A PERILOUS PUFF

What you need to know about the current epidemic of vaping-associated pulmonary injury

by JOSHUA FARKAS, MD

Using electronic cigarettes, or vaping, has become increasingly popular within the past several years. Within the past few months, an outbreak of vaping-associated pulmonary injury (VAP) has been recognized in locations across the United States. The number of patients involved has rapidly increased to the hundreds, and several deaths have been reported.

CONTINUED on page 46

WHEN PATIENTS TURN VIOLENT

Violence against health care workers is everywhere, but we can reduce it

by AMISH SHAH, MD, MPH

When I took my first job as an attending emergency physician at Mount Sinai Hospital in New York, the man who hired me, the late, great Dr. Sheldon Jacobson, put it to me squarely: “Here’s the deal—I take good care of you, and you take good care of the patients.” One problem I never expected is that some patients don’t take care of us in turn.

A few years ago, I was working a night shift when a woman in her twenties presented for mild alcohol intoxication. She was alert and spoke clearly. We had a pleasant conversation, and I told her we would provide some Tylenol and IV fluids. She was appreciative. I sat down and began to type my note just a few feet away.

CONTINUED on page 28
Patients often come to the ER with ambiguous, overlapping symptoms. You need fast, comprehensive lab results to clear up the confusion and keep the ER running smoothly. The BioFire® FilmArray® System utilizes a syndromic approach—simultaneously testing for different pathogens that can cause similar symptoms—to deliver actionable results in about an hour. The BioFire System is a simple, rapid test you can depend on to help you triage effectively and improve patient outcomes.

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**Comprehensive:** One test to check for a broad spectrum of pathogens—viruses, bacteria, parasites, fungi, and antimicrobial resistance genes—so you can determine the best course of action in the shortest amount of time.

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- **Gastrointestinal**
  - 1 Test / 22 Targets / 1 Hour

- **Meningitis/Encephalitis**
  - 1 Test / 14 Targets / 1 Hour

- **Pneumonia**
  - 1 Test / 33 Targets / 1 Hour

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**Syndromic Testing: The Right Test, The First Time.**
Faster FilmArray® System utilizes a syndromic approach—simultaneously assessing multiple symptoms. You need fast, comprehensive lab results to clear up antibiotic resistance genes—so you can determine the best course of action to guide your treatment decisions.

Fast: Rapid turnaround time facilitates efficient diagnosis and treatment. The BioFire System is a simple, rapid test you can depend on to help you triage effectively. By delivering actionable results in about an hour, the BioFire System is the most effective means to communicate our messages, including practice-changing tips, regulatory updates, and the most up-to-date information on healthcare reform. Each issue also provides content that can be used in daily practice. Written primarily by the physician for the physician, ACEP Now is the most effective means to communicate our messages, including practice-changing tips, regulatory updates, and the most up-to-date information on healthcare reform. Each issue also provides content that can be used in daily practice.

Reimbursement Changes for Emergency Care of Veterans

The Veterans’ Emergency Care Fairness Act of 2009 provided payment for veterans enrolled in Department of Veterans Affairs (VA) care who used a non-VA facility for emergency care, but an internal VA regulation blocked those payments. Recently, the U.S. Court of Appeals ruled that the VA must reimburse emergency care of veterans at non-VA facilities.

It’s important to identify veterans who are receiving care at a VA facility, plus those who would qualify for care if they enrolled. The eligibility rules are complicated, and the process is not always straightforward. Once enrolled, the veteran can receive many benefits, including pharmacy, home care, and end-of-life care. Many veterans use non-VA emergency departments because of distance or not knowing they are eligible for care. Now that the VA system has been ordered to reimburse emergency departments for this care, it may be reasonable to add questions about veteran status to your patient registration process and encourage identified veterans to check their eligibility with the VA.

ACEP Urges Policymakers to Remove Obstacles to Treatment for Opioid Use Disorder

As the U.S. Department of Health and Human Services compiles a report for Congress on treating opioid use disorder, ACEP urges policymakers to consider steps to remove obstacles to appropriate care in the emergency department, including removing the “X waiver,” modifying the “three-day rule,” and removing preauthorization requirements. Read the full comment letter at www.acep.org/federal-advocacy/access-to-emergency-medicine. Turn to page 18 to read more about the X waiver and why you should get waived.

Emergency Physician’s Name Added to 9/11 Memorial Wall

Michael G. Guttenberg, MD, who passed away in October 2017 from pancreatic cancer attributed to his work as a first responder at 9/11 Ground Zero, was added to the FDNY World Trade Center Memorial Wall in Brooklyn during a ceremony Sept. 6, 2019. Despite his diagnosis, Dr. Guttenberg served as medical director of Northwell Health’s clinical preparedness and Center for Emergency Medical Services until days before his death.

Regulatory News: Patient Confidentiality for Substance Use Disorder

The U.S. Department of Health and Human Services recently released the Substance Abuse and Mental Health Services Administration (SAMHSA) proposed regulation to modify 42 CFR Part 2, which governs the confidentiality of patient records for the treatment of substance use disorder (SUD). One of the major policy debates around 42 CFR Part 2 has been whether this set of regulations should be modified to align more closely with HIPAA, and the proposed regulation does not do so. Instead, SAMHSA proposes smaller modifications to 42 CFR Part 2 aimed at advancing care coordination for patients with SUD and clarifying existing policies for 42 CFR Part 2 treatment programs (federally assisted alcohol or drug abuse programs) and other health care providers.

ACEP Launches New Website for External Audience

ACEP has reimagined EmergencyCare for You to create a new, comprehensive external website. EmergencyCare.org is a one-stop shop for the public to get the latest news, advocacy updates, and public health and safety tips directly from emergency physicians.

ACEP Now Wins Awards for Editorial Excellence

ACEP Now has received several editorial awards:

- APEX Grand Award for “Two Accounts of Vegas Mass Shooting,” interviews with an emergency physician who treated victims of the 2017 mass shooting at the Route 91 Harvest country music festival in Las Vegas and a victim of the shooting.
- APEX Award of Excellence for “More Than Just ‘I Do,’” about an emergency physician and his partner’s journey to get married before same-sex marriage was legal nationally.
- APEX Award of Excellence and EXCEL Gold Award for “Private Matters?” by Susan T. Haney, MD, FACEP, FAAEM, about her 10-year fight to keep her medical license after voluntarily reporting an adverse drug reaction related to chronic depression.

Read the winning articles at ACEPNow.com.

The annual APEX Awards are given by Communication Concepts to recognize excellence in writing, digital content, graphic design, social media, public relations, and marketing. The annual EXCEL Awards are given by Association Media & Publishing to recognize excellence and leadership in nonprofit association media, publishing, marketing, and communications.
F

The status quo is increasingly unaffordable

by JAMES C. MITCHENER, MD, MPH, FACEP

preventive care, dental, vision, mental health, rehabilitation, substance abuse, and long-term care

by TODD B. TAYLOR, MD, FACEP

If you think health care is expensive now, wait till it’s free.”

—P.J. O’Rourke

health care you get (or is even available).

True single-payer is socialized medicine. This, the most overused takedown of single-payer in general, focus on its supposed defects, some of which I’ll summarize below as “The Seven Myths of Single-Payer.”

Myth #1: “Single-payer is socialized medicine.” This, the most overused takedown of single-payer would have the following salutary effects:

• Severance of the link between employer and health insurance

Enshrined in the basic principles of single-payer health care, we already have. By consolidating the administrative costs of some 1,200 private health plans—each of which duplicates what the others do—we’d capture economies of scale and use the savings to expand access to more people and more services. Sometimes known as Medicare-for-all, single-payer advocates for expanding and improving our existing Medicare program to provide universal, cost-effective, and comprehensive care to all Americans.

To understand how single-payer works, emergency physicians only need to contemplate their own practices since the emergency department is a de facto single-payer environment. What we do, and how we do it, is enshrined in the basic principles of single-payer financing. Our emergency departments are open to all (universality); we treat out-of-town visitors who get sick or injured while staying with family or friends (portability); we have no cost barriers to care (open access); patients, as a general rule, can pick their emergency department (freedom of choice); and we treat all patients alike, regardless of age, income, employment, or pre-existing conditions (equality and equity).

Beyond what’s already cited, single-payer would bring us to the crux of the issue. How you fund health care directly determines what health care you get (or is even available). Nationalization of the health care system in America (eg, via “single-payer”) will be much different than our current private health insurance market. And much of this simply comes down to choice.

In a single-payer system (government funded, regulated, managed, and defined), politicians largely determine health care services and their costs. This is a “regulated monopoly.” In a market-based approach (even one that is highly regulated), individuals (or groups of individuals, eg, employers) largely determine services, and to some extent, the laws of supply and demand determine prices.

Individuals have choices regarding insurance benefits or whether it is even worth the cost to purchase insurance.

Common Sense Analysis of Single-Payer Health Care

It is impossible to read, let alone analyze, everything that has been written about single-payer health care. Further, while various other countries are used as examples, the largest such country by GDP with single-payer health care is Japan, whose health care system (by total spend) is only about 9 percent of that of the United States. England is about 3 percent. We cannot be so naive as to believe a country the size of the United States can simply wholesale adopt a system that works for countries a fraction of our size. Even by pop-

CONTINUED on page 6

health care transformation in the united states

Single-payer would be detrimental to emergency physicians and could cause an economic disaster

by TODD B. TAYLOR, MD, FACEP

If you think health care is expensive now, wait till it’s free.”

—P.J. O’Rourke

By the common definition, America currently has “universal health care.” Health care services are largely available to almost all Americans via a combination of publicly and privately funded systems based on individual demographics. However, not all Americans choose to avail themselves of the options for health insurance to pay for these services and protect their assets.

Prior to the Affordable Care Act (ACA), or Obamacare, about 83 percent of Americans had some form of health insurance. Of the remaining 17 percent, half could have had coverage if they had chosen to pay a modest monthly premium (eg, to add family coverage at work) or simply applied for Medicaid. After ACA, the uninsured rate dropped to about 10 percent, largely due to expansion of Medicaid. As before ACA, perhaps another 5 percent could be covered if they choose.

With these facts in mind, the current discussion on health care is really about how to fund it and not about universal coverage. This brings us to the crux of the issue. How you fund health care directly determines what health care you get (or is even available). Nationalization of the health care system in America (eg, via “single-payer”) will be much different than our current private health insurance market. And much of this simply comes down to choice.

In a single-payer system (government funded, regulated, managed, and defined), politicians largely determine health care services and their costs. This is a “regulated monopoly.” In a market-based approach (even one that is highly regulated), individuals (or groups of individuals, eg, employers) largely determine services, and to some extent, the laws of supply and demand determine prices.

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Given the enormous and growing cost of the status quo ($3.5 trillion annually), and the failure of previous reforms to control costs and fund universal coverage, perhaps the more salient question is, how can we afford not to have a single-payer system?

Myth #3: “Single-payer would eliminate choice. Really? Choice of what? Most working Americans are covered by employer-based insurance, which limits your choice to a doctor or hospital that’s in-network. If you want care from a non-network provider, you have to pay out-of-pocket. Under single-payer, there’d be no such thing as “network,” and the choice of provider would be up to you.

Myth #4: “Things are so bad in Canada.” Cross-border comparisons in health care generally are driven by population-based statistics. In that sense, despite spending 55 percent of what we do on a per-capita basis, Canada has a higher life expectancy, lower infant mortality rate, and overall comparably better quality metrics to the United States. Yes, Canadians do have to wait for hip or knee replacements and MRls. But Canadians are not wait-listed for emergency procedures, and no one stands in line for an emergency procedure. Replacements and MRls require advance scheduling, and if you do not want to wait, you can pay out of pocket. Canadians last year, informing you that Medicare and Medicaid rates is unfounded. First, the implication that we would be paid at Medicare rates is unfounded. First, the implication that we would be paid at Medicare rates is unfounded. Second, no serious single-payer advocates are getting paid at Medicare rates. And third, being paid at uniform Medicare rates would balance the decrease in fees we would have received for treating patients previously covered by commercial insurance. To make sure doctors are paid at Medicare rates and under single-payer, physicians would get paid peanuts. My friend and chief single-payer adversary, Dr. Todd Taylor, likes to remind everyone that single-payer is a monopoly—a single buyer—which means the government would control our remuneration (as if private insurers don’t already?). But the implication that we would be paid at Medicare rates is unfounded. First, organized medicine, at the state level, would play a major role in negotiat-

In summary, single-payer is government-financed care rather than government-controlled care. Thus, it is not socialized medicine any more than the federal interstate highway system is socialized transportation. The additional taxes required to finance single-payer would be levied progressively, and their financial impact would be zeroed out by the elimination of health insurance premiums, copays, coinsurance, and deductibles, providing financial advantage to an estimated 95 percent of Americans. It is well beyond time the United States joined the 23 developed democracies in providing high-quality, affordable, and accessible health care to all its citizens, a goal I believe can be achieved only through a single-payer Medicare-for-all program. Single-payer is simple, inviolate, and I believe ACEP should play a major role in creating it. DR. MITCHELL is an attending physician in the emergency department at St. Joseph Mercy Hospital in Ann Arbor and Chelsea.

VA: “[The Government Accountability Office (GAO)] designated VA health care as a high-risk area in 2017 due to five areas of concern regarding VA’s ability to provide timely access to safe, high-quality health care for veterans: (a) ambiguous policies and inconsistent processes; (b) inadequate oversight and accountability; (c) [information technology] challenges; (d) inadequate staff training; and (e) unclear resource needs and allocation priorities. In 2017, GAO reported that while VA had taken some actions to address these issues, little progress had actually been made.

Military Health System: “The Department of Defense faces significant challenges ensuring that all members of the military, as well as their families, receive appropriate care for everything from general care to specialized clinical care for deployment related injuries such as amputations, chemically induced illnesses, and post-traumatic stress disorder...only 50-60% rate their health plan at 8/10 or better.”

If the above were your résumé, you would be fired. But like many government-run services, health care is apparently good enough for government work. But the question we now face is, do we really want to turn over the remaining 50 percent of health care in America to the government, based on current evidence of mismanagement of the other 50 percent?

If we learn anything from the current silliness in American politics, it’s that we do not want politicians in charge of health care.

A Few Other Considerations

Single-Payer—Tax-Funded Health Care: The progressive tax system in America means the largest burden of the “health care tax” will fall on higher-income individuals. It is the factor of redistribution, which may seem great until you run out of every-
body else’s money. As providers, you may get paid for more people (albeit much less for each), and on the other side, you are also paying their bill (via taxes).

Single-Payer–Universal Health Care Monopoly: A monopoly is a market structure in which a single buyer substantially controls the market as the major purchaser of goods and services. This single entity has market power over sellers as the only buyer, much in the same manner that a monopolist can influence the price for its buyers in a monopoly, in which only one seller faces many buyers. As noted, 50 percent of U.S. health care is already publicly funded (taxes). These programs are regulated limited monopolies in defined populations. Due to little, if any, coordination among these various government programs, they currently do not have the same effect that a true universal monopoly would. In other words, health care providers still have considerable freedom for whom they wish to provide services and at what price. A true single-payer environment would dramatically change these economics. By definition, a monopoly eliminates choice and competition. The government sets the rates. You take it or leave it. If there are not enough “takers,” people wait in line for care.

Net-Net for Emergency Physicians: Under single-payer, we may have lower (perhaps much lower) compensation, deal with patients experiencing a delay in receiving services, and pay (much) higher individual taxes. If we are going to propose a single-payer system, we need to own up to these realities and not act like they will not happen “if done right.” These things will necessarily happen because that is doing it right under single-payer.

Single-Payer–Economic Disaster: Health care is now the largest private-sector industry in the United States, and in some cities it represents more than 25 percent of all jobs. In 2017, $3.0 trillion ($10,348/person and 17.9 percent GDP) was spent on health care. Private health insurance represented 34 percent ($1.122 trillion) of that spend. You do not have to be a genius to know what would happen if you “nationalize” a $3-trillion segment of the health care industry (about 6 percent of GDP). How would United Healthcare ($245 billion market cap), WellPoint ($22 billion), Aetna ($77 billion), CIGNA ($17 billion), Humana ($39 billion), and all the other insurance companies and shareholders respond to nationalization from a government program (eg, Medicare-for-all)? A government takeover like this would clearly be unprecedented in American history.

Single-payer will never happen, and if it does, it would precipitate an economic depression. But the good news is you would have free mental health services for your emotional depression.

References
Clinical Resources for Managing Mental Health Patients

As our advocacy team has been working to improve patient access to mental health care through legislative and regulatory channels, ACEP’s clinical affairs department has been focused on helping emergency physicians manage mental health patients.

**ICARE Bedside Tool for Managing Suicidal Patients in the ED (2018)**
ICARE helps physicians identify suicide risk, communicate effectively, reduce risk, and extend care beyond the emergency department. This app is available in a web-based format (www.acep.org/patient-care/ICARE) and on the emPOC app, ACEP’s new point-of-care (POC) app with five bedside tools that can be downloaded in the App Store or Google Play.

**ADEPT Bedside Tool for Managing Confusion and Agitation in the Elderly ED Patient (2018)**
ADEPT, a point of care tool available in both the web-based format (www.acep.org/patient-care/adept) and on the emPOC app, helps physicians assess, diagnose, prevent, and treat delirium in elderly ED patients.

**Clinical Policy for Adult Patients: Critical Issues in the Diagnosis and Management of the Adult Psychiatric Patient in the Emergency Department (2017)**
Read the full statement and view the related CME options at www.acep.org/patient-care/clinical-policies/Psychiatric-Patient.


ACEP supports the careful and appropriate use of patient restraints or seclusion. View ACEP’s principles regarding patient restraints at www.acep.org/patient-care/policy-statements/use-of-patient-restraints.

Information Papers

View the following in full at www.acep.org/by-medical-focus/mental-health–substance-abuse/information-papers:
- Care of the Psychiatric Patient in the Emergency Department (2014)
- Practical Solutions to Boarding Psychiatric Patients in the Emergency Department (2018)
- Suicide Contagion in Adolescents: The Role of the Emergency Department (2018)

Sobering Centers

Sobering centers provide a safe, supportive environment for mostly uninsured, homeless, or marginally housed publicly intoxicated individuals to become sober, with a goal of decreasing the number of inappropriate ED visits for homeless, alcohol-dependent individuals. Learn more at www.acep.org/by-medical-focus/mental-health–substance-abuse/sobering-centers.


Coalition on Psychiatric Emergencies

The Coalition on Psychiatric Emergencies (COPE) is a group of more than 30 national leaders in emergency medicine, psychiatry, and patient advocacy who are focused on improving the treatment of psychiatric emergencies for patients and emergency providers. The coalition hosts annual pre-conference sessions during ACEP Scientific Assembly to addresses knowledge gaps in acute medical care for emergency psychiatrists and topics on emergency psychiatry for emergency physicians along with other relevant topics. COPE recently collaborated with the American Foundation for Suicide Prevention to create a new award recognizing innovations in the acute care setting for suicide prevention. Learn more at www.acep.org/who-we-are/acep-awards/leadership-and-excellence/innovation-in-acute-care-suicide-prevention-award.
More than 12,000 ACEP members have achieved Fellow status with the College and use the FACEP designation with pride! Here, we highlight ACEP Fellows who have fascinating hobbies and passions outside the emergency department.

**LANE PATTEN, MD, FACEP**

Lane Patten, MD, FACEP, an emergency physician at North Memorial Health in Minneapolis, started a food blog (www.withtewspoons.com) with fellow emergency physician Holly Schrupp Berg, MD, when she was struggling with burnout and needed a creative outlet. The two physicians love that the blog furthers their mission to help people “form connections over food.” Dr. Patten concedes that the stakes are much lower in the kitchen than in her level 1 trauma center: “We mess up a batch of cookies—no big deal!”

**FREDERICK BLUM, MD, FACEP**

Frederick Blum, MD, FACEP, professor in the department of emergency medicine at West Virginia University in Morgantown, calls himself a “Renaissance hillbilly” because of his wide variety of hobbies. He’s an avid photographer and oil painter, and he also writes poetry and practices archery. Dr. Blum learned and competed in archery as a child, and these days, it helps him relax and wind down: “Archery is a form of meditation for me.” He likes to teach archery to children at summer camps.

**MELISSA KOHN, MD, FACEP**

Melissa Kohn, MD, FACEP, an emergency physician at Einstein Medical Center in Philadelphia and medical director for Collingdale Fire Company No. 1 in Delaware County, started running to clear her head and spend more time outdoors. She’s running the New York City Marathon this November as part of her goal of running a half marathon in all 50 states. Her toughest race ever? The Nike Women’s Half in San Francisco. “The hills were brutal!”

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how to intervene
• Encouraging the Centers for Disease Control and Prevention to improve its National Violent Death Reporting System
• Expanding the mental health workforce
• Clarifying HIPAA privacy rules for patients with mental illness and their caregivers
• Eliminating the Medicaid same-day exclusion
• Seeking additional information about Medicaid managed care plan provision of services for adults in an institution for mental diseases
• Studying participation in the Medicaid Emergency Psychiatric Demonstration project
• Enhancing compliance with mental health and substance use disorder insurance coverage

During the 2019 ACEP Leadership & Advocacy Conference, 500 ACEP members asked their legislators to support H.R. 2519, Improving Mental Health Access from the Emergency Department Act. This important piece of legislation, developed by ACEP, would:
• Expedite transition to post-emergency care through expanded coordination with regional service providers, assessment, peer navigators, bed availability tracking and management, transfer protocol development, networking infrastructure development, and transportation services;
• Increase the supply of inpatient psychiatric beds and alternative care settings such as regional emergency psychiatric units;
• Expand approaches to providing psychiatric care in the emergency department, including tele-psychiatry and other remote psychiatric consultations, peak period crisis clinics, or creating dedicated psychiatric emergency service units.

On June 26, the U.S. House Committee on Ways and Means unanimously approved a bill, H.R. 3417, Beneficiary Education Tools, Telehealth, and Extenders Reauthorization (BETTER) Act, to provide patient improvements for rural services provided by Medicare. This bill incorporated a provision based on the ACEP-supported Mental Health Telemedicine Expansion Act that would improve treatment of mental health by providing telehealth services to individuals at home.

Recent Regulatory Efforts
ACEP continues to ask Congress and the Centers for Medicare & Medicaid Services (CMS) to expand Medicare coverage of emergency telehealth services, including tele-psychiatry services.
• April 2018: ACEP members met with CMS to share how innovative psychiatric ED models throughout the country have improved coordination among appropriate providers to improve care for patients experiencing a psychiatric emergency and helped reduce the prevalence of psychiatric boarding.
• June 2018: ACEP members shared the aforementioned psychiatric ED models with key members of Congress.
• December 2018: ACEP responded to a request for comments from the Federal Communications Commission (FCC) related to the National Suicide Hotline Improvement Act of 2018. We supported creating a new three-digit dialing code for mental health emergencies because it could improve access to appropriate care and reduce psychiatric boarding. In August 2019, the FCC issued a formal report to Congress recommending the creation of such a three-digit number.

• April 2019: ACEP responded to a request for information from the bipartisan Congressional Telehealth Caucus. We asked Congress to expand the use of emergency telehealth services, including tele-psychiatry in the emergency department, and we provided several recommendations for upcoming telehealth legislation.

• August 2019: ACEP and the Society for Academic Emergency Medicine responded to the National Institutes of Health’s request seeking input from the community about their use of telehealth in general hospital emergency medical care settings to facilitate the care of individuals with suicide risk. View these comments in full at www.acep.org/federal-advocacy/mental-health.

State Advocacy Efforts
As emergency departments deal with issues related to the inability to transfer psychiatric patients out of the emergency department, many states have sought legislative solutions. The State Legislative/Regulatory Committee set out to help chapters with legislative efforts in states that grant emergency physicians authority to involuntary hold and/or transfer psychiatric patients to an appropriate facility when medically indicated. The committee developed a document that details four legislative approaches to remove barriers and expedite evaluation of psychiatric patients in the emergency department. This resource focuses on involuntary holds, detailing criteria and time limits, along with emergency physician authority and liability.

That document and a variety of other resources including current state bills related to psychiatric holds are available at www.acep.org/state-advocacy/psychiatric-holds.

MR. DAVIS is ACEP director of regulatory affairs. MS. GRANTHAM is ACEP communications manager.
Assessing what’s appropriate and effective care is best accomplished via an accreditation process that offers objective feedback and insight. The goal of ACC’s Chest Pain Center Accreditation is to support your multidisciplinary team’s clinical decision-making and reveal your team’s potential for continued performance improvement. When you want to synthesize support for change, partner with ACC Accreditation Services.

The Benchmark for Truly Significant Process Improvement

Assessing what’s appropriate and effective care is best accomplished via an accreditation process that offers objective feedback and insight. The goal of ACC’s Chest Pain Center Accreditation is to support your multidisciplinary team’s clinical decision-making and reveal your team’s potential for continued performance improvement. When you want to synthesize support for change, partner with ACC Accreditation Services.

10 Reasons to Partner with ACC for Chest Pain Center Accreditation

1. One-on-one navigation and consultation throughout the accreditation journey
2. Ongoing educational opportunities and resources for CV team coordinator, including informative webinars, Ask-the-Experts sessions, and on-demand accreditation workshop modules
4. Access to the suite of ACC resources, quality campaigns, clinical toolkits, and other educational offerings
5. Abbreviated accreditation pathway for Chest Pain – MI Registry Performance Achievement Award recipients
6. Elevated cardiac patient care processes across the care continuum through the use of strategic requirements, reflecting current guidelines and published literature
7. Defined patient pathways for all possible and known ACS populations
8. Community outreach and educational programs to promote cardiac health and ACS awareness among the general public and local providers
9. Complimentary registration to the annual ACC Quality Summit
10. Roadmap to help multidisciplinary teams reach goals, reduce inefficiencies, and implement sustainable process improvement

CPC Accreditation Designation Options

Both PCI-capable and non-PCI facilities may earn CPC Accreditation. PCI-capable facilities may seek a PCI with Resuscitation designation if it provides a 24/7 targeted temperature management program.

Learn more about Chest Pain Center Accreditation at www.ACC.org/CPC

Advance Your Strategy

To learn about other accreditations or certifications available through ACC Accreditation Services, please contact us at 877-271-4176 or accreditationinfo@acc.org.
Emergency Physician Compensation to Increase in 2020

by MICHAEL GRANOFSKY, MD, FACEP, AND DAVID MCKENZIE, CAE

The Centers for Medicare and Medicaid Services (CMS) has released two long-awaited proposed rules: the 2020 Physician Fee Schedule (PFS) and the 2020 Outpatient Prospective Payment System (OPPS) and Ambulatory Surgical Center (ASC) Payment System. ACEP provided extensive commentary on these proposed rules, and CMS is expected to finalize these provisions by early November 2019. Overall, CMS has recognized that emergency medicine is providing higher-intensity care and, as a result, our work relative value units (RVUs) will be increasing.


2020 Conversion Factor Increase

For 2020, CMS proposes a Medicare PFS conversion factor of $36.6896 representing a smaller increase from the 2019 conversion factor of $36.0391. Note that the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) provided 0.5% base updates to the conversion factor through 2019. Those base updates have now expired, leading to this relatively smaller increase.

2020 RVUs Increase for ED E/M Services

Each year, RVU values for physician services are updated. This year, CMS had concerns that the emergency department evaluation and management (E/M) Current Procedural Terminology (CPT) codes were undervalued and requested that the American Medical Association’s Relative Value Update Committee (RUC) perform a survey and revalue the work RVUs associated with the relevant codes. “In the CY 2018 PFS final rule, we finalized a proposal to nominate CPT codes 99281–99285 as potentially misvalued based on information suggesting that the work RVUs for emergency department visits may not appropriately reflect the full resources involved in furnishing these services (FR 82:5308).”—2019 Physician Proposed Rule, page 420

ACEP undertook an extensive survey process and mounted compelling arguments describing the increased complexity of the patients we treat every day in the nation’s emergency departments. (Read more about ACEP’s efforts to increase emergency physicians’ reimbursement rates at www.acepnow.com/category/acep4u.) In good news for emergency medicine, CMS has proposed to revalue the codes based on the RUC recommended work values (see Table 1). (To read behind-the-scenes information about how our ACEP volunteers and staff formed the winning arguments, read our previous ACEP-published article from the September 2019 issue at www.acepnow.com/article/acep4u-how-acep-works-behind-the-scenes-to-ensure-appropriate-medicare-reimbursement.)

A more detailed fact sheet on the 2020 PFS payment proposals can be found at https://shar.es/aXAgIG.

2020 CMS Proposed Rules Contain Bumps for Physician Payments, Emergency Services

MIPS Performance Thresholds Increasing, Making It Harder to Avoid a Penalty

• CMS proposes to increase the MIPS performance threshold, which is the minimum number of points needed to avoid a negative payment adjustment, from 30 points in 2019 to 45 points in 2020 and 60 points in 2021 (see Figures 2 and 3).

• CMS also proposes to increase the exceptional performance threshold (which allows for extra bonus dollars) from 75 points in 2019 to 80 points in 2020 and 85 points in 2021.

• CMS proposes to increase the quality measures and data completeness reporting requirement from 60 percent to 70 percent of applicable patients.

Quality Category Goes Down, Cost Goes Up

• CMS proposes to reduce the weight of the quality category for general medical providers from 50 percent to 40 percent in 2020, 35 percent in 2021, and 30 percent in 2022 while correspondingly increasing the weight and impact of the cost category.

• For each individual quality measure, a provider’s raw percentage of meeting the measure’s requirements is benchmarked against the universe of providers reporting that measure to yield a decile score. Each decile is then converted to a MIPS quality point score on a scale of 1–10. Your “quality points” are then added to your total MIPS score based on the weighting of the quality category for your reporting entity.

The cost category is calculated based on 10 measures:

• Total capitated costs for all attributed beneficiaries measure
• Medicare spending per beneficiary measure
• Elective outpatient percutaneous coronary intervention
• Knee arthroplasty
• Revascularization for lower extremity chronic critical limb ischemia
• Routine cataract removal with intraocular lens implantation
• Screening surveillance colonoscopy
• Intracranial hemorrhage or cerebral infarction
• Simple pneumonia with hospitalization
• ST-elevation myocardial infarction with percutaneous coronary intervention

CMS Proposes Multiple Changes to Emergency Medicine–Focused Quality Measures

• To remove the following measures from the emergency medicine specialty set, meaning that CMS no longer views these as relevant to emergency physicians: #91: acute otitis externa: topical therapy; and #255: Rh immunoglobulin (Rhogam) for Rh-negative pregnant women at risk of fetal blood exposure.

Table 1: 2020 Proposed Increases to ED Work RVUs

<table>
<thead>
<tr>
<th>Code</th>
<th>2019 Work RVUs</th>
<th>2020 Proposed Work RVUs</th>
<th>% Increase in Work RVUs in 2020</th>
<th>Economic Impact for 2020</th>
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<td>2.60</td>
<td>1.56%</td>
<td>+1.97%</td>
</tr>
<tr>
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<td>3.80</td>
<td>3.80</td>
<td>0.00%</td>
<td>+2.05%</td>
</tr>
</tbody>
</table>

Figure 1: 2020 MIPS Category Weighting for Typical ED Providers

| Improvement Activities 15% | Quality 65% | Cost 20% |

Merit-Based Incentive Payment System

The Merit-Based Incentive Payment System (MIPS) is a payment mechanism that provides for annual reimbursement adjustments related to CMS quality program requirements in four categories: quality, cost, promoting interoperability, and clinical practice improvement activities. For the 2020 performance year (affecting 2022 payments), the relevant MIPS categories for typical emergency medicine groups will include (see Figure 3):

• Quality: 65 percent
• Cost: 20 percent
• Improvement activities: 15 percent

In the proposed rules, CMS also advances some significant changes to MIPS, including:

1. Adding a new measure for appropriate utilization of advanced imaging.
2. Proposing to increase the weight of the quality category from 50 percent to 65 percent.
3. Proposing to reduce the weight of the cost category from 25 percent to 20 percent.
4. Proposing to increase the weight of the improvement activities category from 25 percent to 30 percent.

By focusing on quality, cost, and improvement activities, CMS aims to encourage emergency physicians to improve the quality and efficiency of care provided to patients.
• To remove the claims-based version of measure #326: emergency department utilization of CT for minor blunt head trauma for patients aged 18 years and older from MIPS due to topped-out status but to maintain the measure for registry reporting.

• To remove emergency department patients from inclusion in measure #326: atrial fibrillation and atrial flutter: chronic anticoagulation therapy.

CEDR Can Help
The penalty for not meeting MIPS requirements in 2020 will be 9 percent for typical ED groups. ACEP Clinical Emergency Data Registry (CEDR) is available as an EM-specific reporting mechanism to take care of your MIPS reporting requirements. Learn more at www.acep.org/cedr.

MIPS Value Pathways Framework
CMS has published a brand-new term, the “MIPS Value Pathways Framework” (MVPs). As part of the proposed rules, CMS is seeking feedback on its new MVPs, which aims to move MIPS toward a new set of measures that are more clinically relevant for each provider.

CMS proposes that a clinician or group has the choice to opt into an MVP associated with their specialty or opt into a clinical condition. Providers would be reporting on the same measures and activities as other clinicians and groups in the MVP that the provider has opted into. Each MVP “track” would connect measures and activities across the various MIPS performance categories and could rely on a mix of specialty-specific measures as well as population-based administrative claims-based measures automatically calculated by CMS. MVPs would also include more robust and timely performance feedback to better prepare clinicians for transitioning to risk-based alternative payment models. MVPs could begin to apply as early as the 2021 performance year.

A more detailed fact sheet on proposed changes to the quality payment program can be found at www.logixhealth.com/Files/2020%20QPP%20Proposed%20Rule%20Fact%20Sheet.pdf.

Hospital Price Transparency
As part of the proposed OPPS rule, CMS published a series of proposals that collectively aim to increase the transparency of hospital charges. Notably, CMS is proposing requirements that would force hospitals to make their private-payer negotiated (contracted) rates (for “shoppable” services) available to the public.

Hospital Clinic, Emergency Department, and Critical Care Payments
CMS proposed no major changes for hospital-based clinics and emergency department facility payments as well as facility critical care services and trauma activation services. The policies for these services would also remain generally unchanged.

A more detailed fact sheet regarding both the payment and quality proposals in the OPPS rule can be found at https://shar.es/aXAtbr.

Need More Help?
Resources for these and other topics can be found on the reimbursement section of the ACEP website, www.acep.org/administration/reimbursement. ACEP Director of Reimbursement David McKenzie, CAE, can field questions at 800-708-1822, ext. 3233. Finally, ACEP offers well-attended and highly recommended coding and reimbursement educational conferences annually, with the next conference scheduled for Jan. 27–31 in Austin, Texas. Visit www.acep.org/rc for details.

DR. GRANOVSKY is president of LogixHealth, an ED coding and billing company, and currently serves as the course director of ACEP’s Coding and Reimbursement courses. He may be reached at mgranovsky@logixhealth.com.

MR. MCKENZIE is ACEP director of reimbursement.
Dr. Jill Baren tackles critical EM certification issues for ACEP Now

Transforming the way emergency physicians learn and stay certified is one of the most critical and exciting missions of the American Board of Emergency Medicine (ABEM), according to Jill M. Baren, MD, MBA, the new ABEM President, who was elected in July and will serve for the 2019–2020 term.

Currently professor of emergency medicine, pediatrics, and medical ethics at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia, as well as the provost’s faculty leadership development fellow there, Dr. Baren has been a member of the ABEM Board of Directors since July 2012 and was elected to the Executive Committee in 2016.

Dr. Baren recently responded in writing to ACEP Now’s questions about her goals as ABEM President and the future of certification.

What are your goals during your year as ABEM President?

Thank you very much for this opportunity. It’s a pleasure to share my thoughts with the EM community in ACEP Now.

ABEM has two primary strategic objectives for this coming year. First, we have a record number of physicians to assess and need to make sure it’s done in a high-quality, fair, and valid way. Second is the development of MyEMCert (the alternative to the ConCert Exam) to keep pace with new advances that are integrated into our clinical practice. MyEMCert has the potential to transform the adoption of new information into our practices, something ABEM recognizes as high priority.

You are well-known as an academic emergency physician, but 75 percent of ABEM-certified physicians are community physicians. How do you assure community physicians that you understand their challenges?

Yes, 75 percent of ABEM-certified physicians are community physicians, and the ABEM Board includes several physicians who practice in a community setting. Additionally, almost 60 percent are involved in teaching medical students, residents, or fellows. That means the majority of ABEM-certified physicians are committed teachers, which is a perfect fit for our specialty. Emergency physicians are inherently the type of people who want to share what they know with other physicians and their patients. More important, the core of EM practice is similar across most community hospital and academic medical center settings.

Also, every emergency physician on the ABEM Board of Directors and all of our volunteer physicians, such as oral examiners, must be clinically active.

My clinical time is very important to me. As an ABEM Board member working shifts in the emergency department, I am subject to the same rules, regulations, pressures, and stresses that all frontline emergency physicians face.

What can you tell us about MyEMCert, the alternative to the ConCert Exam?

MyEMCert is our highest-priority development project—and it’s coming along nicely. MyEMCert will provide an option to the current program, which is the Lifelong Learning and Self-Assessment plus the 10-year ConCert Exam track. With MyEMCert, physicians will need to complete four modules every five years to keep their certification in good standing. MyEMCert modules will include about 50 questions and focus on specific topics, such as abdominal-pelvic presentations. Modules will also focus on new advances in the specialty. We are assembling a panel of EM experts—journal and textbook editors and evidence-based medicine specialists—who will review new advances submitted by practicing emergency physicians. Many physicians said that they want continuing certification to help them become better doctors. We think MyEMCert is one way to do that.

What is emergency medicine’s most exciting opportunity? Conversely, what are the specific threats to our field that ABEM can address?

From ABEM’s vantage point, emergency medicine’s most exciting opportunity is to revolutionize knowledge translation in our specialty. Through MyEMCert, we can accomplish that goal. Our efforts are catalyzed and expanded when organizations such as ABEM provide a complementary emphasis in their educational programs. ABEM needs ACEP and other organizations as partners to continue to create a high-level educational environment in our specialty.

There are many threats to our specialty, but the ones I think are particularly concerning involve ED boarding and physician burnout. We must continue to attract the best and the brightest physicians into emergency medicine and ensure that we have the right landscape in our training and practice environments to support them. I also want to acknowledge that ACEP has been a leader in calling for protected time for residency core faculty and in taking on the issue of surprise billing.

Women and many minorities continue to be underrepresented in emergency medicine. What can ABEM do about that?

ABEM tracks residency demographic data closely and publishes an annual report in the Annals of Emergency Medicine. ABEM has set an example by encouraging and supporting women and underrepresented minorities to enter the profession. I am extremely proud that we have a very diverse Board and our newly elected Executive Committee is composed of 50 percent women, and about 75 percent of ABEM staff leadership are women. Most recently, all of the physicians selected to join our test-writing group are women. But we can always strive to do better. ABEM just formed a Diversity and Inclusion Expertise Task Force that will work to keep diversity and inclusion a priority for the Board.

ABEM also works hard to make sure that our physician assessment processes are not unfairly biased against certain groups. We perform detailed analyses to ensure that our test questions don’t contain ethnic or cultural biases. We’ve also analyzed our oral examination scores and found no difference in examiner scoring for men and women examination candidates.

Is there such a thing as too many emergency physicians? Too many residency programs? Does ABEM have a position on this?

Workforce is an important issue for our specialty, but ABEM does not offer policy opinions about it. ABEM is resolute that we will not adjust our examination passing standards to regulate the workforce.

I think ACEP is wise to be working with Edward Salzberg, the leading national expert on physician workforce issues, on its Emergency Medicine Workforce Task Force project. ABEM provided ACEP and other organizations data to help inform the specialty about workforce trajectories, especially as it involves certified physicians.

What can you share about yourself so that the EM community can get to know you even better?

I feel very fortunate to have combined clinical care, teaching, research, department chair administration, and service to the specialty throughout my 27-year career! I was one of the first emergency physicians to train and become subspecialty certified in pediatric emergency medicine. Although subspecialty certification provided me with a niche focus for my clinical and academic work, I continued to see the entire spectrum of emergency patients in my practice. It’s given me such an appreciation for the nuances involved in caring for different patients and learning how to be the best patient advocate possible. Getting involved and becoming a leader in various EM organizations allowed me to connect with colleagues across the country and listen to and consider their different viewpoints, which constantly reaffirms the importance of and my commitment to diversity and inclusion. I don’t regret the immense time commitment that it took to become a leader in our specialty; it’s been very rewarding. But I’ve always placed huge emphasis on family life and being physically active outdoors. My family and I enjoy travel, skiing, dining out, and sports events and try to do those things together as much as possible.

In closing, I want to make sure that everyone knows that ABEM is celebrating its 40th anniversary this year. Our success as a certifying body is the direct result of the efforts and quality practice of emergency physicians. We believe that ABEM-certified physicians are the best individuals to provide safe, high-quality emergency care.
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**2019–2020 EMERGENCY PHYSICIAN COMPENSATION REPORT**

**Salaries continue to rise, but more jobs are open to primary care board-certified physicians**

by BARB KATZ

Emergency physician incomes in most areas of the United States continue to increase. In 2009–2010, the national average was $141 per hour. This year, the national average is $221 per hour, a 36 percent increase over 10 years.

At the same time, the average full-time hourly requirement is decreasing from 1,632 to 1,560 clinical hours a year. I found several employers offering full-time equivalent hours as low as 1,240 a year. Of course, the fewer hours worked, the lower the annual compensation.

Also tracking with huge gains are the number of employers open to hiring primary care board-certified (PC-BC) physicians for their emergency department openings. At 53 percent, it’s an increase of nearly 20 percent from last year. I believe the continuing supply-and-demand market is starting to adjust these numbers. Employers in “geographically challenged” locations have no choice. As long as the 2,200 emergency medicine residency graduates continue to focus their job search on the same 15 locations, this issue will continue to grow. I also tracked the multistate large contract group penetration of the market. As of this year, 63 percent of jobs available in the specialty are with these large national contract groups (NCGs).

I want to thank all the groups, employers, and physicians who contributed to the research on this report. Getting real numbers is becoming more and more difficult, with fewer than 20 percent of job listings on all of the web job sites and classified ads providing any income information. Perhaps the competition in the job market has increased to a point where employers are afraid to be forthcoming. Recruiters, take note: From an impromptu survey I ran with physicians who were job searching this year, I discovered 83 percent are more likely to answer a job listing with compensation information than one without.

**Trends for the 2019–2020 Recruiting Year**

- The $300+ hourly rate is alive and well and growing nationwide.
- Overall availability of jobs this year is down 18 percent nationally.
- The highest concentrations of pediatric emergency physician jobs are in Florida and New Jersey.
- The highest rate of income is $395 per hour in New Mexico.
- The lowest rate is $130 per hour in New York City.
- Sign-on bonuses are topping out at $150,000, with the average closer to $40,000.

The following figures are based on first-year incomes for 1,560 clinical hours a year, down 72 hours from last year’s norm of 1,632. This change has impacted the annual package numbers, which are based on the 1,560 clinical hours, plus basic benefits valued at $30,000. The hourly averages include defined bonuses and RVU comp where applicable but do not reflect any sign-on bonuses or relocation or loan assistance. Rankings are based on state hourly averages, not the sporadic highs and lows.

---

**ALABAMA:** $272/hr., $454,000 ann.; 50% PC-BC; 60% NCG; high of $321/hr.; up 15%

**ARIZONA:** $227/hr., $340,000 ann.; 12% PC-BC; 64% NCG; high of $321/hr.; up 15%

**CALIFORNIA:** $240/hr., $405,000 ann.; 73% PC-BC; 76% NCG; high of $300/hr.; up 10%

**COLORADO:** $198/hr., $310,000 ann.; 67% PC-BC; 83% NCG; no significant high; up 15%

**HAWAII:** $265/hr., $446,000 ann.; 71% PC-BC; 90% NCG; high of $365/hr.; up 15%

**MISSISSIPPI:** $266/hr., $446,000 ann.; 50% PC-BC; 50% NCG; high of $330/hr.; no change

**MONTANA:** No compensation information available

**ARKANSAS:** $208/hr., $354,000 ann.; 87% PC-BC; 87% NCG; no significant highs; down 3%

**ARKANSAS:** $208/hr., $354,000 ann.; 87% PC-BC; 87% NCG; no significant highs; down 3%

**FLORIDA:** $267/hr., $446,000 ann.; 71% PC-BC; 90% NCG; high of $365/hr.; up 15%

**LOUISIANA:** $267/hr., $395,000 ann.; 53% PC-BC; 50% NCG; no significant highs; up 15%

**VERTICAL REPORT**

**THE PACIFIC NORTHWEST**

**There is a tie for top regional income average, beginning with the usual leader, the SOUTHEAST, with an average salary of $224 per hour/$390,000 annually. NCGs are providing 90 percent of the jobs this season, and 54 percent of them are open to PC-BC physicians. The regional average is down 4 percent. There is a lot of activity in the Miami and Tampa areas.**

**ARIZONA:** $256/hr., $430,000 ann.; 12% PC-BC; 64% NCG; high of $321/hr.; up 15%

**CALIFORNIA:** $240/hr., $405,000 ann.; 73% PC-BC; 76% NCG; high of $300/hr.; up 10%

**COLORADO:** $198/hr., $310,000 ann.; 67% PC-BC; 83% NCG; no significant high; up 15%

**HAWAII:** $265/hr., $446,000 ann.; 71% PC-BC; 90% NCG; high of $365/hr.; up 15%

**MISSISSIPPI:** $266/hr., $446,000 ann.; 50% PC-BC; 50% NCG; high of $330/hr.; no change

**MISSOURI:** $234/hr., $395,000 ann.; 53% PC-BC; 50% NCG; high of $330/hr.; no change

**MISSOURI:** $234/hr., $395,000 ann.; 53% PC-BC; 50% NCG; high of $330/hr.; no change

**NEVADA:** $227/hr., $384,000 ann.; 79% PC-BC; 92% NCG; high of $365/hr.; up 15%

**KANSAS:** $225/hr., $381,000 ann.; 62% PC-BC; 77% NCG; high of $365/hr.; up 15%

**KENTUCKY:** $227/hr., $384,000 ann.; 79% PC-BC; 92% NCG; high of $365/hr.; up 15%

**KENTUCKY:** $227/hr., $384,000 ann.; 79% PC-BC; 92% NCG; high of $365/hr.; up 15%

**ILLINOIS:** $226/hr., $392,000 ann.; 36% PC-BC; 58% NCG; high of $269/hr.; down 7%

**INDIANA:** $213/hr., $362,000 ann.; 42% PC-BC; 75% NCG; high of $245/hr.; down 7%

**IOWA:** $238/hr., $400,000 ann.; 43% PC-BC; 45% NCG; high of $273/hr.; up 20%

**OHIO:** $241/hr., $406,000 ann.; 42% PC-BC; 58% NCG; high of $260/hr.; up 9%

**NEBRASKA:** $223/hr., $378,000 ann.; 66% PC-BC; 33% NCG; no significant high; up 15%

**NORTH DAKOTA:** No jobs open or information available

**OHIO:** $241/hr., $406,000 ann.; 42% PC-BC; 58% NCG; high of $260/hr.; up 9%

**OHIO:** $241/hr., $406,000 ann.; 42% PC-BC; 58% NCG; high of $260/hr.; up 9%

**SOUTH DAKOTA:** $225/hr., $381,000 ann.; 62% PC-BC; 77% NCG; high of $365/hr.; up 15%

**SOUTH DAKOTA:** $225/hr., $381,000 ann.; 62% PC-BC; 77% NCG; high of $365/hr.; up 15%

**UTAH:** No jobs open or information available

**WISCONSIN:** $239/hr., $402,000 ann.; 41% PC-BC; 45% NCG; high of $300/hr.; up 20%
**Figure 1. States Offering the Most and Least Compensation**

<table>
<thead>
<tr>
<th>TOP 10 STATES FOR COMPENSATION</th>
<th>BOTTOM 10 STATES FOR COMPENSATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. New Mexico</td>
<td>1. South Dakota</td>
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<td>2. Alabama</td>
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<td>4. Vermont</td>
</tr>
<tr>
<td>5. Idaho</td>
<td>5. New Hampshire</td>
</tr>
<tr>
<td>7. Texas</td>
<td>7. Colorado</td>
</tr>
<tr>
<td>10. Wisconsin</td>
<td>10. Minnesota</td>
</tr>
</tbody>
</table>

**DELAWARE:** $166/hr., $290,000; no PC-BC; 50% NCG; no significant high; no change

**DISTRICT OF COLUMBIA:** No jobs open or information available

**MARYLAND:** $213/hr., $362,000 ann.; 9% PC-BC; 50% NCG; high of $266/hr.; up 4%

**NEW JERSEY:** $208/hr., $356,000 ann.; 19% PC-BC; 86% NCG; high of $270/hr.; no change

**PENNSYLVANIA:** $223/hr., $378,000 ann.; 27% PC-BC; 52% NCG; high of $300/hr.; no change

**RHODE ISLAND:** $198/hr., $337,000 ann.; 16% PC-BC; 28% NCG; high of $216/hr.; up 10%

**VERMONT:** $180/hr., $310,000 ann.; no PC-BC; no NCG; no significant high; no change

**WEST VIRGINIA:** $230/hr., $388,000 ann.; 100% PC-BC; 89% NCG; high of $236/hr.; up 16%

**NEW MEXICO:** $150/hr., $287,000 ann.; 4% PC-BC; 50% NCG; no significant high; no change

**NEW YORK:** $216/hr., $367,000 ann.; 29% PC-BC; 60% NCG; high of $275/hr.; up 4%

**TEXAS:** $190/hr., $320,000 ann.; 21% PC-BC; no NCG; no significant high; no change

**ARIZONA:** $165/hr., $250,000 ann.; 7% PC-BC; 75% NCG; no significant high; no change

**IDAHO:** $186/hr., $300,000 ann.; 6% PC-BC; 43% NCG; no significant high; no change

MS. KATZ is president of The Katz Company EMC, a member of ACEP’s Workforce and Career sections, and a frequent speaker and faculty at conferences and residency programs. Contact her at katzco@cox.net.
Get X Waivered! (Also, Ban the X Waiver!)

A 2000 law that allows physicians to prescribe Suboxone for addiction is better than nothing but is now more of a barrier than a conduit

by JEREMY SAMUEL FAUST, MD, MS

How many saves do we really make? We count the dramatic ones, like that rare thoracotomy that worked out. But we often forget to count less flashy saves that play out long after an ED visit, say, that patient who quit smoking because we took a few minutes to chat about it. We tend to overestimate how much of our careers are about the former and underestimate how much are about the latter.

Today, few actions that emergency physicians can take have a higher mortality benefit than obtaining an X waiver. The X waiver permits physicians to prescribe Suboxone (buprenorphine/naloxone) for opioid use disorder patients. The training takes about a day, is inexpensive, and saves lives.

Consider the impact. Of emergency patients who receive naloxone for an opioid overdose, a staggering 5 percent will be dead within one year. Can you think of an acute disease that has such a high one-year mortality rate? Studies suggest that maintenance therapies (like Suboxone) can save many of those lives.1 Opioid use disorder stands alone as the only major substance abuse disorder in which abstinence is more dangerous than agonist treatment with agents like buprenorphine and methadone. Opioid agonist therapy is the gold standard for opioid use disorder treatment. It reduces relapses—and reduces mortality. If we went into business to saves lives but are not willing to do this, we’re failing. If we don’t think that these patients deserve our time or efforts, we are letting our biases and blind spots get in the way.

Sadly, for many of our patients, a near-death experience from opioid use is not a one-time occurrence. As soon as they’re revived, they’re ready to go. You’ve probably seen this kind of patient many times. They’re glad you revived them, they are sometimes—but not always—outwardly grateful, and they’re not interested in treatment. Some take us up on our offer to take a free Narcan kit to go. But others are actually ready to quit. How can we find these patients? It’s easy. Just ask them. For these individuals, prescribing Suboxone in the emergency department is the single best way we can help them.

If I want to save the most lives during my career, mastering my cricothyrotomy and thoracotomy skills is a huge waste of time compared with being waivered and having “the talk” with opioid use disorder patients.

So Why Ban the X Waiver?

Getting the X waiver is a small but worthwhile hassle. It takes about eight hours and a couple hundred bucks, and you have to do a small amount of electronic paperwork. ACEP and many other groups offer these courses. Do this now! I did it last year, and I haven’t regretted it for a nanosecond. I have started a small number of patients on Suboxone. I may have already saved one or more lives by doing so. During that time, I have had zero successful thoracotomies. If we are keeping track of otherwise healthy lives saved, buprenorphine is clearly winning—if not already, then certainly in the long run.

But I also freely admit that getting that waiver was indeed a “small” hassle. And even that small hassle appears to be preventing physicians who want to get waivered from doing so. For any armchair behavioral economists out there, this is a prime example of what Nobel Prize–winning economist Richard Thaler has termed “sludge.” Sludge is “excessive or unjustified frictions that make it more difficult for consumers, employees, employers, students, patients, clients, small businesses, and many others to get what they want or to do as they wish.” Sludge is what keeps you from signing up for things you actually want, like that tax shelter for your medical expenses or child care. Everyone hates sludge. But emergency physicians are particularly averse to it. The X waiver requirement would not pass

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what economist Cass Sunstein calls a “sludge audit,” an exercise designed to determine whether any barriers preventing a particular action are reasonable and worthwhile. (Mr. Sunstein and I published an opinion this month in The Boston Globe calling for removing the X waiver requirement on this basis.)

For that reason, I join many experts in calling for the X waiver requirement itself to be erased from the law books. This summer, the American College of Medical Toxicology made this stance its official policy. ACEP endorsed the position and now has its own statement to the same effect. Bipartisan legislation in both chambers of Congress has been proposed. Let’s urge our lawmakers to move forward on this.

While the fate of the X waiver is unknown, it’s unlikely to go away immediately. In the meantime, I encourage you to take any and all steps to help our opioid use disorder patients. Go and get your X waiver! Also: Ban the pill!

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The Case
A 28-year-old male presents after a motorcycle crash. He has right leg pain and tenderness. His pulses and nerve function are intact. An X-ray shows a tibial shaft fracture. After splinting the leg and calling orthopedics, the physician finds the patient is anxious and reporting worsening pain despite IV morphine. His leg has become pale and cool, with absent pulses.

Clinical Presentation
This textbook presentation of compartment syndrome seems easy. Real cases often are not. In emergency medicine, we deal with critically ill patients who may require sedation and/or intubation, and diagnosing compartment syndrome in patients can require some finesse. Not only can compartment syndrome cause major complications, but frighteningly, 23 percent of medicolegal cases involving compartment syndrome were due to misdiagnosis, while 32 percent of cases were due to delayed treatment.1

Compartment syndrome is due to excessive pressure in a fascial compartment, either through increased volume in a fixed compartment (edema, hematoma) or reduced size of a compartment (tight cast, wound dressings, poor body positioning, etc.).2-4 As pressure builds, lymphatic, capillary, and venous blood flow decrease.5-7 This results in reduced arterial blood flow and tissue ischemia, followed by necrosis, neurological damage, contractures, and, in severe circumstances, need for amputation.8,9 Rhabdomyolysis may also occur with muscle breakdown.10 Unfortunately, muscle necrosis can occur quickly; in one study, one-third of cases experienced muscle necrosis within three hours of injury.11

The most commonly affected region is the anterior compartment of the lower leg, and compartment syndrome can occur in up to 10 percent of patients with tibial fracture.12-14 Male patients age 20 to 40 years are particularly at risk, as this age group has a higher risk of high-energy injuries, greater muscle bulk (more swelling), and stronger fascia. However, the elderly are also at higher risk due to baseline hypertension and reduced compartment perfusion.15 Fractures are the most common etiology. Open fractures can also cause compartment syndrome, as the small fascial/skin breaks do not adequately release pressure.16,17 Other causes are shown in Table 1.

How useful are historical features? Unfortunately, early findings can be subtle or not detected in patients with altered mental status, major trauma, substance use, and extremes of age.18-20 Classically, the earliest symptom is pain out of proportion to the exam (as with other conditions including necrotizing fasciitis and mesenteric ischemia). Patients typically describe this pain as a deep, severe pain that worsens with passive stretch.18,21 While this seems relatively straightforward, data suggest that severe pain has poor sensitivity, as pain is typically subjective.18 If ischemia develops, pain may vanish with necrosis. Other late symptoms include sensory changes/paresthesias and focal motor deficits.18,22

Table 1: Risk Factors Associated with Compartment Syndrome

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Sensitivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blunt soft-tissue injuries</td>
<td></td>
</tr>
<tr>
<td>Burns</td>
<td></td>
</tr>
<tr>
<td>Casts</td>
<td></td>
</tr>
<tr>
<td>Contrast media extravasation</td>
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<tr>
<td>Deep venous thrombosis</td>
<td></td>
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<tr>
<td>Electromyography</td>
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<tr>
<td>Exercise</td>
<td></td>
</tr>
<tr>
<td>Fractures</td>
<td></td>
</tr>
<tr>
<td>Hematologic diseases (ie, hemophilia)</td>
<td></td>
</tr>
<tr>
<td>Infections</td>
<td></td>
</tr>
<tr>
<td>Insect bites</td>
<td></td>
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<tr>
<td>Intramuscular hematomas</td>
<td></td>
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<tr>
<td>Intravenous or intraosseous infusions</td>
<td></td>
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<tr>
<td>Osteotomies</td>
<td></td>
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<tr>
<td>Prolonged immobilization</td>
<td></td>
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<tr>
<td>Skin and skeletal traction</td>
<td></td>
</tr>
<tr>
<td>Snake bites</td>
<td></td>
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<tr>
<td>Vascular procedures</td>
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</tbody>
</table>

Diagnosis
Is your bedside exam reliable? While we are taught about the classic findings of pain with passive stretch, a tense/firm compartment, swelling, focal motor/sensory changes, and decreased pulses, these are not always present and have poor sensitivity.19-21 Digital palpation has a sensitivity under 50 percent for detection of compartment syndrome affecting the hand and under 25 percent for the leg.22 Paralysis and absent pulses are rare, and palpating a tense or firm compartment is not reliable. Swelling of the affected area may be present in only half of patients.19,21 Table 2 demonstrates the sensitivity and specificity of exam findings.23,24

As you can see from Table 2, many classic findings are highly specific but poorly sensitive.

What happens if you combine signs and symptoms? A combination of pain with passive stretch, pain at rest, and paresthesias has a sensitivity of 93 percent for diagnosis, and the addition of paresis increases sensitivity to 98 percent.25 However, do not rely on the absence of any classic isolated findings. Other items that complicate diagnosis based on history and exam include clinician inexperience, sedation, polytrauma, and intoxication.26-28

What about other tools? Abnormal pulse oximetry may indicate compartment syndrome.29 However, you cannot use this to exclude the condition. Rhabdomyolysis is present in up to 40 percent of patients with compartment syndrome, so be sure to check creatine kinase levels, renal function, and electrolytes.20,30,31

The most reliable bedside data can be obtained by measuring intracompartmental pressure. Options include a solid-state transducer intracompartmental catheter (STC) device (eg, a Stryker monitor) or other needle manometry/arterial line set-ups.32-35 The Stryker monitor has a diagnostic sensitivity around 95 percent, with specificity greater than 98 percent.27,28 Make sure to place the catheter within 5 cm of the fracture/injury level. However, the catheter tip should be outside the actual site of the fracture. Also ensure the pressure transducer and catheter tip are at the same height.27,29,30

After obtaining the intracompartmental pressure, you can use an absolute intracompartmental pressure of ≥30 mm Hg or ΔP ≥20 mm Hg; a ΔP <30 mm Hg is also concerning but not strictly diagnostic.30-32 A differential pressure (ΔP = compartmental pressure – diastolic blood pressure) of ≥20 mm Hg is diagnostic. While higher intracompartmental pressures can cause severe damage over a short time period, relatively lower but elevated intracompartmental pressures for long time periods can also cause severe tissue damage. Also, an absolute intracompartmental pressure >20 mm Hg in the setting of hypotension should be considered diagnostic.33-35 If the initial pressure is normal but the clinical picture fits compartment syndrome, a repeat measurement as well as pressure measurements in surrounding compartments are recommended.32,35 Table 3 shows situations that are diagnostic of compartment pressure.

Treatment
If you suspect compartment syndrome for any reason, emergently consult orthopedics. Once a motor nerve deficit is present, full recovery is rare.18-20 The orthopedic surgeon will most likely want to obtain their own pressure assessment, so before you discuss the case with the surgeon, the better. If or-
DEFINITIVE therapy is fasciotomy. In the emergency department, provide analgesia, resuscitate the patient, remove any constrictive dressings/handbands, reduce fractures, and elevate the affected extremity to heart level.2,3,4,5 Removing an external compressive device such as a tight cast can reduce pressure by up to 65 percent.6,7

Case Resolution

The patient has a firm lower leg with absent pulses. Passive movement of the foot causes extreme pain. Orthopedic surgery is consulted, and the patient is taken immediately to the operating room.

The views expressed in this publication do not reflect the views or opinions of the U.S. government, Department of Defense, U.S. Army, U.S. Air Force, Brooke Army Medical Center, or SATHEC EM Residency Program.

References


DR. LONG is an emergency physician in the San Antonio Uniformed Services Health Education Consortium at Fort Sam Houston, Texas.

DR. ROYKMAN (BMW@HighAQ) is assistant professor of emergency medicine at UT Southwestern Medical Center and an attending physician at Parkland Memorial Hospital in Dallas.
2019 ACEP Leadership Award Winners

Congratulations to the 2019 recipients of the College’s most prestigious awards. The winners will be honored during ACEP19 in Denver.

John G. Wiesenfeld Leadership Award
Sandra M. Schneider, MD, FACEP

Dr. Schneider is currently the associate executive director for clinical affairs at ACEP and adjunct professor of emergency medicine at the University of Pittsburgh. She remains clinically active as a part-time attending with Integrative Emergency Services at John Peter Smith Hospital in Fort Worth, Texas.

Dr. Schneider is a graduate of the University of Pittsburgh School of Medicine and board-certified in internal medicine and emergency medicine. After residency, she served in the U.S. Public Health Service in Hazard, Kentucky. She then returned to the faculty at the University of Pittsburgh and was the medical director for the emergency department at Montefiore (University) Hospital. She was then recruited to be the founding chair of the department of emergency medicine and professor of emergency medicine at the University of Rochester in New York. Just prior to moving to Texas, she was the senior research director and professor of emergency medicine at the North Shore LIJ Department of Emergency Medicine.

Dr. Schneider is a past President of ACEP, the Society for Academic Emergency Medicine, and the Association of Academic Chairs of Emergency Medicine. She is also a past chair of the Residency Review Committee for Emergency Medicine and the Emergency Medicine Foundation. Her husband owns an ice cream store and her adult daughter is a crime analyst in Burleson, Texas.

John A. Rupke Legacy Award
Juan A. González-Sánchez, MD, FACEP

Dr. González-Sánchez was born in the Presbyterian Hospital in San Juan, Puerto Rico. He completed his pre-college years at the public school Luis Hernández Verone, graduating in 1978 with high honors. He was accepted at the University of Puerto Rico, Río Piedras campus, in 1978 and graduated magna cum laude in 1982 with a bachelor’s degree in biology and a minor in physical education. In 1982, he was accepted and closed in 1993. One year later, with the support of the School of Medicine of the University of Puerto Rico, the Department of Health, and the leadership of Dr. González-Sánchez, the emergency medicine program was reinstated and has been open for the last 25 years. This program has graduated a total of 220 residents and has been the source of more than 90 percent of emergency medicine specialists who work on the island.

In 2002, under the leadership of Dr. González-Sánchez, the emergency medicine section of the department of surgery became the clinical department of emergency medicine at the School of Medicine of the University of Puerto Rico. Following this, he was appointed department chair and residency program director. Under his leadership and with the support of both the faculty and residents, the department created the first emergency medicine elective for second-, third-, and fourth-year medical students in which more than 3,000 students have participated. It has offered service rotations for other residency programs in which more than 2,500 residents have participated and rotations for international emergency medicine residents from the Dominican Republic. The department had served as a role model for residency programs in the Dominican Republic and gives full support for new ones to come under the leadership of Dr. González-Sánchez. Also since 2002, under the leadership of Dr. González-Sánchez, the University of Puerto Rico Emergency Department has been the sponsor of the annual “Simposio Puertorriqueño de Medicina de Emergencia” meeting with more than 1,600 participants.

This program has been one of the main sources of bilingual emergency medicine physicians for the mainland.

Dr. Jacoby is the chief of staff at South Huron Hospital Association in Exeter, Ontario, Canada. He has been doing research for more than 30 years, publishing on a variety of topics. He is passionate about skepticism and critical thinking. He is the creator of the knowledge translation project The Skeptics’ Guide to Emergency Medicine (www.TheSGEM.com). Dr. Milne is also partial of the faculty for Emergency Medicine and Acute Care Course series and EMRIP. He is married to Barb and has three amazing children.

Dr. Johnson is board-certified in emergency medicine and pediatrics and currently practices emergency medicine at a level 2 trauma center in Mission Viejo, California. He has been in practice for 35 years and has been involved both at the state and national level in organized medicine throughout his career. Dr. Johnson is a past president of California ACEP and also served on the national Board of Directors and as Chair of the Board from 2010 to 2011. He has served as the College’s liaison to the Disaster and the Pediatric Emergency Medicine committees, as well as to the Disaster, Tactical, and Pediatric sections. Dr. Johnson has been an emergency medicine board examiner for almost two decades, and four years

Compiled by Michael J. Mello, MD, professor of emergency medicine, and Dina Burstein, MD, MPH, CPSTI, FAA, assistant professor of emergency medicine, Warren Alpert Medical School of Brown University in Providence, Rhode Island. Visit ACEPNOW.com for the sources of these statistics.
ago, he was elected to the Board of Directors of the American Board of Emergency Medicine, and just began his second term. He also serves as the liaison to the Pediatric Emergency Medicine sub-board.

At the state level, Dr. Johnson co-authored the legislation establishing the Emergency Medical Services for Children Technical Advi- sory Council and has served on the committee for the past 27 years. This year, the committee successfully passed state regulations to improve the care of children throughout the state. He also served on a task force for the California Department of Health Care Ser- vices that wrote the state’s first strategic plan for disaster preparedness and response, is currently on the state’s Joint Advisory Committee on Terrorism and has been actively involved in the oversight of the state’s hospital and public health preparedness grants for disaster planning. Dr. Johnson served two eight-year terms on the state’s Commission on Emergency Med- ical Services and chaired a subcommittee creating guidelines for hospitals and local EMS agencies on disaster preparedness for chil- dren. He has been involved as a consultant on numerous state grants and private projects, specializing in pediatric care, trauma program development, and disaster preparedness, as well as ED efficiency, patient safety initia- tives, and physician engagement. He has also published and lectured on the national and international level on topics including pedi- atrics, disaster preparedness, patient safety, and health policy.

Dr. Johnson completed his health care MBA in Paris, France, five years ago and completed a dissertation that evaluated the readiness of hospitals in Europe to care for children. He is currently pursuing his interests in health plan management, serving on the board of Califor- nia Health & Wellness (a Centene health insur- ance subsidiary) as well as biotech innovation, and serving as chief medical officer for Harbor MedTech (a wound care product company). Dr. Johnson loves international travel and teaching about wine appreciation and physician leadership development.

Diane K. Bolman
Chapter Advocate Award
Elena Lopez-Gusman, JD

Ms. Lopez-Gusman is the executive director of California ACEP and has been with the organization since 2007. She directs the chapter’s advocacy efforts including multiple litigation efforts, regulatory advocacy, and legislative advocacy, also working as a registered lobbyist. Additionally, she oversees the chapter’s two sponsored political action committees and their strategic efforts to elect and reelect champions of emergency medicine.

She brings more than 20 years of legisla- tive, political, and policy experience to her advocacy on behalf of emergency physicians and their patients. She spent 10 years work- ing in the California State Legislature for Assem- blymember Antonio Villaraigosa and Sen. Joe Dunn.

She worked on a variety of legislative poli- cy areas and developed an expertise in immi- gration and health care issues. She first began her collaboration with California ACEP when staffing legislation to ensure that California’s tobacco litigation settlement funds would be spent on health care.

Ms. Lopez-Gusman has extensive cam- paign experience dating back to 1998 when she served as volunteer coordinator for the Assembly Democratic Campaign. She sub- sequently worked on Measure H in Orange County to dedicate local tobacco settlement funds to health care; Proposition 16 of 2000—the Veterans Home Bond Act; Proposition 61 of 2004—the Children’s Hospital Bond Act; Proposition 67 of 2007—the Emergency and Medical Services Funding; and the state con- troller’s race in 2006.

Prior to her service in the legislature, she was a legislative staff attorney for the Mexican American Legal Defense and Education Fund and supervised its Sacramento office.

Ms. Lopez-Gusman earned her BA in sociol- ogy and her JD from the University of Califor- nia, Davis, and is a member in good standing of the State Bar of California and the American Association of Medical Society Executives.

Outstanding Contribution in Research Award
Rebecca M. Cunningham, MD, FACEP

Dr. Cunningham is director of the CDC-funded University of Michigan Injury Prevention Center, interim vice president of research for the University of Michigan, professor of the University of Michigan’s department of emer- gency medicine, and professor in health behavior and health education at the University of Michigan School of Public Health in Ann Arbor.

Dr. Cunningham has a distinguished career in researching injury prevention, particularly in youth and young adult populations. Her focus on brief interventions in the emergency room and health systems has included using technology to overcome barriers to reaching youth to prevent substance use and violent injury (SafeEReams intervention/National Insti- tute on Alcohol Abuse and Alcoholism), and longitudinal studies of youth seeking ED care with assault injury (including firearm injury)/ National Institute on Drug Abuse. She is the principal investigator of the 2017 National Institute of Child Health and Human Develop- ment–funded K12 establishing the Yale Drug Abuse–funded K12 establishing the Yale Drug use, Addiction and HIV Research Schol- ars (Yale-DAHRS) program, a three-year post- doctoral, interdisciplinary, mentored career development program with focused training in prevention and treatment of drug use, ad- diction, and HIV in general medical settings.

She has received multiple clinical, leader- ship, and mentorship awards including the Excellence in Mentoring award from the Asso- ciation for Medical Education and Research in Substance Abuse (2008), Advancing Women in Emergency Medicine award (2016), and the Department of Emergency Medicine Advance- ment of Women Award (2018) from the Soci- ety of Academic Emergency Medicine. She is a founding Board member of Addiction Medi- cine, now recognized as a new subspecialty by the American Board of Medical Specialties. An advocate for individuals with opioid use disorder, she is one of the architects of Con- necticut governor’s strategic plan to reduce opioid deaths, working with state and national policy makers and stakeholders regionally and nationally to change poli- cies and introduce interventions to combat the opioid crisis.

Outstanding Contribution in EMS Award
Robert E. O’Connor, MD, FACEP

Dr. O’Connor is professor and chair of emer- gency medicine at the University of Virginia in Charlottesville. He was born in Pittsburgh, attended secondary school in Philadelphia, and received his baccalaureate degree from Haverford College. He earned his medical degree from the Medical College of Pennsyl- vania and completed residency training in emergency medicine at the Medical Center of Delaware.

He has worked as an emergency physician for over 30 years and has served as a state EMS medical director, department research direc- tor, medical student clerkship director, EMS fellowship director, and residency program director. Dr. O’Connor has served as principal or co-investigator on over 50 extramural and multicenter-funded projects, and has present- ed more than 400 research papers and lectures at local, national, and international meetings. He has more than 150 published manuscripts, co-authored six books, and served as editor in chief of three textbooks. He has served as a peer reviewer for more than 20 journals.

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OUTSTANDING CONTRIBUTION AWARD
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Dr. O’Connor is a past member of the ACEP Board of Directors and is a past Chair of the Board. He is a former board member and past President of the National Association of EMS Physicians and Advocates for EMS as well as a past Chair of its Emergency Cardiac Care (ECC) Committee. In addition, he served on both the Scientific Advisory Council and the Manuscript Oversight Committee for the American Heart Association. He also serves on the JCPR Council for the American Heart Association. His primary research and professional interests are in resuscitation, prehospital care, and EMS systems. He is a member of a number of academic societies and is the recipient of numerous honors and awards. He enjoys active clinical practice and is a member of the medical staff at the University of Virginia Medical Center in Charlottesville.

Community Emergency Medicine Excellence Award
Andrew G. Southard, MD, FACEP

Dr. Southard attended medical school at the University of Colorado and completed residency training in emergency medicine at the University of New Mexico. He is the department chair of emergency medicine and medical director for Saint Alphonsus Regional Trauma Center in Boise, Idaho. He works clinically both at the trauma center as well as the community and rural emergency departments throughout the Treasure Valley in the Saint Alphonsus Health System. He is also the owner of FireDoc, which provides medical direction and training to EMS personnel, and serves as the medical director for the Boise, Salmon-Challis, and Sawtooth national forests. Before medicine, Dr. Southard worked as a wildland firefighter, EMT-B, and wilderness guide throughout the west and Alaska.

Honorary Membership Award
Lowell Gerson, PhD

Dr. Gerson is a professor emeritus of family and community medicine at Northeast Ohio Medical University in Rootstown. He received his doctorate from Case Western Reserve University. His overall academic focus is effective and efficient delivery of medical services and prevention of injury and disease. He has a particular interest in emergency care of older patients, and he is regarded as one of the founders of that specialty. The Academy of Geriatric Emergency Medicine recognized this when it created the Gerson-Sanders Award for outstanding achievement in geriatric emergency medicine.

In 1981, Dr. Gerson identified the disproportionate use of emergency medical services by older patients. His observation, one of the first to identify older persons as a special population, was cited in early research on the topic. In 1992, he published the results of his study investigating the value of case finding by paramedics for problems in older patients. Today, emergency medical services identify older patients with conditions that put them at risk for additional problems.

Available Nationwide

When treating life-threatening or uncontrolled bleeds in patients on apixaban or rivaroxaban

RAPID REVERSAL IS WITHIN REACH

INDICATION
ANDEXXÀ (dabigatran factor Xa, recombinant, inactivated-dose) is a recombinant modified human factor Xa (FXa) protein indicated for patients treated with apixaban or rivaroxaban, when reversal of anticoagulation is needed due to life-threatening or uncontrolled bleeding. This indication is approved under accelerated approval based on the change from baseline in anti-FXa activity in healthy volunteers. An improvement in hematoma has not been established. Continued approval for this indication may be contingent upon the results of studies that demonstrate an improvement in hematoma in patients.

Limitations of Use
ANDEXXÀ has not been shown to be effective for, and is not indicated for, the treatment of bleeding related to any FXa inhibitors other than apixaban or rivaroxaban.

SELECT IMPORTANT SAFETY INFORMATION

WARNING: THROMBOEMBOLIC RISKS, ISCHEMIC RISKS, CARDIAC ARREST, AND SUDDEN DEATHS

See full prescribing information for complete boxed warning

Treatment with ANDEXXÀ has been associated with serious and life-threatening adverse events, including:

- Arterial and venous thromboembolic events
- Ischemic events, including myocardial infarction and ischemic stroke
- Cardiac arrest
- Sudden deaths

Monitor for thromboembolic events and initiate anticoagulation when medically appropriate. Monitor for symptoms and signs that precede cardiac arrest and provide treatment as needed.

WARNINGS AND PRECAUTIONS

Thromboembolic and Ischemic Risks

The thromboembolic and ischemic risks were assessed in 185 patients who received the Generation 1 product and in 124 patients who received the Generation 2 product. The median time to first event was six days, and patients were observed for these events for 30 days following the ANDEXXÀ infusion. Of the 86 patients who received Generation 1 product and were re-anticoagulated prior to a thrombotic event, 11 (12.7%) patients experienced a thromboembolic, ischemic event, cardiac event or death.
During that time, she significantly raised ACEP’s public profile among its external audiences, such as health policy media in Washington, DC. An expert in developing news hooks, Ms. Gore led her team to conduct two to three major media campaigns every year, engaging the use of opinion polls, social media, and advertising. As a result, ACEP’s media coverage on strategic issues doubled and tripled for many consecutive years.

She grew ACEP’s Spokespersons’ Network to more than 500 media-trained emergency physicians across the country and trained ACEP’s physician leaders to be effective on news programs such as Good Morning America and CNN, as well as to conduct desk-side briefings with The New York Times and USA Today. Ms. Gore led ACEP’s evolution into social media, producing professional video for ACEP’s YouTube channel and growing the external Twitter feed to nearly 20,000 followers. ACEP’s YouTube channel generated more than 600,000 views in one year, following the release of the organization’s first viral video. She also oversaw ACEP’s branding process and development of the organization’s tagline, “Advancing Emergency Care.” An expert in crisis communications, Ms. Gore was ever vigilant to protect the white hat image of emergency physicians and ACEP.

Ms. Gore wrote or edited all content for ACEP’s two external websites—newsroom.acep.org and EmergencyCareForYou.org. She developed messaging on policy issues, based on research and focus group testing. Ms. Gore previously worked in the executive office of the president communicating articles about the president’s national drug control strategy. She also served as a press aide to two governors of Florida, editor of a science journal, and editorial director for a social science research firm.

Available Nationwide

Rapid reversal of anti-FXa activity within 2 minutes
following bolus administration in older, healthy volunteers on apixaban or rivaroxaban.1,2

Expert guidance recommends Andexxa for first-line therapy to reverse apixaban or rivaroxaban in patients with life-threatening or uncontrolled bleeds.3

SELECT IMPORTANT SAFETY INFORMATION

Thromboembolic and Ischemic Risks (continued)

Monitor patients treated with ANDEXXA for signs and symptoms of arterial and venous thromboembolic events, ischemic events, and cardiac arrest. To reduce thromboembolic risk, resume anticoagulant therapy as soon as medically appropriate following treatment with ANDEXXA.

The safety of ANDEXXA has not been evaluated in patients who experienced thromboembolic events or disseminated intravascular coagulation within two weeks prior to the life-threatening bleeding event requiring treatment with ANDEXXA. Safety of ANDEXXA also has not been evaluated in patients who received prethrombin complex concentrates, recombinant factor VIa, or whole blood products within seven days prior to the bleeding event.

Re-elevation or Incomplete Reversal of Anti-FXa Activity

The time course of anti-FXa activity following ANDEXXA administration was consistent among the healthy volunteer studies and the ANDEXXA-4 study in bleeding patients. Compared to baseline, there was a rapid and substantial decrease in anti-FXa activity corresponding to the ANDEXXA bolus. This decrease was sustained through the end of the ANDEXXA continuous infusion. The anti-FXa activity returned to the placebo levels approximately two hours after completion of a bolus or continuous infusion. Subsequently, the anti-FXa activity decreased at a rate similar to the clearance of the FXa inhibitors.

Thirty-eight patients who received the Generation 1 product were anticoagulated with apixaban and had baseline levels of anti-FXa activity >150 ng/mL. Nineteen of these 38 (50%) patients experienced a > 93% decrease from baseline anti-FXa activity after administration of ANDEXXA. Eleven patients who were anticoagulated with rivaroxaban had baseline anti-FXa activity levels > 300 ng/mL. Five of the 11 patients experienced a > 90% decrease from baseline anti-FXa activity after administration of ANDEXXA. Anti-FXa activity levels for patients who received the Generation 2 product were not available.

ADVERSE REACTIONS

The most common adverse reactions (≥ 5%) in patients receiving ANDEXXA were urinary tract infections and pneumonia. The most common adverse reactions (≥ 3%) in healthy volunteers treated with ANDEXXA were infusion-related reactions.

Immunogenicity

As with all therapeutic proteins, there is the potential for immunogenicity. Using an electrochemiluminescence (ECL)-based assay, 145 Generation 1 ANDEXXA-treated healthy subjects were tested for antibodies to ANDEXXA as well as antibodies cross-reacting with Factor X (FX) and FXa. Low titters of anti-ANDEXXA antibodies were observed in 26 (14%) healthy subjects (37%), 5% (9/145) were first observed at Day 30 with 20 subjects (14%) still having titters at the last time point (Days 44 to 48). To date, the pattern of antibody response in patients in the ongoing ANDEXXA-4 study who received the Generation 1 product has been similar to that observed in healthy volunteers with 6% (6/98) of the patients having antibodies against ANDEXXA. None of these anti-ANDEXXA antibodies were neutralizing. No antibodies cross-reacting with FX or FXa were detected in healthy subjects (0/145) or in bleeding patients (0/78) to date. There is insufficient data to assess the presence of anti-ANDEXXA antibodies for subjects who received the Generation 2 product.

TREAT SUSPECTED ADVERSE REACTIONS, contact Portola Pharmaceuticals, Inc. at 1-866-777-5947 or the FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.


Please see additional Important Safety Information on adjacent page and Brief Summary of full Prescribing Information including Boxed Warning on following page.
and response policy on the National Security Council's planning and policy making and the development and launch of Stop the Bleed and played a critical role in the response to the Ebola crisis. He represented the National Security Council's interests in the National Security Staff and in the Office of the Assistant Secretary for Preparedness and Response.

Dr. Hunt currently serves as senior medical advisor for national healthcare preparedness policy at the U.S. Department of Health and Human Services, where he is developing a council on the medical response to overwhelming no-notice trauma events and supports the response to high-consequence infectious diseases. Dr. Hunt was distinguished consultant and director of the division of injury response at the Centers for Disease Control and Prevention's (CDC) Injury Center, where he led medical preparedness initiatives for terrorist bombings including the guidance "In a Moment's Notice: Surge Capacity for Terrorist Bombings, and the Tale of Our Cities." He led CDC’s national guidelines for field triage and the development and launch of Stop the Bleed.

**MORATIONS AND USAGE**

Andexxa is indicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**WARNINGs, PRECAUTIONS, and INFORMATIONS**

The Andexxa label is in development and is not currently available.

**INDICATIONS**

Andexxa is indicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**CONTRAINDICATIONS**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**Adverse Reactions**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**Clinical Trials Experience**

Andexxa was evaluated in controlled clinical trials under varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates observed in clinical trials of another drug, and may not reflect the rates observed in clinical practice.

In the approved clinical trials of Andexxa, 223 healthy volunteers received Andexxa diluted and treated with Andexxa. The adverse reactions identified in these studies included:

- **Andexxa Intra-Muscular Testing:**
  - **Incidence:**
    - Hematoma: 1.3%
    - Swelling: 1.3%
    - Redness: 1.3%
    - Pain: 1.3%
    - Foul Smell: 0.6%
    - Hemorrhage: 0.6%

- **Andexxa Oral Testing:**
  - **Incidence:**
    - Redness: 1.3%
    - Swelling: 1.3%
    - Pain: 1.3%
    - Foul Smell: 0.6%
    - Hemorrhage: 0.6%

**Adverse Events**

The most common adverse reactions (3%) and in patients receiving Andexxa were urinary tract infection and nausea.

**Important Precautions**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**Administration**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**Further Information**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.

**Further Information**

Andexxa is contraindicated for patients with hemorrhage or trauma, when resuscitation is needed due to bleeding or anticipated bleeding.
Worldwide Emergency Medicine
ACEP supports two new international emergency medicine courses at ACEP19

The consortium’s original organizing principle was to coordinate trainees’ education and programmatic implementation for academic programs that could not independently fully support such efforts.

A decade ago, the World Health Assembly adopted Resolution 60.22 titled “Health Systems: Emergency Care Systems.” This resolution, passed by the member states of the World Health Organization (WHO), created a framework outlining a path to improving access to emergency care worldwide. Within the WHO, the Emergency, Trauma, and Acute Care program is “dedicated to strengthening the emergency care systems that serve as the first point of contact with the health system for so much of the world, and to supporting the development of quality, timely emergency care accessible to all.” This program has been transformational in focusing the world’s eyes on emergency care. The program’s advocacy was manifest in the successful adoption in May 2019 of World Health Assembly Resolution 72.16, “Emergency care systems for universal health coverage: ensuring timely care for the acutely ill and injured,” which brought further clarity and specificity to the implementation of emergency care in resource-limited settings.

More explicit integration of emergency care into health systems and universal health care coverage is essential to meeting the WHO Sustainable Development Goals. In an effort to support trainees who are learning how to engage in these efforts, the Academic Consortium for Emergency Systems (ACES) was established in 2018. This group is made up of six US-based academic medical centers with a substantial focus on global emergency care development. The overall goals of the consortium are to organize the aforementioned academic medical centers’ collaborative efforts to train the next generation of emergency care advocates and implementers; support our partner countries’ ministries of health, local universities, and other institutions in their efforts to strengthen their emergency care systems; and support the work of the WHO Emergency, Trauma and Acute Care program. The consortium’s original organizing principle was to coordinate trainees’ education and programmatic implementation for academic programs that could not independently fully support such efforts. Consortium objectives include:

1. Facilitate academic partnerships in a new and emerging field of emergency care systems development with local academic partners.
2. Contribute to the body of knowledge for all activities related to emergency care systems in collaboration with consortium partners, including developing professional papers, technical reports, databases, and online tools.
3. Support consortium partners’ efforts via provision of volunteers, academic consultation, and grant preparation to promote research and field implementation projects.
4. Ensure a standardized, trained, and accountable workforce that is qualified to conduct implementation science research of emergency care solutions in resource-limited settings.
5. Provide coordination and continuity in the training of global health faculty, fellows, and learners.

The consortium seeks to provide trainees with consolidated technical expertise and local implementing organizations with an organized workforce ready to promote improvement in the quality of and access to emergency care worldwide. Two ACES-led events at ACEP19 will mark a paradigm shift in the way ACEP approaches capacity building in emergency care systems. By partnering with a consortium of academic medical centers and numerous other international professional organizations, ACEP hopes to advance the discipline of emergency care worldwide and to promote the recent landmark resolutions adopted by member states at the World Health Assembly.

In conjunction with ACEP’s International Section and the ACEP International Ambassador program, ACES will offer the WHO’s Basic Emergency Care Facilitator Course. It was developed by WHO and the International Committee of the Red Cross, in collaboration with the International Federation for Emergency Medicine, as a syndrome-based content and skills training intended for frontline health care providers managing acute illness and injury with limited resources. Additionally, ACES will offer the Fellows Bootcamp for Understanding Emergency Systems, a one-day primer focused on postgraduate trainees in global health that will review core concepts for building emergency care systems in resource-limited settings. More information is available at https://coloradoglobalem.org/acep-2019-preconference-workshops.

**DR. CALVELLO** is associate professor of emergency medicine at the University of Colorado School of Medicine. **DR. KIVLEHAN** is attending physician at Brigham and Women’s Hospital and clinical instructor at Harvard Medical School. **DR. TENNER** is associate professor, global health fellowship director, and co-director of the UCSF WHO Collaborating Centre for Emergency and Trauma Care in the department of emergency medicine at the University of California, San Francisco. **DR. TUPESIS** is associate director of the Global Health Institute at the University of Wisconsin-Madison and faculty in the BreebeWalsh department of emergency medicine at the University of Wisconsin School of Medicine and Public Health.
WHEN PATIENTS TURN VIOLENT CONTINUED FROM PAGE 1

Just a few moments later, the nurse approached her to start the IV. The patient asked why she had taken so long and used a demeaning word. I overheard the exchange and was surprised at her sudden change in attitude. I walked over to deescalate the situation, and she responded with a racial epithet toward me. My nurse indicated that her behavior was inappropriate. The patient then punched her in the face. She then went on a verbal tirade and spat on me. We called the police, and she was arrested. Fortunately, neither my colleague nor I sustained any serious injuries.

How, I wondered, are we supposed to take care of our patients humanely if they fail to see the humanity in us? We do it because it’s our job and it is part of our moral code.

But that doesn’t make abusive behavior from patients OK.

Pervasive Violence Against Providers

Many health care workers will relate to these scenarios. Verbal assaults are so common that they are shrugged off as merely part of the job. We often even tolerate what should be unacceptable statements that are racist, sexist, homophobic—you name it. We often even try to let literal threats roll off our backs.

But over the last few years, several studies have highlighted an epidemic of violence toward health care professionals. This we can never learn to tolerate.

Sadly, I fear, we have done just that. Back in the 1980s, workplace violence was first rigorously assessed in the emergency medicine literature. But by 2018, little progress had been made in addressing and reducing violence. Omar et al published data showing that the problem remained equally prevalent despite an increase in security measures over the previous decade. (Just imagine if we didn’t have such measures in place!)

According to one study, nearly 80 percent of emergency department physicians had either been the victims of workplace violence (which included threats, battery, outside work confrontations, and even stalking) or had witnessed it firsthand in the preceding 12 months. In another study, 100 percent of emergency department nurses reported verbal threats, and 82 percent had been assaulted in the preceding year alone.

Most of us—including myself—have been assaulted multiple times. The Occupational Safety and Health Administration (OSHA) tells us that health care workers are at higher risk of violence in the workplace than those in any other industry.

The February issue of Annals of Emergency Medicine featured a frightening story by Amy Costigan, MD, of an ambush-type assault on an emergency physician. While awareness of violence against health care providers may be increasing, the issue is not being adequately addressed.

Currently, I am a freshman member of the Arizona House of Representatives. The focus of my campaign was to listen to people at a grassroots level, and to that end, I personally knocked on more than 8,000 doors. After being elected, I asked a few nurses during a shift about their biggest concerns. The very first thing they mentioned was workplace violence. Their stories were plentiful and frightening.

Specifically, my colleagues emphasized that we have developed a culture that discourages reporting. Many of us have the impression that reporting will not have any effect and the perpetrator will simply go free. These concerns are valid because currently in Arizona, as in many states, these crimes are often pleaded down to misdemeanors and the consequences are modest. But in the emergency department setting, we have the additional concern that some perpetrators will stalk us or retaliate since we are federally mandated to take all comers regardless of their past illegal behavior toward us.

Taking Action

To address their concerns, I authored a bill to protect all health care workers from assault. With the help of the Arizona Nurses Association and many other health care groups, our bill passed out of the House of Representatives with bipartisan support. Though it stalled in the Senate this term, we will continue to push forward again next year.

There are many potential ways to decrease this problem, from stiffer penalties to administrative reporting requirements. Even mandating signage that clearly communicates the law would be a step in the right direction. Since becoming involved with this issue, I have received countless emails from health care workers with their own harrowing stories and offers of support. And these letters of frustration and support keep on rolling in.

We are lucky to work in an amazing field with kind, caring, dedicated professionals, many of whom I consider personal friends. For all their sacrifices, they have the right to feel safe at work.

As physicians are often viewed as captains of the team, so the burden is upon us to take the lead. If my experience here in my state can be of use elsewhere, please let me know by writing to me at amishforarizona@gmail.com.

Most of all, please join the effort to end violence in health care any way that you can. That may mean creating awareness at work, raising the issue with your state and local ACEP chapters, contacting your legislative representatives, or doing what I did and becoming one. The more our colleagues get involved, the better our chances are.

References


DR. SHAH is an attending physician at Dignity Health and a member of the Arizona House of Representatives for Legislative District 24.

RESOURCES FOR FURTHER READING

- Violence in Emergency Departments: Resources for a Safer Workplace: www.acep.org/administration/violence-in-the-emergency-department-resources-for-a-safer-workplace

INDICATION
ELIQUIS is indicated for the treatment of deep vein thrombosis and pulmonary embolism.

IMPORTANT SAFETY INFORMATION

WARNING: (A) PREMATURE DISCONTINUATION OF ELIQUIS INCREASES THE RISK OF THROMBOTIC EVENTS, (B) SPINAL/EPIDURAL HEMATOMA
(A) Premature discontinuation of any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events. If anticoagulation with ELIQUIS is discontinued for a reason other than pathological bleeding or completion of a course of therapy, consider coverage with another anticoagulant.
(B) Epidural or spinal hematomas may occur in patients treated with ELIQUIS who are receiving neuraxial anesthesia or undergoing spinal puncture. These hematomas may result in long-term or permanent paralysis. Consider these risks when scheduling patients for spinal procedures. Factors that can increase the risk of developing epidural or spinal hematomas in these patients include:
• use of indwelling epidural catheters
• concomitant use of other drugs that affect hemostasis, such as nonsteroidal anti-inflammatory drugs (NSAIDs), platelet inhibitors, other anticoagulants
• a history of traumatic or repeated epidural or spinal punctures
• a history of spinal deformity or spinal surgery
• optimal timing between the administration of ELIQUIS and neuraxial procedures is not known
Monitor patients frequently for signs and symptoms of neurological impairment. If neurological compromise is noted, urgent treatment is necessary. Consider the benefits and risks before neuraxial intervention in patients anticoagulated or to be anticoagulated.

Please see additional Important Safety Information and Brief Summary of Full Prescribing Information, including Boxed WARNINGS, on adjacent pages.
**AMPLIFY** Study Design

A randomized, double-blind, phase III trial to determine whether ELIQUIS was noninferior to enoxaparin/warfarin for the incidence of recurrent venous thromboembolism (VTE)* or VTE-related death in 5400 patients with objectively confirmed, symptomatic proximal DVT/PE. 2693 patients were randomized to ELIQUIS 10 mg orally twice daily for 7 days followed by 5 mg orally twice daily for 6 months, and 2707 patients were randomized to standard of care, which was initial enoxaparin 1 mg/kg twice daily subcutaneously for at least 5 days (until INR ≥2), followed by warfarin (target INR range: 2.0-3.0) orally for 6 months. The primary efficacy endpoint was recurrent VTE* or VTE-related death, and the primary safety endpoint was major bleeding.

≈90% of patients in the AMPLIFY trial had an unprovoked DVT/PE at baseline.†

- The 10% of patients with a provoked DVT/PE were required to have an additional ongoing risk factor in order to be randomized‡

*Recurrent symptomatic VTE (nonfatal DVT or nonfatal PE).
†Risk factors included previous episode of DVT/PE, immobilization, history of cancer, active cancer, and known prothrombotic genotype.

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**IMPORTANT SAFETY INFORMATION (CONT’D)**

**CONTRAINDICATIONS**

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

**WARNINGS AND PRECAUTIONS**

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

- **Bleeding Risk**: ELIQUIS increases the risk of bleeding and can cause serious, potentially fatal, bleeding.
  - Concomitant use of drugs affecting hemostasis increases the risk of bleeding, including aspirin and other antplatelet agents, other anticoagulants, heparin, thrombolytic agents, SSRIs, SNRIs, and NSAIIDs.
  - Advise patients of signs and symptoms of blood loss and to report them immediately or go to an emergency room. Discontinue ELIQUIS in patients with active pathological hemorrhage.
  - The anticoagulant effect of apixaban can be expected to persist for at least 24 hours after the last dose (i.e., about two half-lives). An agent to reverse the anti-factor Xa activity of apixaban is available. Please visit www.andexxa.com for more information on availability of a reversal agent.

- **Spinal/Epidural Anesthesia or Puncture**: Patients treated with ELIQUIS undergoing spinal/epidural anesthesia or puncture may develop an epidural or spinal hematoma which can result in long-term or permanent paralysis.
  The risk of these events may be increased by the postoperative use of indwelling epidural catheters or the concomitant use of medicinal products affecting hemostasis. Indwelling epidural or intrathecal catheters should not be removed earlier than 24 hours after the last administration of ELIQUIS. The next dose of ELIQUIS should not be administered earlier than 5 hours after the removal of the catheter. The risk may also be increased by traumatic or repeated epidural or spinal puncture. If traumatic puncture occurs, delay the administration of ELIQUIS for 48 hours.
  Monitor patients frequently and if neurological compromise is noted, urgent diagnosis and treatment is necessary. Physicians should consider the potential benefit versus the risk of neuraxial intervention in ELIQUIS patients.

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

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

- **Patients with Antiphospholipid Syndrome (APS)**: Direct-acting oral anticoagulants (DOACs) including ELIQUIS are not recommended for patients with a history of thrombosis who are diagnosed with APS. The efficacy and safety of ELIQUIS in patients with APS have not been established.

**ADVERSE REACTIONS**

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

**TEMPORARY INTERRUPTION FOR SURGERY AND OTHER INTERVENTIONS**

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

**DRUG INTERACTIONS**

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

**Clarithromycin**

Although clarithromycin is a combined P-gp and strong CYP3A4 inhibitor, pharmacokinetic data suggest that no dose adjustment is necessary with concomitant administration with ELIQUIS.
FOR THE TREATMENT OF DVT/PE

Only ELIQUIS demonstrated BOTH superiority in major bleeding events AND comparable efficacy vs enoxaparin/warfarin

ELIQUIS increases the risk of bleeding and can cause serious, potentially fatal, bleeding

- Discontinuation rate due to bleeding events: 0.7% in ELIQUIS-treated patients vs 1.7% with enoxaparin/warfarin
- In AMPLIFY, the most commonly observed adverse reactions in ELIQUIS-treated patients (incidence ≥2%) were epistaxis, contusion, hematuria, menorrhagia, hematoma, hematopsy, rectal hemorrhage, and gingival bleeding

Major bleeding was defined as clinically overt bleeding accompanied by at least one of the following:
1. A decrease in hemoglobin of ≥2 g/dL
2. A transfusion of 2 or more units of packed red blood cells
3. Bleeding that occurred in at least 1 of the following critical sites: intracranial, intraspinal, intraocular, pericardial, intra-articular, intramuscular with compartment syndrome, or retroperitoneal
4. Fatal bleeding

ARR=absolute risk reduction; CI=confidence interval; HR=hazard ratio; INR=international normalized ratio; RR=relative risk; RRR=relative risk reduction.

IMPORTANT SAFETY INFORMATION (CONT’D)

DRUG INTERACTIONS (cont’d)

- Combined P-gp and Strong CYP3A4 Inducers: Avoid concomitant use of ELIQUIS with combined P-gp and strong CYP3A4 inducers (e.g., rifampin, carbamazepine, phenytoin, St. John’s wort) because such drugs will decrease exposure to apixaban.
- Anticoagulants and Antiplatelet Agents: Coadministration of antiplatelet agents, fibrinolytics, heparin, aspirin, and chronic NSAID use increases the risk of bleeding. APPRAISE-2, a placebo-controlled clinical trial of apixaban in high-risk post-acute coronary syndrome patients treated with aspirin or the combination of aspirin and clopidogrel, was terminated early due to a higher rate of bleeding with apixaban compared to placebo.

PREGNANCY

- The limited available data on ELIQUIS use in pregnant women is insufficient to inform drug-associated risks of major birth defects, miscarriage, or adverse developmental outcomes.

Please see Brief Summary of Full Prescribing Information, including Boxed WARNINGS, on adjacent pages.
Exposure to any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events. An increased rate of stroke and/or systemic embolism during the period of INR adjustment or INR <2.0 is a known safety concern. Patients should be monitored closely in the initial 3 months following INR adjustment or during a period of INR <2.0. Premature discontinuation of any oral anticoagulant, including ELIQUIS, increases the risk of thrombotic events. Patients with a history of thrombosis who are diagnosed with antiphospholipid syndrome (APS), in particular for patients with a high clinical suspicion for APS (for lupus anticoagulant, anti-cardiolipin antibodies and/or anti-beta 2-glycoprotein I antibodies), treatment with ELIQUIS could be associated with increased rates of recurrent venous thromboembolism events, including pulmonary embolism. The efficacy and safety of ELIQUIS in patients with APS have not been established.

WARNINGS AND PRECAUTIONS

Certain drugs may increase or decrease the effects of ELIQUIS. The concomitant use of either of these drug classes should be avoided if possible. Concomitant use of dabigatran is contraindicated due to a potential interaction with ELIQUIS.

Table 3: Bleeding During the Treatment Period in Patients Undergoing Elective Hip or Knee Replacement Surgery

Table 4: Bleeding Events in Patients with Nonvalvular Atrial Fibrillation in the ARISTOTLE Study

Table 5: Anticoagulation Associated Thromboembolic and Hemorrhagic Events During the Treatment Period

Table 6: Repair of Spinal/Intracranial Hematomas

Adverse reactions occurring in ≥1% of patients undergoing hip or knee replacement surgery in the 1 Phase III trial and the 3 Phase III trials listed in Table 4.

Table 4: Adverse Reactions Occurring in ≥1% of Patients in Either Group Undergoing DVT and PE in the AMPLIFY Study

<table>
<thead>
<tr>
<th>Event</th>
<th>Placebo</th>
<th>N=826</th>
<th>p&lt;0.0001</th>
<th>ELIQUIS*</th>
<th>N=811</th>
<th>p&lt;0.0001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patent/stem of vein thrombosis</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Intra-abdominal thrombosis</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Lower extremity thrombosis</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Thrombosis in pulmonary vein</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Thrombosis in splenic vein</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Thrombosis in retinal vein</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Retinal vein thrombosis</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
<td>1 (0.6)</td>
<td>1 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abruption</td>
<td>27 (3.2)</td>
<td>27 (3.2)</td>
<td>1.000</td>
<td>27 (3.2)</td>
<td>27 (3.2)</td>
<td>1.000</td>
</tr>
<tr>
<td>Contusion</td>
<td>18 (2.1)</td>
<td>18 (2.1)</td>
<td>1.000</td>
<td>18 (2.1)</td>
<td>18 (2.1)</td>
<td>1.000</td>
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<tr>
<td>Necrosis</td>
<td>1 (0.1)</td>
<td>1 (0.1)</td>
<td>1.000</td>
<td>1 (0.1)</td>
<td>1 (0.1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Vascular disorders</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower extremity ischemic ulcer</td>
<td>4 (0.4)</td>
<td>4 (0.4)</td>
<td>1.000</td>
<td>4 (0.4)</td>
<td>4 (0.4)</td>
<td>1.000</td>
</tr>
<tr>
<td>Ischemic ulcer</td>
<td>5 (0.6)</td>
<td>5 (0.6)</td>
<td>1.000</td>
<td>5 (0.6)</td>
<td>5 (0.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Vascular disorders</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower extremity ischemic ulcer</td>
<td>4 (0.4)</td>
<td>4 (0.4)</td>
<td>1.000</td>
<td>4 (0.4)</td>
<td>4 (0.4)</td>
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<tr>
<td>Ischemic ulcer</td>
<td>5 (0.6)</td>
<td>5 (0.6)</td>
<td>1.000</td>
<td>5 (0.6)</td>
<td>5 (0.6)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

AMI Study

The mean duration of exposure to ELIQUIS was 154 days and to enoxaparin was 152 days in the AMI Study. Adverse events related to bleeding occurred in 47.7% (116/244) ELIQUIS-treated patients compared with 45.6% (110/242) enoxaparin-treated patients. The bleeding rate due to events and was 7.7% (18/242) in enoxaparin patients compared to 5.7% (14/244) in ELIQUIS patients. In the AMI Study, ELIQUIS was shown to maintain beneficial effects in the primary safety endpoint of major bleeding with relative risk of 0.69 (95% CI [0.51, 0.94]; P=0.007).

Bleeding results from the AMI Study are summarized in Table 5.

Table 5: Bleeding Results in the AMI Study

<table>
<thead>
<tr>
<th>Event</th>
<th>Placebo</th>
<th>N=242</th>
<th>p=0.0051</th>
<th>ELIQUIS*</th>
<th>N=244</th>
<th>p=0.0051</th>
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</thead>
<tbody>
<tr>
<td>Major bleeding</td>
<td>13 (5.4)</td>
<td>8 (3.3)</td>
<td>1.000</td>
<td>13 (5.4)</td>
<td>8 (3.3)</td>
<td>1.000</td>
</tr>
<tr>
<td>Minor bleeding</td>
<td>47 (19.4)</td>
<td>47 (19.4)</td>
<td>1.000</td>
<td>47 (19.4)</td>
<td>47 (19.4)</td>
<td>1.000</td>
</tr>
<tr>
<td>Bleeding with need for transfusion</td>
<td>10 (4.1)</td>
<td>10 (4.1)</td>
<td>1.000</td>
<td>10 (4.1)</td>
<td>10 (4.1)</td>
<td>1.000</td>
</tr>
<tr>
<td>Bleeding with transfusion</td>
<td>17 (7.0)</td>
<td>17 (7.0)</td>
<td>1.000</td>
<td>17 (7.0)</td>
<td>17 (7.0)</td>
<td>1.000</td>
</tr>
<tr>
<td>Major bleeding with need for transfusion</td>
<td>2 (0.8)</td>
<td>2 (0.8)</td>
<td>1.000</td>
<td>2 (0.8)</td>
<td>2 (0.8)</td>
<td>1.000</td>
</tr>
<tr>
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<td>15 (6.2)</td>
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<td>1.000</td>
<td>15 (6.2)</td>
<td>15 (6.2)</td>
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</tr>
<tr>
<td>Minor bleeding with need for transfusion</td>
<td>33 (13.6)</td>
<td>33 (13.6)</td>
<td>1.000</td>
<td>33 (13.6)</td>
<td>33 (13.6)</td>
<td>1.000</td>
</tr>
<tr>
<td>Minor bleeding with transfusion</td>
<td>20 (8.3)</td>
<td>20 (8.3)</td>
<td>1.000</td>
<td>20 (8.3)</td>
<td>20 (8.3)</td>
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</tr>
<tr>
<td>Major bleeding with transfusion</td>
<td>2 (0.8)</td>
<td>2 (0.8)</td>
<td>1.000</td>
<td>2 (0.8)</td>
<td>2 (0.8)</td>
<td>1.000</td>
</tr>
<tr>
<td>Major bleeding with transfusion</td>
<td>5 (2.1)</td>
<td>5 (2.1)</td>
<td>1.000</td>
<td>5 (2.1)</td>
<td>5 (2.1)</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Geriatric Use

Safety and effectiveness in pediatric patients have not been established.

Pediatric Use

There are no data on the presence of apixaban or its metabolites in human milk. As apixaban is eliminated almost exclusively in urine, breastfeeding is not recommended during treatment with ELIQUIS (apixaban).

Pregnancy

There are no data on the presence of apixaban or its metabolites in human milk. The risk of apixaban exposure through breast milk is unknown. Breastfeeding is not recommended during treatment with ELIQUIS (apixaban).

Contraindications

Use of anticoagulants, including apixaban, may increase the risk of bleeding in the fetus.

Labor or delivery

All patients receiving anticoagulants, including apixaban, are at risk for bleeding.

Usage during pregnancy

There are no data on the presence of apixaban or its metabolites in human milk. As apixaban is eliminated almost exclusively in urine, breastfeeding is not recommended during treatment with ELIQUIS (apixaban).

Pediatric Use

There are no data on the presence of apixaban or its metabolites in human milk. The risk of apixaban exposure through breast milk is unknown. Breastfeeding is not recommended during treatment with ELIQUIS (apixaban).

Pregnancy

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Pregnancy

There are no data on the presence of apixaban or its metabolites in human milk. As apixaban is eliminated almost exclusively in urine, breastfeeding is not recommended during treatment with ELIQUIS (apixaban).

Contraindications

Use of anticoagulants, including apixaban, may increase the risk of bleeding in the fetus.
Herpes Cases in Newborns

Question 1: In neonates infected with herpes simplex virus (HSV), how common is a maternal history of genital herpes?

Data published in 1980 from the National Institute of Allergy and Infectious Diseases (NIAID) Collaborative Antiviral Study Group by Whitley et al included 56 HSV-infected newborns.1 While an important goal of this collaborative multicenter database was evaluating antiviral outcomes in HSV-infected newborns, maternal characteristics were also documented, and 29 of 56 (52 percent) mothers were asymptomatic—without a history of either genital or nongenital HSV. Regarding genital HSV only, 34 of 56 (61 percent) mothers of HSV-infected newborns had no history of genital HSV infections. Subsequent data from that same NIAID registry published in 1988 demonstrated no maternal history of genital HSV infections in 236 of 291 (81 percent) HSV-infected neonatal cases over a 15-year period.2

In 1984, the Centers for Disease Control and Prevention established the National Neonatal HSV Infection Surveillance System and retrospectively collected data from 3,157 hospitals that self-reported cases of neonatal HSV over an 18-month period. The data were published by Stone et al and demonstrated similar findings, with 108 of 150 (72 percent) without a maternal history of genital HSV infections.3 A more recent retrospective case-control study by Mark et al evaluated all children from Washington State via birth certificate data from 1987 to 2002 and identified 41 HSV-infected neonatal cases, of which 67 (74 percent) had no history of maternal genital herpes.4

Conclusion

In HSV-infected neonates, approximately 60 to 80 percent of mothers have no history of genital herpes.

Reference


Link Between Idiopathic Intracranial Hypertension and Obesity in Kids

Question 2: In children with idiopathic (or primary) intracranial hypertension (IIH)—previously called pseudotumor cerebri syndrome—are the typical patients obese as they are in the adult population with this disease?

Although intracranial hypertension is associated with obesity, does this connection hold true in children? Balcer et al performed a retrospective chart review of 45 consecutive children younger than 18 years old who had IIH. Heights and weights were recorded in 40 of these 45 patients, and obesity was defined as >120 percent of ideal body weight adjusted for age and sex. Of these 40 patients, children were divided into three age groups: 7–11 years, 12–14 years, and 15–17 years. By age group, obesity was documented in 6 of 14 (43 percent), 13 of 16 (81 percent), and 9 of 10 (90 percent), respectively, suggesting that obesity was a less common risk in children younger than 12 years of age. In older children with IIH, obesity was more common.

Another retrospective study of the Intracranial Hypertension Registry evaluated 142 pediatric primary intracranial hypertension (IIH) patients. Of the 142 patients, 103 (72.5 percent) were female. Patient demographics were broken down between pre-pubertal (younger than 11 years old) and post-pubertal (11 years or older). While a specific percentage of obesity was not reported in pre-versus post-pubertal groups, the average body mass index in the pre-pubertal group was 21.6 while the average in the post-pubertal group was 30.2 (which is consistent with obesity), a statistically significant finding. The authors also note that the ratio of girls to boys in the pre-pubertal group was almost even at 1 to 1.46.

A recent prospective population-based cohort study evaluated 185 newly diagnosed cases of IIH in children age 1–16 years.5 There were three demographic age categories: 4–6 years, 7–11 years, and 12–16 years. Obesity was present in 7 of 17 (41 percent) cases in the 4–6-year-old group, 29 of 58 (50 percent) cases in the 7–11-year-old group, and 84 of 110 (76 percent) in the 12–16-year-old group. This study suggests, again, that there is an association with obesity in older children with IIH but not necessarily in pre-pubertal children.

While the association between IIH and obesity is strong in older post-pubertal children, it appears less commonly associated in young children prior to puberty (typically less than 50 percent). Avoid disregarding the potential diagnosis of IIH in younger non-obese children with symptoms of the disease.

Summary

Similar to adults, in older post-pubertal children, there is a common association of IIH with obesity. In younger pre-pubertal children, though, many are not obese.

Reference


You Got Served
Survival tips for the first step of a malpractice lawsuit

by GITA PENSA, MD

“They showed up at my door to serve me... I was in my pajamas.”

“I was at home, getting ready for Christmas Eve; my children were two and five, and they came to my door.”

“I was served by a sheriff at work, in front of my co-workers...”

—physician interviews, “Doctors and Litigation” podcast

Receiving official notice of a lawsuit, or being “served,” is an event most physicians dread. The impact can be staggering; most physicians never forget when and where they were first given notice. One physician described it as feeling like “being hit in the head with a two-by-four.”

Here are some tips for making it through the moment of being served and what you should (and should not) do soon afterward.

The Basics of Being Served
“Service of process” is the mechanism by which, in civil litigation, one party officially notifies another that they have filed a “complaint” (lawsuit) against them. You, the defendant, are expected to respond to the complaint within a specified time frame; this will happen later via your attorney. Failure to respond results in a default judgment against you. Every jurisdiction has its own rules on how you may officially be given notice; it is crucial that you are informed in an official manner as part of constitutionally guaranteed due process.

In some areas, being served can be as simple as receiving a certified letter. Elsewhere, you may be served in person with a formal notice from the court establishing its jurisdiction in the matter, known as a “process server.” A uniformed sheriff also might also deliver the notice, which is a particularly stressful method; be it at work or home, you will likely have no warning that they are coming.

Some plaintiff’s attorneys time their notice for maximum impact, such as on a holiday. Emergency physician Mark Plaster, MD, wrote about being served by a sheriff during Thanksgiving dinner in his introduction to How to Survive a Medical Malpractice Lawsuit by Ilene Bremer, MD. One physician I spoke with described being served on Christmas Eve with her small children beside her; another was served shortly after her father’s funeral (an event known by the small-town attorney).

The notices themselves are often jarring and accusatory in tone. This is no accident. Plaintiff’s attorneys are aware of the distress this process causes, and they leverage it. However, sometimes it is apparent that attorneys are not clear on how exactly you harmed the patient in question. Many lawsuits are hastily filed before the statute of limitations runs out, and the arguments are fleshed out later. Either way, the notice is their opening move in a long chess game, crafted to wear you down.

Recognizing their manipulation as a deliberate strategy is step one in gaining back your equilibrium. However, that is a tall order. Regardless of merit, the very accusation of malpractice is enough to cause most physicians significant distress. Anxiety, sleeplessness, and even panic are common, particularly if the legal world is a looming unknown or the case involves a poor patient outcome or death. Do not isolate yourself. You are absolutely allowed to confide in friends and family. You may be told “not to talk about it,” but there is no actual law prohibiting discussing the medicine with others. However, you may be asked under oath at deposition who you’ve discussed case details with, and then they could be deposed, so it’s best to focus on your feelings and the legal events and keep any discussions about the case itself vague and hypothetical.

Once the complaint is in your hand, what do you do?

What to Do
1. Call your insurance carrier and begin the process of establishing a “claim.” They will speak with you about the case and find you an attorney. If you don’t know who your insurance carrier is or how to contact them, ask your employer (avoid revealing too much if they are a possible co-defendant with separate insurance). Your insurance carrier will advise you on your next steps and answer your questions.
2. Obtain a lawyer you trust. If you have a particular attorney in mind, tell your insurer. Otherwise, the insurer will help you find one. Make sure an experienced partner is at least peripherally involved in overseeing your case.
3. Get a book. There are numerous books on malpractice litigation written for doctors. Go online, read the reviews, buy one or more, and read them. You will find that this normalizes the experience, and it arms you with knowledge to lessen your anxiety.
4. Talk about it. To reiterate, you should not face this alone. Confide in friends or family. If your hospital has a peer support group, utilize it. If you know someone who has been through litigation, call them. And if you have a history of substance use, talk to a confidante or sponsor as this is a very high-risk time for relapse. Please be proactive in getting extra support.
5. Take care of yourself. Make time for yourself to decompress away from work and do your best to exercise, eat well, sleep, and spend time with meaningful people in your life. If it means saying no to extra duties at work, say no for now.

What Not to Do
1. Do not access or alter the chart. With electronic charts, it’s easy to see who accessed the chart and when. Your lawyer will be obtaining all the relevant charts for you as part of the discovery phase (which I will discuss in a future column).
2. Do not contact the plaintiff or their family. You may be tempted to speak with them in person. At this stage, do not directly contact them. Everything goes through the attorneys, no exceptions.
3. Do not make any notes about the case that are not specifically addressed to your attorney. Your attorney or insurance carrier may ask you to write down everything you remember within their confidential “attorney-client privilege” bubble, but do not keep private notes.
4. Do not despair. This is a long road, but it’s been well traveled by many excellent physicians. You may be angry because you feel you did everything right; you may be guilt-ridden, feeling you could have made different choices. In either case, many of us have been in your shoes, and these reactions are expected and justified. It’s time we told you so.
The Latest ED Utilization Numbers Are In

CDC survey places emergency department visits back on the growth line

by JAMES AUGUSTINE, MD, FACEP

The Centers for Disease Control and Prevention (CDC) released its statistical survey of emergency department visits for 2016 on April 1. Called the National Hospital Ambulatory Medical Care Survey (NHAMCS), it is a wealth of information for emergency physicians and will guide the data and trends for the emergency services for which they are responsible.1

The Numbers
ED visit estimates increased from 136.9 million in 2015 to 145.6 million in 2016, a jump of 6.4 percent. The 10-year volume change is 24.7 percent, and for the past 20 years, the increase has totaled 61.2 percent (the 1996 ED visit estimate was 90.3 million). The past 15 years of volume estimates appear in Table 1. These data may not match the experience in every emergency department and every community. First, the CDC typically estimates the lowest volume of ED visits, and the NHAMCS does not include visits to freestanding emergency departments. Second, there are changing patterns of ED use based on community sources of unscheduled care. Third, the patchwork of primary care systems in the country influences the number of ED visits locally.

What is apparent from the CDC data is that the trend of emergency departments seeing older, sicker patients, combined with continued growth in retail clinics, telehealth, and other sources of care for nonemergent problems, will yield a net increase in the average severity and complexity of patients seen in full-service emergency departments.

Who Are the Patients?
ED visits increased from 369 to 458 visits per 1,000 people between 1995 and 2016. High utilizers continue to include infants, nursing home residents, the homeless, black persons, and people over age 75.

Infants under age 1 had 987 visits per 1,000 persons. This is relatively high utilization and represents an opportunity for parent education.

There were roughly 2.2 million visits for patients who reside in nursing homes, for a utilization of 1,596 visits per 100 residents. Approximately 33 percent of nursing home patient ED visits resulted in hospital admission (739,000), with an average length of hospital stay of 5.7 days.

Persons classified as homeless represented a larger visit load for EDs compared with prior years. In 2016, homeless persons accounted for an estimated 1,446,000 visits, a rate of 2,690 visits per 1,000 estimated number of homeless persons. Those visits equal roughly 1 percent of total ED visits.

The CDC also categorized visit rates for white, black, Hispanic, and other races/ethnicities. The visit rate was 535 visits per 1,000 white people, 404 visits per 1,000 Hispanics, and 804 visits per 1,000 black people. The visit rate was 172 visits per 1,000 persons of other races (ie, Asian, native Hawaiian or other Pacific Islander, American Indian or Alaska native, and persons with more than one race).

The ED population is aging in line with national demographics. Persons over age 65 accounted for 15.8 percent of ED visits, and persons age 75 and older had 605 visits per 1,000 in 2016. Thus, emergency departments must prepare for larger numbers of patients and develop processes tailored to older persons. In addition, older patients require more workup, treatment, and, thus, more time in the department.

<table>
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<tr>
<th>YEAR</th>
<th>NHAMCS ESTIMATED ED VISITS (MILLIONS)</th>
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<tr>
<td>2001</td>
<td>107.5</td>
</tr>
<tr>
<td>2002</td>
<td>110.2</td>
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<tr>
<td>2003</td>
<td>113.9</td>
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<tr>
<td>2004</td>
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<td>130.9</td>
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<td>2015</td>
<td>136.9</td>
</tr>
<tr>
<td>2016</td>
<td>145.6</td>
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</table>

Finally, because older patients are admitted to the hospital more often, they spend more time as ED boarders. Planning for new or renovating old emergency departments should account for these shifting demographics.

Why Do They Come?
The acuity of visits to the emergency department continues to increase, with a mere 4.3 percent of ED visits classified as non-urgent (the highest rates of these visits were for patients under age 15).

The reasons for visits were coded using a classification system developed by the CDC’s National Center for Health Statistics. The NHAMCS includes a set of tables that relate to that classification, and estimates are presented by age and sex. Injuries accounted for an estimated 42.2 million visits, or 29 percent of ED visits. By comparison, in 2009 there were an estimated 45 million encounters for injuries. This trend reflects the success of many injury prevention programs, leading to an ED population distribution that features less injury and more illness.

The leading causes of injury, poisoning, and adverse effect-related ED visits were falls (10.5 million visits, or 23 percent of total injury visits) and motor vehicle traffic crashes (3.2 million visits, or 8.1 percent of total injury visits).

When viewed through the lens of “presenting complaint,” stomach and abdominal pain were the most common in 2016, accounting for around 9 percent of visits. Chest pain was next highest at 5 percent.

There were 3.5 million visits with a primary diagnosis of mental disorder noted in the emergency departments, of which 2.4 million visits included evaluation by a mental health provider.

Quality Performance Measures
Roughly 3.2 million visits resulted in the patient leaving before treatment was complete, or about 2.2 percent of all ED visits.

There are hospital quality indicators related to ED revisits and hospital readmissions that ED leaders must be aware of. About 2.7 percent of visits were made by patients who had been seen in the same emergency department in the preceding 72 hours (down from an estimate of 5.7 percent in 2015), and the CDC estimates 4.9 percent of ED visits were for follow-up.

The CDC report in 2011 indicated 6.3 percent of patients admitted through emergency departments had been discharged from a hospital in the preceding seven days. In 2016, roughly 2.9 percent of ED visits that led to hospital admission were patients who had been in an emergency department within the prior 72 hours. That number is down from 4.7 percent in 2011.

There is an ongoing increase in the use of diagnostic tools in the emergency departments, especially ECGs. The use of CT scanning appears to have plateaued, but the use MRI and other special imaging procedures (such as ultrasound) is increasing.

Planning for the Future of Emergency Care
Sources other than the CDC study document the growth of alternative care sites compared with full-service, hospital-based emergency departments. For example, a MedPAC report in June 2017 found an increasing number of freestanding emergency departments.2 In 2016, there were 363 off-campus emergency departments in 35 states affiliated with 300 hospitals. MedPAC counted 203 independent freestanding emergency centers, mostly in Texas.

So far, there are no estimates of the total volume seen in freestanding emergency departments. However, the Emergency Department Benchmarking Alliance (EDBA) database includes 237 hospital-owned freestanding emergency departments that saw approximately 3.6 million patients, for an average of 15,000 visits per site. This means hospital-owned and independent freestanding emergency departments may combine for around 8.5 million visits per year.2

There are also a growing number of urgent care centers. As of 2016, the Urgent Care Association counts 8,285 urgent care centers, amounting to 89 million visits and an $18 billion industry.

The demand for emergency departments continues to rise, and there is continued growth in the percentage of overall hospital admissions presenting through the ED. The EDBA data survey found that roughly 69 percent of hospital inpatients are processed through the emergency department. This clearly demonstrates the emergency department has become the front door to the hospital.

The CDC findings should be discussed with hospital and community leaders so that adjustments needed to improve patient safety and service are made, and that the value of emergency services is clear. The Latest ED Utilization Numbers Are In

Table 1: Estimated Annual ED Visits

References
New Drug for Your Infection Toolkit

Hailing from veterinary medicine, pleuromutilins are a new antibiotic option

by RYAN PATRICK RADECKI, MD, MS

In medical school teaching for most of the last half century, the ascendant antibiotic in our armamentarium has been β-lactam. This happy marriage between the amide group and a carbonyl group, joined together by a ring, exhibits lethal effects on bacteria by inhibiting cell wall synthesis.

The most famous and early member of the family is penicillin, which has been followed in general use by cephalosporins, monobactams, and carbapenems. These compounds, however, are susceptible to β-lactamases, a family of hydrolytic enzymes widely manifested by bacteria, conferring antibiotic resistance. While many other antibiotic classes are available, resistance continues to emerge in such common pathogens as Enterococcus and Neisseria. Few new antibiotics are approved by the U.S. Food and Drug Administration (FDA), and over the past decade, these have typically been derivatives of antibiotic classes already in wide use.

Enter the pleuromutilins and the newest antibiotic utensil in our toolbox, lefamulin (Xenleta). Pleuromutilins are not actually that novel; they were isolated from Pleurotus mutilus mushrooms in the 1950s and adapted for commercial use in the 1970s. The pleuromutilins inhibit ribosomal protein synthesis and bind to the same 50S ribosomal subunit as the amphenicols. Their effects are primarily against Gram-positive organisms, including community-acquired and resistant strains of S. aureus, multidrug-resistant S. pneumoniae, and vancomycin-resistant Enterococcus faecium. Activity is also noted against fastidious Gram-negatives such as Haemophilus spp., Moraxella catarrhalis, Neisseria spp., and Legionella pneumophila, as well as the mycoplasmas, ureaplasmas, and chlamydia. No clinically relevant activity is suspected against anaerobic organisms, eg, Enterococcus faecalis, Enterobacteriaceae, or nonfermenting Gram-negatives such as Acinetobacter baumanii and Pseudomonas aeruginosa.

The pleuromutilin antibiotics tiamulin and valnemulin have been in use in veterinary medicine, such as in pigs and poultry, for decades. For human use, a topical antibiotic, retapamulin, has been available in the United States since 2007 for the treatment of superficial wound and soft-tissue infections like impetigo. Now, lefamulin represents the first pleuromutilin available for intravenous and oral human use, with FDA approval granted in August 2019 by priority review under the Qualified Infectious Disease Product designation.

Clinical Trials

The approval of lefamulin stems from results observed in a pair of Phase III clinical trials, each noninferiority trial testing lefamulin against moxifloxacin. The Lefamulin Evaluation Against Pneumonia (LEAP) trials. LEAP 1 tested lefamulin versus moxifloxacin in adults with community-acquired pneumonia (CAP) and PORT scores of 4.5 or less. LEAP 2 tested lefamulin versus moxifloxacin in intravenous treatment for inpatients, with transition to oral administration based on clinical criteria. Supplemental treatment with linezolid in the moxifloxacin arm was authorized if methicillin-resistant S. aureus was suspected or confirmed by culture, while the lefamulin arm received matching placebo.

The most conspicuous feature of this trial was the very low acuity of patients enrolled. Most patients fell into Pneumonia Severity Index (PSI/PORT) risk class III, typically recommended for either inpatient or outpatient management depending on patient-specific factors. Clinical trial requirements issued by the FDA necessitate a minimum of 25 percent of trial patients in PORT class IV or V, and the trial population barely clears this regulatory bar. Exclusion criteria were likewise typical for a tightly controlled trial and excluded patients at elevated risk for deterioration such as nursing home residents, patients with immunosuppression, or those undergoing cytotoxic chemotherapy. It is, then, of little surprise the trial met its 10 percent regulatory margin for noninferiority, with 87.3 percent of those treated with lefamulin as responders compared with 90.2 percent of those treated with moxifloxacin ± linezolid. LEAP 2 performed a similar comparison, except with an entirely oral outpatient regimen. A full peer-reviewed publication detailing these results was not available at the time of this writing, but results are highlighted in two abstracts. The trial enrolled patients with milder pneumonia and PORT scores of primarily II and III, and both lefamulin and moxifloxacin monotherapy were similarly efficacious, with response rates around 90 percent. This, again, easily met the regulatory margin for noninferiority.

Treatment-emergent adverse events (TEAEs) were more common in the lefamulin cohort of LEAP 1, diarrhea was observed in 12.2 percent of the lefamulin cohort of LEAP 2 compared with 1.1 percent of those treated with moxifloxacin. Smaller differences were noted with regard to nausea and vomiting in LEAP 2 but were still greater in those treated with lefamulin. No reliable difference in hepatobiliary injury or QT-interval prolongation was reported in either trial.

CONTINUED on page 44
We have made significant strides toward emergency medicine workplace diversity. That cannot be denied. But given the time and effort we have been putting in, you would think we would have gotten even further. Many of our departments have an office of diversity and inclusion, a women’s wellness group, and programs that support residents who identify as members of underrepresented groups in medicine.

Do they identify with one of the underrepresented groups they were formed to support? The likely answer is yes. Since the inception of diversity and inclusion programs, we have tasked women, people of color, and historically marginalized people to drive the change we need to see. But what if, as a consequence, those who promote workplace and leadership diversity are also simultaneously and subtly punished for it? That’s what appears to be afoot, and it is worth unpacking.

Let’s explore how this might happen.

A Case Example

A well-meaning white male chair promotes a mid-career nonwhite woman into a division chief position and, in addition, asks her to run the new women’s group in her department. She takes both opportunities, even though only one is compensated. Over the next year, she is asked to recommend two physicians for promotion at a leadership meeting. She recommends one white woman and one man who is a person of color. They are both objectively qualified.

According to research, this female division chief is more likely to receive negative professional evaluations on her leadership skills because of the demographics of these recommendations.1,2 Meanwhile, research shows that the white male chair will have no consequences for promoting the woman of color into her job.

In short, when white men in power enhance workplace diversity, they are not punished for it. But when anyone else does it, other evaluators think that they are less effective managers and thus they are penalized.

What We Can Do

What are some solutions? Here are two.

First, continue to support the work of those (white) men in power to enhance diversity and inclusion in the workplace. We should continue to highlight this and encourage power brokers to continue and expand these efforts. We can engage these men within the “ally, advocate, accomplice” framework that I spoke about at this year’s FemInEM Idea Exchange in New York (#FIX19).

• An ally is someone who is not a target of oppression but still works to end it.
• An advocate is a person who publicly supports a change or policy.
• An accomplice is someone who supports the target of oppression when they are going out on a limb.

Second, we need to educate the healthcare workforce about the unconscious biases that lead to these promotion penalties. The inappropriate negative consequences for women and people of color for promoting or sponsoring underrepresented demographics must be addressed. Often, once harmful habits and trends are exposed, solutions follow.

During the ACEP19 Opening General Session, Dr. Kass will present “Perspectives from Female Physicians on Leadership, the Ascent of Women in Medicine and Women at the Forefront of Change.” She and a host of other speakers will be featured as part of FIX: FemInEM Idea Exchange, a conference-within-a-conference at ACEP19 that will provide a space for sharing the experiences of EM physicians whose voices are not traditionally amplified.

Similar to the adage that “you can’t diagnose a disease you’ve never heard of,” you can’t move to address your own unconscious biases if no one has pointed them out.

In an environment in which nonwhite and female leaders are no longer subtly punished for hiring and promoting a more diverse workforce, the path toward equity will be a less steep climb. In the meantime, let’s identify allies, advocates, and accomplices who are so often steering the ship—those who can move things forward—and encourage them to act and celebrate when there are successes.

The equity movement has come a long way. Among those who themselves have not faced barriers of discrimination, we have seen the posture evolve from denial to recognition to a belief that equity matters. The next step is engaging these brokers to fully act on these beliefs so those who still face these barriers are not held back and not punished for helping others as well. By doing this, we will all benefit.

In the end, the equity equation is not just about lifting the oppressed. It’s the sum total of all of our parts, working together to make the professional landscape better than the one we inherited.

References


by DARA KASS, MD

DOING THE MATH TO BENEFIT OUR SPECIALTY

THE EQUITY EQUATION

Sharing the Burden of Equity

Allies, advocates, and accomplices are critical parts of the quest for diversity and inclusion

We

ILLUSTRATION: CHRIS WHISSEN & SHUTTERSTOCK.COM

DR. KASS is assistant clinical professor of emergency medicine at Columbia University Medical Center in New York City, founder of FemInEM, and curator of “The Equity Equation.”

OCTOBER 2019 The Official Voice of Emergency Medicine

ILLUSTRATION: CHRIS WHISSEN & SHUTTERSTOCK.COM

Sharing the Burden of Equity

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References

...Patient seems confused...soot around mouth...

YOU SUSPECT YOUR PATIENT HAS CYANIDE POISONING.* TIME MAY BE RUNNING OUT.¹

Suspect it? Treat with CYANOKIT.

CYANOKIT is approved for the treatment of known or suspected cyanide poisoning. If clinical suspicion of cyanide poisoning is high, administer CYANOKIT without delay.¹

For more information, visit CYANOKIT.com.

*Prior to administration of CYANOKIT, smoke inhalation victims should be assessed for exposure to fire or smoke in an enclosed area; presence of soot around the mouth, nose, or oropharynx; or altered mental status.¹

IMPORTANT SAFETY INFORMATION

Cyanide poisoning may result from inhalation, ingestion, or dermal exposure. Prior to administration of CYANOKIT, smoke inhalation victims should be assessed for: exposure to fire or smoke in an enclosed area; presence of soot around the mouth, nose, or oropharynx; and altered mental status. In addition to CYANOKIT, treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of any seizure activity.

Use caution in the management of patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin. Consideration should be given to use of alternative therapies, if available. Allergic reactions may include: anaphylaxis, chest tightness, edema, urticaria, pruritus, dyspnea, and rash. Allergic reactions including anaphylactic edema have also been reported in postmarketing experience.

Acute renal failure with acute tubular necrosis, renal impairment and urine calcium oxalate crystals have been reported following CYANOKIT therapy. Monitor renal function for 7 days following CYANOKIT therapy.

Substantial increases in blood pressure may occur following CYANOKIT therapy. Elevations in blood pressure (≥180 mmHg systolic or ≥110 mmHg diastolic) were observed in approximately 18% of healthy subjects receiving hydroxocobalamin 5 g and 28% of subjects receiving 10 g.

Usage may interfere with some clinical laboratory evaluations. Also, because of its deep red color, hydroxocobalamin may cause hemodialysis machines to shut down due to an erroneous detection of a “blood leak.” This should be considered before hemodialysis is initiated in patients treated with hydroxocobalamin. Due to potential photosensitivity, patients should avoid direct sun until erythema resolves.

There are no adequate and well-controlled studies of CYANOKIT in pregnant women. CYANOKIT should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Safety and effectiveness of CYANOKIT have not been established in pediatric patients.

The most common adverse reactions (>5%) included transient chromaturia, erythema, oxalate crystals in urine, rash (predominantly acneiform), increased blood pressure, nausea, headache, decreased lymphocyte percentage, and injection site reactions.

You are encouraged to report negative side effects of prescription drugs to the US Food and Drug Administration (FDA). Visit www.fda.gov/medwatch or call 1-800-FDA-1088.

BRIEF SUMMARY:
Consult full Prescribing Information for complete product information
Use with Other Cyanide Antidotes
Caution should be exercised when administering other cyanide antidotes simultaneously with Cyanokit, as the safety of co-administration has not been established. If a decision is made to administer another cyanide antidote with Cyanokit, these drugs should not be administered concurrently in the same intravenous line.

Incompatibility Information
Pharmacodynamic (interaction formation) and chemical incompatibility were observed with the mixture of hydroxocobalamin in solution with selected drugs that are frequently used in resuscitation efforts. Hydroxocobalamin is also chemically incompatible with sodium thiosulfate and sodium nitrite and has been reported to be incompatible with ascorbic acid. Therefore, these and other drugs should not be administered simultaneously through the same intravenous line as hydroxocobalamin.

Simultaneous administration of hydroxocobalamin and blood products (whole blood, packed red cells, platelet concentrate and/or fresh frozen plasma) through the same intravenous line is not recommended. However, blood products and hydroxocobalamin can be administered simultaneously using separate intravenous lines (preferably on contralateral extremities, if peripheral lines are being used).

WARNINGS AND PRECAUTIONS
Emergency Patient Management
In addition to Cyanokit, treatment of cyanide poisoning must include immediate attention to airway patency, adequacy of oxygenation and hydration, cardiovascular support, and management of any seizure activity. Consideration should be given to decontamination measures based on the route of exposure.

Allergic Reactions
Use caution in the management of patients with known anaphylactic reactions to hydroxocobalamin or cyanocobalamin. Consideration should be given to use of alternative therapies, if available.

Allergic reactions may include: anaphylaxis, chest tightness, edema, urticaria, pruritus, dyspnea, and rash.

Allergic reactions including angioneurotic edema have also been reported in postmarketing experience.

Renal Disorders
Cases of acute renal failure with acute tubular necrosis, renal impairment and urine calcium oxalate crystals have been reported. In some situations, hemodialysis was required to achieve recovery. Regular monitoring of renal function, including but not limited to blood urea nitrogen (BUN) and serum creatinine, should be performed for 7 days following Cyanokit therapy.

Blood Pressure Increase
Many patients with cyanide poisoning will be hypotensive; however, elevations in blood pressure have also been observed in known or suspected cyanide poisoning victims. Elevations in blood pressure (180 mmHg or greater systolic or 110 mmHg or greater diastolic) were observed in approximately 18% of healthy subjects (not exposed to cyanide) receiving hydroxocobalamin 5 g and 28% of subjects receiving 10 g. Increases in blood pressure were noted shortly after the infusions were started; the maximal increase in blood pressure was observed toward the end of the infusion. These elevations were generally transient and returned to baseline levels within 4 hours of dosing.

Use of Blood Cytidine Assay
While determination of blood cyanide concentration is not required for management of cyanide poisoning and should not delay treatment with Cyanokit, collecting a pretreatment blood sample may be useful for documenting cyanide poisoning as sampling post-Cyanokit use may be inaccurate.

Interference with Clinical Laboratory Evaluations and Clinical Methods
Clinical Laboratory Evaluations
Because of its deep red color, hydroxocobalamin has been found to interfere with colorimetric determination of certain laboratory parameters (e.g., clinical chemistry, hematology, coagulation, and urine parameters). In-vitro tests indicated that the extent and duration of the interference are dependent on numerous factors such as the concentration of hydroxocobalamin, analyte, methodology, analyzer, hydroxocobalamin concentration, and partially on the time between sampling and measurement.

Based on in-vitro studies and pharmacokinetic data collected in healthy volunteers, the following table (Table 2) describes laboratory interference that may be observed following a 5 g dose of hydroxocobalamin. Interference following a 10 g dose can be expected to last up to an additional 24 hours. The extent and duration of interference in cyanide-poisoned patients may differ. Results may vary substantially from one analyzer to another; therefore, caution should be used when reporting and interpreting laboratory results.

Table 2: Laboratory Interference Observed with In-Vitro Samples of Hydroxocobalamin

<table>
<thead>
<tr>
<th>LABORATORY PARAMETER</th>
<th>Clinical Chemistry</th>
<th>Hematology</th>
<th>Coagulation</th>
<th>Urinalysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium</td>
<td>Erythrocytes</td>
<td>Hematocrit</td>
<td>Leukocytes</td>
<td>Neutrophils, Platelets</td>
</tr>
<tr>
<td>Sodium</td>
<td></td>
<td></td>
<td>Lymphocytes</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td>MCH</td>
<td>MCHC</td>
<td>Monocytes</td>
<td></td>
</tr>
<tr>
<td>Chloride</td>
<td></td>
<td></td>
<td>Eosinophils</td>
<td></td>
</tr>
<tr>
<td>Urea</td>
<td></td>
<td></td>
<td>Neutrophils</td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine</td>
<td>Hemoglobin</td>
<td>Glucose Protein</td>
<td>Erythrocytes</td>
<td>Leukocytes, Ketones</td>
</tr>
<tr>
<td>Bilirubin</td>
<td></td>
<td>Cortisol</td>
<td>Erythrocytes</td>
<td></td>
</tr>
<tr>
<td>Triglycerides</td>
<td></td>
<td>MCH</td>
<td>Leukocytes</td>
<td></td>
</tr>
<tr>
<td>Cholesterol</td>
<td></td>
<td>MCHC</td>
<td>Monocytes</td>
<td></td>
</tr>
<tr>
<td>Total protein Glucide</td>
<td></td>
<td>Basophils</td>
<td>Eosinophils</td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
<td></td>
<td>Neutrophils</td>
<td></td>
</tr>
<tr>
<td>Alkaline phosphatase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Artificially Decreased*

ALT Amylase 

| | |
| | pH (with equivalent doses of <5 g) |

*Artificially Decreased

Additional tests indicated that the extent and duration of interference is variable and may be unpredictable. It may persist up to 28 days.

Table 3: Incidence of Adverse Reactions Occurring in 5% of Subjects in 5 g Dose Group and Corresponding Incidence in 10 g Dose Group and Placebo

<table>
<thead>
<tr>
<th>ADR</th>
<th>Hydroxocobalamin N=46 (n (%))</th>
<th>Placebo N=22 (n (%))</th>
<th>Hydroxocobalamin N=18 (n (%))</th>
<th>Placebo N=6 (n (%))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash*</td>
<td>13 (20)</td>
<td>0</td>
<td>5 (28)</td>
<td>0</td>
</tr>
<tr>
<td>Blood pressure increased</td>
<td>12 (18)</td>
<td>0</td>
<td>5 (28)</td>
<td>0</td>
</tr>
<tr>
<td>Nausea</td>
<td>4 (6)</td>
<td>1 (5)</td>
<td>2 (11)</td>
<td>0</td>
</tr>
<tr>
<td>Headache</td>
<td>4 (6)</td>
<td>1 (5)</td>
<td>6 (33)</td>
<td>0</td>
</tr>
<tr>
<td>Lymphocyte percent decreased</td>
<td>5 (8)</td>
<td>0</td>
<td>3 (17)</td>
<td>0</td>
</tr>
<tr>
<td>Infusion site reaction</td>
<td>4 (6)</td>
<td>0</td>
<td>7 (39)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Rashes were predominantly acneiform

In this study, the following adverse reactions were reported to have occurred in a dose-dependent fashion and with greater frequency than observed in placebo-treated cohorts:

- Increased blood pressure (particularly diastolic blood pressure), rash, nausea, headache, and infusion site reactions. All were mild to moderate in severity and resolved spontaneously when the infusion was terminated or with standard supportive therapies.

Other adverse reactions reported in this study and considered clinically relevant were:

- Eye disorders: swelling, irritation, redness.
- Gastrointestinal disorders: dysphagia, abdominal discomfort, vomiting, diarrhea, dyspepsia, hemorrhage.
- General disorders and administration site conditions: peripheral edema, chest discomfort.
- Immune system disorders: allergic reaction.
- Nervous system disorders: memory impairment, dizziness.
- Psychiatric disorders: restlessness.
- Respiratory, thoracic and mediastinal disorders: dyspnea, throat tightness, dry throat.
- Skin and subcutaneous tissue disorders: urticaria, pruritus.
- Vascular disorders: hot flush.
Experience in Known or Suspected Cyanide Poisoning Victims

Four open-label, uncontrolled, clinical studies (one of which was prospective and three of which were retrospective) were conducted in known or suspected cyanide-poisoning victims. A total of 28 patients received hydroxocobalamin treatment in these studies. Systematic collection of adverse events was not done in all of these studies and interpretation of causality is limited due to the lack of a control group and due to circumstances of administration (e.g., use in fire victims). Adverse reactions reported in these studies listed by system organ class included:

- **Cardiac disorders**: ventricular extrasystoles
- **Respiratory, thoracic, and mediastinal disorders**: pleural effusion

Adverse reactions common to both the studies in known or suspected cyanide poisoning victims and the study in healthy volunteers are listed in the healthy volunteer section only and are not duplicated in this list.

Postapproval Experience

The following adverse reactions have been identified during postapproval use of Cyanokit. Because adverse reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency.

- Cases of acute renal failure with acute tubular necrosis, renal impairment and urine calcium oxalate crystals have been reported in patients treated with Cyanokit.

**DRUG INTERACTIONS**

No formal drug interaction studies have been conducted with Cyanokit.

**USE IN SPECIFIC POPULATIONS**

**Pregnancy**

Pregnancy Category C. There are no adequate and well controlled studies of Cyanokit in pregnant women. In animal studies, hydroxocobalamin caused skeletal and visceral (soft tissue) abnormalities at exposures (based on AUC) similar to human exposures at the therapeutic dose. Cyanokit should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Because cyanide readily crosses the placenta, maternal cyanide poisoning results in fetal cyanide poisoning. Timely treatment of the pregnant mother may be lifesaving for both mother and fetus.

In animal studies, pregnant rats and rabbits received Cyanokit (75, 150, or 300 mg/kg/d) during the period of organogenesis. Following intraperitoneal dosing in rats and intravenous dosing in rabbits, maternal exposures were equivalent to 0.5, 1, or 2 times the human exposure at the therapeutic dose (based on AUC). In the high dose groups for both species, maternal toxicity occurred, and there was a reduced number of live fetuses due to embryofetal resorptions. In addition, decreased live fetal weight occurred in high dose rats, but not in rabbits. Incomplete skeletal ossification occurred in both rats and rabbits. In rats, two fetuses of the high dose group and two fetuses of the mid dose group (each from a different litter) had short, rudimentary or small front or hind legs. Rabbit litters and fetuses exhibited a dose dependent increase in various gross soft tissue and skeletal anomalies. The main findings in rabbits were flexed, rigid flexor or medially rotated forelimbs or hindlimbs and domed heads at external examination; enlarged anterior or posterior fontanelles of the ventricles of the brain and flat, bowed or large ribs at skeletal examination; and dilated ventricles of the brain, and thick wall of the stomach at visceral examination.

**Labor and Delivery**

The effect of Cyanokit on labor and delivery is unknown.

**Nursing Mothers**

It is not known whether hydroxocobalamin is excreted in human milk. Cyanokit may be administered in life-threatening situations, and therefore, breastfeeding is not a contraindication to its use. Because of the unknown potential for adverse reactions in nursing infants, the patient should discontinue nursing after receiving Cyanokit.

**Pediatric Use**

Safety and effectiveness of Cyanokit have not been established in this population. In non-US marketing experience, a dose of 70 mg/kg has been used to treat pediatric patients.

**Geriatric Use**

Approximately 50 known or suspected cyanide poisoning victims aged 65 or older received hydroxocobalamin in clinical studies. In general, the safety and effectiveness of hydroxocobalamin in these patients was similar to that of younger patients. No adjustment of dose is required in elderly patients.

**Renal Impairment**

The safety and effectiveness of Cyanokit have not been studied in patients with renal impairment. Hydroxocobalamin and cyanocobalamin are eliminated unchanged by the kidneys.

**Hepatic Impairment**

The safety and effectiveness of Cyanokit have not been studied in patients with hepatic impairment.

**OVERDOSAGE**

No data are available about overdose with Cyanokit in adults. Should overdose occur, treatment should be directed to the management of symptoms. Hemodialysis may be effective in such a circumstance, but is only indicated in the event of significant hydroxocobalamin-related toxicity. Because of its deep red color, hydroxocobalamin may interfere with the performance of hemodialysis machines.

**NONCLINICAL TOXICOLOGY**

**Carcinogenesis, Mutagenesis, Impairment of Fertility**

Long-term animal studies have not been performed to evaluate the carcinogenic potential of hydroxocobalamin. Hydroxocobalamin was negative in the following mutagenicity assays: in-vitro bacterial reverse mutation assay using Salmonella typhimurium and Escherichia coli strains, an in-vitro assay of the tk locus in mouse lymphoma cells, and an in-vitro rat micronucleus assay. The effect of hydroxocobalamin on fertility has not been evaluated.

**PATIENT COUNSELING INFORMATION**

Cyanokit is indicated for cyanide poisoning and in this setting, patients will likely be unresponsive or may have difficulty in comprehending counseling information.

**Rash**

In some patients, an acneiform rash may appear anywhere from 7 to 28 days following hydroxocobalamin treatment. This rash will usually resolve without treatment within a few weeks.

**Renal Disorders**

Patients should be advised that renal function will be monitored for 7 days following treatment with Cyanokit or, in the event of renal impairment, until renal function returns to normal.

**Pregnancy and Breast-feeding**

Patients should be advised that maternal cyanide poisoning results in fetal cyanide poisoning. Treatment for cyanide poisoning may be lifesaving for both mother and fetus. Patients should notify their physician if they were pregnant during therapy with Cyanokit. It is not known whether hydroxocobalamin is excreted in human milk.

This brief summary is based on CYANOKIT® (hydroxocobalamin for injection) Prescribing Information Version 180_US_20171_NO. Issued: June 2017. For current package insert and further product information, please visit www.cyanokit.com or call Pfizer Medical Information toll-free at 1-800-438-1985.

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"Long Wait, Poor Service—1 Star"

Even if patient reviews don’t correlate with quality care, it’s unwise to ignore them

by CEDRIC DARK, MD, MPH

In response to a 2016 article exploring the themes common among Yelp reviews of emergency department visits, critics noted that “satisfaction correlates only weakly with quality.” In fact, a 2012 study linked positive patient satisfaction with increased mortality—a dreadful outcome that suggests patient satisfaction itself is not necessarily a patient-centered outcome. And while many physicians remain dissatisfied with the comments and scores left by patients on physician-rating sites, executives realize that these reviews might work to drive traffic toward or away from hospitals.

Multiple studies have discovered the key correlates of patient satisfaction: empathy, wait times, perceived technical skill, pain management, and communication.

In this month’s EMRA-PolicyRx Health Policy Journal Club article, Kirstin Woody Scott, MPhil, PhD, discusses a 2019 article that explored the use of Yelp reviews in comparing the patient experience in emergency departments versus urgent care centers. Spoiler alert: When patients reference the “service” received, we in the emergency department tend to lose.

It pains me to admit that hospitals need to behave more like Disneyland or the Cheesecake Factory, but there must be a reason people keep going back to these places. So what is it that leads some organizations to create an indelible positive memory on their customers while the service we provide often yields negative thoughts? After four years of medical school and several more years of residency training to perfect our craft, some physicians might consider it insulting that we have to cater to the whims and service expectations of our patients instead of simply providing high-quality care. For others, this has become demoralizing. While board certification assures us that the scientific portion of our work is sound, the opposite was true for UCCs.

The authors rightfully acknowledge that Yelp can be easily dismissed as a data source since it is unverifiable and unstructured and cannot be considered to be truly representative of all patients. However, Yelp offers rich, narrative data and serves as a platform that allows people to share reflections in real time, unlike publicly inaccessible proprietary data sources such as Press Ganey. Despite these limitations, tens of thousands of people feel compelled to share their thoughts through online platforms, and as researchers and clinicians, we should figure out how to best listen and learn from these raw reflections. Further, in an era where patient satisfaction is increasingly considered an important quality measure (despite its perhaps surprising inverse relationship with actual quality of care), it will become important to more effectively analyze all data points—regardless of the source—to inform how we can better care for patients.

It is a medical student at Harvard Medical School in Boston.

Research Question
Researchers recently leveraged Yelp ratings to provide a general idea of how satisfied patients are with the care they receive in emergency departments and urgent care centers (UCCs). There were three key takeaways. First, people are indeed using Yelp as a way to comment on their experiences in these settings; there were more than 100,000 ratings across both settings between 2005 and 2017. Second, similar to all Yelp business reviews, ratings for both emergency departments and UCCs follow a bimodal pattern, ie, spikes in both 1-star (worst) and 5-star (best) ratings. UCCs had overall higher ratings than emergency departments (47 percent of users gave emergency department 1-star ratings versus 30 percent for UCCs), and only 27 percent of users gave 5-star ratings to emergency departments (versus 51 percent for UCCs). Third, themes that emerged from the comments can inform what aspects of care correlate with high versus low ratings (eg, good bedside manner was associated with 5-star ratings). To make sense of all the comments, researchers employed natural language processing tools to focus on the comments in the extreme ratings (1-star and 5-star), then used differential language analysis to match up the topics that were correlated with low and high ratings. For the emergency departments, topics related to quality of care were more likely to be correlated with high ratings whereas comments on service were more likely to be correlated with low ratings. The opposite was true for UCCs.

The authors rightfully acknowledge that Yelp can be easily dismissed as a data source since it is unverifiable and unstructured and cannot be considered to be truly representative of all patients. However, Yelp offers rich, narrative data and serves as a platform that allows people to share reflections in real time, unlike publicly inaccessible proprietary data sources such as Press Ganey. Despite these limitations, tens of thousands of people feel compelled to share their thoughts through online platforms, and as researchers and clinicians, we should figure out how to best listen and learn from these raw reflections. Further, in an era where patient satisfaction is increasingly considered an important quality measure (despite its perhaps surprising inverse relationship with actual quality of care), it will become important to more effectively analyze all data points—regardless of the source—to inform how we can better care for patients.

References
It is well-recognized that delays in inpatient discharges result in ED boarding of admitted patients. Boarding has a negative impact on ED performance, clinical outcomes, and mortality. Improving the admissions process and decreasing the time patients spend in the emergency department after the decision has been made to admit have a downstream effect on decreasing inpatient length of stay (LOS). Like boarding, discharge delays are associated with increased mortality and adverse events.

The University Hospital (UHS) in the University of Texas-San Antonio health system had conducted a comprehensive ED improvement project, which dramatically improved door-to-doctor (D2D) times and LOS. Walkaways were reduced, and patient satisfaction soared as the timeliness of care was improved. Then the ED leaders—Andrew Muck, MD, and Steven Moore, MD—turned to the hospital for relief from high boarding levels. Their message was simple and powerful: “We fixed our house. Now can you help us with boarding?”

On the heels of the success in the emergency department, hospital leadership responded to this request favorably. They set out to increase inpatient capacity by improving discharge by noon (DBN). Note that DBN is measured as the percent of discharged patients out of beds by noon, not merely those who have a discharge order. Most hospitals experience discharge delays because discharge processes have become complex, are poorly articulated, and are not well synchronized. Things that must happen before a patient goes home often occur in a random fashion, and task roles are unclear. This frequently results in patients leaving the hospital later in the day, long after the ED demand for inpatient beds has risen. This, above all, causes boarding.

Communication around discharge is also haphazard. Common barriers to early discharge include transportation, physical therapy, follow-up appointments, durable

CONTINUED on page 44
Cooperation and Coordination

The improvement initiative at UHS (dubbed “Power Through!”) focused on the discharge process itself, with a goal of increasing DBN without increasing LOS. The team began in the fall of 2018 with a kickoff lecture by Katherine Hochman, MD, of New York University Medical Center in New York City, who has published her successful work. She was able to alleviate boarding by increasing early discharges from the inpatient hospital units. UHS asked each unit and service to address the process of discharge on their units, the communication around discharges, and tools necessary to facilitate that discharge (see Figure 1). A key element in Dr. Hochman’s work and the work at UHS was “discharge rounding”—the implementation of brief discharge-focused rounds that coordinate the discharge of a patient a day or two in advance of an anticipated discharge. Getting ahead of the discharge process and communicating about the discharge to all stakeholders were critical to the project’s success.

Rollout of this program included a retreat that helped to articulate unit level discharge processes, discharge communication, discharge rounds, and tools to support the work. Figure 2 is a sample swim lane diagram articulating the discharge process on a typical unit.

The Results

The hospital-at-large and the adult services unit performed particularly well (see Figure 3). This project was driven by nursing leaders Nelson Tuason, assistant chief nursing officer, and Missam Merchant, director of the central operations management group. Note the dramatic increase in early discharges.

The effect of early inpatient discharge on ED boarding is impressive (see Figure 4). By initiating discharge momentum earlier, beds opened up for ED admissions, which begin late in the morning and continue throughout the day.

At UHS, boarding had been difficult to manage. The increased DBN project had an immediate effect. This nursing-led patient project had the support of the dean, the medical school chairs, and the hospital leaders. With everyone aligned with the mission, they recovered wasted capacity without spending a penny on new inpatient rooms. The hospital has improved on its boarding problem so effectively that the emergency department has consistently avoided diversion for the past six months.

The take-home message is there are board-solutions out there if your hospital is willing to Power Through!

EM LITERATURE

Caveats

However, it should be clearly recognized these trials and publications are produced in their entirety by the sponsor, Nabriva Therapeutics. The vast majority of authors are either employees of, consultants for, or members of the board of directors for Nabriva. There are clear professional and corporate financial interests tied to conducting the ideal trial leading to approval and to presenting these data in the best possible light. These biases do not imply misconduct nor misleading factual presentation, but they may limit generalizability of the effectiveness and safety profile to real-world use.

Regardless, lefamulin is likely to become an important antibiotic option in human medicine. As with any new antibiotic, stewardship will be critical. While the trade magazine advertisements for Xenleta are likely to surge, our prescribing should not follow suit. The narrow eligibility of these trials, the drug’s use in low-acuity patients, the relative paucity of safety information, and, of course, the drug’s increased cost compared with current generic options all reduce its appropriateness. Antibiotics such as this, with unique mechanisms of action, should be held in reserve for cases in which established resistance limits alternative options. These data portend a welcome advance in our treatment options for otherwise challenging infections but are best restricted to such narrow indications.

The opinions expressed herein are solely those of Dr. Radetsky and do not necessarily reflect those of his employer or academic affiliates.

References

CODING FOR NON-PHYSICIAN PROVIDERS

by JASON ADLER, MD, FACEP

Question: How can we maximize reimbursement for services provided by advanced practice providers?

“Non-physician provider” (NPP), a term used by Medicare, and “advanced practice provider” (APP) refer to both physician assistants (PAs) and nurse practitioners (NPs). APPs, growing in numbers in the ED space, represent a significant percentage of the labor pool.

The documentation guidelines for the supervision of APPs and reimbursement levels vary by payer and service provided. For Medicare and many Medicaid evaluation and management (E/M) codes, a physician signature alone will result in payment of 85 percent of the physician’s rate. Alternatively, a properly documented split-shared visit should increase the reimbursement to 100 percent of the physician’s rate. Proper documentation requires the physician to indicate face-to-face (direct supervision) interaction.

Check with your local payers for APP supervision requirements. Some payers require the supervising physician to document at least one element of the history of present illness, examination, or medical decision making. For other private payers, a cosignature alone may be sufficient to support APP supervision and payment at the physician’s rate.

Procedures performed by the APP are typically billed under the APP National Provider Identifier and cannot be shared. Critical care may be billed under the APP as long as the APP satisfies the time and medical necessity requirements. Critical care cannot be a split-shared visit. Combining physician and APP time to meet the 30-minute threshold is not valid.

For more information, check out the FAQ at www.acep.org/administration/reimbursement/reimbursement-faqs/advanced-practice-provider-faq.

Brought to you by the ACEP Coding and Nomenclature Committee.

DR. ADLER is vice president of practice improvement at Brault in San Dimas, California, and clinical assistant professor of emergency medicine at the University of Maryland School of Medicine in Baltimore.
This is currently an area of active investigation about which little is known for certain. Here’s what we do know.

**Quick Tips: Diagnosis and Treatment**

Available evidence suggests that the predominant form of lung injury is lipoid pneumonia. This may relate largely to the vaping history of vaping with tetrahydrocannabinol, so other products may be involved as well. The clinical presentation of VAPI usually begins gradually over several days with gastrointestinal and pulmonary symptoms. Early on, patients may appear to have a viral gastroenteritis or mild pneumonia. Eventually gastrointestinal and pulmonary symptoms. Early on, patients may appear to have a viral gastroenteritis or mild pneumonia. Eventually hypoxic respiratory compromise worsens, with the development of bilateral pulmonary infiltrates. Additional symptoms may include fever, chest pain, and weight loss. CT scans typically show bilateral diffuse ground-glass opacification. Steroid administration may be associated with clinical improvement, although this remains unproven and speculative. Severity is variable, with some patients requiring intubation or even extracorporeal membrane oxygenation.

The optimal approach to investigation and treatment of this disorder remains unknown. Evaluation is primarily driven toward exclusion of alternative likely possibilities (especially various types of infectious pneumonia). Whether every patient requires a bronchoscopy is debatable. For critically ill patients at risk of deterioration, the safest approach could be to provide empiric therapy for both pneumonia and VAPI (current approaches are a combination of antibiotics and a steroid).

This is a rapidly evolving topic, and approaches are likely to evolve even as this goes to print. The most important aspect is to be aware that VAPI exists. This awareness should prompt us to take a detailed vaping history and clinical evaluation of patients at risk of deterioration.

### Classifieds

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The busiest ED in North Carolina, and one of the top 15 busiest in the nation, treats 95k adult and 35k pediatric cases annually in its 92 beds. We are currently seeking residency trained BC/BE emergency physicians to work in the 75 bed adult ED. This ED serves a high acuity patient population with 28% annual admission rate. There are over 90 hours of adult physician coverage daily and over 110 hours mid-level coverage daily. It is a Level III Trauma Center with robust hospitalist service, interventional cardiology 24/7, cardiac surgery, neurosurgery, etc. The facility is Chest Pain and Stroke accredited. The EMS system is hospital owned and managed with an award winning paramedic program. Of note, the Pediatric ED is separate and has 17 dedicated beds with an additional 24 hours of physician coverage and 20 hours of mid-level coverage. We welcomed our inaugural class of Emergency Medicine Residents in July 2017. Opportunities exist for both clinical and academic emergency physicians.

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The Department of Emergency Medicine at Baylor College of Medicine, a top medical school, is located in the world’s largest medical center, in Houston, Texas. The Baylor Emergency Medicine Residency was established in 2010, and we recently received department status in January 2017. Our academic program is based out of Ben Taub General Hospital and Baylor St. Luke’s Medical Center. Ben Taub General Hospital is the largest Level 1 trauma center in southeast Texas with 1,900,000 visits/mo. and 50,000 ED visits/mo. Baylor St. Luke’s Medical Center is home to the Texas Heart Institute and, with freestanding Baylor St. Luke’s Emergency Centers, offers multiple additional practice sites for Baylor faculty. BCM has a collaboration with Texas Children’s Hospital, which has an annual ED census in excess of 90,000 visits. The department has a well-established, three-year Emergency Medicine residency program and an Emergency Ultrasound fellowship. Qualified candidates must be ABEM/AOBEM certified/diplomates. Salary and benefits are competitive and commensurate with experience.

For consideration, please send a letter of intent and a curriculum vitae to:

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FOR ADDITIONAL INFORMATION PLEASE CONTACT:

Susan B. Promes, Professor and Chair, Department of Emergency Medicine c/o Heather Peffley, Physician Recruiter, Penn State Health Milton S. Hershey Medical Center 500 University Drive, MC A595, P O Box 855, Hershey PA 17033
Email: hpeffley@pennstatehealth.psu.edu
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For more information

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The department has a well-established, three-year residency program and an Emergency Ultrasound fellowship. The department is seeking physicians who can contribute to our clinical, education and research missions.

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For consideration, please send a letter of intent and a curriculum vitae to:

Robert Eisenstein, MD, Chair, Department of Emergency Medicine
Rutgers Robert Wood Johnson Medical School
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The Henry JN Taub Department of Emergency Medicine at Baylor College of Medicine is looking for outstanding physician applicants for the position of Vice Chair, Operations and Quality. This position directs the delivery of quality care, compliance with regulatory requirements and adherence to evidence based clinical standards of practice. This position provides clinical guidance and oversight of all the departments’ clinical enterprises and collaborates closely with operational partners across the clinical entities. In addition, this position will assist in the development and implementation of new clinical programs and educational activities and reports directly to the Department Chair. Experience in the simultaneous management of multiple clinical entities is preferred but not prerequisite.

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

Our academic program is based out of Ben Taub Hospital and Baylor St. Luke’s Medical Center. Ben Taub Hospital is a Level 1 trauma center with certified stroke and STEMI programs that sees nearly 90,000 emergency visits per year. Baylor St. Luke’s Medical Center is home to the Texas Heart Institute and with freestanding Baylor St. Luke’s Emergency Centers offers multiple additional practice sites for Baylor faculty. BCM has a collaborative affiliation with eight world-class hospitals and clinics in the Texas Medical Center. These affiliations, along with the medical school’s preeminence in education and research, help to create one of the strongest clinical experiences in the country.

Those interested in a position or further information may contact Ms. LaShaune Delean via email at LaShaune.Delean@bcm.edu or by phone at 713-873-2626. Please send a CV and cover letter with your past experience and interests.

THE DEPARTMENT OF EMERGENCY MEDICINE

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The Devil We Don’t Know

Vaping’s popularity has been, in part, driven by the medical community, which has viewed the habit as a safer alternative to smoking cigarettes. Unfortunately, the use of vaping as a smoking cessation strategy is scientifically a bit dodgy. Our understanding of the toxicity of cigarettes emerged very slowly. This toxicity wasn’t recognized for decades, until long-term epidemiological evidence implicated smoking in lung cancer. Since vaping hasn’t been around that long, it’s simply impossible to know what its long-term effects will be. Thus, it’s impossible to be sure that the long-term effects of vaping will be less severe than those of smoking. Nonetheless, passion to eliminate smoking has promoted this transition away from the devil we know toward a devil we don’t yet understand.

Once commercialized, vaping has rapidly expanded to new markets. Companies have aggressively promoted vaping to adolescents, using advertisement campaigns on Instagram and products of various flavors, including fruit and candy flavors. Consequently, vaping has become common among adolescents, who have been led to believe that vaping is a safer alternative to smoking. Currently, more than a third of high school seniors report some use of vaping.

Trouble Breathing

The gastrointestinal tract has evolved to take in widely heterogeneous material, absorb nutrients, and excrete the remainder. Overall, the gut is astonishingly successful at coping with foreign material while remaining healthy. In comparison, the lungs are not well-designed to deal with foreign material. Vaping exposes the lungs to a dizzying array of chemicals (some of which are known to cause lung disease). This is a recipe for potential disaster.

About a dozen case reports over the last several years have described various forms of lung disease that may result from vaping. The most fulminating form is acute eosinophilic pneumonia, a form of respiratory failure, which may also be caused by smoking cigarettes. Other forms of lung disease associated with vaping include lipoid pneumonia and cryptogenic organizing pneumonia. These are more gradual but may nonetheless progress to ventilator-dependent respiratory failure. To simplify matters, these various forms of VAPI share similar features—they cause bilateral pulmonary infiltrates, which generally respond to steroids.

Despite some early signals of harm, most practitioners have remained blissfully unaware of vaping risks, so it is not a part of medical culture to think about it. Vaping wasn’t taught to us as something to ask about during a medical history the way other substance use was. It’s possible that some cases of VAPI weren’t diagnosed simply because we didn’t know enough to ask about it.

The current epidemic has cast a harsh light on the lack of regulation of vaping products. Vaping is now a billion-dollar industry in the United States and may already be influenced by substantial political contributions. The U.S. Food and Drug Administration (FDA) was given authority to oversee vaping in 2016. However, companies have been given until 2022 before they must submit products for review. Overall, the industry has remained largely unregulated.

Vaping itself may turn out to be safer than smoking, as it takes oncogenic tobacco and smoke out of the equation. In fact, the current epidemic of VAPI most likely relates to adulterants (eg, vitamin E acetate), which, once discovered and banned from e-cigarettes, will likely render VAPI a rare entity. However, this outbreak is doubtless facilitated by the
use of vaping products that are designed to be modifiable. And so one of e-cigarettes’ appeals—the diversity in product it can deliver—may be a setup for other hazards we have yet to discover.

Given a lack of regulation from the federal government, some local governments have stepped in. Gov. Gretchen Whitmer recently outlawed the sale of flavored electronic cigarettes in Michigan (see “Vaping & Public Health Policy” sidebar). This announcement was lauded by officials from the American Heart Association and the American Thoracic Society. In Vermont, a state law was recently passed increasing the age required to buy e-cigarettes to 21.

**Harm Avoidance**
Aside from identifying patients with VAPI, we can begin to educate patients about the potential harms from vaping. If patients are unwilling or unable to abstain from vaping, they should avoid using adulterated vaping liquid or products containing tetrahydrocan-nabinol. For patients seeking to stop smoking, vaping should not be viewed as an aid; cessation strategies that have definitively been proven to be less dangerous should be tried first.

DR. FARKAS is assistant professor of pulmonary and critical care medicine at the University of Vermont in Burlington.

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**HyperRAB®**
Rabies Immune Globulin (Human)

**HIGHLIGHTS OF PRESCRIBING INFORMATION**

These highlights do not include all the information needed to use HYPERRAB® safely and effectively. See full prescribing information for HYPERRAB. HYPERRAB [rabies immune globulin (human)] solution for infiltration and intramuscular injection

Initial U.S. Approval: 1974

**INDICATIONS AND USAGE**

HYPERRAB is a human rabies immune globulin indicated for postexposure prophylaxis, along with rabies vaccine, for all persons suspected of exposure to rabies.

**Limitations of Use:**
Persons previously immunized with rabies vaccine that have a confirmed adequate rabies antibody titer should receive only vaccine.

For unvaccinated persons, the combination of HYPERRAB and vaccine is recommended for both bite and nonbite exposures regardless of the time interval between exposure and initiation of postexposure prophylaxis.

Beyond 7 days after the first vaccine dose, HYPERRAB is not indicated since an antibody response to vaccine is presumed to have occurred.

**DOSAGE AND ADMINISTRATION**

For infiltration and intramuscular use only. Administer HYPERRAB within 7 days after the first dose of rabies vaccine.

<table>
<thead>
<tr>
<th>Postexposure prophylaxis, along with rabies vaccine, after suspected exposure to rabies</th>
<th>HYPERRAB 20 IU/kg body weight OR 0.0665 mL/kg body weight Single dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Administer as soon as possible after exposure, preferably at the time of the first rabies vaccine dose.</td>
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<tr>
<td>• Irritate the full dose of HYPERRAB thoroughly in the area around and into the wound(s), if anatomically feasible.</td>
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<tr>
<td>• Inject the remainder, if any, intramuscularly.</td>
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**WARNINGs AND PRECAUTIONS**

Severe hypersensitivity reactions, including anaphylaxis, may occur with HYPERRAB. Have epinephrine available immediately to treat any acute severe hypersensitivity reactions.

HYPERRAB is made from human blood, it may carry a risk of transmitting infectious agents, e.g., viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent, and, theoretically, the Creutzfeldt-Jakob disease (CJD) agent.

**CONTRAINDICATIONS**

None.

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The most common adverse reactions in >5% of subjects in clinical trials were injection site pain, headache, injection site nodule, abdominal pain, diarrhea, flatulence, nasal congestion, and oropharyngeal pain.

To report SUSPECTED ADVERSE REACTIONS, contact Grifols Therapeutics LLC at 1-800-520-2607 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

**DRUG INTERACTIONS**

• Repeated dosing after administration of rabies vaccine may suppress the immune response to the vaccine.
• Defer live vaccine (measles, mumps, rubella) administration for 4 months.

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**Vaping and Public Health Policy**

In early September, Michigan became the first state to ban the sale of e-cigarette products under emergency rules ordered by Gov. Gretchen Whitmer. Early news reports indicated the directive could spark legal challenges but would be implement-ed under a “finding of emergency” issued by the Michigan Department of Health and Human Services on Aug. 30.

The vaping issue is one of many public health concerns being tackled by emergency physicians who hold influential roles, including Joneigh Khaldun, MD, FACEP, chief deputy director for health for Michigan. Dr. Khaldun will be talking about her role as one of panelists for the ACEP19 Opening General Session at 8 a.m. on Oct. 27 in Denver. Learn more about the session at www.acep.org/acep19/experience/opening-general-session.

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Please see Important Safety Information and brief summary of Prescribing Information for HyperRAB on adjacent pages, or visit www.HyperRAB.com for full Prescribing Information.