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END OF THE RAINBOW
“Real”
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The Official Voice of Emergency Medicine

AUGUST 2020

Volume 39 Number 8

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**AGE TO START
SWABBING FOR
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DOXYCYCLINE AND
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SURPRISE
(BILLING)**
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2020 ACEP ELECTIONS PREVIEW ✓

MEET THE PRESIDENT-ELECT 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, 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 and four members to the ACEP Board of Directors when it “meets” virtually during ACEP20 in October. This month, we'll meet the President-Elect candidates.

CONTINUED on page 8

COVID-19 Therapeutics

What works and
what doesn't?

by JOSHUA NIFORATOS, MD, MTS

With thousands of articles published weekly on COVID-19, navigating the literature on this emerging infectious disease can be daunting. As emergency physicians, important research questions of interest include performance characteristics of various diagnostic tests, risk stratifying patients for discharge versus admission, and, above all, effective treatments. In an era in which preprints (ie, non peer-reviewed drafts of papers being submitted for publication) go viral, and even responsible mainstream media does not always get it right, it's hard to know what to believe. To help health care professionals and the general public keep up and to fight medical misinformation, a group of emergency physicians started the website Brief19.com. We publish analysis of COVID-19 research and policy five days a week, all for free. (Note: ACEP Now's medical Editor in Chief, Jeremy Samuel Faust, MD, MS, MA, FACEP, is also Editor in Chief of Brief19.)

Let's focus on therapeutics. With regard to treatments of potential benefit in the emergency department, there are three big-ticket medicines to consider: dexameth-

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NAVAJO NATION TEAM RUBICON RESPONDS TO COVID-19 CRISIS

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KEEGAN BRADLEY

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NEWS FROM THE COLLEGE

UPDATES AND ALERTS FROM ACEP

Reactions to the 2021 Physician Fee Schedule Proposed Rule

On Aug. 3, the Centers for Medicare and Medicaid Services issued its major annual Medicare payment proposed rule. The next day, ACEP sent a letter to Congress expressing grave concerns with the proposed cuts and calling to waive budget neutrality requirements to avert the cuts that pose a significant threat to emergency physicians and the health care safety net. Visit www.acep.org/medicare-medicaid-chip for a thorough breakdown of this 1,300 page proposed rule and ongoing updates from ACEP's advocacy team.

New Policy Statements Recently Approved

During its recent board meeting in late June, the ACEP Board of Directors approved the following new or revised policy statements. View them at www.acep.org/policystatements.

- Guidelines Regarding the Role of Physician Assistants and Advanced Practice Registered Nurses in the ED, with the revised title Guidelines Regarding the Role of Physician Assistants and Nurse Practitioners in the ED (revised)
- Expert Witness Cross-Specialty Testimony for Standard of Care (new)
- Medical Neutrality (new)
- Antimicrobial Stewardship (new)
- Role of the Emergency Physician in Injury Prevention & Control for Adult and Pediatric Patients (revised)
- Leadership & Volunteers Policy (new)



Make Plans Now for ACEP20: Unconventional

While we wish we could be together in person, we are excited to take ACEP20 into an innovative, exclusively digital format that brings ACEP20 education to emergency medicine clinicians across the world. Here are a few common questions:

- Will the education be live or on-demand?** Both! ACEP20 will include more than 200 hours of CME education, and the best part is that ACEP20 education and CME credit will be available for three years after the event. All of the live events will be debuting during the original meeting dates, Oct. 26–29.
- What about the Council Meeting?** It's

still happening Oct. 24–25 through a virtual platform.

- Will there be social events?** Yes! Just because we're far away doesn't mean we can't find new ways to connect.

See the latest details at www.acep.org/sa.

New Mentoring Program Supports Diverse EM Community

ACEP's Diversity, Inclusion and, Health Equity Section (DIHE) partnered with the Emergency Medicine Residents' Association (EMRA) Diversity & Inclusion (D&I) Committee to launch a mentoring program to support leadership and career development for diverse medical students, residents, fellows, academic attendings, and community emergency physicians in the EM community. The program kicked off Aug. 15, opening up its limited mentoring slots to those enrolled at historically Black colleges and universities, members of the DIHE Section, EMRA's D&I Committee, and the ACEP Young Physicians Section.

Congratulations to the Teaching Award Winners!

ACEP extends its heartfelt congratulations to the 2020 winners, who will be honored during ACEP20 in late October.

2020 National Emergency Medicine Excellence in Bedside Teaching Award

- Jeanne Noble, MD
- Stephen Topp, MD

2020 National Emergency Medicine Faculty Teaching Award

- Joelle Borhart, MD, FACEP
- Creagh Boulger, MD, FACEP
- Christopher Colwell, MD, FACEP
- Megan Fix, MD, FACEP
- Phillip Harter, MD, FACEP
- Christine Kulstad, MD, FACEP
- Gillian Schmitz, MD, FACEP

2020 National Emergency Medicine Junior Faculty Teaching Award

- Sarah Dubbs, MD, FACEP
- Nicholas Maldonado, MD, FACEP
- Therese Mead, DO, FACEP
- Steven Rougas, MD, FACEP
- Andrew Schmidt, DO
- William Shyy, MD, FACEP

Marking Physician Suicide Awareness Day

Physician Suicide Awareness Day is coming up on Sept. 17. ACEP will be providing updates on the Dr. Lorna Breen Health Care Provider Protection Act and additional tools and resources to mark this solemn occasion. As we advocate against barriers that prevent emergency physicians from seeking support, ACEP encourages members to visit the Wellness Hub at acep.org/wellness-hub for multiple pathways to help you find the support you need during this challenging season for our profession. 🧡

RESIDENCY SPOTLIGHT

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Twitter: @UHCMC_ED

Website: thelandofem.com

Location: Cleveland

Year founded: 2008

Number of residents/program length:
12 residents/year, 3-year program



UNIVERSITY HOSPITALS CLEVELAND MEDICAL CENTER/ CASE WESTERN RESERVE UNIVERSITY

Secret weapons (medical):

UH is a program looking to innovate and make our mark on the field. With a youthful faculty hailing from programs around the nation, we have opportunities in nearly every subspecialty, from EMS to pediatric emergency medicine, critical care to sports medicine, point-of-care ultrasound to toxicology. A diverse clinical experience and engaging conference sessions combine to prepare our graduates as expert diagnosticians, master resuscitators, and skilled advocates. Our community of trainees practices at a busy urban Level 1 trauma center as well as suburban regional medical centers and rural Level 3 hospitals, ensuring they are prepared for a fulfilling, lifelong career in emergency medicine.

Secret weapons (nonmedical):

Cleveland is the ideal city for a resident, offering all the amenities of a large U.S. city while maintaining a low cost of living. Some of America's top cultural attractions are a short walk from the hospital, including the Cleveland Museum of Art and Severance Hall, home to the world-renowned Cleveland Orchestra. Downtown, you will find the second-largest theater district in the country and a prominent sports scene with three professional teams. To get outside, visit the Cuyahoga Valley National Park only 45 minutes away and the Cleveland Metroparks, or "Emerald Necklace," spanning more than 23,700 acres and 300 miles of trails including multiple parks on Lake Erie, one of the few places in the Midwest where you can surf.

Recent publications of note:

Foster SD, Hart K, Lindsell CJ, et al. Impact of a low intensity and broadly inclusive ED care coordination intervention on linkage to primary care and ED utilization. *Am J Emerg Med.* 2018;36(12):2219-2224.

Hill J, Stull M, Stettler B, et al. Development and validation of a lecture assessment tool for emergency medicine residents. *AEM Educ Train.* 2018;2(4):310-316.

Ma IWY, Desy J, Woo MY, et al. Consensus-based expert development of critical items for direct observation of point-of-care ultrasound skills. *J Grad Med Educ.* 2020;12(2):176-184.



Trivia

Cleveland is the birthplace of Superman, and many Hollywood movies have been shot here, including "The Avengers" and "Men in Black."

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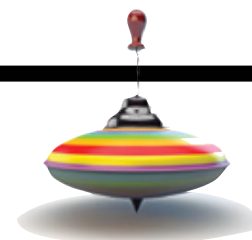
- Unusual Antibiotic Side Effects
- MRI vs. CT in the ED Setting
- Challenges of Managing Pediatric UTIs
- Emerging Issues in Anticoagulation
- Chest X-Ray, Ultrasonography, or CT?
- Headache - ACEP 2019 Guidelines
- LPs in Febrile Infants 29-60 Days Old?
- Suicidal Risk: Assessment and Intervention
- Cardiovascular Pearls, 2019
- DKA and Hyperglycemia Update
- Sore Throat: Still Trying to Get It Right
- Sexual/Racial/Ethnic Disparities in the ED
- ACS & PE - ACEP 2019 Guidelines
- Psychiatric Patients: Medical Evaluation
- Sepsis 2019: Hot Off the Press
- Challenges of Atrial Fibrillation - Part 1
- Challenges of Atrial Fibrillation - Part 2
- Otitis Media Doesn't Cause Fever
- Pearls from *ED Leadership Monthly*
- Pearls from *Risk Management Monthly*
- Urologic Imaging Guidelines
- Pediatric Vomiting and Diarrhea
- Trauma 2019: Hot Off the Press
- Myths in Emergency Medicine
- Myths in EMS Care
- ATS/IDSA Updated Pneumonia Guidelines
- Visual Diagnosis Challenges - Part 1
- Visual Diagnosis Challenges - Part 2
- Important Recent EM Literature - Part 1*
- Important Recent EM Literature - Part 2*

Topics listed with an asterisk () are 90-minute faculty panel discussions;
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2018 & 2019 Series Also Available



Should EDs Watch for CKD?

Redefining the role of emergency physicians in chronic kidney disease management to promote value in care

by AMAL AGARWAL, DO, MBA; JOSEPH A. VASSALOTTI, MD; AND ZHOU YANG, PHD, MPH

Emergency physicians order basic metabolic panels for a variety of reasons. For patients without a primary care physician, an ED visit presents a potentially important opportunity beyond any acute diagnoses and treatment received. Some chronic medical problems can be detected by intent or by chance in the course of many ED workups. Emergency physicians should be on the lookout for these and seize the opportunity to encourage appropriate follow-up.

About 37 million American adults (15 percent) are living with kidney disease.¹ Among people with chronic kidney disease (CKD), the prevalence of hypertension by disease stage is approximately 36 percent in stage 1, 45 to 50 percent in stage 2, 60 percent in stage 3, and more than 80 percent in stages 4–5.² The majority (90 percent) of CKD patients are not aware of their condition, and nearly half are in advanced stages when they receive a definitive diagnosis.³ There is a significant likelihood of undiagnosed CKD among ED patients. While only 3.4 percent of people diagnosed with CKD visited the emergency department between 2015 and 2016, approximately one-third of all ED patients present with blood pressure levels above the threshold for hypertension diagnosis, which would also increase the likelihood of concomitant CKD.^{4,5}

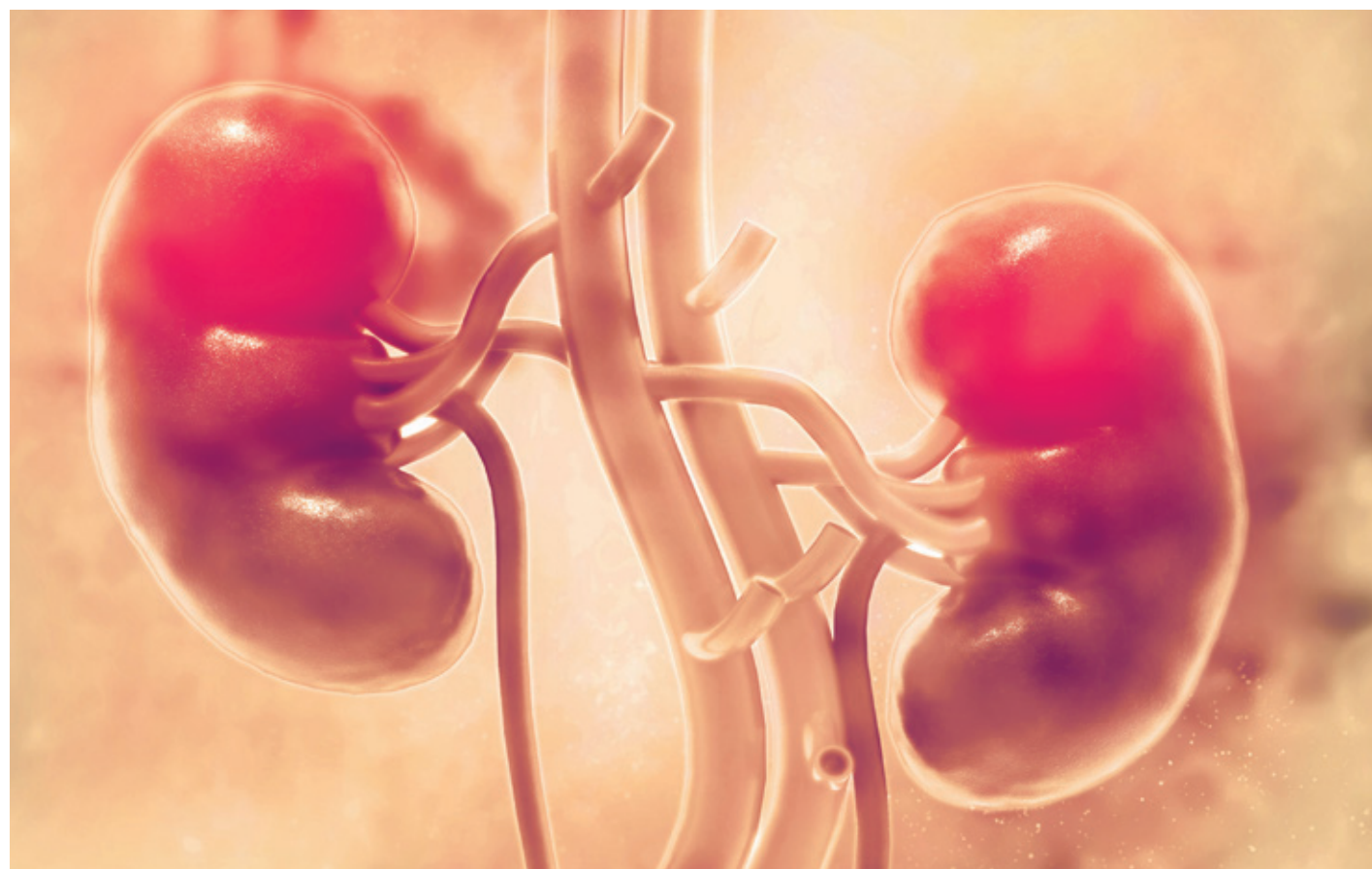
Emergency Physicians Are Uniquely Positioned in Kidney Care

CKD is a major threat to population health in the United States, and if the condition is not diagnosed early and managed well, it inevitably progresses to end-stage renal disease (ESRD). One in five patients with ESRD die within a year after starting dialysis, and that number soars to half of patients within five years.⁴ Approximately 7.2 percent of Medicare fee-for-service annual spending is for the care of ESRD and totaled \$35.9 billion in 2017 alone.²

In response to these issues, the White House released the Advancing American Kidney Health Initiative last year, with the intention of urging the transformation of kidney care.⁶ The priority of this executive order is to “prevent kidney failure whenever possible through better diagnosis, treatment, and incentives for preventive care.”

Emergency physicians are uniquely positioned to answer the call to prevent kidney failure because they interact with significant numbers of affected individuals, most of whom have very low awareness of the disease.

Emergency physicians can increase awareness of CKD among patients with hypertension, and this can be accomplished in part by acknowledging the long-term significance of a low glomerular filtration rate (GFR), discussing it with the patient, and ensuring there is



adequate follow-up. When a patient’s GFR is low, emergency physicians might counsel the patient on adherence to antihypertensive medications and provide a referral to primary care for CKD management.

Advancing ED Practice in Value-Based Care

By addressing possible missed diagnoses of CKD and other chronic illnesses, emergency physicians have substantial potential to improve population health. The increasing shift to value-based care, which ties payments to health outcomes, has expanded the role of the emergency department from treating acute episodes to improving the value of the entire system when possible. For example, in 2019, ACEP proposed an innovative value-based payment model, the “Acute Unscheduled Care Model (AUCM): Enhancing Appropriate Admissions, A Physician-Focused Payment Model (PFFM) for Emergency Medicine.”⁷ The Department of Health and Human Services endorsed this proposal, which provides incentives for emergency physicians to safely discharge Medicare beneficiaries from the emergency department by facilitating and rewarding postdischarge care coordination.

These payment model trends, accompanied by advancing technology in data interoperability, present a new opportunity for emergency physicians to recognize patients at risk of serious chronic conditions continuing to go undiagnosed and therefore unmanaged. This expanded focus will lead to increased patient awareness and education. This, in turn, can motivate individuals to seek and obtain the care they need in a timely manner, leading

to better health outcomes and higher health care value.

The federal government may lead this initiative, but there is an equally important role for private payers in the system transition. Private payers can work with emergency departments on alternative payment models ranging from population-based quality measures to more holistic total cost-of-care models, providing additional incentive to move this work forward.

Emergency physicians play a critical role in our nation’s health system and have an amazing opportunity to advance our nation on the path to value-based health care. Nowhere is this more evident than in the benefits that can be realized with earlier identification and management of chronic diseases such as CKD.

The authors thank William Shrank and Courtney Brown, Humana Inc. and Suzanne Dixon, Humana Healthcare Research for providing writing support and contribution.

Disclosure: Dr. Vassalotti is a consultant on type-2 diabetes health services and population health for Janssen, Inc. and on the CKD advisory board for RenalytixAI, Plc.

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

ACEP4U: With You on the “Corona Coaster”

COMPREHENSIVE SUPPORT FOR EMERGENCY PHYSICIANS THROUGH THE COVID-19 CRISIS



by JORDAN GRANTHAM

The early months of this COVID-19 crisis already feel like a blur, as we were all riding the “corona coaster” together. Many regions that were spared some of the worst conditions in the spring are being hit heavily during these late summer months, so here’s a quick summary of the COVID-19 response so far to highlight the most helpful resources for ACEP members.

Wellness and Support

ACEP wants you to be able to seek help if you are suffering from depression and PTSD without concerns about its impact on your licensure or hospital credentials, so we developed a strong and impactful statement opposing such obstacles that was signed by more than 40 medical societies and advocacy organizations, including the American Medical Association, the National Alliance on Mental Illness, and the Federation of State Medical Boards. This initiative has moved to phase two, in which we and our partners reach out to individual state licensing boards and have meetings with hospital associations and hospital systems to try to remove these obstacles and barriers for our members.

In late 2019, ACEP launched the **Member Assistance & Wellness Program** (www.acep.org/support) as a new member benefit, providing for three free counseling or wellness sessions with a professional, along with the option to receive legal assistance.

The **Physician Wellness Hub** (www.acep.org/wellness-hub) was launched in June. Designed to help you find the right support, the Hub has options for peer support, crisis counseling, or addressing your stress at the source (financial, legal, personal, clinical, or workplace).

To address the tough economic impact this pandemic has had on our members—and medicine as a whole—ACEP compiled the **COVID-19 Financial Survival Guide** (www.acep.org/covidfinancialguide).

ACEP forged new relationships with consumer companies and called upon existing health care partners to step up and sup-

port ACEP members in truly unique and meaningful ways (www.acep.org/covid19benefits):

- We led the call for free and discounted rooms for emergency physicians to protect themselves and their families with Marriott and Hilton.
- We partnered with GrubHub on a virtual benefit concert resulting in \$250,000 in free meals for ACEP members.
- We partnered with Amazon Business to get members unrestricted, hospital-level access to cleaning and other supplies that support their personal safety.
- We partnered with multiple companies that provide our members generous discounts and freebies in support services—including food, child and pet care, and other travel support.

Federal and Regulatory Progress

ACEP’s Advocacy team developed a comprehensive and evolving list of needed policy changes related to workforce protection and mobility, access to care, personal protective equipment (PPE), liability shields, and frontline financial support. We sent this list to all members of Congress and policymakers, and chapters have used it for state-level advocacy.

On April 28, we coordinated 474 members from 45 states to hold 306 legislative meetings during Virtual Hill Day to dis-

cuss COVID-19 policy priorities in lieu of our normal Leadership & Advocacy Conference.

ACEP President Bill Jaquis, MD, FACEP, participated in a small White House meeting with the vice president and key senior Trump administration officials to help inform the administration’s pandemic response.

On the regulatory side, we sent several letters to Alex Azar, secretary for the Department of Health and Human Services (HHS), outlining specific changes and regulatory waivers that would protect emergency physicians and other frontline health care staff while increasing patient access to care.

Our advocacy efforts kicked off a quick cascade of significant changes for emergency medicine:

Pushing for PPE

ACEP’s grassroots campaign generated more than 120,000 letters to members of Congress, urging them to prioritize PPE for frontline personnel and to release PPE in the Strategic National Stockpile. This was one of our most successful grassroots efforts ever!

After discovering some hospitals were sanctioning staff for wearing donated or self-purchased PPE, ACEP discussed this problem with The Joint Commission (TJC),

sharing firsthand accounts we had solicited from our members. TJC then issued a statement of support for allowing staff to bring their own standard face masks or respirators to wear at work.

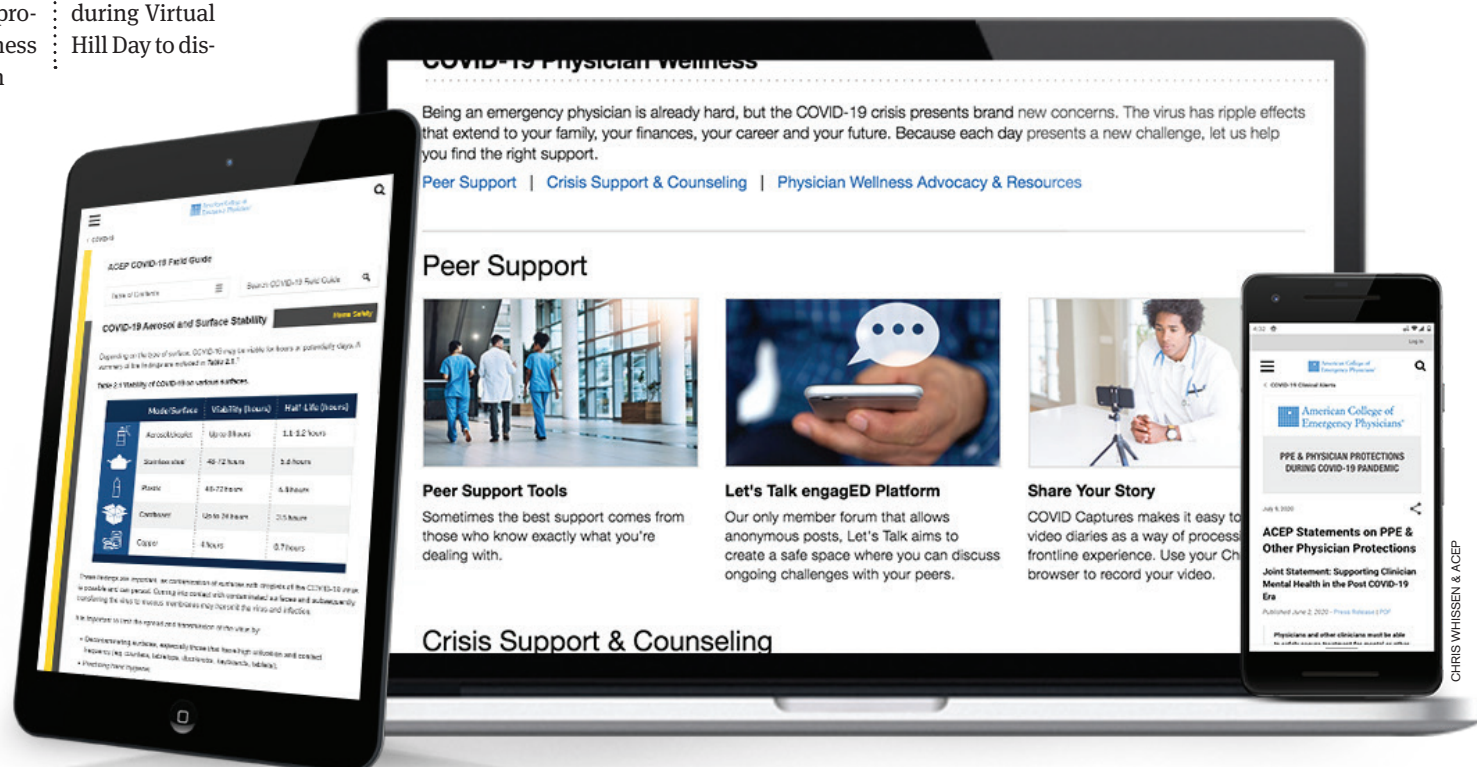
ACEP is also addressing this problem with the American Hospital Association, Centers for Disease Control and Prevention (CDC), the Occupational Safety and Health Administration, the Centers for Medicare & Medicaid Services (CMS), and the Food and Drug Administration. ACEP is also working with GetUsPPE.org to connect private industry with hospitals and clinicians in need.

Expanding Access to Care Through Telehealth

When initial CMS guidance was unclear about how emergency physicians could deliver telehealth services, ACEP was in constant contact with CMS and successfully advocated for two major policy changes.

- The ability to perform medical screening exams via telehealth has helped protect emergency physicians from unnecessary exposure to the virus and preserved limited supplies of PPE.

CONTINUED on page 9



MEET THE PRESIDENT-ELECT CANDIDATES



PLATFORM-STATEMENTS

Dr. Kang and Dr. Schmitz are current members of the ACEP Board of Directors who are running to be ACEP's President-Elect. They responded to the following question:

What is your view on the positive and negative impacts of market forces, such as hospital consolidation and the involvement of private equity, on the practice of emergency medicine?

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; adjunct assistant professor, military and emergency medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland; clinical assistant professor, department of emergency medicine, University of Washington, Seattle; 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

✓ The impacts of market forces on health care have been the subject of research as well as continual public and private debates for decades. Although they constitute a complicated and especially vexing challenge for emergency medicine, changing annually at multiple levels as some forces rise and others ebb, I view their drivers and effects to be shaped by three factors: the stakeholders, industry landscape, and timing.

There were two initial stakeholders in health care, the patient and the physician. As the number of stakeholders drastically increased to now include hospitals, insurers, communities, regulators, plus both state and federal governments, the standing and authority of

physicians depreciated.

Over the past decade, the emergency medicine landscape has been significantly affected by government policy, employer and hospital consolidation, and the rise of private equity. The Patient Protection and Affordable Care Act obligated fundamental changes in reporting (including metrics), reimbursement, and coordination of care while insurers and various states continue to attempt to refuse to pay for some emergency department care and EMTALA remains an "unfunded mandate." These changes helped prompt the ongoing wave of employer, hospital, and health care system consolidations and the beliefs in larger market shares, networks, and greater operational efficiency. These changes also precipitated the rise of private equity in emergency medicine, which offered another source of financial shelter but also introduced another stakeholder.

As emergency medicine evolved, various stakeholders would align with each other. However, over the past decade and until this year, it has often seemed that all of the other stakeholders, including patients, were aligned against emergency physicians.

Over the past six months, COVID-19 has served as a stress test for emergency medicine, disrupting all of the market forces and challenging each stakeholder's values and standing. While some beliefs and practices have held up, others have been revealed to be more promissory or unlikely to be realized. As severely as COVID-19 has affected you, your colleagues, and your practice, it also allows us to regroup, and reaffirm and

regain our standing. Patients, communities, and some government agencies are now more aligned with us and recognize and value our leadership and commitment to high-quality patient care.

Your College has been assessing these market forces and their effects. Two years ago, I requested that one of the objectives for the Ethics Committee was to explore the impact of the business of emergency medicine on the patient-physician relationship. Last year, I supported the introduction and adoption of Resolution 58, The Role of Private Equity in Emergency Medicine, to encourage an open and frank discussion. As your Treasurer, I am knowledgeable about the College's finances and their current limitations, and I encouraged staff to reassess and refine some operations to better position the College once COVID-19 subsides.

If elected, I will continue to utilize these views to facilitate discussion, advocacy, and action so that the College may take advantage of this opportunity to rebuild and sustain our professional standing and leading roles in the definition, management, evaluation, and improvement of quality emergency care for our patients and communities.

Gillian R. Schmitz, MD, FACEP

Current Professional Positions: associate professor, department of military and emergency medicine, F. Edward Hébert School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland; adjunct associate professor, department of emergency

medicine, University of Texas Health Science Center, San Antonio

Internships and Residency: emergency medicine, University of North Carolina

Medical Degree: MD, Loyola Stritch School of Medicine, Maywood, Illinois (2004)

Response

✓ There have been dramatic market forces in the health care sector that have promoted consolidation of hospitals, insurance companies, and physician practice groups. Markets are driven by reimbursement, which is shifting over time from traditional fee-for-service to payment based on value. The industry's response is to consolidate in an effort to increase market share and capture economies of scale. The positive effects of consolidation to date are an enhanced focus on care coordination, information technology, and integrated health care delivery in an effort to improve outcomes while reducing costs. Conversely, the negative effects of consolidation include unchecked growth, with subsequent concentration of influence and decision making into the hands of a shrinking number of business leaders. These business leaders, often non-physicians, may allow disparate priorities to displace the best interests of emergency department patients and emergency physicians.

I believe our patients' interests are best served through physician leadership within every employer and ownership model. ACEP must ensure that our employment models prioritize high-quality care, safe clinical practice environments, fair and equitable compensation, due process rights, and most importantly, a physician voice to lead the business operations and strategic direction of our practices.

Decreased reimbursement and inability to obtain reasonable in-network rates coupled with higher operational costs for quality reporting and technology upgrades forced many smaller practices to close or sell to larger groups. Smaller hospitals lack the economies of scale and physician networks required to achieve care coordination at a lower cost. Many rural hospitals are on the verge of collapse due to lower patient volumes, poor payor mixes, and high deductible plans that create uncollectable bad debt. The number of hospital administrators and managers has grown almost exponentially as has the number of regulations that mandate measurement and reporting of quality, safety, and patient experience metrics. Less and less of the health care dollar is spent on actual patient care. Many counties in the United States are now monopolized by one or two insurance companies and health systems—leaving less competition, less choice, and potentially higher costs.

The role of private equity in physician practice is a complex topic that is controversial and potentially divisive. The evolution and maturation of large, clinically integrated physician staffing models was a predictable response to recent market forces and large-scale consolidation across the entire health care industry. The extent to which emergency physician group leadership is being supplanted by non-clinical corporate executive leadership varies across groups. We need to ask the tough questions and study the impact that different employment and leadership models have on our practice, autonomy, and the health of our patients. We need to ensure that our employers and other business entities that maintain ownership in our practices prioritize patient care and physician independent decision making. Whether we are employed by a hospital, small group, or larger physician organization, there will be increasing financial pressures that will impact us all.

I believe it is the job of the ACEP President to represent and advocate for all emergency physicians, regardless of whom they work for. We all practice under the same tent of emergency medicine, and we have real enemies that will use to their advantage any divisiveness and rancor among our ranks. ACEP must focus on goals that enhance the practice environment of all emergency physicians. We need protections in all practice settings, and ACEP is well positioned to be a champion for each of us. +

- The addition of ED E/M codes on the approved list of Medicare telehealth services enables emergency physicians to be appropriately reimbursed for the care they provide.

Expanding Liability Protections

ACEP continues to actively work to secure immunity from liability. During his White House meeting, Dr. Jaquis explained to Vice President Mike Pence and the other Trump administration officials about the need for such increased liability protections, and ACEP is working directly with Congressional lawmakers to include liability protections in future COVID-19 legislation.

A lot of the liability movement will happen on the state level, so we also provided a template letter asking for full immunity to every state chapter. By July, 16 states and Washington, D.C., had included strong liability protections for frontline health care practitioners in either an executive order or legislation. Another eight states expressed a belief that existing statutes related to emergencies created such protections.

Seeking Federal Financial Support for Our Members

ACEP has consistently pressed for emergency physicians and other frontline health care workers to be prioritized during the distribution of stimulus funding. ACEP sent four letters to the Trump administration and to Congress requesting financial support so emergency physicians can treat patients, maintain readiness, and be fully prepared for further patient surges.

We continue to track new waves of funding from the Provider Relief Fund created in the CARES Act and are keeping our members apprised of announcements. We continue to be in constant contact with HHS to reiterate our concerns.

As part of our focus on small, independent groups, we created resources on financial options to sustain them through COVID (www.acep.org/covid-small-group-resources).

Supporting Physician Mental Health

ACEP is actively supporting several pieces of legislation that prioritize mental health for both health care workers and patients. ACEP worked closely with legislators on the development of the Dr. Lorna Breen Health Care Provider Protection Act, introduced in late July. Learn more about Dr. Breen on p. 11, and see the latest on this legislation and other ACEP-supported bills related to mental health at acep.org/Breen-bill.

Ongoing Concerns

While we press for COVID-related progress, other factions are trying to slide one-sided, insurer-favored surprise billing legislation into the response packages. ACEP is pushing back, explaining that now is not the time to introduce divisive surprise billing legislation into the debate about how to respond to the pandemic.

Information Sharing and Communications

In late January, we sent our first all-member **Coronavirus Clinical Alert**. ACEP coordinated webinars with Washington state physicians who were some of the earliest to experience the COVID-19 surge and connected them with legislators to explain the situation firsthand.

In response to the need to rapidly share COVID-19 experiences, ACEP created the **COVID-19 Community** on the EngagED platform and extended its availability to the international audience. As of mid-June, the forum had 3,987 participants from 90 countries, with 642 conversation threads and 2,799 discussion posts. The COVID-19 Community alerted ACEP to issues we needed to tackle:

- PPE shortages and lack of hospital support for the use of self-purchased or donated PPE
- COVID-19 being used as a negative factor during custody disputes
- Confusion over regulatory policies

Daily summaries of the COVID-19 Community soon became unwieldy. That led to development of the **Field Guide for COVID-19 Care in the Emergency Department** (www.acep.org/covid19-field-guide). This definitive clinical guide is a frequently updated living resource. By July, this guide had more than 125,000 views, it had been independently translated into five languages, and it had been cited by more than 170 prominent online resources, including the CDC, the National Institutes of Health, and the COVID-19 Healthcare Coalition.

The Clinical Alerts grew into the COVID-19 Center (www.acep.org/covid-19), a robust resource library that organizes more than 400 webinars, articles, podcasts, videos, and more by clinical topic. By July, the COVID-19 Center had more than 1 million views. The most accessed page is ACEP's statement standing with our members against emergency physicians' having their jobs threatened.

At the same time, ACEP's public relations team was sharing your frontline experiences with the public. Externally, ACEP or ACEP chapters have been mentioned in COVID-related media stories more than 10,000 times in national and local print, online, and broadcast news outlets since March—a 500 percent increase over 2019. +

MS. GRANTHAM is ACEP's communications manager.

ACEP Now Wins Awards for Editorial Excellence

ACEP Now has received two editorial awards:

- APEX Grand Award for "The Power of Advocacy" by Dr. Kimberly Chernoby, where she discusses her advocacy efforts to work with Indiana Lawmakers to help young pregnant patients gain control over their own care.
- APEX Award of Excellence for the October 2019 issue.

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.



How to Perform an Adductor Canal Block

MANAGE LOWER EXTREMITY INJURIES AND INFECTIONS WITHOUT OPIOIDS

by PETER E. CROFT, MD; AND DAVID MACKENZIE, MDCM, FACEP, FRCPC

Injuries or soft tissue infections of the lower extremity are common reasons for patients to seek emergency care. Ultrasound-guided regional anesthesia is a key component of multimodal and opioid-sparing pain control in the emergency department.¹ Femoral, fascia iliaca, and posterior tibial blocks are lower extremity blocks performed routinely in many emergency departments.²

Blocking the saphenous nerve, often called an adductor canal block, is another valuable tool for emergency clinicians. At the level of the adductor canal, the saphenous nerve is a terminal sensory branch of the femoral nerve. A block provides anesthesia to the medial aspect of the lower leg and ankle as well as the skin overlying a portion of the patella. It is effective for laceration repair or abscess drainage in this distribution and can be used for adjunctive pain relief postoperatively in knee surgeries.³ The adductor canal block is commonly used for analgesia in patients undergoing partial or total knee replacement surgery. Unlike a femoral nerve block, strength in the quadriceps is unaffected, allowing early mobilization or discharge. As with other nerve blocks, ultrasound guidance allows operators to visualize the nerve and can increase the efficacy and safety of the block.^{1,4}

Equipment

Transducer: Select a high-frequency linear transducer (15-6 or 10-5 MHz) with the nerve or soft tissue preset.

Anesthetic: Options include a short- or long-acting anesthetic. Choice depends on the goal of the nerve block: pain relief (preferentially a longer-acting anesthetic) or procedural (preferentially a shorter-acting anesthetic).

• Long-Acting:

- » Ropivacaine (max. dose 3 mg/kg), anticipate 6–10 hours analgesia
- » Bupivacaine (max. dose 2 mg/kg), anticipate 3–12 hours analgesia

• Short-Acting:

- » Lidocaine (max. dose 3 mg/kg), anticipate 1–3 hours analgesia

Research supports using low-dose perineural dexamethasone to prolong the duration of peripheral nerve blocks for several hours.⁵ A safe choice would be the addition of 2–4 mg of dexamethasone to the volume of anesthetic.

Needle: Choose a 21-gauge or larger needle to optimize visualization. In patients with more soft tissue, a spinal needle may be needed. Consider bringing up a skin wheal of lidocaine to make needle entry less painful. When available, nerve block needles increase echogenicity and may help with visualization, though they are not required to perform an adequate block.

Technique

Pre-Block Assessment: As with any nerve block, assess for distal motor and sensory function along with a distal pulse check.

Patient Positioning: Patient positioning for the adductor canal is relatively easy compared to the ergonomic challenges of some other blocks. Place the patient in a “frog-leg” position (see Figure 1), with the machine on the side of the affected leg and the proceduralist on the opposite side of the bed. (As with any bedside ultrasound procedure, position the machine on the opposite side of the bed from the side of the procedure. This allows a clinician to observe the ultrasound screen comfortably.) While local anesthetic systemic toxicity is rare, cardiac monitoring is technically considered a best practice.¹

Ultrasound Landmarks: Position the probe in transverse at the junction between the middle and distal third of the anteromedial thigh. Identify the femoral artery in this area and direct attention to the superomedial aspect of the artery (see Figure 2), which is where the saphenous nerve passes deep to the sartorius muscle. Do not expect the nerve to appear perfectly circular in this region (see Figure 3). Rely



Figure 1: Positioning the patient in a “frog-leg” orientation allows for easy access to the adductor canal.

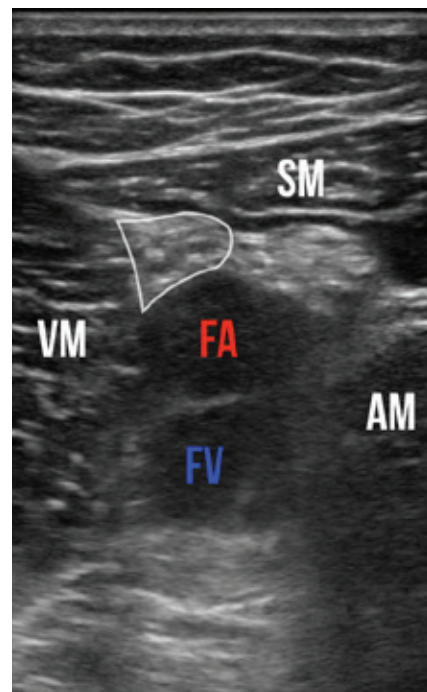


Figure 2: Transverse sonographic view of the adductor canal. The sartorius muscle (SM) forms the “roof.” Vastus medialis (VM) is medial, and the adductor magnus (AM) is lateral. The saphenous nerve (white outline) lies between the femoral artery (FA) and the sartorius. FV is the femoral vein.

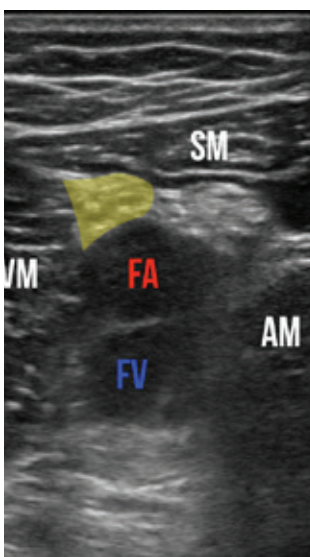


Figure 3: Sonographic view of the adductor canal. The saphenous nerve is highlighted.

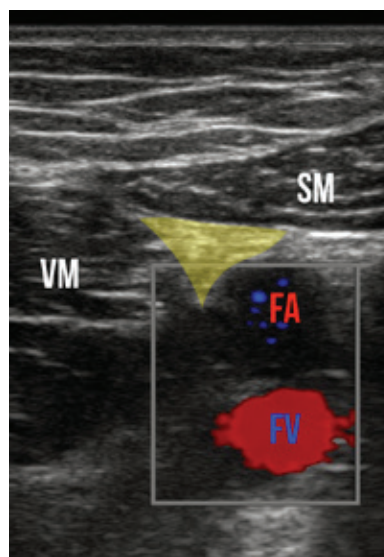


Figure 4: Color Doppler flow visualized in the femoral artery and vein. The target saphenous nerve is marked in yellow.

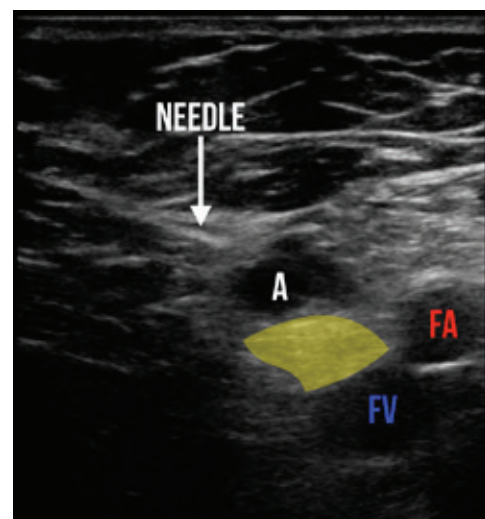


Figure 5: The hyperechoic needle is positioned correctly as the operator administers local anesthetic (A) just above the saphenous nerve (yellow). This in-plane approach provides better visualization of the needle during the procedure.

on the anatomical consistency that the saphenous nerve will run with the neurovascular bundle of the distal femoral artery and vein in this fascial plane (see Figure 4). Once anesthetic is placed superomedially to the femoral artery and deep to the posterior fascia of the sartorius muscle, the saphenous nerve will become more visible as a result of hydrodissection.

Performing the Block: Using an in-plane approach, direct the needle toward the plane of the vascular bundle while maintaining visualization of the needle tip (see Figure 5). Once the needle pierces through the posterior fascia of the sartorius muscle (you may feel a popping sensation), administer anesthetic. If injected at the correct location, hydrodissection will occur, which, as noted above, often allows for better identification of the nerve. The anesthetic will bathe and envelop the nerve bundle. Avoid injecting directly into the nerve so as to avoid potential nerve injury.

Summary

The adductor canal block is a useful nerve block to facilitate the management of lower extremity soft tissue injuries or infections in the emergency department. It is a valuable addition to other peripheral nerve blocks used commonly by emergency clinicians. +

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Remembering Dr. Lorna Breen

Dedicated emergency physician was a casualty of the stress caused by COVID-19

by MAURA KELLY

The following is a summary of “The Pandemic’s Psychological Toll: An Emergency Physician’s Suicide” from the September issue of *Annals of Emergency Medicine*.

When COVID-19 hit New York this spring, the crisis swept away with it Lorna Breen, MD, clinical director of the emergency department at NewYork-Presbyterian Allen Hospital in Manhattan. In late March, 49-year-old Dr. Breen became sick with the virus and never gave herself a complete break from work even while she tried to recuperate. Despite not seeming fully recovered, according to her family, Dr. Breen promptly returned to her 200-bed hospital—which, at times, had as many as 170 COVID patients. There, she faced horrors unlike any she’d experienced in her long medical career. “The scene was overwhelming,” her sister reports. “People were dying everywhere. There weren’t enough oxygen hook-ups, so they were using tanks, but the tanks would run out of oxygen, and patients would die waiting to be seen.” Dr. Breen, who had no history of mental health problems, killed herself on April 26.

The pandemic has exacerbated an existing problem: Physicians have the highest suicide rate of any profession, and the stigma about seeking help remains high among doctors, even while studies indicate that those on the COVID front lines are at elevated risk for depression, anxiety, insomnia, and psychological distress. Experts suggest that peer debriefing sessions help, along with providing adequate personal protective equipment and



ensuring physicians feel appreciated. Some argue that licensing boards should stop asking about mental health diagnoses and treatments. On March 30, a group of psychiatrists founded the Physician Support Line, a confidential hotline (888-409-0141) that provides free psychiatric support for doctors. ACEP members have access to 24/7 wellness support via phone, text, or online chat at acep.org/support. More free counseling and peer support options are listed at acep.org/wellness-hub. +

MS. KELLY is a special contributor to *Annals* “News & Perspective.”

ACEP strongly supports S. 4349, the Dr. Lorna Breen Health Care Provider Protection Act, introduced in the Senate July 29. Visit acep.org/Breen-bill to learn more about it and other ACEP-supported bills that prioritize physician mental health.

Compassionate Care for Patients with Autism Spectrum Disorder (ASD)

In 2018, the ACEP Council passed Resolution 40-18: Care of Individuals with Autism Spectrum Disorder in the ED. The goal was to “identify additional resources or educational materials for emergency physicians on the care of patients with autism spectrum disorder who present to the ED” while taking input from key stakeholders, including patients with ASD and their family members.

This project was assigned to ACEP’s Emergency Medicine Practice Committee, and Lorna Breen, MD, FACEP, volunteered to lead the subgroup that would develop the content for this educational tool.

“We all recognize that sensory, behavioral, emotional, and communication challenges can present significant barriers to receiving emergency care for patients on the autism spectrum,” said Michael Gertz, MD, FACEP, who joined the national workgroup after starting similar ASD work in California. “Our goal in developing this toolkit was to help break down those barriers and empower emergency



physicians to consider broader strategies for treating these patients.”

Dr. Gertz and the other contributors in the group—Connie Kasari, PhD; Sheryl Kataoka, MD, MSHS; Jena Lee, MD; Joann M. Migyanka, DED; and Arvind Venkat, MD, FACEP—divided and conquered the content development. The result covers four main areas: an overview of ASD, how to interact with ASD patients for history and physical, medical and psychiatric conditions, and managing agitation.

The ASD point-of-care tool was published to ACEP’s website shortly after Dr. Breen died by suicide in late April. She guided the workgroup with “humility,” according to Dr. Gertz. “She would be very proud of the final product, I’m sure.” +

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THAT'S NOT SNOT

Spontaneous pneumocephalus following a minor upper respiratory infection

by CAITLAN HINTON; AND ALLISON TROP, MD, FACEP

Cerebrospinal fluid (CSF) leaks are rare. But when seen in an emergency department, they should be recognized as part of a potentially life-threatening process. Emergency physicians mostly encounter CSF leaks in the setting of traumatic injuries, but they can also occur in atraumatic settings. CSF leaks have potential implications for serious intracerebral infection, pain, and, if left untreated, significant morbidity and mortality. Here, we discuss a case of a persistent atraumatic CSF leak in an otherwise healthy young woman.

The Case

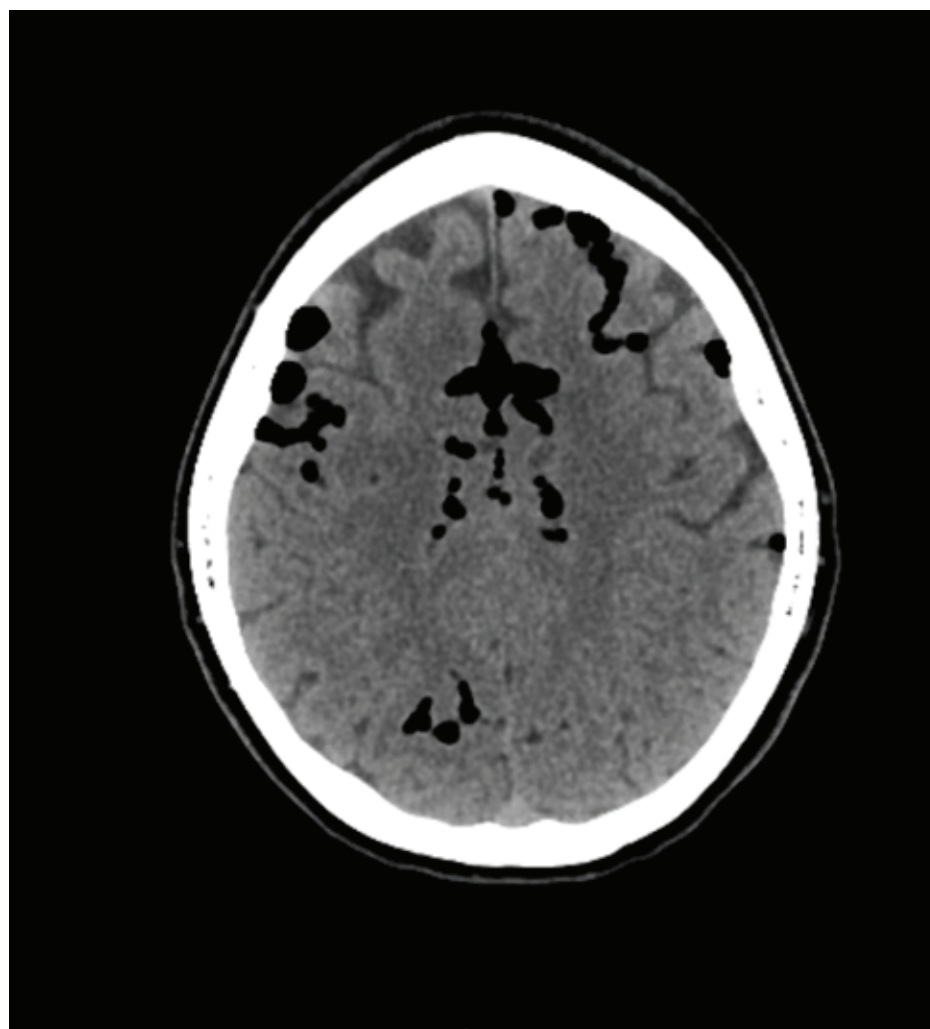
A mid-40s woman presented to the emergency department from home following three weeks of a persistently runny nose. She recently had an upper respiratory infection, but on arrival was symptom-free with the exception of rhinorrhea. She had the “sniffles” for several days three weeks ago but had been feeling fine since. However, her nose has been “constantly” running, requiring that she pack her nose with tissue just to complete her daily activities. No traumatic injury was reported. The patient reported a mild headache that worsened with sitting or standing up after lying flat. She had no signs or symptoms of an ongoing active infection at the time of presentation and showed no meningeal signs. On exam, she was noted to have persistent, clear, continuous drainage from the right nostril. This was markedly pronounced when she would lean forward. pH paper was brought to bedside and, with application of the patient’s nasal drainage, demonstrated a “halo” sign and pH measuring near 7.0. These findings were consistent with a suspected CSF leak. CT scan of the head demonstrated significant pneumocephalus (see Figures 1 and 2). She was found to have erosion of the right posterior maxillary sinus. She underwent fat grafting from the abdomen to repair the sinus defect the next day. After repair, she recovered well with no complications.

Discussion

Pneumocephalus is pathologic air in the intracranial cavity. Air may be located in the epidural, subarachnoid, intraventricular, intracerebral, and, most commonly, subdural space. Pneumocephalus may arise through two different mechanisms: 1) a “ball valve” mechanism where air enters through a defect in the dura and is unable to exit due to overlying tissue, or 2) an “inverted soda bottle” mechanism where a CSF leak generates negative intracranial pressure, allowing air to replace lost CSF. Trauma accounts for nearly 75 percent of cases.^{1,2} Small volumes of air (less than 1–2 mL) are common following head trauma, and pneumocephalus can also be seen



Figures 1 (ABOVE) and 2 (BELOW): CT scan with large-volume atraumatic pneumocephalus.



with fractures of the skull base that breach the dura, penetrating head trauma with dural lacerations, and fractures of the air-filled sinuses. Nontraumatic etiologies include infection with gas-producing organisms such as in meningitis or chronic sinusitis or otitis media; eroding tumors of the skull base; and iatrogenic causes including cranial, spinal, or ENT surgery.³ Pneumocephalus and CSF leaks

may also occur spontaneously or secondary to congenital defects.⁴

Patients typically present with headaches that are worsened by Valsalva maneuvers or leaning forward and improved by lying supine.⁴ There may be associated neck pain and stiffness, nausea, vomiting, irritability, or dizziness. However, patients may also be asymptomatic. CT scan is the gold stand-

ard for identifying the presence of air in the cranial vault and can detect air volumes as small as 0.55 mL. Larger volumes of air can compress the frontal lobes and widen the interhemispheric space, creating the characteristic Mount Fuji sign.¹ Plain films can also be used but may miss small volumes of air. MRI is less sensitive than CT for identifying pneumocephalus, although it is best for identifying the source of a CSF leak. MRI may demonstrate subdural fluid collection, meningeal enhancement, venous congestion, pituitary swelling, and inferior displacement of the cerebellar tonsils.⁴

A small pneumocephalus may be managed conservatively, as intracranial air will reabsorb. Reabsorption can be aided with high-flow supplemental oxygen delivered via face mask with the patient on bed rest in the Fowler (semi-seated) position at 30 degrees.³ Patients should also be instructed to avoid Valsalva maneuvers such as coughing or sneezing, as this may reopen the dural defect. Hyperbaric oxygenation therapy may also be considered for treatment of small pneumocephalus. Be careful to avoid larger volumes of air, as this can result in intracranial hypertension, known as tension pneumocephalus. The ensuing mass effect may cause significant neurological decline and herniation requiring surgical intervention. Surgery may also be required to repair culprit dural defects or for emergent decompression of tension pneumocephalus. Some patients may benefit from blood patch placement for symptom relief.⁴

Potential complications of pneumocephalus include meningitis, seizures owing to cerebral cortex irritation by air, brain abscesses, and brain herniation resulting from tension pneumocephalus.

Summary

During a busy shift, it is easy to just call a runny nose a runny nose. However, we have to stay alert for life-threatening pathologies for seemingly simple chief complaints, as early identification of such cases can reduce morbidity and associated complications. Nothing beats a thorough physical exam and history. Be aware of your own anchoring bias and identify it when you sense it affecting your care. Take the time and effort to get a clear and detailed history from the patient. And remember, not all clear fluid is good. ☘

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Team Rubicon Responds to COVID-19 Crisis

Nonprofit provides medical assistance, equipment, and training to the Navajo Nation

by KEEGAN BRADLEY, MD; AND STANLEY CHARTOFF, MD, MPH, FACEP

Editors' Note: This article was accepted on June 28, 2020, and was accurate at that time. Because information about SARS-CoV-2 and COVID-19 is evolving rapidly, please verify these recommendations and information.

COVID-19 has disproportionately affected various regions in the United States. One area, New York City, dominated the press with dramatic stories of death and heroism. Another, the Navajo Nation, spanning three states in the Southwest, received minimal national attention until recently, despite having higher per capita cases than any state. With approximately 350,000 inhabitants living within 27,000 square miles, the Navajo Nation has seen a dramatic increase since March to 3,740 positive COVID-19 cases and 127 deaths as of May 14.¹ The Navajo Nation rate of infection was 10 times higher than that of the state of Arizona during this period.²

The Navajo Nation had been under-resourced and medically underserved long before this pandemic struck. Vulnerabilities include the Nation's historical lack of resources and sufficient medical care, a high number of medical comorbidities among this susceptible population, a widespread lack of running water that makes frequent handwashing and proper hygiene difficult, and distributed governance. In addition, the Navajo tend to live communally, with multigenerational families in single-room homes. At the intersection of culture, governance, and health, COVID wreaked havoc.

Team Rubicon (www.teamrubiconusa.org) is a nongovernmental nonprofit disaster relief organization founded in 2010 that provides domestic disaster and international humanitarian response using the skills and experi-

ence of veterans. Team Rubicon volunteers have deployed across the country in response to the COVID-19 pandemic to assist with both medical and nonmedical services.

In April 2020, we were part of a group that Team Rubicon deployed to Kayenta, Arizona, in an area of the Navajo Nation especially hard hit by COVID-19. Our mission was to provide assistance with medical and incident command personnel and supplies for the Kayenta Health Center and the surrounding region. Team Rubicon volunteers (known as Grey-shirts) deployed to the area included incident command (IC) support staff as well as physicians, physician assistants, nurses, paramedics, and EMTs. These volunteers helped in the health center's command center as well as the Kayenta Emergency Department and the Navajo EMS service, augmenting local staff stressed by the effects of the COVID-19 pandemic.

The Kayenta Health Center, a part of the Indian Health Service, was built in 2016 and has a 24-7 emergency department with 10 rooms, including a trauma room and a negative pressure room, as well as a pharmacy, a lab, and a radiology suite including a CT scanner. There are no inpatient facilities, necessitating transfers by ground, helicopter, or fixed-wing aircraft.

As in other areas, COVID-19 has resulted in a decrease in total volume but a dramatic increase in the acuity of patients seen at Kayenta Health Center. Since the start of the pandemic, the facility has shifted to disaster mode and created an incident command center to monitor and control the response. Access and movement within the facility is controlled to decrease the chance of spreading infection, and temperature checks are performed daily on everyone entering the building. Team Rubicon IC staff helps monitor and assure avail-

CONTINUED on page 15



ABOVE: The trauma bay at Kayenta Health Center.



LEFT: Dr. Stanley Chartoff at Kayenta Health Center.

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ON THE GROUND: Personal Experience from Kayenta

Keegan Bradley, MD

The day had been very typical, with plenty presenting for COVID-19-related symptoms or mainly minor complaints. I sat there wondering when we would get our sick patient that day, as we had seemed to reach the point of averaging at least one COVID-19-infected patient per day who was critically ill enough to require intubation and transport. It wasn't soon after that we were notified there was a critical patient being brought back with hypoxia and tachypnea and concern for COVID-19. The next thing we noticed was this was not one of our typical patients but one of our own emergency department teammates...



Stanley Chartoff, MD, MPH

I was on duty for my first evening shift in the Kayenta emergency department when a patient who had previously tested positive for the novel coronavirus and was short of breath was being brought back in a wheelchair. I saw on the tracking board that she was 28 years old. One of the other physicians started donning his PPE in anticipation of treating her when she suddenly slid out of the wheelchair and collapsed on the floor in front of the nurse's station...



Visit ACEPNow.com to read the rest of these personal accounts of caring for COVID-19 patients in the Kayenta Emergency Department.

Stethoscopes & Hearing Aids



Figure 1:
An amplified
stethoscope.

TIPS FOR CHOOSING DEVICES TO IMPROVE POOR HEARING

by DAVID BAEHREN, MD, FACEP

Three years ago I noticed I was not hearing well through my stethoscope. I decided to try an in-line analog amplifier that would work with my standard stethoscope. I was pleased with the result.

Unfortunately, over time my hearing continued to deteriorate. I often asked patients and nurses to repeat themselves or speak loudly. I could hear people speak but not understand the words. People speaking behind me thought I was ignoring them. I needed to turn up the volume on the radio and TV, and I found hearing my cell phone challenging.

I made an appointment with an audiologist, and she performed an audiogram. The audiogram showed high-end hearing loss, and she recommended hearing aids. We talked about my work environment and stethoscope use and made a plan. I now wear behind-the-ear hearing aids with a fenestrated dome, which allows me to continue using my same amplified stethoscope. My hearing is greatly improved, and I rarely ask people to repeat themselves.

This approach worked for me, but everyone is different. Below, I discuss the various considerations and options in stethoscopes and hearing aids.

Keep in Mind

When thinking about stethoscope solutions, we first must understand that many heart, lung, and bowel sounds are low-frequency signals, and many current hearing aids don't provide amplification of those frequencies. Therefore, it may not help you to send the stethoscope signal through certain hearing aids.

The good news: Most individuals with hearing loss retain hearing in the low frequencies. Those individuals can use open-fit hearing aids, which leave the ear canal largely open



Figure 2: An amplified stethoscope with a headset.

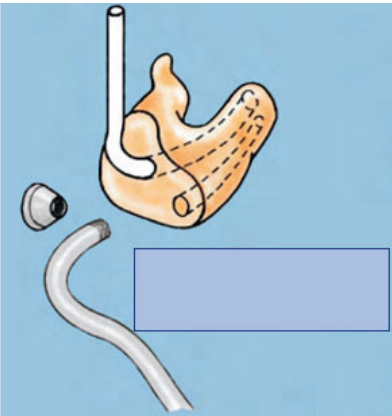
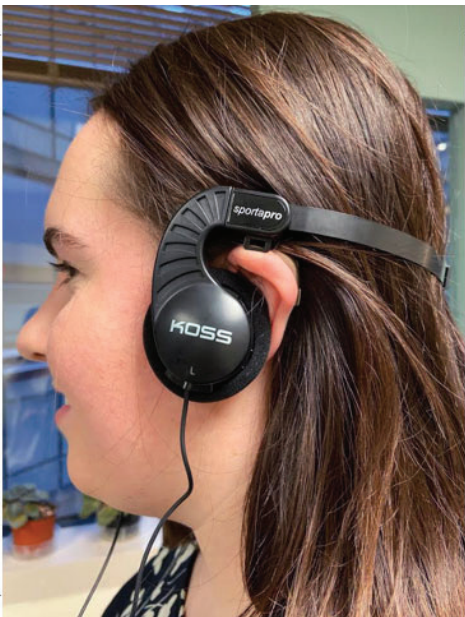


Figure 3 (LEFT): An open-fit behind-the-ear hearing aid.
Figure 4 (ABOVE): A standard behind-the-ear hearing aid with a custom earmold.
Figure 5 (ABOVE RIGHT): A special earmold that accepts a stethoscope tip.

allowing low-frequency sounds to come in naturally. With such hearing aids, you can route the stethoscope signal past them.

Keep in mind that when an individual with normal hearing uses a stethoscope, their ears are blocked and their listening is focused on the stethoscope's sounds. In contrast, when using a stethoscope with hearing aids, the hearing aid microphone remains on while you listen to the stethoscope. This may prove distracting because the sounds in the room will continue to be amplified through the hearing aids. If it is distracting, the audiologist can cre-

ate a hearing aid program in which the microphones can be turned off at the hearing aid or remotely prior to using the stethoscope.

Last but not least, remember that if you do or will wear hearing aids, the goal is always to leave them in place. Removing and replacing hearing aids with each use of the stethoscope is not realistic.

The Options

No Hearing Aids: If you do not use hearing aids but know you aren't hearing through your standard stethoscope as well as you used

to, you can, like me, purchase an amplified stethoscope (see Figure 1). These are typically battery-operated, and you'll want to become familiar with the on/off and volume up/down features.

Invisible Hearing Aids: If you use the tiny, invisible-in-the-canal hearing aids and they are seated deeply in your ear canals, you may be able to use a regular or amplified stethoscope if it is comfortable to put the stethoscope earpieces in your ears. If not, you'll want to use a stethoscope connected to a headset that clamps over the ears (see Figure 2).

**Table 1: Stethoscope Solutions
for Various Hearing Aid Styles**

		POSSIBLE SOLUTIONS				
		AMPLIFIED STETHOSCOPE (Figure 1)	HEADSET AND AMPLIFIED STETHOSCOPE (Figure 2)	DIRECT AUDIO INPUT (Figure 6)	SILHOUETTE RECEIVER (Figure 7)	GATEWAY DEVICE FOR WIRELESS CONNECTION (Figure 8)
HEARING AID TYPE	Open Fit, Behind the Ear (BTE)/Dome (Figure 3)	1		2	2	2
	Standard BTE/Custom Earmold (Figure 4)	3	3		2	2
	In the Ear		2, 3			
	In the Canal		2, 3			
	Completely In the Canal		2, 3			
	Invisible In the Canal	2	2			
	No Hearing Aid					

1 indicates a stethoscope solution that works with the type of hearing aid.

Hearing aid–stethoscope solutions have the following considerations as indicated in the chart:

- 1:** Comfort may be an issue
- 2:** Verify hearing aid has low frequency response
- 3:** Large vent in earmold



Figure 6 (LEFT): Direct audio input from stethoscope to hearing aid.
Figure 7 (ABOVE): A hearing aid telecoil receiving an induction signal.
Figure 8 (RIGHT): A wireless stethoscope-to-hearing aid gateway device.

Open Fit, Behind the Ear: Individuals with normal low-frequency hearing will often use open-fit, behind-the-ear hearing aids (see Figure 3). A small dome at the end of the tube fits in the ear, leaving the canal largely open. Depending on ear canal size and the placement of the dome in the ear canal, these hearing aid users may also be able to place an amplified stethoscope tip in the ear canal along with the dome. If this is not comfortable, use a stethoscope connected to a headset.

In the Ear and Completely In the Canal: If these hearing aid users have some low-frequency hearing and wear open-fit hearing aids, they can also consider a stethoscope connected to a headset.

Behind the Ear with Earmold: If you use

behind-the-ear hearing aids connected to a standard earmold (see Figure 4), have the audiologist remake the earmold to include a stethoscope vent. This is a large air hole in the earmold into which you can insert the stethoscope's metal tip (see Figure 5). You'll want to use an amplified stethoscope because it will go directly to the ear with hearing loss. An earmold with a large vent also can use a headset.

Direct Connections: Behind-the-ear hearing aids can be outfitted with a connector that will allow a cord to run directly from the stethoscope to the bottom of the hearing aid. This sends the stethoscope signal directly through the hearing aid's signal processor (see Figure 6). The audiologist should verify the hearing aid can transmit the needed low frequencies.

If your behind-the-ear hearing aid is equipped with a telecoil (ie, circuitry that picks up electromagnetic induction signals), you could plug a silhouette connection to the stethoscope (see Figure 7). The silhouettes are placed behind the hearing aids, and the signal is transmitted wirelessly. The listener must change the hearing aid program to the telecoil program setting. Again, the audiologist should verify the telecoil circuitry can produce the needed low frequencies.

Wireless Connections: No stethoscopes transmit a Bluetooth signal directly to hearing aids. If a hearing aid user wants a wireless connection, a gateway device that can transit a signal to the hearing aid wirelessly from a digital stethoscope (see Figure 8) might do the

trick. Again, the audiologist should verify the hearing aid can transmit the needed low frequencies. This solution can work for cochlear implant users as well.

Medical Students

The student with hearing loss who must learn to use a stethoscope is different from an experienced health care worker who gradually experiences hearing loss after practicing for years. A student does not know what they are listening for and may not be able to judge if they are hearing adequately. Such students should be encouraged to obtain an amplified stethoscope with a second listener port that an instructor can plug into and listen with the student. This will allow the instructor to judge whether the student is hearing adequately through the amplified stethoscope by asking the student to describe the signals they hear.

Final Thoughts

If your health care setting typically provides stethoscopes, the workplace should purchase an amplified stethoscope for you, too. If not, you will need to supply your own device.

Finally, if you haven't yet purchased hearing aids, let the audiologist know you are a stethoscope user so the hearing aid recommendation can be at least partly based on ease of access to sounds through a stethoscope.

Editor's Note: Visit ACEPNow.com to read an interview with audiologist Catherine Palmer, PhD, offering more tips for emergency physicians concerned about hearing loss. ➕

DR. BAEHREN is an emergency physician in Ohio.

TEAM RUBICON | CONTINUED FROM PAGE 13

ability of personal protective equipment (PPE) and tracks staff exposures.

Both of us typically work in urban academic medical centers. Working in Kayenta, a rural critical-access emergency department, provided clinical, operational, and cultural challenges. But the experience also provided ample opportunities for humility.

Many elderly patients only speak Navajo, requiring staff to help with language translation. Most of the COVID patients we saw were extremely ill when they presented. It was not uncommon to see multiple patients from the same family, especially since those who were infected with coronavirus but not sick enough for admission would be discharged back to their communal homes—there were no facilities for them to self-quarantine. Patients who might be managed at home with prone positioning and high-flow nasal oxygen would require intubation to assure a safe airway during flight to accepting facilities, often as far away as Phoenix, about 300 miles away. Sometimes flights would be delayed, resulting in a need to manage a critically ill patient on a ventilator for a prolonged period, sometimes with limited equipment and medication supplies.

After SARS-CoV-2 began to afflict the Navajo Nation, the already-stressed medical system was strained far beyond its capabilities. The region in the center of the Nation has been leading the number of positive COVID cases with only an emergency department to care for their patients. Team Rubicon recognized the need for outside medical support early and asked for volunteers to deploy to the hardest-hit region of the Navajo Nation at Kayenta.

Team Rubicon has been able to assist the medical mission as well as provide acutely needed PPE. The Indian Health Service staff has been grateful for the support as well as the critical care expertise and education Team Rubicon was able to provide.

The COVID-19 pandemic produced Team Rubicon's first domestic medical responses, to the Navajo Nation as well as a federal medical station in Santa Clara, California, and a drive-through testing center in Charlotte, North Carolina. These missions illustrate how a nonprofit can work with governmental and private organizations to meet the needs during a pandemic disaster. ➕

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Spot Signs of Child Abuse

Remember TEN-4 FACES P—you just might save a life

by CAITLAN HINTON; AND ALLISON TROP, MD, FACEP

Due to the COVID-19 pandemic, people have been staying home and spending more time with family. While this is usually a blessing, it may also be a stressor on families. There is growing concern that we may see a significant spike in suspected child abuse and nonaccidental trauma cases as a result. As emergency physicians, we must stay vigilant for signs of abuse and intervene when possible.

The TEN-4 FACES P mnemonic is helpful in keeping nonaccidental trauma at the forefront of our minds when evaluating and treating children for any and all complaints. Remember to evaluate areas of suspicion a “toddling” child would not normally injure on their own. Look for bruising that does not fit the story, petechiae as a sign of injury around the eyes and behind the ears, and patterned bruising from objects that may have been used to strike or punish a child.

Some emergency departments are fortunate to have specialists on call to assist in these situations. Make use of your local child abuse pediatrician or your forensic nursing team if available. These specialists can be a significant help in delving deeper into the family history and social stressors affecting a family and serve as a liaison with law enforcement and child protective services. If these options are not available to you,

make sure you are familiar with your local child protective services and police procedures for reporting and handling these situations. Remember that as emergency physicians, we are mandated reporters of child abuse and neglect.

What may appear as a minor injury could be a sentinel event and, if caught early, has the potential to prevent further abuse and even a fatality. More than 27 percent of children seen in the emergency department for abusive head trauma had been seen previously for what was a suspected sentinel injury that may have been initially overlooked. This horrifying statistic should motivate us to make a real difference in the lives of these patients by staying alert for signs of abuse and report concerning cases early to child protective services. +

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TEN-4 FACES P Bruising Rule

Kids may play and fall, resulting in minor injuries, especially over the bony prominences like joints or the forehead. However, some types of bruising should always be a red flag for nonaccidental trauma. The TEN-4 FACES P Bruising Rule mnemonic is useful in remembering which locations for bruising should be a concern for physical abuse.

For children 4 years of age and younger, bruising on the following areas should raise concern:

Trunk
Ears
Neck

4 years or younger

Frenulum
Auricular area
Cheek
Eyes
Sclera
Patterned bruising



4 Any bruising on a child less than 4 months



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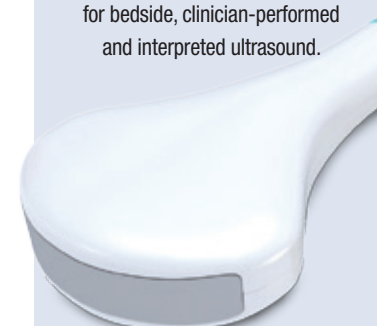
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asone, remdesivir, and hydroxychloroquine. The analysis of these three so far is, in order: promising, somewhat promising, and useless.

The main thing to remember is that a thousand retrospective observational studies provide less reliable information than a single well-done randomized controlled prospective clinical trial.

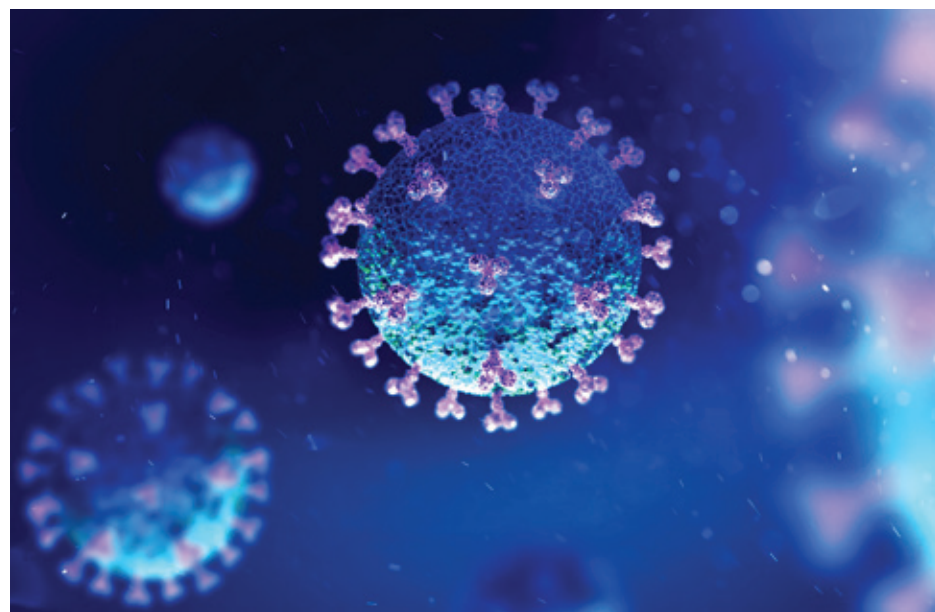
Let's discuss three important, large, multicenter, randomized clinical trials (RCT). One of the RCTs comes from our own National Institutes of Health (NIH), one from the United Kingdom, and one from Brazil, and all published in the *New England Journal of Medicine* (*NEJM*).

Dexamethasone

Has there ever been a week of shift work where you did *not* prescribe IV or oral steroids? Unlikely. Dexamethasone, an inexpensive steroid that is commonly used and widely available appears to be the first medication shown in a high-quality study to reduce the rate of death in any subset of COVID-19 patients.

The results come from a larger conglomerate of trials being conducted in the United Kingdom, known as the Randomised Evaluation of COVID-19 Therapy (RECOVERY) Trial. Published July 17 in *NEJM*, patients enrolled in RECOVERY received 6 mg of either oral or IV dexamethasone once daily for 10 days plus standard of care, or standard of care alone.¹ The primary outcome was death rate at 28 days after enrollment.

The proportion of patients meeting the pri-



mary outcome was 21.6 percent for patients receiving dexamethasone and 24.6 percent standard of care alone. The number needed to treat to prevent one death for a hospitalized patient diagnosed with COVID-19 was 20. Those most likely to benefit were patients who had a new oxygen requirement or were on mechanical ventilation. The results for patients on mechanical ventilation were staggering: 40.7 percent of patients who did not receive dexamethasone had died by day 28 compared with 29 percent among those who did receive dexamethasone. A reduction in deaths of more than 11 percent is an unusually large effect for an ICU study of any kind. Patients who need-

ed oxygen only (but not intubation) also fared better, dying 21.5 percent of the time versus 25 percent among controls.

However, among patients who did not require any oxygen, dexamethasone did not help. In fact, more patients in that group who received the drug died, though the increase was not statistically significant. This is important, because giving dexamethasone to all patients with COVID-19 could be harmful.

The lingering question is whether the extra 11 percent of patients who survived to day 28 among patients on ventilators had improved enough to be awake. That was not reported. Given the relatively low side-effect profile of dexamethasone for patients who are already moribund, it is reasonable to start this medication in the emergency department for patients diagnosed with COVID-19 admitted to the hospital either with a new oxygen requirement or need for intubation.

Remdesivir

The Adaptive Covid-19 Treatment Trial (ACTT-1) RCT was published May 22 in *NEJM*.² ACTT-1 was a double-blind, randomized, placebo-controlled trial of remdesivir, an antiviral, given to patients within 72 hours of diagnosis of laboratory-confirmed SARS-CoV-2 infection in the in-patient hospital setting. The primary outcome of interest was time to recovery, which was defined as either being well enough to have been released from the hospital or remaining in the hospital for infection-control purposes only (ie, to protect families of the patients, not due to the severity of their illness).

The average recovery time was 11 days in the remdesivir group compared to 15 days in the placebo group. While the study was not assessed to directly and properly measure mortality per se, 7.1 percent of patients receiving remdesivir died by day 14 compared to 11.9 percent in the placebo group (hazard ratio 0.7, 95 percent confidence interval 0.47 to 1.04). Of note, remdesivir did not seem to improve time to recovery in patients who were already receiving high-flow oxygen, non-invasive mechanical ventilation, mechanical ventilation, or extracorporeal membrane oxygenation (ECMO) at time of enrollment. Put another way, critically ill patients remained sick whether or not they received remdesivir, though the reduced length of stay for less severe patients could be an important outcome during any future surges that occur during the pandemic when resources may become limited.

Two big caveats to consider: one-third of patients had not reached day 29 of their course by the time of publication. Interestingly, this data has yet to be published as of August 1, including patient-level mortality analyses. We are left to wonder why. Also, the investigators changed the primary outcome of the study in April, after recruitment began. The initial plan had been to assess overall clinical improvement, including mortality rates. That was changed to an assessment of time to discharge among patients well enough to be sent home.

Hydroxychloroquine

Several randomized controlled trials have studied hydroxychloroquine's efficacy in preventing or treating COVID-19. None have shown that it works. The most substantial of these trials was also performed in the United Kingdom by the RECOVERY group (still in preprint) and an RCT from Brazil of patients with mild to moderate COVID-19.³ The study from Brazil was published in *NEJM* July 23.

In this study, patients were randomized to receive either hydroxychloroquine, hydroxychloroquine *and* azithromycin, or usual care. At day 15, there were no differences in clinical status, as adjudicated by a seven-point scale (from complete recovery to death). There were also no signals of benefit in secondary outcomes, including fraction of patients requiring intubation. While believers in hydroxychloroquine have advanced excuses explaining why none of the trials assessing this drug have detected a benefit—ranging from time from onset to randomization to whether or not random ingredients from the periodic table of elements were also included (the most common hail-Mary being zinc)—the fact remains that this treatment has failed to even hint at a benefit in any rigorous analysis.

Summary

Dexamethasone and remdesivir appear to help patients with severe or critical COVID-19, while hydroxychloroquine does not help those with mild to moderate illnesses—and preprint data suggest no benefit in more severe cases, as well. However, dexamethasone should not be given to all COVID-19 patients, as there may be harm among patients with less severe illness. ➡

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A New Chapter for ACEP Leadership

Q&A with Susan Sedory, ACEP's new Executive Director

It's not every day that ACEP welcomes a new Executive Director—in fact, only three people held the position during ACEP's first 50 years. On July 20, Susan Sedory, MA, CAE, became the fourth person—and the first woman—in this position. She will build on the foundation laid by the previous Executive Director, Dean Wilkerson, JD, MBA, CAE, who retired on July 31, 2020.

Prior to joining ACEP, Ms. Sedory had been the Executive Director of the Society of Interventional Radiology (SIR) since 2011, leading the association of more than 8,100 interventional radiology physicians, scientists and clinical professionals in the shared goal to optimize minimally invasive patient care.

Ms. Sedory recently responded by email to questions from the *ACEP Now* Editorial Board and Editor in Chief, Jeremy Samuel Faust, MD, MS, MA, FACEP. Here are some highlights from her responses.

ACEP Now: What attracted you to this position?

SS: The mission and vision of ACEP and the dedication and passion of its members and staff are well-respected in the professional medical association community. As a peer of Dean Wilkerson's for years, I felt like I already knew a lot about the incredible work the College has been doing. And although I wasn't looking to leave SIR at all, I was drawn to learn more. What I found was an incredibly passionate set of leaders and an opportunity to use my strengths to make a difference in the future of emergency medicine and in ACEP. I am incredibly humbled to have been selected from a very competitive and rigorous search process and fortunate to have a supportive family so that I could say yes.

ACEP Now: What were the biggest accomplishments from your tenure at SIR that ACEP can learn from?

SS: As a medical specialty that's a decade or so younger than ACEP, interventional radiology also had to fight its way into being a primary specialty, including during my tenure. This led to an explosive growth in SIR membership numbers and needs—which are both good and challenging problems to have and not necessarily just reserved for newbies. I actually think all professions need to reexamine their brand promise, innovate their outreach, and readjust their priorities to stay ahead. I look forward to bringing the already-innovative staff and leaders in ACEP into that process while expanding our community and the diverse voices it needs to engage fully.

ACEP Now: What do you see as the biggest challenges to medical societies as organizations themselves that we must address?

SS: We were already in a wildly transformative time—and that was before 2020 gave us the health and economic consequences of a pandemic and protests about systemic racial inequity and injustice. Medical societies know this should be a time when the value we bring is at its highest—but we also know that our members and stakeholders have a lot of other demands on their time and resources. We don't take for granted that the cost to be part of our ACEP community is substantial and something that you could deprioritize at any time. The challenge before us is how can we embrace the opportunities that arise from the digital, policy, and social disruptions of 2020 to make ACEP more valued by each member and more beneficial to each patient who seeks emergency care.

ACEP Now: How do organizations like ACEP stay relevant to their members and continue to grow?

SS: As hinted above, I strongly believe that organizational relevance is personal. Yes, ACEP has an obligation to do right



for all emergency physicians and the public who needs your care. Within resource limitations, we are going to do that regardless of whether our membership is larger or smaller. But I also strongly believe that when those who are most passionate about their profession and their patients find their voice and community in their professional association, the momentum to amplify positive change is powerful and motivating. I also believe that embracing innovative changes, like making our 2020 meeting “unconventional,” provides an opportunity to become even more relevant to our members as well as introduce new audiences to the unrivaled educational and networking opportunities ACEP offers.

ACEP Now: How do emergency physicians leverage the newfound respect for our field in order to achieve our collective goals moving forward after COVID-19?

SS: For better or worse, it's true that the current COVID-19 crisis has provided an unanticipated platform for ACEP to deliver on one of our strategic plan objectives, namely, to promote the value of emergency medicine and emergency physicians as essential components of the health care system. I've heard it said that emergency physicians got their white hats back. And just as you are working the front lines to provide quality and compassionate care, ACEP staff and leaders are engaging in new ways with our federal, state, and local government officials, as well as health system stakeholders, both to ensure emergency physicians get the support they need and can provide the care patients need. Unfortunately, the struggles we have faced in improving the delivery system for acute care are still going to be there. Now is the time to continue leveraging those new and closer relationships to advance our mission's promise to both physicians and patients and to address our other strategic objectives, particularly in the areas of promoting delivery models that provide high-quality emergency medical care in different environments, including rural areas, and in pursuing strategies for fair payment and practice sustainability, including alternative payment models. In doing so, the collective experiences of our members over the past months of the COVID-19 crisis provide us with powerful stories and relatable and illustrative examples that we will leverage to significantly strengthen all facets of our advocacy agenda.

ACEP Now: What hurdles will our profession continue to face in the house of medicine in the coming years?

SS: We share many burdens with the greater house of medicine—the growing crisis of physician burnout; the physician shortage and shifting of services to nonphysician health care workers and AI-enabled systems; and the ongoing need for health care reform, especially for our most vulnerable patients and populations. Some of the temporary policies enacted during the COVID-19 crisis, such as payment for telehealth, should remain. Others, such as expanded scope of practice to practitioners and chain pharmacy facilities, have the potential to overrun state regulations. The proactive strength of ACEP's voice at the American Medical Association and in partnership with our state chapters is more important now than ever when new policies must and will emerge.

ACEP Now: Dean Wilkerson knows emergency physicians and ACEP probably better than anyone. Did he give you any parting advice on how to thrive in this position?

SS: Dean has been incredibly generous with his time, both during my preboarding and onboarding activities, helping me learn the duties as well as the culture. He has also clearly built a strong internal bench and external network that I will continue to nurture. What I have recently learned is that I might need him to leave behind a cheat sheet of “Texas Deanisms” so I can try to keep up with his famous sayings!

ACEP Now: Now that you've been on the job for a week or so, what has surprised you?

SS: Not so much as a surprise but rather fortuitous timing, I had the opportunity to join just as the Future of Emergency Medicine Summits that ACEP President William Jaquis, MD, FACEP, convened were occurring. These sessions, the videos of which will be placed on our website for all to view and provide feedback on as ACEP looks to its next strategic planning, offered a great platform to immerse myself in all of the questions posed above as the talks were framed around the domains of patients, people (workforce), practice, and payment. On a more personal level, despite the reality of joining an organization without having met anyone—staff or physicians—face-to-face, I've been amazed at how comfortably accepted I feel. Clearly, ACEP is a special family, and I'm truly honored to be so welcomed into the fold. The dedication of our staff, volunteers, and leaders is indeed unparalleled.

ACEP Now: What are your personal passions outside of work that you would like to share with our members?

SS: My husband, Mark Mead, and our 11-year-old Siberian husky (@kiya_kevin_kyle on Instagram) are fortunate to have four grown children, one grandson, and one granddaughter on the way—all of whom enjoy spending time together any chance we can. You're likely to find us then, or anytime really, doing myriad outdoor activities, including hiking, biking, and water sports. 🐾

BONUS ONLINE CONTENT: VIDEO INTERVIEW

Want to hear more from Ms. Sedory? Check out the online version of this article at [ACEPNow.com](https://www.acepnow.com) for an additional video interview where she answers more questions, both serious and light-hearted, that will help you get to know her better.

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DR. DAHLE blogs at www.whitecoatinvestor.com and is a best-selling author and podcaster. He is not a licensed financial adviser, accountant, or attorney and recommends you consult with your own advisers prior to acting on any information you read here.

“Real” Opportunities

How to invest in real estate with retirement accounts

by JAMES M. DAHLE, MD, FACEP

Q. I want to invest in real estate, but all of my retirement money is in retirement accounts like 401(k)s and Roth IRAs. What are my options?

A. Retirement accounts are, in many respects, a physician's delight. These accounts provide tax-protected growth, which allows for higher returns, enlarging your retirement nest egg. They also facilitate easy estate planning and excellent asset protection in most states. Doctors have sufficient income to be able to maximize these advantages and also generally have more tax-protected accounts available to them, including 401(k)s, 403(b)s, 457(b)s, 401(a)s, SEP-IRAs, individual 401(k)s, profit-sharing plans, defined benefit/cash balance plans, health savings accounts (HSAs), and backdoor Roth individual retirement arrangements (IRAs). They are also more likely than most to benefit from the tax rate arbitrage available by deferring taxes from their highly taxed peak earnings years to what is usually a much lower marginal tax rate

during retirement.

These advantages should make a doctor very hesitant to pass on a retirement account contribution, much less actually withdraw money from an account before they have to in order to pay living expenses or meet federally mandated required minimum distributions beginning at age 72. In fact, any time I hear of an “adviser” trying to talk a physician investor into withdrawing money from a retirement account, my first assumption is that the adviser is selling something to a physician inappropriately.

Doctors are increasingly interested in real estate investing these days, especially after seeing just how fragile their earned income could be during the recent COVID-19-associated economic downturn. Passive income seems to be the cry of the day. Real estate has always been an attractive asset class, offering high returns, low correlation with both stocks and bonds, easy leverage, and some unique tax advantages (primarily depreciation). The fact that a large portion of its return comes in the form of regular income does not hurt either. I invest in real estate and think any doctor interested in it should include it in their portfolio.

However, a lot of doctors have the vast majority or even all of their long-term investment money inside retirement accounts or perhaps are not maxing out these ac-

counts. How can they invest in real estate?

First, realize that there are many different ways to invest in real estate. Although most people think being a real estate investor means buying the house down the street and renting it out, there are many other ways to do it that often provide much more diversification and require far less hassle. One of the easiest is simply to invest in publicly traded real estate companies, either directly or through a mutual fund. Many of these companies are real estate investment trusts (REITs). One of the most popular mutual funds is the low-cost Vanguard REIT Index Fund, which essentially buys all of the publicly traded REITs in the United States. This fund or another similar to it is likely available in your 401(k) and is certainly available in your Roth IRA at the best mutual fund companies, such as Vanguard, Fidelity, or Charles Schwab. These funds are also available as exchange-traded funds that can be purchased at any brokerage firm, whether inside or outside a retirement account.

There are also private real estate investments, including syndications (where many investors combine funds to buy one large property, such as an apartment complex) and private funds. These investments are typically only available to accredited investors (although most emergency physicians qualify by virtue of their income) and offer a few tax advantages over a REIT mutual fund. Pri-

marily, they pass through the depreciation from the property to shield some or all of its income from taxation. However, these investments can be purchased inside a retirement account—the account simply has to be a “self-directed” individual 401(k) or IRA. There are even self-directed HSAs these days. While these do charge more than you would pay for a non-self-directed account at a good mutual fund company or brokerage, the benefit may be worth the extra cost to you.

Can you just buy the house down the street with your self-directed IRA? Yes. Just remember that every dollar going into that house has to come from the IRA and every dollar coming out of it must go to the IRA. Unfortunately, if you have a mortgage on that house, you will run into the unrelated business income tax. Using a self-directed individual 401(k), available to independent contractor physicians, will avoid that tax.

Obviously, the cleanest option if you want to invest directly in real estate is simply doing it outside of your retirement accounts. If you work a little more or spend a little less, you may be able to max out those retirement accounts and still have something left over to invest in real estate. Another option is to use a 401(k) loan for the down payment on your property. You can borrow the lesser of \$50,000 or 50% of the value in the 401(k) for up to five years. The interest you pay will go back into your 401(k) account, although you will miss out on the returns of whatever that money would have been invested in within the 401(k). Keep in mind that if you quit or are fired, that loan will have to be paid back by tax day (including extensions) for the year you separated from the employer or you will owe both taxes and penalties on it.

Still, a 401(k) loan is almost surely better than avoiding a contribution in the first place or, worse, making an early withdrawal from the account. When you withdraw money, you will not only pay taxes on it at your ordinary income marginal tax rate, you will also owe a 10 percent penalty on it. This means that 35 to 50 percent of the money you withdraw will go to the IRS rather than your new real estate investment. That is not a great idea, no matter how attractive an investment a property may seem.

Real estate can be a great investment option. It can provide solid returns and help diversify a stock and bond portfolio. It is best if your real estate investment represents an addition to your retirement account contributions rather than in place of them. You can also invest in real estate within your retirement accounts as long as you follow the applicable rules. +





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by LANDON JONES, MD, AND RICHARD M. CANTOR, MD, FAAP, FACEP

The best questions often stem from the inquisitive learner. As educators, we love, and are always humbled by, those moments when we get to say, "I don't know." For some of these questions, you may already know the answers. For others, you may never have thought to ask the question. For all, questions, comments, concerns, and critiques are encouraged. Welcome to the Kids Korner.



Age to Start Swabbing for Strep

Question 1: At what age do children reliably start getting group A strep pharyngitis?

A prospective observational study by Woods et al evaluated the frequency of group A strep (GAS) in children under 3 years of age in emergency departments who have pharyngeal erythema and other upper respiratory infection (URI) symptoms.¹ There were 78 otherwise healthy children with pharyngitis ages 3 months to 3 years who met inclusion criteria, and their test results were compared to 152 asymptomatic controls of the same age. The gold standard was the throat culture. GAS was detected in 12 of 78 (15.3 percent) symptomatic patients and 5 of 152 (3.3 percent) asymptomatic patients. While 43 (66 percent) of 78 children in the symptomatic group were younger than 2 years of age, only 2 children (4.7 percent) were positive for GAS. The frequency of positive GAS cultures in age-matched controls under 2 years of age was 3 of 123 (2.4 percent). There was no significant difference ($p=0.6$) between the symptomatic and asymptomatic groups, suggesting that the frequency of positive results was no greater than the underlying asymptomatic GAS carrier frequency. Between 2 and 3 years of age, the frequency of positive GAS cultures between symptomatic and asymptomatic children was 29 percent versus 7 percent ($p=0.03$), suggesting that children older than 2 years are more likely to have GAS genuinely contributing to their symptoms.

Similarly, a separate study by Amir et al prospectively evaluated 152 children ages 3 months to 5 years who presented to a pediatrics clinic with pharyngitis and fever without recent antibiotics.² Confirmation of GAS included both a positive throat



culture and elevated antistreptolysin O (ASO) titer. There were no cases of true GAS infection in children younger than 2 years of age.

A separate prospective observational study by Nussinovitch et al (1999) evaluated for GAS in 415 children ages 3 months to 5 years presenting to a pediatrics clinic with fever of 100.4° F or above and URI symptoms.³ Similar to the study by Amir et al, confirmation of GAS included both a positive throat culture and a positive ASO titer. The ASO titers were performed within 96 hours of throat swab. The numbers by age group of these 415 were 65 children ages 3–12 months, 70 children ages 13–24 months, 110 children ages 25–36 months, 90 children ages 37–48 months, and 80 children ages 49–60 months. With increasing age, both the number of true GAS infections and carrier rates increased. In both the 3–12-month age group and 13–24-month age group, the true infection frequency was not

significantly different than the background carrier frequency. While this study reported children under the age of 24 months (2 years) with true GAS infections, the number of cases was very low and very similar to carrier rates, suggesting GAS may not have caused these pharyngitis/URI symptoms.

In addition to a very low frequency of true GAS infection in children under the age of 2 to 3 years, the literature also reports very low rates of acute rheumatic fever and acute post-streptococcal glomerulonephritis secondary to GAS in children under 2 years of age.⁴ In theory, antibiotics can decrease the rate of ARF, depending on local epidemiology. PSGN rates are not altered by antibiotic use.

Conclusion

Group A strep pharyngitis is very uncommon in children under 2 years of age, and possibly 3 years of age. Testing in these age groups is therefore probably not indicated in most circumstances. The incidence of true infection is similar to the carrier rate in this age group which implies that GAS is not a routine cause of pharyngitis/URI in this age group. ➔

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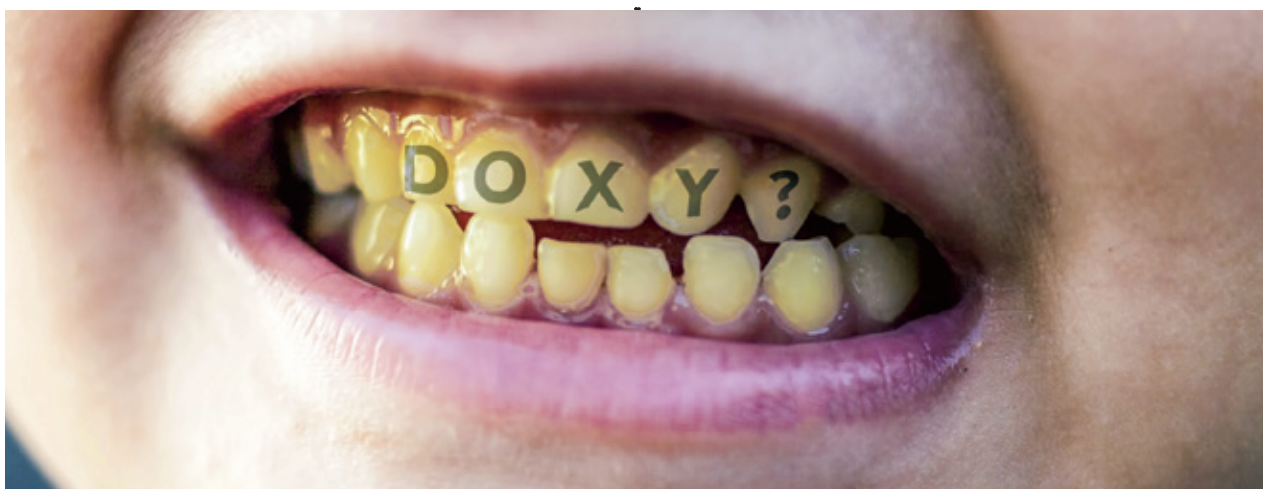
Doxycycline and Teeth

Question 2: In children, should we really be scared about staining teeth with doxycycline treatment?

Studies in the 1960s demonstrated dental staining with the use of tetracycline in children 2–8 years of age.¹ For this reason, it was recommended that it not be used in younger children. These findings were extrapolated to include doxycycline—which binds with less affinity to calcium than tetracycline. Does the modern literature support this?

A blinded, randomized, controlled study by Volovitz et al evaluated 61 children ages 8–16 years for dental staining of permanent teeth after receiving doxycycline for asthma exacerbations.² Of note, permanent teeth begin to calcify after birth, incisors are usually completely calcified by 5 years of age, and the remainder of permanent teeth—with the exception of molars—completely calcify by about 8 years. The study assessed 31 children who had received doxycycline treatment prior to age 8. Of those, 21 received doxycycline prior to age 4 years. There were 30 controls in this study. The median number of doxycycline treatments was two courses, and the time elapsed from the first course ranged from 2–12 years until the teeth were assessed for permanent staining. While the sample numbers are small, no children in either group demonstrated any permanent tooth staining.

Additionally, a retrospective cohort study by Todd et al evaluated 58 Native American children ages 8–16 years for permanent dental staining following doxycycline exposure for the treatment of Rocky Mountain spotted fever (RMSF). The children who took doxycycline were compared to 213 children without exposure in a blinded fashion.³ The average age at the time of exposure to doxycycline was 4.5 years (range 0.2–7.9 years), and the average number of doxycycline courses was 1.8



courses. The average doxycycline course was 7.3 days (range 1–10 days). Like the previous study, no children demonstrated tetracycline-like permanent dental staining. Objective assessments of enamel hypoplasia ($p=1.0$), hypomineralization ($p=0.35$), and tooth shade ($p=0.2$) also showed no significant differences. In a similar fashion, a blinded observational study of 39 pediatric patients exposed to doxycycline under 8 years of age (for suspected central nervous system infections) by Pöyhönen et al found no permanent tooth dental staining nor enamel hypoplasia on assessment.⁴ The average follow-up time for assessment of these permanent changes was 9.6 years.

Somewhat conversely, a review article by Wormser et al conservatively argues that the conclusion regarding the safety of doxycycline and permanent dental staining may be true but premature.⁵ The review argued that the 21-day course of doxycycline recommended for certain disease treatments such as Lyme disease has not been fully assessed and that it therefore should

be withheld if there are safer, equally effective alternatives.

Conclusion

Currently, the overall data are limited, but we are unable to find any studies that demonstrate an association between doxycycline administration in children younger than 8 years of age and permanent dental staining. ➔

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How to Avoid Missing a Pediatric Elbow Fracture

Knowing CRITOE can help prevent an oversight

by ARUN SAYAL, MD

Pediatric elbow injuries are among the most challenging musculoskeletal conditions for emergency physicians. Kids can be a challenge to examine, large cartilaginous areas and various elbow ossification centers make X-rays difficult to interpret, and many missed injuries are both subtle and require operative management.¹

Those of us who manage kids with acute elbow injuries undoubtedly see pulled elbows and supracondylar fractures. We look for effusions on lateral X-rays, think about the anterior humeral line, and possibly recall the mnemonic CRITOE (see below). Supracondylar fractures comprise 60 to 70 percent of pediatric elbow fractures; the bulk of the rest are two commonly missed fractures. Recognizing the other 30 to 40 percent requires awareness of those diagnoses and their clinical presentations.^{2,3} Knowing the clinical relevance of CRITOE helps identify this pair of less common, subtle pediatric elbow injuries that are often operative.

Two Commonly Missed Pediatric Elbow Fractures

Two diagnoses make up the bulk of nonsupracondylar pediatric elbow fractures: lateral condyle (LC) fractures (~15 percent) and medial epicondyle (ME) fractures (~10 percent). This implies that we should diagnose one LC or ME fracture for every two to three supracondylar fractures. If not we may be missing them.

LC fractures are fractures of the metaphysis of the lateral aspect of the distal humerus. These fractures are typically seen in 4- to 10-year-olds and are often misdiagnosed as supracondylar fractures.

ME fractures are avulsions of the ossification center that sits on the medial condyle. These are typically seen in older kids (ages 10 to 16) and are often missed.

By knowing CRITOE and the approximate ages of appearance, a fracture fragment in a younger child will not be mistaken for an ossification center.

Let’s run through it. The elbow has six ossification centers. CRITOE reminds us of their names and the specific order in which they ossify. Their clinical relevance rests on knowing the order and approximate ages in which they ossify, and therefore appear on X-ray (See Figures 1A and 1B).

In order of appearance, the six are:

C: Capitellum (lateral aspect of distal humerus)

R: Radial head (distal neighbor of capitellum)

I: Internal (or medial) epicondyle

T: Trochlea (distal neighbor of I, at medial aspect of distal humerus)

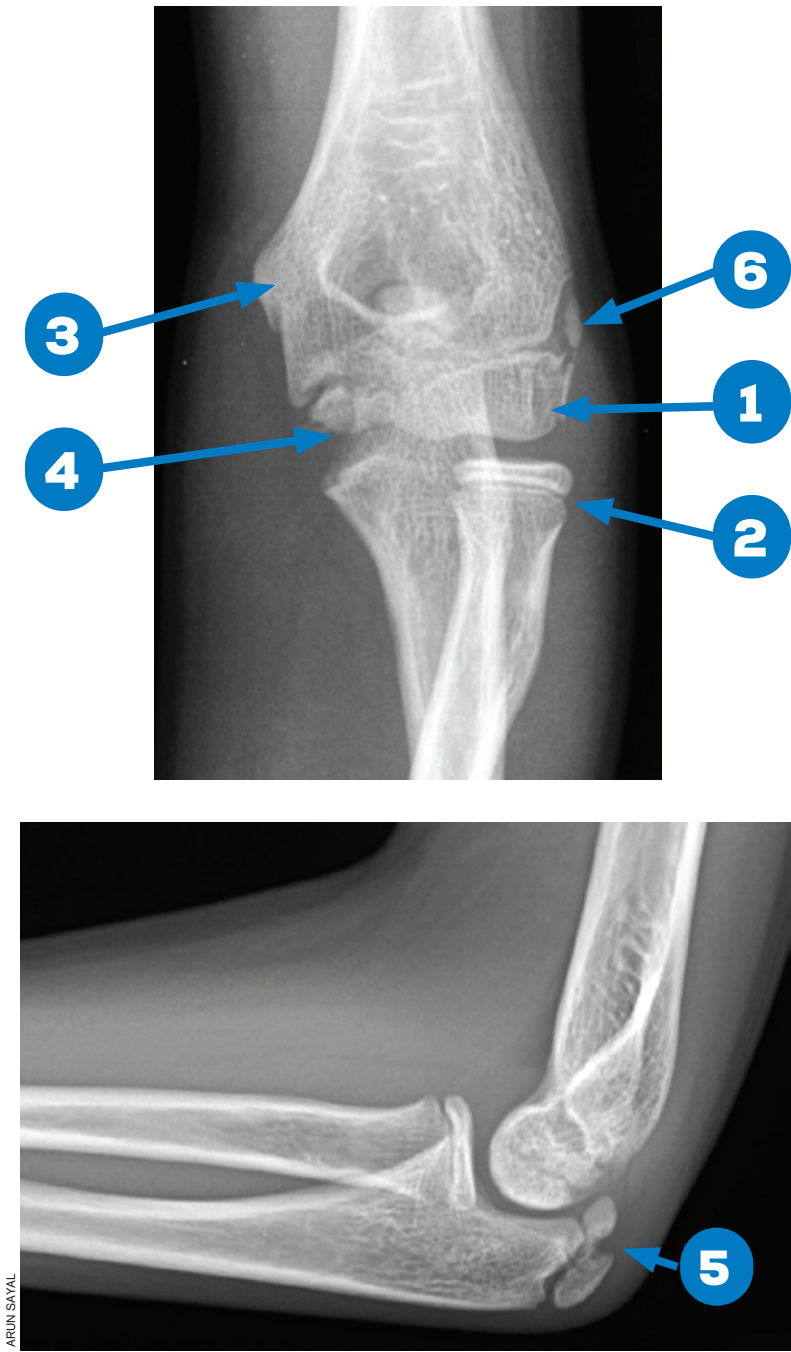
O: Olecranon (best seen on the lateral view)

E: External (or lateral) epicondyle

Because ossification always appears in this exact sequence, the presence of any single ossification center mandates the radiographic identification of those that precede it.

CRITOE can also approximate the age at which the six ossification centers often appear, albeit these are rough estimates due to significant child-to-child variability. Timing varies by sex. For girls, use odd years starting at 1; for boys, use even years starting at 2 (see Table 1).

For example, for a girl, the radial head (R) ossification center should appear at 3 years but can range from 1.5 to 4.5 years (3 years ±18 months). For a boy, the trochlea (T) should appear at



Figures 1A and 1B: Normal X-rays, 13-year-old male. 1) capitellum; 2) radial head; 3) internal (medial) epicondyle; 4) trochlea; 5) olecranon; and 6) external (lateral) epicondyle.

Table 1: Approximate Age (±18 Months) at Which Six Elbow Ossification Centers Appear on X-ray for Girls and Boys

OSSIFICATION CENTERS	C	R	I	T	O	E
Girls’ Ages	1	3	5	7	9	11
Boys’ Ages	2	4	6	8	10	12

8 years but can range from 6.5 to 9.5 years (8 years ±18 months).

A far more accurate indicator of normal however, is comparing the injured to the uninjured elbow. Each elbow should be a very close copy (within 3 to 4 months) of its pair. Comparative films can help confirm suspicious X-ray findings (ossification centers, lucencies, alignment, and so forth). This option should be used selectively after reviewing X-rays of the injured elbow and not as a matter of routine.

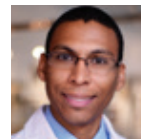
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KEY POINTS

- CRITOE helps identify two commonly missed pediatric elbow fractures.
- Lateral condyle fractures are subtle and tend to occur in 4- to 10-year-olds. If we remember that the E (external/lateral ossification center) should be the last to appear, we will recognize the fracture and not mistake it for an ossification center.
- Medial epicondyle fractures are subtle and tend to occur in 10- to 16-year-olds. If we identify any later-appearing ossification centers (T, O, or E), we must find the “I” (internal/medial ossification center) and then recognize when it is avulsed distally.
- X-rays of a patient’s uninjured elbow are a good indicator of normal. However, obtaining bilateral films should be used selectively, not routinely.
- Given the complexity of ME and LC fractures and the greater tendency for operative management, involve orthopedics early on to confirm the definitive management plan.

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Surprise, Surprise

The nation's search for a solution to surprise billing continues

by CEDRIC DARK, MD, MPH, FACEP

Nearly two years after I wrote a column about balance billing, the nation still wrestles with how to best solve this complex problem with a simple yet fair policy solution.¹ Most physicians understand what a “surprise bill” is by now, but members of the media and the public have been repeatedly confused by the insurance industry’s clever marketing of the term—lumping in not-so-surprising



out-of-pocket costs such as copays and deductibles, items that are expected as part of standard health

insurance contracts.

The narrative, driven by calling out profit-hungry motives of certain players in the health care industry, provides fodder to the assertion that patients should be taken out of the middle of disagreements between insurance companies and physicians over reimbursement. ACEP agrees with the idea that patients should be out of the middle of these ongoing disputes.

Three potential solutions, two of which are currently under consideration in the U.S. Congress, have been proposed to deal with surprise billing. The first, a benchmarking approach that places decision making with insurance companies or government regulators, has been tried in California and is the topic of this month’s Health Policy Journal Club. The second, network matching, would require physicians at in-network facilities to accept the same insurance plans as the facilities in which they work do, ultimately removing leverage from doctors and shifting it to hospitals. The third, baseball-style arbitra-

tion, would permit a neutral third party to decide which player in the game—the insurer or the physician—has an offer closer to the realistic market value of emergency services. This approach has been enacted in blue states like New York and red states like Texas.

After studying this issue for many years, I feel the best solution is a matter of perspective and an honest appraisal of the tradeoffs. No matter what is chosen, patients win, but in my view, benchmarking can become overly generous to insurance companies. Perhaps that is why a set of strange bedfellows ranging, from Al Sharpton to the Cato Institute and from the Hispanic Leadership Fund to swing state voters, have all opposed benchmarking.²⁻⁵ My opinion is that arbitration, the strategy put forth by the House Ways and Means Committee and the one most fair to the doctors toiling on the front lines of America’s emergency departments, is the optimal solution. +

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California’s Approach to Surprise Billing Disadvantaged Physicians

by CHLOÉ WOODINGTON, MD

A “surprise medical bill” is a term used to describe bills charged to an insured person receiving care, inadvertently or intentionally, from an out-of-network (OON) physician. This arises when a patient receives care at an in-network (INN) facility but is treated by an OON physician. A significant amount of attention is being paid to surprise bills from the emergency department.

The amount patients may be charged can be astronomical. A recent article discussed the California approach, AB-72, which limits a patient’s cost sharing to INN levels for all nonemergency physician services at INN hospitals unless the patient provides written consent 24 hours in advance. Due to this change, physicians lost leverage in terms of negotiating contracts and thus formed conglomerates to regain bargaining power.

A recent qualitative study analyzed interviews with 28 stakeholders six to 12 months after implementation of the California law.¹ Interviewees included representatives of advocacy organizations and executives of physician practice groups, hospitals, and health benefit companies.

The interviews revealed that worker, payer, and consumer advocates agreed it is important to protect patients from surprise medical bills; the law is working as planned. However, hospital-based physicians now face substantial lack of leverage in negotiations. They no longer have the ability to charge typical rates, and are instead getting paid the lower OON capped payment or 125 percent of Medicare reimbursement. Using the payer-reported local average contracted rate (defined as a commercial rate con-

tracted by a health insurer for the same or similar service in the geographic region) as the OON payment standard has incentivized payers to cancel contracts with physicians who have existing contracts that exceed local averages. Payers thereby substantially lowered the average rate and subsequently decreased physician reimbursement.

In response, many physicians have consolidated to regain leverage. In turn, patients felt they lost options for care because they now had a smaller pool of physicians from which to choose.

The California approach applies to specialties that were accustomed to billing full OON charges. Specialists reported that AB-72 would cause long-term pay stagnation, make it harder to recruit physicians, and lead to a decrease in physicians willing to staff undesirable shifts. These changes could be problematic for safety-net hospitals that rely on high commercial payments to attract physicians to underserved areas.

In the final analysis, California now protects patients from surprise billing, but the approach alters negotiating leverage between payers and physicians. The California experience allowed insurers to lower payments to physicians, providing early insight into the tradeoffs of one of the possible solutions for surprise billing currently under discussion nationwide. +

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CODING WIZARD

Editor’s Note: 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.

Relaxed Documentation Burden for Teaching Physicians

by MICHAEL LEMANSKI, MD

As part of Centers for Medicare & Medicaid Services (CMS) efforts to reduce mandatory and duplicative documentation of services in the medical record, several substantive changes have been made over the last two years. A discussion of the changes can be found in CMS’s 2020 Physician Fee Schedule Final Rule on pages 377–389 of this 2,475-page document. Many of the changes apply to physicians working in a teaching environment, but some are relevant to all physicians.

It is important to understand that CMS has widely broadened *who* can document the record, but not *what* needs to be documented. Changes include being able review and

verify a student’s note for documentation and billing purposes. However, the record must still show the teaching physician’s presence and participation in the service. The definition of “student” has been expanded to include not only medical students but also physician assistant and nurse practitioner students. Documentation by nurses can now be used by physicians.

The new policies apply to all services including evaluation and management, procedures, and diagnostic tests. The minimum documentation requirement is to sign and date the documentation prepared by other members of the health care team. For more detailed guidance, please see the updated ACEP Reimbursement FAQ on Teaching Physicians at www.acep.org/administration/reimbursement/reimbursement-faqs/teaching-physician-guidelines-faq/. +

DR. LEMANSKI is associate professor of emergency medicine at UMass Medical School-Baystate, ACEP alternate advisor to the CPT editorial panel, and Chair of ACEP Reimbursement Committee Workgroup 4.



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We welcome you to a community that emulates the values Milton Hershey instilled in a town that holds his name. Located in a safe family-friendly setting, Hershey, PA, our local neighborhoods boast a reasonable cost of living whether you prefer a more suburban setting or thriving city rich in theater, arts, and culture. Known as the home of the Hershey chocolate bar, Hershey's community is rich in history and offers an abundant range of outdoor activities, arts, and diverse experiences. We're conveniently located within a short distance to major cities such as Philadelphia, Pittsburgh, NYC, Baltimore, and Washington DC.



PennState Health

FOR MORE INFORMATION PLEASE CONTACT

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Faster results, less waiting.



Improve ER patient flow with syndromic infectious disease testing from BioFire.

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

Fast: Rapid turnaround time facilitates efficient diagnosis and treatment decisions.




Accurate: Superior sensitivity and specificity for results you can trust.

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

Learn more about solutions from the leader in syndromic testing at biofiredx.com.

BioFire® FilmArray® Panels

Tests available for your lab:

-  **Respiratory**
1 Test / 21 Targets / ~45 Minutes
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-  **Gastrointestinal**
1 Test / 22 Targets / ~1 Hour
-  **Meningitis/Encephalitis**
1 Test / 14 Targets / ~1 Hour
-  **Pneumonia**
1 Test / 33 Targets / ~1 Hour



Syndromic Testing: The Right Test, The First Time.