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Face to Face with DISASTER

Almost 30 years later, Dr. Bradford Walters reflects on his experience as first responder to the Flight 255 crash

On an August morning in 1987, a plane schedule to depart from the Detroit Metropolitan Wayne County Airport crashed on takeoff, causing the deadliest sole-survivor aviation accident in history. Emergency physician Bradford L. Walters, MD, FACEP, was one of the first responders to the crash and participated in a search for survivors and efforts to identify the victims. Few emergency physicians will face a disaster of this magnitude in their careers, and no amount of training or planning can prepare you for the reality of being a first responder. Dr. Walters recently sat down with *ACEP Now* Medical Editor-in-Chief Kevin Klauer, DO, EJD, FACEP, to talk about his experience and the lessons he's applied to his emergency medicine practice.

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Planning for the Future

ACEP's President-Elect looks ahead to the goals and challenges of his presidential year

Leading ACEP is a team effort, with emergency physicians and staff working together to represent and advocate for the specialty. Last month, we interviewed ACEP President Michael J. Gerardi, MD, FAAP, FACEP, about the challenges and opportunities ahead for emergency medicine. This month, Jay A. Kaplan, MD, FACEP, who was named ACEP President-Elect in October 2014, shares his views on the key issues facing emergency medicine with *ACEP Now* Medical Editor-in-Chief Kevin Klauer, DO, EJD, FACEP.

Dr. Kevin Klauer: So, Jay, I want to make sure that people understand what your vision is for your presidential year. It starts way in advance and probably not even with your President-Elect year, but the ground is laid for many programs from one president to the next.

Dr. Jay Kaplan: The President, the President-Elect, and the Past President, along with our Executive Director Dean Wilkerson, have weekly leadership calls where we go over issues affecting the college on a month-to-month, week-to-week, and sometimes a day-to-day basis. We talk about leadership, and we talk about the issues that are important to emergency physicians. The Past President, the President, and the President-Elect along with our executive leadership work very closely together in order to keep the ship on course.

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A Deadly Case of MANOPAUSE

A quest for the Fountain of Youth may cost more years than it gains

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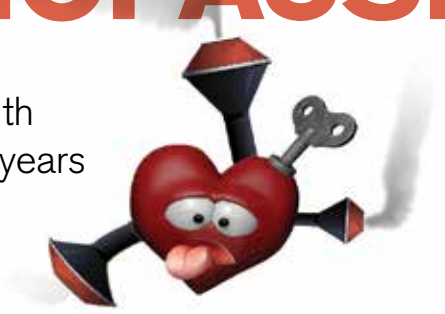

THE BREAK ROOM

Our February New Spin editorial, "Popping Up Like Weeds: The dangers of physician/investor-owned freestanding EDs" by Ronald A. Hellstern, MD, has been a hot topic of conversation at ACEPNow.com. Here are some excerpts from comments we've received. Visit ACEPNow.com to read the whole discussion and add your thoughts, and be sure to check out page 3 for a response to Dr. Hellstern's editorial from ACEP's Freestanding Emergency Centers Section.

It is remarkable that opinion (admitted by the author) is used to inflict injury on the interests (admitted by the author) of the dues-paying membership of ACEP, and in our own newsletter of all places. *ACEP Now* claims to be "The Official Voice of Emergency Medicine" and is an "official publication of ACEP." Why did the editor disallow the chairman of our section the ability to preview and refute the article this month?

—Michael Sarabia, MD, FACEP
Houston

I regret that my op-ed piece caused Dr. Sarabia such anguish. After reading what I wrote again, I do think it can be interpreted as being anti-FSED, and for that, I apologize, but that was not my intention. I do not have a dog in this hunt, as they say in Texas. Being semiretired, my practice is limited to medical group management consulting. Rather than passing judgment, I was attempting to frame a series of questions regarding the possible impact of FSEDs that I think the College will have to address sooner rather than later.

—Ronald A. Hellstern, MD
Dallas

Physicians—I talked to several from Arizona at the ACEP meeting—are tired of being disrespected slaves to a broken hospital ER system and are doing their own freestanding ERs and doing them right for the physicians and the patients. Hospitals need to learn from these new entrepreneurs on how to create a wholesome environment for patients, physicians, and staff. Patients are generally smart enough to self-select the appropriate location—urgent care, freestanding, and ER. The "injury" as you call it being inflicted as you opine on emergency physicians is being done by hospitals that treat ER docs as commodities, by medical staff that disrespect the ER as an intrusion on their life, and by terrible systems of care within the hospitals that fail to analyze and correct the problems...Until ER docs get involved (a dying breed), take responsibility (not merely a paycheck), and become leaders in their own "homes," it is not going to get better...I applaud the entrepreneurs who see and know how to do it right and risk their own capital to make it happen. It's the American way. I only hope that hospitals will either learn from these adventurers' experiences or lease the square footage to them and let them open their boutique unencumbered by the hospital bureaucracy and a disrespectful medical staff.

—John Johnson, MD, FACEP
Valparaiso, Indiana

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ACEP does proudly promote *ACEP Now* as "The Official Voice of Emergency Medicine" and takes that responsibility seriously and in the most literal sense. Our vision is to offer the most appropriate, unbiased forum possible for the discussion, deliberation, and airing of any issues impacting our specialty, especially the most complex and controversial of those issues. In doing so, we must allow diversity of opinion to be heard, and from a specialty society perspective and journalistic perspective, it would be inappropriate to avoid difficult topics, and more important, it would be inappropriate, and even unethical, to censor valid opinions, whether or not they support ACEP policy or not. Our belief is that ACEP cannot be a credible leader in our specialty or in the house of medicine without such integrity. Interestingly, and historically, ACEP and *ACEP News* were formally criticized for the perception of such censorship.

—Kevin M. Klauer, DO, EJD, FACEP
Medical Editor in Chief

I have known Ron Hellstern for over 25 years and have considered him, without doubt, one of the finest intellects in emergency medicine when it comes to operational and organizational knowledge.

Ron has been "calling them as he sees them" his entire career, and I consider his view on freestanding EDs to be tempered and fair. Does not a red flag go up when an entity with a CT scan in it can break even on a handful of patients a day? Does not a red flag go up when a patient with a minor illness stumbles into a freestanding ED and gets hit up with a nasty facility fee as well as a service charge (when they should have gone to an urgent care clinic for a fraction of the charge)?

Emergency physicians used to pride themselves regarding wearing the "white hat" in medicine—taking on all comers, 24-7. And yes, we heavily cost-shifted to get the job done. If a freestanding ED only takes patients with "good" insurance (both Medicaid and even Medicare excluded), what is left for the ED—we have our brothers and sisters skimming off the cream because the ROI is so compelling.

Hospitals to a large extent deserve what they have let happen—their EDs are notorious for making patients wait for care (despite the concierge level charges), have been inept at providing a consistent level of quality, have their halls littered with admitted patients, have been unable to assure specialist coverage, and on and on. But when emergency physicians choose to take away the "good"

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A NEW SPIN

Freestanding Emergency Centers

A novel approach to increasing access to emergency care and decreasing physician burnout

by R. JOE YBARRA, MD, CHAIR OF ACEP'S FREESTANDING EMERGENCY CENTERS SECTION, AND JOHN R. DAYTON, MD, FACEP, SECRETARY OF THE SECTION

During ACEP's Scientific Assembly in 2014, the Freestanding Emergency Centers (FEC) Section became an official ACEP section.[1] The section was created to meet the needs of emergency physicians working in the more than 500 FECs operating throughout the United States. During the first FEC Section meeting, officers were elected, operational guidelines were created, and goals were set to conduct research on care provided in FECs and to educate both professional colleagues and patients on how FECs are benefitting communities and preventing emergency physician burnout.[2]

FECs currently operating represent a mix of emergency departments serving as satellite facilities for large health care corporations and academic institutions and also functioning as privately licensed facilities owned by the emergency physicians who work there. They have been created to meet a number of health care needs:

- Bring emergency care closer to patients in Accountable Care Organizations (ACOs)
- Alleviate crowding at nearby emergency departments
- Increase training sites for medical students and residents
- Present another free-market option for delivery of emergency care

Academic groups like Baylor Health Care System, the Cleveland Clinic, Akron General, and the University of Utah operate FECs. These emergency departments expand training options for medical students and residents, offer moonlighting options for fellows, and serve as centers for certificate training programs for advanced practice providers. Several other academic institutions are also planning to build FECs.

National corporations, like the Hospital Corporation of America, and regional groups, like North Carolina's WakeMed and Colorado's Swedish Medical Center, have also built FECs to meet the needs of patients in their ACO who do not live near one of their flagship facilities.

Independent FECs are currently operating in Texas, Colorado, Rhode Island, and Delaware. This model is also expanding to other states like Arizona. California and Georgia, where independent FECs had originally been banned, are now reevaluating this position. Recent legislation in Georgia has opened the door for independent FECs to take over failing rural critical access hospitals (CAHs). Similarly, the California state legislature is considering changing its licensing protocol to remove stringent requirements that had, basically, disallowed independent FECs so that FECs could serve patients in communities where traditional hospital-based emergency departments have closed.

Emergency department overcrowding, failing grades for "access to care," physician burnout, and a future physician shortage are all problems we face as emergency physicians. FECs may represent part of the solution.

Per the State Association of Freestanding ERs (SAFERTX), FECs offer patients increased access, quality, and efficiency.[3] One criticism levied against independent FECs is that because they are not recognized by the Centers for Medicare & Medicaid Services (CMS), they do not treat Medicare and Medicaid patients and the uninsured. However, independent FECs are actively lobbying to be recognized nationally by CMS. Until then, they strive to live by the ethos of EMTALA, and independent FECs like Cedar Park Emergency Center in Texas not only donate a large amount of charity care every year but also are heavily involved in community health and screening projects.

In additional to the initial ACEP White Paper, there are many emerging opportunities to research FEC care. Jeremiah Schuur, MD, MHS, an assistant professor at Harvard Medical School, is currently working on a $50,000 Emergency Medicine Foundation grant to do a nationwide inventory on FEC care, services provided, staffing and administration, and physical facilities.[4] Erin Simon, DO, FACEP, from Akron General Medical Center, a Cleveland Clinic Affiliate, is a pioneer in FEC research, and her recent articles have demonstrated that FEC acute coronary sydrome care meets national standards, described FEC treatment for blunt trauma, and documented that a hospital network can increase overall ED volume by adding satellite FECs in addition to the flagship hospital.[5–7] Additionally, the FEC Section created an FEC research group during its first few months of existence and has applied for an ACEP Section Grant to investigate the role of FECs in meeting the first goal of the Institute for Healthcare Improvement (IHI) Triple Aim, which is improving the patient experience of care by increasing quality and improving patient satisfaction.

Other current and future research projects involve investigating whether working in a FEC can prevent physician burnout and whether converting critical access hospitals to FECs can help keep emergency care local when a community is losing its failing hospital. Michael Sarabia, MD, FACEP, Councilor for the ACEP FEC Section, has performed research (publication pending) showing that working in FECs not only could improve job satisfaction for emergency physicians but also could improve career longevity and prevent burnout. This may be especially true for owner/operators of independent FECs where they are not burdened with many of the common frustrations as they choose their own electronic health record system and hire and train their own support staff instead of having the inevitable frustration of having both chosen for them.

Emergency department overcrowding, failing grades for "access to care," physician burnout, and a future physician shortage are all problems we face as emergency physicians.[8] FECs may represent part of the solution, and the FEC Section invites anyone interested in the dialogue to join the conversation.

The FEC Section is actively working to address these concerns with research. The FEC model brings solutions, and enthusiastic ACEP members are dedicated to making emergency medicine better for our patients, our communities, and emergency physicians.

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Open Membership to Non-ABEM Trained Colleagues

Exclusion of emergency physicians from ACEP membership is still wrong

by GUY DAVID LEVEAUX, MD

As I was working my way through Virtual ACEP14, a wonderful resource, I was suddenly overtaken with sadness. Since Jerry Franklin died, I am the only doctor I know among all the DOs and MDs who work with critical access hospital (CAH) emergency departments here in West Virginia who gets to be dazzled by rock star master teachers, such as Amal Mattu, and to see all the latest and greatest on the exhibitors' floor. My colleagues are excluded from ACEP membership because they come from family practice backgrounds, which, as my own and other research shows, is the reality of rural emergency medicine. These physicians are filling the need where no residency-trained emergency physicians want to work but are excluded from the best educational resource in the field. Not only is this sad, it is a betrayal of ACEP's mission. This policy is sustained by those with no skin in the game.

Back in the Cold War, '50s and '60s, when nuclear war was imminent, a social critic, Ping Ferry, proposed a reality check deterrent stating that 200 of the elites' children should be educated in the capital of opposing power, 100 American children in Moscow, 100 Russians in Washington, D.C. Before "pushing the button" that would incinerate millions of children and adults, the Soviet premier and American president would be required to personally slit the throat of each of the opposing camp's children. This would remove the idea of nuclear carnage from the abstract. In a similar way, the terrible idea of excluding family practice–trained emergency physicians from ACEP only flourishes in the abstract. If the advocates of this policy actually spent some time visiting CAH EDs, spending some time in our shoes, many would better understand why exclusion from ACEP is clearly a move in the wrong direction if improved ED care in the United States is the goal.

Equally asinine is the sophistry used to rationalize this policy of exclusion. The faulty reasoning goes that since the predominantly family practice–trained MDs and DOs who provide CAH ED care are not EM residency trained, they are not "real emergency physicians" and hence can be excluded from the ethical obligations of ACEP. Not only is this as irrational as declaring the person flying the airplane not to be the pilot, it is insulting to our life's work. In denying the life of fellow physicians, this exclusionary policy has rejected and abandoned a vital part of the American EM workforce.

Single-coverage rural EDs with no or little specialty backup, sometimes also serving as hospitalists because of physician shortages, this is our life work. To insult us by declaring us not to be ED doctors just pisses us off and leads us not to care about ACEP. All this undermines the ACEP mission of "promoting the highest quality emergency care" and being "the leading advocate for emergency physicians, their patients, and the public." The physicians who have created or advocate this policy should be tarred and feathered, at least metaphorically.

Actually, this exclusionary policy has little to do with us in the sticks; it grew out of a spat over plum jobs in plum locations, with a view of creating a differentiated "residency trained" brand that would exclude competitors from the "good jobs." Just look in the back of this paper—the branding campaign has worked, but the unintended consequence was to exclude the emergency physicians of the 1,376 CAHs from ACEP. Our jobs are essential, but we have trouble finding staff.

These are easy fixes. Create an associate ACEP membership contingent upon completion of a program modeled after the two-year certificate in emergency medicine offered by the West Virginia University Department of Emergency Medicine. In the process rural EM would improve, my colleagues could marvel at how good Dr. Mattu and other master teachers are, and our political action committee would get a considerable increase in membership because our political interests are the same.

So I, a grandfathered ACEP member who was at the Detroit Renaissance Center for my first College meeting in about 1982, obviously view the policy of excluding non-ABEM physicians from any participation in ACEP as unethical and wrong. I will happily argue my position at the Boston Scientific Assembly in October should ACEP choose to sponsor such a debate and to provide a venue. The proposition to be debated being "ACEP membership should or should not be open to all physicians who run emergency departments."

DR. LEVEAUX is an emergency physician in Sutton, West Virginia.

ACEP Responds

Dr. Leveaux, thank you for your comments on the value of the educational opportunities at the ACEP *Scientific Assembly*. Both ACEP members and nonmembers are able to attend the meeting and view virtual sessions online, although members receive discounted pricing. To purchase access to Virtual ACEP14, visit www.acep.org/acep14/virtual. To learn more about ACEP15, which will take place Oct. 26–29 in Boston, visit www.acep.org/acep15.

Many ACEP members have strong feelings about expanding membership options, as evidenced by dozens of letters to the editor received in response to the pro-con article about affiliate membership published in the August 2014 issue. ACEP's leadership has heard these concerns and responded.

As ACEP Executive Director Dean Wilkerson, JD, MBA, CAE, reported in his 2014 year-end review in *ACEP Now*, "the ACEP Council voted to commission a comprehensive study and report on the feasibility of creating a non-voting, non-office holding membership category for individuals not currently eligible for full, active membership at its meeting Oct. 25–26, 2014. This report, including the financial and advocacy impact of membership expansion, will be presented to the Council in Boston at ACEP15 this October. This issue deserves the kind of attention to detail and exhaustive study that will take nearly a year to complete…ACEP members should know that we will research this issue in depth and give a comprehensive report this year to the Council."

COUNTERPOINT:
Naloxone Is Safe

40 years of evidence from the field

by ELIZABETH A. SAMUELS, MD, MPH, STEPHEN AKS, DO, FACMT, FACEP, EDWARD BERNSTEIN, MD, FACEP, ESTHER CHOO, MD, MPH, KRISTIN DWYER, MD, TRACI GREEN, PHD, MSC, JASON B. HACK, MD, FACEP, DAVID JUURLINK, BPHM, MD, PHD, FRCPC, MICHAEL J. MELLO, MD, MPH, FACEP, MEGAN RANNEY, MD, MPH, FACEP, ALEXANDER WALLEY, MD, MSC, AND LAUREN WHITESIDE, MD, MS

In the January 2015 *ACEP Now* article "True Cost of Stopping Overdoses," Paul Kivela, MD, MBA, PhD, discussed several issues related to naloxone administration and sustainability of naloxone programs.[1] Many of his concerns are the focus of existing and emerging policies and research. His piece highlighted how important it is for emergency physicians to be familiar with the literature and practice regarding prehospital naloxone use.

Naloxone has been used for more than 40 years and distributed through community-based programs since 1996. Many emergency physicians have worked with first responders to expand naloxone access. Recognizing the lifesaving potential of increased naloxone access, ACEP approved two related resolutions in 2014: to train and equip first responders with naloxone and to expand pharmacy-based naloxone provision and education. This year, ACEP will develop a clinical policy on emergency physicians' prescribing naloxone.[2] As we move forward in supporting expanded naloxone use, it is critically important for us to have a nuanced understanding of the existing literature.

Few Dangers With Prehospital Administration

Emergency medical services (EMS) providers are very experienced and familiar with naloxone administration and side effects. Research on EMS prehospital naloxone use has shown that serious complications, including violence and needle sticks, are rare.[3] The most common side effect is precipitated opioid withdrawal, which is not life-threatening and is less likely with lower doses and intranasal administration.[4,5]

We agree with Dr. Kivela's recommendation of needleless naloxone delivery and intranasal naloxone, which are already being used in many areas. Until intranasal atomizers and intramuscular auto-injectors become widely available and affordable, however, EMS and other first responders should feel safe (when using appropriate universal precautions) using intramuscular formulations.

Medication Stability

We appreciate Dr. Kivela's point that, like many other pharmaceuticals, naloxone should be stored at room temperature and shielded from light until use. Studies have demonstrated naloxone's stability. In one study, naloxone hydrochloride was cycled daily for 28 days through extreme temperatures (2°F–129°F). Samples retained 90 percent of their original concentration, a small degradation similar to that of nitroglycerin.[6] Recommended storage is no different from other medications commonly used in the prehospital setting, such as the EpiPen, which has similar temperature and humidity recommendations.[7,8] Quality-control checks of first responders' equipment should include verifying expiration dates of naloxone, just as with any other transported medication.

Risks and Liabilities

After an overdose, most people are brought to the ED for evaluation and treatment. Refusal of treatment is a common concern faced by EMS providers and emergency physicians, and there is no clear consensus on how to manage these situations. The prehospital literature examining mortality among patients refusing transport after naloxone administration has shown no evidence of increased mortality and low incidence of ongoing respiratory depression.[9–11] In these studies, patients who needed further monitoring were immediately identifiable. Patients with overdoses of multiple substances, or long-acting opioid formulations, will certainly need continued hospital monitoring. For now, patients who refuse transport or opt to leave the ED must do so against medical advice.

Beyond the prehospital setting, there is substantial practice-based evidence supporting community opioid education and naloxone distribution (OEND) programs. Utilizing a similar approach as layperson CPR and automated external defibrillator training, more than 50 OEND programs in the United States provide training to community members in opioid overdose prevention, recognition, and response, combined with community-distributed naloxone.[12] OEND programs have been shown to decrease opioid overdose mortality in Massachusetts, New York City, Chicago, and North Carolina and have proven that laypeople, including intravenous drug users, can reliably administer naloxone.[13–18] Some EDs have started providing take-home naloxone rescue kits to patients identified as at risk for opioid overdose.[19,20]

The risk of liability for incurred naloxone side effects pales in comparison to the risk of the loss of a life when naloxone is unavailable. Twenty-eight states and the District of Columbia have passed laws expanding naloxone access, and 20 states have passed Good Samaritan legislation, protecting individuals who administer naloxone or call 911 for an opioid overdose. Future iterations of Good Samaritan legislation provide opportunities to address concerns about liability related to first-responder naloxone administration.

The Clinton Foundation negotiated a lower price for Evzio, the naloxone auto-injector, which is currently cost-prohibitive for most municipalities and organizations at $600 per kit. It remains to be seen what the new "low" price will be.

Cost and Sustainability

Costs associated with naloxone training are generally modest, as it is easily incorporated into EMS training curricula. Training for laypeople and nonmedical first responders lasts 10 to 60 minutes, depending on local reporting protocols and education credit requirements.[21] Fluctuating medication cost is a problem hospital administrators regularly address through negotiation. Rising costs are becoming more challenging not only for naloxone but also doxycycline, topical steroids, and other essential medications.[22–24] Despite current cost concerns, cost-modeling research has demonstrated that OENDs are, by all health care rubrics, extremely cost-effective.[25] New formulations of naloxone are being developed and manufactured, which should increase supply and competition, thereby driving down cost.[26,27] The Clinton Foundation negotiated a lower price for Evzio, the naloxone auto-injector, which is currently cost-prohibitive for most municipalities and organizations at $600 per kit.[28] It remains to be seen what the new "low" price will be.

Stigma and Understanding of Opioid Overdose Epidemiology

Finally, and most important, we caution against demonizing populations vulnerable to opioid overdose. Public health experts have recognized that opioid overdose is not only an urban phenomenon limited to illicit opioid use among young men. Opioid overdose is seen increasingly among women, older patients in nonurban environments, and patients using prescription opioids for chronic medical conditions.[29–32] Patients with severe liver disease, metastatic solid tumors, renal failure, bipolar disorder, depression, chronic obstructive pulmonary disease, posttraumatic stress disorder, and sleep apnea are also more likely to experience opioid-related overdose.[33,34] Describing overdose patients as "inherently violent" implies population assumptions and insinuates that these patients may be "undeserving" of overdose reversal. For people struggling with the chronic disease of addiction, only by surviving an overdose will they have the opportunity to seek treatment and recovery.

The ED is on the frontline of the overdose epidemic and offers tremendous opportunities for overdose rescue, opioid overdose prevention, and increased access and referral to addiction treatment. Cost, training, sustainability, access, and approach to potential ethical issues are basic challenges for all new and important public health measures, whether it is vaccination, use of child safety seats, or public-access defibrillation programs. Implementation obstacles do not determine the worth of programs with established benefits but demand thoughtful collaboration to find workable solutions.

We look forward to continuing to tackle issues of accessibility, cost, and liability to offer our patients the opportunities that come with survival.

References

Visit **ACEPNow.com** to see the references for this article.

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UPDATES AND ALERTS FROM ACEP

NEWS FROM THE COLLEGE

ACEP Board Member Robert E. O'Connor Receives EMS Achievement Award

ACEP Board Member Robert E. O'Connor, MD, FACEP, has been recognized by the National Association of EMS Physicians with the Ronald D. Stewart Award.


Dr. O'Connor

The award, named for one of the pioneers of emergency medicine and paramedic systems in the United States, is given each year to a person who has made a lasting, major contribution to the EMS community. Dr. O'Connor is professor and chair of emergency medicine and professor of public health sciences at the University of Virginia in Charlottesville. In addition to his service with ACEP, he has been an active volunteer with the American Heart Association/American Stroke Association Quality and Emergency Cardiac Care departments. He currently serves on the 3CPR Council.

Dr. O'Connor has worked as an emergency physician for more than 25 years and has presented more than 400 research papers and lectures at local, national, and international meetings. He has authored more than 150 published manuscripts, coauthored six books, served as editor in chief of three textbooks, and been a peer reviewer for more than 20 journals.

ACEP Toxicology Antidote Mobile App Launched

The ACEP Toxicology Section has created and published the Antidote app, a succinct mobile resource designed for quick access to indications and dosing regimens for a variety of medications and antidotes used for common poisonings encountered by emergency care providers. The project was funded by an ACEP Section Grant.

The app is equipped with a search function that allows you to find specific antidotes by entering a variety of keywords For example, type in "bb," and several possible antidotes for beta blocker poisoning will come up. Alternatively, you can search for individual antidotes or scroll through an alphabetized list. It also allows you to call a poison control center with the click of a button. ***Visit the Toxicology Section website at www.acep.org/toxicology-section/ for details and to download the app for free on your iOS and Android devices.***

TELEVISION SHOW *UNTOLD STORIES* NEEDS YOUR ANECDOTES

UNTOLD STORIES OF THE ER

***Untold Stories of the ER*, featuring life-changing stories from the ED told by emergency medicine professionals, is back for its 10th season on the newly launched Discovery Life channel and TLC. The best stories recount surprising medical or personal challenges, deal with ethical or moral issues, involve new or unusual procedures, and inspire and entertain us with insight and humor.**

The show is asking ACEP members to participate by submitting stories. If your story is chosen, you'll first be interviewed on Skype, and from that interview, a script will be written. Between early August and November, you would be flown to Vancouver, Canada, for the taping of your story. *Please e-mail a short description of each story you'd like to share to ahassett@untoldER.com.*

FDA Announces Drug Shortage App

In early March, the U.S. Food and Drug Administration (FDA) launched the agency's first mobile app specifically designed to speed public access to valuable information about drug shortages. The app identifies current drug shortages, resolved shortages, and discontinuations of drug.

Drugs in short supply can delay or deny needed care for patients. Drug shortages may also lead health care professionals to rely on alternative drug products, which may be less effective or associated with higher risks than the drug in shortage.

"The FDA understands that health care professionals and pharmacists need real-time information about drug shortages to make treatment decisions," said Valerie Jensen, associate director of the Drug Shortage Staff in the FDA's Center for Drug Evaluation and Research. "The new mobile app is an innovative tool that will offer easier and faster access to important drug shortage information."

App users can search or browse by a drug's generic name or active ingredient, as well as browse by therapeutic category. The app can also be used to report a suspected drug shortage or supply issue to the FDA.

What He Said

ACEP member offers a quick review of the Reimbursement and Coding Conference

"I got answers to questions I didn't even know I had, and I found it was very helpful to work off the expertise that other people have. Other people have dealt with a lot of situations I have had to deal with...how they improved it, how they solved it...it's very nice to work off other people's mistakes and be able to not remake them myself."

—Hamilton Lempert, MD, FACEP, Cincinnati

2015 *Research Forum* Abstracts Due April 24

ACEP is now accepting abstracts for the 2015 *Research Forum*. The deadline is April 24, 2015. The *Research Forum* will be held Oct. 26–27 in conjunction with ACEP15 in Boston. Abstracts should represent original research that has not been published or presented at a national scientific meeting. Case reports or subject reviews are not considered original research. Abstracts presented at an international or regional meeting are eligible for submission. ***Get more information and link to the submission form at www.acep.org/rf.***

EMS Strong Launched to Celebrate the Men and Women of EMS

Are you EMS Strong? ACEP, in partnership with the National Association of Emergency Medical Technicians (NAEMT), is proud to announce EMS Strong, a new campaign designed to unite and inspire emergency medical services personnel, strengthen the profession on a national level, and expand and amplify National EMS Week. ***Learn more about the campaign at www.emsstrong.org.***

Council Committee Selection Begins

Volunteer to serve on an ACEP Council committee and lend your experience and expertise.

Members will be appointed to the following committees: 2016 Steering Committee; 2015 Tellers, Credentials, and Elections Committee; 2016 Council Awards Committee; and 2015 Reference Committees for the 2015 Council meeting in Boston. ***A brief description of each committee and access to the needed forms are available at www.acep.org/council.***

An application form is needed for the Steering Committee, and a separate form is needed for the other Council committees. Once the link for the correct application form is clicked, it will direct you to the log-in page where your ACEP log-in and password are required. Note that you must be a Councillor or Alternate Councillor to serve on a Council Committee.

Once you submit the form, you should see a message that confirms your submission. ***Please contact Mary Ellen Fletcher at mfletcher@acep.org if you have any questions. Reference Committee appointments will be finalized in August, and all other Council committee appointments will be finalized in October.***

NEWS CONTINUES *on page 8*

CAN'T-MISS EVENTS

Registration is now open for the Legislative Advocacy Conference and Leadership Summit. Join 500 of your closest friends as you work to improve health care policy and learn valuable tips on how to become a more effective leader.

DATE	EVENT	PLACE	WEB SITE
APRIL 26–30	Emergency Department Directors Academy Phase II	Dallas	acep.org/edda
MAY 3–6	Legislative Advocacy Conference	Washington, D.C.	acep.org/lac
MAY 3–7	SEMPA 360	Lake Buena Vista, Florida	sempa.org/conference
MAY 18–20	ACEP Simulation-based Immersive Medical Training Course	Phoenix	acep.org/sim
JUNE 3–7	Emergency Medicine Academy Phase 2/3	Denver	acep.org/emacademy
OCT. 26–29	ACEP15	Boston	acep.org/acep15

patients from the community hospital, it seriously undermines the tenuous system that we all will need.

Ron Hellstern is right on.

—Rick Bukata, MD
Sierra Madre, California

Thank you, Dr. Hellstern, for your response and encouraging healthy discussion...Readers should understand:

1) FECs are accused of being able to break even on too few patients. Hospital-owned FECs have and take the same opportunity. FECs aren't charging more than hospitals, so why aren't hospitals providing the same access and service with far more paying patients and revenue? The FEC model will compel hospitals to better fund ED care, which is long overdue.
2) Most opponents to FECs (Drs. Hellstern and Bukata included, I am sure) have never set foot in an FEC. If they have, they have not taken a family member there for care. They fail to see our perspective in which we and our patients understand the value of access.
3) Diplomacy is important, but sometimes the facts are so blaringly clear that they should be spoken firmly.

...Drs. Bukata and Hellstern's poor understanding of the FEC model takes focus away from the patients. This stance, and offering no alternative which has not already been attempted, will lead to ACEP continuing to give the United States a grade of D– for access on its report card for emergency care. This stance is "doing harm" and is against the Hippocratic Oath. These are firm words, but the facts in Houston are too blaringly clear. Gentlemen, please join our section and become informed.

—Michael Sarabia, MD, FACEP
Houston

Dr. Hellstern has opened quite a dialogue! ...I don't believe this is a black-and-white issue that you bring up. The number of patients that will be so-called taken away from hospital emergency departments will probably not change the volume of patients seen. We know that most emergency departments are overcrowded and unable to provide the services that many people want or deserve. The volume will only continue to increase with the increase in "insured" patients...This model has allowed me to practice the type of medicine that I would've considered ideal for my specialty: the ability to communicate with patients and to make sure that they were adequately informed of everything that was done to them and to make sure that all issues are addressed. As a matter of fact, many patients have remarked that I have been able to spend more time and show more interest in them than their primary care physician. After a long and very diversified career in emergency medicine, of which half was spend in an academic setting, it is good to find satisfaction in the practice of emergency medicine and not have to deal with hospital issues.

—Juan Nieto, MD, FACEP
Austin, Texas

Regional Anesthesia in the ED

An alternative to opioids

BY JAMES DUCHARME, MD, CM, FRCP

As discussed in previous issues, the availability of options for severe pain control other than opioids has increased as our understanding of the mechanisms of pain neurobiology has grown. Another area that has come into the spotlight, since the advent of ultrasound, has been the use of regional anesthesia for pain control or for procedures.

Initial use of ultrasound focused on its diagnostic utility with the development of the focused assessment with sonography for trauma, or FAST, exam—aortic aneurysm, intraperitoneal fluid, etc. That use has continued to expand, and ultrasound now can be used to diagnose congestive heart failure and even intravascular volume depletion by assessing the inferior vena cava.

Procedural uses for ultrasound have been, for the most part, limited to vascular access, peripheral or central, with only a few centers using ultrasound for regional anesthesia. This latter application should probably be the greatest use of ultrasound in our departments, not the least. Ultrasound-guided regional anesthesia (UGRA) is not only extremely safe, but it guarantees block success.

Benefits of UGRA

Initial studies looking at regional anesthesia discussed femoral nerve blocks for hip fractures. Ultrasound was not used. Although the studies described success in pain relief, closer review described the onset of pain relief from the blocks taking hours. In other words, many of the reported blocks were, in fact, not successful; onset of pain relief should take five to seven *minutes*. For many nerves, use of anatomical landmarks (blind technique) can result in unacceptably high failure rates and possible complications. Use of ultrasound will markedly change that and provide proper regional anesthesia in most hands. Unfortunately, UGRA is not considered a priority. Even in a center where femoral nerve blocks were done, time to UGRA for femur fractures averaged two hours prior to the initiation of a specific protocol that targeted a time of 15 minutes after arrival.[1] In another study of patients with flail chest injuries requiring ventilatory support, where regional anesthesia (epidural) is supposed to be the standard of care, only 8 percent of patients received an epidural.[2] UGRA allows not only visualization of the needle to the nerve, it also allows visualization of the anesthetic flowing around the nerve. It is also provides proof that the needle did not touch other structures (such as the lung, artery, etc.). The combination of success with a very high safety record is something we should always seek. UGRA can be an excellent alternative to procedural sedation in patients at risk (eg, an ASA 3 patient who may not tolerate sedation or a patient with altered mental status). In such patients, UGRA such as supraclavicular brachial plexus blocks or sciatic nerve block in the popliteal fossa allows for painless reduction of distal dislocations or fractures without the risks of sedation or the need for complicated monitoring.

UGRA should not be limited to procedures but should also be used for effective pain control. However, its limitations need to be understood. In patients at risk for the development of compartment syndrome, UGRA will hide the first and most important symptom of increasing pain. Such patients are therefore not candidates for UGRA. Regional anesthesia has to be integrated into trauma protocols if they are to become a routine part of practice. Currently, pain management is not considered a priority in the resuscitation of unstable trauma patients. It is often not a priority even in patients with isolated extremity fractures. The latter are routinely sent for imaging and confirmation of fracture before any pain control is administered. Introducing UGRA as part of a trauma protocol could be straightforward: Almost every trauma patient receives a routine ultrasound assessment. The machine is already at the bedside. Since ultrasound can rapidly identify long bone extremity fractures, couldn't the logical next step be to move the probe a few inches and perform UGRA?

There are advantages to providing regional anesthesia over systemic analgesics. It allows ongoing assessment of the rest of the patient without impediment from systemic medications. Long-acting anesthetics such as bupivacaine or ropivicaine used within the first four hours after the injury can successfully block windup and minimize pain later and the need for analgesics down the road. Note that short-acting agents such as lidocaine cannot have this effect nor can systemic medications such as opioids or ketamine. In a 2003 study by Morrison et al, failure to effectively control pain from hip fractures in elderly patients increased ninefold the risk of deterioration of their mental status.[3] Most of us have difficulty titrating opioids to a safe and effective endpoint in patients who are cognitively impaired. Use of UGRA guarantees complete pain control for at least six to eight hours. Placement of an infusion catheter using ultrasound ensures ongoing pain relief until a patient gets to the operating room.

Training and Uses

Proper technique is essential, so training must be arranged. Many universities now offer cadaver-based regional anesthesia courses, often targeting anesthesiologists and pain physicians, but the training is equally valid for us. Regional anesthesia with and without ultrasound should be an integral part of our practice.

Consider:

- Facial nerve blocks for laceration repair
- Occipital nerve block for laceration in the posterior half of the scalp
- Median nerve blocks or ulnar nerve blocks for hand injuries
- Suprascapular nerve block for shoulder reduction
- Epidurals for flail chest injuries (working with anesthesiology)
- Brachial plexus blocks for upper extremity injuries (or localized severe burns)
- Femoral nerve blocks for hip and femur fractures (see Figures 1 and 2)
- Sciatic nerve blocks for ankle or foot injuries and reductions

I am certain that many readers could identify other blocks they have found effective. This should be an integral part of our patient care and part of our core education.

Figure 1. In plane approach for ultrasound guided block of the femoral nerve.

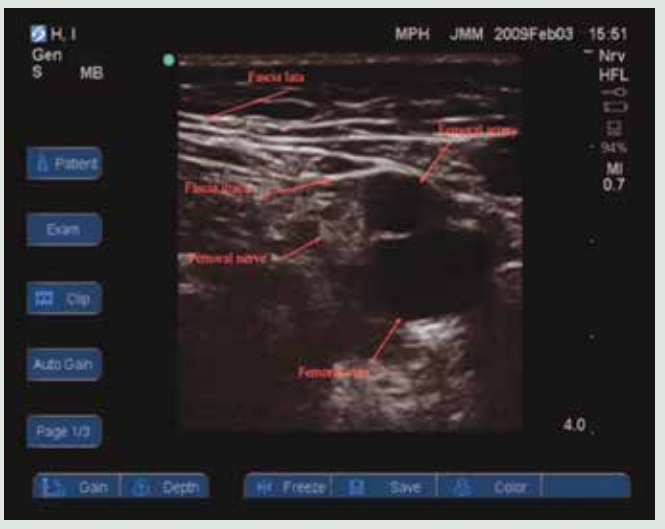

Figure 2. Ultrasound view of the anatomy of the left femoral triangle.

SOURCE: *Anaesthesia.* 2010;65(Suppl 1):57-66. Reprinted with permission.

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PLANNING FOR THE FUTURE

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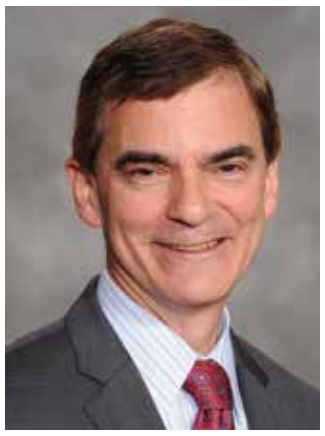


"I have concerns about how we're going to be paid for the increased number of patients we expect to see. Value always relates to what you get for the dollars that are spent. If we want more dollars in our own pockets, which is what I want for my colleagues...we're going to have to show our value."

–Jay A. Kaplan, MD, FACEP

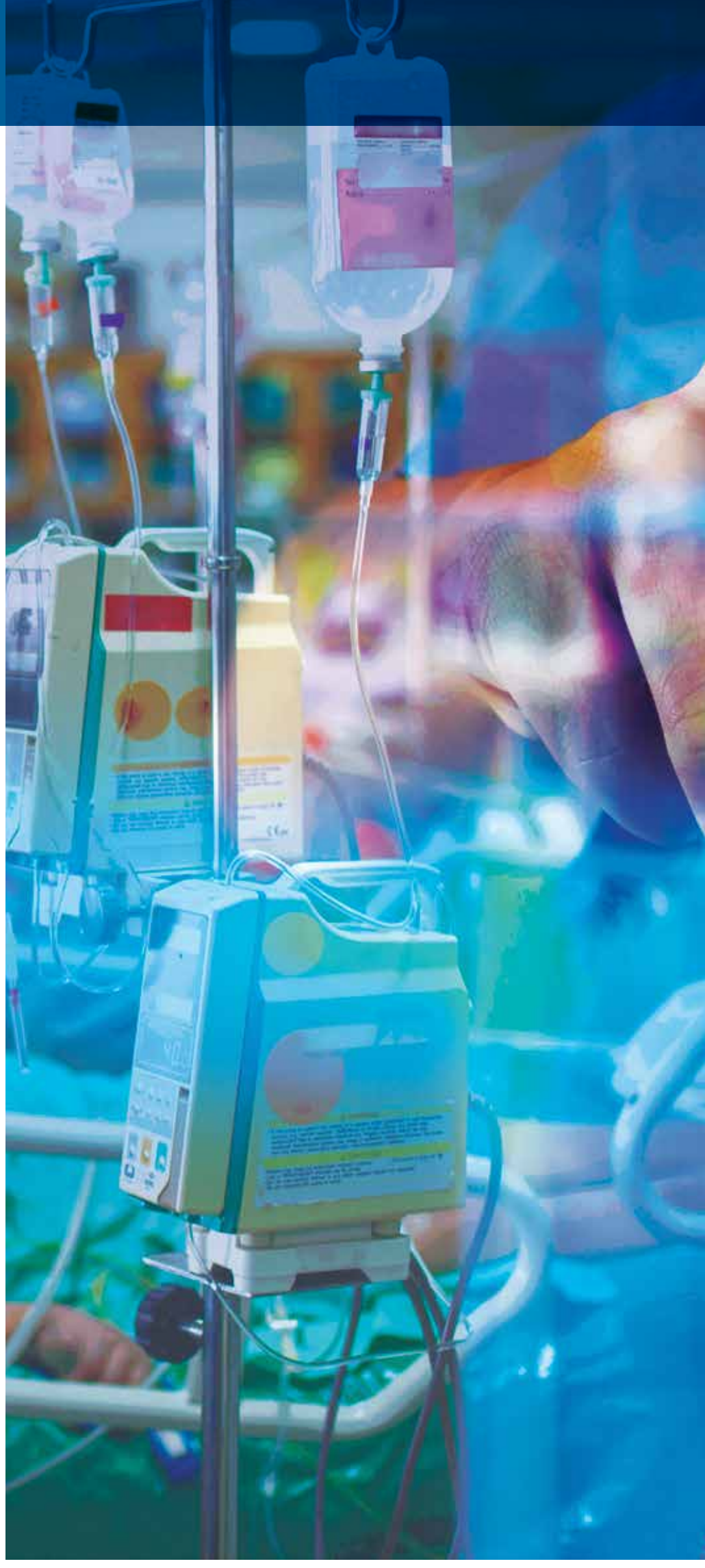
KK: On those weekly calls, can you give us a sense of what important issues you've dealt with recently?

JK: Recently, we've talked about quality issues, the value-based modifier, and the pay-for-performance issues that are affecting emergency physicians. We met recently in Washington, D.C., and one of the issues that came up was medical liability reform, in particular, safe harbors. We discussed how we can approach Congress with regard to that. We reviewed our Qualified Clinical Data Registry and getting that up and running so that emergency physicians do not take a hit in terms of their reimbursement as pay for performance becomes more challenging. We talked about fair payment because reimbursement is also a major issue for emergency physicians and the whole issue of the banning of balance billing and the "greatest of three" rule, which relates to how physicians are compensated by insurance companies.

KK: This sounds like a good segue into what you feel are the biggest challenges for emergency medicine now and in the future.

JK: Showing our value. Emergency medicine has been scapegoated. We are known as the most expensive place to receive care when that is not the case. We have tried to tell our legislators that we're only 2 percent of the health care dollar, but they haven't bought it. As we move into the era of Accountable Care Organizations and bundled payments and less reimbursement per patient, we're going to have to show our value in terms of consistent practice, following practice guidelines, and decreasing cost. We can't do anything about patients coming to us, but we can create programs for our ED superusers to improve appropriate utilization. As our population ages, I have concerns about how we're going to be paid for the increased number of patients we expect to see. Value always relates to what you get for the dollars that are spent. If we want more dollars in our own pockets, which is what I want for my colleagues, we're going to have to look at whether to admit patients or not and our choices regarding expensive advanced imaging. We need to show that by being more consistent in our utilization of admission and of imaging, we can save the "system" money, and therefore we deserve to be paid fairly.

Burnout is another big issue for emergency physicians. I've been very involved with wellness for many years. There have been articles published that have said that emergency physicians are second in terms of the percentage of physicians who report burnout. I want emergency physicians to have long, successful, and fulfilling careers, and we have to be active in making sure that our members have the resources that they need to give the kind of care they want to give their patients and not feel exhausted, burned out, and fatigued.



Reimbursement is another area. There is going to be a fight for every dollar, and again, we'll have to show our value. Another issue is medical liability reform. Unfortunately, we're in the midst of a number of do-nothing Congresses, so I'm not sure how successful we can be; however, we will continue to push for that. Congressman Charlie Dent (R-Pennsylvania) reintroduced the Health Care Safety Enhancement Act, which would classify emergency physicians (providing EMTALA-mandated care) as federal employees, receiving the same protection as public health service physicians. I am hopeful that we can push for EMTALA liability reform and even better safe harbors. Ensuring that we have an adequate workforce is critical. The number of graduate medical education slots that emergency medicine and other specialties have is currently based on a mid-1990s study. Clearly, we have more medical students who are graduating now. We have a huge need for emergency physicians, and we need to try to increase our residency positions so we can graduate the number of doctors that we need. The gold standard for delivering emergency

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care should be delivered by emergency medicine residency–trained, board-certified physicians, and we will not have enough of those in the foreseeable future.

KK: What do you think the likelihood is during your presidential year that we will either have a safe harbor act enacted or have EMTALA reform that’s meaningful?

JK: We have a greater opportunity for the EMTALA mandate than we do for safe harbors. I would put that at around 50 percent.

KK: Tell me how you feel you can justify the value of dues dollars to the members. If you had to convince one person to join, what would be your elevator speech?

JK: I would point out a number of advocacy successes that we have had in the last number of years. Physicians who are recently out in practice may not remember that we had to initially fight for the prudent layperson definition of an emergency, which passed at the state level, then at a federal level, and then we fought hard and had it included in the Affordable Care Act legislation. It is now a federal mandate that patients have a right to come to the emergency department based on their belief of whether they have an emergency or not rather than on a retrospective determination. The Relative Value Scale Update Committee determines our payment, and while a number of other specialties have seen a very significant drop in their reimbursement, we have not seen that in emergency medicine because ACEP has been representing members at the federal level for years. Also, ACEP offers some of the best educational opportunities for emergency physicians. If you’re a member, you receive that at a discount. ACEP's Education Committee, along with the ACEP staff heading up education, have been very proactive and on the cutting edge. There are a number of other aids, such as Portfolio Tracker, which ACEP now provides for emergency physicians, as well as what’s coming soon, a Qualified Clinical Data Registry (QCDR). If you’re a member, you will get the QCDR at a very large discounted rate, and that will save emergency physicians several thousands of dollars per year and will be a no-brainer return on investment.

KK: Jay, what do you say to the nonmember who says, “All of the great work that ACEP is doing I benefit from anyway, so why do I need to write a check? Why can’t I just ride on the coattails of those who have already paid their dues?”

JK: Well, that’s one way you can look at it. I would like to think that there are people who contribute and that they have a certain integrity, which goes along with, “If I’m going to receive benefits, then I deserve to contribute to the organization that is providing those benefits.”

KK: What would you say if someone approached you and said, “I think ACEP favors contract management groups and is in bed with Big Pharma”?

JK: I’d say that is what the perception was 15 to 20 years ago. While I’m a member of a large group, it is a democratic group, and every physician has a say. Every physician, after you’ve been in the group for five years, owns as much of our group as somebody who may have been in the group for 30 years. If you look at recent leaders of ACEP, they have included academic physicians. The leadership has not been representative of large contract groups. I think that ACEP as an organization needs to represent all different models of practice. I cannot say that there is one way better than another, and I do think that emergency physicians need to have a say in their practice and need to be fairly compensated. There are a number of ways that that can be done. I will say for myself, when I was in medical school, we were one of those medical school classes that chose not to take stethoscopes from a pharmaceutical company. It’s a fine balance, and ACEP has done extremely well with regard to that balance. I have been very careful, and the ACEP Board has been extraordinarily careful with regard to how ACEP, as an organization, has interacted with large insurance and big pharmaceutical companies.

KK: Am I hearing you say that you believe the membership criteria should be broadened a bit?

JK: Well, no, you didn’t hear me say that. I am a champion of the little guy and will always be. It is true that, as a professional organization, we need to stand for our patients, and we need to recognize that a large percentage of patients right now are currently seen in emergency departments that are not staffed by ACEP members. They’re not staffed by ACEP members because in order to be a member of ACEP right now, you need to be board certified in emergency medicine. The only way that that can happen is if you do an emergency medicine residency, and we still have a lot of physicians who are rendering care in emergency departments, particularly in smaller emergency departments, who are not trained in emergency medicine. The real question is, do we want to leave them outside of our organization or is there some way that we can find to bring them in?

EMRA, the Emergency Medicine Residents’ Association, is the future of our specialty, and anything that ACEP decides to do needs to be done in partnership with and in close collaboration with EMRA. If we could somehow capture those people who might not currently be members but would like to be members, and we can do so in a way that does not put them at the same level of the gold standard of an emergency physician, then we should see if we can do that.

Right now, we’re an organization of just about 33,000 emergency physicians, and I want people to think about what kind of power we could have in terms of our advocacy and in terms of our patients if we had 50,000 members. What could we do in Washington to fight for reimbursement, to fight for medical liability reform? The larger you are, the more presence you have. The larger your voice, the more represented you are and the more you get what you want for yourself and for your patients. We need to work with our young physicians and have them understand that doing so would not constitute a threat to them, that they’ll always be the gold standard, and that if we could be more inclusive, it could actually be a win-win-win-win. It could be a win for those physicians, it could be a win for ACEP, it could be a win for our young physicians, and it could be a win for our patients.

Face to Face with DISASTER

"I'm an emergency physician. We don't hesitate. We don't pause. We set those things aside, and we process them later."

–Bradford L. Walters, MD

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In this Aug. 16, 2012, file photo, flowers and pictures are shown at the memorial in Romulus, Michigan, to mark the 25th anniversary of the crash of Northwest Airlines Flight 255 near Detroit Metropolitan Airport. The aircraft crashed in the Detroit suburb of Romulus, killing all 154 people aboard except for a 4-year-old girl. Two people also died on the ground. In the new documentary, "Sole Survivor," Cecelia Cichan, whose married name is Crocker, breaks her silence, discussing how the crash of the Phoenix-bound jetliner has affected her.

KK: Tell us about the crash.

BW: This was the Northwest Airlines Flight 255 that, unfortunately, lost control upon takeoff on August 16, 1987, around 9 p.m. (Detroit). The plane lost control, banked to the left, and hit a parking structure at the edge of the airport, crashing on a four-lane, heavily traveled street.

KK: Do you remember what type of aircraft it was?

BW: This was a McDonnell Douglas MD-82 (an earlier version of today's MD-88). It had 149 passengers and six crew. One 4-year-old young lady by the name of Cecilia, was the sole survivor. The captain was John Maus and the first officer was David Dodds. I was one of the physicians who participated in the formal autopsy onsite of both the captain and the first officer.

KK: You were involved in the federal National Disaster Medical System (NDMS). Were you just happening by the accident, or were you notified and responding?

BW: Neither. I happened to be at home. I saw the news event. I said, "They might need help and, in addition, this might be a chance to learn from Wayne County's NDMS or whoever's responding to this mass disaster." So, I identified myself to a police officer there. I expected he was going to say, "No, I understand what you're saying, but the area is closed off and you can't get through," and I'd turn around and go home, saying "I'd tried my best."

KK: Are you that guy who drives around with an EMS bag, a cric kit, rib spreaders, and a defibrillator in your trunk?

BW: Wait, wait, wait, you also have to say that now I also carry a glidescope. I am that guy, but at the same time, I'm an emergency physician. You know that famous line from 9/11: When everyone was running out, the first responders, the emergency medical teams were running in.

KK: Did you have a blue light on top of your car or on your dashboard?

BW: I did not. I draw the line there.

KK: Back to the story…

BW: The police had stopped traffic and I just walked up to the officer and identified myself as an emergency physician as part of the NDMS team. He said, "Come with me," and put me in a car with a deputy. They drove me to the site and told me they would take care of my car.

KK: As you were approaching, what is the first sight at the crash that you really remember?

BW: It's really a surreal thing, but my first impression was the smell. There was a combination of the kerosene smell of jet fuel; the plane burst into flames, so you smelled the smoke and char; and then there was that smell of burned and dead flesh.

KK: Did you consider not participating at that point, or pausing?

BW: No, never thought of pausing. I'm an emergency physician. We don't hesitate. We don't pause. We set those things aside, and we process them later.

KK: What was your first sight?

BW: It's multi-sensorial because there were these huge klieg lights. There were these huge spotlights illuminating the scene, but also the red on-and-off lights of all the EMS vehicles and fire trucks. Quite a bit of smoke was in the air. They had just finished putting out the last of the fires, and there were all these objects. You could see the difference between the angular pieces of fuselage and softer shapes. I realized these were body parts. I was not prepared for the magnitude of that.

KK: Tell me about who you met on the scene. Who was your first contact that gave you a clinical assignment and what did you do then?

BW: The incident command center turned me over to one of the paramedics, and they got me into full bunker gear. We started going through some of the larger pieces of fuselage that could potentially house a survivor. We went through each of the large pieces of fuselage and then some of the bodies that were on the ground, and we assured ourselves that each one of them was, in fact, a non-survivor. One of the more surreal incidents was there was a relatively large piece of the middle fuselage that was still sort of intact and we climbed into it. We were walking down the aisle, stopping at each of the bodies again looking for a possible survivor, and I catch my air hose on a piece of debris. I feel my head and my air hose pull back, and I'm trying to reach back; I'm starting to panic. I'm inside the fuselage. I can see that there are a lot of gases around, a lot of smoke. It's very eerie, and all of a sudden, I feel someone grab me from behind, and I think I screamed. I'm not sure, but the paramedic behind me saw that I had caught my hose. He grabbed me first and pulled me backwards to free my hose.

"Interestingly enough, the young lady who was the survivor actually has a tattoo of a McDonnell Douglas MD-82 on her hand as a reminder of being the only survivor of her family. I would love to meet her one day."

KK: What did you take away from this experience that you use in daily practice now?

BW: We had to revamp what we were doing at that scene over and over again as the situation changed, as we realized that there were no survivors and now we had to collect all the bodies and try to identify them. By the way, I learned how to do a disaster identification autopsy.

KK: It's interesting that they would put you into this role without previous forensic experience. What exactly did they have you do?

BW: Actually, they had collected the bodies. They cleared out their hangar, collected all the bodies, and brought them there. Another company brought in two refrigerated trucks so that the bodies could be placed in a refrigerated environment. When I got back to that facility, they said, "We need physicians to help us with identification," and it was on-the-job training. It's not that difficult. A lot of it is cataloguing the body parts, the victims' clothing, determining sex, trying to get an idea of age, looking for any pieces of jewelry, rings, necklaces, and things like that. You try to get eye color. The FBI identification team came in and I learned how they do the fingerprints. Do you want to know how they do the fingerprints?

KK: Sure.

BW: They can't roll the fingerprints on a corpse, particularly one that's been damaged significantly. They actually take the hand and remove each of the fingers, and they very carefully roll the fingerprints. The FBI agent said, "this is our last and only opportunity to identify some of these people and without that, their families are never going to get closure."

KK: Did you sign death certificates? What authority or accountability did you have for what you were doing?

BW: Actually Warner Spitz signed the death certificate, but it was on our say-so.

KK: Did you have any assistance with a critical incident stress debriefing?

BW: It didn't exist then. I had to process this all myself. One of the other things I learned is that I would've done much better had I been able to talk about this, even with my colleagues.

KK: Why didn't you?

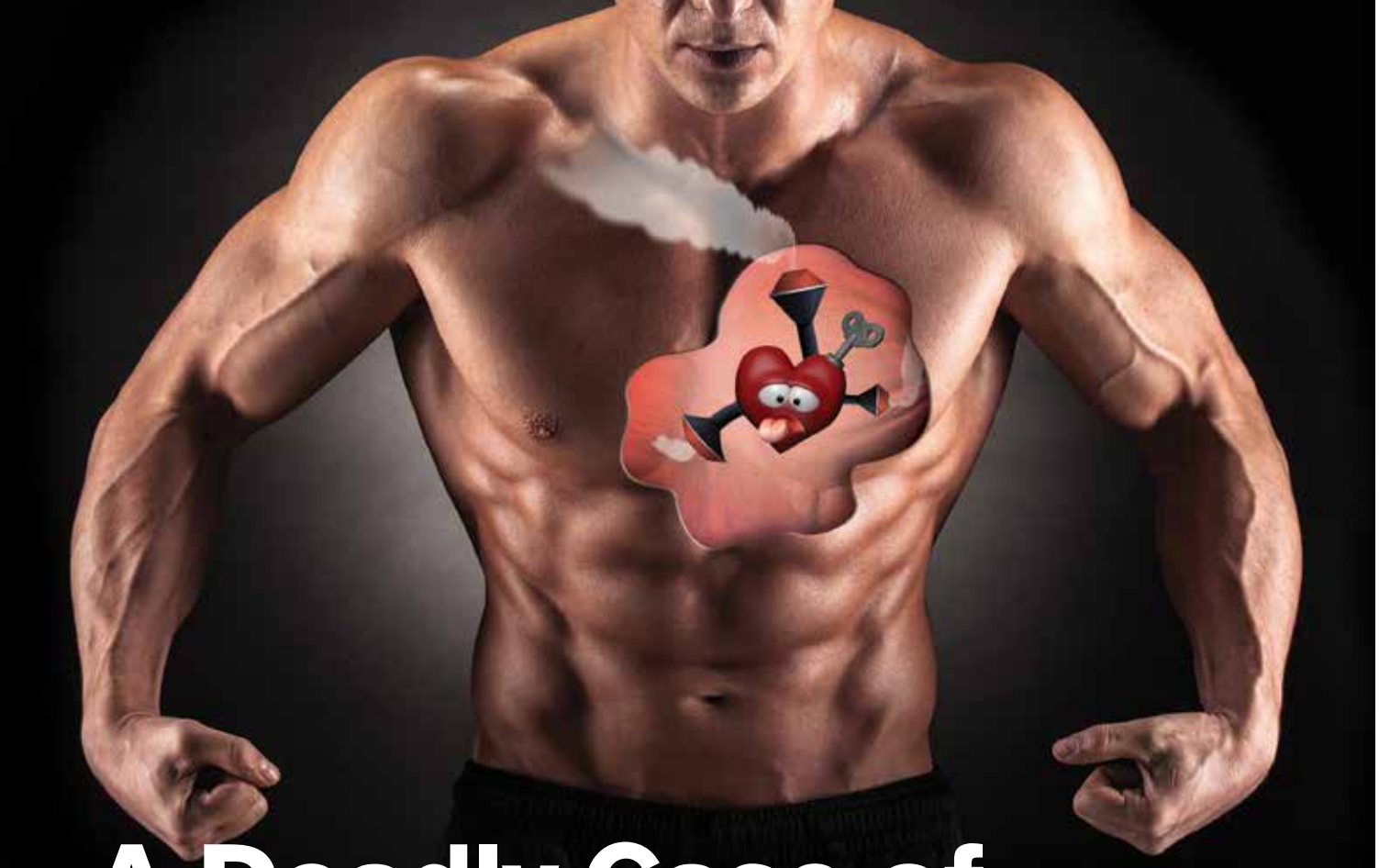
BW: I don't know why. I talked about it with a couple of close friends. Of course, my wife was really instrumental in being the person who listened to it. I was brought up in the era of, basically, you just sucked it up and you moved on.

KK: It's amazing that you got to the other side of this thing intact emotionally and even intellectually. It has to be a life-altering event.

BW: I think we do such a far, far better job now with the emotional states of both the victims and the people who provide aid, as was seen with Katrina and similar events. Interestingly enough, the young lady who was the survivor actually has a tattoo of a McDonnell Douglas MD-82 on her hand as a reminder of being the only survivor of her family. I would love to meet her one day.

KK: The crash was 30 years ago. Can you tell me how many times you've had this type of a detailed conversation about this?

BW: This may be among the most detailed conversations I've ever had about this.



A Deadly Case of MANOPAUSE

A quest for the Fountain of Youth may cost more years than it gains

BY JAMES LIM, MD, ANJALI HULBANNI, MD, AND EDWARD CHEW, MD

ILLUSTRATION/PAUL JUESTRICH; PHOTOS SHUTTERSTOCK.COM

The Case

"I told him he never should have started that medication," said the patient's worried wife.

Several hours earlier, her husband had presented to the emergency department for chest pain and shortness of breath. He first noticed it over the past week when doing routine chores such as cleaning and moving furniture.

"It didn't stop him, even though it was bothering him. He never had any serious health problems," she said.

Other than diabetes and sleep apnea, her 62-year-old husband was healthy. His primary doctor sent him to the ED for further evaluation after a concerning ECG was obtained in his office. He was tachycardic but seemed relatively stable. We proceeded with a chest pain and dyspnea work-up, which included cardiac enzymes, chest X-ray, and a d-dimer. He waited patiently, charming the staff with his small talk and affable personality.

Enzymes were negative, and d-dimer was positive. I took him for his CT angiogram. As soon as it was done, the tech and I immediately noticed the large bilateral pulmonary emboli on the screen in front of us (see Figure 1). I was preparing to take him back to the ED when he asked, "Is there a bathroom over here? I'd rather use it here before going back to the ED. It's pretty crowded over there."

He had a point. The ED could be a madhouse with just two bathrooms. His wife and I assisted him to the bathroom. It was only seconds before I heard her scream. I opened the door, and he was sitting on the toilet, a glazed look on his eyes.

"I think he just passed out," she exclaimed.

He was awake but seemed distant and tired. We helped him walk back to his stretcher. I rushed him back to the ED. IV, O_2, monitor—he was still tachycardic and hypertensive. He didn't meet criteria for lysis, so heparin was started.

"I told him he never should have started that medication," his wife said.

"What do you mean?" I asked. He hadn't told us about any medications.

"His doctor started him on something to improve his energy," she said, explaining that a month ago he had started taking testosterone as an energy and sexual supplement.

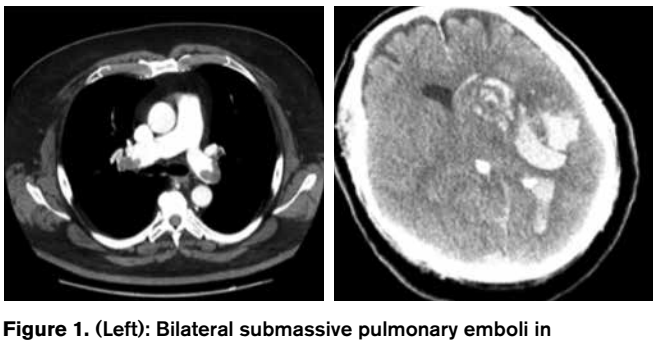


Figure 1. (Left): Bilateral submassive pulmonary emboli in our patient on exogenous testosterone.

Figure 2. Repeat head CT five hours after tPA administration for treatment of pulmonary emboli and ischemic stroke.

But things turn on a dime. While the heparin drip was running, something happened. The talkative man from before was now on a stretcher and unable to speak or move his right side. First a pulmonary embolism, now a stroke? We stopped the heparin and rushed him to CT. He was negative for bleed. This was not particularly reassuring and didn't lessen our dilemma. It was clear he was having an ischemic stroke. Neurology, the ED team, and his family had a long discussion about treatment options—tPA or not? Given his concurrent submassive bilateral pulmonary emboli and a presumed ischemic stroke with significant functional morbidity, his family consented to thrombolysis.

He remained awake but still unable to speak as the tPA was administered. He was able to follow commands with his unaffected side.

Five hours later, a repeat head CT confirmed our most-feared outcome: hemorrhagic conversion of his left middle cerebral artery infarct (see Figure 2). Efforts were made to reverse the tPA without success. The damage was done. During his hospital stay, he was intubated for airway protection but never improved. He eventually died on day nine.

Discussion

The use of testosterone to slow the aging process in men has recently increased in popularity. US testosterone prescription sales totaled a whopping $2.4 billion in 2013 alone. *Time* magazine's 2014 article "Manopause?! Aging, Insecurity and the $2 Billion Testosterone Industry" brought national attention to the increasing off-label use of the drug and the birth of an industry for aging men.[1]

Turn on the TV, and you will frequently see ads with fresh-faced older men running through meadows, enjoying a renewal of energy and youth. Testosterone is one of the drugs people associate with the Fountain of Youth. Now, the use of exogenous androgens for treating primary medical disease is all but a footnote in the practice of medicine.

Unfortunately, little research has been done to demonstrate the benefits of testosterone to reduce the symptoms of the natural aging process in men. Studies published recently have drawn scrutiny to this practice, hypothesizing the increased risk of cardiovascular events with the use of exogenous testosterone.[2,3] The Food and Drug Administration has taken notice, calling for an investigation to determine the potential risks.

However, advocates of exogenous testosterone therapy have recently published data suggesting the opposite. They contend testosterone does not increase cardiovascular risk and may even protect against it.[4]

Needless to say, much has yet to be determined. Randomized clinical trials now must disregard precedent, where benefit has been presumed, and fully examine harm. An earlier trial was terminated early due to the harm seen in the group receiving testosterone.[5]

Should this influence our practice as emergency physicians given the low likelihood we will prescribe testosterone supplementation? It should give us pause when a patient comes through our doors with a history of testosterone supplementation. As of today, it is unclear if we should advocate for or against testosterone's use, but it puts even greater emphasis on the shared decision-making process between patient and doctor.

As one ages, is it worth increasing the already-looming risk of a vascular event in exchange for the Fountain of Youth? Drinking from the Fountain is sweet, indeed, but the Fountain runs dry all too soon. It remains unclear whether testosterone ultimately influenced the outcome of my patient. He was a father and husband looking to regain his youth. Would he have changed his mind about testosterone if he knew there might be a possibility, however small, that it would result in death? Or, even worse, result in a severe and incapacitating disability? Patients often have a difficult time making the best choice for themselves, even when possessing adequate knowledge of the risks. In the postpaternalistic age, we must sometimes, unfortunately, stand aside and let patients make their own choices once they have been presented with the risks and benefits as best we know them.

As a cirrhotic patient with a large hydrothorax and uncomfortable scrotal edema said to me so aptly, "Stop talking about my lung. The lung can wait. Take care of my stuff down there first."

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When to CALL THE CODE

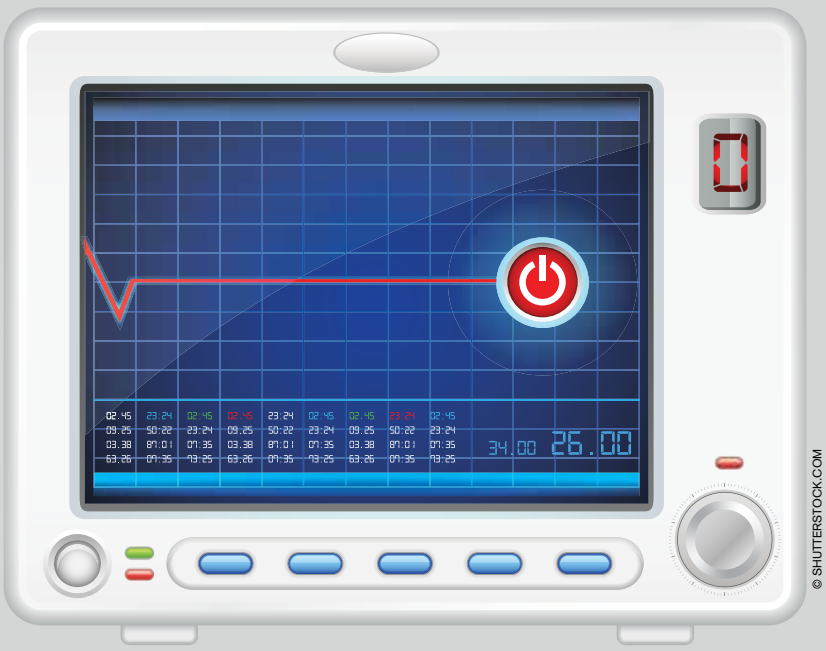
Ethical issues in terminating ED resuscitations

BY ELIZABETH M. PHILLIPS, MD, MA, CATHERINE MARCO, MD, FACEP, JOHN JESUS, MD, DAVID H. WANG, MD, AND GREGORY LUKE LARKIN, MD, MS, MSPH, FACEP

The Case

A frantic call comes in on the box: "CPR in progress—three minutes out!" Emergency medical services (EMS) abruptly rolls in with a 41-year-old female schoolteacher who became unresponsive at work. The school personnel provided immediate bystander CPR, and EMS arrived on scene five minutes after the patient lost pulses. EMS continued CPR but had neither established IV access nor given any medications. You immediately dichotomize her prognostic profile. You note that she is young and had a witnessed arrest, immediate CPR, and a potentially reversible cause of cardiac arrest. In the back of your mind, however, you are also assessing the negative prognostic variables: resuscitative efforts have been under way for at least 15 minutes with no IV access, no code medications were given, and she was not intubated in the field.

In the emergency department, you establish access, intubate, and attempt defibrillation for what appears to be ventricular fibrillation. Attempted resuscitation continues with multiple rounds of advance cardiovascular life support (ACLS) medications. By the fourth shock, 30 minutes after the arrest, her pupils are fixed and dilated. The patient's family arrives and is obviously distraught, urging you to save her life. The pressure of knowing her prognosis, the urgency of her family's pleas to continue resuscitative efforts, and a sense of professional failure now weigh on your mind as you approach the decision to terminate resuscitation. Your team turns to you expectantly, waiting for direction.



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Discussion

A particularly challenging situation occurs when the family of a patient in cardiac arrest desires protracted attempts to save a loved one. Although clinicians may be tempted to honor family member requests in order to avoid confrontation or save time, interventions should only be considered when there exists at least a possibility of medical benefit for the patient.[1] Respect for patient autonomy and family wishes is sometimes used to justify providing nonbeneficial resuscitative treatment. Such action, however, ignores family member bias and the limitations of surrogate decision making, and it also violates clinicians' dual professional responsibility to protect both patients' health interests and scarce health care resources.[2,3]

Despite the development of CPR more than half a century ago, the prognosis for patients with cardiopulmonary arrest (CPA) remains grim. The prehospital survival rate to neurologically intact hospital discharge for victims of out-of-hospital cardiac arrests is approximately 3 percent, and rates of survival in ED patients who arrest are in the range of 20 percent.[4] For patients who arrest in the field, studies from prehospital systems in many countries have validated a basic life support (BLS) rule for termination. This rule highlights three criteria that characterize physiologic futility with a 99.8 percent predictive value: 1) EMS did not witness the arrest, 2) no shock was delivered prior to transport, and 3) there was a failure to obtain return of spontaneous circulation (ROSC) prior to transport. Similar studies evaluating ED arrest patients reveal that recurrent arrests are less likely to result in ROSC and, ultimately, survival to hospital discharge.[5]

Current evidence supports early termination of ED resuscitative efforts in CPA patients who meet established criteria for physiologic futility. These criteria include the prehospital BLS rule, cardiac standstill on bedside echo, and/or an end-tidal CO_2 <10–15 mm Hg after 20 minutes of standard ACLS. Several ED CPA studies have shown that cardiac standstill on ED echocardiography is 100 percent predictive of failure to leave the ED alive regardless of both downtime and initial presenting rhythm.[6]

End-of-life care is a complex task for emergency physicians and should include careful consideration of patients' wishes, family input, scientific evidence regarding prognosis, and physician judgment. Several organizations have provided guidance for such complex decisions. Current ACEP policy states that "physicians are under no ethical obligation to render treatments that they judge have no realistic likelihood of medical benefit to the patient." This policy also states that emergency physicians' judgments should be unbiased, based on available scientific evidence and societal and professional standards, and sensitive to differences of opinion regarding the value of medical intervention in various situations.[7] The American Medical Association has also stated in policy that "physicians are not ethically obligated to deliver care that, in their best professional judgment, will not have a reasonable chance of benefiting their patients."[8]

Equally important as *deciding* when to refuse a family member's request for continued resuscitative efforts is how the family is *approached* about the decision. Shared decision making with clinicians, patients, and families can be a means of achieving consensus for the best approach to honor patients' wishes. Clinicians should clearly explain their positions and invoke practice guidelines when appropriate. Furthermore, clinicians should identify and address why conflict exists when making these decisions in order to decrease possible feelings of abandonment and mistreatment.[9]

In the case presented, it would be ideal if the health care team and family understood and agreed with the decision to discontinue resuscitative efforts. However, it is ultimately up to the provider to make the best clinical decision with the information provided. In this case, it would be appropriate to cease further resuscitative efforts and to focus on family support, including communication and spiritual counseling if desired. The emergency physician should explain to the family that their loved one received the best and most appropriate care that modern medicine can provide.

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Feel Like a Criminal? Compact to the Rescue

Applying for a license in a new state can feel like punishment, but new FSMB compact may simplify the process

BY KELLY APRIL TYRRELL

Dean Wilkerson, JD, MBA, CAE, tells of a physician who recently moved from New York to Texas and sought a medical license in her new home state.

The physician, also licensed in Pennsylvania, had been sued twice, but the suits were dropped each time, said Wilkerson, Executive Director of ACEP and a former corporate attorney in Texas. Yet in the process of applying for her third medical license, she was required to track down original documentation to prove she was fit to practice and dredge up her medical education records from the 1970s. For now, she is on a six-month waiting period.

"They're putting her through hell," said Wilkerson. "She has a license in New York and Pennsylvania, and Texas is acting like she just got out of prison."

ILLUSTRATION/PAUL JUESTRICH; PHOTOS SHUTTERSTOCK.COM

Practical Solution to a Multifaceted Problem

The anecdote highlights one of the numerous barriers physicians may face when seeking medical licensure in a new state. A new interstate licensure compact created by the Federation of State Medical Boards (FSMB) aims to simplify the process, reducing the hurdles physicians must surmount while improving access to care for patients and maintaining their safety. Several states are now considering draft legislation to adopt it, while others remain wary.

"Medical boards want to protect the public from unethical practitioners, but it seems very burdensome, time-consuming, and expensive to get a license in a new state," Wilkerson said. "It creates barriers to expanding physicians' service and access to care for patients."

If adopted, the compact would allow states to access background and credential checks, disciplinary histories, investigative actions, and more from the state in which a physician holds a principal license rather than putting the onus of primary documentation on the individual physician. All compact states in which a physician seeks licensure could then share that information, reducing inefficiencies, expediting the approval process, and enabling innovations like more widespread adoption of telemedicine.

"Iowa's doing all this work to make sure I'm a good physician," said Hans House, MD, FACEP, ACEP liaison to FSMB, professor of emergency medicine at the University of Iowa, and ACEP Board member. "Illinois shouldn't have to reinvent the wheel."

"Emergency physicians can and do move from state to state, unlike a family medicine doctor who develops a bunch of patients, and it may not be as easy to pick up and move to California," said Wilkerson. "We would really like to see a more streamlined interstate licensing system to account for the movement of our members over time."

Telemedicine is also a driving force behind a push to make medical licensure across state lines easier, particularly in rural and underserved areas.

"Telemedicine is growing as a solution for our Midwest states, where there are shortages of emergency physicians," said Dr. House. "It's attractive for those who practice telemedicine and need licenses in every state where patients are being seen."

Last year, the FSMB developed model interstate compact legislation, and to date, 13 states have drafted bills to adopt it. In order to work, the compact must be implemented in seven states, said Donald H. Polk, DO, chair of the FSMB, a family medicine physician, and chair of Tennessee's osteopathic board.

Of the 70 FSMB member state medical and osteopathic boards, 27 have endorsed the compact, Dr. Polk said. Some are enthusiastic supporters, while others are waiting for more information or to see if it works in other states.

"Some don't want to be first," said Dr. Polk. "Others want to be in on it from the beginning."

> "Emergency physicians can and do move from state to state…We would really like to see a more streamlined interstate licensing system to account for the movement of our members over time."
>
> *–Dean Wilkerson, JD, MBA, CAE*

How It Would Work

The compact would involve the formation of an interstate commission composed of two representatives from each participating state to oversee compact activities. These could be physicians, members of the public, or state board executive directors.

A physician's state of principal license would perform all of its traditional licensure duties, including verifying medical education, issuing licensing examinations, and conducting criminal background checks. States that join the compact would have access to that data, expediting the licensure process when qualifying physicians apply. The compact sets high standards for physicians wishing to participate in expedited interstate licensure. For instance, they cannot have been convicted of an offense or disciplined by a licensing agent.

Each state would, as in the traditional licensure mechanism, maintain jurisdiction over that license, and physicians would be held accountable to the states in which their patients live; however, a violation in one state would become the purview of all licensing states, and action against a physician could be taken in each.

This is one of the reasons the Minnesota Board of Medical Practice (MBMP) supports the compact and is eager to see the bill currently in its state legislature, which it did not introduce, signed into law.

"It's a good solution to finding ways to enhance portability without jeopardizing state sovereignty, which is very important to Minnesota," said MBMP Executive Director Ruth Martinez. "It's a constructive, thoughtful solution to a problem a lot of states are experiencing."

Like the compact between states that issue driver's licenses and allow motorists from other states to travel through their borders, the FSMB recognized it was important for states to maintain control rather than attempt to move to a national process.

Some Reservations Remain

Some states remain concerned the compact will supersede their licensure requirements or worry about the costs of funding the interstate commission and the authority of the FSMB to set some rules, such as fees for licensure. The compact also does not address state-specific continuing medical education requirements, which can add up to hundreds of hours each year for physicians licensed in multiple states.

"Doing this requires a certain amount of trust in the system and in other states," said Dr. House. "Some states may be less willing to go along with the compact."

The Medical Board of California (MBC) Executive Director Kimberly Kirchmeyer said it is currently weighing its options. The compact was an agenda item at its January 2015 meeting, where members were invited to voice questions and concerns. The board also invited the FSMB to attend a future meeting.

While the overall impression has been positive, the MBC seeks additional clarity and assurance. For example, "there is no requirement for the commission to include a public member," Kirchmeyer said. "If every state put a physician on the [interstate] commission, it would be physician-led."

In Maryland, Devinder Singh, MD, chief of plastic surgery at the University of Maryland School of Medicine and chair of the Maryland Board of Physicians (MBP), said that while a compact bill is in play in his state's legislature, the MBP did not introduce it, and MBP would prefer to see how compact legislation plays out in other states. It invited the FSMB to its April board meeting, though Dr. Singh notes that the compact simply is not a board priority this year. Instead, the MBP aims to close a criminal background check loophole in its current licensing regulations.

In Minnesota, Martinez said the board views the compact as an opportunity to better meet the needs of patients. "I think the advantage to patients is enormous and one of the best things about this compact," she said.

The MBMP also sees virtue in the high standards that the FSMB would require of physicians seeking licensure in compact states, the opportunity to expedite discipline across state lines, and, in a lesser-discussed benefit, the ability of states to share their physician data.

Martinez is optimistic the bill will be passed in Minnesota this year, and Dr. House believes several states could approve their draft legislation by year's end.

"The Maryland Board of Physicians supports the idea of portability of licensure, and we definitely see the benefits of telemedicine or teleconsultation," said Dr. Singh. "As innovation and technology grow by leaps and bounds, it makes sense for boards to be open to innovation and innovate themselves in parallel. The compact may be a way forward."

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The Nose Knows

The art of nasoendoscopy

by RICHARD M. LEVITAN, MD, FACEP

In my airway education travels, I meet folks who claim no need for endoscopy skills. While it's true you can be an emergency physician and not know how to do nasoendoscopy or long-scope intubation, the real question is, why would you? You can live without a dog, but why would you? You can be an emergency physician and not know ultrasound (coming up with ways to punt, work around, or make excuses), but let's face it—the more you put in the "I don't do that" column, the more uncomfortable you will be with the great challenge of being an emergency physician. Conversely, the less you fear, the easier it is to stand at the front door of your hospital, ready for anything, which is no easy task. It's about making peace with the challenge you've accepted.

Until I felt really confident with an endoscope, I was particularly scared about trach changes, dislodged trachs, angioedema, Ludwig's angina, and other airway challenges that I felt I needed otolaryngology/anesthesia to address. I still respect all of these things and appreciate the expertise our consultants can provide, if they're available. Let's not fool ourselves; patients are ours, and we are responsible for them. In some venues, like where I now work in rural New England, we are all they have.

I learned endoscopic skills through nasoendoscopy. Compared to a long scope (60 cm), nasoendoscopy (30 cm length) is far simpler. It can also be done frequently in the course of caring for ED patients. Long-scope intubation, especially now with the widespread use of video laryngoscopy, is usually done only when the mouth is the problem (angioedema/Ludwig's).

Nasoendoscopy is great for those severe sore throats. It is far faster and better than plain films or CT to assess for epiglottitis. I like looking for foreign bodies, fish bones, etc., but I appreciate that objects can be embedded beneath the mucosa and not be visible by endoscopy. I had a patient who unknowingly ingested a folded small staple in her Chinese food a few days earlier and presented with sore throat. Her mucosal appearance was normal but tender, and she had a low-grade fever. CT identified the foreign body and abscess.

Another great use of nasoendoscopy is for diagnosing laryngeal asthma or spasmodic vocal cord dysfunction (ie, paroxysmal vocal cord motion). I, and most experienced emergency physicians, have mistakenly intubated patients who present with severe wheezing only to discover on induction that their airway abnormality corrects entirely when unconscious. If you make this diagnosis, you can prevent cycles of unnecessary intubation, steroids, etc. It requires observing vocal cord adduction during inspiration, which is opposite of what the larynx does normally. Treatment can be as simple as slow nasal inspiration and exhalation through the mouth via pursed lips. If the diagnosis is certain, benzodiazepines help tremendously. To nail the diagnosis, cord adduction with inspiration must be observed. Diagnostic clues include severe distress (requesting intubation) but normal pulse oximetry and loud stridor audible over the neck. Of course, this requires excluding other causes, like foreign body (above, at, or below the cords), severe allergy (causing edema), asthma, gastroesophageal reflux disease, cold exposure, etc.

I think the most compelling reason emergency physicians should pick up nasoendoscopes is to do tracheoscopy. Gazing at the trachea is awesome for understanding airway anatomy. This is where our tracheal tubes interact with the rings. It is also so easy and so mission critical in trach patients with breathing problems. If a trach gets replaced, it should be verified by direct observation of tracheal rings, a chest X-ray, and documentation of exhaled CO_2 and good pulse oximetry. It is not uncommon that a trach is placed subcutaneously in a patient who, while awake, can breathe around it but then is brought back dead to the ED with the trach in a subcutaneous location. Inspecting the trachea, you can exclude bleeding and mucous plugging. It's only 11 centimeters from the cords to the carina. Inserting a short scope into the tracheostomy tube (cannula removed) gives you an easy and direct view. No drugs are required, and if you don't exit the Shiley or other tube, you will not trigger coughing or gagging.

I recently showed a patient his trachea through his trach tube. ...He he greatly appreciated viewing his own trachea for the first time in his life! It convinced him the trach was in position.

I recently showed a patient his trachea through his trach tube. He flipped the scope over and looked in the eyepiece; he greatly appreciated viewing his own trachea for the first time in his life! It convinced him the trach was in position, the reason he came to the ED in the first place. He followed up as an outpatient with his otolaryngologist.

Finally, there are the cases where a tube cannot be inserted through the mouth, and it must go through either the nose or the neck. In the "surgically inevitable airway," for those patients who will get a surgical airway because of significant pathology (not quickly reversible) of the oropharynx, it makes sense to go through the neck first if you're forced to intervene. However, in patients with angioedema or Ludwig's who may be much improved within a day or two, the nasal route with endoscopic guidance is worth trying. Understand, however, when attempting to intubate these patients, the backup, immediate default plan is to cut the neck. Have them marked, have a tray open and ready, and discuss the possibility with patients and staff so if cutting is required, it's no surprise, and you are cognitively and physically ready. These types of patients will likely be impossible to rescue by passive oxygenation, mask, or supraglottic ventilation.

There are two other factors changing the rules and enabling, or requiring, emergency physicians to pick up endoscopes. First, there's no logistical or financial excuse not to have scopes in the ED. There are now single-use disposable endoscopes (AMBU aScope) and sterile endoscopic sheaths (Medtronic EndoSheath) to put over short and long scopes. These eliminate the need to have scopes sent out of the department for cleaning or repair. Some endoscopes also attach directly to our video laryngoscope monitors (Storz).

The second new reason to embrace endoscopy of the airway is that otolaryngology coverage is declining. More and more, we are at risk of having to manage these cases ourselves. We are becoming one of only a few specialties remaining that is made of "proceduralists," like acute care surgeons in trauma or critical care physicians in some venues.

We cannot run from our fears in this job. It is better to run at them, expanding our skills set, to the do the best for our patients and make better decisions. In the long run, as you gain confidence and eliminate fear, you will last longer in the challenging environment of emergency medicine. The need for endoscopic skills may be infrequent; the benefit of knowing how to do it, priceless.

Editor's note: *Dr. Levitan actually learned nasoendoscopy on himself to better teach airway anatomy—it's a party trick he has done on stage in numerous conference venues. He now shares this learning experience in some of his airway courses, where operators practice on one another and themselves using sterile sheaths.*

DOGMA FEELS RIGHT UNTIL YOU STEP IN IT

SKEPTICS' GUIDE TO EMERGENCY MEDICINE

DR. MILNE is chief of emergency medicine and chief of staff at South Huron Hospital, Ontario, Canada. He is on the Best Evidence in Emergency Medicine faculty and is creator of the knowledge translation project the Skeptics' Guide to Emergency Medicine (www.TheSGEM.com).

PROPPR Ratio for Massive Transfusions

Pragmatic, Randomized Optimal Platelet and Plasma Ratios trial investigates transfusion mix for patients with major bleeding

by KEN MILNE, MD

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Case

A 23-year-old male presents to the ED with multiple gunshot wounds to the chest and is hemodynamically unstable. Your clinical gestalt tells you he is going to need a massive transfusion.

Question

What is the effectiveness and safety of transfusing adult patients with severe trauma and major bleeding using plasma, platelets, and red blood cells (RBCs) in a 1:1:1 ratio versus a 1:1:2 ratio?

Background

Trauma is the leading cause of death in the United States among patients between the ages of 1 and 44. The U.S. Department of Defense developed damage-control resuscitation to try to prevent some of these deaths. It involves taking a balanced approach of providing blood products in a 1:1:1 ratio of plasma, platelets, and RBCs.

There have been no large, multicenter, randomized clinical trials with survival as a primary end point. The Prospective, Observational, Multicenter, Major Trauma Transfusion (PROMMTT) was a large observational trial that demonstrated that many clinicians were transfusing patients with a ratio of 1:1:1 or 1:1:2 and that early transfusion of plasma and platelets was associated with improved six-hour survival after admission.

Relevant Article

Holcomb JB, Tilley BC, Baraniuk S, et al. Transfusion of plasma, platelets, and red blood cells in a 1:1:1 vs a 1:1:2 ratio and mortality in patients with severe trauma: the PROPPR randomized clinical trial. *JAMA*. 2015;313(5):471-482.

- **Population:** Patients ≥15 years of age requiring at least 1 U of any blood component within the first hour of arrival or during prehospital transport and/or predicted by the Assessment of Blood Consumption (ABC) Score ≥2 or clinical gestalt to need massive transfusion.
- **Intervention:** 1:1:1 ratio
- **Comparison:** 1:1:2 ratio
- **Outcome:** All cause mortality at 24 hours and 30 days. Secondary outcomes: time to hemostasis, blood product volumes transfused, and complications.

Authors' Conclusions

"Among patients with severe trauma and major bleeding, early administration of plasma, platelets, and red blood cells in a 1:1:1 ratio compared with a 1:1:2 ratio did not result in significant differences in mortality at 24 hours or at 30 days. However, more patients in the 1:1:1 group achieved hemostasis, and fewer experienced death due to exsanguination by 24 hours. Even though there was an increased use of plasma and platelets transfused in the 1:1:1 group, no other safety differences were identified between the two groups."

Key Results

No statistically significant difference in mortality at 24 hours (12.7 percent versus 17.0 percent) or at 30 days (22.4 percent versus 26.1 percent) for 1:1:1 compared to 1:1:2 ratio.

Exsanguination in first 24 hours significantly decreased (9.2 percent versus 14.6 percent), and more patients achieved hemostasis (86 percent versus 78 percent). More plasma (median 7 U versus 5 U) and platelets (median 12 U versus 6 U) were used in the 1:1:1 ratio versus 1:1:2 ratio, respectively.

There was no difference in complications between the two transfusion strategies.

EBM Commentary

The primary outcome of all-cause mortality was not statistically significant. This does not mean there is no difference between the two protocols, just that there was not a difference greater than 10 percent.

The study was unblinded once the transfusion protocol was started. This could have interfered with the treatment of the patients once they were assigned to one of the two protocols.

The hypothesis to compare 1:1:1 ratio to a 1:1:2 ratio was generated from the PROMMTT study. This was a prospective observational trial, and there could have been confounding factors responsible for the observed mortality benefit.

Another issue is the 1:1:1 group received platelets first (six units) followed by alternating RBCs and plasma. In contrast, the 1:1:2 group received two units of RBCs first followed by one unit of plasma. Platelets were not provided until after receiving nine units of other blood products. It is possible the platelets given first in the 1:1:1 group were responsible for the earlier hemostasis and fewer deaths due to exsanguination by 24 hours.

Bottom Line

A 1:1:1 ratio is a reasonable approach to adult patients who require a massive transfusion and seems to achieve more hemostasis and less death from exsanguination at 24 hours without increased complications.

Case Resolution

The patient was started on a 1:1:1 massive transfusion protocol and had a thoracotomy performed but ultimately did not survive.

Thank you to Salim Rezaie, MD, FACEP, who is a faculty member at the University of Texas, for his help with this review.

Remember to be skeptical of anything you learn, even if you learned it on The Skeptics' Guide to Emergency Medicine.

Additional Resources

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AVOID THE HAZARDS OF EM PRACTICE: FAQs FROM YOUNG PHYSICIANS

WHAT I WISH I KNEW...

DR. SCHYNOLL is vice president for performance improvement at TeamHealth in Knoxville, Tennessee.

Tame Cantankerous Consults

Five tips for forging positive relationships with consultants

by WOLFRAM SCHYNOLL, MD FACEP

In the course of every provider's medical career, there is a certainty that we all have to face: the challenge of managing a relationship with a difficult consultant. This also begs a broader question: how do you forge a good working relationship with consultants in general? There are several proven methods to successfully accomplish this.

First, you need to better understand *their* world. Take every opportunity to learn and appreciate their workload, schedule, and career demands. The easiest way to do that is to simply round on them from time to time. Spending a few informal minutes "off the clock" talking with consultants about their lives, careers, or interests can facilitate the start of great professional relationships. Ask them how their day or week is going. Ask them what makes their work challenging or difficult, and apply their answers to internally asking yourself what you can do to minimize these stated challenges. Ideally, do this when you aren't asking anything from them.

Second, once you have a better understanding of them, use this knowledge to ask what mutual expectations both of you may have that will result in a good working relationship. Inquire what you can do to optimize the collaboration, efficiency, and transfer of care to them. It is as simple as inquiring, "As I consult you from time to time, what can I do optimize our working relationship and to make it easier and more efficient for you to complete your consult? My goal is to always provide you with a high-quality handoff, and I would like to know, from your perspective, how I can consistently achieve that." This type of conversation inevitably promotes great mutual respect.

Third, take the time to thank consultants on a regular basis. By making them feel appreciated for their time, efforts, and contributions, you openly acknowledge their value and expertise. An example might be, "I want to take a moment to thank you for being a valued resource and colleague to me. I appreciate your expertise, passion for great patient care, and commitment to quality. I acknowledge how stressful and difficult your day can be, and I want to express my appreciation for the support and expertise that you provide to me." Even the most cantankerous consultants will warm their demeanor when faced with persistent praise and appreciation.

Nathaniel Mann, MD, is a resident in the department of emergency medicine at the University of Cincinnati in Ohio. Jordan Celeste, MD, is president of the Emergency Medicine Residents' Association and an emergency physician in Florida.

Fourth, the medical environment can be demanding and stressful, which makes it all the harder to engage consultants in occasional casual and relaxed conversations in an attempt to earn their respect, trust, and even friendship. The best way to optimize relationships with consultants is to occasionally spend time with them at social functions or gatherings. There are usually plenty of opportunities throughout the year to attend a professional social function where you can engage your consultants in more casual and relaxed conversation. There is no better way to forge amicable relationships than sharing an occasional appetizer or glass of wine (perhaps two for the grumpier ones) with colleagues.

Finally, despite your best efforts to accomplish the above, there are times when consultants' behavior, demeanor, and actions cross the line of professionalism and common courtesy. Rather than endure this type of abuse, it is necessary to appropriately confront it. This is a crucial conversation that requires good preparation, timely execution, and, above all, tactful discipline. These types of conversations are most successful if you avoid accusatory statements and rather construct the conversation around how you can work better together. The key to these conversations is to ensure that you have developed and exercise good emotional intelligence. This involves being self-aware and accurately perceiving your emotions in the moment and predictable tendencies, managing those emotions and impulses using self-control to be flexible and stay positive, being socially aware by accurately reading the other person's emotions, and combining all to effectively influence, manage conflict, collaborate, and lead change. Of all the skills needed to forge good working relationships with consultants and staff, having and exercising good emotional intelligence is the most important to your success. There are many excellent references on emotional intelligence. One easy and informational read is *Emotional Intelligence 2.0* by Travis Bradberry and Jean Greaves.

If you follow all of the above suggestions, there is a high probability that your medical career will be blessed with many solid and rewarding consultant relationships. We all know how satisfying that can be!

BRINGING DATA TO THE BEDSIDE

BENCHMARKING ALLIANCE

JAMES J. AUGUSTINE, MD, FACEP, is director of clinical operations at EMP in Canton, Ohio; clinical associate 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.

DR. BROIDA, is director of risk management for Emergency Medicine Physicians (EMP) in Canton, Ohio; is COO of EMP's medical malpractice insurance company; and serves on the ACEP Medical Legal and EM Practice committees.

The ED Diagnostic Center

Know the usage data on diagnostic tests to manage utilization in your department

by JAMES J. AUGUSTINE, MD, FACEP, AND ROBERT BROIDA, MD, FACEP

Diagnostic testing options available to emergency physicians continue to expand. The conflicts over the use and cost of testing have spilled over into the popular press and have generated questions from the radiologists who provide many of the interpretations of the images ordered in the emergency department.[1] Managing expensive diagnostic testing in the ED is one element of the value that emergency physicians bring to the American health system. It is important that all ED physician leaders understand the data on imaging rates to adequately address resource utilization queries and better manage their departments.

The ED has a critical and growing role as the diagnostic center for the medical community. This role is particularly important for patients who are being evaluated for potential admission to the hospital due to an acute-onset injury or illness. Because 68 percent of inpatients are processed through the ED, emergency physicians are responsible for a disproportionate share of diagnostic testing and the patient-flow issues related to it.

Diagnostic testing has changed markedly over the last 20 years, with the advent of imaging technology using a broad range of modalities (ultrasound, ionizing radiation, magnetic resonance, positron emissions, etc.). These remarkable tools provide unprecedented ability to evaluate patients as they present with a wide range of clinical problems.

There are two sources of data related to the utilization of diagnostic imaging in the ED over the last decades. The Centers for Disease Control and Prevention (CDC) gathers and reports data through the National Hospital Ambulatory Medical Care Survey (NHAMCS). NHAMCS data from the CDC are available from 1992 through 2011, the last available year. The Emergency Department Benchmarking Alliance (EDBA) uses a voluntary data submission process from a large number of EDs and has collected and reported on data through 2013.

The NHAMCS data survey measures the **percent of patients who receive an imaging study**, not taking into account how many imaging procedures are done on any single patient. The NHAMCS report found that 44 percent of patients received a simple X-ray in 1992. In 2011, that number was only 34 percent. The NHAMCS report indicates that 2 percent of patients had CT scanning performed in 1992. This increased to 14 percent in 2007 and peaked at 16 percent for 2010 and 2011.

The EDBA reports on ED utilization of diagnostic imaging as measured in the **number of procedures performed** per 100 patients seen. A patient having multiple imaging procedures performed (eg, a hip X-ray and a chest X-ray) would have two procedures in the EDBA reporting system but only be credited as one imaging patient in the NHAMCS data. The EDBA data survey for 2013 was developed from the performance measures reported by 1,151 EDs that saw 45 million patients in that calendar year.[2] The data are reported in cohorts based on type and volume of patients seen in the ED (see Table 1).

Utilization of CT scans appears to have peaked and has decreased during the last two years, based on the EDBA data surveys over the last 10 years (see Table 2). CT utilization peaked at 22 CT scans per 100 patients seen between 2006 and 2011. There was a 10 percent drop in utilization to 20 CT procedures per 100 patients seen in 2012 and 2013. This is consistent with a recent report that showed decreased growth in CT and MRI imaging rates over the last nine years.[1]

There is about a 50 percent difference in CT utilization based on ED volume, with the range between 16 and 24 procedures per 100 patients seen. Pediatric EDs only use CT imaging about four times per 100 patients seen. Plain diagnostic X-rays show little difference in utilization based on volume.

According to the EDBA report, MRI utilization across all EDs has now reached about 1.3 procedures per 100 patients seen, but this increases to 1.9 in the high-level trauma centers.

Trauma centers utilize diagnostic imaging to evaluate patients with critical injuries. Within the EDBA data set, the data have been sorted into separate cohorts of trauma centers (see Table 3). Pediatric trauma centers have very different profiles than general EDs, so they are excluded. The three cohorts are Level I and II trauma centers, Level III and IV trauma centers, and all other EDs.

Table 3 shows that the higher-level cent-

CONTINUED *on page 22*

Table 1. EDBA Data Survey 2013, Single-Year Cohort

ED TYPE	ECGs DONE PER 100 PATIENTS	SIMPLE X-RAY PROCEDURES PER 100 PATIENTS	CT PROCEDURES PER 100 PATIENTS	MRI PROCEDURES PER 100 PATIENTS
Adult	34	49	20	1.3
Pediatric	2	31	4	0.3
Over 100K volume	31	44	20	1.3
80–100K	27	49	22	1.4
60–80K	31	50	23	1.9
40–60K	30	49	24	1.7
20–40K	24	46	19	1.2
Under 20K volume	20	41	16	0.5
Freestanding EDs, urgent care centers	19	18	12	0.3
ALL EDs COMBINED	**26**	**46**	**20**	**1.3**

Table 2: EDBA Data Survey 2013, Trend Data

YEAR	ECGs DONE PER 100 PATIENTS	SIMPLE X-RAY PROCEDURES PER 100 PATIENTS	CT PROCEDURES PER 100 PATIENTS	CT UTILIZATION BY CDC NHAMCS DATA, % OF ED VISITS WITH CT PERFORMED
2013	26	46	20	Not available
2012	26	48	20	Not available
2011	26	48	22	15.8%
2010	23	44	22	16.4%
2009	23	43	21	14.3%
2008	22	44	22	14.6%
2007	20	48	22	13.9%
2006	19	48	22	11.6%
2005	18	48	18	10.7%
2004	17	49	NA	9.3%
1992 NHAMCS	**13**	**42**	**2.4%**	**2.4%**
2011 NHAMCS	**19**	**34**	**15.8%**	

Table 3: EDBA Data Survey 2013, Comparison of Trauma and Nontrauma Centers

	LEVEL I AND II TRAUMA CENTERS, NOT PEDIATRIC	LEVEL III AND IV TRAUMA CENTERS	NO TRAUMA CENTER DESIGNATION
Number of hospitals	182	241	695
High acuity %	68%	65	64
Admit %	23%	14.7%	15.7
Transfers out %	1.0%	3.0%	2.2%
EMS arrival %	22%	15%	15%
Median length of stay (minutes)	223	156	163
Left before treatment complete %	3.1%	2.2%	2.1%
ECGs per 100	31	23	26
X-rays per 100	49	43	48
CT per 100	26	18	20
MRI per 100	1.9	0.8	1.4

FORENSICS FACTS

DR. RIVIELLO is professor of emergency medicine at Drexel Emergency Medicine in Philadelphia. He is board certified in emergency medicine and has a master of science in forensic medicine from Philadelphia College of Osteopathic Medicine.

Can You Size a Bullet Based on the Entry Wound?

by RALPH J. RIVIELLO, MD, MS, FACEP

You have just finished resuscitating a gunshot victim who has a wound to his chest. The bullet remains in the patient. The detective comes and asks, "Doc, what caliber is the bullet? We have a suspect and need to match his weapon to the bullet."

KEY POINTS

1. Forensic accuracy is essential when taking care of gunshot victims.
2. Never estimate the size of a bullet based upon the wound size.
3. Radiographs should not be used to accurately determine the caliber of a bullet retained in the body.

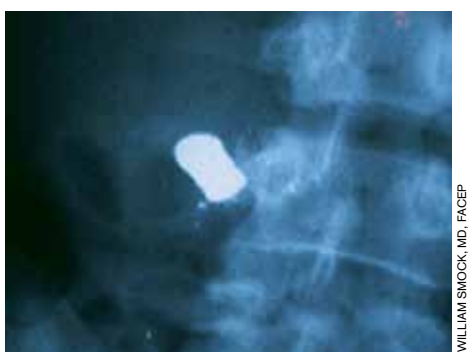
Can you tell the caliber of the bullet based on wound size or radiographs?

The simple answer is no. The size of any gunshot wound, entrance or exit, is primarily determined by five variables: the size, shape, configuration, and velocity of the bullet at the instant of its impact with the tissue, plus the physical characteristics of the impacted tissue itself. Importantly, because of the elasticity of skin, the size of the entrance wound will not coincide with the caliber of the bullet. The wound may be smaller, larger, or the same size as the bullet. When a bullet hits the skin surface, it causes indentation before perforation. Following perforation, elasticity causes the skin to recoil, and the resulting round, circular defect is not the same size as the diameter of the bullet.

BE A MEDICAL DETECTIVE–BONE UP ON YOUR FORENSIC SKILLS

With regard to radiographs, several factors affect the estimation of bullet caliber. Magnification while taking the radiographs can distort the size of the bullet on the radiograph. The bullet size on a radiograph will increase as the distance from the film to the X-ray source decreases. To be accurate, the radiograph must be taken exactly 73 inches from the bullet. As the distance from the X-ray plate to the bullet increases, so does this magnification effect. There are two ways an X-ray can be used to directly estimate bullet caliber. One is to take two radiographs at 90 degrees to each other to estimate the depth of the bullet in the body. A number of bullets of different caliber are then placed alongside the body and at a suitable position and then imaged to compare the bullet caliber. This is rarely done in clinical practice. The other method is to use a micrometer to compare the size of the bullet's shadow on the X-ray to several bullets of known caliber. Whatever bullet is closest in size to the radiographic image must be the largest caliber that the bullet in the body can be. Once again, this is only an estimate and can only exclude other bullets and not precisely determine caliber. There are other complex radiographic protocols and formulas that have been used, but none have been admitted into court.

Figure 1. Radiograph of retained projectile.



WILLIAM SMOCK, MD, FACEP

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BENCHMARKING ALLIANCE

CONTINUED FROM PAGE 21

ers see patient populations with higher acuity, admission rates, emergency medical services (EMS) arrival, and longer time for processing. There are also differences in the use of diagnostics commensurate with the trauma level.

CT scans are used more frequently in Level I and II trauma centers than in lower-level centers. There are 26 CT procedures per 100 patients seen in Level I and II trauma centers and 18 to 20 procedures in lower-level and nontrauma centers. Emergency physicians in these EDs should be aware of the differences, and when called upon to study their utilization, they should compare their experience to cohorts at a similar level of trauma designation and pediatric mix.

It is critical that emergency physicians are able to use and understand the data on diagnostic testing in their department and have comparison data available for their peers. This will allow better decision making by all parties involved in utilization management.

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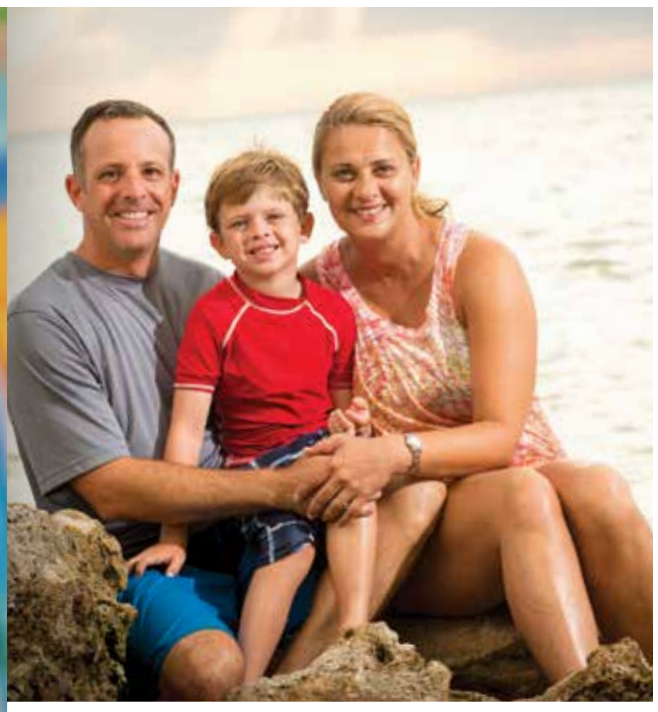

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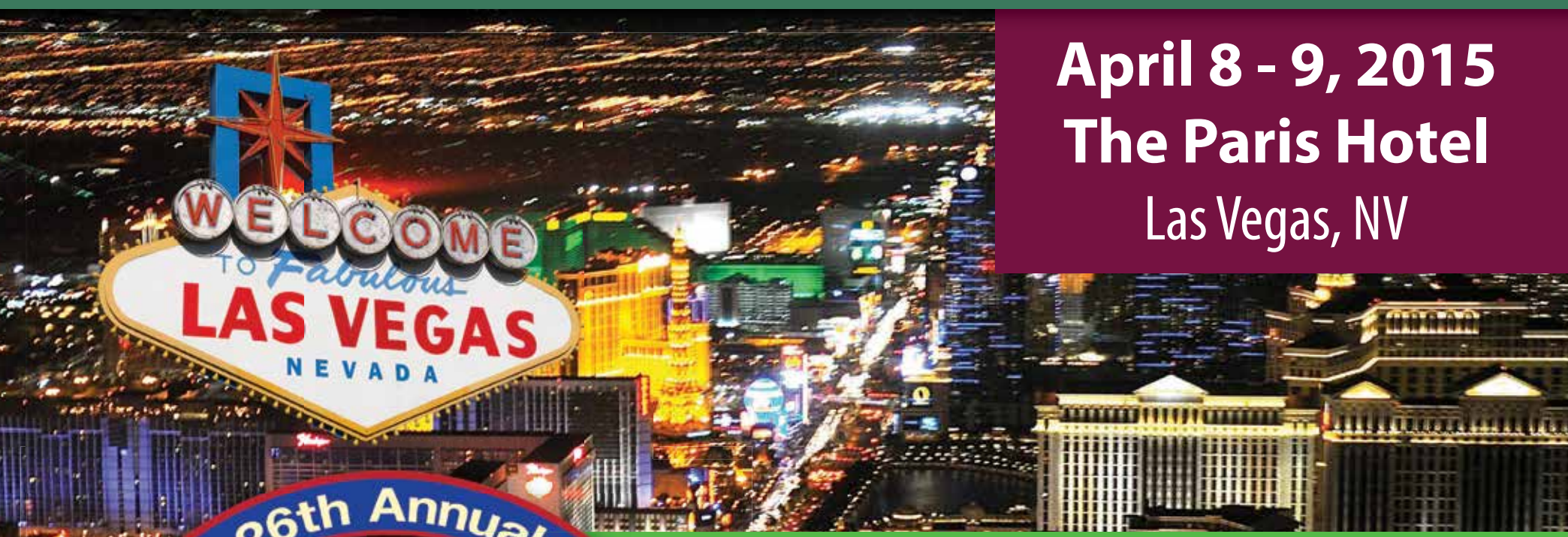

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