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PLUS

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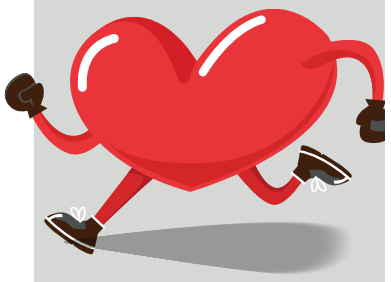

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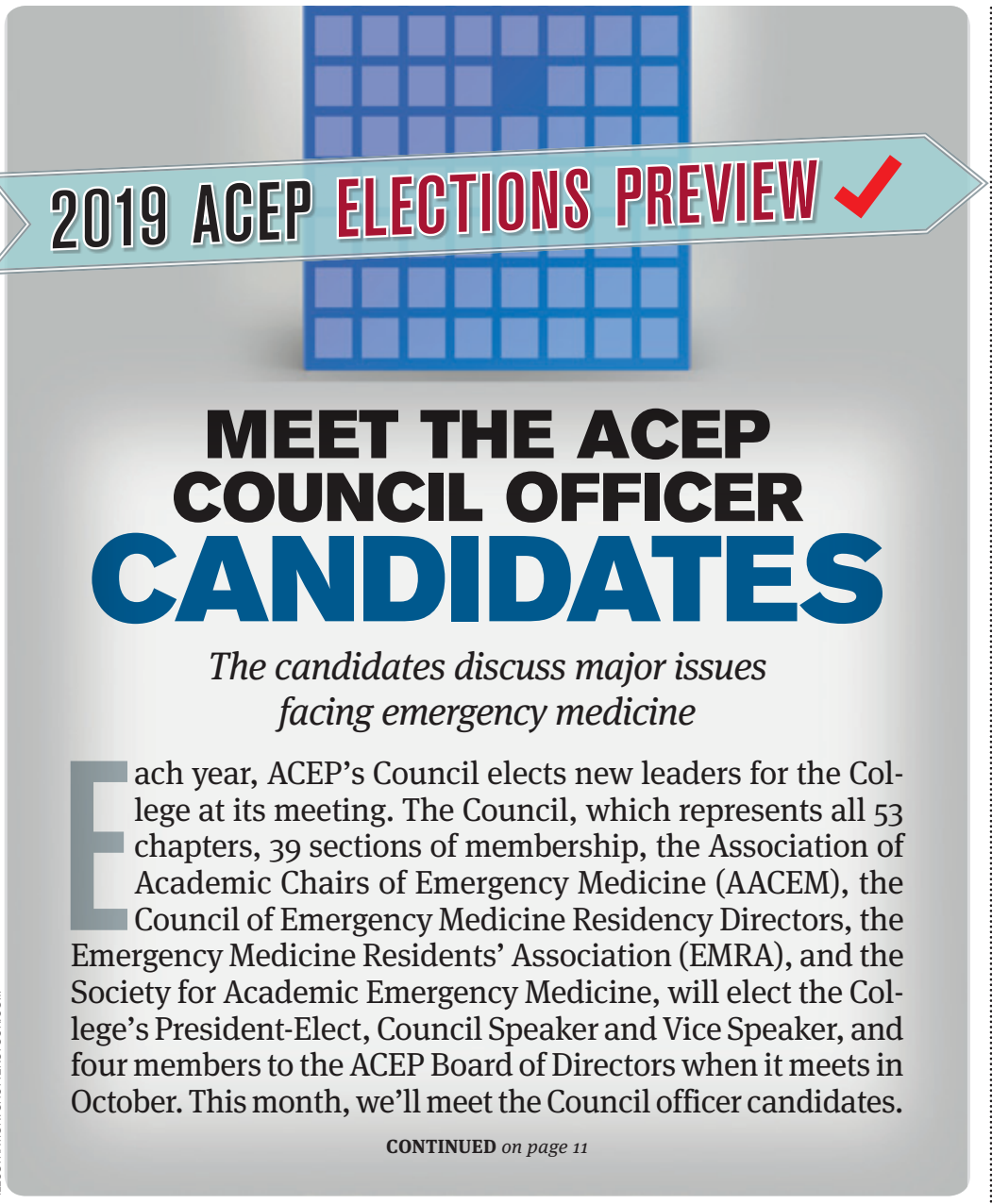

2019 ACEP ELECTIONS PREVIEW

MEET THE ACEP COUNCIL OFFICER CANDIDATES

The candidates discuss major issues facing emergency medicine

Each year, ACEP's Council elects new leaders for the College at its meeting. The Council, which represents all 53 chapters, 39 sections of membership, the Association of Academic Chairs of Emergency Medicine (AACEM), the Council of Emergency Medicine Residency Directors, the Emergency Medicine Residents' Association (EMRA), and the Society for Academic Emergency Medicine, will elect the College's President-Elect, Council Speaker and Vice Speaker, and four members to the ACEP Board of Directors when it meets in October. This month, we'll meet the Council officer candidates.

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ILLUSTRATION: SHUTTERSTOCK.COM

DROPERIDOL IS BACK

Here's what you need to know

by EDWARD W. BOYER, MD, PHD

In 2001, when we had agitated patients in the emergency department, we'd give them intramuscular droperidol and everything would be fantastic. It also worked well for nausea and vomiting, and was a useful adjunct for headache treatment.

But then because of concerns related to prolongation of the QT interval on ECG, the threat of torsades de pointes, and persistent shortages of the drug, the U.S. Food and Drug Administration (FDA) published a widely criticized warning that recommended a screening ECG prior to dosing, telemetry for two to three hours following administration, and a contraindication for patients with a long QTc (with a cutoff at >440 ms for males, >450 ms for females).[1] In short order, droperidol disappeared from hospitals in the United States, the United Kingdom, and many other places, despite the fact that other medications like haloperidol had the same theoretical risks and remained widely available. But now, injectable droperidol is back, courtesy of manufacturer American Regent. Much of the body of knowledge regarding the clinical use of droperidol has eroded over time, so here's what you need to know:

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Dosing and Benefits

First, droperidol at the 5–10 mg doses (intravenous [IV] or intramuscular [IM]) used for sedation and control of agitation is safe. Onset of action can be expected within 5–10 minutes IM, and a bit faster IV, though studies suggest full effects may not be apparent for up to 20–30 minutes, at which time redosing can be considered. IM haloperidol, on the other hand, works far more slowly than droperidol, often taking 20–30 minutes for onset. In fact, the main advantage of

CONTINUED *on page 14*

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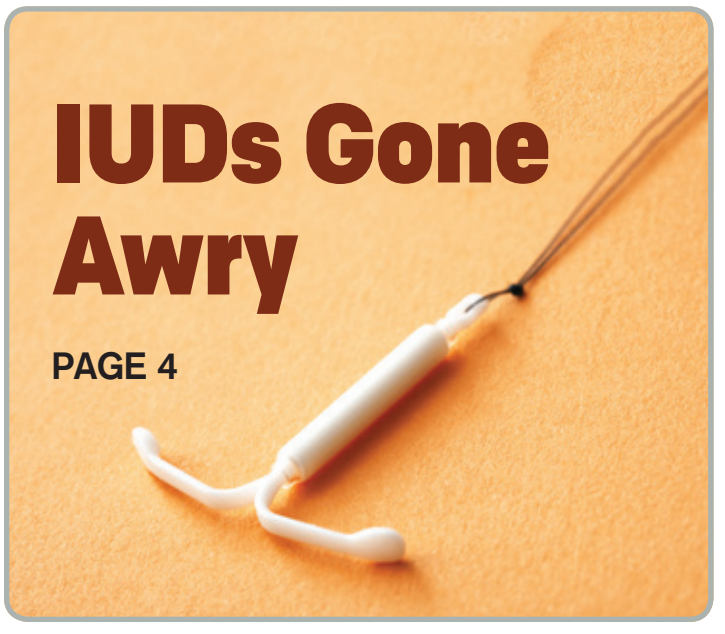

IUDs Gone Awry

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NEWS FROM THE COLLEGE

UPDATES AND ALERTS FROM ACEP

#ACEPNation Hits Membership Milestone

In August 2019, we reached 40,000 members for the first time in our history. We're so proud to stand beside you. Here's to the next 50 years! Customize your membership preferences at www.acep.org/membership.

Medicare Payment Rule Adjusts Value of EM Services

The Centers for Medicare & Medicaid Services (CMS), the agency responsible for running Medicare and Medicaid, recently issued its proposed Medicare physician fee schedule for 2020. CMS included a proposal to revalue the ED evaluation and management codes, the most commonly billed services for emergency physicians.

As the only EM organization represented on the AMA Relative Value Scale Update Committee (RUC), which develops values for physician service codes, ACEP advocated strongly for this revaluation. (Read the full story about how our regulatory and reimbursement teams advocated for the revaluation at ACEPNow.com.)

The RUC accepted our recommendations, and CMS is proposing to accept the RUC's recommended values. If finalized, this revaluation would increase Medicare reimbursement for ED visit codes by approximately $137 million in 2020, when the policy becomes effective. The increased values would become the new standard for each year after that. Next month, *ACEP Now* will feature a detailed analysis of the CMS proposed rule and its implications for emergency medicine.

Stay updated on this proposed rule and other regulations that affect you on our regulatory blog, Regs & Eggs, at www.acep.org/regsandeggs.

ACEP Shares Opioid Resources with FDA

The U.S. Food and Drug Administration (FDA) is interested in the development of resources to reduce the use of opioids where alternatives exist, so ACEP shared its extensive opioid resources. To view those resources, visit www.acep.org/opioids. Our two opioid-related point-of-care tools—MAP (managing acute pain) and BUPE (buprenorphine)—are now available on our new app, emPOC, available through the Apple Store and Google Play.

ACEP Hosts Health Care IT Summit

In July, ACEP hosted thought leaders from health information technology (IT) for a one-day collaborative summit designed to foster important discussions about the future of health care IT in the acute care setting. More than 100 outside-the-box thinkers discussed both aspirational and immediately actionable ways to make health care IT more intuitive and functional for emergency physicians and their patients.

The Health IT Summit included prominent EM informatics experts and representatives from the CDC, the Office of the National Coordinator for Health Information Technology, the Veterans Health Administration, Cerner, Epic, and more, brainstorming about the future of care delivery and data sciences. What's the ideal future state of health care IT, and how do we get there? How do data acquisition, artificial intelligence, data transparency, population health, quality initiatives, policy, advocacy, predictive modeling, and data-driven networks factor into future plans?

The work product of this summit will be summarized to serve as a guidebook for ACEP's future planning, policy, and advocacy related to administrative burden and EHR.

ACEP4U: New Medicare Payment Codes

Visit **acepnow.com** for the full backstory explaining how ACEP's 2018 RUC Advisors, Ethan Booker, MD, FACEP, and Jordan Celeste, MD, FACEP, worked with ACEP staff to present compelling data for an increase in emergency department evaluation and management codes.

Working to Decrease Your Documentation Burden

On Aug. 12, ACEP responded to a CMS request for information on additional ways to reduce the administrative burden for health care providers through the "Patients over Paperwork" initiative. We asked CMS to take the following actions:

- Postpone the Appropriate Use Criteria program. Although we got a clarification to the exemption for emergency medical conditions, we need more time to educate our members and hospitals about when the exemption is applicable.
- Make electronic health records easier to use and increase the ability to receive and exchange information about our patients.
- Require hospitals to share clinical data with clinical data registries to fulfill Merit-based Incentive Payment System (MIPS) reporting requirements.
- Simplify MIPS requirements for hospital-based clinicians.
- Revise existing criteria for adding new codes to the list of approved telehealth services to make it easier to add emergency telehealth codes to this list.
- Implement emergency medicine–specific alternative payment models (APMs) and specifically adopt ACEP's APM, the Acute Unscheduled Care Model.

Learn more about ACEP's work to reduce your administrative burden at www.acep.org/ehr.

CORRECTION

In the "Meet the Board of Directors Candidates" article in our August issue, Dr. Gabor Kelen's name was spelled incorrectly. *ACEP Now* apologizes for this error.

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- Has reviewed in excess of 2,200 malpractice cases over the last 25 years as a risk management consultant
- Serves as a medicolegal consultant for numerous physician groups and hospitals
- Editor of the ACEP book *Emergency Medicine Risk Management: A Comprehensive Review*

W. Richard Bukata, MD

- Edited over 15,000 abstracts and wrote over 200 essays on EM-related topics while editor of *Emergency Medical Abstracts*
- As Medical Director of the Center for Medical Education has been involved with the production of over 600 Emergency Medicine courses since 1985
- Served as the Medical Director of a community hospital in Los Angeles for over 25 years
- Recipient of the ACEP Outstanding Contribution in Education Award

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IUDs Gone Awry

HOW TO APPROACH PATIENTS WITH AN INTRAUTERINE DEVICE

by LANA SHAKER, MD; AND REBECCA GOETT, MD, FACEP, FAAHPM

The Case

A 23-year-old woman with no significant past medical history presents to your emergency department with one-day history of gradually worsening left lower quadrant (LLQ) abdominal pain. Her last menstrual period is unknown, as she reports she no longer has regular menstruation since having a Mirena intrauterine device (IUD) placed 18 months ago. She reports vaginal spotting a few days ago, which resolved. The pain is mild and intermittent without vomiting, diarrhea, fever, or dysuria. Her vital signs are blood pressure 108/68, heart rate 108, respiratory rate 16, oxygen saturation 99 percent, and temperature 98.7° F orally. On exam, she is tender to palpation in the LLQ.

Background

IUDs are a form of long-acting reversible contraceptive and one of the most effective reversible contraceptive methods.[1] A summary of their actions and mechanisms is listed in Table 1.

Bottom line: As the popularity of IUDs has increased, the importance also increases for emergency care providers to understand the use and pathologies associated with IUDs. Given the increasing popularity of this method of contraception, we may see more IUD complications in the emergency department.[2] Complications with IUDs include expulsion, method failure/unplanned pregnancy, uterine perforation, pelvic inflammatory disease, abdominal or pelvic pain, dysmenorrhea, and abnormal bleeding.[3]

Approach to Abnormal Uterine Bleeding, Abdominal/Pelvic Pain

In addition to the above IUD-specific complications, new onset of abnormal uterine bleeding and abdominal or pelvic pain should be evaluated similarly to that of non-IUD users with the differential diagnosis including:

- Complications of pregnancy
- Pelvic inflammatory disease
- Urinary tract infection
- Intra-abdominal processes
- Ovarian cyst or torsion
- Gynecologic malignancy

Table 1: IUD Types

	COPPER IUDS	LEVONORGESTREL IUDS
Mechanism of Action	Prevents fertilization	Prevents fertilization, hormone exertion
Brand Names	Paragard	Mirena, Liletta, Kyleena, Skyla
Length of Use	Up to 10 years	3–5 years
Most Common Adverse Effects	Heavy menstrual bleeding, pain[10]	Headache, nausea, breast tenderness, mood changes, decreased menstrual bleeding or amenorrhea, ovarian cyst formation *Side note:* Hormones do not increase fracture risk or affect bone mineral density
Can It Be Used for Emergency Contraception?	Yes, immediately upon insertion, no oral backup contraception needed*	Yes, but oral backup contraception is needed*
Failure Rate	0.1 to 2.2 per 100 women per year[11]	0.1 to 0.6 per 100 women per year[11]

** Immediately after an abortion, childbirth, or transitioning contraceptive methods.[1]*

Initial management of the patient with abnormal uterine bleeding should include a pelvic examination (to attempt IUD string visualization) with a possible pelvic ultrasound to assess IUD location.[4]

Pregnancy with an IUD

When a patient with an IUD is determined to be pregnant, the first priority is to determine the location of the pregnancy. Women who become pregnant with an IUD in place are more likely to have an ectopic pregnancy.[1]

Interuterine Pregnancy: Determine the woman's desire to continue or terminate the pregnancy, gestational age, IUD location, and whether IUD strings are visible.[5]

For women with an IUD desiring pregnancy continuation, IUD removal is recommended. Retained IUDs have increased risk of spontaneous abortion, septic abortion, chorioamnionitis, placental abruption, placenta previa, cesarean delivery, low-birth-weight infants, and preterm delivery especially.

If the strings are visible and the IUD can be easily removed from the cervical canal, it is recommended to do so; however, if the strings have retracted into the uterus, ultrasound-guided IUD removal may be performed by a specialist but may disrupt a wanted pregnancy. Patients will need to be counseled appropriately.[5,6] After IUD removal, women who conceived with an IUD in place remain at high risk for complications compared to pregnancies conceived without an IUD.[6] For women desiring pregnancy termination, the IUD can be removed prior to or during a medical abortion.[5]

Ectopic Pregnancy: Use of an IUD does not increase the absolute risk of ectopic pregnancy because it prevents pregnancy effectively. However, if pregnancy is suspected and confirmed with an IUD in place, the pregnancy is more likely to be ectopic.[5] Point-of-care ultrasound can assist with rapid, accurate diagnosis of ruptured ectopic pregnancy. Pregnant patients with an empty uterus on ultrasound but without clear signs of ectopic pregnancy, such as extra-uterine gestational sac, adnexal mass, or free fluid, are classified as having a "pregnancy of unknown location" and require reliable follow-up until the pregnancy location can be confirmed.[7]

Pelvic Inflammatory Disease

Risk of pelvic inflammatory disease (PID) is elevated in the first three weeks following IUD insertion, before returning to baseline rates.[4,8] IUD insertion is contraindicated in women with current purulent cervicitis or known chlamydial/gonorrheal infection until treatment is complete and symptoms have resolved.[1,8] If PID is diagnosed in an individual with an IUD in place, Centers for Disease Control and Prevention (CDC) guidelines recommend leaving the IUD in place (outcomes are similar whether the IUD is removed or left in place).[4] PID should be treated the same as in patients without IUDs in place and requires follow-up within 48 to 72 hours to assess for clinical improvement. If clinical improvement fails to occur, IUD removal should then be considered.[5] There are currently no CDC recommendations on management of tubo-ovarian abscess in a woman with an IUD. Current protocols call for inpatient treatment with IV antibiotics, with consideration of IUD removal if clinical improvement is not observed.[5]

Expulsion

If expulsion is suspected, pelvic exam should be performed to assess for the IUD strings or a partially expelled IUD protruding out of the cervical os.[5] If the IUD and strings are not present, imaging such as an ultrasound, abdominal radiograph, or CT should be obtained for IUD localization and potential perforation. If the IUD cannot be located, it may have been fully expelled. See Table 2 for information on expulsion risk.

Perforation

Uterine perforation is a potentially serious complication of IUD use and can lead to invasion and migration to abdominal and pelvic organs. The IUD may be embedded in the myometrium or translocate through the uterus to the abdominal cavity. Migration to adjacent

organs can lead to bowel obstruction, peritonitis, fistula formation, obstructive uropathy, and intraperitoneal adhesions.[3]

Primary perforation occurs during insertion and is typically associated with severe abdominal pain.[3] Secondary perforation is a delayed event and can present as chronic abdominal pain, vaginal bleeding, missing strings, or even asymptomatically.[3] The incidence of uterine perforation is estimated at between 0.2 and 3.6 per 1,000 insertions.[2]

Imaging for IUD localization should be performed with ultrasound, abdominal X-ray, and/or CT scan. Eighty percent of IUDs are found in the peritoneal cavity after perforation.[3] There is no substantial difference in prevalence of perforation between levonorgestrel and copper IUDs; adhesions are more highly associated with copper IUDs.[2,9] Risk factors for uterine perforation include breastfeeding, postpartum state, lack of experience by the health care provider performing insertion, extreme anteflexion or retroflexion of the uterus or uterine abnormalities, multiparity, nulliparity, history of cesarean delivery, and myomectomy.[9] Patients may require hysteroscopy, cystoscopy, colonoscopy, laparoscopy, or exploratory laparotomy depending on IUD location.

Immediate Complications of the IUD Insertion Procedure

Some patients may develop pain with IUD insertion. Nulliparity and history of severe dysmenorrhea are associated with greater insertion-related pain.[4] Some pain, such as cramping and changes in bleeding pattern, may be normal in the initial weeks after IUD placement. Some patients may develop vasovagal reactions with syncope, nausea, and/or vomiting. Because primary uterine perforation can occur during insertion and cause severe pain, these patients may need to be evaluated with pelvic examination and further imaging to assess IUD location and determine if primary perforation has occurred. IUDs can lead to irregular menstrual bleeding, which typically improves with time.[5] For these patients, nonsteroidal anti-inflammatory medications are first-line therapies for treating dysmenorrhea and abnormal bleeding.[4] Naproxen in particular has been shown to decrease pain and bleeding.[1]

Table 2: IUD Expulsion

EXPULSION RISK DEMOGRAPHICS	FAILURE RATE*
First Year of Use[1,12]	2–10%
Younger > Older patients[1,12]	5–22% (in adolescents)
After Abortion: 2nd trimester > 1st trimester[5]	N/A
Postpartum	10–27%

** Failure rate range is 0.1 to 2.2 per 100 women years.11*

IUD Removal in the ED

IUDs rarely require removal in the emergency department. Some circumstances do require this, including a partially expelled IUD causing pain and bleeding. The procedure for IUD removal is simple: Grasp the strings securely using ring forceps and apply gentle traction outward. If IUD removal with gentle traction and without resistance is unsuccessful, the procedure should be discontinued as the IUD may be embedded, perforated, or translocated. Such instances likely require hysteroscopy or laparoscopy for further evaluation.

Case Resolution

A point-of-care urine pregnancy test is positive. Pelvic examination shows a closed cervical os with IUD strings visible, no vaginal bleeding, and left adnexal tenderness. Point-of-care ultrasound shows an empty uterus, no free fluid, and possible left adnexal mass. The patient is taken to the operating room by ob-gyn for diagnostic laparoscopy, leading to the diagnosis of a left adnexal unruptured ectopic pregnancy. Salpingectomy is performed. The patient is discharged from the hospital and later decides to have her IUD removed as an outpatient because of anxiety related to possibility of developing a future ectopic pregnancy.

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DR. SHAKER is a senior resident in emergency medicine at New Jersey Medical School and Rutgers University.

ACEP Executive Director to Retire

Dean Wilkerson will step down in 2020; a search committee is looking for ACEP's next director

ACEP

Dean Wilkerson
Executive Director of ACEP

After more than 15 years as executive director of ACEP, Dean Wilkerson, one of only three individuals to hold the position, plans to retire in 2020.

"At this point in my life, I want more of what every person wants more of—time," he said. "After 40 years of doing important but very stressful and time-consuming jobs, I want to step away and spend more time doing things that I never seem to have enough time to do. It just seems like the right time to let some other person come in and help ACEP continue to make progress."

Mr. Wilkerson told the ACEP Board of Directors in early 2016 that he planned to retire when his current contract ended on July 31, 2020. Because it has had time to plan, the Board has retained a search firm and established a Search Committee that includes ACEP President Vidor E. Friedman, MD, FACEP. Association Strategies (assnstrategies.com) was selected to conduct a nationwide search for ACEP's next executive director. A position specification should be available by early October. The goal is to have the new executive director start by June 2020.

"Over the past decade I have had the pleasure to work closely with Dean, he has been a great partner for ACEP for many years," said Dr. Friedman. "Under Dean's leadership the college has grown tremendously—both in terms of membership and the variety and quality of the services that ACEP provides to our members. We will do a thorough nationwide search to find his successor, who will have some big shoes to fill."

A History of Accomplishments

When Mr. Wilkerson joined ACEP in 2004, the Board was looking for him to bring new approaches to advocacy for emergency medicine and emergency physicians. One of the first things Mr. Wilkerson did was reallocate $272,000 from other areas in ACEP's budget to public relations and media advocacy.

The first 16 months on the job saw a whirlwind of activity in which he interacted with ACEP's national leaders and chapters. Mr. Wilkerson attended the Michigan Chapter meeting and had dinner with ACEP founders John G. Wiegenstein, MD, and John A. Rupke, MD, listening to them regale the rapt dinner party with stories of the early days of ACEP.

"I fell in love with emergency physicians and their energy and enthusiasm," he said.

At the 2005 annual meeting in Washington, D.C., ACEP held a Rally on Capitol Hill. More than 4,000 emergency physicians, nurses, and paramedics participated in the event and it is believed to be the largest public advocacy gathering of a medical organization ever. Just months later, the first *National Report Card on the State of Emergency Medicine* was released with strong media coverage on network television, radio, and in major news publications. ACEP followed this *Report Card* in years to come with releases in 2009 and 2014 that helped drive ACEP's advocacy agenda.

In 2009, on the heels of the second *Report Card*, a comprehensive media campaign called "Myths and Realities," the lead-up to the passage of the Affordable Care Act, and other factors, Mr. Wilkerson was named #37 on the list of Top 100 Most Influential People in Health Care by *Modern Healthcare* magazine. "It was a great honor for me, but it was really a testimony to how active and effective ACEP members and staff are in so many areas," he said.

The value of activity at the chapter level has been important to Mr. Wilkerson. He added $50,000 to the ACEP budget for state public policy grants in addition to ACEP's traditional chapter grants. In 2008, ACEP started offering free member services for chapters, including a state public policy tracking service, chapter newsletters, website development, and more.

During his tenure, ACEP communications have continually evolved to suit changing member needs, with several comprehensive overhauls of our website; the daily customized news briefing, *EM Today*; and an embracing of social media with Twitter, Facebook, blogs, podcasts, videos, apps, and more.

Mr. Wilkerson said he is proud of how ACEP has reengineered *ACEP Now* by increasing the clinical content of what was once known as *ACEP News*. *Annals of Emergency Medicine* has long been an excellent flagship publication of ACEP and has continued to gain prominence. His leadership is helping guide the early 2020 launch of ACEP's second journal, an online-only open-access publication known as *JACEP Open*.

After passage of the Affordable Care Act, ACEP created the Emergency Medicine Action Fund (EMAF), which has funded many important projects, including the "Value of EM Study" conducted by the RAND Corporation.

A Lasting Legacy

One of the most significant developments under Mr. Wilkerson's leadership has been the creation of ACEP's Clinical Emergency Data Registry (CEDR), what he describes as "an amazingly complicated enterprise." It was started in 2014, and by 2016, CEDR began to gain traction and grow steadily. "CEDR will be a cornerstone asset of ACEP and the specialty for the foreseeable future as quality measurement and improvement continues to be of vital importance not only to the government but to all payers," Mr. Wilkerson said.

Many clinical and practice resources were developed under Mr. Wilkerson's leadership, including the Boarding Solutions Report distributed to all member hospitals by the American Hospital Association; the Geriatric ED Accreditation Program; the Emergency Medicine Practice Research Network (EMPRN), which captures important insights from more than 1,200 members; and, most recently, the EM point-of-care tools for use at the bedside.

As emergency medicine faced challenges from other specialties, Mr. Wilkerson led ACEP as it staked out ground to support its members. When anesthesiologists adopted a policy for sedation that was inappropriate for care in the emergency setting, ACEP adopted its own sedation policy that was far more applicable. As the critical care community has started to embrace a European standard for sepsis care that is not the standard of care in the United States, ACEP is now developing its own policy.

Part of his legacy is ACEP's new headquarters, a three-story, 57,000-square-foot building that reflects the bold and progressive character of emergency medicine. Located near Dallas/Fort Worth International Airport, ACEP's new facility has proved convenient and welcoming for a variety of EM organizations and affiliated companies.

"Being the chief executive of ACEP is a tremendous honor. We are more than just a professional medical society. To me, the mission of ACEP is a cause every bit as important as that of any philanthropic organization in the world," Mr. Wilkerson said.

"We are striving to provide access and help deliver the highest quality of emergency medical care possible. I fiercely advocate for emergency medicine and emergency physicians whenever I have the opportunity," he said, adding, "An ACEP past president once paid me a real compliment when he said, 'Dean wears ACEP underwear.'"

ACEP

ACEP's 2005 Rally on Capitol Hill in Washington, D.C., drew 4,000 participants and is believed to be larger than anything ever done by any medical organization.

GROWTH UNDER DEAN WILKERSON'S TENURE

MEMBERSHIP
2004 **23,197**
2018 **40,000**

ACEP BUDGET
2004 **approximately $18 million**
2019 **approximately $43 million**

STAFF
2004 **92 staff**
2019 **150 staff**

COUNCIL
2004 **264 councillors**
2019 **433 councillors**

SECTIONS
2004 **26 sections**
2019 **40 sections**

NEMPAC
2004 **about $500,000 in donations**
2019 **over $1 million in donations**

911 NETWORK
2004 **1,100 members**
2019 **4,000 members**

EMF
2004 **$450,000 in donations**
2019 **$1,090,000 in donations**

ANNUAL SCIENTIFIC ASSEMBLY ATTENDANCE
2004 **3,500 attendees**
2018 **7,469 attendees**

LAC ATTENDANCE
2004 **310 attendees**
2018 **722 attendees**

SPOKESPERSON NETWORK
2004 **236**
2019 **600**

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ACEP NOW RESPONDS TO RECENT MASS SHOOTINGS

Lately, there seem to have been so many public mass shootings that the most recent one could be the cover story on every single issue of this magazine. We obviously can't do that. What's more, the stories are all roughly the same. The terrorist uses a weapon of war to kill and injure dozens, and emergency departments are put to the test. Heroes are lauded for their acts, which should never have been necessary in the first place. Could there be anything more nauseating than the fact that we have become collectively "bored" by these events? The news cycles are getting shorter because, frankly, we've grown accustomed to mass shootings.

When these catastrophes occur, though, it must spur some action. Inaction is the embodiment of cowardice and is not who we are. It seems unfathomable that, as of last fall, there was any doubt as to whether firearm safety was "in our lane" as emergency physicians. We know it is. ACEP's long-standing policy on "Firearm Safety and Injury Prevention," was last revised in 2013 and embodies many sensible measures. The policy, printed below, takes a "yes, and" approach, rather than a "no, but" one.

Below is a summary of some of ACEP's statements, and our ongoing efforts in this arena. Some revisions and additions are being made as I write this. Know about them and get involved.

—Jeremy Samuel Faust, MD, MS, MA, Medical Editor in Chief of ACEP Now

OUR POLICY

ACEP abhors the current level of intentional and accidental firearm injuries and finds that it poses a threat to the health and safety of the public.

ACEP supports legislative, regulatory, and public health efforts that:

- Encourage the change of societal norms that glorify a culture of violence to one of social civility
- Investigate the effect of socioeconomic and other cultural risk factors on firearm injury and provide public and private funding for firearm safety and injury prevention research
- Create a confidential national firearm injury research registry while encouraging states to establish a uniform approach to tracking and recording firearm related injuries
- Promote access to effective, affordable, and sustainable mental health services
- Protect the duty of physicians and encourage health care provider discussions with patients on firearm safety
- Promote the development of technology that increases firearm safety
- Support universal background checks for firearm transactions
- Require the enforcement of existing laws and support new legislation that prevents high-risk and prohibited individuals from obtaining firearms by any means
- Restrict the sale and ownership of weapons, munitions, and large-capacity magazines that are designed for military or law enforcement use

UPDATE ON ACEP FIREARM SAFETY INITIATIVES

In response to the mass shootings in July, ACEP President Vidor Friedman, MD, FACEP, provided the ACEP membership with an update on ACEP's firearm safety initiatives, including:

- Per a 2018 Council resolution, the Public Health & Injury Prevention Committee is considering updates to the Firearm Safety and Injury Prevention statement and will send its recommendations to the Board for review in September.
- The Emergency Medicine Foundation has partnered on research grants and ACEP made a contribution to the American Foundation for Firearm Injury Reduction in Medicine (AFFIRM), a nonprofit organization founded and led by emergency physicians working to end the epidemic of gun violence through research, innovation, and evidence-based practice.
- ACEP's High Threat Casualty EMS Subcommittee recommended several action items that the Board will be considering.

Several key initiatives will be discussed or debuted at ACEP19 in Denver:

- A resolution has been submitted to the Council for consideration that will be discussed at the Council Meeting Oct. 25–26.
- The results of our Council Survey about a variety of policy positions related to gun injury prevention will be available by the Council Meeting.
- "Until Help Arrives," our training program designed to help emergency physicians provide basic first-responder training in their communities, will launch at ACEP19.
- ACEP will host a preconference course on assessing threat and identifying patients at risk for causing harm entitled "Care Under Fire: EDs, Gun Violence, and Threat Assessment."

Find all of ACEP's active shooter resources, including policy statements, podcasts, and more, at www.acep.org/activeshooter.

TOXICOLOGY Q&A

PHOTO: JASON HACK (OLEANDER PHOTOGRAPHY)

Look But Don't Eat

by JASON HACK, MD, FACEP, FACMT

QUESTION: At what time of year should you watch for this lovely but toxic bloom?

CONTINUED *on page 10*


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Toxicology Q&A Answer

QUESTION ON PAGE 8

ANSWER: Late spring and early summer.

Iris (Greek for "rainbow") is a group of flowers that come in a wide variety of striking color variations and is found gardens around the world. They are erect herbaceous perennials notable for ornamental, large, unobstructed ruffled flowers that have a distinctive architecture—composed of three outer hanging sepals (falls) and three inner petals (standards) usually arched and erect.[1] This sits on top of stiff green two- to three-foot stalks (scapes) that originate from leaf bundles (fans) of sword-like leaves. They open in late spring and early summer.

Toxins and Symptoms

There are more than 200 species of iris and related plants. The entire plant is toxic. The noxious compounds have been variously called irisin, irone, iridin, irisin, and irisine. The highest concentrations of toxins are found in the rhizomes (underground stems) and bulbs, while lesser amounts are found in the stems and flowers.

Poisoning is primarily seen in inquisitive dogs and cats, but toxins can affect humans if they are exposed. Iris toxicity is generally mild in humans, but in pets and cattle, it can cause serious illness and death.

Symptoms of iris poisoning in pets vary in severity depending on amount of exposure and which part of the plant was ingested.

Consumption of the toxic compounds—resinoids and pentacyclic toxic terpenoids—will cause increased salivation, diarrhea, vomiting, decreased appetite, ulcers, and sores in the muzzles and lips of the animal as well as bleeding of the stomach and small intestine.

If toxicity occurs in humans, the most common symptoms are skin irritation from dermal exposure, nausea and vomiting, abdominal pain, and diarrhea in cases of substantial ingestion.[2]

There is no specific treatment. Supportive care is advised.

Interesting Facts

Orris (*Iris pallida*) has been used in the perfume and pharmacy industry for hundreds of years because irone emits a violet smell and serves as a fixative, causing perfumes to hold their scent longer. Extract of orris is found in gin, which is why some people are allergic to it.[3]

Iris dilutions are also listed as a homeopathic remedy for "sick headaches" that "begin with blurred vision."[4]

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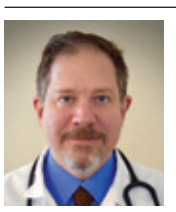


DR. HACK (OLEANDER PHOTOGRAPHY) is director of the division of medical toxicology at Brown University in Providence, Rhode Island. He enjoys taking photographs of beautiful toxic, medicinal, and benign flowers that he stumbles upon or grows in his garden. Contact him at ToxInRI@gmail.com.

IRIS

PHOTO: JASON HACK (OLEANDER PHOTOGRAPHY)

2019 ACEP ELECTIONS PREVIEW

CONTINUED FROM PAGE 1

MEET THE ACEP COUNCIL OFFICER CANDIDATES

COUNCIL SPEAKER CANDIDATE

COUNCIL VICE SPEAKER CANDIDATES

PLATFORM STATEMENTS

The Council officer candidates responded to this prompt:

Give an example of an issue where you had to sideline your personal viewpoints to represent the opinion of a group.

COUNCIL SPEAKER

The following member is a candidate for ACEP Council Speaker.

Gary R. Katz, MD, MBA, FACEP (Ohio)

Current Professional Positions: chief medical officer and emergency physician at Community EM Partners, Ohio; assistant professor, department of emergency medicine, The Ohio State University, Columbus

Internships and Residency: emergency medicine residency, Summa Health System, Akron, Ohio; emergency medicine internship, Summa Health System

Medical Degree: MD, Medical College of Ohio (1998)

Response

One of my guiding principles is that when I represent an organization, I do so in a manner that speaks for that collective opinion without distancing myself from or otherwise undermining the decision authority of that organization. For this reason, I will focus on my process for when I assert my personal opinion and when I would set that aside in the duty of the organization to which I serve.

The first step is making sure I've asserted my personal opinion at the appropriate time. To do this, I must assure I have actively participated in the deliberative process to the extent allowable. During discussion if I find that a recommended action is errant or shows poor judgment, then it is appropriate to raise those concerns to the appropriate body, be that subcommittee, chair, Council floor, or other administrative component of the organization.

However, if the organization has been thorough, fair, and fulfilled its duty as a deliberative body, once the final decision is made, my duty is to then represent that point of view. This must be completed without acting defiantly or undermining the decision. This goes so far as to avoid distancing myself through statements such as, "While I don't agree, the organization has decided to take [specified] action." In a similar vein, I view it as inappropriate to recruit others to object to the decision on my personal behalf via backroom conversations, which is just another way to skirt one's duty to properly represent a body's position.

While a specific position may be at odds with my personal stance, it is important to remember that our organization has redundant processes to properly consider positions and share where we might individually disagree or agree. Through proper channels, it is always possible to reconsider, modify, or resolve decisions, but to do so, one must use the formal deliberative process to amend or rescind prior action. A highly functioning organization can employ these tasks for greater agility than blindly implementing past decisions under a changed or new construct.

COUNCIL VICE SPEAKER

The following members are candidates for ACEP Council Vice Speaker.

Kelly Gray-Eurom, MD, MMM, FACEP (Florida)

Current Professional Positions: chief quality officer and assistant dean for quality and safety; associate chair, director of clinical and business operations, and director of PA services department; and professor, department of emergency medicine at the University of Florida/UF Health Science Center, Jacksonville

Internships and Residency: emergency medicine residency and internship, University of Florida Health Science Center

Medical Degree: MD, University of Vermont College of Medicine (1992)

Response

Emergency physicians sideline their personal views all the time. We are 24-7-365. Anyone. Anything. Anytime. At any given moment, we are called upon to provide care and compassion to people we don't agree with and sometimes don't like very much. We deal with administrators and consultants who have vastly different viewpoints. Yet usually, we find a way to put aside our personal views and simply do our jobs to the best of our ability. I am no different. I take deep breaths. I walk away. I face-palm at my desk. I try to ignore the unimportant differences that cause needless turmoil during the shift. Most of the time in the ED, I can just keep moving.

Outside of the ED, it is harder. Social media and political advocacy in 2019 create entirely new levels of difficulty in the challenge of collaboratively finding common ground. Rapidly typing the first thing that pops into my inflamed brain when I see one of *those posts* is so tempting. The power is right there—a thumb click away. My view will be online for all to see. It is hard to step back from that adrenaline rush. When I start thinking, "Well, I will just tell them," delete and scroll down has become my favorite self-centering trick. Wait, pause, and think it through. It doesn't have the same immediate gratification, but it also doesn't have the inevitable, "Ugh! What did I just do?"

Advocacy has a very different challenge because unlike social media, the people in the room can see me. Working across differences is critical to achieving our goals for ACEP and our EM physicians. I don't agree with some of the people who are important to our advocacy efforts. I don't always like their actions or their voting records. Mastering the poker face and reading the room have become key skill sets. A sense of humor doesn't hurt either.

One of my DC representatives would take perverse delight in bad-mouthing my emergency department and my partners every time we entered their office. "You didn't treat my constituent's diabetes correctly. He had a blood sugar of 117, and you did nothing!" It was always a 15-minute browbeating from Dr. Google. They had no wish to be educated; they just wanted to start our conversations feeling their authority. I had to learn to hold my medical teaching moments for ACEP issues. If I deviated too far from Dr. Google, I became the enemy and the conversation was over. I wouldn't let them get too far down the path of bad-bad doctor. Some things are just too important, and our clinical reputation is one of them. But allowing a small personal annoyance to slide for the good of the group was necessary in that particular office, at that particular time, to achieve advocacy success.

CONTINUED *on page 12*

Finding humor, having patience, picking the right moments, and learning to set aside personal agendas are tools that will help me serve and facilitate discussions as Council Vice Speaker.

Andrea L. Green, MD, FACEP (Texas)

Current Professional Positions: emergency physician, American Physician Partners and Marshfield Clinic Eau Claire Center, Eau Claire, Wisconsin

Internships and Residency: emergency medicine residency, Howard University Hospital, Washington, DC; emergency medicine residency, Sparrow Hospital/University of Michigan, Lansing

Medical Degree: MD, University of Iowa College of Medicine (1979)

Response

✔ In the state of Texas, we breed big ideas and big points of view. When President of the Texas College of Emergency Physicians, of course I had to tackle big issues. I fought against the repeal of Texas tort reform statutes, shut down an effort by a teaching hospital that was trying to create an alternative board emergency medicine fellowship, was involved with efforts to address the issue of Medicaid expansion in our state, and started our chapter residency visit program. I do not shy away from jumping into issues with both feet. I am skilled at recognizing when and how to intervene, putting things in proper perspective, and the importance of creating win-win situations in a variety of settings. I have integrity and selflessness, and I unquestionably understand suspending your personal viewpoints on behalf of others.

A personal example was a situation that occurred when I was a member of a single-hospital, independent, democratic emergency physician group. Our group was requested to provide staffing for a new facility being developed by our hospital. The group initially indicated to the CEO a willingness to accept the additional contract. However, as time grew closer to opening the new facility, the group began to reconsider the financial risk and the work. Our group hired a consultant who did an extensive financial and risk assessment and provided data indicating that the risk was not as substantial as the group predicted. I was comfortable with the data presented and the assessment of the consultant. I felt that our group could be successful and was concerned about the potential negative impact on our group of changing our position so late in the process. I encouraged our group to move forward with the project. After multiple meetings with the consultant, the group took a vote deciding not to move forward and requested that I present their decision to the CEO. This decision was made about 90 days prior to the opening of the new facility. I met with the hospital CEO concerning the decision of our group. I discussed with him the financial, staffing, and risk concerns of our group. He was extremely displeased with being advised of this decision at 90 days prior to his grand opening. To prevent our group from losing their contract, I knew I had to problem-solve. I agreed to help him with an alternative plan to keep his opening on track, ultimately creating a win for our group, who continued enjoying their single contract for over 20 years.

Howard "Howie" K. Mell, MD, MPH, CPE, FACEP (Illinois)

Current Professional Positions: national reservist emergency physician, Vituity, Emeryville, California

Internships and Residency: emergency medicine residency, Mayo Clinic School of Graduate Medical Education, Rochester, Minnesota

Medical Degree: MD, University of Illinois at Chicago College of Medicine at Rockford (2004)

Response

✔ I have served as a member of the Public Relations Committee and as a spokesperson for ACEP for the last nine years. In that time, I don't think I've seen a single clinical issue as contentious as the use of tPA for acute ischemic stroke. There are strong opinions on both sides of the debate, and I've been known to make my opinion very clear—to say I'm skeptical is perhaps a bit of an understatement. At one point, I had an opportunity to take that skepticism public, perhaps even to reinvigorate the debate nationally. But instead, I put the College first and faithfully represented ACEP as a spokesperson.

In February 2013, ACEP published a controversial guideline entitled "Clinical Policy: Use of Intravenous tPA for the Management of Acute Ischemic Stroke in the Emergency Department." This set off a firestorm. Almost immediately, a Council resolution was introduced asking that the policy be revisited and that a 60-day open comment period be included. Needless to say, the Council debate was spirited, lengthy, and at times downright heated. Many Councilors had significant questions about the data used to drive the conclusions, and we strongly disagreed with the determination that there was Level A (by ACEP's rating scheme) evidence supporting the use of tPA. We stridently argued to rework the policy. That resolution was eventually passed by 75 percent of the Councilors. The policy would be revisited. The ACEP Board

had a lengthy discussion regarding clinical policies in November 2013, and in January 2014, the Board approved specific direction and comments to the Clinical Policies Committee regarding implementation of the resolution.

When this occurred, many in the media (including some national news outlets) asked, "What happened [with ACEP's policy]?" As an ACEP spokesperson, I was asked to handle some of these interview requests and to help come up with talking points regarding the controversy. This was an incredible opportunity to express my opinion to reporters, to explain the limitations of the data, and to describe the concerns shared by so many of our colleagues regarding the use of tPA in acute stroke. It might've been possible to drive the tPA question into the national health care discussion, especially considering the cost of the drug. However, it wouldn't benefit ACEP to revisit the Council debate in the press. Putting the use of tPA to treat acute stroke into question in the public's eye would only serve to confuse and even frighten patients, and ACEP didn't have a recent clinical policy (at that point) to fall back on. So I helped craft a message that the debate on the resolution was a debate of methodology, about the rigor required for a Level A recommendation, and whether the meta-analyses used by the Clinical Policies Committee provided sufficient evidence. With this type of dry description and simple, but truthful, summation, most media outlets quickly lost interest. While I usually would wish to reenergize a debate about which I am passionate, that wasn't my role.

ACEP Now Wins Awards for Editorial Excellence

ACEP Now has received several editorial awards:

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

Read the winning articles at ACEPNow.com.

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

Table 1: Droperidol Safety Data

CITATION	PATIENT POPULATION & METHODS	DOSE	OUTCOMES
Acad Emerg Med. 2005;12(12):1167-1172	• Randomized, double-blind trial • N=144 • For acute undifferentiated agitation	• Droperidol IM 5 mg • Ziprasidone IM 20 mg • Midazolam IM 5 mg	• No cardiac dysrhythmias were identified
Ann Emerg Med. 2010;56(4):392-401.e1	• Randomized controlled trial • N=91 • For acute behavioral disturbance	• Droperidol IM 10 mg, 5 mg • Midazolam IM 10 mg, 5 mg	• No significant adverse events • QT prolongation was noted after sedation in 2 of 31 droperidol patients and 2 of 29 midazolam patients
Ann Emerg Med. 2015;66(3):230-238.e1	• Prospective observational study in six emergency departments • N=1,009 • For acute behavioral changes	• Droperidol IV/IM 10–20 mg • Interquartile range 10–17.5 mg	• 1.3% had a QT prolongation • Half of those patients had another cause for QT prolongation • No patients developed torsades de pointes

Compiled by Brigham and Women's Hospital Drug Safety Committee.

droperidol for agitated patients is precisely in those without IV access. IV haloperidol works fine for psychosis. But without an IV line in place, the delayed onset with IM haloperidol is not workable in the emergency department setting, which is why it is so often mixed with benzodiazepines ("5 and 2" just flies off the tongue; more on that later).

The FDA warning, which it bears noting has not been revised, uses 2.5 mg as its threshold for concern. But there is no good evidence to support this approach. True, some people who received droperidol have developed torsades but only after receiving absolutely gargantuan doses, totaling more than 300 mg. Droperidol's cardiovascular safety is supported by a series of studies that found none of the more than 1,200 agitated patients who received the drug developed torsades (see Table 1).[2-4] Some patients did exhibit prolongation of the QT interval, but a substantial proportion of patients had additional reasons for prolonged repolarization. Although these data were collected in emergency departments, studies in prehospital and anesthesia settings have added heft to the finding that sedating doses of droperidol cause neither clinically significant QT prolongation nor torsades. In short, droperidol is safe.

Second, droperidol is a smarter choice for sedation than lorazepam. Clinical trials have demonstrated that agitated patients need additional doses of lorazepam five times more frequently than those receiving droperidol.[5] In other words, while a patient may need only a single 5 mg dose of droperidol, a comparable patient may need 2 mg lorazepam—again and again and again and again. The issue here is one of pharmacodynamics. Physicians often recognize that lorazepam has a relatively short plasma half-life, but control of agitation is a pharmacodynamic effect. Lorazepam has slower central nervous system (CNS) penetrance, so sedation is delayed. Because achieving sedation takes longer, clinicians often give additional doses of lorazepam before the previous dose has fully taken effect. The serial administration of lorazepam is a real problem. Sedation following parenteral lorazepam typically lasts six to eight hours, but sedation following repeat dosing can persist even longer, sometimes up to 24 hours.

Droperidol avoids the oversedation commonly seen in lorazepam (and other benzodiazepine) therapy. Droperidol, with its brisk CNS penetrance, sedates faster, so clinicians can "tune" the degree of behavioral control to a particular clinical scenario, eliminating frequently incorrect stacked dosing of benzodiazepines. This alone may help avoid an unnecessary hospitalization of a patient

CONTINUED *on page 23*

Figure 1: webPOISONCONTROL App

Figure 2: Example Questions

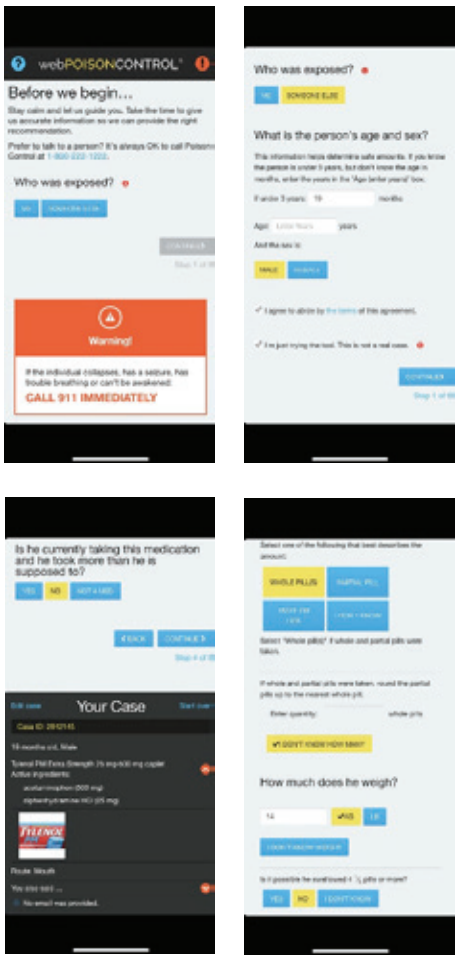
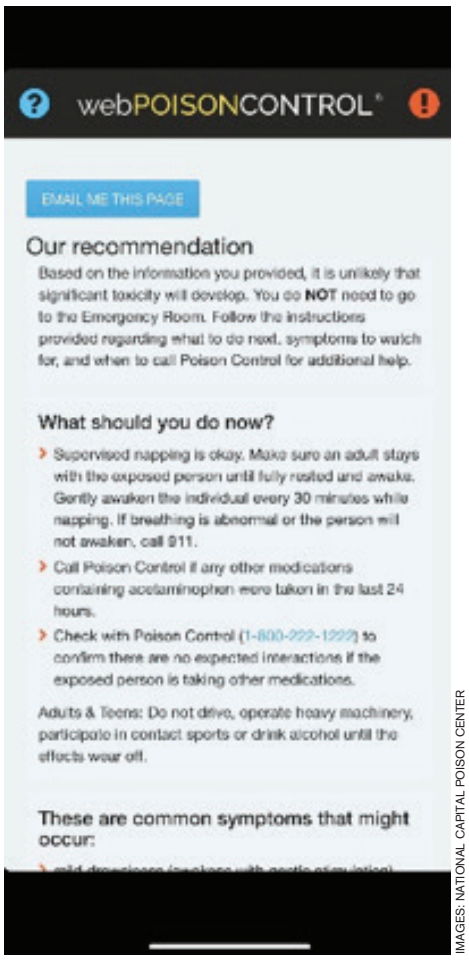


Figure 3: Recommendation



IMAGES: NATIONAL CAPITAL POISON CENTER

Meet webPOISONCONTROL

This internet-based poison control application offers trustworthy information to patients

by KELLY JOHNSON-ARBOR, MD, FACEP, FUHM, FACMT

Currently, almost 6,000 people call poison control centers every day. An additional 4,000 to 9,000 people per day experience a poison exposure but don't call because they don't like talking on the phone or waiting in phone queues, feel embarrassed or fear being judged, or don't want to scare their child who is listening nearby. Others just prefer to look online for health information and won't call poison control at all.

Meeting patients where they are, the National Capital Poison Center, in collaboration with other poison centers, has now developed webPOISONCONTROL (see Figure 1). webPOISONCONTROL is a fully automated, algorithm-driven online toxicology tool designed for public users and poison centers. The average time to complete a webPOISONCONTROL case is 2.6 minutes; since human interaction is not required, there is no need to pick up a phone or remain on hold when using the tool.

Online medical information is frequently inaccurate and even unsafe. Among the best ways to combat misinformation is to improve public access to free and accurate information. Case-specific and evidence-based, webPOISONCONTROL is available both online at www.poison.org (click on the orange "help me with a possible poisoning" button) or by downloading a free mobile app (available on the App Store and Google Play).

This tool is not just for the lay user. Many traditional phone-based poison control centers have also begun to use webPOISONCONTROL as an adjunct resource, especially to determine ED triage thresholds and home treatment recommendations. Participating poison centers are provided enhanced accessibility to the program's algorithms, triage rationales, and calculation functions. Although most webPOISONCONTROL cases are managed in the home setting, emergency physicians should be aware that patients who present to the emergency department may be there based on recommendations given by the program. These patients have done more than just "Googling their symptoms" and should be taken seriously.

There are currently more than 1,700 unique webPOISONCONTROL human toxicity algorithms ranging from pharmaceutical and over-the-counter medications to household products, bites, stings, and plants. The toxicity algorithms are created by U.S.-based toxicologists and reviewed by an expert panel prior to release.

While webPOISONCONTROL was created with the public user in mind, the platform is also helpful for emergency physicians as it includes toxicity information for rarely encountered substances that may be unfamiliar to many poison center specialists or medical toxicologists. After entering some basic data into the app (including patient age, sex, time of exposure, substance and amount; see Figure 2), webPOISONCONTROL can inform a user about whether toxicity is to be expected after exposure to, for example, a sip of lavender essential oil, ingestion of animal de-wormer tablets, or a catfish sting. Information regarding more commonly encountered toxic exposures (including prescription medications, laundry pods, and vitamins) is also available through webPOISONCONTROL.

The webPOISONCONTROL algorithms also provide information regarding common symptoms, expected durations of symptoms, and home treatment recommendations (see Figure 3). To ensure that the recommendations for each case are accurate, webPOISONCONTROL cases are audited daily by a team of toxicologists, and algorithms are updated when new information becomes available. Analysis of the results of cases managed by webPOISONCONTROL reveals similarities to cases managed by traditional poison centers; the majority of cases are managed in the home setting and without referral to a hospital, and most cases involve children younger than 6 years of age. Most users are in their 20s to 30s, female, and accessed webPOISONCONTROL on a mobile device.[1]

webPOISONCONTROL was not designed to replace traditional poison control centers; the program is currently limited to the management of single-substance exposures and is therefore unable to provide toxicity recommendations for patients who were exposed to multiple drugs. Additionally, patients who are at the extremes of age, are pregnant, or have underlying serious medical conditions are excluded from the webPOISONCONTROL algorithms. Users who admit to suicidal intent receive an automatic message to call poison control. Based on the information entered into the tool, webPOISONCONTROL may still provide users with a recommendation to call poison control for additional assistance. However, for a large percentage of users, webPOISONCONTROL will simply advise that serious toxicity is not expected and that on-site management is appropriate.

With the increasing use of the internet as a resource for medical advice, it is necessary for medical professionals to identify trustworthy and accurate internet-based medical advice platforms for patients to use. In the emergency medicine setting, patients should be encouraged to download the webPOISONCONTROL app for future use so that they can potentially avoid unnecessary emergency department visits for minor poisoning exposures.

Reference

1. Litovitz T, Benson BE, Smolinske S. webPOISONCONTROL: can poison control be automated? *Am J Emerg Med*. 2016;34(8):1614-1619.

DR. JOHNSON-ARBOR is a medical toxicologist and co-medical director at the National Capital Poison Center in Washington, D.C.

By the Numbers

INTIMATE PARTNER VIOLENCE

Intimate Partner Violence (IPV) is a **pattern of behavior between married or unmarried romantic partners or family** who live in the same dwelling that can include physical violence, sexual violence, stalking, and/or psychological aggression.

50%

of women seen in the emergency department report a lifetime history of partner violence, of which

11.7% occurred with their current partner.

Only 1/3 of acutely injured victims of abuse are identified as such during their ED visit.

EACH MONTH 76

women die because of domestic violence homicide with a gun.

There are multiple risk factors for death from domestic violence, including previous partner violence incidents and separating from a romantic partner. One of the strongest:

THE ABUSER HAVING ACCESS TO FIREARMS INCREASES RISK OF DEATH 5-FOLD.

17 STATES

have **extreme risk protection orders (ERPO) laws,** which (depending on the state) allow family members, health professionals, or law enforcement to petition a judge to remove guns from someone's home if they pose a risk to themselves or others. These laws are relatively new, and there is no good evidence yet as to whether they help protect victims of domestic violence.

The number of domestic homicides that involved a gun

INCREASED BY 26% FROM 2010 TO 2017

Compiled by AFFIRM research. Visit **ACEPNow.com** for the sources of these statistics.

DR. FUNK is a practicing emergency medicine physician in Springfield, Missouri, and owner of Med Mal Reviewer, LLC. He writes about medical malpractice at www.medmalreviewer.com.

Figure 1: Triage note

COMPLAINT: CHEST PAIN.
ASSESSMENT: **pt here w/ c/o legs vibrating and abd feels like is going to explode. pt denies chest pain. pt states he had 1 episode of loose stools today after eating radishes, tomatoes, eggs and locs. pt also had centrum vitamin. pt w/ multiple complaints.**

Figure 2: Noncontrast CT scan results

Impression: Somewhat limited study without intravenous contrast.

Cystic lesion in the left kidney is likely a simple cyst , however it is incompletely characterized without intravenous contrast. Ultrasound of the kidneys or CT scan with intravenous contrast would be helpful to better determine the nature of this lesion.

No abdominal aortic aneurysm. No evidence of dissection on this noncontrast study.

Cardiomegaly.

Figure 3: Arbitrator verdict sheet

VERDICT SHEET

1. Do you find that any defendant physician was negligent in connection with their care and treatment of decedent [redacted].

ER Physician	Yes	_____	No	X
Hospitalist	Yes	_____	No	X
Cardiologist	Yes	X	No	_____

2. Do you find that [redacted] Hospital breached the EMTALA duty to provide an appropriate medical screening examination to decedent [redacted].

Yes _____ No X

IMAGES: ERIC FUNK

The Case of the Missing X-ray

Inconsistent record keeping and insufficient imaging complicate this malpractice case

by ERIC FUNK, MD

Patients often present to the emergency department with multiple symptoms that do not fit clearly into one specific chief complaint or diagnostic pathway. In these atypical situations that defy simple description, policies and algorithms are difficult to apply. But when patients suffer unexpectedly bad outcomes, plaintiff's lawyers are quick to point out any deviation from hospital protocols. This medical malpractice case highlights these issues.

The Case

A 61-year-old man presented to the emergency department with several complaints. The triage note (see Figure 1) mentioned a sudden onset of feeling like his abdomen was "going to explode" and a vibrating sensation in his legs. Initial triage vitals showed a blood pressure of 169/84, pulse of 66 beats per minute, 18 respirations per minute, and a temperature of 96.1°F. The triage nurse listed the chief complaint as "chest pain" but later documented "pt denies chest pain." His allergies listed an anaphylactic reaction to iodinated contrast.

The physician's note described the pain as starting suddenly while loading a car. He had an "abrupt onset of the sensation that he had a lid of a paint can that began in his epigastrium and slammed up into his jaw and then came down and continues to compress upon his abdomen." The patient described feeling diaphoretic, a sense of his legs shaking, and a small amount of diarrhea. He denied chest pain to the physician. His past medical history was remarkable for history of aortic valve replacement, but he denied history of coronary artery disease or abdominal aortic aneurysm or other aortic syndrome.

The physician's examination noted a "very kind and cooperative" patient. His large abdomen made the exam difficult, but an aortic pulsation was detected and noted to be "concerning given this gentleman's proportions." The vascular exam in his lower extremities was "symmetrically diminished." The cardiac exam noted a systolic click.

After taking a full history and exam, the physician documented a differential diagnosis that included a concern for abdominal aortic aneurysm, acute coronary syndrome, and renal colic. An ECG showed no acute signs of ischemia. An initial troponin level was negative. The patient medication list included warfarin, and his International Normalized Ratio was 2.8 in the emergency department. The complete blood count and metabolic panels were unremarkable. Given the history of anaphylaxis to contrast, a noncontrast CT scan of the patient's abdomen was ordered. No abdominal aortic aneurysm or evidence of dissection was seen on CT (see Figure 2).

These results were reviewed, and the emergency physician admitted the patient to the hospital. To ensure a telemetry bed for the patient, he entered the hospitalization order under "chest pain." The hospitalist was contacted, interviewed and examined the patient in person, and admitted him. A cardiology consult was requested, and the cardiologist saw the patient several hours later on the floor. The cardiologist did not feel that this case was cardiac in nature but nonetheless recommended an ECG and a stress test for the following day.

When the hospitalist finished her shift, she signed out to the nurse practitioner (NP) covering the floor overnight. It was the NP's first day at this job. During the sign-out, the hospitalist and NP received a call from the patient's nurse that he had become hypotensive and looked unwell. They both immediately went to his bedside. A repeat ECG was ordered and was notable for borderline but suspicious ST-segment changes. Therefore, the hospitalist called the interventional cardiologist (a different cardiologist than who had initially completed the consult), and the patient was taken emergently to the cardiac catheter lab for what was presumed to be an acute coronary syndrome. In the cath lab, a large thoracic aortic aneurysm was discovered. Large hemopericardium was also found. The cardiologist believed that there was an area of fistulization from the aneurysm into the pericardium. An immediate consult with a cardiovascular surgeon was obtained, but the patient went into cardiac arrest shortly thereafter. Resuscitative measures were attempted, but unfortunately, the patient did not survive. The family did not request an autopsy.

The patient's family subsequently contacted a law firm. After initial review, the family signed a contingency agreement agreeing to pay the law firm 40 percent of any settlement or verdict as well as all litigation expenses. The defendants included the emergency physician, hospitalist, first cardiologist, and hospital. The lawsuit was filed in federal court, as opposed to state courts (which handle most medical malpractice cases). This was done because the patient was from a separate state than the physicians and because the plaintiff's allegations included an EMTALA violation.

Analysis

One of the primary issues that the plaintiff's attorney used to support the negligence claim was the discrepancy in documentation about the patient's chest pain. The triage nurse entered chest pain as the chief complaint, but the physician and nurse both wrote that the patient denied chest pain. The doctor hospitalized the patient on telemetry status due to chest pain, despite writing that he did not have chest pain. These contradictions provide easy fodder for the plaintiff's attorneys to support their claims of negligence, regardless of whether intermittent chest pain changed initial management (the patient ostensibly received the initial workup that he would have had whether or not he had active chest pain at the time of evaluation).

This patient did not receive a chest X-ray despite the conflicting reports of chest pain. To worsen the matter for the defense, the hospital had a written policy for chest pain patients that allowed the ED nurses to order certain tests, including a chest X-ray. The plaintiff suggested that the emergency physician was negligent in his work-up, given that even a simple triage protocol called for an X-ray to be ordered. Additionally, the CT that was ordered in the emergency department was indeed an abdominal CT only and did not include the chest. Therefore, no thoracic imaging was obtained prior to admission.

Both sides eventually agreed to enter into binding arbitration with a neutral party, with

a cap on any settlement of $500,000. After reviewing the case, the arbitrator found that the emergency physician and hospitalist were not negligent and that there had been no EMTALA violation. The cardiologist who initially consulted on the patient was found to be negligent (see Figure 3).

The arbitrator awarded the plaintiffs $791,000 in damages, which was reduced to $500,000 per the previous agreement and was paid by the cardiologist's malpractice insurer. As agreed, the law firm took 40 percent of the awarded damages ($200,000) plus their expenses of $69,000. This left $144,000 for the patient's wife and $43,500 for each of his two children.

Take-home Points

There are several learning points from this case in regard to both medical care and documentation. A key concept is that fatal aortic pathology may not reliably localize to a specific anatomical area. If there is reasonable concern for aortic pathology, the entirety of the aorta should be imaged (a CT of the chest *and* abdomen/pelvis should be ordered for any aortic syndrome evaluation). (As a sidebar, it was later revealed that the patient's reported anaphylactic reaction to contrast may not have been accurate, underscoring the importance of accurate medical record keeping in general.) Nonetheless, there are other options available for imaging the aorta, including MRI or transesophageal echocardiography. Emergency physicians should be prepared to advocate vigorously for the necessary testing, despite the fact that these are uncommon work-ups and may result in some pushback.

Finally, the documentation in this case presented problems for the emergency physician's defense. Discrepancies between the physician and nurse created opportunities for criticism, even if management would not have been substantially altered by resolving that discrepancy in real time. More striking were discrepancies within the emergency physician's own chart. This made it easy for the plaintiff's attorney to suggest that a chest X-ray should have been ordered, potentially averting tragedy.

A review of the details of this case reveals a behind-the-scenes look at medical malpractice litigation, giving the reader practical tips to improve both their care and documentation. Interested readers can view more of the details from this case—including the original medical record, legal documents, expert witness opinions, and further analysis of the medical care and documentation—at **www.medmalreviewer.com**.

UNIVERSITY OF PUERTO RICO

RESIDENCY SPOTLIGHT

UNIVERSITY OF PUERTO RICO

Location: Carolina, Puerto Rico

Year founded: 1993

Number of residents: 10 per class, three-year program

SECRET WEAPONS (MEDICAL)

A major perk is exposure to tropical medicine (dengue fever, leptospirosis, etc.) and disaster medicine. After our work during and after Hurricane Maria in 2017, we can proudly say that we endured, recovered, and have continued to learn from that experience. As a result, many valuable skills for tomorrow's emergency physician, regardless of where they may practice in the future, are second nature to our graduates. Our program provides a very hands-on experience. All procedures are performed by residents under direct supervision of board-certified emergency physicians. We have fellowship-trained faculty in administration, hospice and palliative medicine, EMS, pediatric emergency medicine, and ultrasound. We also have faculty with master's degrees in clinical research, and most have completed the ACEP Teaching Fellowship. Our alumni have been accepted into fellowship programs in ultrasound, undersea and hyperbaric medicine, wilderness, international medicine, critical care medicine, simulation, pediatric emergency medicine, toxicology, education, and sports medicine, among others.

SECRET WEAPONS (NONMEDICAL)

Difficult shift? Need a free day to relax or want to go study in a different setting? Our island provides incredible sites, all within driving distance: beautiful beaches; El Yunque National Forest; timeless sites such as El Morro Fort, a nearly 500-year-old historic relic that once defended against foreign invaders and today is a unique museum situated above the cliffs of San Juan Harbor. We also have easy access to outdoor activities including kayaking in one of our three bioluminescent bays. And don't forget excellent weather all year long. On top of all this, we have excellent cuisine, superb coffee, and the world-renowned Bacardi Rum.

—Maria Ramos-Fernandez, MD, MSc, FACEP, program director

TRIVIA

Who recently freaked out riding Puerto Rico's Monster Zipline? Jimmy Fallon.

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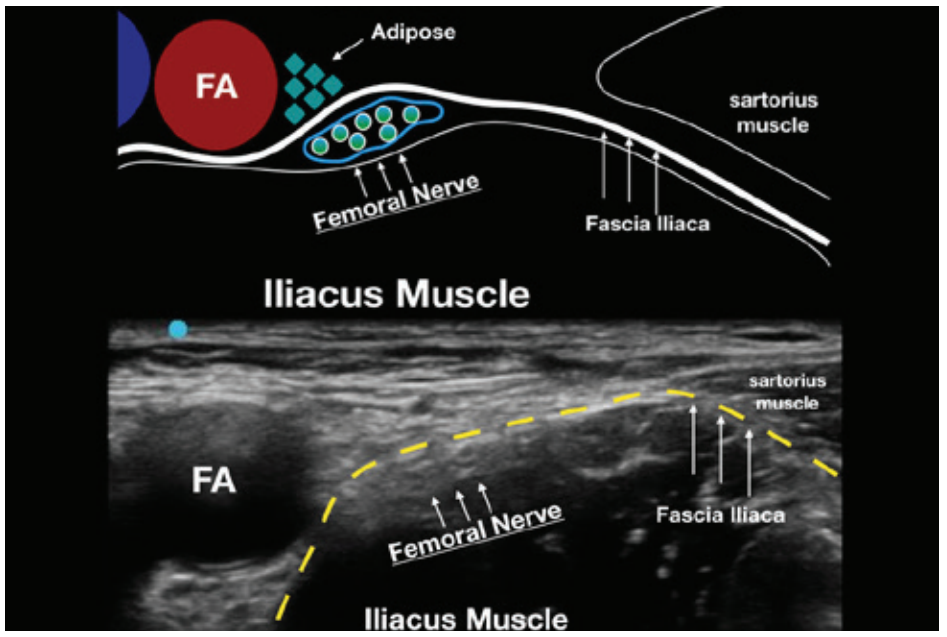

FIGURE 1: A. Drawing of the relevant sonoanatomy when performing an ultrasound-guided femoral nerve block. Note that the fascia iliaca keeps the femoral nerve right next to the iliacus muscle. **B.** Ultrasound image of the same anatomy. The fascia iliaca (yellow dotted line) is the key structure to recognize when performing the block.

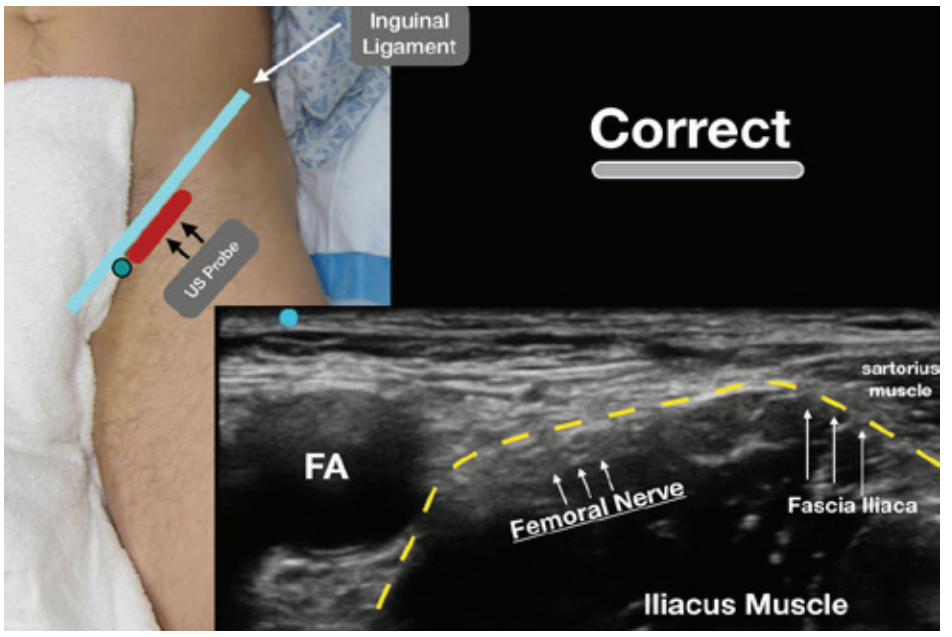

FIGURE 2: Place the ultrasound probe (with the probe marker facing to the patient's right/green circle) just under the inguinal ligament so that the relevant anatomy is clearly visualized.

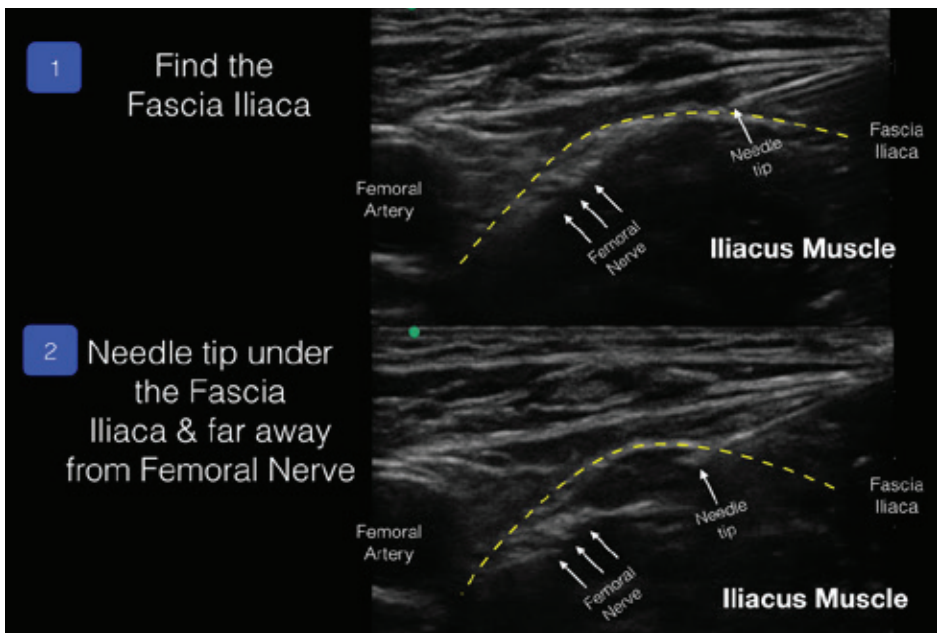

FIGURE 3: The block needle enters from lateral to medial and deposits anesthetic under the fascia iliaca (away from the femoral nerve and artery).

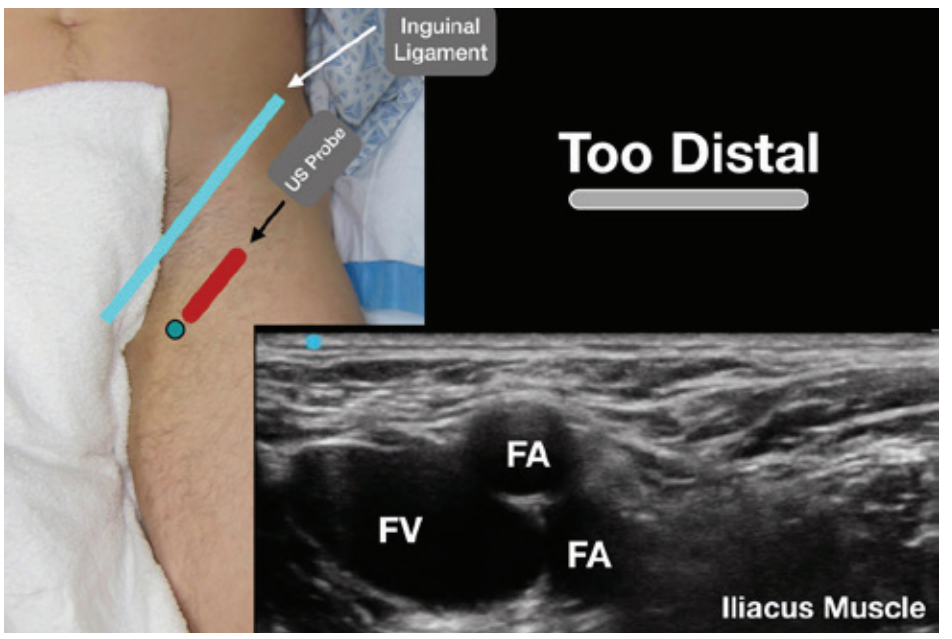

Figure 4: Error 1: The ultrasound probe is too distal in the thigh. The femoral artery has split into the deep and superficial femoral arteries, making visualization of the fascia iliaca and iliacus muscle difficult.

Avoid These Common Nerve Block Errors

Tips to improve efficacy with ultrasound-guided femoral nerve block

by ARUN NAGDEV, MD; AND DANIEL MANTUANI, MD, MPH

In emergency medicine, the quality of pain management of the acutely injured patient has steadily matured over the past two decades. Instead of a strategy that leaned heavily on opioids, we have progressed to multimodal pathways that consist of various medications (opioids, ketamine, nonsteroidal anti-inflammatory drugs, acetaminophen, etc.) as well as ultrasound-guided nerve blocks (UGNBs). Our center has incorporated UGNBs into our practice for more than a decade to achieve optimal pain control, and most of our clinicians (including residents, physician assistants, and nurse practitioners) have become facile in ED-based blocks for numerous injuries. We have been fortunate to teach numerous clinicians the basics of UGNBs and allow them to develop comfort with the skill set needed for optimal acute pain management.

This series of articles—starting with the ultrasound-guided femoral nerve block—will discuss common errors that we have seen from our learners. We hope that these minor adjustments in technique will improve UGNB efficacy and spur more clinicians to incorporate these techniques into their armamentarium for optimal pain management.

The goal of the ultrasound-guided femoral nerve block is to offer partial pain control for acute hip fracture (including femoral neck and intertrochanteric fracture). A single injection block performed at the bedside can reduce pain by about 50 percent and decreases IV pain medication requirements. Some data suggest that early ultrasound-guided femoral nerve blocks in patients with hip fractures may improve functional outcomes.[1-3]

Technique

Classically, the femoral nerve sits just lateral to the femoral artery and is held in close approximation to the Iliac muscle by the fascia iliaca. Placing the ultrasound probe just below the inguinal crease with the probe marker aimed to the patient's right allows clear visualization of relevant anatomy. The fascia iliaca is the key structure to identify when performing the ultrasound-guided femoral nerve block (see Figures 1 and 2). For a successful ultrasound-guided nerve block, the goal is to place the tip of your needle just under the fascia iliaca. Once in the proper location, injection of anesthetic (or normal saline for hydrodissection) will be clearly seen as black (anechoic) fluid that will spread between the fascial plane and the iliacus muscle. With this technique, the needle stays far away from both the femoral nerve and artery, improving procedural safety (see Figure 3). Also, to prevent exceeding the maximal suggested dosing of anesthetics, we recommend referring to a dosing guide when performing any block (http://highlandultrasound.com/med-guide). To simplify the math, in a patient over 50 kg, you can safely deliver either 20 ml of 0.5% bupivicaine or 1% lidocaine.

For a more detailed explanation of the procedure, please refer to the previous articles on ultrasound-guided femoral nerve blocks published in *ACEP Now* (www.acepnow.com/article/ultrasound-guided-femoral-nerve-block).[4]

In our experience, when novice clinicians are able to locate this classic sonoanatomy, the procedure is often easily performed, leading to

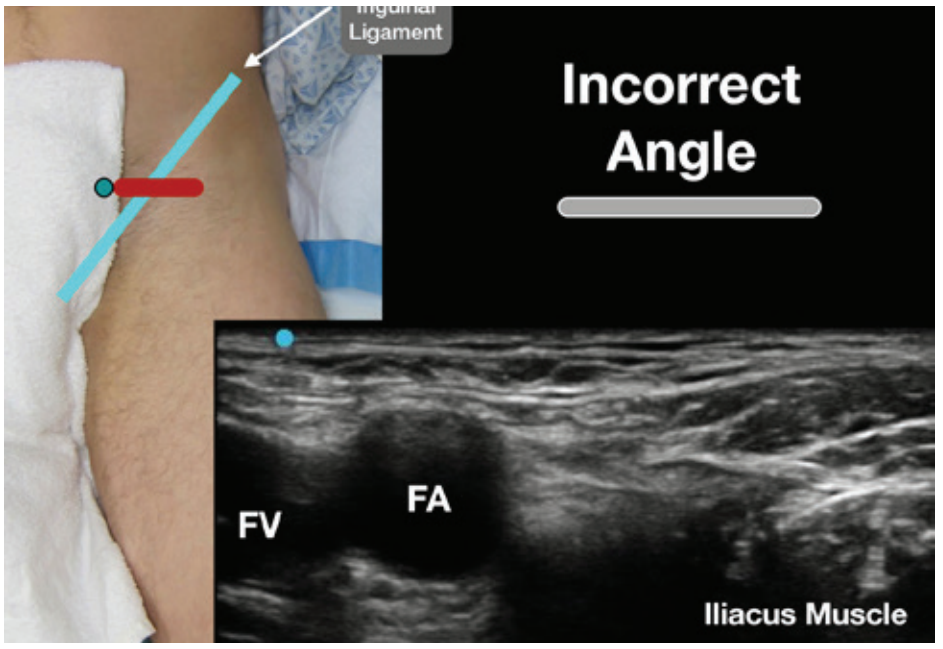

Figure 5: Error 2: The angle of the probe is not perpendicular to the femoral artery, making the fascia iliaca and iliacus muscle difficult to identify.

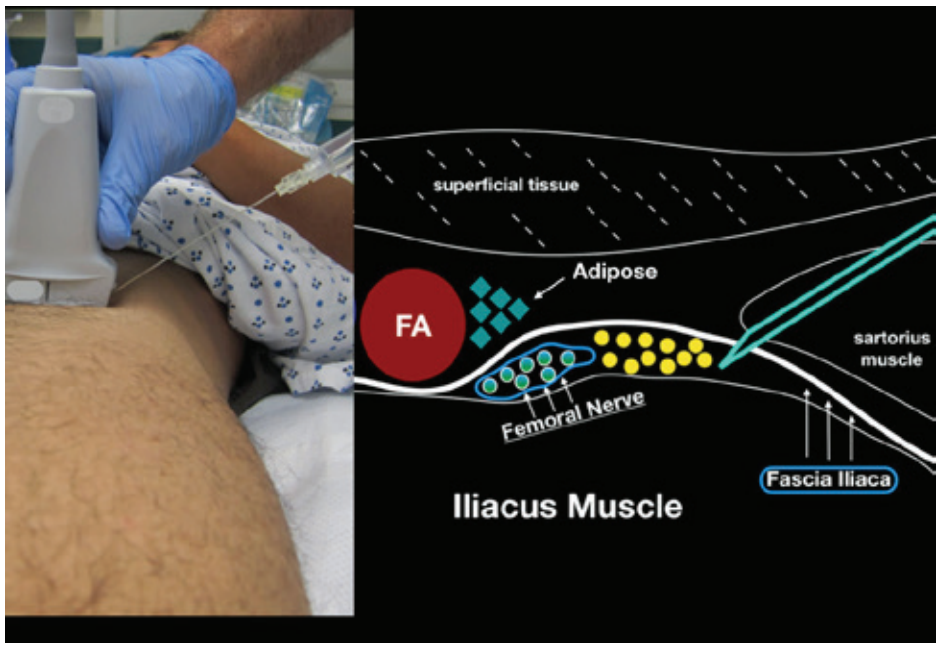

Figure 6: When performing an in-plane lateral to medial approach to the ultrasound-guided femoral nerve block, obtain clear sonoanatomy by proper probe positioning. Try to get your block needle just under the fascia iliaca (lateral to the femoral nerve) and inject anesthetic gently.

low rates of block failure. Unfortunately, we have noticed two common errors when defining the relevant sonoanatomy that can be easily remedied by minor probe manipulations.

Error 1: Probe Placement Distal to Femoral Artery Bifurcation

To obtain the classic sonographic view needed for successful ultrasound-guided femoral nerve block, the clinician must image at the level of the common femoral artery. We have observed that many clinicians place the ultrasound probe distal to the bifurcation of the common femoral artery, imaging the superficial and deep femoral arteries. At this level, the femoral nerve and the fascia iliaca can be difficult to locate. We recommend sliding the probe cephalad and positioning it just below the inguinal ligament so that the common femoral artery is clearly visualized (see Figure 4).

Error 2: Probe at the Wrong Angle in Relation to Femoral Artery

Another error that we commonly see is incorrect probe angle. The ultrasound probe needs to be oriented perpendicular to the common femoral artery to obtain an optimal view of the sonoanatomy. If the probe angle is incorrect, the femoral artery will be visualized, but the clear fascia iliaca and iliacus muscle can be difficult to locate. By keeping the probe parallel to the inguinal ligament, visualization of the femoral artery and nerve bundle will be easily obtained (see Figure 5).

Conclusion

The ultrasound-guided femoral nerve block is an ideal single-injection block for emergency clinicians to incorporate into their practice. This technique as part of a multimodal approach to the pain management of the acutely injured patient is supported by literature and can be performed relatively easily at the bedside. Recognizing two common errors in probe placement can help the novice clinician find important sonoanatomy and perform the block with a high degree of confidence and accuracy. Our technique allows for the needle to be far away from the femoral nerve and artery while allowing anesthetic to be deposited under the important fascial plane (the fascia iliaca) (see Figure 6). Offering optimal multimodal pain control for acute injuries by integrating ultrasound-guided femoral nerve blocks is the core responsibility of the practicing emergency physician.

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High-Sensitivity Troponins: The New Frontier

A paradigm shift in risk stratification of low-risk chest pain patients

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

The management of emergency department patients with chest pain continues to evolve. There was a time when everyone with nary but a thoracic twinge got admitted. Even many low-risk patients were admitted (either to an observation unit or an inpatient bed) for noninvasive cardiac testing. Others would get testing within 24 to 72 hours. However, this approach was and remains inefficient and costly. Most important, it has never been shown to definitively improve patient-oriented outcomes.

We tend to underestimate the risks of admitting patients to the hospital as well as the risks of overdiagnosis (ie, false positives associated with noninvasive cardiac tests). With the recent introduction and use of sixth-generation high-sensitivity (hs) troponins, validation of the HEART Pathway (a clinical decision tool with an acronym that includes physician gestalt based on **H**istory, **E**CG features, **A**ge of patient, traditional **R**isk factors for ACS, and initial **T**roponin) for both diagnosis and prognostication, and an ACEP clinical policy suggesting that stress testing should not be routinely done, the emergency management of the low-risk chest pain patient is undergoing a paradigm shift—for the better.[1–3]

Patients at low risk for acute coronary syndromes (ACS) are those who are hemodynamically stable, have no concerning features on history or examination, and do not have objective evidence of myocardial ischemia on initial ECGs and biomarker testing. Consensus guidelines further define the low-risk patient as having a less than 1 percent risk of a major adverse cardiac event (MACE) or death at 30 days' follow-up, a threshold below which the harms inherent in further testing appear to outweigh any clinical benefit.[4,5]

Conventional Versus hs-Troponin

Conventional troponin assays use a reference limit at or near the 99th percentile of normal value, so any elevation above the reference level is, supposedly, consistent with myocardial injury. However, because these are binary assays (a test that gives a yes-or-no answer), some clinically important myocardial injury may not be initially detected at normal levels, thus necessitating serial troponin testing over 6 to 12 hours to achieve sufficient sensitivity.

In contrast, hs-troponin assays should not be considered binary tests. In fact, by definition, 50 percent of healthy individuals have detectable hs-troponin concentrations at baseline. Hs-troponin assays detect much lower concentrations of serum troponin and with much greater precision. This means that hs-troponin assays can detect clinically significant (but also some tiny insignificant) rises and falls in troponin concentrations much sooner in an ED evaluation. Moreover, the accuracy of diagnosing myocardial injury more than merely increases with hs-troponin; the Fourth Universal Definition of Myocardial Infarction is met specifically by the presence of a value above the 99th percentile and a rise or fall in that value (in order to be considered acute).[6] The key in utilizing the hs-troponin is both recognizing elevated values and observing a rising and falling pattern of hs-troponin (the "delta troponin"), rather than relying on a binary cutoff.

The "delta troponin" is defined as the change in troponin concentration between two assays performed a prespecified time interval apart. The National Academy of Clinical Biochemistry recommends using a dynamic change of 20 percent or more to define myocardial infarction in patients with baseline elevations in troponin.[7] Note that this change can be an increase or a decrease, in which increasing troponin suggests an evolving myocardial infarction while decreasing troponin suggests a resolving one. However, the bulk of the literature suggests that an absolute delta (eg, 10 ng/L troponin T) rather than a relative change (eg, 20 percent) generally performs better.

Several rapid testing algorithms have been developed with very high sensitivity for ruling out myocardial infarction, in some cases with a single troponin at the time of ED arrival. A normal ECG and a single undetectable hs-troponin drawn three hours or more after the onset of symptoms rules out myocardial infarction at ED arrival in a third of patients.[8] The ability to detect lower concentrations of troponin also enables rapid serial testing protocols that are independent of the timing of the patient's symptoms. For example, two-hour serial testing algorithms have been derived and validated for hs-troponin T and hs-troponin I assays (which are similar molecules made by different manufacturers and with different reference ranges) that rule out myocardial infarction in 60 percent of patients and rule in myocardial infarction in 15 percent of patients, leaving only 25 percent of patients undifferentiated after a two-hour ED evaluation.[9]

Utilizing the HEART score with hs-troponins also lowers the number of patients considered low risk from 40 percent to 10 percent.[1]

While theoretically the higher sensitivity of these troponin assays is expected to result in lower specificity and overdiagnosis of ACS, based on experience in Canada, where hs-tro-

ponins have been widely adapted, the use of hs-troponins compared to conventional assays decreases length of stay and admissions without missing any additional myocardial infarctions.[10]

Which Patients Are Safe to Discharge?

Using a single undetectable hs-troponin after three hours of symptom onset or a negative delta two-hour hs-troponin regardless of symptom onset, in combination with normal serial ECGs, not only rules out myocardial infarction in the vast majority of patients but also lowers the posttest probability of 30-day MACE to below 2 percent, a level below which ancillary testing may cause more harm than the risk of ACS itself.[5]

The addition of the HEART score to the pathway lowers the predicted 30-day MACE rate to less than 1 percent.[11] Using this decision tool identifies patients considered safe for early discharge. While the HEART score was initially designed to predict the likelihood of ACS in ED patients presenting with acute chest pain, it has now been robustly validated using both conventional and hs-troponin to predict 30-day MACE, leading to a 2018 ACEP Level B recommendation for its use in patients being evaluated for non–ST-elevation acute coronary syndrome or suspected ACS.[3]

Which Delta HS-Troponin Is Best?

The one-hour delta troponin algorithms perform well; however, the rule-out delta and rule-in delta are often different by only a few nanograms, which may be within the variation of the assay itself.[12] Consequently, misclassification on the basis of assay variation alone may occur. The studies validating one-hour algorithms were done in ideal conditions with samples being batch-tested on a single analyzer with the same lot of reagents. In the real world with multiple analyzers testing samples over time, assay variation is likely to be higher than observed in published studies. With two-hour delta troponins, there is less risk of misclassification from assay variation. Three-hour algorithms have not been shown to be any more accurate than two-hour algorithms.[13]

Is Ancillary Testing After the Initial ED Visit Necessary?

With such a highly sensitive pathway using hs-troponins and HEART score, ancillary testing after the initial ED workup has come under scrutiny. Exercise treadmill stress tests have a false-positive rate as high as 80 percent, leading to unnecessary angiograms, cardiac stents, and even bypass surgery.[14] In ED patients with chest pain and no evidence of acute myocardial infarction, stress testing is associated with higher rates of invasive procedures without reductions in death or myocardial infarction.[15]

The 2018 ACEP clinical policy recommends against routine use of ancillary testing prior to discharge in low-risk patients in whom myocardial infarction has been ruled out.[3] It argues that limiting complex, expensive, and time-consuming testing can reduce patient cost, emergency department and hospital length of stay, and patient anxiety caused by unnecessary stress testing and potentially false-positive results, once adequate acute myocardial infarction rule-out and risk stratification have occurred.

The American Heart Association guideline recommends that hospital systems establish an agreed-on standard approach to minimize medicolegal risk.[16] Sit down with your cardiologists and hash this out so there is an agreed-upon algorithm that makes sense based on the literature. An algorithm for low-risk chest pain patients that includes hs-troponin and does not include routine ancillary testing is the most reasonable approach based on the current body of literature. Efforts should also be focused on patient education so they understand their incredibly low risk of MACE as well as the significant risks of ancillary testing.

What's the bottom line? A single undetectable hs-troponin after three hours of symptom onset or a delta two-hour hs-troponin T less than 4 ng/L plus normal serial ECGs and a HEART score of 0–3 rules out acute myocardial infarction and lowers the predicted 30-day MACE to well below 1 percent, a threshold below which ancillary testing may lead to more harm than benefit.

Does clinician judgment (ie, gestalt) matter anymore? On one hand, gestalt is inherent in part of the HEART score ("suspicious" history). However, data on how gestalt performs out of the context of clinical decision tools are emerging, so this remains an open question.

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Best Option for Queasiness During Pregnancy?

Ondansetron and its association with congenital malformations

by KEN MILNE, MD

The Case

A 28-year-old woman presents with nausea and vomiting during pregnancy. She is at eight weeks' gestation and frustrated that nothing has worked. She has tried ginger, acupressure, vitamin B6 with doxylamine, and dimenhydrinate. A friend in her prenatal class told her about ondansetron, but a quick Google search mentioned birth defects, and this scared her. She wants to know what else she could safely try.

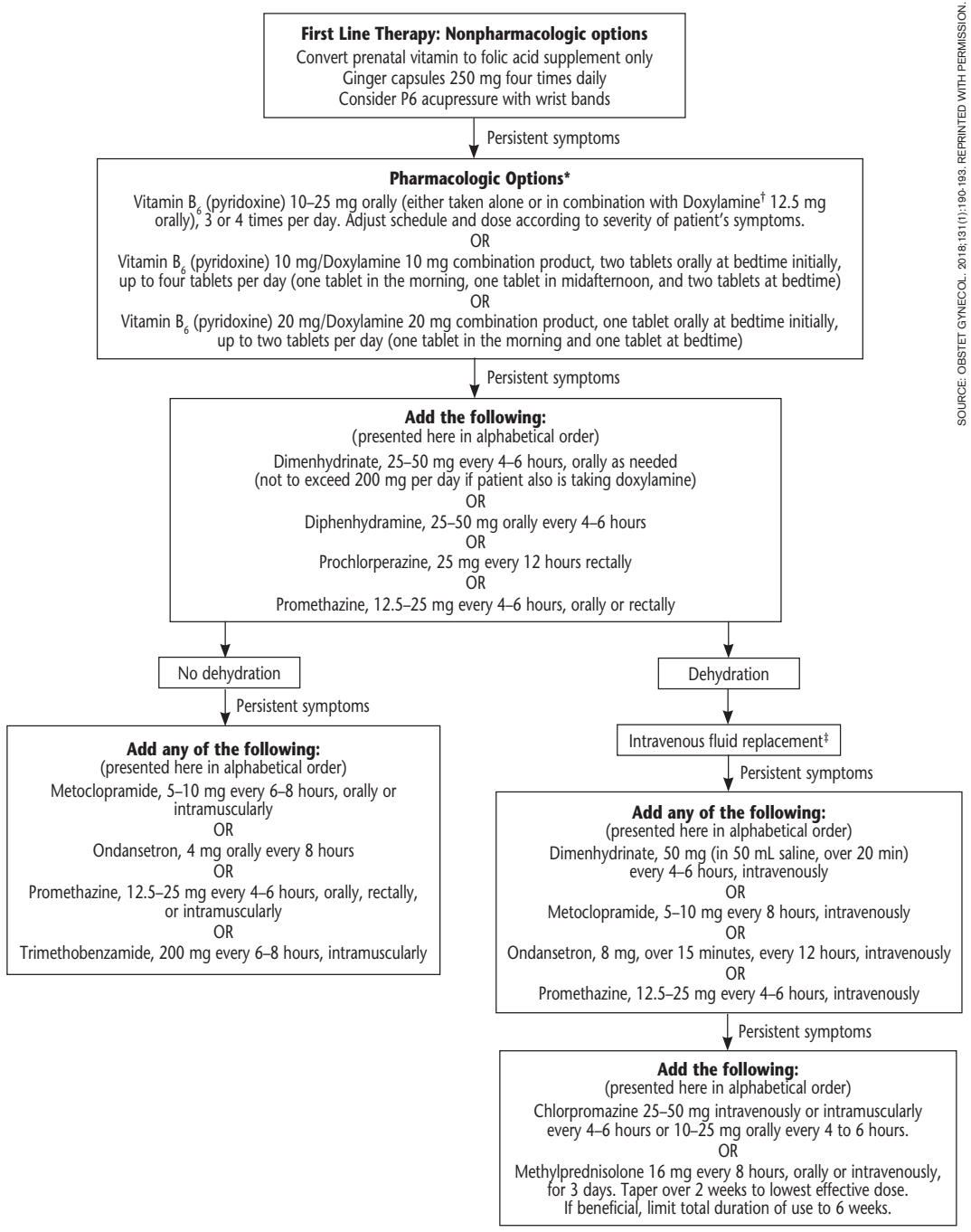
Background

Nausea and vomiting in pregnancy is a very common and frustrating condition. In more than 30 percent of women, the symptoms can become clinically significant. The most common cause of hospitalization in early pregnancy is hyperemesis gravidarum.

The American College of Obstetricians and Gynecologists has published an algorithm for nausea and vomiting in pregnancy in a practice guideline (see Figure 1).[1] It starts with nonpharmacological options like acupressure with wrist bands (despite evidence of efficacy). Pharmacological options include vitamin B6 alone or in combination with doxylamine. The next step is adding dimenhydrinate, prochlorperazine, or promethazine. The algorithm then dichotomizes into no dehydration or dehydration with persistent symptoms. It is at this step when ondansetron is added as a possible treatment.

The evidence of fetal safety of ondansetron is conflicting. An observational study showed that ondansetron taken during pregnancy was not associated with an important increased risk of fetal harm.[2]

FIGURE 1: Algorithm for Nausea and Vomiting of Pregnancy



SOURCE: OBSTET GYNECOL. 2018;131(1):190-193. REPRINTED WITH PERMISSION.

Clinical Question

Is the use of ondansetron during pregnancy associated with congenital malformations?

The Study

Huybrechts KF, Hernández-Díaz S, Straub L, et al. Association of maternal first-trimester ondansetron use with cardiac malformations and oral clefts in offspring. *JAMA*. 2018;320(23):2429-2437.

- **Population:** Women ages 12 to 55 years on Medicaid from three months prior to conception to one month postpartum.
- **Exposure:** Women who were pregnant and filled at least one prescription for ondansetron during the first three months (12 weeks) of pregnancy.
  - » **Excluded:** Women who filled a prescription during the three months before the start of their pregnancy.
- **Comparison:** Woman who were pregnant and filled a prescription for pyridoxine, promethazine, metoclopramide, or any alternative treatments.
- **Outcome:**
  - » **Primary Outcomes:** Cardiac malformations and oral clefts diagnosed within 90 days after delivery.
  - » **Secondary Outcomes:** Subgroups of cardiac malformations and oral clefts evaluated along with congenital malformations overall.

Authors' Conclusions

"Among offspring of mothers enrolled in Medicaid, first-trimester exposure to ondansetron was not associated with cardiac malformations or congenital malformations overall after accounting for measured confounders but was associated with a small increased risk of oral clefts."

Key Results: This observational study included 1.5 million women and 1.8 million pregnancies. The mean age was 24 years, and 5 percent were potentially exposed to ondansetron in the first trimester.

No increased risk of cardiac malformation was observed, but there was a statistical increase in the risk of oral clefts.

- **Primary Outcomes:**
  - » **Cardiac malformation:** adjusted relative risk (RR) 0.99 (95% CI, 0.93–1.06)
  - » **Oral clefts:** adjusted RR 1.24 (95% CI, 1.03–1.48)
- **Secondary Outcome:** Overall malformations: adjusted RR 1.01 (95% CI, 0.98–1.05)

Evidence-Based Medicine Commentary

1. **Observational Study:** The largest limitation to this study is the observational design. It demonstrates associations, not causation. Other confounders and co-variates could have been responsible for any difference discovered in the dataset with ondansetron exposure during pregnancy.
2. **Exposed Women:** The exposed pregnant women had different baseline characteristics than those women not exposed to ondansetron. Exposed pregnant women were more likely to smoke; have psychiatric diagnosis or neurologic condition; be white; and fill a prescription for other nausea and vomiting medication, psychotropics, steroids, and suspected teratogens. These differences could have affected the results.
3. **External Validity:** This dataset captured 1.5 million women and 1.8 million pregnancies. This is a large number but only represents 50 percent of all the pregnancies in the United States. The pregnant women included were Medicaid patients and may be different than pregnant women with other insurance types.

Bottom Line

Ondansetron exposure in early pregnancy does not appear to be associated with an overall increased risk of fetal malformations, but there may be a small statistical increased risk of oral clefts.

Case Resolution

You advise her that metoclopramide is recommended to be used before ondansetron. She responds well to a 5 mg oral dose in the emergency department. She is discharged home with a prescription for metoclopramide. You advise her to return if her nausea and vomiting do not improve, she is unable to tolerate oral intake, or she is losing weight.

Thank you to Dr. Nick Papalia who is currently completing his obstetrics and gynecology residency at the University of Calgary in Alberta, Canada.

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

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THE NEXT GENERATION OF EM

RESIDENT VOICE

DR. HANSEN is a second-year emergency medicine resident at Central Michigan University in Saginaw.

Engage Human Brain

A human connection is sometimes the best medicine we can give

by DAVID B. HANSEN, DO

Midshift. Pick up a new patient. Overdose. On what? Ibuprofen, about 10. How old? 16.

Hmm

Fast thinking. Check vitals. Medical history. Last ED visit. Unremarkable.

See patient. What happened? Took 10 Ibuprofen. Why? Shrug.

What else today? Drugs? Tylenol? Antifreeze? Hand sanitizer? No to all.

Get to work. Exam unremarkable. Talk to the mom. We're concerned.

Complete blood count. Metabolic panel. Tox screen. ECG. Chest X-ray. Salicylate level. Tylenol level. Ethanol level. Dial 1-800-222-1222. Toxicologist on call answers. Monitor the patient. Repeat the metabolic panel. IV fluids. Repeat vitals. Unchanged. Repeat exam. Unremarkable.

Hmm

Slow thinking. What is it about this kid? What could I miss that would potentially kill him? Other ingestions? Don't think so. The workup was negative. Kidney damage? No, repeat labs were fine, and he has been urinating without difficulty. Cardiotoxicity? No, initial ECG and repeat were both normal, no QT prolongation. Legit suicide attempt or emotional reaction to a fight with his mother?

I should dig into his history a bit.

Says here he was diagnosed with depression a year ago. He was started on escitalopram (Lexapro) but only took the one prescription. No refills since then. No other suicide attempts. No other hospitalizations. Let's go talk a bit more.

Mom, is your son still taking Lexapro? No, he took it for the first month and then said he wouldn't take it anymore. Didn't like the way it made him feel. Any Lexapro in the house? No, he finished the initial prescription.

Patient, are you feeling depressed? No response. Have you seen a psychologist or counselor to talk through some stuff? Mom replies that there was a counseling session a year ago but nothing since then. Are you going to hurt yourself or others again? No way. Do you want to go to a psych facility or go home? Home.

Tidy up the chart. Speak to attending. Overdose. Ibuprofen. About 10. Workup normal. ECG normal. Repeat ECG normal. X-ray normal. Repeat labs normal. Vitals stable. Social work consult completed. Discharge? Attending evaluates. He's go for discharge.

Hmm

No. Stop. Disengage physician brain. Engage human brain. We got lucky this go-around, and I don't think this was a legitimate suicide attempt, but what happens next time? What if next time he reaches for Tylenol, takes the whole bottle, and wrecks his liver? Or reaches for aspirin, takes the whole bottle, fries his kidneys, or stops breathing? Or reaches for alcohol or cocaine or opioids? I'm glad that social work saw this patient, but he's already proven reluctant to get and accept help for his depression. I've done my job as an emergency physician. Now let me see if I can do my job as a human being who knows a thing or two about depression.

I reenter the room and sit down next to the bed. I speak to the patient directly now, despite his previous taciturn responses. I turn off the doctor voice, lean in, look him in the eye, and begin again.

Listen to me because this is important. We got lucky today, and this attempt to hurt yourself doesn't appear to have succeeded. We are ready to send you home from the ED, and we have a whole bunch of symptoms we want you to look out for, but in the meantime, we need to talk. You could have seriously hurt yourself today or even killed yourself. Even if you weren't really trying to kill yourself, you could have still done so accidentally. And then what? Regardless of what you believe or what you have faith in, no one knows what happens when we die. Even the life we already have is not guaranteed for another minute. We're lucky to be walking around this planet because life is the first and greatest gift that we will ever receive.

But you've got this thing, this condition, this tendency, this burden of depression in your life. I know because I have it, too. And I'm here to tell you now that it never goes away fully. There will be times when it's just a tiny whisper in your ear. There will be times when it's screaming in your mind and dragging you underwater. There are ways you can manage it, and we're better now than we ever were at treating it. But it will never fully leave you. It's a part of you, just like it's a part of me.

For 35 years, I somehow thought that I was the only one who felt this way or that I was weak for feeling this way. I was wrong then, and I now know none of those things are true. I have the benefit of a few years of age on you, and I've been dealing with this thing for longer, and I've gotten pretty good at managing it. But it took time and work to get here. If you get help and work to make yourself better, then hopefully you will get a handle on it, too. But I can promise you that if you try again to hurt yourself and you die, then your story ends there, and depression will have mastered you and not the other way around.

It may seem unfair that you have to deal with this. Maybe it is. But going through this trial of mental health can change you in positive ways, too. It will deepen your compassion. It will expand your empathy. It will give you the ability to someday have a conversation with someone who needs your help. You will be someone who can understand when others can't. And trust me, that ability to help someone in need is a great privilege.

I'm not your parent. Even if I were, I couldn't truly make you do anything you did not want to do. But I encourage you strongly to get help. I can only do so much from the emergency department. It's up to you how you want to handle this, but don't squander the gift of life you have been given. Stay strong, not by going it alone but by getting help and working to get better.

I get a nod and a smile. I then discharge him home with the contact info for an adolescent psychiatrist and some other resources for follow-up.

Are we all merely worker drones in the emergency department, dispensing medical treatments that anyone with a degree and a couple shifts under their belt could deliver? Occasionally, it can feel this way. But what we do in the emergency department always matters a little and sometimes matters a lot.

It's the best job in the world. We are all *good* at everything. But each of us is *great* at perhaps one or two things. Seize these opportunities. Welcome them when they arise.

Engage physician brain. Bring human brain along. See next patient.

DROPERIDOL | CONTINUED FROM PAGE 14

who—after receiving multiple doses of lorazepam—"just won't wake up." Using droperidol instead has the potential to decrease lengths of stay for intoxicated patients who have temporarily become a belligerent threat to themselves and others in the emergency department.

Third, droperidol is a better choice for controlling agitation than haloperidol, which became the mainstay choice over the last 20 years during which droperidol was largely unavailable here. While haloperidol is a superb antipsychotic, it is a lousy sedative. That's why a sedative (such as lorazepam) is often needed for behavioral control—we've known since at least the 1980s that haloperidol alone simply doesn't cut it—thus the "5 and 2" strategy that has become the reflexive approach for controlling the agitated ED patient. Single drug therapy is often safer than polypharmacy, an aphorism supported by studies pitting droperidol versus haloperidol plus lorazepam. Lorazepam tends to oversedate patients, often for long periods of time. For those of us old enough to be familiar with droperidol's wondrous ability to rapidly control agitation without snockering the patient for hours, we remember that its use translated into simpler dispositions; formerly agitated drunks essentially "went down" but could be easily awakened and discharged by shift's end.

Finally—and this is important for emergency physicians—there is no need for an ECG prior to droperidol administration at common ED doses. Continuous cardiovascular monitoring to detect torsades is not mandated and usually unnecessary. This is based upon the knowledge that any observed QT prolongation following droperidol administration is both uncommon and, even if present, almost always clinically insignificant. Interestingly, data from some studies seem to suggest that lorazepam is actually more likely to be associated with QT prolongation, although the mechanism for this is not clear and it certainly did not lead to cardiac dysrhythmias.[3]

Conclusion

Overall, droperidol sedates faster and more cleanly than haloperidol or lorazepam, either alone or in combination. Data support not obtaining screening ECGs and continuous cardiovascular monitoring is not required. Droperidol was, in years past, the first-line therapy for sedation; the time has come for it to return to that status.

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DOING THE MATH TO BENEFIT OUR SPECIALTY

THE EQUITY EQUATION

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Know Your Workplace Rights

Current laws offer protections but are not optimized for emergency medicine

by ANDREA AUSTIN, MD, FACEP; AND ANNAHIETA KALANTARI, DO, FACEP

Emergency physicians take care of patients 24-7-365. Yet we are not immune to life transitions and challenges, including personal and family medical and life events. For too long, family leave has been presented mainly as a women's issue. In reality, it affects everyone. Today, families are created in various ways: biologically and via surrogacy, adoption, and fostering. Allowing time off only for biological mothers promotes the antiquated idea that caring for children is women's work; this is both paternalistic and unfair to men (including same-sex male parents) who want to share the parenting load and be home during those special early weeks and months.

While we all hope to work for groups and organizations that understand this concept and voluntarily commit to practices that promote a fair workplace, it is also important to know the legal protections available for those who require family leave.

Workplace Discrimination Protections

Title VII of the Civil Rights Act of 1964 prohibits workplace discrimination on the basis of race, color, religion, sex (including pregnancy, gender identity, and sexual orientation), national origin, age (40 or older), disability, or genetic information. Title VII also applies to private and public colleges, universities, and employment agencies.[1] When discrimination occurs, physicians have various options to address the problem. It can be reported internally to the organization, for instance with the assistance of human resources or employee-assistance programs. A formal charge can also be placed with the U.S. Equal Employment Opportunity Commission (*EEOC*).[2] A full list of laws enforced by the EEOC can be found at www.eeoc.gov/laws/statutes/index.cfm.

In 1978, the Pregnancy Discrimination Act amended Title VII to prohibit discrimination on the basis of pregnancy.[3] During employment interviews (and, later, during promotion or leadership decision making), inquiring about pregnancy status or future family plans or asking about children is illegal. Such inquiries can lead to civil lawsuits for discriminatory hiring practices. While some of these inquiries are well-intentioned attempts to get to know prospective employees better, some groups have illegally avoided hiring women who have or plan to have children. If the prospective employee brings up the topic, it may be discussed. There are other examples of inappropriate inquiries during interviews and the hiring process, and it is recommended that

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leaders provide guidelines and training to all personnel involved in the interview and hiring process. At a minimum, all personnel should be familiar with the *topics that cannot be asked about* during interviews.[4]

Family and Medical Leave Act

The Family and Medical Leave Act (FMLA) allows up to 12 weeks off each year for family or medical reasons to eligible employees of companies with 50 or more employees.[5] Personal serious health problems that preclude performance of the job are permitted leave. In addition, care of family members defined as spouse, child, and parent with serious medical illnesses is also protected under the law. Leave may permissibly be taken after childbirth, adoption, or foster placement.[6] To be eligible, employees must have worked a minimum of 1,250 hours in the previous year. Employers are required to maintain employee health insurance benefits during the time taken for FMLA leave. This period includes pregnancy loss.

Additionally, depending on the state, women who give birth may be able to apply for paid sick leave or partial wage reimbursement covered by state temporary disability insurance. Women at high risk of miscarriage may be eligible for workplace accommodations under the Americans with Disabilities Act. The following website is a resource regarding legal protections and miscarriage: www.abetterbalance.org/resources/miscarriage-workplace-rights.

Know Your State Family Leave Protections

Several states have additional family protection leave laws. For example, California offers paid family leave that is funded through state disability insurance via state tax withholding.[7] The plan allows for 60 to 70 percent of income (calculated from the previous 12 months of work), with a maximum weekly benefit of $1,252.[8] For most emergency physicians, this is equivalent to a single shift at best, but over the course of six weeks, it does provide some support. This website provides a comparison of family leave laws and regulations by state: www.ncsl.org/research/labor-and-employment/state-family-and-medical-leave-laws.aspx.

Future Directions

Many of the current laws are not optimized for emergency physicians. For example, many emergency physicians work for groups with fewer than 50 employees, meaning that the protections under both the FMLA and the Affordable Care Act do not apply. For those who are employed in groups with 50 or more employees, the minimum of 1,250 hours of work required in the previous year can cause physicians to delay starting a family or preclude taking time off even for personal or family illness. Many physicians have already postponed starting a family as a result of the burdens around medical school and residency. Lastly, FMLA is unpaid leave. Lack of paid parental leave has been associated with poor parental and infant outcomes, including spontaneous abortion, preterm labor, infants who are small for gestational age, depression, and breastfeeding noncompliance.[9-11] So while current laws provide some options for emergency physicians, there is much room for improvement.

There are some emergency medicine or-

ganizations with progressive family leave policies, including Acute Care Solutions and Vituity.[12,13] However, only 50 percent of emergency physicians report having a formal parental leave policy in their workplace, and as many as 36 percent are dissatisfied with policies they do have.[14] With the American Academy of Pediatricians recommending 12 weeks of parental leave as the minimum necessary for healthy children, it must be asked, when will all of emergency medicine support our physician parents?[15] When Walmart has a more progressive parental leave policy than the majority of EM workplaces, we really need to ask ourselves, beyond the laws, if we are doing enough for our fellow physicians.[16]

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CODING WIZARD

NAVIGATE THE CPT MAZE, OPTIMIZING YOUR REIMBURSEMENT

Editor's Note: *Cutting through the red tape to make certain that you get paid for every dollar you earn has become more difficult than ever, particularly in our current climate of health care reform and ICD-10 transition. The ACEP Reimbursement Committee has partnered with ACEP Now to provide you with practical, impactful tips to help you navigate through the coding and reimbursement maze.*

LUMBAR PUNCTURES

by SCOTT PASICHOW, MD, MPH

Question: What do I need to know to bill for a lumbar puncture?

Answer: There are two types of lumbar puncture (LP) codes: diagnostic and therapeutic. When done for diagnosis, choose Current Procedural Terminology (CPT) 62270 (2.25 Relative Value Units [RVUs], $81.11 Medicare). When the diagnosis is already known and the LP is performed for therapeutic drainage reasons, CPT 62272 (2.43 RVUs, $87.60 Medicare) is the correct code choice. Another spinal injection code, CPT 62273, is available for epidural blood patch.

When documenting the LP procedure, note the position of the patient, site of entry, preparation technique, and any findings. It is also advisable to document the attempt even if it was unsuccessful, as these can be billed with the appropriate modifiers (eg, -52 or -53). Note the reason the procedure was unsuccessful, and document how much of the procedure was completed prior to termination. Especially note if a patient requested you stop the procedure, as this is a relevant distinction from being otherwise unable to obtain a sample.

When you use ultrasound to assist in needle placement and images are saved, this can be billed separately as CPT 76942 (0.67 RVUs, $24.15 Medicare). Not all insurance providers will reimburse this as a separate procedure, so you should check with your local payers to see if this additional code is of value. ✪

Brought to you by the ACEP Reimbursement Committee.

DR. PASICHOW is an emergency medicine resident at Rhode Island Hospital in Providence.

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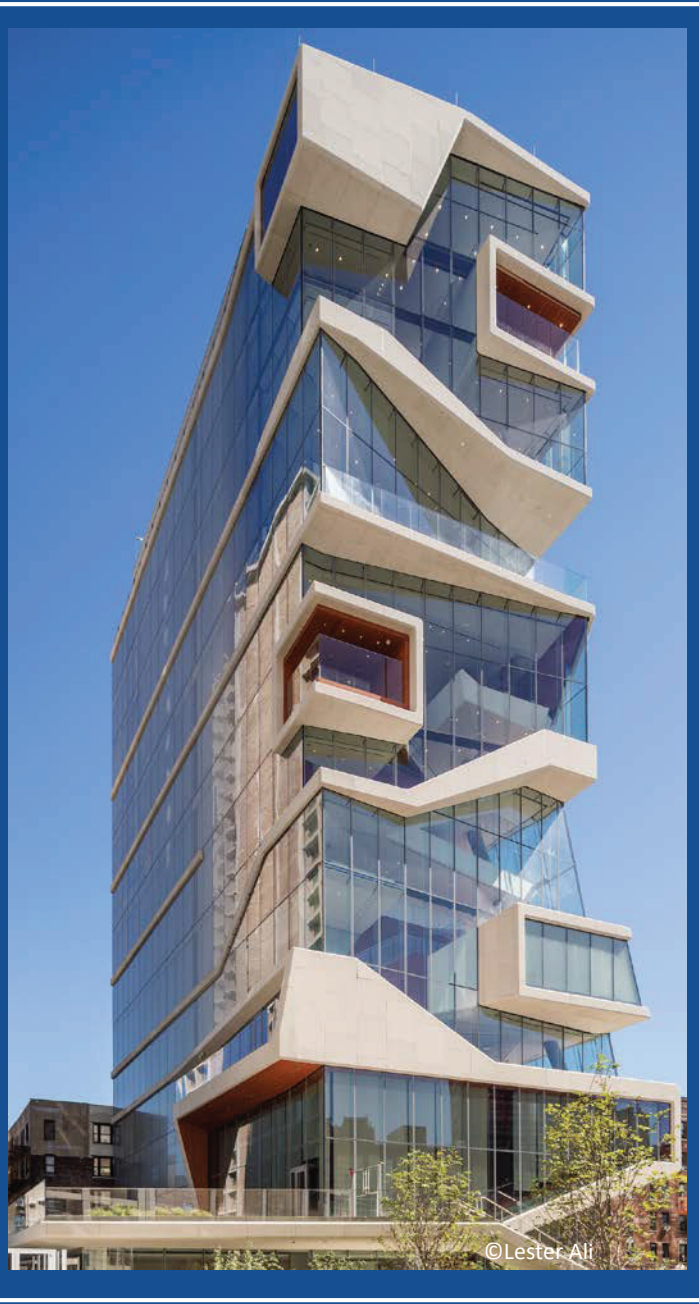
The Department of Emergency Medicine at Baylor College of Medicine, a top medical school, is located in the world's largest medical center, in Houston, Texas. The Baylor Emergency Medicine Residency was established in 2010, and we recently received department status in January 2017. Ultrasound specific educational programs exist for our residency (14 residents per year in a 3-year format), ultrasound fellowship, physician assistant fellowship and UME programs. We offer a highly competitive academic salary and benefits commiserate to academic level and experience.

Our academic program is based out of Ben Taub General Hospital and Baylor St. Luke's Medical Center. Ben Taub General Hospital is the largest Level 1 trauma center in southeast Texas with certified stroke and STEMI programs that sees nearly 100,000 emergency visits per year. Baylor St. Luke's Medical Center is home to the Texas Heart Institute and, with freestanding Baylor St. Luke's Emergency Centers, offers multiple additional practice sites for Baylor faculty. BCM has a collaborative affiliation with eight world-class hospitals and clinics in the Texas Medical Center. These affiliations, along with the medical school's preeminence in education and research, help to create one of the strongest emergency medicine experiences in the country. Those interested in a position or further information may contact Dr. Jennifer Carnell via email carnell@bcm.edu or by phone at 713-873-7045. Please send a CV and cover letter with your past experience and interests.



COLUMBIA | COLUMBIA UNIVERSITY DEPARTMENT OF EMERGENCY MEDICINE

NewYork-Presbyterian
The University Hospital of Columbia and Cornell

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JOIN US AS WE BUILD OUR ACADEMIC DEPARTMENT AND CREATE THE FUTURE OF EMERGENCY MEDICINE!

The newly formed Department of Emergency Medicine at Columbia University Vagelos College of Physicians & Surgeons is seeking highly qualified Emergency Physicians with a strong desire for clinical & academic excellence.

Candidates with demonstrated academic interest and/or fellowship training in the following areas are encouraged to apply.

- Pediatric Emergency Medicine
- Critical Care
- Medical Education
- Disaster and Emergency Preparedness
- Research
- Quality and Safety
- Toxicology
- Simulation

Candidates with an interest in community Emergency Medicine practice are also welcome to apply for faculty positions at NewYork-Presbyterian/Lawrence Hospital in Bronxville, New York.

Submit a letter of interest and CV to Dr. Angela M. Mills, MD, FACEP,
J. E. Beaumont Professor and Chair
EMrecruiting@cumc.columbia.edu

Columbia University is an Affirmative Action, Equal Opportunity Employer.

For more information

Weill Cornell Medicine
Emergency Medicine

Leading Emergency Care | INNOVATION SCHOLARSHIP COMPASSION

NewYork-Presbyterian

EMERGENCY MEDICINE
CLINICAL AND RESEARCH FACULTY

Weill Cornell Medicine's new academic Department of Emergency Medicine is seeking motivated Clinical and Research Emergency Medicine faculty. We are seeking candidates to join a diverse enthusiastic group of academic Emergency Physicians at one of the premier academic medical centers in the nation. Successful candidates will be full-time clinicians committed to excellence in patient care and education or to research and scholarship. Research faculty applicants must have a demonstrated track record or the potential to obtain independently-funded, investigator-initiated research. All areas of research relevant to Emergency Medicine are of interest, including but not limited to translational research, clinical research, technology development, big data science, informatics, health services research, and health policy research.

The Emergency Department at New York Presbyterian-Weill Cornell Medical Center serves as one of the major campuses of the fully accredited four-year New York Presbyterian Emergency Medicine Residency Program. Our Emergency Department is a high volume, high acuity regional trauma, burn and stroke center caring for more than 90,000 adult and pediatric patients. Faculty also have the opportunity to work at our New York Presbyterian-Lower Manhattan Hospital ED Campus, which is a busy community hospital seeing 45,000 annual visits.

We offer programs in Telemedicine, Medical Toxicology, Geriatric Emergency Medicine, Wilderness Medicine, Global Emergency Medicine, Simulation and Healthcare Management and Leadership. In addition, we offer fellowships in Geriatric Emergency Medicine, Emergency Medicine, Healthcare Leadership and Management, Pediatric Emergency Medicine as well as PA and NP residencies in Emergency Medicine.

We offer a highly competitive salary, a comprehensive benefits package, and a generous retirement plan. Academic appointment at Weill Cornell Medicine and salary will be commensurate with experience.

For the 2019-20 period, New York Presbyterian Hospital ranked No. 5 in the nation and No. 1 in the New York Metropolitan area US News & World Report Best Hospitals rankings.

Please send curriculum vitae and cover letter to:

Rahul Sharma, MD, MBA, FACEP
Chairman and Emergency Physician-in-Chief
ras2022@med.cornell.edu

emed.weill.cornell.edu

New York Presbyterian Hospital-Weill Cornell Medicine is an equal opportunity employer-Minorities/Women/Vets/Disabled encouraged to apply.

Baylor College of Medicine

THE DEPARTMENT OF EMERGENCY MEDICINE

Service. Education. Leadership

Vice Chair, Operations and Quality

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

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

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

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

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