A 5-year-old girl comes into your emergency department with what seems like community-acquired pneumonia (CAP). She has been febrile with a temp of 102°F and is mildly tachypneic but shows no real signs of respiratory distress. On examination, you can hear some crackles in the right mid-zone. Her chest X-ray (CXR) confirms your findings of CAP, and she is well enough to be treated as an outpatient with oral antibiotics.

Clinical Question
Is five days of oral antibiotic therapy noninferior to 10 days to achieve clinical cure in children with CAP?

Background
Pediatric CAP is a common occurrence. The Infectious Diseases Society of America (IDSA) guidelines from 2011 make several recommendations in the management of these children:

• They do not support routinely obtaining a chest X-ray (CXR) to confirm the diagnosis of CAP, and she is well enough to be treated as an outpatient with oral antibiotics.

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BrainScope®

A breakthrough in rapid, objective brain injury assessment

**BrainScope** is an essential decision support tool that uses EEG data, advanced A.I. & machine learning to identify objective markers of brain bleed and concussion.

**Structural Injury Assessment**

- **99% sensitivity** to positive head CT (≥ 1mL of blood) with 98% NPV
- **Emergency Department:** Demonstrated potential to reduce head CT use in the ED by 31%

**Functional Injury Assessment**

- **Brain Function Index:** Scales with severity of injury
- **Concussion Index:** Aids in evaluation of concussion at time of injury & throughout recovery, may be used to establish baseline

☑️ Works with drug & alcohol impaired patients

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**Intended Use Patient Population**

- **Structural Injury Classifier & Brain Function Index:** 18-85y of age, GCS 13-15, within 72 hours of injury.
- **Concussion Index:** 13-25y of age, GCS 15, within 72 hours of acute injury, at baseline, & throughout recovery.

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ACEP Hosts Special Edition Research Forum

In August, the ACEP Research Committee organized the first-ever Research Forum Special Edition: COVID-19, funded through a grant from the Centers for Disease Control and Prevention. The conference brought together public health leaders, academic researchers, and top-notch educators with perspectives on basic science, prevention, treatment, resiliency, and advocacy. It showcased some of the best and latest research data alongside didactic and panel presentations by world-renowned experts. Research topics included immunology, vaccinations, resiliency, innovations in care delivery, disparities in care, telemedicine, risk factor identification, novel treatments, and education. All abstracts were published in a special supplement of Annals of Emergency Medicine, available at www.annemergmed.com/issues/0096-0607(21)X0008-X.

ACEP’s traditional Research Forum will still be held during ACEP21, with these COVID-19 presentations as bonus content.

Senate Passes Lorna Breen Bill

In early August, the Senate approved S 610, the Dr. Lorna Breen Health Care Provider Protection Act. This comes on the heels of hundreds of ACEP members joining together to lobby for this legislation during last month’s Leadership & Advocacy Conference, conducting 287 meetings with legislators and staffers from 44 states (read more on page 6). S 610 and its bipartisan House counterpart, HR 1667, are focused on researching and developing policies to prevent burnout and improve mental health among health care clinicians, along with removing barriers to accessing care and treatment (including consideration of stigma and licensing concerns). Learn more about next steps for this bill at www.acep.org/senate-passes-breen-bill.

PALS Requirement Removed for EM Physicians in ACS Pediatric Centers

The American College of Surgeons (ACS) removed the pediatric advanced life support (PALS) certification requirement from its recent publication of the 2023 American Board of Emergency Medicine (ABEM) NAM Fellow. Dr. Madsen is an associate professor in the departments of emergency medicine and epidemiology, co-director of the Rhode Island Hospital Comprehensive Stroke Center and the Miriam Hospital Stroke Center, and associate director of the division of sex and gender at the Warren Alpert Medical School of Brown University/Brown University School of Public Health/Rhode Island Hospital in Providence. The ABEM NAM Fellowship provides talented, early-career health science scholars in emergency medicine an opportunity to experience and participate in evidence-based care or public health studies that improve patient care in domestic and global health systems.

Correction

The article “Working Up Double Vision” (July 2021) incorrectly stated that patients with CN VI palsy “present with outward deviation most apparent when looking toward the affected side.” They present with medial deviation of the eye.
SBH HEALTH SYSTEM
(ST. BARNABAS HOSPITAL)

Twitter: @Sbh_EM_Res

Location: Bronx, New York

Year founded: 1990

Number of residents: 60

Program length: 4 years

What makes your program unique?

Our four-year program in a diverse, inner-city location provides great training. One of the things that makes our program unique is the Track Program, which allows residents to concentrate elective time on a “niche” of emergency medicine. This expands your knowledge, exposure, and portfolio in a corner of emergency medicine, which prepares you for fellowships or can help to jump-start your career.

Why is your city a great place to live?

It’s New York City. The city, as it returns to its vibrant form, has all kinds of sites to see, experiences to take part in, and ways to spend your free time. Two experiences that are five minutes away from the hospital are the Bronx Zoo and New York Botanical Garden, which are fantastic ways to spend a day.

Recent publication of note:

Opiate use disorder is a crisis for our county but especially the population we serve, and therefore, we are the busiest site for a New York City Department of Health and Mental Hygiene project that aims to get naloxone into the community. The project is ongoing; however, our toxicologists are also working on buprenorphine treatment. One recent publication—authored by Howard G. Greller, MD, director of research and medical toxicology at SBH Health System, and colleagues—demonstrates that we are focused on this issue daily and are sharing our clinical experiences with other clinicians across the United States.¹

What is a fun fact about your city or program?

It’s New York City. The city, as it returns to its vibrant form, has all kinds of sites to see, experiences to take part in, and ways to spend your free time. Two experiences that are five minutes away from the hospital are the Bronx Zoo and New York Botanical Garden, which are fantastic ways to spend a day.

Reference

ROWING FOR TEAM USA

After competing in Tokyo, Olympic rower returns to EM residency

by JORDAN GRANTHAM

Genevra “Gevvie” Stone, MD, was working at a summer camp when she realized emergency medicine was the perfect specialty for her.

Ominous thunderstorms were rolling in fast. Dr. Stone, the camp’s lead sailing instructor, was responsible for getting every young sailor back to shore immediately so they could shelter from the storm. For so frenzied minutes, Dr. Stone calmly orchestrated the safe return of every camper. Managing the waterfront chaos brought out the best in her, and she relished the adrenaline rush. “I realized that this is what I get to do every day in the emergency department—help people and manage chaos,” she remembered. “I felt so lucky.”

Despite her sailing experience, Dr. Stone’s ability to manage pressure-packed situations was formed in a different type of boat. The daughter of two Olympic rowers, she tried other sports before her natural ability in the shell was too much to ignore. She rowed for Princeton University’s crew before moving on to the USRowing under-23 circuit. While paddling furiously underwater—literally and figuratively—to keep everything afloat. After an incredible career spanning three Olympic appearances and one silver medal, Dr. Stone made the transition from one high-stakes situation to another in August 2021, trading her red, white, and blue unisuit for the pastel personal protective equipment donned by her newest crew at Beth Israel Deaconess Medical Center in Boston.

Like many athletes on the path to the Tokyo Olympics, Dr. Stone was deeply disappointed when the pandemic forced the games to be delayed a year. The decision to train for the 2020 Games wasn’t one she took lightly. Back in 2017, she was rowing recreationally but clocking faster times than ever. When she started beating her own silver medal time from the Rio Olympics, she couldn’t help thinking about trying for Tokyo. She already had an on-again, off-again schedule with medical school and residency because of her previous two Olympic cycles, so she knew taking time away during her residency would pose challenges.

With the support of her residency director and her fellow residents as some of her biggest cheerleaders, she decided to take a two-year leave from her residency to train for Tokyo 2020. “Not many people have this opportunity,” they told her. “You have to do it!”

Dr. Stone stayed as involved with her EM program as she could, participating in didactics and research projects. By spring 2020, she was in peak physical condition and ready for the USRowing trials. When the delay was announced, the prospect of adding a full year of rigorous training to her calendar was a hard adjustment. “My mind and body were not prepared for it,” Dr. Stone explained. Even though the finish line kept moving further away, she kept going.

She stayed in touch through her residency’s active group text thread, watching her friends use humor to cope with the stress of pandemic conditions. She offered to return to help at the hospital, but her program directors didn’t want to risk exposing her to the virus.

She empathized with her EM peers, but she was living a different reality. After a few too many “thanks for all you do” comments from well-wishers at the grocery store, she stopped wearing her favorite scrubs as sweatpants. When pandemic guilt threatened to distract her too much, Dr. Stone refocused on what she could control. She wanted to see her Olympic dreams through as a thank-you to everyone who made her dual dreams possible. “I had to fully engage [in my training] and make them proud,” Dr. Stone said.

At the USRowing trials, she placed second with one of her fastest times ever for single sculls, but only the first-place finisher gets to race the single at the Olympics. In true emergency physician fashion, she moved immediately to plan B. She teamed up with a partner and successfully earned her spot on her third consecutive Olympic team, this time competing in double sculls.

For the past decade, she has been a duck, gliding smoothly between her scrubs and scull, all while paddling furiously underwater—literally and figuratively—to keep everything afloat. After an incredible career spanning three Olympic appearances and one silver medal, Dr. Stone made the transition from one high-stakes situation to another in August 2021, trading her red, white, and blue unisuit for the pastel personal protective equipment donned by her newest crew at Beth Israel Deaconess Medical Center in Boston.

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For the first time since February 2019, the ACEP community came back together for an in-person meeting. The annual Leadership & Advocacy Conference (LAC) was held July 25–28 in Washington, D.C. With extra precautions because of the specter of the Delta variant of COVID-19, 324 ACEP members from 44 states met to get the latest updates on federal and state issues, hear from members of Congress and key congressional staff, and participate in 273 virtual Capitol Hill visits. Given the realities and challenges of holding the meeting, it was most definitely a remarkable success. Perhaps most important, the members who attended were able to personally reconnect with friends and colleagues within the ACEP family. Being together and providing one another with validation of the importance of their hard work was an incredibly powerful experience.

Before I share more about the substance of the conference, I want to recognize the ACEP D.C. and educational meetings teams for making the conference a reality. The rapidly evolving COVID-19 situation required unique and careful planning; the conference was held with special precautions to maximize the safety of all participants.

The first day of the educational program covered many topics, including opportunities for the future of telemedicine in emergency medicine practice, the perceptions and use of social media on Capitol Hill, and an interactive session on the EM workforce issue with leaders from ACEP, the Emergency Medicine Residents’ Association (EMRA), the Council of Emergency Medicine Residency Directors, and the Accreditation Council for Graduate Medical Education. And once again, props to the ACEP Young Physicians Section and EMRA for hosting their annual pre-conference Health Policy Primer educational program.

Connecting with Congress

As with every LAC, the College developed a set of “asks” and talking points for the Capitol Hill visits. Identifying the “right” issues to focus on during the meeting requires a thoughtful and strategic approach to increase our likelihood of advocacy success. That strategy is based upon identifying issues that both are important for emergency medicine and will resonate on Capitol Hill given the political climate and priorities of the current Congress and the President’s administration. Our goal, as always, is to remind legislators that we do the work of the people every day and that we need their support to be able to continue that work. With a heavy overtone of the worsening situation created by the Delta COVID-19 variant, our issues and topics this year were:

- Support for the Dr. Lorna Breen Health Care Provider Protection Act (S 610/HR 1667) [Editor’s note: The Dr. Breen Act was passed by the Senate in early August. Thank you to everyone who advocated for it!]
- Advocating for elimination of the X-waiver registration requirement
- Preventing pending cuts to 2022 Medicare payments for emergency physicians

During the second day of the conference, we got to hear from and speak with key members of Congress including Sen. Tim Kaine (D-VA) who was a primary sponsor of the Dr. Breen Act, and the two co-chairs of the bipartisan Problem Solvers Caucus in the U.S. House, Rep. Josh Gottheimer (D-NJ-05) and Rep. Brian Fitzpatrick (R-PA-01). ACEP members shared their very real firsthand experiences of how their emergency departments, hospitals, and communities have been overwhelmed by COVID-19 with these members of Congress and key committee and congressional staff.

The stories conveyed not just the clinical challenges we face but also how difficult it has been for emergency physicians to withstand the worst of COVID-19 while so many refuse to get vaccinated, wear masks, and put the public health of the nation ahead of their own beliefs.

Although we were hopeful for a return to the traditional “on the Hill” congressional visits, the U.S. Capitol was still not completely open to the public for constituent visits. Despite that, the Virtual Hill Day was very effective and successful. Everyone on Capitol Hill is now very comfortable with virtual meetings and it has become part of the “new normal” for congressional offices. Telling our stories directly to members of Congress and staff is invaluable in helping them understand who we are, what we do, and how important we are to protecting the health of the nation. Sharing the sobering clinical data and statistics of COVID-19 is important when talking with a member of Congress. More importantly, sharing true accounts of real people who are their constituents whose lives have been affected—or ended—by COVID-19 is critical. Telling these narratives helps legislators and staffers understand that what our work is about real people and not just politics. Inevitably, when we tell these stories, we tell them not just about our patients but also about us and how hard our work has been for now over a year and half.

A Voice for EM

Each year, while those of us who attend LAC get to tell our anecdotes, we also understand that we are representing emergency physicians across the country and telling our stories too. Although a few hundred of us can do that, there is nothing more powerful than bringing more voices to the Hill. The future of COVID-19 is still unwritten, but we certainly hope that by 2022 we can all be together again, in person, and on Capitol Hill advocating for our fellow physicians, our patients, and our specialty.

So please come next year to LAC and add your voice! In the meantime, join the 911 Grassroots Network at www.acep.org/911grassrootsnetwork to stay informed on federal and state issues. You can also support ACEP by contributing to NEMPAC, the National Emergency Medicine Political Action Committee, and help ACEP amplify your voice on the issues that matter most to emergency medicine.
Is it bacterial or viral meningitis?

Don’t guess – know in about one hour.

Quickly distinguishing between bacterial and viral meningitis means more than freeing up beds. It can be a matter of life or death. The BioFire® FilmArray® Meningitis/Encephalitis (ME) Panel uses the syndromic approach, which simultaneously tests for 14 of the most common causes of central nervous system infections in about an hour. These rapid results from the BioFire ME Panel help you get patients on targeted treatment sooner and avoid unnecessary admissions.

1 Test. 14 Targets. ~1 Hour.

Shorten time to diagnosis.

Time to diagnosis–adult patients¹  Time to diagnosis–pediatric patients²

3.3-day reduction  4-day reduction

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FOUR PERFECT DAYS
in BOSTON
WHAT TO DO, SEE, AND EAT AT ACEP21

by ELLANA STINSON, MD, MPH

We all recall sitting at our desks in our history classes (my worst subject ever), learning from our textbooks about events such as the Boston Massacre, the American Revolution, the Boston Tea Party, and the Battle of Bunker Hill. You can’t forget the notorious midnight ride by Paul Revere where he warned “The British are coming!” It’s not the British this time, but yes, ACEP21 is definitely coming!

Today, Boston is best known as a thriving research center with world-leading medical facilities. This city is also a global pioneer in innovation and entrepreneurship. Boston’s rich history is not the only thing we are known for around here. One thing that is least talked about is this city’s depth and breadth of diverse culture, with a wide variety of restaurants and neighborhoods that carry their own unique characteristics and style. In my opinion, as a Southerner turned Bostonian, it is quite arguably the best city to host ACEP’s Scientific Assembly.

Not only are we medical and innovation centers noteworthy, but so is our “wicked good” clam chowder and lobster rolls. With Boston being a world-class culinary destination, there is honestly something for everyone with an array of foods and restaurants to suit any palate, just pick your flavor of the day.

This year’s conference is in the seaport district of South Boston along the harbor that represents a newer, bolder side of Boston. Here are a few of my favorite spots to ensure that you experience four perfect conference days.

[Editor’s note: Visit ACEPNow.com to read an extended version of this article with more things to see and do each day.]

Monday

On our first day when we are finally all together again and running into old colleagues, friends, and bosses, you may be wrapped up in soaking in the conference. Consider attending some sessions from ACEPNow columnists and Editorial Board members. Early Monday morning, you can catch Richard Cantor, MD, FACEP, presenting “Cruising the Literature: Pediatric Emergency Medicine 2021.”

As you come off your conference high after learning about the latest scientific advances to help manage the tiniest patients, I recommend unwinding by stepping outside for a bit of fresh air and taking off your mask as you walk over to a quick lunch at Café on D by Delilah of Course. I’ll be heading to Row 34 for their famous lobster roll and a nice glass of char-donnay.

Following the afternoon sessions, perhaps “What I Learned My First Year as a Director,” by Jenice Baker, MD, FACEP, “Rags to Riches” by James M. Dabie, MD, FACEP, or a review of pediatric ECGs by Annalise Sorrentino, MD, FACEP, you may want to unwind with a few cocktails, so check out the Lookout Rooftop at The Envoy Hotel for spectacular harbor and city views. It can get crowded, so you will want to have reservations.

If you’d rather get out of your conference attire before dinner and getting all fancy is not your thing, check out Del Frisco’s or Temazcal, both along the harbor, which always provide a friendly atmosphere to meet new friends or meet up with old ones.

Tuesday

Empty morning schedule? No problem! Start the day with a few minutes of relaxation and meditation or maybe grab your yoga mat and get fit. A few ideal outdoor exercising spots are the Lawn on D, Waterfront Park, or Fan Pier Park to take a morning stroll along the Harborwalk.

On your way to the Convention Center, here are a few bakeries for coffee, pastries, or bagels: Cardullo’s Gourmet Shoppe, Seaport Café, Tatte Bakery & Café.

On arrival to the Convention Center, find Arun Nagdev, MD, teaching “Upper Body Regional Nerve Blocks” and Ken Miller, MD, discussing some of his “Clinical Pearls from the Recent Medical Literature.”

Should you dare to venture out a little further today, maybe catch an Uber or grab your rental car keys and visit the North End. This is Boston’s oldest residential neighborhood and is best described as the “Little Italy” of Boston. With narrow streets and colonial-era sites, you will find Paul Revere’s house and the Old North Church, along with some of the most quaint and flavor-rich Italian restaurants, bakeries, and dessert parlors. Lobster roll alert! Neptune Oyster is by far my favorite lobster roll spot.

Wednesday

You are bound to be tired from the night before, so check out some of the nearby coffee shops before starting your day. I am not the best judge of coffee, but I hear these two are quite popular: La Colombe Coffee Roasters and Sorrel Bakery & Café. Don’t worry if you started out late, the rapid fire talk on “Diagnosing Pulmonary Embolism in Pregnancy” by Lauren Westafer, DO, MPH, doesn’t start until 12:30 p.m. You will be finished just in time to make it to Larry’s BBQ Café for a filling lunch prior to the afternoon sessions. They close at 3 p.m., so don’t stop to talk to too many old friends on your way over or you might miss it.

If you opt to call it an early day, consider the Institute of Contemporary Arts, which has free admission for families.

After a long day of learning, it’s time to clean up and get ready to party with old friends. I’ll be headed over to The Grand Boston, a high-tech Vegas-style dance club featuring a lineup of top DJs and VIP areas with bottle service. For something a little more low-key, check out Scorpion Bar. If clubbing isn’t your style, try an evening of bowling at Kings Dining and Entertainment where you can bowl a few rounds, find good bites at their retro-modern restaurant, and play a few games at the arcade.

Thursday

For those of you not flying out immediately, conclude your conference with Michael Granovsky, MD, FACEP, discussing “RVU Killers” to avoid missing out on maximizing your reimbursement. You’ll need a little extra pocket change if you want to spend Thursday afternoon soaking up some local culture. Boston is full of museums, but one of my all-time favorites is the Isabella Stewart Gardner Museum where you can find not only art in her former home, but a glass cased café, a reading room, and a full lineup of events for all age groups, day or night.

Want to unwind and grab a brew? Boston has quite a few breweries to check out. Near the conference you will find Harpoon Brewery, the brewer of New England’s original IPA: Harpoon IPA. Catch a tour and check out the beer hall that serves pretzels.

If you are looking for a relaxed, cozy atmosphere, visit Dorchester Brewing Company. Here you can enjoy a roof deck with views of the beautiful Boston skyline. And if you love BBQ, check out the notorious M&M BBQ within Dorchester Brewing Company.

Boston’s many neighborhoods fit into one large city filled with centuries of history while simultaneously emerging as a newer, bolder town. Boston brings a variety of different flavors (pun intended) and adventure on just about at every corner. As we prepare to gather in the city of Boston, one of the country’s most historic places, I am sure you will find a place or two that remind you of home. Hopefully you stumble across a few spots that will give you that much-needed break from hours of conferencing. Either way, make sure you soak it all in and take a piece of Boston back home with you.

DR. STINSON is in the department of emergency medicine Codley Dickinson Hospital and President of the New England Medical Association.

By the Numbers

TRAVEL

We polled ACEP NOW READERS about their travel plans for the rest of the year. HERE’S WHERE YOU’RE GOING.

36% in the U.S.

17% internationally

TRAVELING FOR FUN

6% in the U.S.

4% internationally

TRAVELING FOR WORK

16% in the U.S.

The Official Voice of Emergency Medicine
As we count down to the Scientific Assembly, ACEP is also preparing for the 2021 Council Meeting. Not familiar with the ACEP Council and how it governs ACEP strategy and policy? Here’s a quick overview.

The Council is composed of emergency physicians who represent ACEP’s chapters (one voting councillor per chapter, plus one additional councillor for every 100 chapter members), sections (one voting councillor per section), and the Emergency Medicine Residents’ Association (eight voting councillors), plus one councillor each for the Association of Academic Chairs of Emergency Medicine, the Council of Emergency Medicine Residency Directors, the Society for Academic Emergency Medicine, and the American College of Osteopathic Emergency Physicians.

Council Purview

The Council has several duties. It elects ACEP’s Board of Directors, Council officers, and the President-Elect of the College (see page 12 for more details). The Council also holds meetings where councillors can ask questions of the candidates. The Council reconvenes, and the reference committees provide oral reports and recommendations to the Board, the Council Steering Committee, or the Bylaws Interpretation Committee, for their consideration. The Council adopts, rejects, or refer resolutions, or to the Board, the Council Steering Committee, or the Bylaws Interpretation Committee, for their consideration. The Council adopts, adopts as amended, refer to the Board, the Council Steering Committee, or the Bylaws Interpretation Committee, or not adopt. This year’s meeting will feature four reference committees that will focus on governance and membership issues, advocacy and public policy issues, emergency medicine practice issues, and workforce and scope of practice issues. After the reference committee hearings, the Council reconvenes, and the reference committees provide oral reports and recommendations from their hearings. Discussion ensues, and eventually each resolution is voted on by the Council. Resolutions adopted by the Council are influential in shaping ACEP policy.

ACEP elections also occur during the ACEP Council Meeting. Nominations for the open ACEP Board of Directors and Council officer positions are accepted in early spring, and the slate of candidates is approved by the Nominating Committee. At the Council Meeting, each candidate presents their platform and ideas to the councilors. A Candidate Forum is also held where councillors can ask questions of the candidates. Councillors submit their votes at the end of the second day of the Council Meeting, and those elected are announced that day as soon as votes are tallied.

The majority of the work is done in reference committee hearings, which are open to all members, not just councillors. The resolutions are divided between the reference committees so that every committee does not have to deliberate on every resolution. The reference committees, whose members are appointed by the Council Speaker, host hearings where councillors and ACEP members can deliberate about the resolutions. The reference committees may amend resolutions, consolidate kindred resolutions by constructing substitutes, and recommend the usual parliamentary procedures to the Council: adopt, adopt as amended, refer (to the Board, the Council Steering Committee, or the Bylaws Interpretation Committee), or not adopt. This year’s meeting will feature four reference committees that will focus on governance and membership issues, advocacy and public policy issues, emergency medicine practice issues, and workforce and scope of practice issues.

New Sickle Cell Point-of-Care Tool Available

The Emergency Department Sickle Cell Care Coalition (EDSC®) has released a new point-of-care tool for managing sickle cell disease in the emergency department (available at www.acep.org/sickle-cell). EDSC® is a collaboration between ACEP, the American Academy of Pediatrics, the American Society of Hematology, the American Society of Pediatric Hematology/Oncology, the Centers for Disease Control and Prevention, the Emergency Nurses Association; the Health Resources and Services Administration; The Joint Commission; the National Heart, Lung, and Blood Institute; the Sickle Cell Disease Association of America; and the Sickle Cell Foundation of Tennessee. Development of the tool was co-chaired by Caroline Freiermuth, MD, MS, FACEP, and Patricia Kavanagh, MD. Look for an ACEP Frontline podcast episode about this tool featuring Dr. Freiermuth. EDSC® is also planning to host a webinar in late September to discuss this resource and other considerations for sickle cell care in the emergency department.

Virtual Grand Rounds Continue

In April 2020, ACEP’s Academic Affairs and Education Committees started conducting monthly Virtual Grand Rounds (VGR) as a way to provide socially distant education during the pandemic. Led by VGR Course Director Laura Oh, MD, FACEP, these free monthly sessions have featured well-known faculty covering timely topics including cardiology, wellness, airway, ultrasound, pediatrics, health policy, difficult conversations, neurology, and more. All past VGRs are available on demand in the ACEP Online Learning Collaborative at http://ecme.acep.org. Look for upcoming events at www.acep.org/virtualgrandrounds.
For its 2020–2021 grant cycle, the Emergency Medicine Foundation (EMF) awarded nearly $1 million in grants. One of its recipients was Janice Blanchard, MD, PhD, who received $98,777 for her project titled “An Evaluation of Stressesors Related to COVID-19 in Emergency Medicine Physicians.” We recently spoke with Dr. Blanchard, professor of emergency medicine and chief of the health policy section at the George Washington School of Medicine & Health Sciences in Washington, DC, about her research and how she hopes it will change the field.

What is unique about your data?
We had two parts. One part was interviews with emergency medicine physicians, emergency medicine nurses, and EMS workers at 10 locations across the country. The interviews were very meaningful. We got really personal, enriched stories from them to better understand how COVID-19 has impacted their stress and mental health outcomes.

The second part of our study involved a survey of nurses, physicians, and EMS workers at the same 10 locations across the country. From the survey data, we could understand the relationship between workplace factors, perceived stress, and mental health outcomes. The qualitative study gave us personal stories. The survey gave us a bigger data set to understand the relationship of these factors.

What are the goals of your research?
The purpose is to try to design interventions to address the stress in the future. Long term, we really want to understand what changes at the organizational level and individual level can alleviate workplace stress in the future. Even before the pandemic, emergency medicine clinicians and emergency medicine physicians in particular had really high levels of burnout. This isn’t going away, we’re still having those same issues that will increase our levels of burnout, and we may have more pandemics in the future. It’s really important to understand how to decrease that burnout and anxiety and how to do that by alleviating some of the stress that emergency medicine clinicians face.

The stress can be multifold. It can be due to organizational factors, it can be due to lack of peer support, and we really need to understand how to address each of these issues better. When there are higher levels of anxiety, depression, and particularly burnout, clinicians’ work productivity decreases. When your clinicians aren’t happy and aren’t effective, that translates to poor patient care.

What is unique about your data?
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Dr. Hack is chief of the division of medical toxicology and vice chair for research at East Carolina University in Greenville, North Carolina.

Scan the QR code to read the rest of the interview at ACEPNow.com.

EMF Grant Enabled Doctor to Delve into Pandemic Burnout

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Scan the QR code to find out.
Big thanks to Dr. Sean Bush for providing the snake for my pictures.

VENOM DILEMMA

QUESTION: How worried do I need to be about a bite from this snake?

DR. HACK is chief of the division of medical toxicology and vice chair for research at East Carolina University in Greenville, North Carolina.

Scan the QR code to find out.
Big thanks to Dr. Sean Bush for providing the snake for my pictures.

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3. Critical Care Medicine 2020; 48(9):1249-1257
What is your view of ACEP’s strategy regarding workforce, scope of practice, and College sustainability?

**Christopher S. Kang, MD, FACEP, FAWM**

**Current Professional Positions:** attending physician and faculty, core emergency medicine residency, Madigan Army Medical Center, Joint Base Lewis-McChord, Washington; attending physician, Olympia Emergency Services, PLLC, Providence St. Peter Hospital, Olympia, Washington; clinical assistant professor, department of emergency medicine, University of Washington, Seattle; adjunct assistant professor, military and emergency medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland; associate professor, physician assistant program, Baylor University, Waco, Texas

**Internships and Residency:** emergency medicine residency, Northwestern University, Chicago

**Medical Degree:** MD, Northwestern University (1996)

**Response**

ACEP’s current framework of workforce considerations established the necessary initial strategy to mitigate the projected surplus of emergency physicians by 2030 as well as the foundation for our specialty’s evolution and sustained success. As the Board of Directors liaison to the Emergency Physician Assistant/Nurse Practitioner Utilization and Emergency Medicine Workforce Task Forces, I ensured that physicians remain the leaders of the care team and are not to be treated as replaceable by other degrees. Emergency medicine became a leader in the house of medicine because our founders and the College fought together for their patients and specialty. However, as experienced by other specialties, the emergency medicine workforce could not grow unbridled indefinitely. The COVID-19 pandemic served as a stress test, accelerated this maturation process, and exposed needed changes. We have further lost ground as we have had to stand on the defensive from both outside of and within our ranks. Instead of assigning blame, ACEP stepped up and moved forward with organizations wishing to collaborate on solutions. Since chairing the 2018 workgroup that recommended the task forces and the inclusion of all emergency care organizations, I have increasingly gained essential awareness of the issues we face every day. Because of my service on both task forces, I now have critical knowledge of past, current, and potential future workforces and the opportunities for continued partnership with the other stakeholder organizations. It is with this unique insight that I helped define the core tenets of the current framework of workforce considerations, including:

- Uphold the incontrovertible expertise and role of emergency physicians as THE leaders of the emergency care team;
- Promote quality-controlled emergency medicine residency training programs—continue to recruit the best and provide them with the contemporary clinical, administrative, operational, advocacy, and leadership skills to succeed;
- Support emergency physicians in whatever setting they are employed—inside and outside the emergency de-
The building of confidence in any relationship is based upon how we listen to, respect, and act both toward each other and in support of each other. In my 30 years of ACEP membership, I have had the opportunity to work with and represent so many great emergency physicians. From my early days as an eager young resident serving on the EMRA Board of Directors to my service now on the ACEP Board of Directors, and in the course of each and every committee, task force, and Board meeting, I have never forgotten that I serve the interests of all ACEP members and the specialty of emergency medicine. ACEP is recognized within the house of medicine and with policy makers in the health care arena as the voice of emergency medicine. The College is respected in this role because we always focus on doing the right thing for our patients and our members. Focusing on the needs of our members and patients is the core of everything we do in ACEP, and we must never lose this foundation.

For this question, I believe one can substitute the word “trust” for “confidence.” I believe that trust in a relationship is built on two things: communication and action. As the College has matured, we have become a multipronged organizational entity. This maturation has led to some amazing moments, such as a mom or dad emergency physician literally passing the baton of care during shift sign out to a daughter or son. ACEP’s maturation also creates challenges for effective communication with our members. Creating a sense of connection and family is a critical role of ACEP that emphasizes our uniqueness as a specialty. As some in emergency medicine and the health care arena are trying to tear us apart, the College, and by that I mean each member, has been a source of pride and strength for me. But effective communication with a multigenerational group of emergency physicians requires that the College enhance our communication strategies. ACEP’s connection to each and every member, regardless of generation, is vital to our future.
The actions we take, the progress we make, is all about The Dash. It begins with the ACEP Council, our councillors, and the Board of Directors. What we accomplish at Council sets the stage for what we need to accomplish today, tomorrow, and the rest of the year. While our progress may feel incremental, significant changes can and do happen.

The College can and should do more to promote our achievements. Our members may not fully realize everything that ACEP is doing for our members and our specialty. As a brief summary:

- **Advocacy in 2018:**
  - Four emergency medicine—focused bills signed into law
  - 30 Congressional letters of support or comment submitted
  - 10 regulatory comment letters submitted
  - 555 legislative visits conducted by ACEP members and staff
  - More than 4,000 members in the ACEP 911 Legislative Grassroots Network respond to advocacy alerts when needed by ACEP by emailing their members of Congress on a particular issue of concern to emergency medicine.

This network covers 95 percent of Congressional districts.

- 5,219 donors to NEMPC, the 48th largest physician specialty PAC

NEMPC contributed $2.2 million to House and Senate candidates and party committees in 2018.

- Notable Board items in 2021:
  - Legislative and Regulatory Priorities for the First Session of the 117th Congress
  - National Pandemic Readiness—Ethical Issues
  - Definition of Democracy in EM Practice
  - Safer Working Conditions for Emergency Care Workers
  - Avoiding the Pitfalls of AI
  - Artificial Intelligence in Emergency Medicine

As I reflect over the past two and half years, your Board has considered over 400 items of business. The Council resolutions that you create and approve are the work products and achievements for the College. Think about it—over 400 items of business in close to three years. Our memories are short; the COVID-19 pandemic challenged all of us but allowed us to become stronger. We became stronger by working together to produce the ACEP COVID-19 Field Guide. This resource launched April 8, 2020, and one month later had over 100,000 page views, over 150 agencies/websites/links to our site, and has been translated into Japanese, Chinese, Spanish, Hindi, and Urdu with over 230 pages of content—outstanding, and of its members and our specialty. The challenge lies in determining which method of communication is best to accomplish the amazing work that is being done on behalf of the EM workforce and scope of practice for non-physician providers.

The College prioritizes our members’ interests begins with engaging our members in the process—through committee or task force membership, Council involvement, and active participation in ACEP state chapter affairs. Additionally, confidence in ACEP’s dedication is further enhanced through robust communication with members regarding the amazing work that is being done on behalf of emergency physicians and the patients they care for.

Our specialty certainly has its share of challenges. I believe that challenges create opportunities, and when I look at how much our specialty has grown over the past 50 years, I am optimistic. There are emergency physicians who will continue to innovate, adapt, evolve, and lead in delivering the best care possible for our patients—with the emergency department and beyond. As your next ACEP Board member, I commit to ensuring that the interests of our members, our patients, and our specialty will be prioritized above all else.

Heidi C. Knowles, MD, FACEP

**Current Professional Positions:** associate medical director

- Emergency medicine residency, University of Texas at Houston Medical School (2003)

**Response**

Confidence—“the feeling or belief that one can rely on someone or something, firm trust”—is critical to an organization’s members’ interest, involvement, and commitment. Currently, there is a divide amongst emergency medicine physicians, one side committed to ACEP and the other questioning the priorities and loyalties of ACEP. At this time, it is essential that ACEP commit to building confidence in all emergency medicine physicians, not only to retain members but also to gain new ones, so that ACEP can continue to be the voice of EM.

Communicating a clear strategic picture, one that allows members to gain awareness of the historical precedence set by the College will help the College better understand its future goals and strategies implemented by the Board. Strategic planning that occurs at the national level must be clearly communicated to every member. This transparency will go a long way in building confidence that ACEP is prioritizing the interests of its members and our specialty. The challenge lies in determining which method of communication is best to accomplish this goal. Since ACEP’s membership is diverse, this communica...
cattion must continue to be multimodal—via traditional and electronic methods, with emphasis being placed on identifying the most ef-ficacious means of getting the message across. Video conferencing is another method that can be taken advantage of to allow mem-bers the opportunity to hear this information live as well as have interactive discussions/Q&A sessions. Video conferencing allows mem-bers to voice their opinions, feel validated, and, importantly, be heard. The COVID pan-demic has made virtual reality commonplace, and most of our members are now familiar with its use. ACEP should embrace this opportunity to set up regional meetings with EM physicians for virtual “town hall” discussions across the country. Communicating the hard work that the ACEP offices and Board members are doing on a daily basis will give members an under-standing and insight into how these activities affect them and their practice. This will ulti-mately lead to a confident and loyal member.

Michael Lozano Jr., MD, MSHI, FACEP

Current Professional Positions: attending physician, Envision Physician Services, Fay-etteville Emergency Medical Associates, Inc., Fort Lauderdale, Florida; attending physician, TeamHealth, InPhyNet Contracting Services, LLC, Tampa, Florida; medical director, fire and rescue department, Board of County Commis-sioners, Hillsborough County, Tampa

Internships and Residency: emergency medicine residency, Albert Einstein College of Medicine of Yeshiva University, Bronx Mu-nicipal Hospital Center, Bronx, New York

Medical Degree: MD, Mount Sinai School of Medicine, New York, New York (1987)

Response

The objective reality is that ACEP does indeed prioritize both our members’ interests and specialty. College publications, policy statements, and advocacy efforts all provide support for that statement in both words and deeds. The challenge is in properly and effectively communicating this reality to our rank-and-file membership. Without that connection to membership, confidence wanes and the weeds of misinformation will flour-ish. To combat this, we need to be purposeful in framing our communications to always be viewed through the lens of member interest. Additionally, we can educate the membership on our organizational structure and provide ad-ditional degrees of transparency in our gov-ernance processes.

A casual review of the June issue of ACEP Now is representative of how the breadth of our practice is supported by ACEP. There are articles on clinical issues such as the man-agement of pulmonary embolism, marine envenomation, and urticaria. COVID-19 vac-cination challenges are discussed alongside the global health aspects of vaccine shar-ing. Professional development is promoted through articles and resources (ED Directors Academy, Scientific Assembly, and Leadership & Advo-cacy) and didactic materials (Critical Decision in EM, and PEERcert+). All are relevant and relatable to physicians practicing emergency medicine. Similarly, when visiting the newly updated ACEP website, one sees categories of content that resonate on a professional or per-sonal level. Additionally, the myriad commit-tees and sections available for participation reflect the priorities of our membership.

The content and services are indicative of the big umbrella that is emergency medicine and which is represented by ACEP. Although some of our efforts, like advocacy, raise all boats, we should make it a point to indicate the personal benefits of membership and not just when we want people to renew. We should include terms such as “member bene-fit” and prominently illustrate the savings due to membership at the point of purchase for all our products.

Messaging is but one aspect of restor-ing confidence. Actions speak louder than words, and to that end, we should actively reach out to the membership to determine their preferred mode of communication. We are a multigenerational organization, and our members have individual preferences for con-nection with us. In tandem we should embark on an educational journey to better inform on the governing structure of ACEP. I would haz-ard to guess that many members are not clear on the role of Council and how it connects with the Board. There is probably a larger number of members that are unaware of the staff at the ACEP offices (both) and the great and varied work that they do on our behalf. Finally, I would advocate for greater transparency.

Let us take advantage of the pandemic and continue to open Board meetings and Coun-cil electronically to the general membership. Transparency goes a long way in restoring confidence.

ACEP is an organization that represents the interests of emergency physicians and their patients. In doing so, there are multiple touch points across the career range of membership. Promoting confidence, and in turn commit-ment, can be achieved through effective com-munication, education, and transparency.

Henry Z. Pitzele, MD, FACEP

Current Professional Positions: attending physician, Jesse Brown VA Medical Center and Advocate Illinois Masonic Medical Cen-ter, Chicago; attending physician, Mesa View Regional Medical Center, Mesquite, Nevada

Internships and Residency: emergency medicine residency, University of Illinois at Chicago

Medical Degree: MD, University of Illinois at Chicago College of Medicine (2000)

Response

So much of what we do as organizational leaders is based in symbolism; what we say in public matters, and what we do in pub-lic matters even more. Every day, hundreds of people within ACEP spend countless person-hours working for the betterment of our spe-cialty—unfortunately, this fact does not always permeate down to the members who are busy scanning heads and admitting chest pain. We need to do significantly better with messaging so that the tremendous and significant value which ACEP generates for the specialty (and for front-line docs) is conveyed to the people whose hard-earned money and time make up the foundation of our organization.

The other thing we can do is to elect leaders within ACEP who have no other interests than the betterment of the specialty and the improvement in the lives of front-line doc-tors and ED patients. The physicians who hold leadership-level positions within na-tional staffing companies necessarily have to balance the interests of ACEP with the inter-ests of their company—when those two are at odds (for instance, with the business model of oversupplying EM residents to drive down...
Joseph R. Twamoh, MD, MBA, FACEP  
Current Professional Positions: president and founder, Queue Management, LLC; UPMC–Hanover Hospital emergency department, Hanover, Pennsylvania  
Internships and Residency: emergency medicine residency, Spectrum Health–Butterworth Hospital, Grand Rapids, Michigan  
Medical Degree: MD, Rutgers—Robert Wood Johnson Medical School, New Brunswick, New Jersey (1983)  

Response  
One of the biggest issues that we currently face is our workforce.  
We witnessed an unprecedented drop in EM volumes at the onset of COVID-19. As a result, many members experienced a reduction in hours—and compensation. Twenty percent of new EM residency graduates were unable to find jobs. ACEP’s recent study, “Emergency Medicine Physician Workforce: Projections for 2030,” projects a surplus of emergency physicians by 2030. Woven into this challenge is the rising use of non-physician providers (NPPs).  
NPPs make up roughly 25 percent of the total EM workforce. The increasing use of NPPs has reduced the need for emergency physicians. In addition, there is an increased push at the state level for the independent practice of NPPs. Recently, the American Academy of PAs voted to change the name of the clinicians they represent from physician assistants to physician associates. The motivation for this is not surprising. In many EDs where I have worked, PAs effectively work independently. However, they can be geographically separated from physicians, making communication challenging. In addition, physicians can be maxed out taking care of their own patients and have little bandwidth to see and evaluate the NPP’s patients.  

The solution to this problem will be complex and nuanced. NPPs are now woven into the fabric of the EM workforce, and there is no going back. There are many competing interests, and it will be difficult, if not impossible, for ACEP to take a position that will make everyone happy. However, I believe that our North Star on this issue should be what’s in the best interest of our patients. That is where we can all find common ground. Many years ago, ACEP promoted the standard that emergency departments should be staffed by EM-trained physicians, not moonlighting internists or surgeons. Similarly, we need to redefine what a clinically effective, safe, physician-led care team should be. We need to make that definition the standard for emergency departments across the country. We need to develop a model for an ED care team that we’d trust to care for our loved ones, and a model for where we want to work. By placing patients first, we will be true to ourselves, our members, and our specialty. 

No wonder that some in the NPP world are seeking independent practitioner status. However, to blame NPPs for this problem misses the root cause. NPPs cost about a third of a physician’s salary. Entities that employ physicians and NPPs—hospitals, health systems, contract groups—are financially incentivized to reduce their labor costs and replace physician hours with NPP hours whenever possible. This is true for both for-profit and not-for-profit organizations. However, the use of NPPs isn’t all the result of unbridled greed; many physician-owned contracts would not be financially viable without the use of NPPs. Hospitals would have increased labor costs, leaving less money available for other health initiatives that serve the community. Yet, the potential for abuse clearly exists. Indiscriminate substitution of physician coverage with NPPs serves only the bottom line.

The membershio knows this—they are waiting for us (the Council and the collective ACEP leadership) to show them that nothing is more important to ACEP than the long-term well-being of EPs. I believe in Dr. Schmitz, and I think she’s the right leader for this heavy task; the multifactorial framework approach to Workforce is absolutely the right way to go—I just want to make certain that we give her the utmost support in the “limit corporate interests” plank of that framework, and that starts with an unconflicted Board. The specialty can and will continue to grow and flourish, and this is the most immediate way to show the membership that ACEP is the best way forward.
GRACE in Evaluating Chest Pain

New guidelines empower physicians to consider when less is more

by LAUREN WESTAFER, DO, MPH

Emergency department evaluations for chest pain are common, accounting for approximately 5 percent of all ED visits. Up to 40 percent of these patients return to the emergency department with recurrent chest pain within one year. The intensity of evaluation for acute coronary syndrome (ACS) may vary—some patients may have received prior stress testing, coronary CT angiography, or even cardiac catheterization. Although risk stratification tools such as the History, EKG, Age, Risk factors, and Troponin (HEART) score are widely used to help determine disposition of patients with chest pain, there is little guidance regarding patients with recurrent chest pain who have had a prior evaluation. How much should a prior negative stress test or cardiac catheterization guide the medical decision-making?

Enter the Society for Academic Emergency Medicine Guidelines for Reasonable and Appropriate Care in the Emergency Department (GRACE) on recurrent chest pain. This is the first of a clinical practice guideline series aimed at de-implementing low-value prac- tices within emergency medicine. These guidelines attempt to make recommendations for patients who present with low-risk chest pain, defined as those deemed low risk by a validated scoring system (eg, HEART score >4) who present to an emergency department with an evaluation for ACS at least twice in a 12-month period. The primary outcomes assessed were major adverse cardiac events (MACE), including acute myocardial infarction (AMI), need for percutaneous coronary intervention (PCI) or bypass, and death. Nearly all the recommendations in this document are based on low-quality evidence, mostly from studies in directly answering the questions, as few addressed recurrent evaluations specifically.

Serial Versus Single Troponin

Recommendation: “In adult patients with recurrent, low-risk chest pain, for greater than 3 h duration we suggest a single, high-sensitivity troponin below a validated threshold to reasonably exclude ACS within 30 days.”

This recommendation is congruent with other clinical policies, including the 2018 ACEP clinical policy on suspected ACS, as MACE within 30 days was 0.5 percent, falling below the acceptable miss rate of 1 to 2 percent. There are two key components to this recommendation. First, a single troponin only applies to high-sensitivity troponin, as there is insufficient evidence for conventional troponin assays. Second, the chest pain must be more than three hours in duration, as very few patients in the included studies presented to the emergency department earlier.

Repeat Stress Testing

Recommendation: “In adult patients with recurrent, low-risk chest pain, and a normal stress test within the previous 12 months, we do not recommend repeat routine stress testing as a means to decrease rates of MACE at 30 days.”

Ideally, stress testing would identify patients with intervenable coronary artery disease and reduce MACE; however, studies assessing stress testing of ED patients with chest pain have not found a reduction in MACE at 30 days. Yet, stress testing carries potential harms from downstream testing and procedures as false positive tests are not uncommon.

Outpatient Versus Inpatient Management

Recommendation: “In adult patients with recurrent, low-risk chest pain and either no occlusive coronary artery disease (CAD) (0 percent stenosis) or non-obstructive (<50 percent stenosis) CAD on prior angiography within five years, the authors recommend referral for expedited outpatient testing as warranted rather than admission for inpatient evaluation.

These recommendations are possible the most “practice changing” in the document. Patients with nonobstructive CAD have very low incidence of AMI or death in the two years following the catheterization—fewer than one event in 100 patients followed for two years. The event rate is even lower for those with no occlusive CAD. As a result, hospital admission for ACS evaluation is likely to generate more harms (al- lergic reactions, procedural risks, stress, and cost) than benefit.

Screening and Referral for Depression and Anxiety

Recommendation: “In adult patients with recurrent, low-risk chest pain, the authors recommended using depression and anxiety screening tools and referral for anxiety or depression management.

The evidence basis for these recommendations is minimal and rooted in observational data finding variable results for an association between chest pain recurrence and anxiety and depression. At this time, the evidence doesn’t provide sufficient information on what to do if a patient “screens in” for depression or anxiety. As emergency physicians, we must be cautious in attributing medical issues to mental health and recognize that a concurrent diagnosis of anxiety may cause us to anchor and potentially miss a serious diagnosis.

Conclusion

The recommendations in this guideline are rooted in low-quality evidence and therefore are a weak set of treatment options for emergency physicians. Yet, they represent a critical step in ED evaluations—guidance for clinicians to stop performing low-value or wasteful care. In medicine, we often strive for a “zero miss” culture, despite the impossibility of this aim and recommendations to embrace a 1 to 2 percent missed diagnosis rate in ACS. We often fail to consider the iatrogenic harms and patient and societal costs associated with over-testing and more intensive care. The GRACE guidelines may empower some clinicians to more thoughtfully and rationally evaluate patients with low-risk recurrent chest pain by providing reassurance that “more” may not necessarily be beneficial to the patient.

References

Physician Interrupted

Interruptions abound in the ED, but does putting limits on physician chart access eliminate medication errors?

by CEDRIC DARK, MD, MPH, FACEP

Emergency physicians have a difficult job. In no other profession can a person be interrupted more than once every 10 minutes while being asked to make critical lifesaving and life-altering decisions.1 Even when interruptions are minimal, working long and odd hours can induce erroneous judgment if we are not careful with our decision making. I remember the combination of fatigue and inexperience during my internship year when I was writing orders on a newly admitted patient before leaving the hospital after a 24-hour shift. Walking around the ICU on rounds, I suddenly remembered that I had written for the wrong medication. Before an error could happen, I was able to go back and change the order. Back then, orders were written on paper, they weren’t executed rapidly or in real time, and you could only write in one chart at a time because you had to have the thick binder of the patient’s medical record physically open in front of you. Following the advent of electronic medical records, it has become even easier to mix charts and extraordinarily simple to place the wrong order on the wrong person. Whenever I try to order a dose of ketorolac on a patient who neglected to tell me that they are allergic to ibuprofen, the computer alerts me to this potential adverse event. But the computer can’t tell me if I am ordering a medication for the wrong patient or a test for the wrong person or an X-ray on the incorrect side of the body. To reduce errors such as these, The Joint Commission and the Office of the National Coordinator for Health Information Technology have suggested that physicians should only open one chart at a time on their computer screens. Based on expert opinion alone, this restriction promises improved patient safety. It also threatens efficiency, which, in the emergency department, is one of a physician’s greatest commodities. This month’s journal club article at right explores this assumption. It shows that when a medical system reduced the number of open charts that physicians were allowed to access simultaneously from four to two, mistaken entry errors—orders that were “placed, retracted, and reentered on a different patient”—decreased.2 Once quantified, the rate at which errors declined meant that for every 5,000 orders, only one would be changed. Extrapolating this to my high-volume urban emergency department, could that mean that only 20 patients out of every 100,000 would have an order entry error? Is that level of restriction worth it? A report by Kaiser Health News entitled “Death by 1,000 Clicks” detailed the new types of errors that have become prominent as we have expanded our medical records into the digital age.3 While we have certainly reduced problems with illegible handwriting and standardized protocols, we’ve also made it more difficult to do seemingly simple tasks. Reducing the emergency physician’s ability to multitask does not benefit our patients—it just promises to be another impediment to the practice of medicine. A second study, a randomized trial testing The Joint Commission’s “expert opinion” to limit physicians to one open chart at a time, similarly showed that emergency physicians do not need to sacrifice efficiency for safety.4

References
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American College of Emergency Physicians

ADVANCING EMERGENCY CARE
Bacterial Bloutout

Question 1: In children, is there a particular duration of diarrhea that would suggest a bacterial etiology?

A 2006 prospective study by Klein et al evaluated 1,626 stool samples of children with diarrhea presenting to a pediatric emergency department over a 3-year period. The authors evaluated clinical characteristics such as the number of stools, duration of diarrhea (in days), recent travel, fever, age, and presence of blood. They then evaluated whether these characteristics were associated with an increased likelihood of a positive bacterial diarrhea culture.

This study was performed in the United States. The median age of children enrolled was 1.3 years, and the median duration of diarrhea prior to presentation was 3 days. Bacterial pathogens were culture-positive in 18 of 1,626 stool samples (7.3 percent), and factors significantly associated with a positive bacterial stool culture were travel outside the United States within 30 days (relative risk [RR] 2.8), blood in the stool (RR 3.4), or passing of more than 10 stools in the previous 24 hours (RR 1.5).

Interestingly, duration of diarrhea more than 10 days significantly decreased the likelihood of yielding a positive bacterial stool culture (odds ratio [OR] 0.3; 95 percent confidence interval [CI] 0.1–0.9). Also, this study found that clinical physician judgment for the need for a stool culture demonstrated sensitivity and specificity of 76 percent and 66 percent, respectively. Physician gestalt was almost as predictive as the model developed by multivariate analysis.

A second prospective case-control study of 3,366 children in Africa and southeast Asia found a negative association between viral etiology and bloody diarrhea as well (OR 0.129; 95 percent CI 0.096–0.173), suggesting that bloody stool is not typically associated with viral etiologies of diarrhea. Conversely, bloody stools were associated with a bacterial cause (P<0.0001). This study did not find a significant association between diarrhea duration and the likelihood of a bacterial etiology.

Conclusion

We were unable to find a particular duration of diarrhea that would suggest a bacterial etiology. Bloody stool and recent travel outside the United States seem to be the strongest predictors of a bacterial etiology.

References


Lumbar Punctures

Question 2: In children with a complex febrile seizure, on which patients might you safely forego a lumbar puncture (LP)?

A retrospective study by Selz et al evaluated 390 cases of complex febrile seizures in 366 children ages 6 months to 6 years in the post-Hib and post-pneumococcal vaccine era. The authors evaluated the incidence of either bacterial meningitis or herpes encephalitis. A lumbar puncture (LP) was performed on 146 of 390 cases (37 percent). Of 390 total complex febrile seizures, there were six cases of meningitis (1.5 percent; 95 percent confidence interval [CI] 0.6–3.3 percent) and one case of herpes encephalitis (0.3 percent; 95 percent CI 0–1.4 percent). All children with meningitis or HSV encephalitis demonstrated persistent altered mental status after the complex febrile seizure. There were no cases of meningitis or encephalitis in children with normal mentation following their complex febrile seizure or in any children who did not receive an LP, suggesting that the incidence of meningitis and encephalitis is low in children with complex febrile seizures—particularly those who have returned to their baseline mentation.

Kimia et al retrospectively studied 526 children ages 6 months to 60 months with a first-time complex febrile seizure, evaluating this population for bacterial meningitis specifically. Of note, they did not evaluate for herpes encephalitis. In this population, 340 of 526 children (64 percent) received an LP; and bacterial meningitis was identified in three of 526 cases (0.9 percent; 95 percent CI, 0.2–2.2). Of these three bacterial meningitis cases, two children presented before conjugated pneumococcal vaccine was commonly in use and had altered mental status. The third child was treated for suspected acute bacterial meningitis. She looked well on exam but had a cerebrospinal fluid (CSF) sample “contaminated with blood” that grew no bacterial pathogens on CSF culture. No CSF cell count was ordered, but she had a positive blood culture for S. pneumoniae and was treated as suspected bacterial meningitis. This child also had significant hypocalcemia consistent with rickets. Like the prior study, the incidence of meningitis was very low, especially in a well-appearing child.

A separate retrospective study by Hardasmalani and Saber found similar results in 71 children with complex febrile seizures.1 One patient (1.4 percent) had meningitis, and that patient presented in status epilepticus. Another retrospective study by Rivas-García et al found no cases of meningitis or encephalitis in 654 cases of febrile seizures consisting of 537 simple febrile seizures (82 percent) and 117 complex febrile seizures (18 percent).1 In the complex seizure group, 46 had prolonged seizure more than 15 minutes, six had focal seizures, and 76 had multiple seizures within 24 hours. Another retrospective study by Fletcher and Sharief identified 193 children with first-time complex febrile seizures; 156 received an LP; there was a single case of acute bacterial meningitis, and that patient had four seizures, of which one lasted more than 30 minutes.

A five-year multicenter retrospective study from seven pedi- atric emergency departments by Guedj et al evaluated 839 children with complex febrile seizures.2 Particularly, the authors were interested in the incidence of meningitis or encephalitis in children with a “clinical exam not suggestive of meningitis or encephalitis,” defined as a normal baseline neurological exam without altered mentation or meningeval signs. LPs were performed in 260 of 839 of patients (31 percent) overall and only 147 of 630 well-appearing children (23 percent). There were no cases of meningitis or encephalitis in the well-appearing group.

While these studies suggest that the incidence of meningitis and encephalitis is very low after a first complex febrile seizure—especially in children who are well-appearing—it is important to note that these studies are retrospective in nature.

Conclusion

After a complex febrile seizure, well-appearing children who have returned to their baseline and have a normal neurological exam can probably forego the lumbar puncture. Because these studies are retrospective in nature, caution should be employed when exercising this treatment strategy.

References

in CAP patients who are well enough to be managed as outpatients.

- They do not support preschool children routinely being prescribed antibiotics. This is because most of these CAPs in this age group are caused by viral pathogens.
- They do recommend antibiotics for school-age children diagnosed with CAP.
- How long school-age children should be treated for CAP is an open question. The guidelines provide a strong recommendation based on moderate quality of evidence that a 10-day course has been best studied, but a shorter course may be just as effective.

There is a relatively small (n=115) randomized controlled trial reporting five days of amoxicillin (80 mg/kg divided three times a day (TID)) was noninferior to 10 days for CAP in children 6 months to 19 months of age.

A five-day course has also been recommended by the American Thoracic Society and the IDSA for adults with CAP under certain conditions.7


Population: Children age 6 months to 10 years diagnosed with CAP who are well enough to be treated as outpatients

Exclusions: See paper for list of exclusions

Intervention: Five days of high-dose amoxicillin (50 mg/kg divided TID) followed by five days of placebo

Comparison: Ten days of high-dose amoxicillin (50 mg/kg divided TID)

Outcomes:

- Primary Outcome: Clinical cure at 14–21 days defined as meeting all three criteria: significant improvement in dyspnea and increased work of breathing, and no recorded tachypnea, at the day 14–21 follow-up visit; no more than one fever spike or one admission with a respiratory illness from day four up to and including the day 14–21 follow-up visit; and lack of a requirement for additional antibiotics or hospital admission during the two weeks after enrollment.

- Secondary Outcomes: Days off school or child care, missed work days for caregivers, adverse reactions, and adherence

Authors’ Conclusions

“Short-course antibiotic therapy appeared to be comparable to standard care for the treatment of previously healthy children with CAP not requiring hospitalization. Clinical practice guidelines should consider recommending 5 days of amoxicillin for pediatric pneumonia management in accordance with antimicrobial stewardship principles.”

Results

A total of 281 children enrolled in the trial, with a median age of 2.6 years. Forty-three percent were female.

Key Result: A five-day course of antibiotics was inferior to a 10-day course of antibiotics in children with CAP.

Primary Outcome: Clinical cure at 14–21 days after enrollment

- Per-protocol (PP) analysis: 88.6 percent in the intervention group, 90.8 percent in the control group; risk difference was -0.016 (97.5 percent confidence limit -0.087) and cannot claim noninferiority.

- Intention-to-treat (ITT) analysis: 85.7 percent in the intervention group, 84.1 percent in the control group; risk difference was 0.023 (97.5 percent confidence limit -0.061).

- Secondary Outcomes: Caregivers were off work two days instead of three in the intervention group. All other secondary outcomes were the same.

Evidence-Based Medicine Commentary

1. Representative Cohorts: There is a question of whether this cohort represents children with CAP presenting to the emergency department. Only 281 (5 percent) of the 5,406 children diagnosed with CAP were randomized. The study flow diagram shows researchers missed 3,215 possible children to include, suggesting they were not recruited consecutively. This also could have introduced some selection bias.

2. Chest X-Ray: This is not needed to make the diagnosis of CAP in children, and it is actively discouraged by the IDSA guidelines.

3. Clinical Care: Their definition of clinical cure included some subjective criteria. Different physicians could have different interpretations on what a “significant improvement” looked like clinically and if the child required additional antibiotics or hospital admission. This could have introduced uncertainty into the data.

4. Statistical Versus Clinical Outcome: This was a noninferiority trial, and they correctly performed a per-protocol analysis. The noninferiority margin was based on several assumptions. Because the one-sided 97.5 percent confidence limit of the point estimate of 7.5 percent was exceeded, a formal conclusion of noninferiority could not be made.

However, this is a statistical outcome and may not be a clinically important difference. Physicians will need to interpret the finding for themselves and think about how to apply the data. Both groups had about a 90 percent cure rate, with only a 1.6 percent absolute risk difference between the 5- and 10-course of antibiotics. Will crossing a difference be meaningful?

5. External Validity: This trial was conducted at two pediatric emergency departments in Canada. It is unclear if these represent similar patients presenting to community emergency departments, rural emergency departments, or facilities in other countries.

Bottom Line

A five-day course of antibiotics was statistically inferior to the traditional 10-day course for children with CAP treated as outpatients, but it is unclear if this is clinically important.

Case Resolution

You engage in shared decision making with the parents and ask them if they would like a short course of antibiotics (five days) or the traditional course (10 days). Both have about a 90 percent chance of success, but a few more children were not clinically cured after five days of treatment.

Thank you to Dr. Andrew Togg, who is an emergency physician and co-founder and website lead for Don’t Forget the Bubbles (https://dontforgetthebubbles.com), for his help with this review.

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

References


How to Perform an Erector Spinae Plane Block

by DANIEL MANTUANI, MD, MPH; ELAINE YANG, MD; CODY SCHULTZ, MD; AND ARUN NAGDEV, MD

The erector spinae plane block (ESPB) is a relatively new block, first described in 2016 as an analgesic technique for neuropathic thoracic pain. Since that time, this simple and safe technique has been adopted with enthusiasm and used with great efficacy to treat pain resulting from a wide array of pathological processes. Often referred to as the “poor man’s epidural,” the beauty of this single-injection high-volume block lies in its capacity to anesthetize the majority of the hemithorax. Additionally, the sonoanatomy of the ESPB is relatively simple and safe. Under the erector spinae muscles lie the transverse processes, which act as a bony “backstop” to prevent inadvertent puncture of any critical structures.

SOUND ADVICE

ONE MORE REASON NOT TO ORDER AN X-RAY

DR. MANTUANI is ultrasound fellowship director at Highland Hospital in Oakland, California. DR. YANG and DR. SCHULTZ are ultrasound fellows at Highland Hospital. DR. NAGDEV is director of the ultrasound division at Highland Hospital.

Scan the QR code for a step-by-step guide to performing an ESPB and a video of the procedure.

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