




PLUS



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ADMIT OR NOT?

What is the standard of care for patients with pending blood cultures?

by WILLIAM SULLIVAN, DO, JD; CATHERINE A. MARCO, MD; AND ROBERT C. SOLOMON, MD, FACEP



EXHIBIT A

ILLUSTRATION: CHRIS WHISEN, SCIENCE SOURCE & SHUTTERSTOCK.COM

**QUESTION:** Does this expert testimony reflect the standard of care in emergency medicine: “Ordering blood cultures necessitates hospital admission and antibiotic administration”?

The patient’s emergency department records were not provided for this review, so the patient’s symptoms, physical examination, lab testing, and emergency department treatment were obtained solely from the expert witness deposition transcript.

The patient was a 53-year-old male with a past medical history including hepatitis C and chronic anemia who presented to the emergency department with weakness, fever, vomiting, loose dark stools, and a rash. There were also notations that the patient had experienced “flu-like symptoms” for almost a month. The patient had been prescribed a course of ciprofloxacin for a urinary tract infection but discontinued it approxi-

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SKEPTICS’ GUIDE TO EMERGENCY MEDICINE



ILLUSTRATION: CHRIS WHISEN & SHUTTERSTOCK.COM

NON-VALUE OF VALIUM

Treating acute, nontraumatic, nonradicular low back pain with naproxen plus diazepam

by KEN MILNE, MD, MSC, CCFP-EM, FCFP, FRRMS

The Case

A 49-year-old man presents to the emergency department with an acute onset of back pain. He was carrying some heavy groceries and felt something pull in his lower back. He took some naproxen, which he uses as needed for an old high school football injury, but is still in pain. You do not find any red flags on the history and physical examination. He is feeling better after a dose of morphine, but he still has difficulty bending and walking. It’s time to consider what medications to discharge him home with.

Background

There are about 2.7 million visits to the emergency department annually for low back pain. While the vast majority of visits are due to benign conditions, this diagnosis can be frustrating for patients and physicians.

One thing physicians have to consider is not missing the uncommon but danger-

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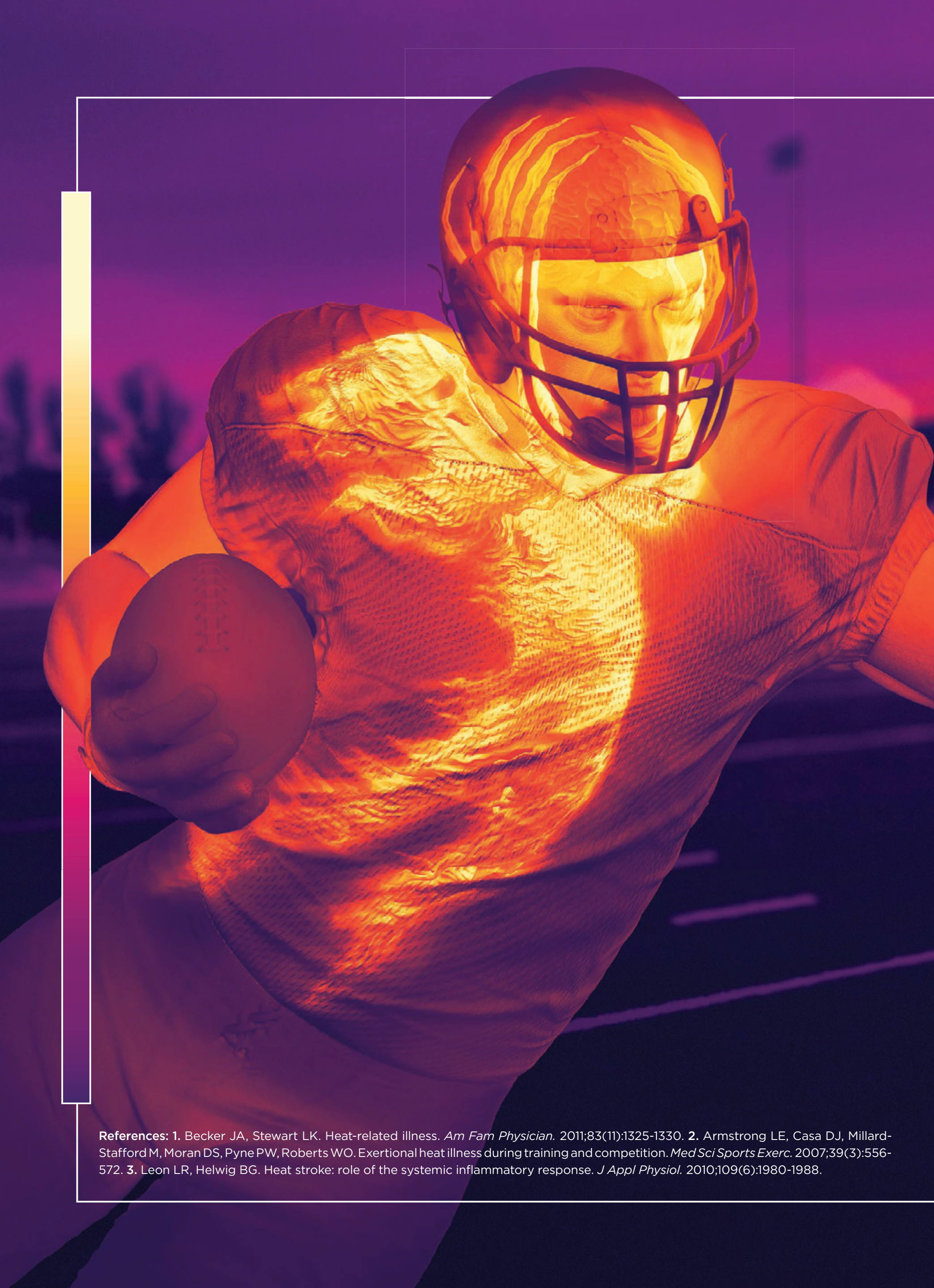
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ACEP on the Hill at the Leadership & Advocacy Conference

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# EXERTIONAL HEAT STROKE DESTROYS FROM THE INSIDE

**WHEN THEIR BODY TEMPERATURE  
RISES TO DANGEROUS LEVELS,  
IT CAN QUICKLY BECOME A  
LIFE-THREATENING SITUATION.<sup>1</sup>**

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

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## NEWS FROM THE COLLEGE

UPDATES AND ALERTS FROM ACEP

# ACEP Staff Receive Awards



Two ACEP staff members have recently been awarded for their outstanding achievements in their areas of expertise. ACEP has an incredibly talented team of staff members, and recognition from their peers is a reflection of their hard work on behalf of ACEP members.

Rick Murray, ACEP's director of EMS, received the 2017 Paul E. Pepe National Excellence in EMS Award. This honor was presented recently at the EMS State of the Sciences: A Gathering of Eagles XIX meeting in Dallas, which brought together more than 800 top EMS leaders from around the world.

Nancy Calaway, CAE, ACEP's director of member communications and marketing, was named the 2017 Executive of the Year by the Dallas Fort Worth Association Executives (DFWAE). DFWAE is a professional society of more than 700 national and Texas-based associations, convention and visitors bureaus, and partner companies. 📍



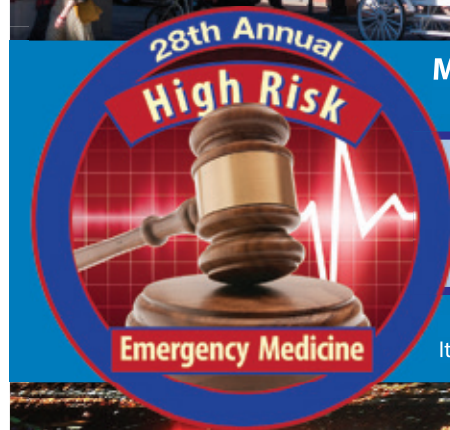
PHOTOS: ACEP

TOP: Rick Murray at the EMS State of the Science: A Gathering of Eagles XIX meeting.

BOTTOM: Nancy Calaway (left) with ACEP Executive Director Dean Wilkerson at the DFWAE meeting.

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# EM LEADING THE WAY AT OEMS

Dr. Jon Krohmer emphasizing team approach in role at NHTSA



**In** emergency care, every minute counts. It's critical that everyone, from the emergency medical services (EMS) providers who first see the patient to emergency physicians in the hospital, can communicate effectively and work as a team with the goal of providing the best care possible. This team approach is what Jon Krohmer, MD, recently named director of the Office of Emergency Medical Services (OEMS) for the National Highway Traffic Safety Administration (NHTSA), is emphasizing in his new role. As director, he is responsible for guiding national policy and strategy for EMS systems.

Dr. Krohmer recently sat down with *ACEP Now* Medical Editor in Chief Kevin Klauer, DO, EJD, FACEP, to discuss his new position and what he hopes to accomplish in the role.

**KK: I'm so excited to have this conversation. Tell us about the new position you're in.**

**JK:** I've been named director of the OEMS for the NHTSA. I'm the first emergency physician director of the office. Historically, it has been someone who has come from the ranks of EMS state administration or EMS administrative oversight. I'm very honored to be the first emergency physician in this position.

**KK: It's definitely very exciting to have you in this role, representing emergency medicine. How did your career path guide you in this direction?**

**JK:** Working full-time in EMS was always my goal. I grew up, as many of us did, very interested in medicine and wanting to ultimately be a doc. I remember a time when I was a kid in the hospital and had an opportunity to chat with one of the orderlies who was taking care of me. That orderly also worked part-time as an ambulance attendant for the local funeral home who supplied the ambulance at that time. In college, I was watching the television show *Emergency!*—I kept thinking to myself, "Why are these docs that are doing this EMS stuff?" That was in the early '70s, when they were really just starting EM residencies. My initial undergrad was in pharmacy. I served as an EMT for a volunteer rescue squad. I did my medical school at the University of Michigan and knew that I was going to go into emergency medicine and focus primarily on EMS.

**KK: How did you find your pathway into public service beyond EMS?**

**JK:** While I was practicing in Western Michigan as the medical director for a countywide EMS system, I started to become more and more involved in regional and state EMS ac-



PHOTO: JON KROHMER

tivities and trauma systems development and EMS and health system preparedness. Then, around 2005, a couple of years after the Department of Homeland Security (DHS) had been created, they realized that they didn't have any medical resources to which they could turn when medical issues came up. At that time, Dr. Jeff Runge, who is also an emergency physician, was the administrator at NHTSA. The deputy secretary of DHS asked Jeff to speak with them about medical issues relating to the discipline of homeland security. Based on their conversations, he was asked to become the first chief medical officer at DHS.

He was looking to expand his staff. We had dinner one night, and we talked about the kind of things he was looking forward to doing at DHS. I talked with him about some of the programs I had been working on in Michigan. I interviewed and was accepted for the position of the deputy chief medical officer in September 2006.

**KK: When were you offered this new role at NHTSA?**

**JK:** The position is a career civil service position. When the previous director of OEMS retired, they posted it, as they do all federal leadership positions. I had worked very closely with the folks in this office while I was at DHS, so I knew about the posting of the position,

and I applied for it. There were roughly 30 folks who were considered for it, and I was lucky enough to get it.

**KK: We're all lucky that you're in this role. How does the role you're in differ from the role that, for instance, Dr. Ricardo Martinez had several years ago?**

**JK:** The position that Dr. Martinez had actually was the same position that Jeff Runge subsequently filled. They were both administrators of NHTSA. Ricardo was the first emergency physician to be in that position, and Jeff was the second. The position of the administrator really is the leader of NHTSA, which is one of the components within the Department of Transportation. NHTSA focuses primarily on motor vehicle standards and motor vehicle safety issues.

**KK: When did you officially start?**

**JK:** I started with NHTSA on Sept. 4, 2016.

**KK: What are you hoping to accomplish in this role?**

**JK:** OEMS at NHTSA is the federal agency that has been involved in emergency medical services activities and oversight the longest. This office was created shortly after the National Academy of Sciences paper that was published in 1966 called "Accidental Death and Disabil-

ity: The Neglected Disease of Modern Society." We really focus on global policy and strategic issues of EMS systems growth, development, refinement, and all of the things that support the infrastructure for EMS at the local level. We have developed the EMS scope of practice and the EMS agenda for the future. We're focusing very significantly now on issues related to EMS data management and being able to help build up a more robust national infrastructure for EMS data collection and performance measure development and how we can improve data linkages with health information exchanges.

**KK: What changes do you think may be worthwhile that you might want to make?**

**JK:** Historically, EMS has focused on emergency response and providing care for emergency illnesses and injuries. There have been a lot of discussions about things like alternative transport destinations and alternative disposition activities for folks that EMS providers care for, including mobile integrated health care delivery. One of the other challenges that we're faced with is that EMS has grown so rapidly over recent years. The communication and collaboration among those organizations has been pretty good, but I think that we could probably still improve that a little bit. One of the things I really want to do is make sure that we identify all of the stakeholders as all of the activities move forward so that they have an opportunity to participate in the discussions and to be part of the process. We're very fortunate in emergency medicine that ACEP has been very involved in all of the activities associated with EMS for a very long time. The ACEP EMS staff are an extremely talented group. Rick Murray, Pat Elmes, and several others do a phenomenal job of keeping on top of things and making sure that the Board, the EMS Committee, and the membership are aware of all of the EMS issues that are going on.

**KK: In the course of the great career that you've had so far, and the great career ahead of you, if you could accomplish one thing through this position that would impact care delivery, what would it be, Jon?**

**JK:** I think it would be that we continue to reinforce to everyone that is involved in EMS that EMS is very much a team sport. We have the folks in the field, clinical providers, educators, quality improvement coordinators, operational administrators, and local and state regulators. We all need to understand that we're all part of one team and continue to work together. We also need to continue to reinforce to the folks in the hospital, to whom we transfer care, that we're all part of the same team. 🙌





## EXPERIENCING THE DANGERS OF MARIJUANA FIRSTHAND

Legalization does  
*not* equal safety

by BRAD ROBERTS, MD

I recently finished my residency in emergency medicine and began to practice in Pueblo, Colorado. I grew up there, and I was excited to return home. However, when I returned home, the Pueblo I once knew had drastically changed. Where there were once hardware stores, animal feed shops, and homes along dotted farms, I now found marijuana shops—and lots of them. As of January 2016, there were 424 retail marijuana stores in Colorado compared with 202 McDonald's restaurants.<sup>1</sup>

These stores are not selling the marijuana I had seen in high school. Multiple different types of patients are coming into the emergency department with a variety of unexpected problems such as marijuana-induced psychosis, dependence, burn injuries, increased abuse of other drugs, increased homelessness and its associated problems, and self-medication with marijuana to treat their medical problems instead of seeking ap-

propriate medical care.

I watched one of my colleagues and several security guards restrain a psychotic teenage girl who was reportedly “dabbing” (heating highly concentrated, solidified THC, which is inhaled). A short time later, a young adult male came in, having reportedly tried to hang himself three times. He stated that he had been smoking marijuana “all day, every day.” He was “seeing ghosts” that told him to kill himself. Not long after, a man presented in tears, saying that he had lost his job, was on the verge of losing his family, and needed help stopping the use of marijuana and didn't know where to go for help. Another colleague saw two young adult patients from a hash oil explosion that left them with very severe burns. I have certainly seen more cases of infective endocarditis from injection drug use than I expected in this once-quiet town.

I had expected to see more patients with cannabinoid hyperemesis syndrome (and I have), but they were the least of my concern. Our local homeless shelter reported seeing

5,486 (unique) people between January and July 2016, while for the entire year of 2013 (before recreational marijuana) that number had been 2,444 people.<sup>2</sup> Most disturbing, we weren't seeing just homeless adults but entire families. It is a relatively common occurrence to have patients who just moved here for the marijuana show up to the emergency department with multiple medical problems, without any of their medications, often with poor or nonexistent housing, and with no plan for medical care other than to use marijuana. They have often left established medical care and support to move here for marijuana and show up to the emergency department, often with suitcase in hand.

### Increasingly Potent & Dangerous Drug

This new commercialized marijuana is near 20 percent tetrahydrocannabinol (THC, the psychoactive component of cannabis), while the marijuana of the 1980s was less than 2 percent THC. This tenfold increase in potency doesn't include other formulations such as oils, “shatter” (highly concentrated solidified THC), or “dabbing” (heated shatter that is inhaled to get an even more potent form) that have up to 80 or 90 percent THC.<sup>3</sup>

The greatest concern that I have is the confusion between medical and recreational marijuana. Patients are being diagnosed and treated from the marijuana shops by those without any medical training. I have had patients bring in bottles with a recommended strain of cannabis and frequency of use for a stated medical problem given at the recommendation of a marijuana shop employee. My colleagues report similar encounters, with one reporting seeing two separate patients with significantly altered sensorium and with bottles labeled 60 percent THC. They were taking this with opioids and benzodiazepines. In some cases, places outside of medical clinics, like local marijuana shops, are being used to give screening examinations for medical marijuana cards.<sup>4</sup> Reportedly, no records are available from these visits when requested by other medical providers. A large number of things treated with marijuana, often with no cited research at all or with severe misinterpretation of research, are advertised online. These include statements that marijuana treats cancer (numerous types), cystic fibrosis, both diarrhea and constipation, hy-

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“A New Spin” is the personal perspective of the author and does not represent an official position of ACEP Now or ACEP.



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poglycemia, nightmares, writer's cramp, and numerous other conditions.<sup>5-7</sup>

Although there are likely some very effective ways to use the cannabinoid receptor (probably better termed the anandamide receptor), putting shops on every street corner and having nonmedical personnel giving medical advice is a very poor way to use this as a medicine. Furthermore, to suggest that combustion (smoking) be the preferred route of medication delivery is harmful.<sup>3,8-10</sup> I am also concerned that this is being widely distributed and utilized as a medicine prior to safety and efficacy studies having been completed; widely varying dosing regimens, concentrations, and formulations are being developed, sold, and utilized. Patients are not being informed of the adverse effects associated with marijuana use, but instead, they are being told, "There are no adverse effects." I am in favor of using the anandamide receptor for treatment purposes. However, we should do this safely and appropriately. What is occurring now is neither safe nor appropriate.

There are numerous adverse effects of marijuana that are significant. Marijuana use may lead to irreversible changes in the brain.<sup>3,9,11,12</sup> Marijuana use correlates with adverse social outcomes.<sup>3</sup> It is strongly associated with the development of schizophrenia.<sup>13-16</sup> Dependence can lead to problem use.<sup>17,18</sup> There are adverse effects on cardiovascular function, and smoking leads to poor respiratory out-

comes.<sup>3,19,20</sup> Traffic fatalities associated with marijuana have increased in Colorado.<sup>1</sup> Pregnant women are using marijuana, which may lead to adverse effects on the fetus, and pediatric exposures are a much more common occurrence.<sup>21,22</sup>

### Different Approach Is Needed

We should approach mass marijuana production and distribution as we would any other large-scale public health problem. We should do what we can to limit exposure, and we should provide clear, unbiased education. In the case of prevention efforts being unsuccessful, we need to provide immediate treatment and assistance in stopping use. If we are going to use this as a medication, then we should use it as we use other medications. It should have to undergo the same scrutiny, Food and Drug Administration approval, and regulation that any other medication does. Why are we allowing a pass on a medication that very likely would carry with it a black-box warning?

As emergency physicians, we are on the front lines. We treat affected patients; we need to be at the forefront of public policy recommendations at both state and national levels. +

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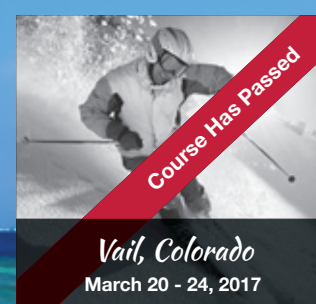


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mately one to two weeks prior to his emergency department visit due to the appearance of a rash. During his evaluation in the emergency department, he was persistently tachycardic with a heart rate of 120. He was given IV fluids, and multiple tests were performed, including blood cultures. Lab results showed that the patient was hyponatremic, had a stable hematocrit of 30, and had a positive nasal swab for influenza. His white blood cell count was normal without a left shift, and his lactate level, urinalysis, and chest X-ray were also normal. The following day, preliminary results of the blood cultures were positive for gram-positive cocci. That day, a message was left on the patient's voicemail, instructing him to return to the hospital. He did not return until three days later. He died shortly thereafter from septic shock, disseminated intravascular coagulation, and multisystem organ failure.

The expert witness faulted the treating emergency physician for several issues. This review addresses the expert's repeated assertions that because blood cultures were performed, the patient should have been admitted to the hospital and treated with intravenous antibiotics due to a suspicion of bacteremia.

Excerpts from the expert's deposition testimony include the following:

"One would not order blood cultures and discharge a patient home with a suspicion for bacteremia," although at the same time noting that bacteremia "sometimes resolves spontaneously."

"If blood cultures are ordered, that means that bacteremia in the bloodstream is suspected. There is no test to prove that it exists immediately. So unless there is a reason to suspect that someone could have occult bacteremia, like the conditions I mentioned, the treatment is admission and intravenous antibiotics. Otherwise, this happens [referring to the patient's death from sepsis]. You don't send otherwise relatively immunocompetent patients home with bacteremia. You treat them."

When questioned by the defense counsel about whether the expert was assuming that because blood cultures were ordered, the treating physician must have suspected bacteremia, the expert replied:

"I think doctors order things that have a low probability of being positive for a number of reasons, depending upon the disease. But in the case of blood cultures for bacteremia, it's the only reason you do blood cultures. And if you suspect bacteremia in a patient who is immunocompetent, the treatment is antibiotics."

When asked if the facilities at which he works discharge patients with pending blood cultures, the expert stated:

"Under certain circumstances, we do discharge patients with pending blood cultures—infants occasionally who are suspected of having occult bacteremia; patients with HIV known to have low CD4 counts; patients who have a febrile illness who are dialysis patients; and on certain occasions, certain types of immunocompetent cancer patients will have blood culture sent from the emergency department at discharge. Other than those patients, we do not do blood cultures on patients who are discharged because the only reason to do blood cultures is to suspect bacteremia, and bacteremia requires intravenous antibiotics."

After reviewing the expert's testimony and available literature on this topic, the Standard of Care Review Panel concluded that the expert witness presented opinions that did not repre-



ILLUSTRATION: CHRIS WHISEN, SCIENCE SOURCE & SHUTTERSTOCK.COM

sent the standard of care for several reasons.

#### 1. Blood Cultures

A. The review panel was not able to find any studies providing definitive guidelines regarding when blood cultures should be ordered. In fact, one study specifically noted that "published guidelines do not clearly state when blood culture should be drawn."<sup>1</sup> This study also noted that there is only a 2 percent pretest probability of bacteremia in febrile ambulatory outpatients and that isolated tachycardia was not helpful in improving the accuracy of diagnosing bacteremia.

B. The review panel also found literature noting that 3.8 percent of blood cultures obtained in patients discharged from the emergency department return positive and that 86 percent of those cultures were positive for pathogens that would typically necessitate inpatient antibiotic therapy. Only 50 percent of the patients in this study responded to a call for a return visit.<sup>2</sup>

C. With regard to the expert's assertion that obtaining blood cultures mandates admission and antibiotic treatment, the review panel did not find any literature recommending such management, and they unanimously agreed that the statement did not reflect the standard of care in emergency medicine. As the expert noted, and as many sources confirm, most occult bacteremia resolves spontaneously without treatment. In addition, studies show that many blood cultures are falsely positive due to skin contaminants.

D. Using the above data, mandatory admission and antibiotic treatment after obtaining blood cultures in febrile ambulatory outpatients would result in a 50-fold increase in hospital admissions for this patient demographic.

E. Finally, the expert's own testimony contradicted his statements about the standard of care. He noted that the facilities at which he works do discharge patients with pending blood cultures under some circumstances. The review panel noted that the types of patients the expert inferred could be discharged pending blood cultures were at higher risk for bacteremia

and sepsis than the general population since they included patients more likely to be immunocompromised such as those with HIV, those with cancer, and those on hemodialysis.

#### 2. Risk of Bacteremia

The review panel found one study showing that the two-day mortality for patients with community-acquired bacteremia was 4.8 percent compared to 2.0 percent in culture-negative patients (0–2-day mortality rate ratio 1.9). After the first two days, mortality rates were 3.7 percent and 2.7 percent, respectively, with a mortality rate ratio of 1.1. At 30 days, the mortality in both culture-positive and culture-negative patients was approximately 10 percent, with no significant difference in mortality between the groups.<sup>3</sup> However, this study included patients who had blood cultures performed within two days of hospital admission and who had no hospitalizations within the preceding 30 days, so the results may not necessarily apply to emergency department patients such as those presented in this review.

This study also noted that as many as half of positive cultures were due to organisms inoculated from the skin into culture bottles at the time of sample collection and did not reflect true bacteremia. These false-positive blood culture results from skin contaminants may lead to unnecessary investigations and treatments.

#### 3. Retrospective Bias

The Standard of Care Review Panel believed that the expert's opinions in this case were influenced by retrospective bias. The expert repeatedly stated that the treating physician should have known that the patient was bacteremic because the culture results returned positive. However, the preliminary culture

results did not return until the following day. There is no way that the treating physician could have known the culture results at the time of treatment. It was the consensus of the Standard of Care Review Panel that strict prospective analysis is of utmost importance when reviewing the management of any patient care.

#### Conclusion

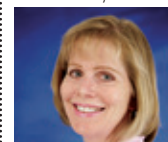
It was the consensus opinion of the review panel that obtaining blood cultures does not mandate antibiotic treatment or hospital admission. +

#### References

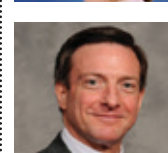
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**DR. MARCO** is professor of emergency medicine at Wright State University Boonshoft School of Medicine in Dayton, Ohio.



**DR. SOLOMON** is an attending physician at UPMC St. Margaret in Pittsburgh.

#### DID YOU KNOW?

ACEP members can request a review of questionable expert witness testimony regarding emergency medicine's standards of care. Procedures for this review are found on the ACEP website at [www.acep.org/Clinical---Practice-Management/Procedure-for-Review-of-Testimony-Regarding-Standard-of-Care-in-Emergency-Medicine/](http://www.acep.org/Clinical---Practice-Management/Procedure-for-Review-of-Testimony-Regarding-Standard-of-Care-in-Emergency-Medicine/).



# NEITHER RAIN NOR SNOW

## ACEP on the Hill at the Leadership & Advocacy Conference

by L. ANTHONY CIRILLO, MD, FACEP

This year's ACEP Leadership & Advocacy Conference (LAC) was perfectly timed to provide ACEP members an amazing opportunity to have their voices heard on the crucial issue of health care reform in Washington, D.C. With a new presidential administration and the newly seated 115<sup>th</sup> Congress considering a potential vote to repeal and replace the Affordable Care Act (ACA or Obamacare) at the time, the change in the timing of this meeting to March from the usual May scheduling seemed downright visionary. However, the weather was not as cooperative, with the possibility of a major snowstorm forcing significant changes to the conference agenda. Although it took some good old-fashioned emergency medicine flexibility and ingenuity, most of the conference attendees were able to make it to Capitol Hill to meet with members of Congress and their staff to carry the message of how important emergency medicine is to the viability of our national health care system.

Although the conference didn't officially start until Monday, March 13, there were many pre-meeting events and committee meetings where important business of the College got done. With 120 emergency medicine residents and medical student registrants at the meeting, the Emergency Medicine Residents' Association (EMRA) and the ACEP Young Physicians Section (YPS) started the action on Sunday with their Health Policy Prim-

er program. This half-day session included great presentations beginning with an "Intro to Health Policy" talk by Rachel Solnick, MD, who serves as EMRA's legislative advisor, followed by insightful lectures on mental health, graduate medical education, the ACA, and how the Medicare Access and CHIP Reauthorization Act (MACRA) will affect physician payments for years to come. William Jaquis, MD, FACEP, from the ACEP Board of Directors closed the program with "A Roadmap to Getting Involved," encouraging the attendees to be persistent in their advocacy efforts and to work through ACEP's many opportunities to be contributors in the health policy arena.

LAC is really two meetings in one. The first two days are the "Advocacy" part of the meeting, which culminates with official Hill visits to members of Congress at the Capitol. The last day is the "Leadership" program, which focuses more on professional development and how to be a better leader and advocate for yourself, your colleagues, and your patients. This year's leadership program offered great presentations, including:

- "Leadership Resiliency During Times of Constant Change" by ACEP President Rebecca Parker, MD, FACEP
- "Where the Rubber Meets the Road: The Intersection of Social Media and EM" moderated by Ryan Stanton, MD, FACEP; and featuring Alicia M. Kurtz, MD; Howard K. Mell, MD, MPH, CMPE, FACEP; and Carolyn K. Moody, DO, MPH
- "The Impact of Implicit Bias: Leaders Beware" moderated by Douglas M. Char, MD, FACEP; and featuring Adrian M. Daul, MD, FACEP; Vidya Eswaran, MD; Kevin M. Klauer, DO, FACEP; Aisha T. Liferidge, MD,

FACEP; and Bernard L. Lopez, MD, FACEP

- "Leadership Under Fire: When Crisis Defines Us" moderated by Robert W. Strauss Jr., MD, FACEP; and featuring Kathleen J. Clem, MD, FACEP; and Chad Kessler, MD, MHPE, FACEP

This year's advocacy conference agenda was full of timely and informative presentations, including:

- "Creating Solutions to the Opioid Crisis" by Eric Ketcham, MD, MBA, FACEP, FACHE; and Mark S. Rosenberg, DO, MBA, FACEP
- "Reporting Under MACRA-CEDR" by Stephen K. Epstein, MD, MPP, FACEP; and Pawan Goyal, MD, MHA, CBA, PMP, FHIMSS, FAHIMA
- "Out-of-Network/Balance Billing—Where Are We? A Federal/State Update" by Edward R. Gaines III, JD, CCP; Alison Haddock, MD, FACEP; and Nathan R. Schlicher, MD, JD, FACEP
- "Affordable Care Act—Repeal or Replace? What's Next" by Sen. Tim Kaine (D-VA), a 2016 vice presidential candidate

Day one of the conference was closed with an informative and entertaining presentation by ZDoggMD, Zubin Damania, MD, who did his one-man show on physician burnout and how to be resilient in the difficult world of being a health care professional.

### The Hot Topic

Although ACEP has legislation that has been introduced in the 115th Congress on a number of important topics, such as EMTALA liability reform, this year's legislative focus was clearly on the Republican proposal to repeal and replace the ACA, titled the American Health Care Act (AHCA). During the meeting, the Congressional Budget Office (CBO) provided a scor-

CONTINUED on page 12

## LAC: A Resident's Perspective

by GARTH NYAMBI WALKER, MD, MPH

Caring for all emergency department patients is important to residents and attendings. However, some of the most critical challenges facing our patient populations cannot be addressed within the confines of an examination room. How does insurance affect care after disposition? How can the emergency department address mental health effectively for individuals who may not have access to adequate outpatient resources? How does innovation interface, or even interfere, with health care delivery? These are just a few of the difficult questions raised in the context of emergency care that may require legislative or regulatory solutions.

Health care policy plays a critical role in advancing the efficiency and efficacy of emergency care, but lawmakers cannot do it on their own. The doctors on the front lines have firsthand knowledge of the challenges facing the system and which policies may affect positive change. As one of those doctors, I felt a responsibility to get involved in health care policy but wasn't sure how to do so. In January, I joined the Emergency Medicine Residents' Association (EMRA) Board of Directors, which spends a great deal of time discussing the issues affecting emergency physicians, residents, and patients. We also attend the ACEP Leadership & Advocacy Conference (LAC) together as a board. This year was my first opportunity to participate in the conference, but it definitely won't be my last.

The beauty of LAC is that it celebrates accomplishments in emergency medicine while also highlighting, for the benefit of congressional leaders, the challenges of delivering the high-quality care our patients deserve. The diverse selection of speakers this year was incredible, and the leadership represented ran the gamut of experience from Rachel Solnick, MD, a rising PGY2 resident who presented the nuts and bolts of the Affordable Care Act, to established academicians such as Arjun Venkatesh, MD, MBA, MHS, who discussed strategies to contain cost and general practice variation within the emergency department.

As a first-time attendee, I found ACEP's LAC to be an inspiring and invaluable experience. We learned not only how we as physicians can be effective leaders but also how we can work the governmental levers to address critical social and economic issues that affect our patients. LAC is a tremendous platform to shape policy affecting our practice and also serves as a critical reminder that we must advocate for our patients and our specialty.



**DR. WALKER** is a resident physician at the University of Chicago EM section and the member-at-large on the EMRA Board of Directors.



ACEP and EMRA members pose in front of the Washington Monument during the NEMPAC reception at LAC17.



ing of the original bill introduced in the U.S. House. The CBO is a nonpartisan office of the federal government that provides a fiscal note to a bill. This fiscal note delineates the proposed financial effects of a bill over a 10-year period. With the CBO report highlighting the fact that about 24 million people would lose health care coverage over the 10-year period, the conference attendees were focused on making sure emergency medicine's message made it to the Hill. Under the leadership of Dr. Parker, ACEP developed a position of supporting key principles for evaluating any proposed health care reform legislation. Rather than being "for" or "against" a bill or reform plan, ACEP stood committed to making sure that our public leaders recognize the importance of emergency medicine in any health care system reform.

ACEP issued the following emergency medicine health care reform principles that it considers indispensable to any replacement legislation. The principles are aimed at maximizing access to medical care while improving its quality and lowering its costs.

- Maintain emergency services as a covered benefit for any insurance plan.
- Ensure the federal prudent layperson standard extends to Medicaid fee-for-service and that compliance measures are in place for all other health plans. The prudent layperson standard requires health insurance companies to cover claims based on a patient's symptoms, not the final diagnosis. It means, for example, if a patient has chest



ACEP President Dr. Rebecca Parker (left) and Senator Tim Kaine during LAC17.

pain but the diagnosis is ultimately a less urgent medical condition, such as a panic attack, the health insurance company cannot retrospectively deny coverage.

- Require health insurance companies to be transparent with the data used to determine in- and out-of-network reimbursement rates for their patients' medical care. Ensure appropriate reimbursement rates for emergency services.
- Eliminate the need for prior authorization for emergency services and guarantee parity in coverage and patient co-payments for in- and out-of-network emergency care services.
- Retain protections for preexisting conditions, no lifetime limits, and allowing chil-

dren to remain on their parents' insurance plan until age 26.

- Enact meaningful medical liability reforms, including protections for physicians who provide federally mandated EMTALA-related services, who care for patients in a federally declared disaster area, and who follow clinical guidelines established by national medical specialty societies.
- Ensure any continuation or expansion of health savings accounts, health reimbursement accounts, association health plans, and individual health pools provides meaningful health insurance benefits and coverage for individuals and families, including access to emergency care services.
- Repeal the Independent Payment Advisory Board and the excise tax on high-cost employer health benefit plans. Delay repeal of the Center for Medicare & Medicaid Innovation until at least 2020 or amend it to eliminate mandatory provider participation in Medicare models. This will allow an adequate transition period for the Transforming Clinical Practice Initiative grants aimed at lowering costs, improving health outcomes, and delivering more effective care.
- Acknowledge the role of freestanding emergency centers and other health care delivery models as crucial to encouraging coverage innovation.
- Protect the most vulnerable populations in this country by making sure Medicare, Medicaid, and the Children's Health Insurance Program (CHIP) remain available and

solvent for current and future generations.

Although the AHCA was eventually pulled from the floor of the U.S. House before a vote was taken, there is no doubt that there will be renewed attempts to reform the health care delivery and financing system in the near future. The principles ACEP have adopted will continue to serve as the guidepost for whether ACEP will support future proposed legislation.

### Be There Next Year

Given the continued pressures on the health care system to deliver high-quality, accessible, and affordable care to this nation, there will always be a need for emergency physicians and emergency care. However, it is exactly those same pressures that threaten to reduce the funding and support for emergency medicine as health care expenditures rise and the population grows and ages. LAC is a great opportunity for you to become more educated about the issues facing health care and our specialty and to have your voice heard directly by members of Congress.

Make sure that you come to the next LAC meeting, May 20–23, 2018, to be part of the voice of emergency medicine on Capitol Hill! ➔



**DR. CIRILLO** is director of health policy and legislative advocacy for US Acute Care Solutions in Canton, Ohio, and chair of the ACEP Federal

Government Affairs Committee.

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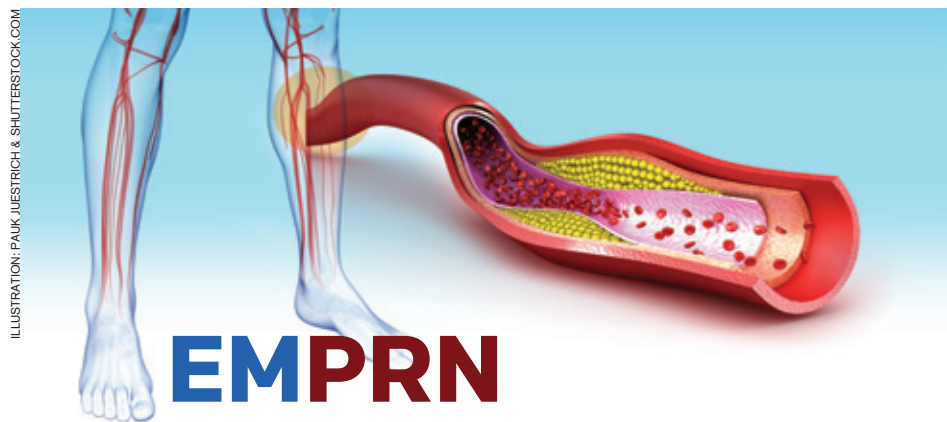
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# Assesses Emergency Medicine Practice

Examining the treatment of deep vein thrombosis

by SANDRA SCHNEIDER, MD, FACEP

The Emergency Medicine Practice Research Network (EMPRN) was designed to provide a means of assessing the real-life practice of emergency medicine. Too often, research studies are performed within urban academic centers whose patients and providers are not representative of the real practice setting. Using EMPRN, we can examine a more typical population. By becoming part of EMPRN, individuals agree to participate in three to four short surveys each year. Participation helps provide information important to ACEP's advocacy, planning, and practice efforts.

EMPRN recently performed a survey of practicing emergency physicians on how they are treating patients with deep vein thrombosis (DVT).

How would you treat an otherwise healthy patient with a provoked DVT? The graphs at

## EMPRN

**+** Emergency Medicine Practice Research Network

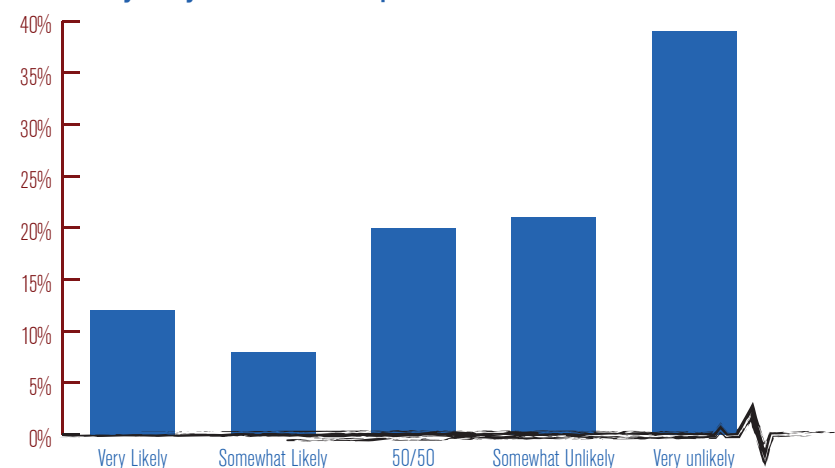
right show how your colleagues answered that question.

Many thanks to the members of the EMPRN network who participated. If you have questions regarding EMPRN or would like to propose a topic for a future survey, email [sschneider@acep.org](mailto:sschneider@acep.org). ☺

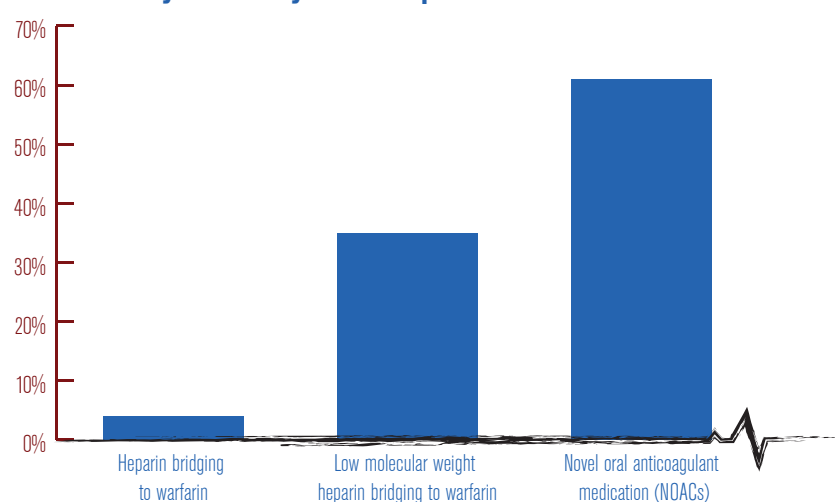


**DR. SCHNEIDER** is a project leader for EMPRN.

### How likely are you to admit the patient?

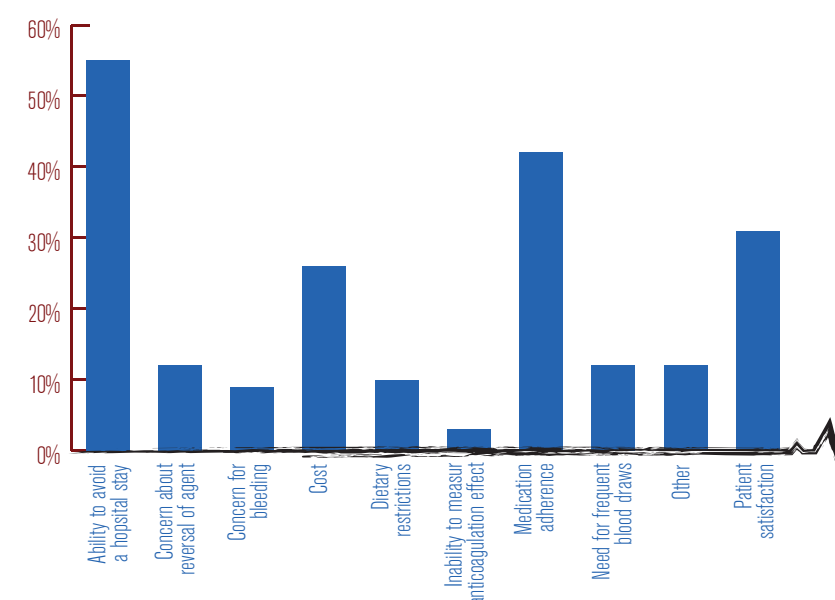


### How would you initially treat the patient?



### Why did you choose that therapy?

(Note that more than one choice could be made.)



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YOU HAVE  
YOUR HEALTH UNTIL  
YOU DON'T

# WELLNESS

**DR. MARCO** is professor of emergency medicine at Wright State University Boonshoft School of Medicine in Dayton, Ohio.

**DR. LALL** is assistant professor and assistant residency director in the department of emergency medicine at Emory University School of Medicine in Atlanta.

**DR. WONG** is an instructor of emergency medicine at Beth Israel Deaconess Medical Center and Harvard Medical School in Boston.

**DR. SCHEARS** is studying social justice and microeconomics at Brandeis University in Waltham, Massachusetts; she is due to graduate in May 2017.

# Physician Wellness

How to be  
healthier than  
your patients

by CATHERINE A. MARCO, MD; MICHELLE D. LALL, MD, MHS; MATTHEW L. WONG, MD, MPH; AND RAQUEL M. SCHEARS, MD, MPH; ON BEHALF OF THE ACEP ETHICS AND WELLNESS COMMITTEES

Physician wellness is associated with career satisfaction.<sup>1</sup> Compared to other specialties, emergency physicians suffer from high rates of burnout.<sup>2-6</sup> In addition to personal career satisfaction, wellness and resilience are important to maintaining patient safety and quality of care. We demonstrate some important prin-

ciples of wellness and quality through five case scenarios.

### Case 1: No Duty Hours for Attendings

You are recovering from a painful divorce. Although suffering from some depression and sleep deprivation, your financial needs necessitate moonlighting to pay for your kids' college tuition, and you are working 60-70 hours per week. Colleagues have remarked you are becoming forgetful. On a few occasions, you have forgotten to hand off patients properly to floor providers and lost track of treat-

ments in progress for your ED patients. Who should monitor wellness and quality?

The Accreditation Council for Graduate Medical Education duty hour restrictions were set in place in 2003 and updated in 2011. These guidelines were instituted to enhance patient safety and improve the working conditions and education of resident physicians.<sup>1,2</sup> Unfortunately, there are no restrictions on attending physician duty hours. The lack of regulatory oversight makes it impera-

CONTINUED on page 14





ILLUSTRATION: CHRIS WHISEN &amp; SHUTTERSTOCK.COM

tive for individual physicians, colleagues, and departments to monitor workload and fatigue.

The primary responsibility lies with the emergency physician. Despite financial pressures, duty to patient safety and quality of care must supersede personal financial interests. The determination of an appropriate workload that allows for rest, exercise, nutrition, and social wellness should be made by the individual physician. At times, if judgment is clouded by personal circumstances, colleagues or medical directors may appropriately discuss these issues with the physician and arrive at a mutually agreeable plan of action.

#### Case 2: I Never Call in Sick!

*After traveling from a busy week at ACEP's annual meeting, you are scheduled to work three back-to-back shifts. You will only be able to get about three hours of sleep before your next shift, and you are already exhausted. Should you call in sick?*

Emergency physicians display a high degree of responsibility to the profession. Many emergency physicians feel such a sense of responsibility and loyalty that they will work while ill, fatigued, or otherwise impaired. Many feel that to shirk such a responsibility would be an undue imposition on already-stressed colleagues.

The solution to this problem must be multifaceted. Insight and prevention are the primary pillars of the solution. Whenever possible, physicians should anticipate stressful schedules and situations and plan accordingly. In this case, it should have been anticipated that an early shift after a trip would not be conducive to wellness and optimal function.

When unforeseen circumstances arise, such as illness or injury, physicians should work together to come to the best solution on a case-by-case basis. Departments should strive to develop a jeopardy call system if feasible. If this is not feasible, such as in a small group, physicians should work together to ensure

that physicians are functioning at their best to ensure patient safety and quality of care. This may necessitate trading shifts or working extra shifts to cover for a physician who is not fit for duty.

#### Case 3: I Smell Alcohol

*Dr. A arrives at work late, disheveled, and with alcohol on her breath. What is the duty of the physician she will be relieving?*

Emergency physicians routinely interact at shift change. This is an opportunity to interact with each other to ensure fitness for duty. On rare occasions, it may be evident that a colleague is impaired in some way, such as by fatigue, stress, mental health issues, or substance abuse. In such cases, physicians have a duty to work together to support each other and arrive at a plan of action to ensure patient safety. In the short term, a physician who is impaired should not be providing patient care. This may be very uncomfortable to address and may necessitate involvement of the department chair or medical director. A plan of action may include temporary removal from clinical duties, a mental health evaluation, and inpatient or outpatient treatment to ensure physician recovery. Failure to address issues that directly affect patient safety are an abdication of professional responsibility.

#### Case 4: Caring for the Carer

*Dr. B, one of your longstanding colleagues, returned from a tour of duty in Iraq within the last year. Lately, he has appeared more quiet and withdrawn and is slower and less interested in his patients. As quality assurance (QA) director, you know he has also had several patient complaints in the last three months with the similar theme of patient dissatisfaction with not receiving opioids for chronic pain. Has he provided a lower quality of care for not "adequately" addressing pain? For lacking empathy? Does your role as QA director give you any*

*additional insights in helping your friend navigate under the circumstances?*

Dr. B's decreased interest in his patients is worrisome and the central issue of this case. This decreased interest may represent a lack of empathy or something else. Physician empathy is a crucial part of interacting with patients. Conversationally, it often provides hope and the shared understanding needed by the patient for healing purposes and provides a meaningful dimension to the medical professional's work life. If it is potentially missing or coincides with personality changes, it may be indicative of underlying psychiatric issues or substance abuse or dependence. Dr. B should be reminded of any services or resources offered by the department or hospital.

Patient experience of care surrounding opioid analgesics for chronic pain is a challenge we face in emergency medicine. While it's important to treat pain in all of our patients, best practices recommend against the use of opioids for chronic pain.<sup>7</sup> Additionally, chronic pain is best managed by a primary care provider, not an emergency physician. Complaints of poor patient experience for this reason should be reviewed, but if some kind of analgesia was provided or recommended, Dr. B has likely adequately addressed the pain complaint. From a quality assurance prospective, patient complaints such as this may offer a useful path to discuss what may be far more substantive and helpful to Dr. B.

#### Case 5: Physician, to Heal Thyself, First Do No Harm

*Dr. C has a high rate of opioid prescriptions and orders in the emergency department. A nurse informs the department chair that she believes he has pocketed some ordered opioids. Who should monitor possible substance abuse and diversion?*

Suspected substance abuse and diversion should be directly addressed with Dr. C by his supervisor (eg, department chair) and,

perhaps, employee health. If there is concern about substance use before shift or on shift, he should be pulled off the clinical schedule and undergo a fit-for-duty evaluation. In many states, if a physician self-reports abuse to the medical board, the disciplinary action of the board is often more favorable than if the physician is reported by someone else. There are several national groups that facilitate physician rehabilitation and return to the workplace. Normally, an employer may not take action against the employee because the employee has exercised the right to partake in the Family and Medical Leave Act

(FMLA) for treatment for substance abuse.<sup>8</sup> However, if the employer has an established policy applied in a nondiscriminatory manner that has been communicated to all employees and that states under certain circumstances an employee may be terminated for substance abuse, pursuant to that policy the employee may be terminated whether or not the employee is presently using leave under the FMLA. ➤

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# Thank You

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*\*as of April 2017*





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CONTINUED FROM PAGE 1

ous conditions like spinal epidural abscess, osteomyelitis, cauda equina syndrome, and pathological fractures. Multiple red flag lists have been published to help physicians identify patients at risk for some of these serious conditions (eg, TUNA FISH, see Table 1). While no list is complete, they can be helpful.

Patient demands for imaging can be another source of frustration. The ACEP *Choosing Wisely* recommendation encourages physicians to avoid lumbar spine imaging:

*Avoid lumbar spine imaging in the emergency department for adults with non-traumatic back pain unless the patient has severe or progressive neurologic deficits or is suspected of having a serious underlying condition (such as vertebral infection, cauda equina syndrome, or cancer with bony metastasis).*

An additional frustration is the lack of efficacious treatments for low back pain. Acetaminophen has been shown not to affect recovery time compared to placebo.<sup>1</sup> Adding cyclobenzaprine or oxycodone/acetaminophen to naproxen alone was shown not to improve functional outcomes.<sup>2</sup>

There are also concerns about the appropriate use of opioids. ACEP has a clinical policy on prescribing opioids and specifically addresses ED patients with acute low back pain.<sup>3</sup> It gives three Level C recommendations:

For the patient being discharged from the emergency department with acute low back pain, the emergency physician should ascertain whether nonopioid analgesics and non-pharmacologic therapies will be adequate for initial pain management.

Given a lack of demonstrated evidence of superior efficacy of either opioid or nonopioid analgesics and the individual and community risks associated with opioid use, misuse, and abuse, opioids should be reserved for more severe pain or pain refractory to other analgesics rather than routinely prescribed.

If opioids are indicated, the prescription should be for the lowest practical dose for a limited duration (eg, one week), and the prescriber should consider the patient's risk for opioid misuse, abuse, or diversion.

Finally, it is important to be supportive of patients with acute low back pain while at the same time setting realistic expectations. They need to know that their pain may not be 100 percent relieved in the emergency department and that symptoms could persist for weeks or even months.<sup>4-6</sup>

## Clinical Question

In patients with acute nontraumatic, non-radicular low back pain, will a short course of diazepam added to naproxen improve functional outcomes at one week?

## Reference

Friedman BW, Irizarry E, Solorzano C, et al. Diazepam is no better than placebo when added to naproxen for acute low back pain (published online ahead of print Jan. 19, 2017). *Ann Emerg Med*. pii:S0196-0644(16)31214-8.



ILLUSTRATION: CHRIS WHISSEY & SHUTTERSTOCK.COM

- **Population:** Adult patients presenting to the emergency department with acute low back pain  $\leq 2$  weeks of duration that caused functional impairment (score  $> 5$  on the Roland-Morris Disability Questionnaire [RMDQ]) and discharged home.
- **Exclusions:** Radicular pain, pain  $> 2$  weeks or a baseline low pain frequency of at least once per month, absence of other non-musculoskeletal causes of pain, no direct trauma to the back, unavailable for follow-up, pregnant or breastfeeding, those with chronic pain syndrome, and those allergic or intolerant to the use of the investigational medications.
- **Intervention:** Educational session, naproxen 500 mg PO every 12 hours as needed, plus diazepam 5–10 mg PO every 12 hours as needed.
- **Comparison:** Educational session, naproxen 500 mg PO every 12 hours as needed, plus 1–2 placebo every 12 hours as needed.
- **Outcome:**
  - **Primary:** Improvement in the RMDQ score between ED discharge and one week follow-up.
  - **Secondary:** Pain intensity at one week and three months measured on a four-point descriptive scale and adverse events.

## Authors' Conclusions

"Among ED patients with acute, nontraumatic, nonradicular low back pain, naproxen plus diazepam did not improve functional out-

comes or pain compared with naproxen plus placebo one week and three months after ED discharge."

## Key Results

The study enrolled 114 patients (mean age mid-30s and about 55 percent men).

**Primary Outcome:** No improvement in functional outcome at one week when diazepam was added to naproxen. Both groups improved by 11 points on the RMDQ.

**Secondary Outcome:** Pain intensity at one week and three months was comparable between the two groups. Adverse events were infrequent and comparable between the two groups, with no serious unexpected adverse events reported.

## Evidence-Based Medicine Commentary

**Inclusion/Exclusion:** Only 21 percent (114 of 545) of the patients screened were included in the study. This limits the results to only a specific subset of patients presenting to the emergency department with back pain.

**Recall Bias:** Many of the inclusion/exclusion criteria and RMDQ were susceptible to recall bias, an error that can occur when participants are asked to remember events or experiences for a study.

**Patient Population:** Patients were recruited from an urban health care system in a socioeconomically depressed population. Socioeconomic factors may be associated with back pain outcomes, and these results may not

Table 1: Red Flag Symptoms of Back Pain

<b>T</b>	TRAUMA
<b>U</b>	UNEXPLAINED WEIGHT LOSS
<b>N</b>	NEUROLOGIC SYMPTOMS
<b>A</b>	AGE $> 50$
<b>F</b>	FEVER
<b>I</b>	INTRAVENOUS DRUG USE
<b>S</b>	STEROID USE
<b>H</b>	HISTORY OF CANCER

necessarily apply to other patient populations.

**Unbalanced Groups:** Patients in the diazepam arm were more likely to be unemployed. This is a known prognostic factor in recovery in back pain patients.

**Blinding:** Patients in the benzodiazepine group may have been unblinded. While the authors reported no difference in those feeling dizzy or tired "a lot," they did not report how many participants felt these side effects "a little." However, you would expect any lack of blinding to have favored the diazepam group.

## Bottom Line

Diazepam should not be routinely added to a NSAID for outpatient management of acute, nontraumatic low back pain patients presenting to the emergency department.

## Case Resolution

The man is encouraged to use his naproxen if he feels it provides some benefit, stay active, follow up with his primary care physician, and return to the emergency department if any red flags develop. He also is reassured that symptoms may persist for weeks to months.

*Thank you to Anand Swaminathan, MD, MPD, from Core EM and EM:RAP for his help with this review. Dr. Swaminathan is an assistant professor of emergency medicine in the department of emergency medicine at NYU/Bellevue Hospital in New York City.*

Remember to be skeptical of anything you learn, even if you heard it on the Skeptics' Guide to Emergency Medicine. +

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PRACTICAL TIPS  
FOR THE  
PRACTICAL DOCTRICKS OF  
THE TRADE

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# Milking Migraines

Comparing the use of propofol to other agents for treatment of migraines

by TERRANCE MCGOVERN, DO, MPH;  
AND JUSTIN MCNAMEE, DO

**M**igraines remain a common presenting complaint in the emergency department. Accounting for 2.1 million visits annually, they can be one of the most frustrating conditions to take care of.<sup>1,2</sup> Nearly 45 percent of migraine sufferers receive the wrong treatment in the emergency department, which may lead to poor patient satisfaction and frequent bounce backs.<sup>3</sup> When your department's "migraine cocktail" doesn't work and you've even tried dipping into some dexamethasone or sumatriptan without much success, you are probably out of options. Most emergency physicians around the country are comfortable with using propofol for rapid-sequence intubation and procedural sedation, but what about for migraines?

A group working in an outpatient headache and pain clinic was the first to accidentally discover the beneficial effects of propofol on intractable headaches.<sup>4</sup> Krusz et al began noticing a trend after their patients were given a preprocedural dose of propofol for its anxiolytic and antiemetic properties: the patients' headaches would nearly disappear.<sup>4</sup> This occurred in six patients prior to receiving a nerve block. The group then began to study this treatment more formally. They enrolled 77 patients who had a refractory headache unresponsive to their typical rescue medication regimen from their outpatient clinic. Propofol was administered in 20–30 mg boluses every three to five minutes intravenously, with an average total dose of 110 mg needed to completely abolish the headache or achieve maximal reduction. There was a pain reduction of 95.4 percent on a 0–10 visual analog scale (VAS) in the 77 patients enrolled, with 82 percent having complete resolution of their headache. Unfortunately, the doses were not reported as mg/kg doses, which makes it difficult to apply to different populations, but they did report that none of their patients fell asleep or lost consciousness during treatment with propofol. This study gave rise to multiple case reports and even some randomized trials.

## Propofol Versus Dexamethasone

The use of dexamethasone in the treatment of migraines has been well researched but with conflicting results. When used in conjunction with other medications, it appears to help, but when used alone, it may not be as efficacious.<sup>5–9</sup> Its benefit in preventing recurrent or relapsing migraines arguably may be its biggest benefit.<sup>10–12</sup> In a prospective, double-blind, randomized, controlled trial (DBRCT), dexamethasone 0.15 mg/kg (max 16 mg) was compared to 10 mg aliquots of propofol every five to 10 minutes (max 80 mg) in 90 adult patients diagnosed with a migraine headache (defined by the International Headache Soci-

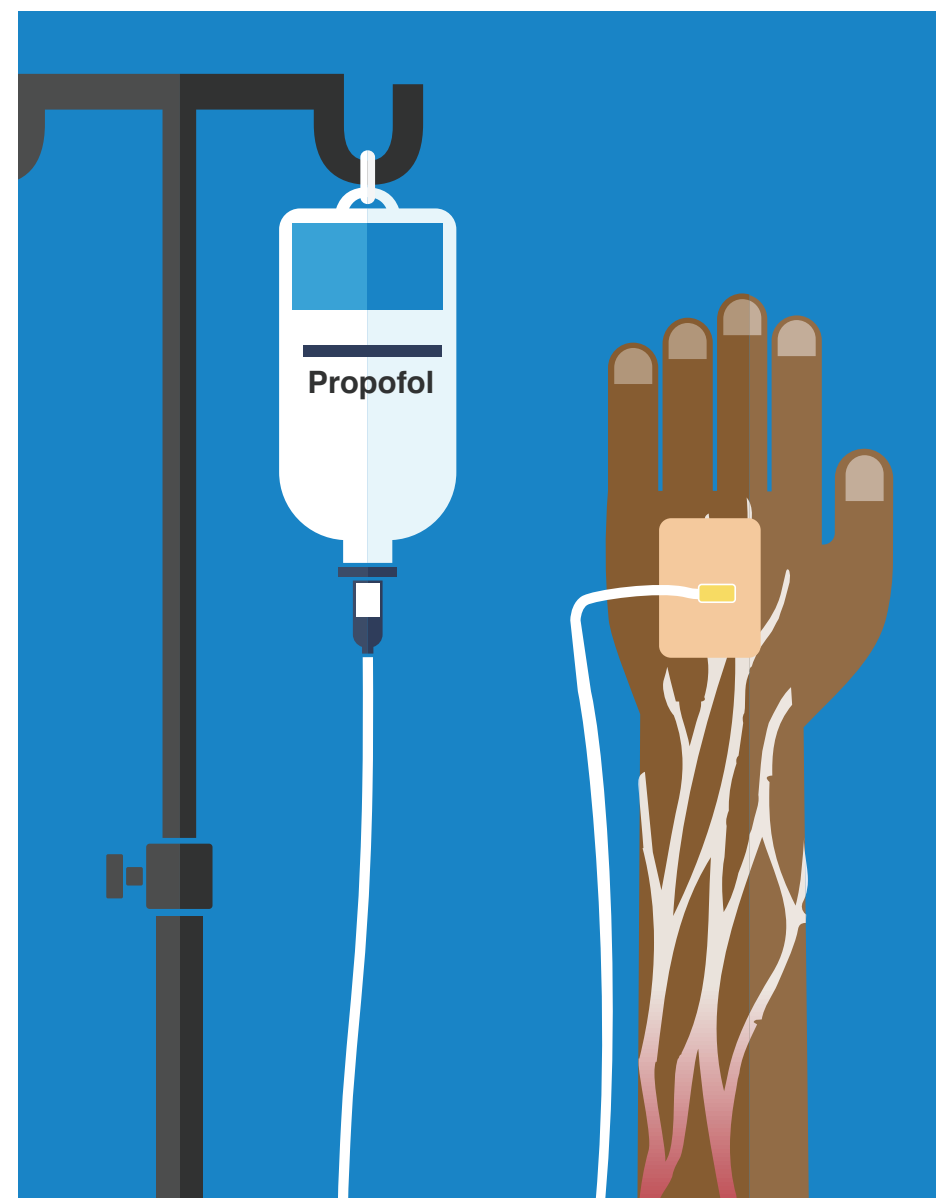


ILLUSTRATION: CHRIS WHISSEN & SHUTTERSTOCK.COM

**Nearly 45 percent of migraine sufferers receive the wrong treatment in the emergency department, which may lead to poor patient satisfaction and frequent bounce backs.**

ety).<sup>13</sup> The two groups were not significantly different in terms of age, sex, symptoms, and VAS pain score prior to treatment. When comparing the rate of response to treatment, propofol was faster and more efficacious than dexamethasone when using the VAS as the marker for resolution.<sup>13</sup> This study was done in Iran, where they do not have access to intravenous NSAIDs or sumatriptan, and thus lacks generalizability to the United States since the majority of practitioners are not using dexamethasone as a single agent for treating migraines in the emergency department.

## Propofol Versus Sumatriptan

In another DBRCT, propofol was compared to sumatriptan as a rescue medication in the

emergency department setting.<sup>14</sup> Ninety adult patients between the ages of 18 and 45 with the diagnosis of an acute migraine attack were randomly assigned to either receive 6 mg of subcutaneous sumatriptan or a 30–40 mg bolus of propofol, with intermittent dosing of 10–20 mg to achieve a Ramsay Sedation Scale score of 3 to 4 (ie, responding to commands or a stimulus). The propofol cohort had significantly less pain 30 minutes after administration compared to the sumatriptan group, but the pain reduction evened out after one and two hours. There were no instances of hemodynamic instability or desaturation (<90 percent). Additionally, the recurrence rate for sumatriptan 24 hours after discharge was found to be 55.3 percent, whereas propofol was only 17.1 percent.

## Conclusion

There are some practical limitations that can be expected with the use of propofol for treating migraines. Are you really going to stay in the room for 30–60 minutes to rebolus propofol and monitor the patient, while the waiting room piles up and there is an emergency department full of patients waiting to be seen? While we do have some randomized trials comparing propofol to dexamethasone and sumatriptan, neither of these are the current standard for the initial management of headaches in the emergency department. We need more formal studies comparing propofol to our current "migraine cocktails" that we use in the United States. For now, propofol is probably just another trick up your sleeve that you can use safely in the emergency department if you are willing to devote some time to that patient; otherwise, I don't know if we're quite ready to start milking all migraines when they hit the door. ☺

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# Fluids: The Enemy of Everything in the Airway

Tips and tricks to manage gushers

by RICHARD M. LEVITAN, MD, FACEP;  
YEN CHOW, MD; & JIM DUCANTO, MD

**I**t has long been assumed in emergency airway management that the fundamental priorities are oxygenation and ventilation. Apart from instances of severe acidosis with compensatory respiratory alkalosis, ventilation is rarely as time critical as oxygenation. Desaturation and severe hypoxemia kills in seconds to minutes; the lack of ventilation causes a buildup of carbon dioxide and eventually acidosis, but it is only critical when patients start out severely acidotic (eg, diabetic ketoacidosis, salicylate overdose, acute renal failure, rhabdomyolysis, etc.).

Next to oxygenation, the priorities of emergency airway management are the management of fluids and the prevention of regurgitation and aspiration. Fluid regurgitation and vomiting has been underaddressed as a life threat in emergency airways.

Every seasoned clinician has encountered clinical situations where fluids impeded laryngoscopy and ventilation. Fluids are, in fact, the enemy of everything in the airway. They make direct and video laryngoscopy more challenging because they obscure landmarks. Look-around-the-curve video devices fail when fluid splatters across the optical element. Endoscopes are particularly useless when there is significant fluid in the airway as it is nearly impossible to keep the lens clean and discern an open pathway.

The most serious threat of fluids in the airway is not with laryngoscopy but rather with oxygenation. Apneic oxygenation, bag-mask ventilation, and rescue devices like the laryngeal mask airway and King LT all function poorly, if at all, when there is a high volume of fluid in the airway. In fact, there is only one airway management technique that can overcome massive fluids in the upper airway: cutting the neck. Cricothyrotomy, with a cuffed tube in the trachea, separates the airway from the shared aerodigestive tract through which all other means of oxygenation are dependent upon. When fluids are uncontrollable, it may be the only option and must be done quickly.

Dr. DuCanto, an anesthesiologist with a unique passion for the airway, created a vomiting mannequin on which to practice intubation in the face of massive fluids. Dr. Levitan has been lucky enough to teach with him and Dr. Chow. Dr. DuCanto and Dr. Chow have thought about vomit in the airway more than anyone else on the planet.

The following tips and tricks for managing fluids in the airway are a combination of Dr. Levitan's suggestions and techniques from Dr. DuCanto and Dr. Chow.

## 1. Preoxygenate as upright as possible.

This will give patients the longest safe ap-



**Figure 1 (ABOVE):** PEEP valve attached to bag-valve mask. Notice nasal cannula under the mask, as well as hand positioning of operators. The first operator holding the bag has his hand under the bag for balance. The second operator is holding the mask tightly against the patient's face while actively moving the mandible forward at the same time. This patient positioning and two-operator coordination are far superior to trying this flat and pushing the mask down onto the mandible.



**Figure 2 (LEFT):** Flipping over the connector of a 7.0-8.0 mm tracheal tube, allowing it to be connected to standard suction tubing.

**Figure 3 (BELOW):** Two suction catheters during laryngoscopy. The operator has stabilized the first catheter in the hypopharynx with the left hand (with same hand holding the laryngoscope). The second catheter is in the operator's right hand, being used for additional suctioning, immediately before placing the tube.



PHOTOS: RICHARD LEVITAN

nea time, and is especially critical in obese patients. Do this with a standard nasal cannula and a mask (either continuous positive airway pressure therapy, bag-valve mask, or non-rebreather mask). Positive end-expiratory pressure (PEEP) is essential in many obese patients and those with fluid-filled alveoli. Single-use disposable PEEP valves should be on every bag-valve mask in the ED (see Figure 1).

**2. Decompress the gastrointestinal bleeders and bowel-obstructed patients with an nasogastric (NG) tube before induction.** The volume of fluid that can come up in these instances can be catastrophic.

I prefer to remove the NG tube (suctioning as it is withdrawn) just prior to laryngoscopy (but after induction) because I don't want to work around it during intubation. In situations where the fluids are just not stopping, I would leave it in during the intubation and work around the NG.

## 3. Positioning is critical during intubation.

Head elevation is best for opening alveoli, especially in obese patients. In fluid-filled airways, you want the fluids to go posteriorly into the esophagus. Also, as fluid fills the esophagus when muscular tone is lost from rapid-sequence intubation (RSI) or unconsciousness, you want gravity to keep it

from going into the pharynx. In the sickest of these patients, an upright intubation, either facing the patient or the operator standing on the bed or stool, may be best.

## 4. Have two suction setups with the largest suction catheters available.

Test them before induction. It's amazing how complicated the suction setups seem in the midst of chaos; getting the right tubing connected to the correct ports on the canister can be a challenge. This should be done before starting the procedure. A standardized location for the suction is best as it can be difficult to find and is easily knocked to the ground when things become chaotic. We suggest that they be tucked under the right shoulder or corner of the bed. Large-bore rigid suction catheters are available from at least two medical device companies and can be a tremendous upgrade in the handling of fluids. The two principle products in the United States are the Big Yank by ConMed and the DuCanto catheter by SSCOR, Inc. (Dr. DuCanto, invented this device, and he receives royalties on this product.) Tracheal tubes can also be used as suction devices when connected to suction tubing either with a meconium aspirator or by flipping the endotracheal tube connector around on a 7.0 to 8.0 mm tracheal tube (see Figure 2). Another option is to use a meconium aspirator connected to an adult-sized tracheal tube.<sup>1</sup>

## 5. Suction before blade insertion.

It makes no sense to immerse a video device into the fluid pool. Even a direct laryngoscope is compromised if the light is buried in the fluid. The rigid suction catheter can be used to assist control of mouth opening and tongue control during initial laryngoscope blade insertion to improve the efficiency of laryngoscopy and potentially improve success at first-pass laryngoscopy. Dr. DuCanto and Dr. Chow advocate using the rigid suction catheter as a means of opening the mouth, manipulating the tongue, and draining fluids to progressively expose landmarks.

## 6. After suctioning with one Yankauer or other device, place this first suction catheter to the left of the laryngoscope blade into the hypopharynx (below the larynx), where it can continue to drain fluids from the esophagus while reducing its potential to evacuate supplemental oxygen supplied via the nasal cannula. In this position, the rigid suction catheter will be held by the laryngoscope blade (medially) and the patient's pharynx (laterally) (see Figure 3). Some Yankauer catheters require a vent hole to be occluded in order to generate suction; tape up the vent hole if needed

CONTINUED on page 20





**DR. HELMAN** is an emergency physician at North York General Hospital in Toronto. He is an assistant professor at the University of Toronto, Division of Emergency Medicine, and the education innovation lead at the Schwartz/Reisman Emergency Medicine Institute. He is the founder and host of Emergency Medicine Cases podcast and website ([www.emergencymedicinecases.com](http://www.emergencymedicinecases.com)).

# Occult Knee Dislocation

Spot this rare but potentially devastating injury

by ANTON HELMAN, MD, CCFP(EM), FCFP

## The Case

A 40-year-old man lost control while driving and collided into a barrier at 45 miles per hour. He was belted, no airbag was deployed, and there was no passenger intrusion. He did not lose consciousness and had full recollection of the event. He only complained of severe right knee pain.

On examination, his primary survey was unremarkable. On secondary survey, there were no signs of head injury, but there was slight cervical spine tenderness without thoracic or lumbar spine tenderness. His chest and abdominal exams were normal. His focused assessment with sonography for trauma (FAST) exam was negative. His pelvis was stable. His extremity exam revealed a swollen tender right knee with an obvious effusion and very limited range of motion.

## Discussion

One of the differential diagnoses that we don't often think about is that of the occult knee injury. A cognitive forcing strategy should be employed every time we are confronted with a patient who presents to the emergency department with a significant knee injury but has a normal or near normal X-ray:

1. Quadriceps tendon rupture
2. Patella tendon rupture
3. Lateral tibial plateau fracture
4. Knee dislocation with spontaneous reduction
5. Locked knee
6. Compartment syndrome

Here, we will review some physical exam pearls to help improve our assessment of the knee and elucidate pitfalls in the diagnosis and management of one of the more serious but rare occult knee injuries. Spontaneously reduced occult knee dislocation is often missed and may result in ischemic complications culminating in limb amputation.

## Knee Examinations in Patients with Severe Knee Pain

Many patients who have suffered an acute knee injury will experience pain that limits the physical exam. Clinicians may short-change their examination of the knee because they don't want to cause more pain. Nonetheless, there are several tips to help patients relax enough to help facilitate provocative testing and the essential maneuvers. First, patients must be supine on a stretcher (not sitting in a chair), with both knees fully exposed. Place a pillow or roll under the distal femur so that the knee is relaxed at about 20 degrees of flexion to allow for provocative knee testing. If necessary, inject 3 mL of 1% lidocaine into the knee joint before attempting provocative maneuvers.

## The Case Continued

After placing a roll under the patient's distal femur and injecting the knee joint with lidocaine, a full knee exam, including neurovascular examination of the lower extremity, was completed. This revealed normal pedal pulses bilaterally. However, there was significant ligamentous laxity of the knee. After the cervical spine was cleared and the patient was observed for six hours with serial examinations, he was placed in a full leg posterior splint and sent home with orthopedic follow-up.

Three days later, the patient returned to the emergency department with severe foot pain and a cold, pulseless foot. Emergency vascular surgery was performed for a massive popliteal thrombosis; he never recovered full function of his right lower extremity.

## When to Suspect an Occult Knee Dislocation

About 20 percent to 50 percent of all knee dislocations spontaneously reduce before patients arrive at the emergency department, and while patients may feel a shift of the knee joint, they may not recognize that their knee is dislocated. One pitfall in the history is assuming that a low-energy mechanism cannot cause a knee dislocation. A low-energy mechanism such as stepping off a curb in patients with a body mass index greater than 40 accounts for a significant proportion of missed occult knee dislocations. One study found that 47 percent of knee dislocations were due to low-energy trauma (eg, slips and falls), with 75 percent being in obese patients. Obese patients with low-energy trauma were more likely to have associated neurovascular injury than high-energy trauma patients in this cohort.

If patients have severe knee pain and a large effusion, check for a "loose knee." Sometimes it is obvious that there is multidirectional ligamentous laxity when the examiner stabilizes the thigh and attempts to move the lower leg with the knee slightly flexed. A helpful rule of thumb is three of four knee ligament disruptions should be considered a knee dislocation until proven otherwise. Another clue: if patients complain of the knee buckling and are found to have a foot drop, then a knee dislocation should be suspected as the dislocation can cause a common peroneal nerve palsy. Lastly, upon lifting the patients' legs by their heels, the dislocated knee may fall into hyperextension compared to the contralateral knee.

## Workup of Suspected Knee Dislocation

The presence of normal distal pulses does not preclude occult popliteal artery injury as this has been shown to have a rate of 5 percent to 15 percent when normal pulses are present.

Ankle brachial index (ABI) and Doppler ultrasound imaging may miss small intimal injuries that clot after a few days. The gold standard is an arteriogram, but CT angiogram is more readily available.

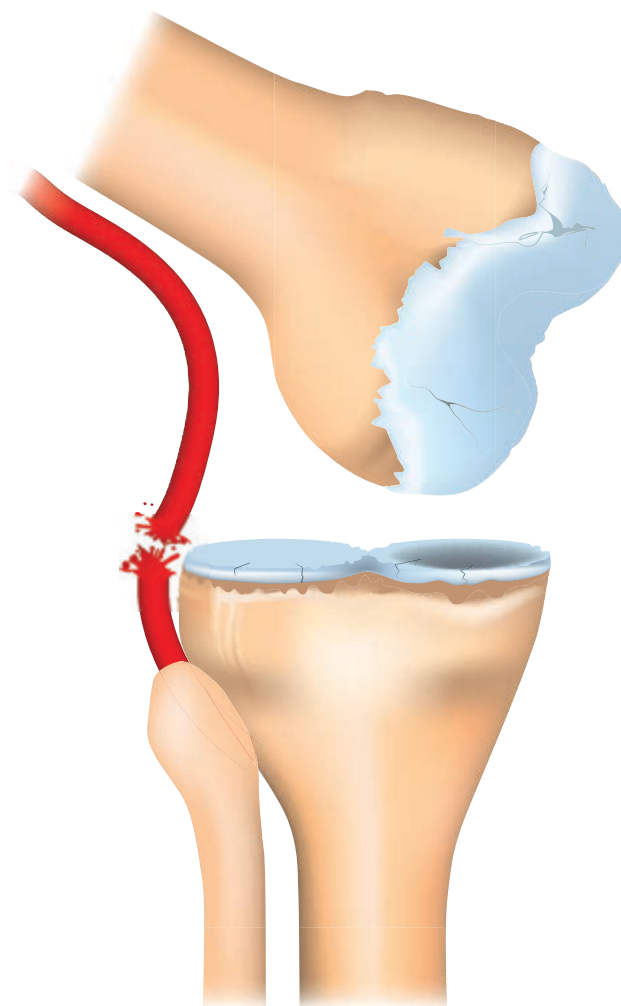
Until recently, all patients with suspected knee dislocation underwent CT angiogram to assess for vascular injury. However, since the vast majority of patients who do have a vascular injury but have normal serial neurovascular exams and normal serial ABIs have intimal tears that do not require surgery, some experts recommend simply administering anticoagulants and admitting patients for observation without performing a CT angiogram.

If you suspect an occult knee dislocation, immediately consult orthopedics as revascularization within six to eight hours of popliteal artery injury is recommended to prevent ischemic complications.

## Occult Knee Dislocation Take-Home

Don't send home patients who tell you that it felt like their knee shifted out of place and they have a big swollen knee with laxity in multiple directions on exam until you're sure they haven't had a vascular injury related to a spontaneously reduced knee dislocation. Even if they have palpable peripheral pulses and a normal ABI, speak to your orthopedic surgeon, considering a CT angiogram to rule out a popliteal injury, and admit. Remember to have a high index of suspicion in any obese person with even a low-force mechanism.

A special thanks to Dr. Arun Sayal and Dr. Hossein Mehdian for their participation in the EM Cases podcast on which this article is based. +



Above: posterior knee dislocation. Below: anterior knee dislocation.

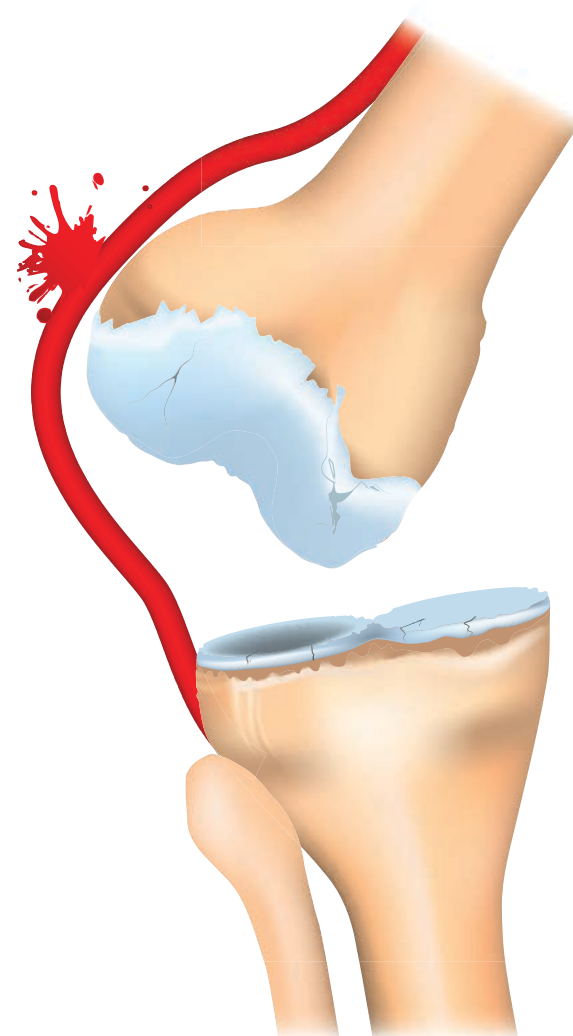


ILLUSTRATION: CHRIS WHISEN & SHUTTERSTOCK.COM





**DR. MOODY**, founder of the EM Docs Facebook group, is president of the Tennessee College of Emergency Physicians and former emergency department chair for Mountain States Health Alliance.



# We Are Not Alone

EM Docs share leadership goals and tips for treating pain and charting

by K. KAY MOODY, DO, MPH

**EM** Docs is evolving! The original intent was to share the joys and challenges of practicing emergency medicine. Currently, upon the writing of this article, there are 12,590 members, with 99 awaiting verification. EM Docs continues to be an oasis of wellness for emergency medicine physicians around the world by bringing us out of isolation and providing a safety net for one another. The educational aspect is growing. Knowledge translation is accelerating by creating a network of learners and educators. Some residency programs have started using EM Docs discussions as a springboard for academic discussions.

## Physicians as CEOs

There has been much discussion on EM Docs regarding physician-led care. The top hospitals, according to *U.S. News & World Report*, are disproportionately led by physician CEOs.

Currently, too many decisions that affect patient care are made without physician input. For example, on EM Docs, our poll demonstrated that almost 100 percent of the time, when a physician determines that their emergency department has reached a dangerous level and is at an unsafe number of patients, the decision to divert is made by an administrator, someone with no patient care experience, someone who is not in the emergency department or able to see the surge of critical patients. The decision seems to be financial rather than based on patient safety. Many EM Docs feel this represents a conflict of interest.

Some EM Docs are currently studying for their MBAs, law degrees, and MHAs. Most agree that they would like to see people with medical know-how in charge. Many pointed out in our discussions that MBAs are a “dime-a-dozen” and it is more



A self-portrait of Dr. Moody.

about experience, saying, “There is no MBA that can match what an MD [physician] with experience brings to the table.” One made the point that “the letters certainly open doors.” Carrie de Moor, MD, a board-certified emergency physician who is CEO of multiple freestanding emergency departments in Texas

said, “Physician-owned and -led hospitals are proven more profitable with better patient experience. Medicine should be led across the board by doctors.” One EM Docs member said that her two-physician family chose a hospital partly because it was physician-led.

## Success Stories of Lidocaine

So many EM Docs continue to share success stories in the quest to avoid opioids. The use of lidocaine for headache and for renal colic has gotten recent attention on the site. For headaches, you can nebulize 2 mL of 2% lidocaine (without epi) mixed with 1 mL of normal saline. For renal colic, administer 1.5 mg/kg of 2% lidocaine (maximum dose 200 mg) mixed with 100 mL of normal saline given over 10 minutes (or longer to avoid nausea and lightheadedness).

## Tips for Getting Charts Done

EM Docs continue to “poll” one another for tips and tricks of the trade. One recent discussion was about suggestions for getting charts done during a shift to avoid staying late to finish them. Solutions? Scribes. Build macros and favorites. Chart as you go. Get two-thirds of the chart done after walking out of the room. Do the discharge papers when you do the chart for patients without a workup. For patients with workup, do orders, history of present illness, review of symptoms, physical examination, and initial medical decision making, save/share/pend the note, and finish at disposition. Only stray from this for unstable patients. Take a laptop into the room, ask a few open-ended questions, and do the orders and the note while patients talk. It keeps away distractions and nurses and staff asking you to do something else. If there is an emergency, the staff will find you. Patients are happy because they think you are transcribing every word. +

## AIRWAY | CONTINUED FROM PAGE 18

to provide continuous suction. (This is one of design advantages of Dr. DuCanto’s catheter—there is no vent hole.)

7. **Use a second suction device to suction the hypopharynx** (with the right hand) immediately before placing the tracheal tube.
8. **Pay particular attention to progressive visualization of landmarks in the setting of massive fluids.** Find the palatal arch, the uvula, and the horizontal edge of the epiglottis, and work the suction tip deeper until the posterior cartilages and glottic opening are seen (see Figure 4).
9. **Check the cuff after placement.** Proper inflation and seal are especially important. Verify end-tidal CO<sub>2</sub>, check the post-intubation X-ray, and make sure to return the NG tube to suction.

Some institutions have subglottic suction tubes. These tubes have a thick sidewall (about a millimeter thicker than a standard tube) and port that is just above the cuff. This allows suctioning of fluids below the cords but above the cuff of the tube. These tubes markedly reduce the incidence of ventilator-associated pneumonia. They are made by several different manufacturers and would be a good

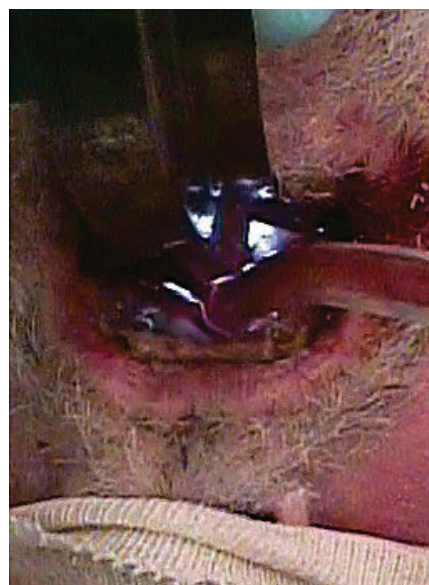


Figure 4: Image sequence for landmark visualization in the setting of massive fluids.

idea in situations where blood or secretions are prodigious. I am not sure it would have any benefit in situations with vomitus, depending on the particulate size, as the subglottic suction hole is relatively small.

Two final points: **Have surgical airway tools ready.** If intubation from above is impossible, the only way to oxygenate your pa-



tient may be a cricothyrotomy. It should be at the bedside and should be discussed with everyone on the team. This lowers the cognitive threshold for making the decision. Most surgical airways fail not because of technical difficulty but because they are initiated on dead patients. If intubation from above is unsuccessful, cut before the patient codes.



PHOTOS: RICHARD LEVITAN

**Lastly, gown up and use eye protection.** In the words of Mike Tyson, “Everyone has a plan, until they get hit in the face!” +

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

Testing, Testing

Understanding the data on diagnostic testing allows for the development of new metrics as quality indicators

by JAMES AUGUSTINE, MD, FACEP

Emergency departments have appropriately developed a role as the diagnostic and treatment center of excellence (and availability) in the health system. Diagnostic testing has changed over the years but still consists mostly of obtaining and analyzing blood, urine, and other body fluids; obtaining tracings of electrical activity in the body; and obtaining images of the body using a broad range of modalities (ionizing radiation, magnetic resonance, positron emissions, and ultrasound). These sophisticated tools provide unprecedented evaluation of patients presenting with a wide array of illness and injury.

There is significant interest in the use of diagnostic testing, particularly imaging, in the emergency department. Quality measures are being developed that compare the use of diagnostic procedures among different emergency departments and among individual practitioners. It is necessary to have historical comparatives and trend data on the use of diagnostics to prepare for the use of new metrics as quality indicators. It is also necessary to understand the difference in utilization among emergency departments that serve different patient populations.

The Emergency Department Benchmarking Alliance (EDBA) uses a voluntary data submission process for a large number of emergency departments and has collected and reported on data through the year 2016. Definitions for the various performance measures are uniform.<sup>1</sup> The EDBA measures ED utilization of diagnostic testing in the number of procedures performed per 100 patients seen. The latest survey is compiling data from approximately 1,400 emergency departments that saw 55 million patients in 2016 and reports in cohorts based on type and volume of patients seen in the emergency department (see Table 1). The data would be considered “macro data” in measuring the performance of the entire large set of emergency departments and not for individual emergency physician performance.

Table 1 shows differences in utilization of diagnostic testing based on volume served and patient population that is predominantly served in the emergency department. There are very significant increases in use of diagnostic testing in adult-serving emergency departments when compared to those serving pediatric populations. Pediatric emergency departments only use CT imaging about four times per 100 patients seen. Plain diagnostic X-rays show little difference in utilization

Table 1: ECG and Imaging Procedure Utilization per 100 Patients in 2016 by EDBA Data Cohort

ED TYPE	ECGS	MRI PROCEDURES	ULTRASOUND PROCEDURES	CT PROCEDURES	SIMPLE X-RAY PROCEDURES
All EDs (N=1,400)	27	1.6	7	20	42
Under 20K volume	20	0.6	3	17	40
20–40K	22	1.0	6	19	41
40–60K	27	1.5	7	22	44
60–80K	29	1.7	7	22	45
80–100K	29	1.9	8	24	48
Over 100K volume	32	1.9	8	24	46
Pediatric EDs	3	0.8	4	4	25
Adult EDs	34	1.8	7	26	49
Freestanding EDs	20		5	16	41

Table 2: ECG and Imaging Procedure Utilization per 100 Patients, EDBA Data Surveys Trend Data

YEAR	ECGS PER	MRI PROCEDURES	ULTRASOUND PROCEDURES	CT PROCEDURES	SIMPLE X-RAY PROCEDURES
2016	27	1.6	7	20	42
2015	25	1.5	6	21	44
2014	26	1.2	5	20	46
2013	26	1.3	4	20	46
2012	26	1.1	N/A	20	48
2011	26	N/A	N/A	22	48
2010	23	N/A	N/A	22	44
2009	23	N/A	N/A	21	43
2008	22	N/A	N/A	22	44
2007	20	N/A	N/A	22	48
2006	19	N/A	N/A	22	48
2005	18	N/A	N/A	18	48

Table 3: Diagnostic Utilization and Acuity Characteristics of Trauma and Non-Trauma Centers, EDBA Data Survey 2016

	ADULT LEVEL I AND II TRAUMA CENTERS	ALL LEVEL I AND II TRAUMA CENTERS	LEVEL III AND IV TRAUMA CENTERS	NO TRAUMA CENTER DESIGNATION
Number of Hospitals	81	285	234	840
High Acuity %	73%	68%	67%	63%
Admit %	25%	22%	15.5%	14.6%
EMS Arrival %	26%	23%	16%	15%
Median Length of Stay (mins)	274	226	163	169
X-rays Per 100	50	46	42	44
CT Per 100	26	23	19	20
MRI Per 100	2.0	1.8	1.0	1.0



based on volume. Volume over 40,000 patients per year also results in more frequent use of testing, including 12-lead ECGs.

Table 2 displays the trend data for 11 years of comparison. There is a trend to increasing utilization of ECGs, ultrasound, and MRI imaging. MRI utilization across all emergency departments has now reached about 1.6 procedures per 100 patients seen, but this increases to 2.0 in trauma centers. The reporting of MRIs has only occurred over the last five years, and the reporting of ultrasound has only occurred over the last four years, with each showing expanding use. The 11-year trend shows a decrease in the use of simple X-rays and a slight reduction in the use of CT imaging.

To further characterize performance, hospitals have been sorted based on trauma center designation (see Table 3). The four cohorts are adult-serving Level I and II trauma centers, all Level I and II trauma centers, Level III and IV trauma centers, and all other emergency departments. A comparison of these cohorts finds that designation of the hospital as a Level I or II trauma center is associated with a significant increase in the utilization of diagnostic imaging. In the subset of trauma centers serving a population that is almost exclusively adults, there is a further increase in the use of imaging.

The management of trauma volumes is associated with an overall increase in the acuity

of patients as measured by the percentage of patients who are reported as CPT code 99284, 99285, or 99291 (high acuity). Trauma designation also results in higher arrival rates by EMS, higher admission rates, and longer median lengths of stay for all patients served in the emergency department. There is about a 30 percent difference in CT utilization based on higher-level trauma center status and a doubling of the use of MRI procedures.

The emergency department 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 related to an acute episode of injury or

illness. Because about 66 percent of inpatients are processed through the emergency department, physicians are responsible for a disproportionate share of diagnostic testing and the patient-flow issues related to it. Emergency physicians must understand the data on diagnostic testing in their department and have comparison data available. This will allow for better decision making by all parties involved in utilization management and the rate of use of diagnostic imaging as a marker of quality. ➔

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**Phone:**  
**201-767-4170**





The Emergency Group, Inc. (TEG) is a growing, independent, democratic group that has been providing emergency services at The Queen's Medical Center (QMC) in Honolulu, Hawaii since 1973. QMC is the largest and only trauma hospital in the state and cares for more than 65,000 ED patients per year. QMC opened an additional medical center in the community of West Oahu in 2014, which currently sees 50,000 ED patients annually.

Due to the vastly growing community in the West Oahu area, TEG is actively recruiting for **EM Physicians BC/BE, EM Physicians with Pediatric Fellowship who are BE/BC and an Ultrasound Director**. Physicians will be credentialed at both facilities and will work the majority of the shifts at the West Oahu facility in Ewa Beach, Hawaii.

We offer competitive compensation, benefits, and an opportunity to share in the ownership and profits of the company. Our physicians enjoy working in QMC's excellent facilities and experience the wonderful surroundings of living in Hawaii.

For more information, visit our website at [www.teghi.com](http://www.teghi.com). Email your CV to [tegrecruiter@gmail.com](mailto:tegrecruiter@gmail.com) or call the Operations Manager at 808-597-8799.



#### MetroHealth Medical Center Correctional Health Program

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Send CV and inquiries to [ttallman@metrohealth.org](mailto:ttallman@metrohealth.org). Thomas A Tallman, DO, MMM, FACEP, Medical Director, MetroHealth Correctional Health Program, 216 704 4296.

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#### MEDICAL DIRECTOR

The program is searching for a dedicated Medical Director for the Ben Taub General Hospital. The Medical Director will oversee all clinical operations at Ben Taub, with a focus on clinical excellence. The successful candidate will be board certified and eligible for licensure in the state of Texas. The candidate will have a solid academic and administrative track record with prior experience in medical direction. Faculty rank will be determined by qualifications.

Those interested in a position or further information may contact Dr. Dick Kuo via email [dckuo@bcm.edu](mailto:dckuo@bcm.edu) or by phone at 713-873-2626. Please send a CV and cover letter with your past experience and interests.

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**FAX CV to 213-482-0577  
or call 213-482-0588, or email  
[neubauerjanice@gmail.com](mailto:neubauerjanice@gmail.com)**

#### WASHINGTON, Olympia:

Full-time, partnership track opportunity for residency trained BC/BE emergency physician. Established, independent, fee-for-service democratic group. Annual volume 70,000+. State-of-the-art department located on the scenic Puget Sound.

Send CV to Kathleen Martin, 413 Lilly Rd. NE., Olympia, WA 98506 or [kathleen.martin@providence.org](mailto:kathleen.martin@providence.org)



#### EMERGENCY MEDICINE OPPORTUNITIES

#### AT LEVEL 1 TRAUMA CENTER IN SAN FRANCISCO BAY AREA!

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For more information contact Ben Aguilar at [baguilar@vephealthcare.com](mailto:baguilar@vephealthcare.com) or 925-482-8253.



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We offer salaries commensurate with qualifications, sign-on bonus, relocation assistance, physician incentive program and a CME allowance. Our comprehensive benefit package includes health insurance, education assistance, retirement options, on-campus fitness center, day care, credit union and so much more! For your health, Hershey Medical Center is a smoke-free campus.

Applicants must have graduated from an accredited Emergency Medicine Residency Program and be board eligible or board certified by ABEM or AOBEM. We seek candidates with strong interpersonal skills and the ability to work collaboratively within diverse academic and clinical environments. Observation experience is a plus.

For additional information, please contact:

**Susan B. Promes, Professor and Chair, Department of  
Emergency Medicine, c/o Heather Peffley, Physician Recruiter,  
Penn State Hershey Medical Center, Mail Code A590,  
P.O. Box 850, 90 Hope Drive, Hershey PA 17033-0850,  
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