomenon is a result of any condition that produces LV underfilling, including hypovolemia, right ventricle (RV) failure, cardiac tamponade, or pulmonary hypertension, all of which can be observed on bedside cardiac ultrasound. These events can also be associated with ventricular dysrhythmias resulting in syncope and death.

### Bleeding

LVAD patients are typically anticoagulated and are predisposed to the development of atrioventricular malformations along the gastrointestinal (GI) mucosa, making GI bleeds the second most common complication. Patients can also develop acquired von Willebrand syndrome from the breakdown of von Willebrand multimers from the shearing forces created by the LVAD. Holding anticoagulation is appropriate in the setting of acute GI hemorrhage. Consider using tranexamic acid, prothrombin complex concentrate, or fresh frozen plasma in LVAD patients with unstable bleeding, in coordination with the LVAD team.

### Pump Thrombosis

Pump thrombosis occurs in 1 to 2 percent of all patients at two years’ post implantation. Consider using thrombolytic therapy (eg, tissue plasminogen activator)."
ischemia or hemorrhage. Promptly manage blood pressure with afterload-reducing medications to maintain a goal MAP of 70 mmHg.1 ACE inhibitors and beta blockers are the preferred agents, but hydralazine and nitrates may also be used on an individual basis.2

Infection
Infection is the most common complication of long-term LVAD use.3 Multiple sites can be affected, but driveline infections (DLIs) remain the most common. Approximately 80 percent of DLIs occur between 30 days and six months after implantation. Clinical presentations vary from mild pain to fever, warmth, and purulent discharge at the driveline exit site. In a 2013 retrospective review of 247 LVAD patients, only half of patients presented with fever, leukocytosis, or systemic inflammatory response syndrome criteria.4 DLIs can also extend into the pump pocket and lead to bloodstream infection and endocarditis. Treat with early IV fluids and broad-spectrum antibiotic therapy (ie, cefazolin, vancomycin, and linezolid) covering for negative bacilli (Staphylococcus aureus, coagulase-negative Staph and gram-negative bacilli [Klebsiella, Pseudomonas]).5 These patients will also need to be transferred to the nearest LVAD facility for more definite treatment (ie, LVAD replacement).6

Dysrhythmias
Postsurgical scarring can alter the conduction system within the myocardium, predisposing to ventricular dysrhythmias. The incidence of sustained ventricular tachycardia/ventricular fibrillation is 56 percent with the highest prevalence in the first postoperative month.2 Fortunately, the treatment is no different than in patients without LVADs, and cardioversion is indicated if the patient becomes hemodynamically unstable.2

Table 2: LVAD Abnormalities

<table>
<thead>
<tr>
<th>ECHOCARDIOGRAM FINDINGS</th>
<th>POTENTIAL CAUSES</th>
<th>LVAD PUMP FINDINGS</th>
<th>MANAGEMENT (WITH LVAD TEAM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormally small LV (R → L septum shift)</td>
<td>Suction event</td>
<td>Low power Normal or high PI High speed (rpm) Low pump flow</td>
<td>IV fluid bolus to increase LV filling</td>
</tr>
<tr>
<td>Large RV and LV</td>
<td>Pump thrombosis/obstruction</td>
<td>High power Low PI High speed (rpm) Low or no hum</td>
<td>Heparin or thrombolytic</td>
</tr>
<tr>
<td>Large RV and small LV</td>
<td>RV failure Pulmonary hypertension</td>
<td>High power High PI</td>
<td>IV fluid bolus ECG Consider inotropes</td>
</tr>
<tr>
<td>Small RV and LV</td>
<td>Hypovolemia GI bleed Sepsis</td>
<td>Low flow</td>
<td>IV fluid bolus Consider blood transfusion and reversing coagulopathy Antibiotics</td>
</tr>
</tbody>
</table>

References
Clinical Trial Results Matter

Explore the efficacy and safety data at hcp.eliquis.com

NVAF
Indicated to reduce the risk of stroke and systemic embolism in patients with NVAF.

INDICATIONS
ELIQUIS is indicated to reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation (NVAF). ELIQUIS is indicated for the treatment of deep vein thrombosis (DVT) and pulmonary embolism (PE), and to reduce the risk of recurrent DVT and PE following initial therapy.

IMPORTANT SAFETY INFORMATION

WARNING: (A) PREMATURE DISCONTINUATION OF ELIQUIS INCREASES THE RISK OF THROMBOTIC EVENTS, (B) SPINAL/EPIDURAL HEMATOMA

(A) Premature discontinuation of any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events. If anticoagulation with ELIQUIS is discontinued for a reason other than pathological bleeding or completion of a course of therapy, consider coverage with another anticoagulant.

(B) Epidural or spinal hematomas may occur in patients treated with ELIQUIS who are receiving neuraxial anesthesia or undergoing spinal puncture. These hematomas may result in long-term or permanent paralysis. Consider these risks when scheduling patients for spinal procedures. Factors that can increase the risk of developing epidural or spinal hematomas in these patients include:

• use of indwelling epidural catheters
• concomitant use of other drugs that affect hemostasis, such as nonsteroidal anti-inflammatory drugs (NSAIDs), platelet inhibitors, other anticoagulants
• a history of traumatic or repeated epidural or spinal punctures
• a history of spinal deformity or spinal surgery
• optimal timing between the administration of ELIQUIS and neuraxial procedures is not known

Monitor patients frequently for signs and symptoms of neurological impairment. If neurological compromise is noted, urgent treatment is necessary. Consider the benefits and risks before neuraxial intervention in patients anticoagulated or to be anticoagulated.

CONTRAINDICATIONS
• Active pathological bleeding
• Severe hypersensitivity reaction to ELIQUIS (e.g., anaphylactic reactions)

WARNINGS AND PRECAUTIONS
• Increased Risk of Thrombotic Events after Premature Discontinuation: Premature discontinuation of any oral anticoagulant, including ELIQUIS, in the absence of adequate alternative anticoagulation increases the risk of thrombotic events. An increased rate of stroke was observed during the transition from ELIQUIS to warfarin in clinical trials in atrial fibrillation patients. If ELIQUIS is discontinued for a reason other than pathological bleeding or completion of a course of therapy, consider coverage with another anticoagulant.

• Bleeding Risk: ELIQUIS increases the risk of bleeding and can cause serious, potentially fatal, bleeding.
  – Concomitant use of drugs affecting hemostasis increases the risk of bleeding, including aspirin and other antiplatelet agents, other anticoagulants, heparin, thrombolytic agents, SSRIs, SNRIs, and NSAIDs.
  – Advise patients of signs and symptoms of blood loss and to report them immediately or go to an emergency room. Discontinue ELIQUIS in patients with active pathological hemorrhage.
  – There is no established way to reverse the anticoagulant effect of apixaban, which can be expected to persist for at least 24 hours after the last dose (i.e., about two half-lives). A specific antidote for ELIQUIS is not available.

• Spinal/Epidural Anesthesia or Puncture: Patients treated with ELIQUIS undergoing spinal/epidural anesthesia or puncture may develop an epidural or spinal hematoma which can result in long-term or permanent paralysis. The risk of these events may be increased by the postoperative use of indwelling epidural catheters or the concomitant use of medicinal products affecting hemostasis. Indwelling epidural or intrathecal catheters should not be removed earlier than 24 hours after the last administration of ELIQUIS.
WARNINGS AND PRECAUTIONS (cont’d)

The next dose of ELIQUIS should not be administered earlier than 5 hours after the removal of the catheter. The risk may also be increased by traumatic or repeated epidural or spinal puncture. If traumatic puncture occurs, delay the administration of ELIQUIS for 48 hours.

Monitor patients frequently and if neurological compromise is noted, urgent diagnosis and treatment is necessary. Physicians should consider the potential benefit versus the risk of neuraxial intervention in ELIQUIS patients.

- **Prosthetic Heart Valves:** The safety and efficacy of ELIQUIS have not been studied in patients with prosthetic heart valves and is not recommended in these patients.

- **Acute PE in Hemodynamically Unstable Patients or Patients who Require Thrombolysis or Pulmonary Embolectomy:** Initiation of ELIQUIS is not recommended as an alternative to unfractionated heparin for the initial treatment of patients with PE who present with hemodynamic instability or who may receive thrombolysis or pulmonary embolectomy.

ADVERSE REACTIONS

- The most common and most serious adverse reactions reported with ELIQUIS were related to bleeding.

TEMPORARY INTERRUPTION FOR SURGERY AND OTHER INTERVENTIONS

- ELIQUIS should be discontinued at least 48 hours prior to elective surgery or invasive procedures with a moderate or high risk of unacceptable or clinically significant bleeding. ELIQUIS should be discontinued at least 24 hours prior to elective surgery or invasive procedures with a low risk of bleeding or where the bleeding would be noncritical in location and easily controlled. Bridging antiocoagulation during the 24 to 48 hours after stopping ELIQUIS and prior to the intervention is not generally required. ELIQUIS should be restarted after the surgical or other procedures as soon as adequate hemostasis has been established.

DRUG INTERACTIONS

- **Strong Dual Inhibitors of CYP3A4 and P-gp:** Inhibitors of cytochrome P450 3A4 (CYP3A4) and P-glycoprotein (P-gp) increase exposure to apixaban and increase the risk of bleeding. If patients receiving ELIQUIS doses of 5 mg or 10 mg twice daily, reduce the dose of ELIQUIS by 50% when ELIQUIS is coadministered with drugs that are strong dual inhibitors of CYP3A4 and P-gp (e.g., ketoconazole, itraconazole, ritonavir, or clarithromycin). In patients already taking 2.5 mg twice daily, avoid coadministration of ELIQUIS with strong dual inhibitors of CYP3A4 and P-gp.

- **Strong Dual Inducers of CYP3A4 and P-gp:** Avoid concomitant use of ELIQUIS with strong dual inducers of CYP3A4 and P-gp (e.g., rifampin, carbamazepine, phenytoin, St. John’s wort) because such drugs will decrease exposure to apixaban and increase the risk of stroke and other thromboembolic events.

- **Anticoagulants and Antiplatelet Agents:** Coadministration of antiplatelet agents, fibrinolytics, heparin, aspirin, and chronic NSAID use increases the risk of bleeding. APPRAISE-2, a placebo-controlled clinical trial of apixaban in high-risk post-acute coronary syndrome patients treated with aspirin or the combination of aspirin and clopidogrel, was terminated early due to a higher rate of bleeding with apixaban compared to placebo.

PREGNANCY CATEGORY B

- There are no adequate and well-controlled studies of ELIQUIS in pregnant women. Treatment is likely to increase the risk of hemorrhage during pregnancy and delivery. ELIQUIS should be used during pregnancy only if the potential benefit outweighs the potential risk to the mother and fetus.


Please see Brief Summary of Full Prescribing Information, including Boxed WARNINGS, on adjacent pages.

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INDICATIONS AND USAGE
Reduction of Risk of Stroke and Systemic Embolism in Nonvalvular Atrial Fibrillation — ELIQUIS® (apixaban) is indicated to reduce the risk of stroke and systemic embolism in patients with nonvalvular atrial fibrillation.

Prevention of Venous Thromboembolism Following Hip or Knee Replacement Surgery — ELIQUIS is indicated for the prophylaxis of deep-vein thrombosis (DVT), which may lead to pulmonary embolism (PE), in patients who are undergoing elective hip or knee replacement surgery.

Treatment of Deep Vein Thrombosis — ELIQUIS is indicated for the treatment of DVT.

Treatment of Pulmonary Embolism — ELIQUIS is indicated for the treatment of PE.

DOSAGE AND ADMINISTRATION
Dosage and Administration (Selected information)

Temporary Interruption for Surgery and Other Interventions
ELIQUIS should be discontinued for at least 48 hours prior to surgery or invasive procedures with a moderate or high risk of uncontrolled bleeding or systemic embolism. ELIQUIS should be reinitiated within 24 hours following initial bleeding or the surgery or invasive procedures.

Monitoring
Monitor patients frequently for signs and symptoms of neurological impairment. If symptoms suggestive of neurological impairment occur, ELIQUIS should be discontinued at least 48 hours prior to elective surgery or invasive procedures.

CONTRAINDICATIONS
CONTRAINDICATIONS
ELIQUIS is contraindicated in patients with the following conditions:

• Active pathological bleeding (see Warnings and Precautions and Adverse Reactions)

• Severe hypersensitivity reaction to ELIQUIS (e.g., anaphylactic reactions) (see Adverse Reactions)

WARNING AND PRECAUTIONS
Increased Risk of Thrombotic Event After Premature Discontinuation
Premature discontinuation of any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events. If anticoagulation with ELIQUIS is discontinued for any reason, the patient should be advised to receive an equivalent amount of anticoagulation with another oral anticoagulant until the risk of thrombotic events is reduced. Premature discontinuation of any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events.
Nausea 153 (2.6) 159 (2.7)

Adverse reactions occurring in ≥1% of patients undergoing hip or knee replacement surgery in the AMPLIFY study are listed in Table 6.

Table 5: Bleeding Results in the AMPLIFY Study

<table>
<thead>
<tr>
<th>Event</th>
<th>ELIQUIS N=2689</th>
<th>Placebo N=5924</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>2 (0.2)</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>CRNM*</td>
<td>25 (0.9)</td>
<td>23 (0.4)</td>
</tr>
<tr>
<td>Major + CRNM</td>
<td>27 (0.25)</td>
<td>35 (0.55)</td>
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<td>Minor</td>
<td>75 (8.9)</td>
<td>90 (17)</td>
</tr>
<tr>
<td>Major + Minor</td>
<td>48 (5.2)</td>
<td>41 (14)</td>
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</table>

* CRNM = clinically relevant nonmajor bleeding

Events associated with each endpoint were counted once per subject, but subjects may have contributed events to multiple endpoints.

Adverse reactions occurring in <1% of patients in the AMPLIFY study are listed in Table 8.

Table 8: Adverse Reactions Occurring in ≥1% of Patients Undergoing Extended Treatment for DVT and PE in the AMPLIFY Study

<table>
<thead>
<tr>
<th>Event</th>
<th>ELIQUIS N=2676</th>
<th>Placebo N=5890</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>2 (0.1)</td>
<td>1 (0.1)</td>
</tr>
<tr>
<td>CRNM*</td>
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Adverse reactions occurring in ≥1% of patients in the AMPLIFY study are listed in Table 7.

Table 7: Bleeding Results in the AMPLIFY-EXT Study

<table>
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Events associated with each endpoint were counted once per subject, but subjects may have contributed events to multiple endpoints.

Adverse reactions occurring in <1% of patients in the AMPLIFY-EXT study are listed in Table 6.

Table 6: Adverse Reactions Occurring in ≥1% of Patients Treated for DVT and PE in the AMPLIFY Study

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Events associated with each endpoint were counted once per subject, but subjects may have contributed events to multiple endpoints.
EMPTY DRAWERS AS DRUG SHORTAGES GROW

Make sure your emergency department has a plan to deal with critical drug shortages

by JAMES J. AUGUSTINE, MD, FACEP

In recent years, there have been countless unprecedented, unexpected, and unplanned short-term medication shortages and ever more promises that long-term remedies were being implemented. However, the manufacturers and the federal agencies that oversee drug supply and manufacturing practices—the Food and Drug Administration (FDA) and the Drug Enforcement Administration (DEA)—have continued to be at odds over safe manufacturing and quality processes, and once again, there are life-threatening problems with medication supplies for emergency providers.

The shortage crisis affects drugs across all classes of emergency medications. As of June 26, 2017, there are 69 preparations of 28 emergency care medications that are short, including most forms of adenosine, atropine, bicarbonate, calcium, dextrose, dopamine, epinephrine, fentanyl, furosemide, labetalol, magnesium, lorazepam, and the paralytic agents. There are an additional 50 large-volume intravenous fluid preparations that are unavailable. The most publicized issue has been related to the hospital shortage of bicarbonate, which affects a wide range of patients.

In response to significant pressure from health care providers, including the emergency community, the FDA has taken two actions. It has approved the sourcing of sodium bicarbonate from an Australian medication manufacturer, a step that mirrors a prior action allowing the importation of normal saline solution from a Norwegian manufacturer in 2014. The FDA has also allowed the extension of expiration dates on some lots of three emergency medications: atropine, dextrose, and epinephrine.

It is important that emergency physicians understand the details of this extension program and can share this information with hospital pharmacists, C-suite leaders, and any regulatory agencies. The details are available on the FDA website at www.fda.gov/Drugs/DrugSafety/DrugShortages/ucm563360.htm.

This extension program will assist in the crisis management of the shortage of these three emergency medications. The program, which could potentially be extended to other medications, allows emergency providers to use medications currently in stock for patient care. It will also facilitate a short-term cost savings because the replacement costs of these medications are going to be significantly higher during the shortage. For example, a recent price for a single 1 mg vial of epinephrine 1:1000 was more than $17. In recent years, it cost less than $2.

Action Plan

Emergency physicians will need to work with hospital pharmacists and logistics personnel for EMS agencies to ensure the ongoing availability of emergency medications and intravenous fluids. The FDA notification is a good reason to convene a meeting of emergency department leaders and hospital pharmacists to discuss ongoing management strategies. All emergency physicians and nurses are going to need education on any hospital program that involves using medicines beyond printed expiration dates. The printed FDA notification should be available for those providers as well as any regulatory persons who inspect the emergency department and question this practice.

If the shortage is causing EMS personnel, emergency physicians, and ED nurses to use substitute medications or ones that are not in the usual practice, there should be timely communication and extra safety practices implemented to facilitate good patient care. For example, if paralytic agent supplies are restricted, all providers must be aware of the limitation of substitution with other medications, including dosing changes. Emergency department program materials need to be available in the department to update staff and advise at the point of use about correct dosing, compatibility issues, and side effects. Some emergency departments are putting up safety cards in their medication rooms so staff members have an immediate visual prompt.

All emergency department staff members—especially the nursing personnel who do most of the medication administration—need to be educated regarding the ongoing shortage issues. The FDA suggests not writing the extension information on the drug container. An alternate mechanism will need to be crafted to allow personnel to understand the extension.

There are other detailed medication management strategies that may be integrated by the joint emergency department and pharmacy leadership team to address the issue. For now, clinicians need to be continually updated on shortages. All staff should rotate medications in an attempt to use those medicines closest to their expiration dates. ACEP will provide updates regarding any future FDA actions related to critical drug shortages.

DR. AUGUSTINE is chair of the National Clinical Governance Board of US Acute Care Solutions, based in Canton, Ohio; clinical professor of emergency medicine at Wright State University in Dayton, Ohio; vice-president of the Emergency Department Benchmarking Alliance; and on the ACEP Board of Directors.

ACEP NOW AUGUST 2017 The Official Voice of Emergency Medicine
FOAMcast covers medical texting and SMACC in Berlin

by EREMY SAMUEL FAUST, MD, MS, AND LAUREN WESTAFTER, DO, MPH

Over the last three years, FOAMcast listeners have come to expect our podcast to serve as a bridge between the cutting-edge progressive emergency medicine practice favored by free open-access medical education (#FOAMed) blogs and podcasts and the real world of everyday medicine and core content that we all practice most of the time. To that end, our four most recent shows are excellent examples of that bridge. Check them out on iTunes or at FOAMcast.org. Here’s a quick rundown.

**Text Messages**

First up, text messaging during clinical care. I text. You text. Your brother or your mother text. Your patients? They definitely text, often during the physician encounter. Let’s face it: We all text. In fact, 93 percent of all Americans have a cellular phone, and of those, 81 percent report use of text messaging. What about doctors? The numbers vary, but according to research cited in an essay written by plastic surgeon Brian Drolet, MD, at the Center for Biomedical Ethics and Society at Vanderbilt University Medical Center in Nashville, studies have found that 60 to 80 percent of physicians text for the purpose of communicating in the context of clinical care. The first question is whether using texting (officially known as “short message services,” or SMS) is legal at all.

The good news is that, yes, using texting for communicating medical information with other providers involved in the care of a patient is legal, provided that we are careful. Surprisingly, “being careful” doesn’t only mean that we must use encrypted texting software for these endeavors. In fact, a truly secure and fully encrypted texting platform that physicians can rely on simply does not exist. Long story short, we can use normal text applications on our smartphones, provided that we take precautions in addition to following the normal HIPAA rules. Here are some pointers:

- **Protected health information (PHI) must be de-identified.**
- **A patient’s name (even initials) must not appear in a text.**
- **Mistakes are possible if, for example, you are texting with a consulting service who is following more than one patient in your department.**
- **Extra care must be taken, and follow-up phone calls often are advisable.**
- **A patient’s medical record number should also not appear in a text.**
- **May physicians text photographs of clinical information to one another? Yes but, again, with precautions. For example, a picture of an EGG may be tested to a cardiologist consultant as long as PHI does not appear in the photograph. Even photographs of rashes can be texted, assuming you can find a dermatologist who’s interested.**
- **Make certain that the patient can’t be identified by the photograph. This means, for example, zooming in on rashes that appear on the face to protect the patient’s privacy.**

In summary, it is legal and permitted to text clinical information, but do so with the utmost respect for the law and patient privacy in general. Texting clinical information has substantial advantages to phone calls. In addition to avoiding painful games of phone tag, texting can also eliminate ambiguity associated with phone conversations; sometimes we misspeak or cannot hear a colleague because our work environment is too loud. Texting is a clear record of what everyone said. This can be very helpful and may even minimize the potential for mistakes.

**SMACC**

Our next three shows were daily reviews from the annual Social Media and Critical Care conference (SMACC), which was held in Berlin, Germany. Now in its fifth year, SMACC (and its #a14SMACC hashtag) accumulated over 67,000 tweets in the month of June, which were posted by more than 6,500 individual participants, though only around 2,500 people attended the actual conference. SMACC has become a family reunion for the #FOAMed world as well as anyone who is interested in cutting-edge critical care.

Because SMACC is an unusual conference in that it is attended not just by physicians but also by nurses, emergency medical technicians, physician assistants, social workers, students, and professors, the organizers must strike a balance between talks that highlight progressive and even leading-edge critical care that might be enjoyed by ED and ICU physicians and those that might resonate with our non-physician colleagues.

Thus, for every talk about endocarditis, somehow made entertaining and high-yield by Canadian emergency physician David Carr, MD (@DavidCarr333), of the University Health Network in Toronto, or resuscitation of the recent post-cardiac surgery patient (spoil-er: According to Australian heart and lung surgeon Nikki Stamp, FRACS (@DrNikkiStamp), they should not die without a thoracotomy, albeit not in the emergency department), there were talks about how to give feedback to students, which is not so different than breaking bad news to patients, according to researcher Jenny Rudolph, PhD (@GetCuriousNow), assistant clinical professor of anesthesia and executive director of the Center for Medical Simulation at Harvard Medical School in Boston, or how to make complicated work environments more simple via psychological “hacks” by Christopher Hicks, MD (@HumanFactorz), an emergency physician at St. Michael’s Hospital and a clinician-educator at the University of Toronto.

Our two favorite talks of the conference demonstrate the breadth covered at SMACC. In a brilliant talk James Rippey, MPS (@theSomaCave), an emergency physician at the University of Western Australia in Perth and an ultrasound enthusiast, reminded us that point-of-care ultrasound is not so unlike any other test we may choose to perform. Although it can have tremendous utility, it can be overused. Dr. Rippey presented data on the incidence of incidental findings on ultrasound. In one study, 26 percent of eFAST exams performed by EM residents elicited incidental findings, and the authors noted that some of these can lead to unnecessary work-ups, just like CT scans or MRIs.

Finally, a talk about the growth of emergency medicine in Africa by Annet Alenyo Ngabirano, MD (@AAlenyo), an emergency medicine registrar at Stellenbosch University in Cape Town, South Africa, reminded us how we can learn from each other’s successes and failures. We were inspired by learning that, since the first emergency physician graduated from residency in Africa in 2007, nine out of 54 African nations now have emergency medicine programs. As such, the flow of information is becoming bidirectional. While we can be proud of what the field of emergency medicine has accomplished in the United States in the last few decades, it’s clear that, increasingly, we will have much to learn from the rest of the world as their programs mature and continue to spread.

**Reference**

Retiring Early with a $0 Tax Bill
It may seem far-fetched, but a $0 tax goal is achievable

by JAMES M. DAHLE, MD, FACEP

Q. One of my partners retired early and said she basically pays no taxes at all. Can that be true?

A. A basic understanding of our tax code can be extremely valuable when doing financial planning with or without a formal advisor. The media and even politicians often mistakenly assume that a high earned income is what defines wealth. In reality, a wealthy person has a high net worth, not a high earned income. That misunderstanding, however, has resulted in a tax code that primarily taxes income rather than wealth. So although physicians who make $400,000 per year may have a negative net worth, they will still have a high tax bill.

Newly minted attending physicians are often shocked to realize just how highly their income is taxed. The progressive nature of the tax code means that the more income you make, the higher the percentage of your income that goes toward income taxes. When it comes to taxes, earned income is the worst kind of income there is. Not only do you have to pay payroll taxes such as Social Security and Medicare on the income, but the taxes might even be calculated using a completely different (and higher) set of tax brackets than uninsured income! This might result in an emergency physician paying an effective tax rate (total tax divided by total income) in the 30 percent range and a marginal tax rate (the rate at which the next dollar earned is taxed) in the 45 percent range!

There is a lot of methods to dramatically lower your tax bill while you are working full-time as a physician. The largest tax breaks are usually tax-advantaged savings accounts such as 401(k)s and health savings accounts (HSAs). However, there is one method that has been used by some physicians to dramatically lower their tax bill: retiring early!

Many physicians, used to paying a very heavy tax burden during their working years, are surprised by just how low their retirement tax bill might be. They no longer have to pay payroll taxes at all and might even move to a state without an income tax. Deductions and exemptions they might have been phased out of before are now available again. Some of their income is likely to be tax-free, and a significant part of it is taxed using the lower qualified dividends/long-term capital gains scale. When you combine all of this, it is entirely possible that your retired partner isn’t paying income tax at all. Let’s run the numbers and see just how much income a couple could have without having to pay taxes.

Let’s assume a married couple is 55 years old, newly retired, but with one high school student and one college student. They are not yet receiving Social Security and have no pension. Their house is paid off, they don’t give much to charity, and they live in a tax-free state, so they have decided to just take the standard deduction. Their spending money comes from a large taxable investing account where the basis (eg, what they paid for the mutual fund shares) is about half the value of the account, some small Roth IRAs, an HSA, and large traditional IRAs from rolling over their 401(k)s from when they were working.

Let’s say they take $10,000 from their Roth IRAs and another $5,000 from their HSA. Their taxable account kicks off $10,000 from municipal bond interest (tax-free) and $20,000 from qualified dividends. They sell another $10,000 worth of shares from the account. Finally, they withdraw $35,000 from their tax-deferred accounts using the substantially equal periodic payment (SEPP) rule to avoid paying any penalties for withdrawing prior to age 59½. That is a total spending amount of $100,000. What is their tax bill on that income? It’s $0. No tax at all is due.

How can that be? Let’s go through the items one by one.

• The $10,000 Roth IRA withdrawal is not taxed at all.
• The $5,000 HSA withdrawal used for health care expenses is not taxed at all.
• The $10,000 in municipal bond interest is not taxed at all.
• Half of the sold mutual fund shares ($10,000) are basis and thus not taxed at all.
• The other half of the shares are subject to long-term capital gains taxes. However, in this case that is the 0 percent bracket.
• The qualified dividends are subject to tax as well but like the long-term capital gains, only at 0 percent.
• That leaves the $35,000 tax-deferred account withdrawal to be taxed at ordinary income tax rates.

However, we haven’t even touched this family’s deductions or credits. First, we can subtract their $12,600 standard deduction and their $16,200 personal exemptions. That leaves $6,200 of taxable income, which results in a tax bill of $620 because it is all taxed in the 10 percent bracket. However, this family qualifies for a nonrefundable child tax credit of $2,000. Thus, no tax would be due. And we didn’t even consider the likely possibility of this family receiving the American Opportunity Tax Credit (a credit of up to $2,500 paid toward college tuition).

While $100,000 might not seem like much when compared to the gross salary of an emergency physician, with a dramatically reduced tax bill, without student loans, with no need to save for retirement or college, and with a paid-off mortgage, $100,000 may very well be enough to allow you to maintain your pre-retirement standard of living.

Even if you decide to have a more luxurious retirement than $100,000 of spending per year, you are still likely to have a dramatically lower tax bill in retirement. It might not be $0, but it will probably be closer to $0 than to what you are paying now. In fact, early retirees often deliberately increase their tax bill by doing Roth conversions of tax-deferred money in order to lower their overall lifetime tax burden, but that’s a subject for another column.

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Polishing Up D-Dimer

Adjusting thresholds for rational practice may reduce unnecessary imaging

by RYAN PATRICK RADECKI, MD, MS

Nearly every strategy addressing the diagnosis of pulmonary embolism (PE) revolves around the D-dimer test. These crosslink fragments resulting from the cleaving of fibrin mesh by plasmin have doomed many an unsuspecting soul to computed tomography pulmonary angiograms (CTPAs). The oft-lamented primary challenge associated with dependence upon D-dimer is its lack of specificity. The list of underlying conditions resulting in elevated levels of circulating D-dimer is extensive and includes:

- Increasing age
- African-American ethnicity
- Postoperative states
- Autoimmune and connective tissue disorders
- Hemodialysis
- Malignancy
- Pregnancy
- Smoking and illicit drug use

The first item on the list, increasing age, has been recently addressed by the reasonable approach of age-adjusting the D-dimer for every year over the age of 50.1 However, the other items on the list are simply part of the smorgasbord of collateral damage in our quixotic quest to identify every last PE. What if there were a better way? What if we could make D-dimer great again? The answer is as unremarkable as it is obvious: just like age adjustment, simply increase the commonly used dichotomous cutoff. Fewer D-dimer results above the testing threshold will result in fewer CTPAs and, by association, reduced harms from unnecessary imaging. This is hardly a new concept—it’s more that the gradations of risk stratification are not used to their full potential in real emergency practice. The Kaiser Permanente Hawaii region describes increasing the D-dimer threshold from 400 ng/mL to 1,000 ng/mL as part of an institutional effort to reduce unnecessary testing.1 Its retrospective review of patients evaluated for PE found zero missed from a cutoff of 182 low- and intermediate-risk patients. Subsequently, after practice change, ongoing quality assessment did not detect any missed PEs in a similar cohort of 47 patients using a 1,000 ng/mL as a threshold.

Finally, the second article prospectively describing practice using a threshold of 1,000 ng/mL comprises a Dutch effort directly following the Kline analysis.2 These authors performed their own retrospective and observational prospective analyses to clarify which elements of risk stratification conveyed the greatest risk with relation to pretest likelihood of PE.3,4 Their resulting protocol, the YEARS algorithm, was then prospectively evaluated across 12 Dutch hospitals across almost two years. Their results were published in The Lancet in May.

Their algorithm dramatically simplifies the approach to risk stratification and testing. All patients considered for PE are tested using D-dimer. Patients with one of the three YEARS high-risk items—clinical signs of deep vein thrombosis, hemoptysis, and whether pulmonary embolism is the most likely diagnosis—could be excluded from further testing using the conventional cutoff of 500 ng/mL. Then patients without any of those high-risk features used a cutoff of 1,000 ng/mL.

In their cohort of 3,645 patients undergoing the protocol, rate of subsequent venous thromboembolism was nearly identical between those excluded from additional testing by variable D-dimer thresholds and those with the diagnosis excluded by CTPA. Of 1,613 non-anticoagulated patients in follow-up after a D-dimer below their specific threshold, only seven were ultimately diagnosed with PE in the following three months. Similarly, in follow-ups of 1,138 with negative CTPA results,...
How CDS Can Help You
Clinical decision support tools can put guidelines into practice

by NALANI TARRANT, MPH

While there are many evidence-based guidelines and decision aids to guide imaging decisions in the emergency department (designed for indications ranging from pulmonary embolism [PE] to head injury), use of these tools is generally low. Even in the same hospitals, clinicians vary greatly in their use of imaging. As part of the ACEP Emergency Quality Network (E-QUAL), the avoidable imaging learning collaborative showcased “reducing avoidable imaging” success stories from emergency departments across the country. Ali Raja, MD, MBA, MPH, executive vice chairman of the department of emergency medicine at Massachusetts General Hospital and an associate physician at Brigham and Women’s Hospital, both in Boston, led the development and implementation of several successful tools designed to improve guideline adherence for emergency department imaging. His team added real-time, evidence-based clinical decision support (CDS) to a computerized physician order entry system in order to improve adherence to best practices regarding ED imaging for PE. Figures 1 and 2 reflect how Dr. Raja and his colleagues implemented meaningful CDS that was nonintrusive, helpful to the clinician, and resulted in greater adherence with evidence-based practice. Figure 1 shows an automated calculation of the Wells score and feedback regarding the calculated score and its predetermined associated risk for PE.

What Did We Learn?
By integrating CDS tools and clinician variation feedback reporting, Massachusetts General and Brigham and Women’s hospitals have improved both the use of imaging and adherence to guidelines. In order to do this successfully, obtaining multidisciplinary leadership buy-in, including emergency medicine, radiology, internal medicine, and IT, while keeping in mind the main goal of always being patient-focused are important, Dr. Raja noted. “This means that we need to be sure to avoid imaging patients who don’t need it, but it also means that we should be imaging those who do,” he said. Improving the appropriateness of imaging required engagement of both inpatient and outpatient clinical service lines to ensure common clinical expectations because avoiding imaging in the emergency department does not do patients any good if they will get it anyway as soon as they are admitted.

Visit ACEPNow.com for examples of CDS in the emergency department. In one study, CDS helped decrease ordered CT pulmonary angiography in hospitalized patients. In another, the yield of PE increased while utilization was reduced, implying that more of the right patients were being imaged.

What Can You Do?
To learn more about the CDS tools used and the experience of Dr. Raja, listen to his E-QUAL success story at www.acep.org/equal. This webinar demonstrates that the source of the evidence is less important than obtaining broad, multispecialty clinician buy-in for what everyone considers the right thing to do. Completion of this E-QUAL webinar is also designated for 1 CME credit.

If you have questions about E-QUAL, contact project manager Nalani Tarrant at ntarrant@acep.org.

MS. TARRANT is E-QUAL project manager at ACEP.
eight patients were ultimately diagnosed. The face validity of nearly identical miss rates between imaging and non-imaging pathways lends substantial credibility to their algorithm. There are a few oddities specific to the YEARS protocol precluding universal recommendation as is. Most important, D-dimer results were routinely available prior to risk stratification. This meant clinicians had access to the D-dimer result when assessing the patient as “PE is most likely diagnosis.” It is naive to expect foreknowledge of the D-dimer result did not influence their risk stratification, introducing potentially detrimental effects on internal validity and certainly on generalizability. At the least, these prospective results, along with the retrospective and observation series, support revisiting our thresholds for D-dimer. In patients for whom PE is not likely, it is probably reasonable practice to consider D-dimer results below 1,000 ng/mL as providing further decreasing the likelihood of PE. Overtesting and overdiagnosis of PE have long been recognized as problematic, and applying even this simplest additional layer of Bayesian reasoning to testing for PE will help our patients by decreasing the costs and harms from testing without a disproportionate increase in harms from missed PE.

References

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Robert Eisenstein, MD, Chair, Department of Emergency Medicine, Rutgers Robert Wood Johnson Medical School, 1 Robert Wood Johnson Place, MEB 104, New Brunswick, NJ 08901; Email: Robert.Eisenstein@rutgers.edu; Phone: 732-235-8717; Fax: 732-235-7379.

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- Ultrasound

Fellowships
- Administration, Operations & Quality
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frances.schulz@ucdenver.edu

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The academic Department of Emergency Medicine at the CU School of Medicine is dedicated to excellence in clinical care, teaching and mentoring, research and scholarship, and innovation. We have 75 faculty emergency physicians and are looking to grow our faculty.

The University of Colorado Anschutz Medical Campus is among the top institutions nationally in clinical care, education and research. More than 4,000 students learn alongside faculty members who also make meaningful medical discoveries and provide expert clinical care. We teach residents in the Denver Health Residency. A hub for research and innovation, CU Anschutz receives over $400 million in research awards each year and has filed 1,300 patent applications and formed 53 new companies since 2002. University of Colorado Hospital sees over 100,000 inpatient visits, over 2.5 million outpatient visits, and employs over 15,000 providers and staff. The Emergency Department at Anschutz sees over 100,000 patients annually and our regular faculty primarily staff this location.

UCHealth, our large hospital-based health system, is expanding along the Rocky Mountain front range. Our community-based physicians will primarily staff these locations at new hospitals and freestanding ERs.

Denver is a highly desirable place to live, work, and raise a family. We offer salaries commensurate with qualifications, relocation assistance, physician incentive program and a CME allowance, and a comprehensive benefit package.

Learn more about us at:
www.medschool.ucdenver.edu/em

For additional information, please contact:
Frances Schulz, HR Manager, Emergency Medicine
frances.schulz@ucdenver.edu
Emergency Medicine Opportunities

Join a physician group with a 97% retention rate

Avera Medical Group is connected to the region’s leading health care system with more than 200 clinics and 33 hospitals covering 60 specialties across South Dakota, Minnesota, Iowa, Nebraska, and North Dakota. Avera Medical Group physicians’ network, consisting of over 850 professionals providing focused patient care. Our patient-centered care structure combines compassion and innovation with the simple goal of creating happier, healthier communities.

“Avera embodies what physicians” represent. Their commitment to excellence has placed them at the forefront of technology, Magdalene Hidder, M.D.

North Carolina – Asheville

Stable long term democratic group looking to add new partners. Have the best of all worlds – work in a busy level II trauma center that sees 100k pts/year and live in an awesome small city in the mountains. We are a fee for service model with competitive compensation. Employment model available in nearby regional hospitals. Looking for motivated full time Physicians to join our team.

Send CV to Chris Flanders at Chris.flanders@msj.org.

Fairbanks, Alaska

New full-time position for a BC/BE Emergency Medicine physician to join a stable, democratic group of 10 physicians. This is a hospital practice based at Fairbanks Memorial Hospital. Annual visits exceed 36,000.

Fairbanks Memorial Hospital is a JCAHO accredited 159-bed hospital that is the primary referral center for the 100,000 residents of Alaska’s interior.

Fairbanks is a truly unique university community with unmatched accessibility to both wilderness recreation and urban culture. We aim to strike a balance between life and medicine, offering excellent compensation and benefits with a 2-year partnership track. 10 hour shifts with excellent mid-level coverage.

For additional information please contact:
Michael Burton MD, President (907) 460-0902 mrb5w@hotmail.com
or
Art Strauss MD, Medical Director (907) 388-2470 art@ghepak.com

South Peninsula Hospital

Emergency Department Physician

Opportunity in Homer, Alaska is nestled on the shores of Kachemak Bay and overlooking the Kenai Mountain Range. Homer is known for fishing, the arts, eco-tourism, and a high quality of life.

South Peninsula Hospital, voted in the top 100 Critical Access Hospitals, is offering an excellent employed or independent contractor Emergency Dept physician position with excellent earning potential. Full Time employees would be eligible for health, life insurance and pension plan participation.

The following skills are required:
- Alaska license
- Board Certified Emergency Physician or Boarded in Family Practice with 3 years’ experience working as ER Physician.
- Desire to be active member of collegial and progressive ER and Medical Staff.
- Strong interest in teaching and sharing knowledge with nursing/ancillary staff.

Send CV’s to Robert Letson rfl@sphosp.org
www.sphosp.org

Exceptional Emergency Medicine Opportunity

Antelope Valley, California

Antelope Valley Emergency Medical Associates (AVEMA) seeks:
(1) Experienced, board certified Emergency Physician for full-time/part-time work with IC status
(2) PA’s or NP’s with EM/Acute Care experience

AVEMA is a stable, independent, democratic group that has staffed the ED for over 40 years. Antelope Valley Hospital is a public, not for profit hospital in Lancaster, California, with 120,000 ED visits. We have trauma, stroke, STEMI, EDAP, and chest pain center status. Full specialty call panel 24/7. Also: Scribe coverage for all physicians/NP’s/PA’s, efficient EHR, radiologist real-time reading of all imaging, paid malpractice, housing between shifts, excellent nurses and medical staff.

As the community-training site for the UCLA/OVMC EM residency program, residents are in the ED most days. UCLA faculty appointment is possible for our attendings.

This is an amazing opportunity! We look forward to hearing from you.

Contact: Thomas Lee, MD, tomllee@ucla.edu 323-642-7127

WASHINGTON, Olympia:


Send CV to Kathleen Martin, 413 Lilly Rd. NE, Olympia, WA 98506 or kathleen.martin@providence.org

The Official Voice of Emergency Medicine

ACEP NOW AUGUST 2017

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The Emergency Medicine Department at Penn State Health Milton S. Hershey Medical Center seeks energetic, highly motivated and talented physicians to join our Penn State Hershey family. Opportunities exist in both teaching and community hospital sites. This is an excellent opportunity from both an academic and a clinical perspective. As one of Pennsylvania’s busiest Emergency Departments treating over 75,000 patients annually, Hershey Medical Center is a Magnet® healthcare organization and the only Level 1 Adult and Level 1 Pediatric Trauma Center in PA with state-of-the-art resuscitation/trauma bays, incorporated Pediatric Emergency Department and Observation Unit, along with our Life Lion Flight Critical Care and Ground EMS Division. We offer salaries commensurate with qualifications, sign-on bonus, relocation assistance, physician incentive program and a CME allowance. Our comprehensive benefit package includes health insurance, education assistance, retirement options, on-campus fitness center, day care, credit union and so much more! For your health, Hershey Medical Center is a smoke-free campus. Applicants must have graduated from an accredited Emergency Medicine Residency Program and be board eligible or board certified by ABEM or AOBEM. We seek candidates with strong interpersonal skills and the ability to work collaboratively within diverse academic and clinical environments. Observation experience is a plus.

FOR ADDITIONAL INFORMATION, PLEASE CONTACT:

Susan B. Promes, Professor and Chair, Department of Emergency Medicine, c/o Heather Peffley, Physician Recruiter, Penn State Health Milton S. Hershey Medical Center, 500 University Drive, PO Box 855 Mail Code A595, Hershey PA 17033, Email: hppeffley@pennstatehealth.psu.edu

OR apply online at: http://hmc.pennstatehealth.org/careers/physicians

Penn State Health Milton S. Hershey Medical Center is committed to affirmative action, equal opportunity, and the diversity of its workforce. Equal Opportunity Employer – Minorities/Women/Protected Veterans/Disabled.
**Los Angeles, California**

**Downtown Los Angeles:**
Quality STEM Stroke Center, good Metrics, paramedic receiving (no peds inpatients). Physician coverage 38–40 hrs/day with NP & PA 12–20 hrs/day. 1.9 pts/hr, stable 25+yr contract, core group physicians average 23 years tenure. Require Board certified or Board eligible (residency trained) with experience. Day & night shifts (max 5 nights/mo.). Salary competitive.

**Tustin – Orange County:**
New ER opening December, paramedic Receiving, 110-bed hospital, 9 bed ER, Anticipate 600-900 visits/mo. Base + Incentive (patient volume + RVU) 24 hr. Shifts

**Los Angeles:**
Low volume 700/mo. urgent care non-Paramedic receiving, less stress, 20 yr. contract w/stable history. Patients 1/hr. Base + incentive

**Norwalk:**
Low volume 600/mo. Paramedic receiving. Patients 8/hr. 10-year history stable. $110/hr. 24hr shifts available

Fax to 213-482-0577 or call 213-482-0588, or email neubauerjanice@gmail.com

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**Baylor College of Medicine**

**Exciting Emergency Medicine Opportunities**

**Academic Faculty & Clinical Faculty Opening**

The Department of Emergency Medicine at Baylor College of Medicine is looking for Faculty who are interested in a career in Academic Emergency Medicine. We are currently hiring faculty of all ranks commensurate with prior experience and seeking applicants who have demonstrated a strong interest and background in medical education, simulation, ultrasound, or research. Clinical opportunities are also available at our affiliated hospitals.

The Department of Emergency Medicine at Baylor College of Medicine, a top medical school, is located in the world’s largest medical center, in Houston, Texas. The Baylor Emergency Medicine Residency was established in 2010, and we recently received department status in Jan 2017. Our residency program has grown to 14 residents per year in a 3-year format. We offer a highly competitive academic salary and benefits commensurate to academic level and experience.

Our academic program is based out of Ben Taub General Hospital and Baylor St. Luke’s Medical Center. Ben Taub General Hospital is the largest Level 1 trauma center in southeast Texas with certified stroke and STEMI programs that sees nearly 100,000 emergency visits per year. Baylor St. Luke’s Medical Center is home to the Texas Heart Institute and with freestanding Baylor St. Luke’s Emergency Centers offers multiple additional practice sites for Baylor faculty. BCM has a collaborative affiliation with eight world-class hospitals and clinics in the Texas Medical Center. These affiliations, along with the medical school’s preeminence in education and research, help to create one of the strongest emergency medicine experiences in the country.

Those interested in a position or further information may contact Dr. Dick Kuo via email dckuo@bcm.edu or by phone at 713-873-7044. Please send a CV and cover letter with your past experience and interests.

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**Classifieds**

**LUCRATIVE EM JOBS**

**IN SOUTH TEXAS!**

Work just 30 miles from the scenic Gulf Coast and popular South Padre Island!

Valley Baptist Medical Center Harlingen

- 50,000 annual ED volume
- Scribes and NP/PA support
- Region’s lead trauma center with comprehensive stroke services
- Physician-owned group
- No state income tax!
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