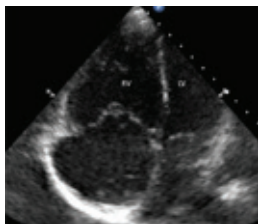


FEATURE

## UTIs and Estrogen: The Overlooked Link

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FEATURE

## Echocardiography for Hemodynamic Optimization

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EM CASES

## Spontaneous Cervical Artery Dissection

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FEBRUARY 2022

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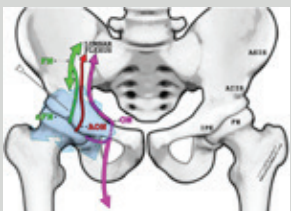
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### ACEP Sues Over Implementation of No Surprises Act

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SOUND ADVICE

### Benefits of Using the Pericapsular Nerve Group (PENG) Block

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## Crisis Emergency Department Challenges in a Long Pandemic

by RENÉE BACHER

HOW CRISIS  
STANDARDS  
OF CARE AND A  
NURSING SHORTAGE  
ARE STRESSING AN  
ALREADY-STRESSED  
HEALTH CARE  
SYSTEM

The COVID-19 pandemic has seen crisis stand-  
ards of care created and implemented in emer-  
gency departments across the United States,  
from waiting rooms converted into treatment spaces  
to patients back-transferred from urban hospitals  
with oxygen shortages to rural centers. While some of  
these documents have been successful, others have  
been problematic.

CONTINUED on page 6

## Practicing Medicine in the Fast Lane

How an unexpected  
weekend job turned  
into a lifelong passion  
for one emergency  
physician

by STEPHANIE CAJIGAL

Paul Kozak, MD, FACEP, never cared  
about car races as a kid. Watch-  
ing ABC's *Wide World of Sports*,  
he thought the wide-angle camera  
made it seem like cars were going  
around the track at 30 mph. Fast-  
forward to his time in residency  
at Methodist Hospital in Indian-  
apolis, where an interesting opportu-  
nity involving speed racing presented  
itself. Some of the attending physi-  
cians at the hospital also worked  
for the Indianapolis Motor Speed-  
way and asked Dr. Kozak if he'd like  
to moonlight as a physician at the  
track. He thought it'd be a good way  
to make some extra money.

Once he got to the track, seeing and  
feeling a car whizz by during a prac-  
tice lap was like nothing he'd ever  
experienced. It was

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## The Building Blocks of Certification Awareness

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ACEP Now's conversation with ABEM  
President Dr. Marianne Gausche-Hill.

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# NEWS FROM THE COLLEGE

## UPDATES AND ALERTS FROM ACEP

### Call for Board of Directors Nominations

The ACEP Nominating Committee is accepting nominations from individuals and component bodies for four open positions on the ACEP Board of Directors. Elections for the Board of Directors will be held during the ACEP Council meeting Sept. 30, 2022, in San Francisco. Visit [acep.org/board-nominations](http://acep.org/board-nominations) for more details.



### Call for ACEP Committee Applicants

ACEP has 30 committees working to support emergency physicians and advance the specialty, encompassing many areas of clinical care, physician wellness, advocacy, EMS, practice management, research, compensation and more. If you're interested in applying for one of the committees, visit [acep.org/committee-applicants](http://acep.org/committee-applicants) for more information. Applications are due May 15, 2022.

### New Point-of-Care Tools for DVT, PE and Hyperkalemia

Have you checked out ACEP's new bedside tools to help guide the identification and outpatient treatment of patients with hyperkalemia, low-risk deep vein thrombosis and low-risk pulmonary embolism? These helpful tools are available through the ACEP website or by downloading the emPOC app, which is free for all ACEP members.

Visit [acep.org/pointofcaretools](http://acep.org/pointofcaretools) for more information.

### ACEP Leaders Pen New Blog

ACEP's newest blog ([acep.org/boardblog](http://acep.org/boardblog)) will feature regular updates from ACEP leaders on the recent work they are doing on behalf of members. The Board blog will provide written or video updates on workforce, strategic planning, ACEP's lawsuit versus the federal government and more.

### ACEP Members in the News

- **Steve Cantrill, MD, FACEP**, was formally recognized by the National Institutes of Health for serving on the task force that developed the NIH COVID-19 Guidelines. Dr. Cantrill is believed to be the first EM physician to be part of an NIH guideline group.
- **Taneisha Wilson, MD**, received the Bannister Award from Rhode Island Monthly for her work to develop the Discussing Anti-Racism and Equity in Emergency Medicine (DARE-EM) curriculum. The Bannister Awards honor Rhode Island leaders who advance equity and promote diversity.
- **Jeremy S. Faust, MD, MS, FACEP**, former Medical Editor in Chief of *ACEP Now*, is the new Editor in Chief of *Medpage*. His writing has appeared in major media outlets across the country, and he writes the column "Inside Medicine" on *Bulletin.com*. In early 2020, Dr. Faust launched *Brief19*, a daily review of news and developments related to COVID-19.
- **Laura Iavicoli, MD, FACEP**, is the new Deputy Chief Medical Officer at NYC Health + Hospitals/Elmhurst, where she has practiced emergency medicine for 20 years.
- **Chadd Kraus, DO, DrPH, CPE, FACEP**, is the first Director of Research for the American Board of Emergency Medicine. He will lead the effort to build the research group at ABEM.

## COMMENTS

### "Quarantine the Oral Boards" December, 2021

Completely agree! And thanks for stating the obvious. Curious to hear your thoughts on how simulation sessions similar to the airline pilot model might be incorporated into board certification/recertification and professional remediation. I am an EM residency PD, who has long thought this sort of "testing," although with obvious costs and logistical challenges might be more useful and valid. Similar to the way it's used in residency. Testing for learning and testing of learning. I can picture a future in which UME—GME—professional maintenance is much more seamless and integrated. Your thoughts please.

—Thomas H. Matese Jr., DO FACP, FACEP

Thank you for the article. At one time, I was also skeptical of the need for the Oral

Board exam. However, I have since become an ABEM Oral Board Examiner and my impression has changed significantly. These exams are very well planned, examined, and analyzed. Obviously, without discussing confidential details about candidates or the process, I can confidently say that the ABEM Oral Exam is needed. The public as well as our profession benefit from a robust oral exam. And ABEM does it very well. To another point in the article, at least as far as the oral board goes, I promise the accommodations are not lavish. Look up the Rosemont Marriott—nothing lavish here. And by the way, while there may be legitimate reason to question some ABEM expenses, comingling this issue with the oral boards just confuses the issue.

—Jonathan Jones

## CORRECTION

In December 2021, "ACEP Council Resolutions Tackle Key Issues" incorrectly stated Dr. Gilman's former employer's location. The correct location is Yuma, Arizona.



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# RESIDENCY SPOTLIGHT

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University of Wisconsin first-year residents have some fun on the Med Flight helipad during orientation.

### What does your residency program offer that is not available anywhere else?

We describe ourselves as a four-year-style training program in a three-year-plus package. We've integrated what we feel are the most important components of four-year programs:

- Running a community emergency department as a pre-attending
- Serving as trauma resuscitation leader
- Engaging in longitudinal pediatric and critical care experiences, including with our premier Med Flight service
- Being mentored by invested faculty who are dedicated to developing leaders

After three years of training, many of our residents elect to stay for an optional 3+1 year to pursue more specialized niche development in a number of subspecialty areas including prehospital medicine, ultrasound, global health, medical education, clinical simulation, administration and quality, research, critical care, and physician wellness.

### How has the program evolved over the past few years?

Our program has really hit its stride. We're old enough to know who we are and where we excel but not so old that we've forgotten how to innovate and grow. With the addition of multiple clinical leadership roles for our residents (pre-attending shifts, trauma

resuscitation, and several capstone critical care months), we've seen graduates right out of training propelled into academic faculty positions, competitive fellowships, and leadership roles in community groups across the country. And despite tremendous growth as a program over the last 10 years, we've been able to preserve our resident-centric culture with robust faculty mentorship.

### How do residents bond?

The tight-knit bonds between our residents undoubtedly start with a month-long orientation when they arrive in Madison and are cemented at an annual residency retreat shortly thereafter. In addition to social activities led by the upper classes, new residents

quickly integrate with faculty, staff, and advanced practice providers at several department-wide social events, including EM Graduation and the Program Director Welcome dinner. Our residents often share an appreciation for hiking, cycling, climbing, or hanging out with their furry friends at any number of local dog parks. Residents and faculty also take time to enjoy the dynamic restaurant scene in Madison. In addition, faculty host off-campus events including EM journal clubs and career-advising sessions where residents glean advice about navigating life after residency.

—Aaron Kraut, MD, residency program director

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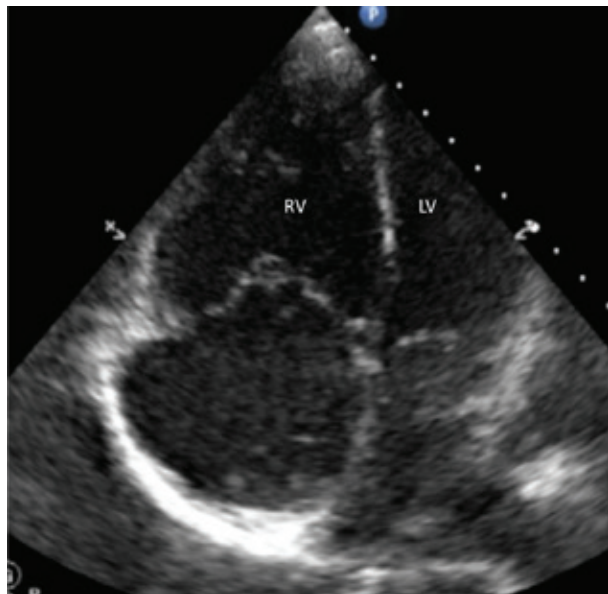
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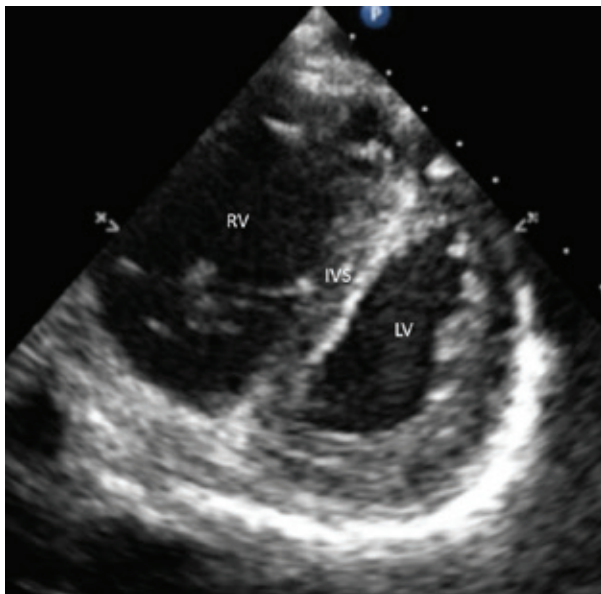
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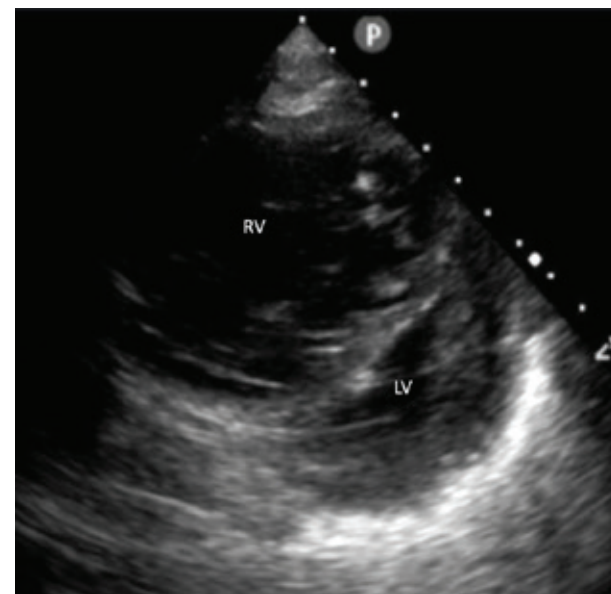




**Figure 1:** Four-chamber apical view demonstrating enlarged right ventricle (RV).



**Figure 2:** Bowing of the interventricular septum (IVS) into left ventricle is visualized as "D-sign" on a parasternal short-axis view in a patient with right ventricular (RV) failure.



**Figure 3:** Parasternal short-axis view showing decrease in the size of left ventricular (LV) cavity.

SRIKAR ADHIKARI

# Do It with Heart: Preintubation Point-of-Care Echocardiography for Hemodynamic Optimization

How utilizing heart scans can mean the difference between life and death

by SRIKAR ADHIKARI, MD, MS

Have you wondered why a particular patient coded after endotracheal intubation? Actually, it is not uncommon for critically ill patients to decompensate during or after this essential intervention. While approximately 60 percent of critically ill patients require endotracheal intubation,<sup>1</sup> it also puts them at high risk for hemodynamic collapse during the procedure. Prior studies suggest that there is up to a 25 percent risk of hemodynamic instability even in successful critical care unit intubations.<sup>2</sup> Therefore, hemodynamic optimization is crucial prior to endotracheal intubation to prevent peri-intubation hemodynamic instability and poor patient outcomes.

## Heart Failure Considerations

Endotracheal intubation is especially perilous for a patient with right ventricular (RV) failure, which can occur because of abruptly increased RV afterload or decreased contractility from a wide range of clinical conditions, including pulmonary embolism, acute exacerbation of chronic lung disease, or acute respiratory distress syndrome.<sup>3,4</sup> RV failure is an underdiagnosed condition in patients undergoing intubation and invasive mechanical ventilation. Performing this procedure in patients with RV failure can result in catastrophic hemodynamic collapse because the failing right heart is very sensitive and unable to compensate for any increase in afterload and/or decrease in preload from intubation.

The normal right ventricle is thin-walled, highly compliant, and typically ejects blood against a vascular resistance only 20 percent that of the systemic circulation. Even a slight increase in pulmonary vascular resistance can overload a normal right ventricle, and it does not handle increases in afterload well under conditions such as pulmonary embolism, resulting in RV dilatation and, when severe, RV failure. As RV failure progresses,

the interventricular septum bulges to the left, compresses the left ventricular cavity, impairs filling of the left ventricle, and reduces the septal contribution to RV contractility. This left-sided septal shift leads to reduced cardiac output and systemic hypotension. The effects of intubation and invasive mechanical ventilation will exacerbate this situation, resulting in hemodynamic collapse and, in some cases, cardiac arrest.<sup>5</sup>

Point-of-care echocardiography has evolved as a simple, portable, and rapid noninvasive tool for assessment of hemodynamic status. It provides invaluable information for diagnoses and direct resuscitation in critically ill patients, including assisting in the evaluation of intravascular volume status and fluid responsiveness. This bedside imaging modality can help guide appropriate interventions prior to patient decompensation and assess responses to interventions. Preintubation echocardiography allows for direct and noninvasive visualization of the right ventricle at the bedside and can play a major role in the hemodynamic stabilization of critically ill patients. It allows clinicians to implement therapeutic strategies to prevent potential hemodynamic decompensation during and following endotracheal intubation in patients with RV failure. Preintubation echocardiography can detect signs of RV failure (pressure and volume overload) such as right ventricle dilation (best appreciated in the four-chamber view), septal flattening visualized as "D-sign" and bowing of the interventricular septum into the left ventricle on a parasternal short-axis view, decrease in the size of left ventricular cavity, and decreased left ventricular filling leading to decreased cardiac output (Figures 1–3).<sup>4</sup> With detection of echocardiographic signs of RV failure, different ameliorating strategies can be employed prior to intubation to optimize hemodynamics and avoid worsening RV failure and cardiovascular collapse. Sonographic assessment allows clinicians to approach

preintubation resuscitation in a specific, targeted manner that includes volume optimization, restoration of perfusion pressure, and improvement of myocardial contractility.

Endotracheal intubation should be avoided or delayed when possible as this is an extremely high-risk procedure in patients with RV failure. If the intubation is unavoidable, avoid excess positive end-expiratory pressure (PEEP) or airway pressures. An alternative in some cases is noninvasive positive pressure ventilation, which has a less pronounced effect on venous return and preload compared to invasive mechanical ventilation. A common misconception is that RV failure should consistently be treated with volume supplementation. In a large proportion of cases, RV failure is associated with excessive preload. In such cases, volume resuscitation can overdistend the RV and thereby increase RV wall stress, decrease contractility, increase inter-ventricular dependence, reduce left ventricular filling, and ultimately decrease cardiac output. Unlike other causes of shock, fluid boluses can actually worsen hemodynamics in RV failure and generally should not be administered in RV failure patients during the peri-intubation period. In the setting of acute RV failure due to pulmonary embolism, an inhaled pulmonary vasodilator, such as nitric oxide, can be used for afterload optimization in the peri-intubation period to decrease pulmonary artery pressure through pulmonary vasodilation.

## How to Avoid Making the Worst of a Bad Situation

With the exception of patients with severe left ventricular failure, pulmonary vasodilators offer numerous benefits, including improved oxygenation and ventilation (due to facilitation of ventilation-perfusion matching) and decreased pulmonary vascular resistance without causing systemic hypotension. Another strategy to avoid worsening RV failure includes the administration of vasopressors

(epinephrine, vasopressin, or norepinephrine) prior to endotracheal intubation while avoiding phenylephrine. In a hypotensive patient with severely elevated pulmonary artery pressure, vasopressors can raise systemic arterial pressure, augment cardiac output, and reduce the risk of exacerbating RV ischemia.<sup>6</sup>

The failing right ventricle is exquisitely sensitive to changes in preload, afterload, and contractility in the peri-intubation period. Identification of acute RV failure and careful hemodynamic optimization are crucial to improve outcomes in patients undergoing endotracheal intubation. The complexity of hemodynamic management in acute RV failure creates a powerful argument for emergency physicians to use preintubation echocardiography. With increasing use of point-of-care ultrasound, emergency physicians are well-positioned to use echocardiography for hemodynamic optimization prior to intubation. It can provide invaluable information regarding RV structure and function, help guide interventions, and improve safety in critically ill patients. +

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**DR. ADHIKARI** is a tenured Professor, Chief of Emergency Ultrasound section and Emergency Ultrasound Fellowship Director at the University of Arizona in Tucson, Arizona.



A paper published in *NAM Perspectives* last summer on crisis standards of care and COVID-19 noted that the authors were unable to share specific details some colleagues relayed as some of these clinicians suffered “professional retribution for raising these issues or being willing to have open and honest discussion of the tactics that were implemented.”<sup>1</sup> It cited improvements needed in the areas of equity and allocation of resources; graduated changes across the care continuum in staffing, dialysis, and respiratory support; and prior crisis standards-of-care work and its contributions during COVID-19.

In the emergency department at the University of Florida Health Jacksonville, instituting crisis standards of care has meant treating patients in waiting rooms with vertical beds as well as forming a Hospital Incident Command Center (HIC) that opened in February 2020 and has remained open since, according to Kelly Gray-Eurom, MD, a professor and assistant dean for quality and safety.

“During the initial phases of the first surge, the HIC’s team met via Zoom every day at 9 a.m.,” she says. “The team was large and multidisciplinary so communications and planning could be robust.” These team members included all members of the hospital’s C-suite, the dean, medical disaster officer (an emergency physician), patient safety officer, nursing leaders from all areas of the hospital, pharmacy, supply chain, infection prevention and control, media relations as well as representatives from housekeeping and laundry.

The State of Alaska had a crisis standards-of-care document in development years before the COVID-19 pandemic, but it wasn’t approved until March 2020 when it looked increasingly clear they may need it, according to Anne Zink, MD, chief medical officer for the state and an emergency physician at Mat-Su Regional Medical Center in Palmer, Alaska. The state convened a group of clinicians to adopt a document close to The Minnesota Framework but with edits to adjust for things such as the fact that Alaska does not have a burn unit. The state updated the document last August and is currently in the process of updating it again. But, as helpful as that document has been, it was by no means a panacea. “Those documents cover what happens when you run into things,” Dr. Zink says. “They do not address what happens when you run out of people.”

### Nursing Shortages

Even prior to the COVID-19 pandemic, the United States was projected to run short of RNs.<sup>2</sup> Baby boomers created more demand for health care, and the national move toward health care reform in recent years has meant nursing schools nationwide have had to expand capacity, according to the American Association of Colleges of Nursing. Nearly two years into the pandemic, hospitals across the United States have felt that shortage acutely, particularly in the dwindling numbers of nurses available to staff emergency departments.

According to a recent American Nurses Foundation survey, 21 percent of 9,572 nurses surveyed last fall said they intended to leave their position, with another 29 percent saying they were considering leaving.<sup>3</sup> Of those wanting to leave, 47 percent cited the negative effects of work on their health and well-being, and 41 percent cited insuf-

ficient staffing.

“I’d be lying if I tell you we’re doing good,” says Maureen Ramos, MSN, RN, speaking of the exhaustion and burnout nurses are still facing during the pandemic. Ramos is director of nursing in the emergency department at Ben Taub Hospital, part of the Harris Health System in Houston. “I think for the past almost two years now, it’s been hard. These clinicians have burdens they carry from their home life, and they’re expected to be 100 percent all of the time they’re here. I’m in awe of the fact that they come in here 100 percent.”

The pandemic combined with nursing shortages has meant longer hours, higher nurse-to-patient ratios, and protocols that have had to be fluid to accommodate things like personal protective equipment shortages and pivoting on best practices based on the latest information. Another nursing challenge is that the pandemic has made it very lucrative for experienced emergency nurses to get contracts to work through outside staffing agencies. Those working for traveling nurse agencies can make as much as \$150–\$200/hour, which can be up to five times the amount emergency department nurses make when they are on staff at a hospital. On top of this, some traveling nurses are provided with food, lodging, and bonuses.

“It has been a challenge to keep very experienced emergency department nurses because everyone’s just competing for the same exact manpower I want for my team,” Ramos says.

Not only is Ben Taub Hospital competing with traveling nurse agencies, it is also competing with the many health care institutions in the Houston area. Recruiters from these health care facilities have reached out to the hospital’s staff directly in an attempt to lure them away, and administrators at Ben Taub have had to develop strategies to retain their staff, including tuition reimbursement and big retention bonuses as well as sometimes matching inflated pay for a limited time period.

The same thing has been happening at University of Florida Health Jacksonville. “Our CEO, CNO, and CFO have been very impactful, adding increased salaries and bonuses for staff across the house but especially the COVID units or other hard-to-staff areas,” says Dr. Gray-Eurom, adding that the large increase in salary expense is not sustainable at a safety-net hospital, so it is difficult to know what the future will bring.

### Visibility

Another pitfall when it comes to crisis standards of care is that they don’t necessarily make sure clinicians have visibility on everyone in emergency departments across the state who need help.

“They’re really good for a single facility deciding who goes on dialysis,” Dr. Zink says. “But from a state perspective, if you don’t have awareness that a patient in a rural community needs dialysis because that clinician was told there’s no bed availability, then we don’t know that person’s out there and we can’t try to solve that problem.”

Scrambling to find creative solutions saved lives. In Alaska, they offloaded overcrowded urban hospitals facing oxygen shortages by back-transferring patients to rural centers. The hospital where Dr. Zink

practices, an hour outside of Anchorage, rarely receives patients from other hospitals, but during the pandemic when it had availability, it became commonplace to accept patients from hospitals around the state—and sometimes from hospitals hundreds of miles away. They had to set up different processes for accepting patients, and the state ended up purchasing dialysis machines for their hospital and others. “In consultation with nephrology, we were able to expand the number of hospitals that had dialysis capacity during our surge,” says Dr. Zink, adding that the state brought in 477 additional health care workers, from nurses to respiratory therapists, from around the United States to help them expand capacity. They also juggled patients, when necessary, transferring more stable patients who required less oxygen back to smaller hospitals as well as locating outpatient dialysis for patients who needed it.

In another change during the pandemic in Alaska, the state now has a website with a dashboard showing the availability of beds at each of the 26 hospitals in the state. Whether it’s ICU beds, med/surg beds, or psychiatric beds, every emergency physician in the state can see what’s available and where instead of calling around.

### Burnout

With repeated surges comes burnout. One of the biggest challenges to emergency departments is that the tools traditionally applied to crisis standards of care do not take into account the length of time the pandemic has dragged on, the many months hospital systems have been overwhelmed, and the inevitable fatigue for health care workers.

“You can’t just have people be in emergency or crisis mode for three months straight. As humans, we need to sleep, we need to care for each other. It’s impossible to be in that crisis response full time,” Dr. Zink says. “This is where hospitals have had to lean into systems changes to make sure they’re able to get the care they need.”

Dr. Gray-Eurom says her hospital’s Center for Healthy Minds and Practice saw a surge in use throughout the pandemic. Across all types of employees, she says, there were increases in burnout, relationship challenges, and other stress-related factors. The center provides free, confidential, and unlimited behavioral therapy to all employees as well as develops and maintains a peer-support counseling network to widen the available safety net to employees experiencing acute adversity.

With the most recent surge in Alaska, Dr. Zink says she is hopeful her team has improved the ways they think about caring for everyone in the state, including the transfer of patients, as well as improved their understanding and awareness of statewide resources.

“I do think that the hospitals, emergency medicine physicians, and the subspecialists like hospitalist groups have a much better understanding of each other’s capabilities, capacities, limitations, and their willingness to work together to solve problems,” she says. “I think this is helpful and will extend long past the pandemic.”



Kelly Gray-Eurom, MD



Maureen Ramos, MSN, RN



Anne Zink, MD, FACEP

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# UTIs and Estrogen: The Overlooked Link

by ASHLEY WINTER, MD; RACHEL RUBIN, MD; AND HOWIE MELL, MD, MPH

It is common for patients with vulvas who are older than 50 years of age to present to the emergency department with symptoms of urinary tract infections (UTIs). They complain of urinary frequency, urinary urgency, pelvic pain, pain with urination, vaginal dryness, and constipation. Some have scary-looking urinalyses, and others never have positive cultures. We know from the “Choosing Wisely” campaign that we should (a) not treat asymptomatic bacteriuria and (b) not run urine cultures on asymptomatic patients, but as some of these women present again and again, what’s an emergency physician to do?

The answer should never just be antibiotics.

The answer should be antibiotics if there is an infection *and* treatment of the underlying problem to prevent the symptoms from happening again. This is a condition called genitourinary syndrome of menopause (GSM). As if hot flashes and night sweats weren’t enough, the lack of hormones after age 50 causes these significant genital and urinary symptoms. And unlike hot flashes, they don’t magically get better or go away with time. In fact, they just keep getting worse.

But all of this is not only treatable—dare we say, it is *preventable*.

## What Is GSM and Why Does It Matter?

In a recent study, 68 percent of postmenopausal women with recurrent UTIs treated with vaginal estrogen alone did not go on to receive additional therapy.<sup>1</sup>

GSM is a relatively new term that was established around 2014 to replace the diagnosis of vulvovaginal atrophy/atrophic vaginitis.<sup>2</sup> Not shockingly, describing anything as atrophic is deeply concerning to patients, and just as important, the term atrophy doesn’t describe the signs and symptoms of what actually happens to the genitals and urinary tract after hormone withdrawal.

GSM is essential for an emergency physician to understand, diagnose, and treat.

GSM is a chronic and progressive condition that has the potential to pose significant morbidity and even mortality to patients. Think about the 90-year-old nursing home patient with urosepsis. The source of the urosepsis is much more likely from her GSM than her 2-mm nonobstructing stone. And you can bet we would place her on FDA-approved vaginal estrogen or dehydroepiandrosterone, with refills lasting forever.

Without circulating estrogens and androgens, there is a loss of collagen and elastin, diminished blood supply, and a loss of an acidic environment, which changes the entire ecosystem of the genital and urinary tract. Because of these changes, women develop urinary frequency, urgency, dysuria, pelvic pain, and recurrent UTIs. Additional symptoms include vaginal dryness; dyspareunia; and difficulties with desire, arousal, and orgasm.<sup>3</sup>

Approximately 50 percent of postmenopausal women experience GSM symptoms, and 10 to 15 percent of women over 60 years old have recurrent UTIs.<sup>4,5</sup> Among women who are experiencing GSM symptoms, less than 10 percent are prescribed therapies; this discrepancy between prevalence and treatment is due in part to lack of patient education regarding GSM and the lack of physician-initiated assessment.<sup>6</sup>

## There Is Hope for Patients and Prescribers

A promising development is the 2019 guidance of the American Urological Association (AUA) to include vaginal estrogen as a prophylaxis for peri- and postmenopausal women with recurrent UTIs to reduce future UTI risk (moderate recommendation, evidence level: Grade B).<sup>7</sup> These treatment guidelines are an important initial step toward the medical community introducing the assessment and treatment GSM in its clinical practice.

The problem is that few women with GSM are prescribed vaginal estrogen, and many who get the prescription don’t use it properly, can’t afford it, stop using it, or fear using it because of misinformation and inappropriate FDA boxed warnings.<sup>8</sup>



Ashley Winter MD || Urologist  
@AshleyGWinter

I have eliminated more UTIs from this planet with vaginal estradiol than with antibiotics.

9:06 PM · Oct 28, 2021 · Twitter for Android

But the crazy thing about this is that vaginal estrogen is a local treatment. It’s completely safe for essentially all women.<sup>9</sup> In fact, there are *very few* women over 50 for whom we wouldn’t recommend the use of local vaginal estrogen. For hormone-sensitive cancers (breast and some endometrial), we always pick up the phone and talk about it with the patient’s oncologist, and after a collegial discussion, most of these women are encouraged to use it.

There are no data—*none*—showing that local vaginal estrogen causes cancer, cardiovascular problems, stroke, dementia, or any other issues. In fact, two decades of research show just the opposite. Even studies in women who have gynecological cancers show no issues using local vaginal estrogens.<sup>10,11</sup> We prescribe and encourage this therapy in our patients with breast cancer or a family history of breast cancer as well as those who are worried about breast cancer.

## Let’s Look at a Quick Example

At one point during gestation, pregnant patients will have systemic estrogen levels of roughly 3,000 pg/mL. At the same time, if we measured the estrogen level in the biological fathers of these pregnancies, we would expect levels of roughly 25 pg/mL. Menopausal women’s systemic estrogen levels are less than 5 pg/mL, and on vaginal estrogen, they remain at roughly 5 pg/mL. Our point? Local vaginal estrogen does not impact the amount of estrogen in your bloodstream. How is it going to cause tumor growth, dementia, or blood clots? It’s not, and it doesn’t.<sup>12</sup> A birth control pill has different risks than an IUD, which has *very* different risks from local vaginal estrogen. All hormones are not the same.

Perhaps now you are sold on this diagnosis and its treatment, but how do you do it because standard emergency medicine training does not include this particular therapy? Starting local vaginal hormone therapy is easy and should be started in the emergency department. There are some key points to remember when explaining the therapy to patients:

1. There are lots of options out there, including inserts, gels, and rings.
2. If cost and insurance coverage are issues, generic estradiol 10-mcg inserts are typically \$40/month with a cash price and GoodRx coupon. Advise one vaginal insert daily for two weeks, then twice weekly indefinitely.

Figure 1: Pharmacological Treatments for GSM

Treatment	Product Name	Dose
VAGINAL CREAM		
17-beta-estradiol cream	Estrace, generic	1 g daily for 2 weeks, then 1g 2× per week
Conjugated equine estrogens cream	Premarin	1 g daily for 2 weeks, then 1g 2× per week
VAGINAL INSERTS		
Estradiol vaginal tablets	Vagifem, Yuvaferm	10-mcg inserts daily for 2 weeks, then 2× per week
Estradiol soft-gel capsules	Imvexxy	4- or 10-mcg inserts daily for 2 weeks, then 2× per week
DHEA (prasterone) inserts	Intrarosa	6.5-mg capsules daily
VAGINAL RING		
17-beta-estradiol ring	Estring	1 ring inserted every 3 months

How recent developments in the study of hormones may help patients more effectively

3. It may take as long as two to three months to see maximal benefit (remember the tissue must heal, which takes time).
4. It will only keep working if you keep using the therapy. For a woman who needs vaginal estrogen therapy, asking when the therapy should stop is like asking, “When can I stop brushing my teeth?” or “When can I stop wearing my seat belt?” Never. The answer is never.

The next time you encounter a postmenopausal women with recurrent UTIs, think about GSM, an essential and easily treatable diagnosis for emergency physicians who care for older women. 📌

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**DR. ASHLEY WINTER** (@AshleyGWinter) and **DR. RACHEL RUBIN** (@drachelrubin), two renowned urologists who focus on sexual medicine, joined forces with emergency physician **DR. HOWIE MELL** (@drhowiemell) to compose this article after a productive conversation sparked on Twitter about a better approach to patients presenting with recurrent urinary tract infections.



# The Building Blocks of Certification Awareness

A conversation with ABEM President Marianne Gausche-Hill on the merits of board certification for emergency physicians

by CEDRIC DARK, MD, MPH, FACEP

Recently, I sat down with Marianne Gausche-Hill, MD, president of the American Board of Emergency Medicine (ABEM), to discuss the new MyEMCert examination, the board certification process, and some critiques posed by emergency physicians in our New Spin article in January.

**Dr. Cedric Dark: Can you tell us about your role as ABEM president and your “day job” as an emergency physician?**

**Dr. Marianne Gausche-Hill:** I’m currently a practicing emergency physician at Harbor-UCLA Medical Center in Torrance, California. I work in both the pediatric emergency department and the adult emergency department. My full-time job is as the medical director for the Los Angeles County Emergency Medical Services Agency here in Los Angeles County. I oversee all the prehospital care here in LA County—about 88 cities.

**CD: MyEMCert is an “assessment for learning rather than an assessment of learning,” you say in our December article. For those who aren’t academics and specifically trained in medical education, can you explain what you mean by this?**

**MGH:** The qualifying exam, which is part of our initial certification examinations, is an assessment of learning. An assessment for learning really integrates all your learning opportunities. In addition, through the process of taking MyEMCert, it’s a more formative approach because it provides immediate feedback. I think that’s helpful in terms of creating an opportunity for those who are participating in the continuing certification process to continue learning.

**CD: Our December article refers to changes being considered for initial certification but that it will likely remain a rigorous exam process. We also ran an opinion article from ACEP members arguing that now is the time to do away with the oral boards component. Is that an active consideration?**

**MGH:** We aren’t specifically looking at retiring it, but with that said, everything is on the table as we really look at our initial certification process and try to decide what are the best methods for us to evaluate initial certification.

**CD: Why should the public want their doctors to be board-certified?**

**MGH:** Essentially, being board-certified is considered the highest standard. I think one of the things we need to do better is build additional awareness. We do know that the



Dr. Dark and Dr. Gausche-Hill smile for the camera during their video interview for ACEP Now.

public cares about certification. They don’t necessarily ask us directly, but through the ABMS Certification Matters website, they’re checking hundreds and hundreds of times this year if their emergency physician is board-certified. We know that [patients] care, and I think we could frankly do a much better job at educating the public around that.

**CD: The certification time period is decreasing from 10 years to five years. Why was this change made?**

**MGH:** I think some time ago, as an organization, ABEM recognized that the [American Board of Medical Specialties] standards for continuing certification would likely require that the period be shortened. And in fact, as we rolled out MyEMCert, we heard from and surveyed practicing emergency physicians. And within the first two weeks, 13,000 physicians had responded, and what we heard from them is they really don’t want to take a high-stakes exam every 10 years. What they wanted is something like MyEMCert, which is an assessment for learning. We had the opportunity with the transition from 10 to five to allow those in the 2021 cohort to certify by [the MyEMCert] process.

**CD: A lot of what we learn now is from online resources, whether peer-reviewed material like UpToDate, crowd-sourced like WikiEM, or FOAM resources such as SGEM or EM Cases, which you can read in ACEP Now. How has that transition informed the changes ABEM is undertaking?**

**MGH:** With our new advances panel, we have a blog to really leverage the best of what’s

happening right now in terms of transmission of information and synthesizing that information. Our thought moving forward is how can we leverage both traditional and non-traditional resources to allow and to provide our emergency physicians the opportunity to look things up as they go through this process. The bottom line is we give every physician every opportunity to use those resources that they have available to answer questions.

**CD: We always tell our residents, “This is how you answer this question on the boards, but this is how we practice in real life.” How will ABEM make its certification process come closer to true, daily EM practice?**

**MGH:** We don’t have item writers unless they’re working in an emergency department. You don’t want theoretical questions by individuals who are not practicing every day. In addition, every question on our exams requires support in either standard medical text, peer-review journals, etc. And so the bottom line is, if you’re not seeing patients, you’re not writing ABEM tests or module content.

The other thing we do is standard setting panels, where we have individuals who are practicing emergency physicians from all over the country come together and help us determine the pass rate of these and they also vet all the questions on the exam, which is really a rigorous process. And then finally when you take these, any exam that we have, you have the opportunity as someone who’s actually in the middle of taking an exam or afterward to comment on a question. We read all those comments.

**CD: What about zebras? Dr. Heather Studley, a physician we interviewed about MyEMCert, liked the new test because it focused less on extremely rare cases—for her written boards, she had five questions on sarin nerve gas. Regarding MyEMCert she says, “If you’re trying to test me on the spectrum of what’s relevant in my practice, it’s definitely not sarin nerve gas.” How do you balance evaluating emergency physicians for the knowledge of common things versus being prepared for the uncommon occurrences?**

**MGH:** Overall, a common message that we’re hearing from physicians is that they prefer the myEMCert format because the content is more relevant. And the goal here is to create scenarios that you’re going to see. We really are moving myEMCert to be really timely, relevant, up-to-date.

**CD: How is ABEM tackling the issue of emergency physicians who speak out against proven measures to reduce the impact of the COVID pandemic such as masks and vaccines and advocate for unproven methods such as hydroxychloroquine and ivermectin?**

**MGH:** In April 2021, we released a statement on professionalism, and then in August, we released a statement about misinformation. We have a process in place that allows anyone to report an emergency physician who they think is spreading disinformation about COVID, its treatment, the vaccine, etc. It’s really important to understand that we have a thoughtful process for evaluating these cases. I’ve talked to a number of emergency physicians, and they had great concerns. We talked



about what the process was, and they felt a lot more comfortable at the end. And I think just to be clear, all emergency physicians with whom there's a concern about professionalism have the opportunity to provide ABEM with information about what happened and will be given due process in appeal options.

**CD: An opinion article we recently ran says this: "The purpose of initial certification is to objectively and independently confirm that physicians who complete an emergency medicine residency demonstrate core knowledge, skills, and abilities needed to practice emergency medicine at the highest standards. The problem is that ABEM has no evidence to show that**

**it can make this determination." How do you respond to this accusation?**

**MGH:** I think there's several things. The examinations are assessed differently than other things in medicine, with randomized control trials (RCT) considered the gold standard in terms of level of evidence. Typically, we can show correlation, but it's a lot more challenging to show causation. We published a number of articles about certification. One is risk of state medical board disciplinary action. We know that if you were once certified, if you were initially certified as an emergency physician and you let that lapse, you have two and a half to three times the risk of state medical board disciplinary action.

The other thing that we know is that emer-

gency physicians dealing with patients with myocardial infarction not only can identify it and treat appropriately, but it decreases the risk of significant adverse events as well as cost of care if you're board-certified. And then finally, one of the things we really believe in, noncomplacency in continuing to strive forward. Every year we try to make things better.

ABEM submitted its certification program to an external review by the National Commission for Certifying Agencies and is the first medical specialty board to receive this NCCA accreditation. It's the highest standard for testing and assessment organizations, and we're very proud of it.

*This interview was edited for brevity and clarity.* ➔



**Watch this interview on ACEP's YouTube Channel.**



## PEERCert+ Adds Advanced Emergency Ultrasound Component

**In** January 2020, ACEP introduced the newest member of the PEER test prep family: PEERCert+ Advanced Ultrasound. This module was specifically designed using PEER's premier prep standards to meet your Focused Practice Designation needs.

This exam prep tool is full of helpful visuals, with more than 200 ultrasound images, infographics and videos. It includes more than 100 content questions that match EM ultrasonography core curriculum, plus a 50-question simulated practice test. Like all PEER modules, you can earn CME as you go.

Advanced Ultrasound is just the latest addition to the growing PEERCert+ family of modules. The other prep tools, designed to help prepare for MyEMCert, include Abdominopelvic, Abnormal Vital Signs and Shock, Head and Neck, Neurology, Social and Behavioral Health, Thoracorespiratory, and Trauma and Bleeding. Another new module, Nontraumatic Musculoskeletal, is set to launch in late February 2022.

View the full PEER umbrella at [acep.org/peer](http://acep.org/peer) or learn more by visiting our website at [acep.org/peercertplus-advancedultrasound](http://acep.org/peercertplus-advancedultrasound). ➔

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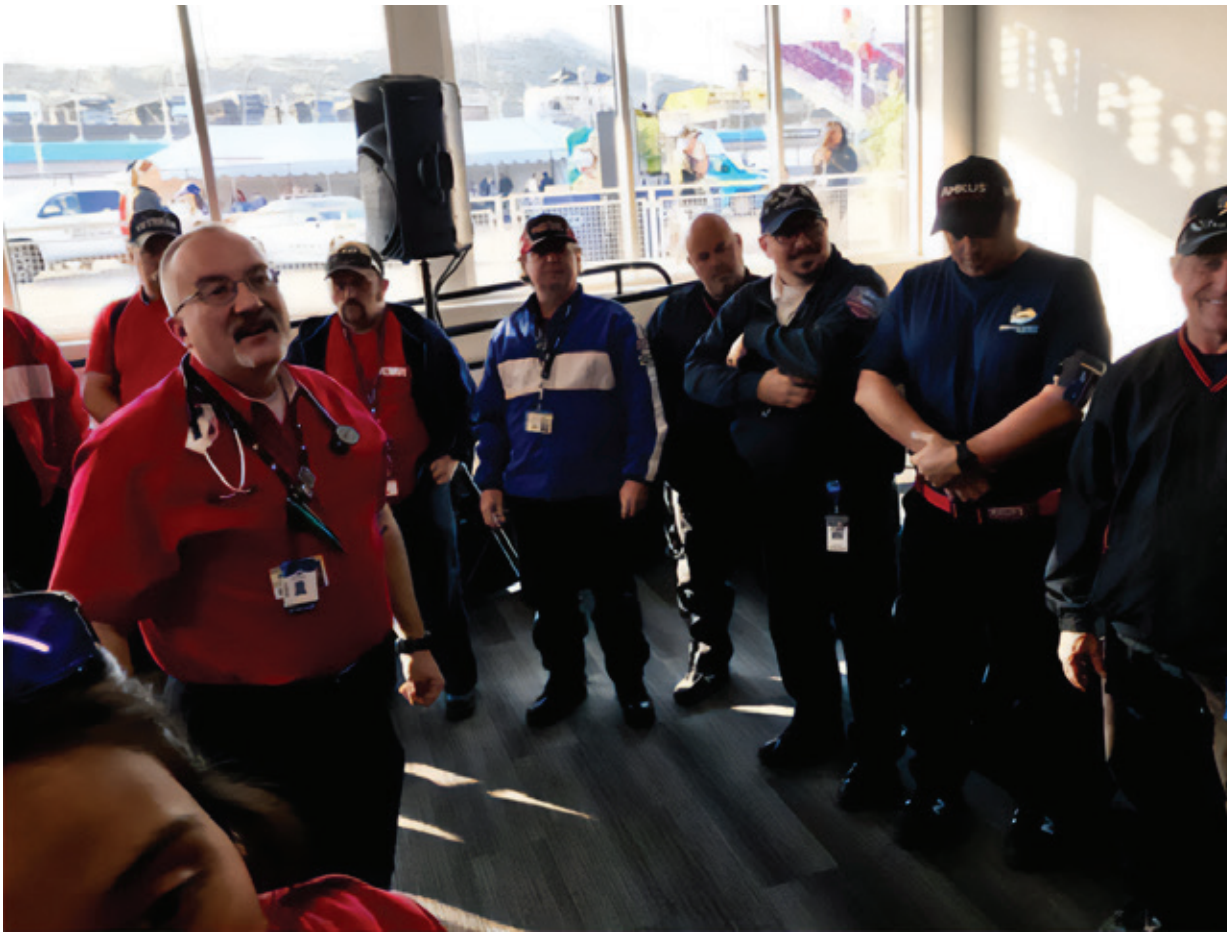
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PHOTOS: PAUL KOZAK

Dr. Kozak (far left) during a race morning briefing for all the on-track rescue, fire, and safety personnel.



Dr. Kozak (far left) assisting with track extrication training with the on-track crews.

there that Dr. Kozak decided to do an elective at the Indianapolis Motor Speedway—beginning a passion spanning two decades. “The first lap of the Indy 500, with all 33 cars going around the track at full volume, never stopped raising the hairs on the back of my neck,” he says.

Today, Dr. Kozak is medical director of the Phoenix Raceway, a position he’s held since 1994 while also working as a consultant with the Mayo Clinic in Scottsdale, Arizona. He recently spoke with *ACEP Now* about on-track resuscitations, fire suits, if the sport can ever be made safe, and why it’s important to diversify your career.

**ACEP Now: Describe your career path as a physician in motor racing.**

**Dr. Kozak:** In my last year of residency, I had the option of doing a one-month elective at a racetrack in Indianapolis. I did driver physicals, used the Jaws of Life, and learned how to recognize a methanol fire versus an oil fire. My project was developing a mini emergency action plan for the track. Eventually, I graduated and moved to Arizona. The Indianapolis Racing League would race in Phoenix, and a physician I knew, Hank Bock, who was the medical director for the Indianapolis Motor Speedway and IndyCar Series, arranged for me to be a physician at the Phoenix Raceway. In 2007, I became the medical director.

I set up a mini elective at the track so if any residents were doing their EMS month during a race, I would show them what racing medicine is all about. Two of my residents have been working with me for 22 years.

Because I was involved in that track for so long, after Dale Earnhardt Sr. died in [a crash at the Daytona 500 in] 2001, NASCAR came up with the idea to have a nurse/physician/medical liaison program. They already knew me, so they asked if I would get involved with the project. I wrote the job description for liaisons and worked as a consultant for NASCAR for three years as one of the initial four doctors who were part of the program. We would go to different racetracks and analyze fire safety procedures and make recommendations, like who should be the director or what kind of services they needed.

**ACEP Now: What do you love about racing medicine?**

**Dr. Kozak:** I can’t think of someone better-suited to do this work than an emergency physician. You get to work with EMS, and if someone has a heart attack or impending labor, you’re right there. If it gets windy, the fans can get debris in their eyes or have an asthma attack. During part of the year, bee stings are common. The crew go from track to track and oftentimes can’t get back to primary care. You do blood pressure checks. If they forget their hypertension medicine or blood sugar is high or low, you check those things. I also do trauma evaluation for drivers who crash. If a driver eats a bad Dorito, for example, and is throwing up, I’ll prescribe a nausea medication to help the driver perform.

**ACEP Now: How do you balance working with NASCAR and the Mayo Clinic?**

**Dr. Kozak:** I’m at Mayo Clinic full time. I probably attend races six to seven weekends each year, plus trainings in Phoenix. I also attend the NASCAR safety summit, a meeting where we go over new changes to car and fire safety and medical for all teams across the United States.

**ACEP Now: What’s the craziest thing you’ve ever seen, and what did you learn from it?**

**Dr. Kozak:** The very first fatality I had was in 1997, and it was a support race for NASCAR. The driver got out of control, and his car swung around and got hit on the driver’s side, and the cement wall creased his helmet and destroyed his car. We had to do a resuscitation on the track.

That one incident was captured on video, and we learned a ton of information from it. It changed our practice on the track. For one thing, all the safety personnel are now in fire suits. At the time, I was in jeans, a polo shirt, and hat. On the long





Rally cars add a Z axis impact with jumps.

lens, you can see me in a white hat, bouncing up and down as I was administering CPR. I intubated the driver on the track and got a heartbeat. The driver died three hours later because he had crushed his head.

At that point in time, we understood our best mode of attack is to put an airway in and get off the track as fast as possible. Some would say it's heartless to keep racing when there's been a serious injury. The problem is if you stop a race after a fatality or issue on the track, everyone in the stands wants to go home and will clog access points for moving injured people or extra resources.

We now have code on the radio to say when there's been a serious injury as a way of letting everybody know. This activates the administration of the track to begin interactions to make announcements on the driver's health and get needed assistance with safety and security and making sure we have a clear shot of the freeway so we can get to the nearest hospital.

#### **ACEP Now: How have attitudes to race car safety changed in the last few decades?**

**Dr. Kozak:** Initially, the attitude of racing was, "If it doesn't make my car go faster, I'm not interested in it." That changed in the 1950s when there was a terrible crash at the 24-hour race at Le Mans. A car became airborne and fell into the stands and killed people. You have multiple drivers in a 24-hour race. One of the co-drivers was an engineer by the name of Fitch. He got interested in safety and created the Fitch barrel, which are big yellow canisters with a black top and sand at the bottom. If they're hit, they absorb the impact.

The thing that woke NASCAR up was when Dale Earnhardt Sr. died in Daytona. They started requiring fireproof suits. They put a center bar in the cars in case the roof caved in. In the old days, the seats were flimsy—now they have padding to contain the head from bouncing around.

Probably the two biggest safety factors that have

come out are the head and neck restraint known as the HANS device and the SAFER barrier, which is a steel-foam fatality barrier. So when a car hits a barrier, it absorbs 50 percent of the kinetic energy.

I did an analysis because we have records of all the drivers who crashed at the Phoenix Raceway. We had nine records before the HANS device and SAFER barriers and 10 after that. We did an evaluation and found that people who had a crash before these protections had a 22 percent chance of being transported to a hospital, and after they were introduced, this went down to less than 8 percent.

#### **ACEP Now: Is it possible to make this sport safe?**

**Dr. Kozak:** No. If it were safe, nobody would watch it. We've done a lot with first strikes [or injuries]. Another thing we're working on is the second strike, when a driver loses control of the car and one of the other drivers coming around the corner at 179 mph hits you. One of the worst second strike injuries that I've ever heard about was in 2001 with Alex Zanardi. As he was slowly recovering from a spin, another car came around and took off the front of the car and his legs. The physician I knew who was working there as the medical director clamped his arteries, and he was able to survive.

#### **ACEP Now: How has racing given you a new perspective on emergency medicine?**

**Dr. Kozak:** I do enjoy the competition and getting to know the drivers. It is a good break from the day-to-day grind of treating COVID and abdominal pain. I've been working in an emergency department since 1981. I think in order to prevent professional burnout, it's important for emergency physicians to pursue a wellness course and have something else in life they can point to.

*This interview has been edited for length and clarity.* ⊕



Jeff Gordon in #24 heading out to the track.



Bad day at the office for this driver. But, as you can see, he emerged uninjured ... although the car did not! Safety innovations at work.





# ACEP4U: Litigation

## SURPRISE! ACEP SUES THE FEDERAL GOVERNMENT OVER IMPLEMENTATION OF NO SURPRISES ACT

by JORDAN GRANTHAM

**We** thought the end of 2020 brought an end our multi year battle over out-of-network (OON) billing through Congressional passage of the No Surprises Act. ACEP considered it a solid win that this comprehensive bill to ban balance billing for OON care was coupled with a fair independent dispute resolution (IDR) process to ensure clinicians and facilities are paid appropriately for OON services delivered.

The language of the No Surprises Act laid a clear path for the regulatory phase of the implementation process, giving federal agencies a little over a year to act before the requirements took effect in 2022. Even before federal agencies issued any regulations, ACEP and other partners submitted letters and met with administration officials to discuss key policy and operational aspects of the law and provide recommendations on how to appropriately implement them. In mid-2021, we saw some of our efforts come to fruition.

On July 1, federal agencies released the first interim final rule (IFR) implementing the law, which included strong language endorsed by ACEP that enforces the prudent layperson standard. The rule states that denying emergency coverage based on a retroactive review of diagnosis codes is inconsistent with the emergency services requirements of the No Surprises Act and the Affordable Care Act. This win was the result of our past federal and state level advocacy efforts on the prudent layperson standard—as part of the rationale for including the policy, the rule specifically refers to ACEP’s lawsuit against Blue Cross & Blue Shield of Georgia.

Unfortunately, federal agencies chose to ignore most of the other major policy recommendations that ACEP and the broader physician community made. When the second IFR for the No Surprises Act was released at the end of September 2021, ACEP and many other groups involved were shocked to see that it went against congressional intent by undoing key components of the No Surprises Act’s IDR provisions.

ACEP and many others worked hard *with* Congress to ensure a final bill that protects patients from surprise bills while providing a robust IDR process. The purpose of IDR is to facilitate a fair interaction between parties once patients are out of the middle of billing disputes. However, the second IFR did the

opposite: by requiring arbiters to greatly prioritize the artificially-low Qualified Payment Amount (essentially the median in-network rate) set by insurance companies it undermines the entire IDR process in the bill. This flawed regulation is expected to encourage insurance companies to narrow their networks even further, making it harder for patients to get emergency care, particularly in small or rural communities. We are already seeing this playing out since the rule’s release, with some health plans unilaterally canceling long-standing contracts with emergency physician groups and pushing them out of network.

ACEP immediately launched an all-out blitz to push back against the flawed process put forth in the regulation. Find a full timeline of ACEP’s OON advocacy progress, plus links to the supporting documentation, at [acep.org/surprise-billing](https://acep.org/surprise-billing), but here’s a quick breakdown of the latest push:

- **Oct. 1:** ACEP issues a statement strongly and publicly voicing our disappointment that the regulations are almost entirely inconsistent with Congressional intent to create a fair and unbiased process to resolve billing disputes.
- **Oct. 14:** ACEP hosts Surprise Billing Town Hall to update members on the second IFR and discuss advocacy strategy.
- **Oct. 15:** ACEP and additional medical organizations meet with key federal leaders to discuss concerns about the second IFR.
- **Nov. 5:** Reps. Tom Suozzi (D-NY), Brad Wenstrup, DPM (R-OH), Raul Ruiz, MD (D-CA), and Larry Bucshon, MD (R-IN) send a letter to HHS urging them to amend the second interim final rule. ACEP members sent 5,297 messages to Congress asking them to support the letter, which was cosigned by 152 bipartisan members.
- **Nov. 11:** ACEP and EDPMA submit an initial response to the second interim final rule implementing the No Surprises Act, followed by a comprehensive response on Dec. 6.
- **Dec. 9:** ACEP publicly supports the goals of the lawsuit filed by the American Medical Association and the American Hospital Association against the Departments of Labor, Treasury, and Health and Human Services.
- **Dec. 22:** ACEP joined with the American College of Radiology and the American Society of Anesthesiologists to file a

lawsuit against the government charging that the IFR goes against the language of the No Surprises Act and will ultimately harm patients and access to care.

“It is deeply troubling that the administration would upend the deliberately balanced mechanism to resolve billing disputes established by Congress as part of the No Surprises Act. We are left with a law that will tilt market forces in favor of insurers and they are already exploiting their newfound incentive to push emergency physicians out of network,” ACEP President Gillian Schmitz, MD, FACEP, said. “Legal remedy is necessary so that the IFR does not undermine the entire dispute resolution process.”

This flawed IFR was issued without the customary comment period given to most federal regulations that allows organizations like ACEP to weigh in. Our lawsuit asks that the federal government be required to rescind the second IFR. This will compel the government to go start again, this time providing an opportunity for ACEP and other medical organizations to provide important feedback on the regulation.

We are waiting for the federal government to file its response to the lawsuit and are closely watching the progress of the other, similar legal actions against this IFR that have been filed by physician groups and other providers in other states because those outcomes will be influential on other pending cases. We’ll keep you posted as the lawsuit moves forward.

Meanwhile, keep in mind that the ban on balance billing and the other patient protections from the No Surprises Act are now in place—and won’t be impacted by our lawsuit. It is important for you to comply with these requirements, and ACEP has created a webpage to help you better understand them. Learn more on page 21.

Finally, surprise billing advocacy happens also on the state level. As of December 20, 2021, 19 states had introduced 37 bills related to out-of-network billing. ACEP’s state legislative staff are working directly with ACEP chapters to support state-level advocacy. Contact your local chapter to see how you can make an impact at the state level, and join the 911 Grassroots Network ([acep.org/911grassrootsnetwork](https://acep.org/911grassrootsnetwork)) to stay apprised of ACEP’s federal advocacy efforts. 📍





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# Fewer Scans, More Blood Thinners in Pulmonary Embolism

It's not too early to start thinking about post-COVID procedures

by RYAN RADECKI, MD, MS

There will someday be a time when COVID is not the most likely diagnosis, and all our old decision instruments can be dusted off to risk-stratify patients. A trial that enrolled patients before COVID will once again be generalizable to patients after COVID. One day, emergency physicians will return to pre-COVID thinking; one of those pesky differentials will be tracking down acute pulmonary embolism (PE), not confounded by viral syndromes and thrombosis inflicted by the deranged coagulopathies of SARS-CoV-2 infection.

## Current Procedural Considerations and Inefficiencies

Many of us have refined our use of the D-dimer assay over the past few years. Rather than a simple, immutable, dichotomous divining rod, the D-dimer has crept toward appropriate use as a continuous variable. The most prominent of these efforts have been the YEARS algorithm and PEGeD demonstrations.<sup>1,2</sup> Each of these studies demonstrated, in their enrolled populations, the value and safety of tweaking the D-dimer threshold. The YEARS algorithm, mixing objective findings and gestalt, safely allows the D-dimer threshold to be doubled. In a similar fashion, the PEGeD study incorporates the use of Wells criteria for pulmonary embolism as its vehicle for doubling the D-dimer threshold.

In parallel, it has been recognized the normal circulating D-dimer concentration typically increases with age. Considering this, the safe adoption of an "age-adjusted" D-dimer has been demonstrated.<sup>3</sup> For typical assays in which the dichotomous D-dimer threshold is 500 ng/mL, this is practically applied by changing the cutoff for patients older than 50 years to Age in Years  $\times$  10.

However, it does not directly follow whether combining these two strategies remains safe. Parsing out patients deemed to be at low risk may have the effect of enriching the risk level of the remaining population such that the age-adjusted threshold no longer provides adequate negative predictive value. Then the further question remains whether the combination of these strategies reduces advanced imaging to an extent sufficient to justify a potential increased risk for missed PE.

These questions are directly addressed in a trial conducted primarily before the onset of the COVID-19 pandemic.<sup>4</sup> In this prospective, multicenter trial, the authors randomized

hospitals to their usual strategy, based on age-adjusted D-dimer, or to cross over to an intervention diagnostic strategy combining age adjustment with the YEARS algorithm. To be included in the trial, patients with suspected PE were those judged not to be at high risk (greater than 50 percent) but likewise unable to be excluded by the Pulmonary Embolism Rule-Out Criteria (PERC).

The answer is solely good news. In patients randomized to the intervention diagnostic strategy, only three (0.4 percent) were found to have a venous thromboembolism (VTE) of any kind during three-month follow-up. Conversely, the control strategy, with fewer patients excluded, resulted in six (0.9 percent) patients diagnosed with VTE in follow-up. No other signals of potential missed harms were observed, such as subsequent hospital admission or mortality.

Clear benefits regarding a reduction in chest imaging were observed. The control strategy, in these low- to intermediate-risk patients, resulted in 40 percent of patients being imaged for PE based on D-dimer results. The intervention strategy reduced this rate of imaging by 25 percent, down to 30.4 percent. While the trial has minor limitations as a result of its pragmatic nature and study population, it provides reasonable supporting evidence that combining the YEARS algorithm criteria with an age-adjusted threshold is safe.

News generating less enthusiasm comes along with regard to the diagnosis of subsegmental pulmonary embolism (SSPE). Generally speaking, I have been rather skeptical of new diagnoses of SSPE. With improving diagnostic resolution on modern advanced imaging, it has been suspected many SSPE are either false-positives or otherwise not clinically important. Rather, there is an idea the normal physiology of the lungs includes a small

burden of thromboembolism, serving to filter clots and protect the arterial circulation. Recent CHEST guidelines have specifically addressed the uncertainty surrounding SSPE, allowing for a reasonable period of outpatient observation and investigation rather than initiation of anticoagulation.<sup>5</sup>

This prospective cohort study, however, indicates we ought to be concerned even for these tiny, equivocal PEs.<sup>6</sup> In this multicenter study, an algorithm meant specifically to avoid anticoagulation was applied to new diagnoses of SSPE. All patients included in this study with a new diagnosis of SSPE underwent bilateral lower-extremity ultrasound at the time of diagnosis as well as one week later. If both these tests remained normal, patients were managed without anticoagulation and followed for recurrent thromboembolism within 90 days.

Unfortunately, the study was terminated early for safety by exceeding a prespecified stopping rule. After analysis of the first 292 patients out of a planned 300, the excess diagnoses of recurrent VTE triggered the end to recruitment. Overall, the cumulative incidence of recurrent VTE within 90 days was 3.1 percent, substantially greater than expected in a matched cohort. In those with single SSPE, incidence was 2.1 percent; in those with multiple SSPE, the incidence was 5.7 percent. Fortunately, no patients suffered a fatal PE during the study follow-up period.

Differences were also observed between younger and older patients. Patients younger than 65 demonstrated a recurrence rate of 1.8 percent compared to a recurrence of 5.5 percent in the older cohort. While the overall study shows a preponderance of harm to managing patients without anticoagulation, a shared decision-making conversation may still be valid in patients younger than 65.

The other interesting tidbit from this study includes those who were diagnosed with SSPE but separated from the main analysis because their lower-extremity ultrasonography demonstrated deep venous thrombosis. There were 28 patients diagnosed with lower-extremity VTE on initial or repeated ultrasonography, indicating the importance of this testing component for evaluation of those patients considered for initial management without anticoagulation.

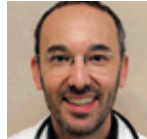
## Information Is Key

While these findings are stylistically framed as *good* or *bad* news, most important, these studies add clarity to our practice. While many have likely already been combining pretest adjusted thresholds with age-adjusted thresholds to aid in decisions regarding imaging in PE, these data solidify it as a reasonable practice. Contrariwise, we have further information regarding the risks of subsequent VTE after a diagnosis of SSPE with which to weigh against the risk of bleeding from anticoagulation. Combined, these data likely support fewer instances of advanced imaging but more initiation of anticoagulation for patients managed as outpatients with PE.  $\oplus$

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# The Many Faces of Spontaneous Cervical Artery Dissection

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

## The Problem

A cervical artery dissection (CAD) occurs when a tear in the intima of a carotid or vertebral artery initiates a dissection along the length of the artery. An intramural hematoma with subintimal dissections may develop, resulting in stenosis of the artery and potentially complete occlusion and/or showering of emboli distally. Symptoms result from both local vessel distension and clot as well as downstream hypoperfusion. CAD is a relatively common cause of ischemic stroke in young people and has recently become more prevalent, largely owing to improved access to CT angiography and advances in neuroimaging.<sup>1</sup> Despite these trends, CAD is likely underdiagnosed.<sup>2</sup>



Why do we often miss CAD on the initial visit to the emergency department? There are several reasons. First, some patients present with pain in the head and/or neck as their only symptoms.<sup>3</sup> Second, ischemic stroke symptoms, which occur in approximately two-thirds of patients, may be delayed for as long as two months.<sup>4</sup> Third, if neurological findings are present, they may be transient or fluctuating and do not necessarily fit a typical large-vessel occlusion pattern. The median time to diagnosis from onset of symptoms is seven days, so it is commonly missed on initial presentation to the emergency department.<sup>3</sup>

This article aims to enhance your understanding of CAD so that you are more likely to pick it up without excessive use of CT angiography.

## Arriving at a Pretest Probability

Arriving at a pretest probability for CAD high enough to trigger obtaining advanced neuroimaging should involve an assessment of risk factors. These include connective tissue disorders such as Marfan and Ehlers-Danlos syndromes, recent infection, history of migraine headaches, oral contraceptive pill use, smoking, and the peripartum period.<sup>5,6</sup> Importantly, ruling in a diagnosis of migraine headache does not necessarily rule out a diagnosis of CAD. While recent chiropractic manipulation of the neck has been shown to be associated with CAD, a causal role has never been proven.<sup>7</sup> While observational data suggest that 80 percent of CADs are preceded by trauma, it is difficult to implicate minor trauma such as shaving the neck or extending the neck to replace a light bulb in a ceiling as the cause.<sup>7</sup> Regardless, it is reasonable to ask patients who present with unusual head and/or neck pain if they have incurred any recent minor trauma to the head or neck.

## Manifestations: Local and Downstream

The clinical manifestations of CAD can be divided into *local phenomena* and *downstream phenomena*. The hallmark of CAD is neck pain and/or headache, which occurs in 74 percent of cases, is often severe, and may be migrating in nature.<sup>8</sup> This corresponds to the tear in the intima and dissection along the artery. The onset of pain may be “thunderclap” in nature, hence mimicking a subarachnoid hemorrhage. It is therefore important to consider CAD as the cause of an abrupt-onset headache after a negative workup for subarachnoid hemorrhage, as plain CT and lumbar puncture are likely to be normal in patients with CAD without obvious central nervous system (CNS) ischemic symptoms. The pain may also come on more gradually, be intermittent, or fluctuate.

Neurological symptoms, if they occur, most often occur within the first 24 hours.<sup>1</sup> Local neurological symptoms caused



The right vertebral artery is occluded due to a dissection near its origin near the subclavian artery.

by local stretching, distention, and clotting of the artery may include a partial Horner's syndrome.<sup>9</sup> As such, it is important to carefully examine patients in whom you suspect the diagnosis for ptosis and miosis. Other local manifestations include cranial neuropathies and pulsatile tinnitus, and if the dissection extends into the intracranial vault, subarachnoid hemorrhage may occur.<sup>10</sup>

Downstream phenomena depend on whether the dissection is in the vertebral or carotid artery. It is important to realize that

while carotid dissections generally cause contralateral neurological findings, vertebral dissections may cause contralateral or bilateral findings. While classic middle cerebral, anterior cerebral, or posterior cerebral artery territory stroke syndromes may occur, a variety of seemingly nonanatomical neurological findings may manifest because of showering of emboli distally. Vertebral artery dissection may rarely present with isolated vertigo, although a careful examination for long-tract signs and the classic “D's” of posterior circulation stroke (diplopia, dys-



arthria, dysphagia, dystaxia) usually reveals an abnormality that should trigger a search for CAD in the young patient with vertigo.<sup>11,12</sup>

CAD may present with a variety of local and downstream phenomena that may be delayed from the onset of pain, may be fluctuating or transient, and may seemingly not fit a classic anatomical vascular distribution, making the diagnosis especially difficult.

### When to Use CT Angiogram of the Head and Neck

Based on risk factor assessment, detailed questioning of the headache or neck pain characteristics, and any neurological findings discovered on examination, if your pretest probability is more than one to two percent for the diagnosis of CAD, it would not be unreasonable to pursue the diagnosis by first ruling out an intracranial bleed with noncontrast CT and then confirming the diagnosis on CT angiogram of the head and neck. MRI with contrast is the gold standard for diagnosis, but it is seldom accessible in a timely manner for most emergency physicians.<sup>13</sup>

### Management of CAD

There is no high-level evidence for clinical benefit for any treatment strategies for cervical artery dissections.

Emergency department management of CAD starts with attention to the ABCs and other considerations for stroke patients including blood pressure management, glucose control, etc. I find it useful to divide patients into three groups for management decisions:

Group 1: Those with a suspected diagnosis

but who have not yet had advanced neuroimaging to confirm the diagnosis

Group 2: Those with imaging-confirmed extracranial dissections

Group 3: Those with imaging-confirmed intracranial dissections

For those patients who have not had their diagnosis of spontaneous CAD confirmed by CT angiogram of the head and neck, some recommend treating on speculation with acetylsalicylic acid (ASA) [personal correspondence].<sup>14</sup> However, there is no evidence to suggest that this practice significantly improves outcomes, and if the patient is later found to have an intracranial dissection with subarachnoid hemorrhage, ASA may lead to further bleeding.

While CAD is commonly treated with anticoagulants such as low-molecular-weight heparin, two sizable trials, the CADISS trial and the TREAT-CAD trial, comparing antiplatelet agents and anticoagulants have failed to show a clinically meaningful significant difference in outcomes of recurrent stroke or death.<sup>15,16</sup> Other prospective observational studies have suggested that those treated with anticoagulants had fewer one-year recurrent events than patients treated with antiplatelet agents; however, there was no statistically significant difference.<sup>17</sup>

Both endovascular and systemic thrombolysis have been studied; however, there are no randomized controlled trials to support their use, and observational studies show no clinical benefit, with an increase in intracranial hemorrhage.<sup>18</sup> Endovascular stenting has also failed to show significant clinical bene-

fit.<sup>19</sup> Given the clinical equipoise in the literature with all treatments for CAD, consultation with your local neurologist upon diagnostic confirmation will help to guide management.

Next time you are faced with a young patient with an unusual new-onset headache and/or neck pain, consider the diagnosis of CAD. If your pretest probability for the diagnosis based on risk factor assessment and any new, transient, fluctuating or permanent local neurological or CNS manifestations is more than 1 to 2 percent, consider workup with non-contrast CT of the head to rule out an intracranial bleed followed by a CT angiogram of the head and neck. If the diagnosis of CAD is confirmed, involve your neurology colleagues for management decisions, as the literature is not clear as to the most effective treatment. CAD is sometimes a very difficult diagnosis to make on an initial visit to the emergency department; by increasing your awareness and clinical suspicion for this rare disease, you will be less likely to miss this diagnosis. 📌

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V I R T U A L



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# Benefits of Using the Pericapsular Nerve Group (PENG) Block

Exploring how the PENG block may provide faster pain relief for patients with hip fractures

by NATHANIEL LEU, MD, MS; JOSH LUFTIG, PA; DANIEL MANTUANI, MD, MPH; ARUN NAGDEV, MD; AND MAXIMILIANO SOBRERO, MD

**H**ip fractures are one of the most frequently encountered complaints in the emergency department, with more than 300,000 patients hospitalized annually in the United States.<sup>1</sup> Hip fractures significantly increase the short- and long-term morbidity and mortality of older patients.<sup>2</sup> Especially in older patients, the pain from this injury is often undertreated, leading to further morbidity, such as increased delirium and delays in recovery.<sup>3</sup> Current evidence strongly suggests that multimodal analgesia can decrease morbidity and mortality for patients with hip fractures.<sup>4,5</sup>

It has become common practice for emergency physicians to manage the pain from hip fractures with a combination of systemic analgesics and femoral nerve blocks (FNBs) or fascia iliaca blocks (FIBs). These blocks classically target the femoral nerve and have shown moderate analgesia. However, these blocks may provide incomplete pain relief since the articular branches that supply the hip joint originate more proximal to where the FNB/FIBs are performed.

## A New Technique for Hip Injuries

The pericapsular nerve group (PENG) block may be a superior regional block for such injuries in the emergency department. This block was originally described in 2018 for total hip arthroplasties, later used for degenerative hip disease, and recently expanded for traumatic hip and pelvic fractures.<sup>6</sup> Also, in the emergency department, the PENG block may be the ideal block for pain control for rami fractures. Anatomical research confirms that the PENG block reaches these additional articular branches from the femoral and obturator nerves, which innervate the hip by depositing local anesthetic within the myofascial plane between the psoas muscle and superior pubic ramus.<sup>7</sup>

The PENG block may be the ideal regional block for such hip injuries in the emergency department as it can be performed rapidly, provides excellent pain relief, and spares motor function deficits often seen with femoral nerve blocks.

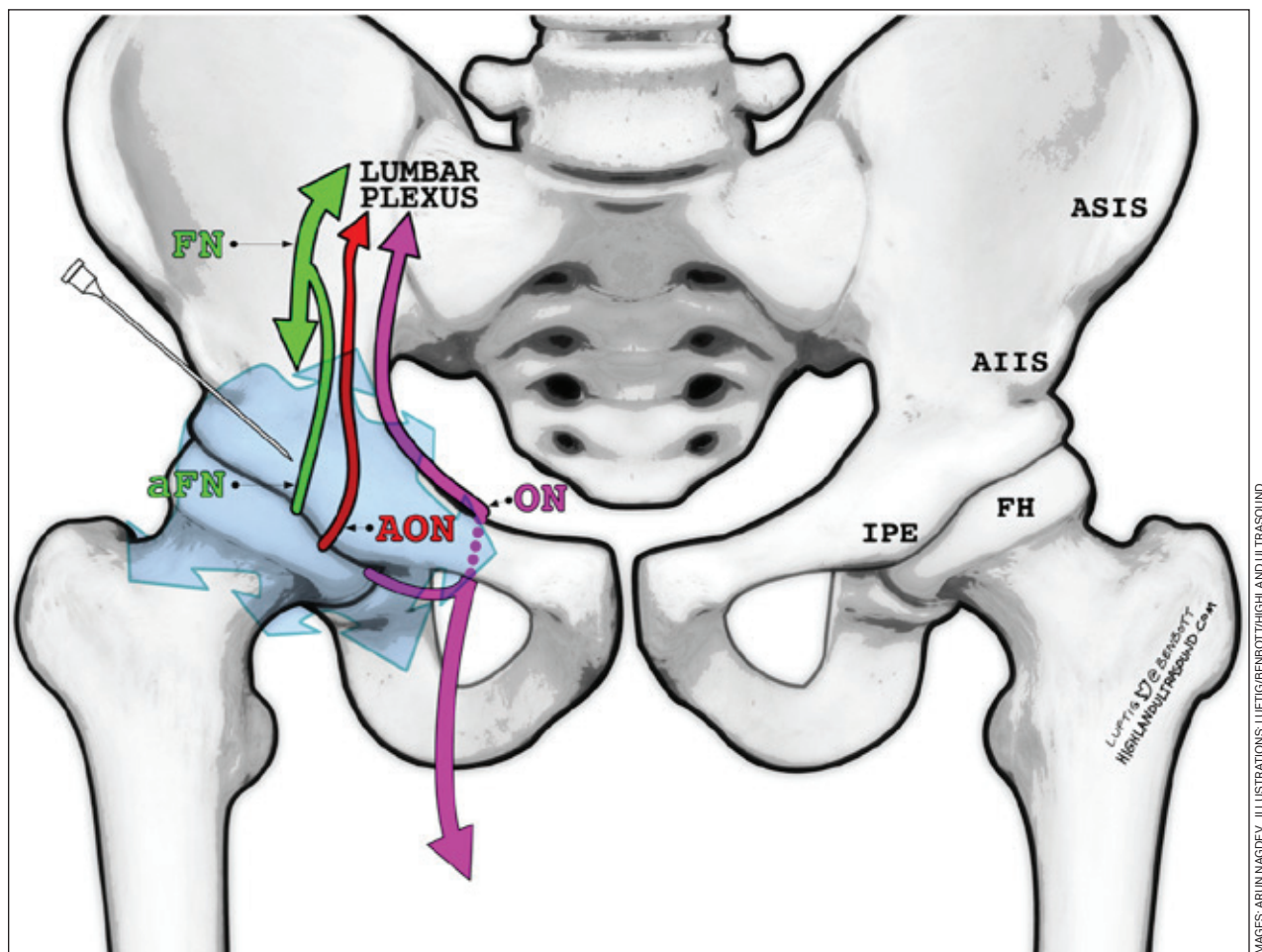
## Anatomy and Innervation

The PENG block targets the terminal sensory branches of the femoral, obturator, and accessory obturator nerves, which are primarily responsible for hip and pelvis innervation. The location of these structures relative to the pelvis is depicted in Figure 1. These nerves branch off proximally from the lumbar plexus and travel deep within the pelvis. Therefore, they are not reliably affected by the more distal FNB/FIB.<sup>8</sup>

Specifically targeting these articular sensory nerves within the myofascial plane of the psoas muscle and ilium can provide superior pain control for hip fractures while also avoiding most of the motor deficits associated with FNB/FIBs. Additionally, anesthetizing the obturator nerve at this level can provide pain control for fractures involving the rest of the pelvis, in particular pelvic rami fractures.<sup>9</sup>

## Supplies

1. Low-frequency curvilinear transducer (5-2 MHz) allows for greater visualization of surrounding landmarks. In thin patients and when learning to locate relevant anatomy, we recommend a high-frequency linear transducer (13-6 MHz).
2. Anesthetic: approximately 20-30 mL bupivacaine 0.5 percent (5 mg/mL; maximum 2 mg/kg); lower volumes for hip fractures and higher volumes for pelvic fractures. In



**Figure 1:** Sensory innervation to the hip primary comes from the femoral nerve (FN), obturator nerve (ON), and accessory obturator nerve (AON). Anesthetic (blue-shaded region) can spread in this myofascial space to provide optimal analgesia.

large-volume plane blocks, always refer to a reputable weight-based local anesthetic (LA) dosing chart such as HighlandUltrasound.com or MDCalc.com.<sup>10,11</sup>

3. Normal saline flushes 10-20 mL. Can be mixed into the same syringe with the LA or injected separately to initially open up the fascial plane (hydrodissection).
4. 100-mm 21 g blunt-tip block needle or 20-22 g Quincke spinal needle. Needle visualization for deep target blocks is significantly easier when using echogenic block needles.
5. 91-cm or 36-inch tubing.
6. Chlorhexidine skin prep.
7. Transparent dressing (Tegaderm) for the transducer and sterile gel packets.
8. 25-30 g needle for local skin wheal.

## Procedure

### Pre-block

The patient should be placed on continuous cardiac monitoring and pulse oximetry whenever performing a high-volume ultrasound-guided nerve block. Additionally, the clinician should be knowledgeable of the signs, symptoms, and treatment of local anesthetic systemic toxicity (LAST) and have 20 percent lipid emulsion therapy readily available for this rare but potentially serious complication.<sup>12</sup>

### Positioning

The PENG block is performed with the patient in a supine position. Place the ultrasound system contralateral to the affected hip to allow for clear line of sight. An in-plane lateral to medial approach will allow the operator to visualize the needle tip during the entire procedure (see Figure 2A).

### Survey Scan

Place the curvilinear transducer parallel to and over the inguinal crease. Identify the femoral vessels medially and the rounded anterior surface of the femoral head laterally (see Figure 2B). The femoral nerve, which is not targeted in the PENG block, lies just lateral to the femoral artery. While maintaining the same orientation parallel to the inguinal crease, slide the transducer cephalad until the bony ilium is visualized. Also note the anterior inferior iliac spine (AIIS) and iliopubic eminence (IPE) (see Figures 3A and 3B). The rounded hyperechoic psoas tendon (PT) resides along the ilium between these two structures. The target of the PENG block is the fascial plane over the ilium just lateral and deep to the psoas tendon. Note that the femoral vessels and nerve are both medial and far from the needle pathway.

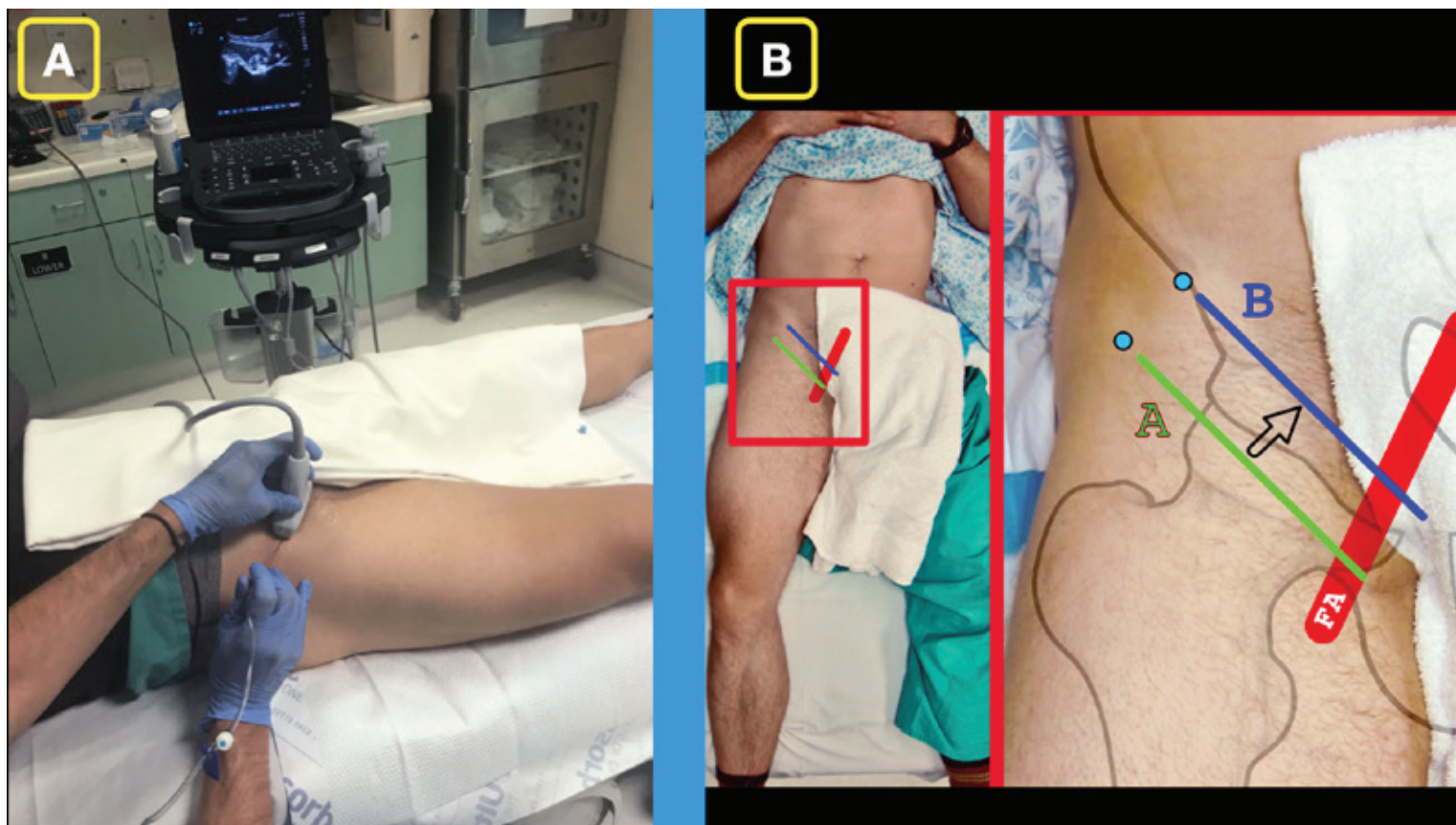
### Skin Wheal

After satisfactory identification of the landmarks noted on the survey scan, widely prep the skin with chlorhexidine. Allow this to completely dry and place 2-3 mL lidocaine skin wheal 2-3 cm lateral to the transducer.

### Needle Entry

Using a lateral to medial in-plane approach, advance the block needle at a 30 degree to 45 degree angle toward the bony ilium just deep and lateral to the psoas tendon. After the first 1-2 cm, the angle may be slightly redirected to reach this target. With deep blocks that require steep trajectories such as the PENG block, needle visualization may be difficult. "Toeing in" the transducer so that the ultrasound beam is more parallel to the needle can improve visualization.<sup>13</sup> Continue advancing the needle until it reaches the hard bony backstop of the ilium. Af-





**Figure 2A:** The ultrasound system is placed contralateral to the affected hip so that the operator has a clear line of sight of the needle as well as the ultrasound screen.

**Figure 2B:** Basic position of the ultrasound transducer in the region of the inguinal ligament. The green line (A) indicates the first position. In this position, the femoral head and femoral artery will be located. The blue line (B) indicates a minor adjustment in order to locate the ideal location for the PENG block.

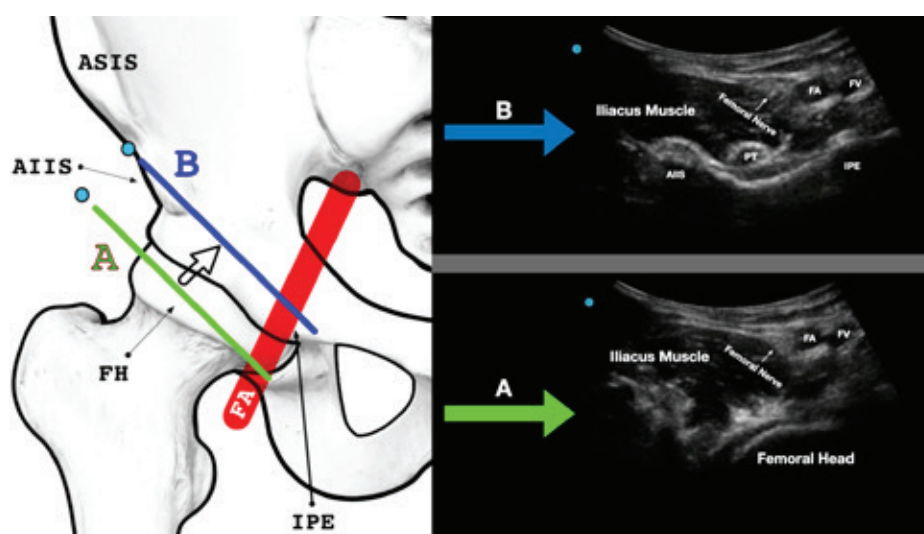
ter aspiration, gently hydrodissect this overlaying fascial plane. Proper needle placement will demonstrate anechoic fluid of LA injected underneath the psoas tendon, lifting it upward and spreading medially. If resistance is encountered during injection or fluid is not visualized entering the fascial plane, this can be corrected by slightly rotating the needle and reattempting injection until proper spread is visualized. This needle rotation repositions the needle-tip bevel and assists with penetration into the fascial plane. Once satisfied with the needle placement, slowly inject the remainder of the 20–30 mL of local anesthetic into the already-open fascial plane (see Figures 4 and 5).

**A Simple, Safe, and Valuable Tool**

The PENG block is a simple, safe block that can be applied to a wide variety of painful pelvic injuries. It is unique in that this block provides pain control to hip and pelvic fractures and can be a valuable tool for multimodal pain control in the acute setting. This block may provide superior analgesia to hip fractures compared to the traditionally performed FNB/FIBs. Like other ultrasound-guided nerve blocks, the clinician should be knowledgeable about the surrounding anatomy and comfortable with needle visualization. 🍀

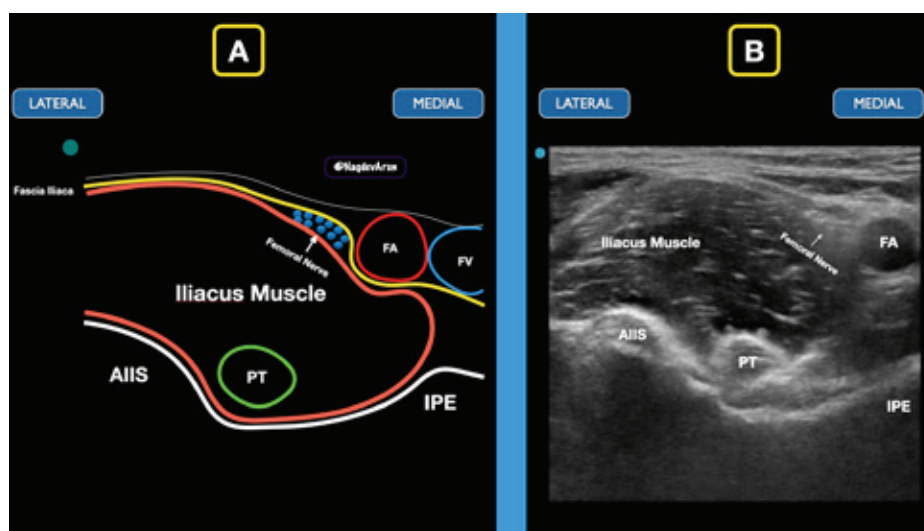
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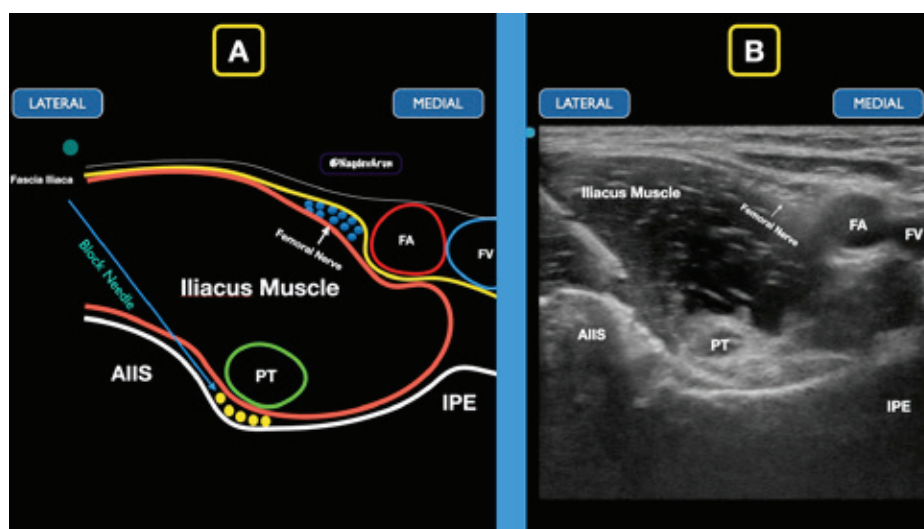


**Figure 3A:** The green line (A) indicates the initial location. Note the femoral artery (FA) and femoral vein (FV) as well as the femoral head.

**Figure 3B:** Maintaining the probe parallel to the inguinal crease, slide the probe a bit cephalad. The blue line (B) indicates the ideal location for the PENG block. Note the anterior inferior iliac spine (AIIS), the iliopubic eminence (IPE), and the psoas tendon (PT). The femoral vasculature (FA/FV) and femoral nerve in the proximal aspect of the ultrasound screen will often be visible at this location.



**Figure 4:** Schematic drawing (A) and ultrasound image (B) of the classic location of the PENG block. Note the fascia iliaca in relation to the femoral nerve, femoral artery (FA), and femoral vein (FV). Note the anterior inferior iliac spine (AIIS), iliopubic eminence (IPE), and psoas tendon (PT).



**Figure 5:** The block needle comes from a lateral to medial approach to deposit anesthetic under the iliacus muscle. The goal is to spread anechoic anesthetic (yellow circles) under the psoas tendon between the iliacus muscle and the bony ramus.





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

# Another COVID Casualty: The ED Transfer Process

Numbers don't lie and neither does the impact of COVID on emergency departments

by JAMES J. AUGUSTINE, MD, FACEP

New waves and challenges of COVID-19 keep coming. Emergency physicians keep managing the front lines, caring for patients with increasing severity of illness and stacked in hallway beds in the emergency department.

The performance of emergency departments in 2020 has been summarized by the Emergency Department Benchmarking Alliance (EDBA) in its annual survey report. One of the operational changes that occurred in the pandemic year was a significant increase in patient transfers from emergency departments. This trend is no doubt accelerating in 2022.

The average transfer rate in 2019 for all emergency departments was about 3.1 percent. The data for 2020 showed a transfer rate

of 3.4 percent, with the ongoing transfer rate higher in small-volume emergency departments at 5.6 percent. Transfer rates were up across all types of departments. More important, the transfer rate of 3.4 percent was twice that of the survey done in 2011. Table 1 displays the trends in ED transfer rates over the last 13 years.

## How Many Patient Encounters Does That Reflect?

The ED volume in the United States in 2019 was around 160 million patients. At the 3.1 percent transfer rate, that was almost 5 million patients being transferred in a year, or almost 14,000 patients a day. That is a lot of patient movement, with each transfer requiring significant coordination work and compliance programs related to the Emergency Medical Treatment and Labor Act (EMTALA) requirements. These data do not

include freestanding emergency departments, which have patients who can place additional burdens on the transfer resources of hospitals and hospital systems.

This only represents ED transfers; some hospitals also must transfer patients out of inpatient units when patient needs are identified that cannot be managed in the first hospital.

## Which Patients Are Being Transferred?

The annual study of ED visits by the Centers for Disease Control and Prevention (CDC) in its National Hospital Ambulatory Care Survey characterizes ED visits by disposition. One of the disposition types is patients being transferred to psychiatric hospitals. From 2011 to 2019, the CDC reports that about one-third of patient transfers were to psychiatric facilities

for mental health treatments. That is true for the last set of data tables published for ED visits in 2018.<sup>1</sup> Mental health transfers represent one of the greatest areas of specialized care, which hospitals appear unprepared to handle. And this was prior to COVID, which makes these types of transfers even more difficult.

## What Factors May Be Contributing to ED Transfers?

ED transfer rates vary dramatically by cohorts, as seen in Table 2. Transfer rates in small-volume emergency departments are at least five times higher than those of high-volume ones.

The results of the survey indicate that fewer hospitals in rural communities have the resources to keep complex patients. This included COVID patients in 2020. Rural hospitals have been closing service lines and been unsuccessful in recruiting physicians willing

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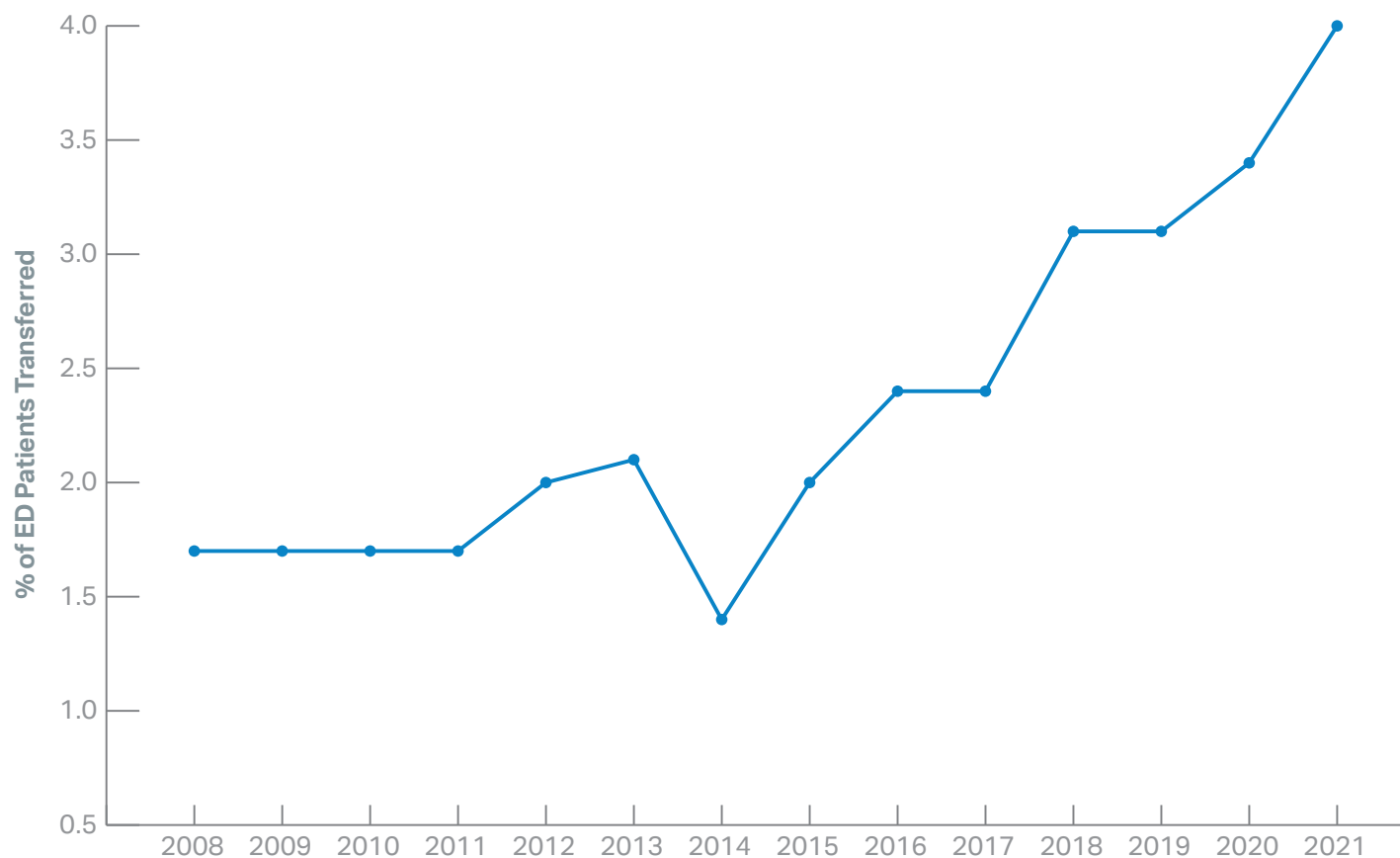
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Table 1. Trends in Transfers of ED Patients



to care for complex patients. Rural facilities also have limited financial resources to care for high-cost patients.

#### Moving Toward Solutions to Flow of Admitted and Transfer Patients

The role of emergency physicians and hospital leaders has dramatically escalated with the surges and medical system challenges produced by the COVID pandemic. The trends suggest emergency departments will see higher-acuity patients and more patients with complex medical needs.<sup>2</sup>

The emergency department is the portal into the hospital for critical patients who will either be admitted or transferred. Patients admitted from the emergency department account for about 67 percent of overall hospital admissions in addition to patients who will be transferred for admission to other hospitals. Any patient who requires boarding constitutes a challenge to ED operations, one that occurs now for both admitted and transferred patients.

Because about a third of transfers relate to patients with mental health needs, the emergency department would benefit from community practices that feature the use of sites other than the emergency department for the management of persons with mental health and substance abuse issues. There are communities looking to implement mental health care sites and sobering centers as well as mechanisms that allow police and EMS to refer patients directly to those sites rather than to an emergency department.<sup>3-6</sup> The ability to process these individuals primarily to a site of quality mental health and substance abuse care is a positive and preserves the focus of ED care on medical and trauma patients.

Patient transfers are not infrequent and are resource-intensive for emergency physicians and nurses. Hospital and ED leaders must ensure that emergency physicians have easy-to-implement “patient transfer packs” that conform to EMTALA guidelines. Those processes allow the many steps to successful patient transfer to occur in an efficient matter, without wasting the time of the ED physician, nurse, or clerk trying to complete the process.

Many hospital systems have developed

Table 2: ED Patients Transferred, by Cohort of EDs, in 2020

EMERGENCY DEPARTMENT COHORT	% OF ED PATIENTS TRANSFERRED
All EDs	3.4
Adult EDs	1.6
Pediatric EDs	2.5
Over 80K volume	0.9
60-80K	1.6
40-60K	2.1
20-40K	2.9
Under 20K volume	5.6

patient flow centers (or transfer centers), which had an important role even pre-pandemic in efficiently moving patients to the best site of care within the system. In response to pandemic surges, some states have developed dedicated hospital coordinating centers to improve the flow of patients outside of established hospital systems in an attempt to match patient needs with resources.<sup>7,8</sup> These centers certainly have a future role.

The rapid increase in ED patient transfers is a marker of the growing centralization of certain high-intensity clinical services and illustrates the need for a very effective system for organizing the movement of patients to those needed services. *Perhaps it means that certain critical services need to be decentralized and delivered in more hospitals.*

There is clearly a mismatch of services when millions of patients with mental health needs are processed in emergency departments and then packaged for transport to a definitive site of care.

Emergency physician leaders must appreciate the monumental challenges in acute care delivery that are occurring in the pandemic years and work with hospital leaders to serve a changing emergency population in the near future. Telehealth may have an important role

in this regard.

The need to serve ED patients who must be transferred for definitive care is yet another important management priority. 📌

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## By the Numbers

### SIDE EFFECTS OF STRESS AMONG HEALTH CARE WORKERS

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NURSES

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NURSES

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1 IN 3

physicians and nurses plan to reduce work hours.

Source: Mayo Clinic Proceedings



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# THE END OF THE RAINBOW



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# Don't Take on Too Much Risk

## Three temptations to avoid when trying to grow your money

by JAMES M. DAHLE, MD, FACEP

**Q I just sold an investment and will need to pay taxes on the gains in a few months. Should I put the proceeds into Tesla stock or Shiba Inu cryptocurrency until then?**

**A.** I write this as I return from the 2021 ACEP Scientific Assembly. It was great to be all together again in person and to speak with many of you face-to-face about your specific financial situations and questions. Hundreds of you came to my two presentations, and I recorded two podcasts: one with the Emergency Medicine Residents' Association about financial tips for residents and another for the ACEP Frontline Podcast with Ryan Stanton MD, FACEP, about inflation and cryptocurrencies.

When I started The White Coat Investor more than a decade ago, the tagline was "Helping those who wear the white coat get

a fair shake on Wall Street." More recently, I've described our work as "Helping docs stop doing dumb stuff with their money." In recent months, I am getting an increasing number of questions about ideas that I would consider "dumb stuff." Just like in medicine, there is no such thing as a stupid question, just controversial topics in the financial world. However, some of the financial mistakes doctors are doing or considering doing these days are the equivalent of treating a gastrointestinal bleed with a combination of coumadin and heparin. These unforced errors are likely to end very badly.

Many young physician-investors have no personal recollection of a serious downturn in the stock or real estate markets. With the exception of three very brief drops, stock prices have been rising consistently since the Great Recession struck in March 2009. The price of housing and real estate invest-



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ments in general has also been skyrocketing in many areas of the country for most of the last decade. More than 6,000 cryptocurrencies have been invented; many of them have had spectacular returns so far. Even bonds have had better-than-expected returns over the last decade. Meanwhile, due to government policies, interest rates have been kept artificially low to the point that the current yield on a 10-year treasury bond is four percent less than the current rate of inflation. Most physicians have mortgages at rates under four percent, and many have not made a student loan payment in nearly two years.

The appetite for, and tolerance of, both market risk and leverage risk in the financial markets right now is ridiculously high compared to most of financial history. Many doctors have made terrible financial decisions and not only gotten away with them but been massively rewarded for taking on unwise risks. This trend will not continue forever—trees do not grow to the sky.

Here, I discuss three unforced errors that investors, including physician investors, commonly make and seem to be making more frequently in the last couple years.

### 1. Investing Short-Term Money in Long-Term Investments

Stocks, bonds, and real estate are long-term investments. If you need money in a few months to pay off a loan, buy a car, make a house down payment, or pay your taxes, it has no business in any of these investments. That's what a savings or money market account is for. In this situation, the return of your principal matters a

lot more than the return on your principal. The price volatility of these investments dramatically outweighs any benefit you might see. You are essentially gambling and are nearly as likely to lose money in the short term as to make it. If investing short-term money in solid long-term investments that produce earnings, interest, and rents is just gambling, where does that put speculating into precious metals or cryptocurrencies? You might as well take next quarter's estimated tax payment down to the roulette table in Las Vegas and put it all on red.

### 2. Taking on Too Much Debt

The mathematical benefits of investing with leverage—especially fixed, long-term, non-callable, low-interest rate debt—cannot be denied. However, just because a little bit of something might be good does not mean that a lot of it is better. Given the higher than historical investment returns in all asset classes over the last decade and interest rates less than the rate of inflation, I cannot recall a more tempting time to invest with borrowed money. Physicians sometimes do this unknowingly by delaying the payoff of a mortgage or student loans, or do it deliberately with cash-out refinances and margin loans. Either way, the effect is the same, and it works until it doesn't. If you have borrowed half of the money you have invested and the investment drops 50 percent in value, your entire investment is wiped out. If you borrowed 80 percent of the money you have invested and the investment drops 50 percent in value, you may find yourself in front of a judge declaring bankruptcy. Be careful how much you borrow to invest.

### 3. Putting Serious Money into Play Assets

Many investors enjoy learning about their investments, doing research, and investing on the cutting-edge of technology. Maybe they're trying to time the market, picking individual stocks, dabbling in precious metals, or speculating on which cryptocurrency the world will eventually adopt for widespread use. While I view my entire portfolio as serious money and do not do any of this stuff, I certainly agree with most financial advisers who think it is fine to do this, so long as you only do it with "play money." Play money is five percent or less of your portfolio—total. If you want to put five percent of your portfolio into cryptocurrencies like Bitcoin, Cardano, Solana, or even Shiba Inu, knock yourself out. But if you put five percent into each of those and another 20 percent into GameStop or whatever the latest meme stock might be, you will violate the basic tenets of investing. History has shown that doing so does not usually end well in the long run.

You have worked hard to learn how to be a physician. You work hard now for your paycheck. If you want to be financially secure, you need to make sure your money is working as hard as you. Doctors make enough money that they do not need to hit home runs or optimize every single financial decision to have a comfortable retirement as a multimillionaire. They do not, however, make enough money that they can do foolish things with their earnings and expect their generous salary to always bail out bad decisions. +



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# Navigate the No Surprises Act

New resource explains the changes that affect emergency physicians

The 2020 No Surprises Act (NSA) established new federal protections against surprise medical bills and balance billing, most of which took effect Jan. 1, 2022. ACEP's federal affairs team created a new webpage (acep.org/NSA-overview), that provides a summary of the No Surprises Act requirements and what they mean for EM physicians.

Do you have questions about disclosure requirements? Good Faith Estimates? State laws? This page has you covered. You'll find helpful infographics that quickly explain the independent dispute resolution (IDR) provision of the No Surprises Act, a type of arbitration process where an impartial outside entity decides the ultimate payment for out-of-network services. The IDR is hugely important, and ACEP is actually suing the federal government over the implementation of this piece of the bill (but that's a whole separate story you can read on p. 12). The page explains how the federal law interacts with each state law, along with disclosure requirements that are the responsibility of physicians. +

The screenshot shows a webpage titled "The No Surprises Act" with a navigation menu and a main content area. The main content area includes an "Overview of the Law" section with four key points: 1. Ban balance billing for out-of-network emergency care, 2. Ban balance billing for scheduled out-of-network services, 3. Prohibit insurers from assigning higher deductibles, and 4. Provide similar patient protections for an ambulance. Below this is a section titled "What does this mean for Emergency Physicians?" with a flowchart and a list of key takeaways.

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**Academic & Clinical Faculty Opening**

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

Baylor College of Medicine is located in the world's largest medical center in Houston, Texas. We offer a highly competitive academic salary and benefits commensurate to academic level and experience. Our academic program is based out of [Ben Taub General Hospital](#), [Baylor St. Luke's Medical Center](#) and Texas Children's Hospital. Ben Taub General Hospital is the largest Level 1 trauma center in southeast Texas with certified stroke and STEMI programs that sees nearly 80,000 emergency visits per year. Baylor St. Luke's Medical Center is home to the Texas Heart Institute and is a tertiary referral center with multiple transplant programs and many high acuity patients. Texas Children's Hospital is consistently ranked as one of the nation's best, largest and most comprehensive specialty care pediatric hospitals. These affiliations, along with the medical school's preeminence in education and research, help to create one of the strongest emergency medicine experiences in the country.

**MINIMUM REQUIREMENTS**

- Education: M.D. degree or equivalent
- Experience: Previous experience in Research, Simulation and Toxicology strongly preferred but not required
- Licensure: Must be currently boarded or board eligible in Emergency Medicine and eligible for licensure in state of Texas. Those interested in a position or further information may contact [Dr. Dick Kuo](#) via email [dckuo@bcm.edu](mailto:dckuo@bcm.edu) or by phone at 713-873-2626. Please send a CV and cover letter with your past experience and interests.



**(Emergency Medicine) Instructor – Physician Assistant  
Houston, TX**

**Summary**  
To provide coverage for patient care for Emergency Medicine at Ben Taub General Hospital. This is a critical piece of the clinical service that will help maintain coverage within the Emergency Center.

**Minimum Qualifications**  
Education Required: Master's degree in Physician Assistant Studies. NOTE: Bachelor's degree in Physician Assistant Studies accepted based on terminal degree requirements at time of graduation.

**Certification/Licenses/Registration:** Current license as a Physician Assistant by the State of Texas Physician Assistant Board. Specialty certification as required by department. Basic Life Support (BLS) Certification.

Applications can be submitted via the Baylor College of Medicine Jobs Website: [https://jobs.bcm.edu/job/Houston-%28Emergency-Medicine%29-Instructor-Physician-Assistant-Texa/812405100/?feedId=295800&utm\\_source=Indeed&utm\\_campaign=Baylor\\_Indeed](https://jobs.bcm.edu/job/Houston-%28Emergency-Medicine%29-Instructor-Physician-Assistant-Texa/812405100/?feedId=295800&utm_source=Indeed&utm_campaign=Baylor_Indeed)

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# Penn State Health Emergency Medicine

## About Us:

Penn State Health is a multi-hospital health system serving patients and communities across 29 counties in central Pennsylvania. The system includes Penn State Health Milton S. Hershey Medical Center, Penn State Children’s Hospital, and Penn State Cancer Institute based in Hershey, PA; Penn State Health Holy Spirit Medical Center in Camp Hill, PA; Penn State Health St. Joseph Medical Center in Reading, PA; and more than 2,300 physicians and direct care providers at more than 125 medical office locations. Additionally, the system jointly operates various health care providers, including Penn State Health Rehabilitation Hospital, Hershey Outpatient Surgery Center, Hershey Endoscopy Center, Horizon Home Healthcare and Pennsylvania Psychiatric Institute.

In December 2017, Penn State Health partnered with Highmark Health to facilitate creation of a value-based, community care network in the region. Penn State Health shares an integrated strategic plan and operations with Penn State College of Medicine, the university’s medical school.



We foster a collaborative environment rich with diversity, share a passion for patient care, and have a space for those who share our spark of innovative research interests. Our health system is expanding and we have opportunities in both an academic hospital as well community hospital settings.

## Benefit highlights include:

- Competitive salary with sign-on bonus
- Comprehensive benefits and retirement package
- Relocation assistance & CME allowance
- Attractive neighborhoods in scenic Central Pennsylvania



**PennState Health**

## FOR MORE INFORMATION PLEASE CONTACT:

Heather Peffley, PHR CPRP - Penn State Health Physician Recruiter  
[hpeffley@pennstatehealth.psu.edu](mailto:hpeffley@pennstatehealth.psu.edu)

Penn State Health is fundamentally committed to the diversity of our faculty and staff. We believe diversity is unapologetically expressing itself through every person’s perspectives and lived experiences. We are an equal opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to age, color, disability, gender identity or expression, marital status, national or ethnic origin, political affiliation, race, religion, sex (including pregnancy), sexual orientation, veteran status, and family medical or genetic information.





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