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The Official Voice of Emergency Medicine

JUNE 2024 Volume 43 Number 6  FACEBOOK/ACEPFAN  INSTAGRAM/ACEPNATION  X/ACEPNOW [ACEPNOW.COM](https://www.acepnow.com)

PLUS



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ACEP LAC 2024 Recap

Taking on the tough issues and holding the tough conversations

by L. ANTHONY CIRILLO, MD, FACEP

Leadership is defined as “the action of leading a group of people or an organization.” Advocacy is defined as “the act or process of supporting a cause or proposal.” Bringing those two concepts to life is what the 2024 ACEP Leadership and Advocacy Conference (LAC), themed “Stronger Together” and held April 14-16 in Washington, D.C., was all about. While it

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Combating Sepsis

Updates in the management of severe sepsis and septic shock

by MATTHEW CARVEY, MD; AND JONATHAN GLAUSER, MD, MBA, FACEP

Sepsis is a life-threatening organ dysfunction secondary to a dysregulated host response to an infection; an estimated 48.9 million cases are recorded, and 11.0 million sepsis-related deaths were reported from 1990-2017.¹ From its first definition in 1991, many landmark trials have advanced the care of sepsis and septic shock. In 2001, Rivers and colleagues found that early intravenous fluid administration may improve overall in-hospital mortality rates.² Similarly, in 2004, Kumar and colleagues demonstrated that each hour of delay in administration of antibiotics may lead to a mean decrease in survival.³ From there, multiple studies have investigated vasopressor use, corticosteroids, and even vitamin C in the establishment of an effective set of guidelines in the management of severe sepsis and septic shock. The predominant entity regulating the policies regarding sepsis management is the Surviving Sepsis Campaign (SSC). Secondary entities, such as Centers for Medicare and Medicaid Ser-

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PRACTICE CHANGERS

UPDATED UROLOGY GUIDELINES FOR PRIAPISM

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Cedric Dark, MD, MPH, FACEP cdark@acep.org	Danielle Galian-Coolidge, MPS dgalian@wiley.com
ASSOCIATE EDITOR	ART DIRECTOR
Catherine A. Marco, MD, FACEP cmarco@acep.org	Chris Whissen chris@quillandcode.com
ASSISTANT EDITOR	RESIDENT FELLOW
Amy Faith Ho, MD, MPH, FACEP amyho@acep.org	Carmen Marie Lee, MD, MAS carmen.marie.lee@gmail.com

ACEP STAFF

EXECUTIVE DIRECTOR/ CHIEF EXECUTIVE OFFICER	SENIOR VICE PRESIDENT, COMMUNICATION
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ADVERTISING STAFF

DISPLAY & CLASSIFIED ADVERTISING
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kmiller@mrsvica.com
(856) 768-9360

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NEWS FROM THE COLLEGE

UPDATES AND ALERTS FROM ACEP

ACEP-Developed Due Process Legislation Introduced by Congress

Last month, Congress introduced the “Physician and Patient Safety Act” (H.R. 8325/S. 4278), which would ensure emergency physicians are afforded due process protections before any change in a physician’s employment status—one of ACEP’s top advocacy priorities for years. ACEP helped develop this bill that would require the Department of Health and Human Services to issue regulations ensuring that any physician has a fair hearing and appellate review before any termination, restriction, or reduction of professional activity. This proposed legislation is the result of years of ACEP advocacy for stronger protections for emergency physicians on the job. ACEP has long held that all emergency physician contracts should include a due process clause.

ACEP’s Extensive Work with Feds to End Non-Compete Clauses Pays Off

For years, ACEP has sounded the alarm on the detrimental impact of noncompete clauses on emergency physicians that limit their right to freely practice medicine in their communities. Last month, the Federal Trade Commission voted 3-2 to ban these clauses in the future & make current ones unenforceable—a move that ACEP strongly supports. Using your powerful stories, ACEP has been consistently and repeatedly helping to ensure the FTC saw the impact of these predatory clauses and help address the anticompetitive conditions faced by many emergency physicians.

New State Legislative Dashboard Highlights Chapter Advocacy Activities

Use a new one-stop shop to stay current on state-level legislative and regulatory activities with ACEP’s new State Legislative Dashboard. The dashboard was announced at ACEP’s Leadership and Advocacy Conference earlier this year and covers initiatives such as health care worker safety, legal mandates on clinical practice, mental health and boarding, scope of practice, and others. Issue-specific details are behind a member login.

Check it out at acep.org/StateLegislative-Dashboard.

Call for ACEP Now Columnists, Writers

The ACEP Now Editorial Advisory Board would like to expand its group of columnists and writers. Are you:

- Boarded in Emergency Medicine with a Critical Care subspecialty and aware of current updates in EMCC?
- An emergency physician with medical malpractice or risk management expertise?

For either column, ACEP Now needs excellent writers who are reliable, are able to meet deadlines, have unique ideas that meet the pulse of the membership, and are not currently a recurring writer in another publication. If you are interested, please send an email telling us

why you’d be a great fit, along with at least one writing sample, to acepnow@acep.org.

Save on Fees with New Payment Option for ACEP Membership

ACH transfers, or electronic checks, are now available for new and renewing ACEP members, allowing a secure bank-to-bank money transfer that eliminates processing fees. Members on an installment plan or auto-renew can easily update their payment information at any time by accessing the “Payment Methods” section of My Account on ACEP’s website.

GEDA Accredits 500 EDs Worldwide

ACEP’s Geriatric Emergency Department Accreditation (GEDA) program ensures that our older patients receive well-coordinated, quality care at the appropriate level at every ED encounter. Last month, GEDA accredited its 500th emergency department worldwide. The concept of a geriatric ED has developed in the past decade as hospitals recognize that one-size ED care does not fit all. Older people in the ED have presentations, needs, dispositions, and outcomes that are quite specific to them. Learn more about GEDA at acep.org/geda.

President-Elect, Board Candidates Announced

ACEP’s Nominating Committee has selected the slate of candidates for 2024’s elections for the ACEP President-Elect and four positions on the ACEP Board of Directors. Councilors will select the leaders during an election at the ACEP Council meeting in Las Vegas on Saturday, September 28, in conjunction with ACEP24.

President-Elect Candidates

- L. Anthony Cirillo, MD, FACEP
- Jeffrey M. Goodloe, MD, FACEP
- Ryan A. Stanton, MD, FACEP

Board of Directors Candidates (four positions to be filled)

- Jennifer J. Casaletto, MD, FACEP (NC)
- Steven B. Kailes, MD, MPH, FACEP (FL)
- C. Ryan Keay, MD, FACEP (WA)
- Heidi C. Knowles, MD, FACEP (incumbent—TX)
- Diana B. Nordlund, DO, JD, FACEP (MI)
- Bing S. Pao, MD, FACEP (CA)

Series Shows Life of Rural ED

A new docuseries takes international audiences inside a rural Texas emergency department. “Desert Doc” centers on longtime ACEP member Sudip Bose, MD, FACEP, and Medical Center Hospital, the highest level trauma center in 38,000 square miles. The emergency department cares for patients in 22 counties, roughly the size of the state of Maine. The series had access to film in the ED over the several months, illustrating many of rural ED’s challenges and opportunities, and crews were on site when a gunman shot and killed seven people in Midland–Odessa and captured the physician’s care response. “Desert Doc” is available now on Amazon Prime Video. ➕

RESIDENCY SPOTLIGHT

NUVANCE HEALTH AT VASSAR BROTHERS MEDICAL CENTER

Location: Poughkeepsie, N.Y.

Social media handle(s): @vassarem

Year founded: 2020

Number of residents: 30

Program length: 3 years



Class of 2025 during orientation

What Does Your Program Offer That Residents Can't Get Anywhere Else?

Vassar Brothers Medical Center stands out as an exceptional residency training destination for several reasons. Once a community hospital, we have grown to become the Mid-Hudson region's tertiary care center, covering a large catchment area spanning urban, suburban, and rural communities with a diverse array of medically complex presentations. This growth has allowed us to provide more extensive bedside training, along with an advanced ultrasound and simulation curriculum. Our case index population also has allowed for several of our residents to publish case reports and be accepted to National CPC competitions, simply due to the rare pathology seen on shift. We are also involved with outreach, participating with our local Board of Health and Community Health events focused on addressing health disparities, as well as incorporating Global Health opportunities into our curriculum through electives to Ghana and Peru, to name a few.

Lastly, our program distinguishes itself by its resident and

faculty diversity, adaptability, and commitment to resident satisfaction and development. As an evolving residency, we prioritize responsiveness to the changing needs and preferences of our diverse residents. Supported by a dedicated Graduate Medical Education team, our program is committed to fostering the best possible environment for resident skill development and professional growth.

The combination of patient diversity, resident diversity, and a resident-centered, supportive culture makes Vassar Brothers Medical Center and Nuvance Health an outstanding place to complete a residency, where residents can truly thrive and become the best EM physicians they can be.

What Are Some Fun Activities Residents Like to Partake in or Recently Participated In?

Our Wellness Committee is dedicated to the well-being of our team, and they have organized many activities to ensure our residents have fun too! In addition to our monthly happy hours exploring local breweries, seasonally themed events are planned throughout the year, such as the annual July Kickball

Tournament, the Halloween Murder Mystery, a Friendsgiving dinner, a Holiday Secret Santa, and a New Year Cultural Pot Luck! We also have an annual overnight retreat in the nearby Catskills, where all residents are excused from clinical duties and get to spend time together along with faculty mentors; this is a time for fun as well as reflection on the program and year to come.

The Mid-Hudson Region also offers an array of activities in which our residents participate, such as rock climbing, hiking, cycling, running trails, nearby skiing/snowboarding, and local wineries/breweries, with the added benefit of being an hour drive from New York City.

How Should Potential Applicants Learn More about Your Program?

We would encourage potential applications to follow us on social media or visit our website at:

<https://learning.nuvancehealth.org/residency-programs/emergency-medicine-residency-program/>

—Melissa Nelson-Perron, MD, FACEP, Associate PD

MEMBERS IN THE NEWS

KEN MILNE, MD

ACEP Member **Ken Milne, MD**, was named the 2024 Emergency Physician of the Year for the Ontario Region by the Canadian Association of Emergency Physicians (CAEP). Dr. Milne is the creator of the knowledge translation project, The Skeptics' Guide to Emergency Medicine (TheSGEM), and writes a regular column of the same name for *ACEP Now*.

Dr. Milne is a staff physician at the Strathroy Middlesex General Hospital in Strathroy, Ontario, Canada, and is an Associate Professor in the Department of Medicine (Division of Emergency Medicine) and Department of Family Medicine at the Schulich School of Medicine and Dentistry. He teaches evidence-based medicine, clinical epidemiology, critical appraisal and biostatistics at Western University in London, Ontario. In 2019, Dr. Milne was honored with the ACEP's Judith E. Tintinalli Award for Outstanding Contribution in Education.



THE BREAK ROOM

SEND YOUR THOUGHTS AND COMMENTS TO ACEP NOW@ACEP.ORG

Ethical Issues in Interhospital Transfers of Emergency Department Patients

A national physician on-call data center where hospital on-call lists are published and categorized by location would be of great value in locating the appropriate available hospital and physician.

—Curtis Brown, MD, FACEP

Who is liable when the ED is over capacity, boarders (admitted but not bedded) are using ED space and staff, and a patient is alleged to have come to harm?

In these circumstances, I submit the emergency physician should be held harmless. One should not be liable for those things one does not control (e.g., personnel and hours, physical assets, and the budget to operate them).

This can be done at ACEP by creating a policy. Properly written, this may provide some defense to those putting themselves out there for the public good. We deserve protection, not thoughts and prayers.

—Thomas Benzoni, DO, FACEP



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EM board-certified or not, managing the acutely ill or injured child can be among the most challenging scenarios in emergency medicine – that's why the **Mastering Pediatric Emergencies** course was created.

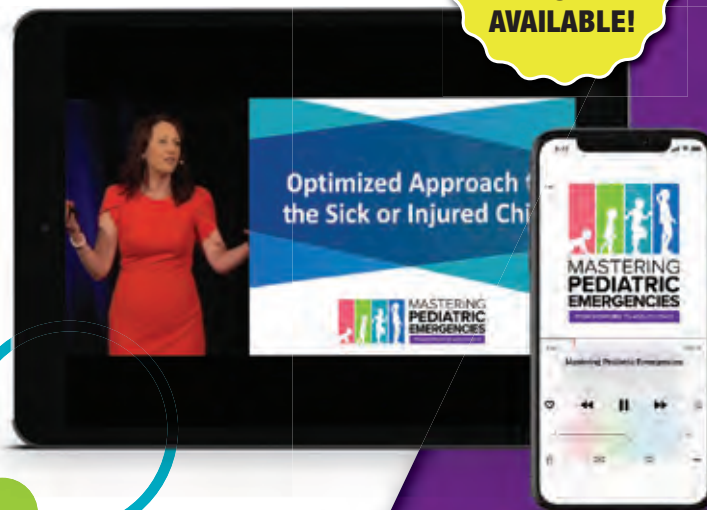
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“Great job! Love the personal stories to drive points home.”

“Very entertaining and engaging. More importantly, I learned a ton!”

“This course was exceptional, between the caliber of presenters to the review content.”

“I learned so much! Really enjoyed all the presentations!”

“Lectures were all impressive and exceptionally worthwhile!”

“Overall, you had great topics and professional speakers! Thank you for the colored printed manual.”

“All of the presentations exceeded my expectations and I was blown away by the effectiveness of this conference.”

“All of the faculty were excellent.”

“I greatly appreciated the short lectures. It was nice to know I didn't have to focus on an in-depth topic for hours on end.”

“This was wonderful and I will be recommending this to my colleagues.”

ACEP4U: Defending YOU by Demanding an End to the Boarding Crisis

by NANCY CALAWAY, CAE

This fall, ACEP will participate in the Agency for Healthcare Research and Quality (AHRQ) Director's summit on emergency department boarding.

ACEP's participation in such a pivotal meeting was not just luck or convenience. ACEP helped make the summit possible by mobilizing Congress to request action from the Department of Health and Human Services (HHS) during the Leadership and Advocacy Conference in 2023. At that time, emergency physicians helped secure 44 signatories on a congressional "Dear Colleague" letter to the Administration, sounding the alarm onto the boarding crisis and asking them to establish such a task force. And they listened.

ACEP has been using our wide-ranging influence like this for years to work tirelessly with any stakeholder who has a role in boarding solutions to protect you and your patients. As the boarding crisis has escalated in the past few years, a variety of public and often less-than-public efforts have been made by ACEP leaders to solve the problems you face every day in the ED. These meetings, conversations, emails, and exchanges that are constantly happening with federal and state decision-makers to improve the specialty.

Collaborating with Other Stakeholders

Recently, ACEP's Emergency Medicine Section Council to the American Medical Association (AMA) introduced a resolution, "Improvements to Patient Flow in the U.S. Healthcare System," for consideration at the AMA House of Delegates 2024 Annual Meeting, June 8 – 12 in Chicago.

This resolution, if passed by the House of Delegates, directs the AMA to work with relevant stakeholders and propose recommendations to appropriate entities to improve patient flow and access to care throughout multiple environments in the U.S. health care system.

In September 2023, ACEP organized and hosted the first National Stakeholder Summit on Boarding to analyze the causes of boarding, discuss barriers to overcoming these causes, and identify priority areas to pursue in creating systemwide solutions.

ACEP prioritized attendance of hospital groups at this boarding summit so they could hear firsthand the impact that boarding is having on patients, physicians, and other health care workers, and also answer to this growing crisis. Certain possible solutions could have unintended consequences, and it's important that all stakeholders talk through the challenges.

More nurses in inpatient units, for example, can help alleviate ED boarding; however, experience has shown that **mandated** ratios, especially with current nursing shortages, could exacerbate the problem: if there are too many



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patients and not enough nurses for the inpatient unit, patients are left boarding in the ED so the inpatient area stays in legal compliance.

That is why the American Hospital Association (AHA) and America's Essential Hospital, two of the largest organizations representing hospitals, were invited to and urged to attend ACEP's Boarding Summit. Representatives from both groups attended.

In all, 15 health care organizations participated in the Summit:

- American College of Emergency Physicians
- Agency for Healthcare Research and Quality (AHRQ)
- American Hospital Association
- American Nurses Association
- American Psychiatric Association
- America's Essential Hospitals
- Apprise Health Insights
- Administration for Strategic Preparedness and Response (ASPR)/Biomedical Advanced Research and Development Authority (BARDA)
- Association of State and Territorial Health Officials
- Emergency Nurses Association
- International Association of Fire Chiefs
- LeadingAge
- National Association of Emergency Medical Technicians
- National Alliance on Mental Illness
- National Governors' Association

ACEP President Aisha Terry, MD, MPH, FACEP, as well as ACEP's DC staff, are regularly having one-to-one conversations with hospital executives, government agencies, and others who can effect meaningful change. ACEP will

continue pushing these groups to work harder to solve boarding issues, to improve patient safety, and to protect emergency physicians.

Backing State-Level Efforts

ACEP is currently working to provide our Connecticut chapter with a State Public Policy Grant to bolster its efforts to support state legislation that would require hospitals to collect and report data on emergency department wait times and volumes (CT SB 181).

The bill would require annual data on bed capacity, the number of ED patients admitted to the hospital, and average length of time from arrival to admission, among other information. The data would then be posted on the state department of public health's website.

If passed, the Connecticut proposal would secure the nation's first reported metrics on boarding at the state level.

Working with the Federal Government

Advocacy strategies work best when they tackle an issue from multiple angles. ACEP has been pushing the federal government - those with actual authority to regulate hospitals - to use its significant power to identify and enact boarding solutions.

We have requested that the recommendation from The Joint Commission (TJC) that no ED patient board for longer than four hours, be changed into a requirement.

ACEP has also asked the TJC and the Quality Improvement Organizations (QIO) program to include ED staffing levels in their assessments because they regulate hospitals and

can have significant influence on hospital practices.

There are several requests ACEP has made of the Centers for Medicare & Medicaid Services (CMS), including:

- Call for a new CMS Condition of Participation requiring hospitals to develop contingency plans when inpatient occupancy exceeds 85 percent (or similar threshold), including a load balancing plan and a utilization plan of alternative space and staffing for inpatients when ED licensed bed capacity is occupied.
- Request to modify the CMS measure, "Median Time from ED Arrival to ED Departure for Discharged ED Patients," to create a bright line standard (e.g., four hours) with a percentage performance (i.e., measure and report the percentage of ED visits that exceeded a certain time frame, rather than just the current median time in minutes that allows everyone to fail together and not reduce the ranking).
- Urge CMS, instead of sunseting the measure in 2024, to maintain the "Admit Decision Time to ED Departure Time for Admitted Patients" measure in the Hospital Inpatient Quality Reporting Program—one of the only measures available to track this statistic and provide incentives/enforcement to help reduce wait times and boarding.

ACEP has been standing up for the interest of emergency physicians and your patients for decades and we will continue to do so. 🍎

MS. CALAWAY is ACEP's Managing Director for Content and Communications Integration.

TOXICOLOGY Q&A



PHOTO: JASON HACK (OLEANDER PHOTOGRAPHY)

Spiky Creepy Crawler

by JASON B. HACK, MD, FACEP

QUESTION: This spiky creepy crawler embeds its spines in your skin.

ANSWER on page 19

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ACEP Board Meeting Tackles Current Issues, Practice Trends

Aware of growing discourse among emergency physicians about physician unionization, the ACEP Board of directors spent some time at its April meeting discussing what role—if any—ACEP could play.

Although not committed to implementation of either, the Board discussed possible options including providing support to members who want to unionize themselves and considering partnership with one or more established unions. Decisions are pending and discussions continue.

There was some other practice discussions and clinical updates during the meeting, including the Board's approval of a revised process for Clinical Policy development that would move to a single-question format to develop clinical policies on a faster timeline and be more responsive to member needs.

And the Board approved a new clinical policy, "Critical Issues in the Management of Adult Patients Presenting to the ED with Seizures," rescinding the 2014 clinical policy with same title.

Related to clinical policy development, the Board considered a referred 2023 Council amended resolution, regarding the creation of a clinical policy on emergency physicians' role in the medication and procedural management of early pregnancy loss. The Clinical Policies Committee found there was not sufficient evidence to support developing a clinical policy, and the Board approved that decision. The Public Health Committee will develop a Policy Statement on this topic.

Approved Policy Statements in April included—

- Length of Residency in Training in Emergency Medicine—new Policy Statement (which was developed based on a 2023 Council Resolution about "Supporting 3-year and 4-Year EM Residency Program Accreditation")
- Selective Triage for Victims of Sexual Assault to Designated Exam Facilities—revised Policy Statement
- Prehospital Blood Administration in Hemorrhagic Shock—new Policy Statement
- Alcohol Advertising—reaffirmed Policy Statement
- Trauma Care Systems—revised Policy

Statement

- Well Workplace—new Policy Statement
- Work continues on the development of an ED Accreditation program, and at the April meeting, the Board approved the program's criteria and levels of applications. The ED Accreditation program is designed to recognize hospitals that adhere to policies and practice standards that meet key criteria and provide the best patient care possible. Open applications will be coming soon, but you can find out more and get on the interest list today at acep.org/EDaccreditation.

The inaugural ACEP Accelerate conference—which combined the ED Director's Academy, the Advanced Pediatrics EM Assembly, Reimbursement & Coding, and Teaching Fellowship—took place in Arlington, TX in March 2023. While there were a few wrinkles to iron out, it was deemed an overall success by attendees who found the increased networking opportunities and larger exhibit hall greatly enhanced the previously stand-alone events. To build on that momentum, the Board approved hosting ACEP Accelerate on Jan. 17-23, 2025 in Orlando, Florida.

There were some ACEP business decisions at the April Board meeting, as well. The Directors agreed to notify chapters that they will need to pay credit card fees for their portion of membership transactions beginning July 1, 2025. The chapters were given a comment period until May 31, 2024. It was also noted that ACEP has implemented a new option for electronic checks (ACH bank drafts) which have a significantly lower fee than credit card processing, and members are being encouraged to use these secure, bank-to-bank money transfers, if available.

Per the annual dues increase policy approved last year, ACEP membership dues will increase three percent beginning July 1, 2024 to keep up with inflation. This increase will apply to national dues for Regular and International member rates; Candidate member rates will not change in 2024.

The next Board meeting will take place June 26-27 at ACEP Headquarters in Irving, TX. Board meetings are always open to ACEP Members. +

WHAT ARE YOU THINKING?



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LAC RECAP | CONTINUED FROM PAGE 1

would be refreshing, and certainly easier, to advocate on “simple” issues, ACEP chooses to take on the tough issues and fights that improve the lives and practices of emergency physicians. And, in the spirit of both talking the talk and walking the walk, at LAC24, the College not only took on the difficult issues, but also the difficult conversations.

By the numbers, the conference was another success. There were 433 attendees, including 157 attending for the first time, 64 emergency residents, and five medical students. Always the conference’s highlight, ACEP members participated in 227 Capitol Hill visits, including 53 visits with members of Congress. Each of these visits, whether with a member of Congress or their staff, is an opportunity to educate them on the issues and build relationships. In some ways, members of Congress and their staff are like emergency physicians. Just as we can be simultaneously caring for patients with an acute STEMI, ankle sprain, acute psychotic episode, and appendicitis, a member of Congress may vote on the same day for funding NASA, establishing climate law, passing a foreign aid package, and naming a post office. The point is that, just like us, they are required to know and act on a wide variety of issues. Members of Congress and their staff need trusted experts to provide insights and expertise on issues. That’s why developing a relationship of mutual trust with them is an essential part of our visits to Capitol Hill.

This year, ACEP members took to the Hill to advocate on four issues: emergency department (ED) workplace violence, ED/hospital boarding, Medicare physician payment reform, and the need for fair due process laws to protect emergency physicians (see page 2 for a late-breaking update on this effort).

The first day of this conference was packed with amazing educational presentations and enlightening conversations. Topical presentations and panel discussions by ACEP members on “Using Social and Traditional Media to Influence Congress,” “In Order to Form a More Perfect Union...ization?” “AI and Emergency Medicine,” “Stanley Cup, Space and Ski Slopes: New Practice Models Outside the ED,” and “Leading by Example: ACEP’s Model Legislation to Fight Scope Creep/Expansion,” all highlighted the College’s work to protect emergency physicians and advance the specialty of emergency medicine.

In a session titled, “A Conversation on Antitrust in Health Care,” Jonathan Kanter, JD, Assistant Attorney General of the Antitrust Division for the U.S. Department of Justice, spoke about the commitment of his department’s Health Care Task Force to ensuring that consolidation in health care doesn’t affect the care of patients delivered at the bedside. Mr. Kanter committed to continuing the work his office is already doing with the College to identify and address concerns of emergency physicians that the corporatization of health care delivery in physician groups, health care systems, and insurance companies has created an arms race of data driven to optimize profits rather than to improve the value of care delivered in the physician–patient relationship.

The second day of the conference began with one very difficult conversation prior to scheduled visits on Capitol Hill. Based on his support of ACEP and his lead role on several issues, including due process for emergency physicians, reform



ABOVE: This year, there were 227 meetings on Capitol Hill.

RIGHT: ACEP President Aisha Terry, MD, FACEP, honored several lawmakers who have sponsored EM-friendly legislation.



Texas emergency physicians met with their Senators, Representatives, and key staff members. Many of these ACEP members were making return visits to the annual LAC meeting.

of the Medicare Physician Fee Schedule, and fair implementation of the No Surprises Act, ACEP had extended an invitation to Rep. Greg Murphy, MD (R-NC) to speak at the conference. While at the time of the invitation there was broad agreement on Rep. Murphy’s participation, the situation became complicated when Rep. Murphy introduced the Embracing anti-Discrimination, Unbiased Curricula, and Advancing Truth in Education (EDUCATE) Act to ban race-based mandates at medical schools and accrediting institutions. The EDUCATE Act would cut off federal funding to medical schools that force students or faculty to adopt specific beliefs, discriminate based

on race or ethnicity, or have diversity, equity, and inclusion (DEI) offices or any functional equivalent. The bill would also require accreditation agencies to check that their standards do not promote these practices, while still allowing instruction about health issues tied to race or collecting data for research.

The introduction of the EDUCATE Act was met with clear and strong opposition by ACEP members, the College itself, and others within the House of Medicine. ACEP took the opportunity to publicly stand by our existing policy statement, “Workforce Di-

CONTINUED on page 8

LAC First Timers

by DACIA RUSSELL GOMAN, MD, JD

Changing minds is tough work. As emergency physicians, we sign up for this task on every shift and with every patient. We train for this. We excel at this.

But how do we tackle change agency when our own specialty is the patient? How do we suture the wounds left by reimbursement cuts? How do we resuscitate our institutions struggling under the unyielding fight for more resources at the bedside? How do we

protect our own from physical threats that breach our ambulance bays?

I believe many of the solutions are rooted in advocacy.

I was a first-time attendee for ACEP’s Leadership and Advocacy Conference (LAC) in Washington, D.C., this April. I joined ACEP to advance the fight to protect our practice and our physicians, who undergird the health care safety net. LAC gifted me, and the ranks of our colleagues, a platform for defining our own journeys as health care ad-

vocates.

In Washington, D.C., we unpacked issues of workplace violence, emergency department boarding, due process for employment arrangements, and the inflationary pressures on Medicare reimbursement. We repackaged these concerns into action items for our lawmakers. We met with elected officials and their staffers. We told our stories. And we told them again.

As we shift back to our home bases, I am inspired to refine the dialogue that we start-

ed. The conversations cannot end. Our aspirations for a specialty that serves the highest aims of evidence-based practice, patient care, and physician fulfillment are within reach. But we must work for them. We must advocate. +



DR. GOMAN is a board-certified emergency physician currently practicing in Ohio with US Acute Care Solutions.

iversity in Health Care Settings,” which was reaffirmed by the Board of Directors in June 2023.


ACEP heard from many members regarding Rep. Murphy’s invitation to speak at LAC; these included calls to uninvite him and discussions about a coordinated walkout by attendees. Led by ACEP President Aisha Terry, MD, MPH, FACEP, the College had multiple conversations with many members and listened to their concerns and thoughts. Rather than uninvite Rep. Murphy, ACEP took the approach of allowing Rep. Murphy to attend so that members could exchange our thoughts and perspectives with him. Dr. Terry led a professional and graceful discussion with Rep. Murphy. During the conversation, Rep. Murphy shared his perspectives on DEI initiatives within health care professional training; they are clearly not aligned with the College’s policy. Therefore, Dr. Terry educated Rep. Murphy about the numerous scientific studies that have demonstrated the value of having a diverse workforce and closed the session by sharing her personal perspective of having grown up, and still having family, in the very district Rep. Murphy represents.

Ultimately, allowing Rep. Murphy to participate in LAC was consistent with the College’s “walking the walk” of encouraging respectful listening and dialogue on difficult issues, even if we ultimately end up disagreeing. The College, just like our society, is composed of individuals with a wide variety of experiences,

perspectives, and beliefs. One of the greatest challenges is listening to others, especially those with whom we disagree. Those who choose to live in an echo chamber are doomed to never learn or understand perspectives beyond those they currently know.

ACEP members likewise share a diversity of opinions on a number of issues. The College chooses to actively solicit and listen to the opinions of our members. Balancing the different perspectives of members on issues where there is no consensus is one of the greatest challenges for the College. When we discuss and consider issues that represent the diverse interests of our members, the College remains committed to the three core foundations upon which it was founded and which unify our members: ensuring our place as a unique specialty in the House of Medicine, advocating for emergency physicians, and advancing the care of patients.


If you want to be part of the incredible voice of emergency physicians that ACEP carries to Capitol Hill each year, then join us next year for LAC from April 27-29, 2025, in Washington, D.C.!




DR. CIRILLO is a member of the ACEP Board of Directors.

THE AMERICAN COLLEGE OF EMERGENCY PHYSICIANS BELIEVES

- Hospitals and emergency physicians should work together to promote staffing of hospitals and their emergency departments with highly qualified individuals of diverse race, ethnicity, sex (including gender, gender identity, sexual orientation, pregnancy, marital status), nationality, religion, age, disability, or other characteristics that do not otherwise preclude an individual emergency physician from providing equitable, competent patient care.
- Attaining diversity with well qualified physicians in emergency medicine that reflects our multicultural society is a desirable goal.
- Health professionals, educators, and administrators must recognize and address institutional barriers and policies that may contribute to underrepresentation of certain groups in the workforce.
- To maintain and increase the supply of primary care physicians who care for vulnerable populations over the coming decades, educational and health care entities should establish and promote pipelines to develop and support future professionals.
- A diverse workforce can display increased cultural competence across cultural practices, languages, and social issues.
- Culturally congruent health care interactions can improve adherence, trust, and patient experience, thereby expanding quality of, and access to, care for traditionally hesitant or disengaged populations.



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EMERGENCY PHYSICIAN PASSIONATE ABOUT LITERACY'S IMPACT ON HEALTH PROSPECTS

by JORDAN GRANTHAM

Nick Vasquez, MD, FACEP, gets to see the impact of social determinants of health every day in the emergency department. Like most in our specialty, he wants to help solve problems. He's spent 12

THE EQUALIZERS

**NICK VASQUEZ,
MD, FACEP**

Celebrating equity
champions in
emergency care

years in this place of inquiry and service," as he calls it, trying to understand some of the root causes of health inequities. Dr. Vasquez honed in on one

piece of the puzzle that he's now passionate about trying to change: childhood literacy.

"And there's this critical point [for children] around age eight, age nine, age 10 ... somewhere in there, they will either learn to read, or they will not," Dr. Vasquez said. "If they learn to read and they're proficient at reading, they gain agency. They gain this idea of, 'I can.'"

He said emergency physicians often care for those who did not develop agency, and it's led them to believe the world has power and they do not. "They feel like they can't," Dr. Vasquez

said. "That dividing line is so powerful."

When confronted with the research regarding the link between literacy and health, Dr. Vasquez said he had a "What the hell are we doing?!" moment of clarity. Ever since, he has been a vocal proponent for improving literacy rates in his Arizona community.

"Everything that I do is about empowering, educating. If you had simply one or two or three more years of primary school, you'd be more likely to wear a seatbelt. You'd be less likely to smoke. You'd be more likely to be successful at the end of the day," he said.

It Starts with Diversity

"I got to get you to care about you, and you will self-correct," Dr. Vasquez explained. Of course, it's not as simple as it sounds. As immediate past chair of ACEP's Diversity, Inclusion, and Health Equity Section, he's reflected on the difference among those three things. It starts with diversity, which he says is "changing up the faces around you." The next step is inclusion, which Dr. Vasquez thinks is harder to achieve because the people in power have to be aware that there's a problem before we see any positive change.

The hardest to achieve of all is equity, because "equity is sharing power," Dr. Vasquez said. That's hard to reach, he explained, when operating in a system where those in power "by nature don't like to share."

Rather than get discouraged by the feeling of trudging uphill toward equity, Dr. Vasquez focuses on empowering children to read. "Once they're able to read, they are self-motivated to help themselves, to be better patients, to be better decision makers, to put themselves first," he said. "It is this weird thing where you don't have to fix the world; you just have to teach kids to read. "That extra couple of years of primary school or that extra impact from graduating high school is so powerful. It's like the best medicine we can get."

Having Insight into Your Problems

Despite his passion for this work, Dr. Vasquez still gets discouraged when he feels like he's not making a big enough impact. When that happens, he remembers a book he read that talks about the difference between problems and dilemmas, *Stop Physician Burnout*.

"There's this difference between a problem, which is a finite, solvable thing, and a

dilemma, which is an eternal unsolvable but must be a managed thing. You have to separate the two," he said. "[A dilemma is] meant to be managed, and you have to understand what you value most so you can make trade-offs and be okay with what you're letting go of."

"I think that we, physicians, especially emergency physicians, try and drive ourselves nuts trying to solve unsolvable things," Dr. Vasquez said. "You may have insight into the world's problems, but they're not yours to solve, because you didn't create them and therefore you can't end them."

"You can advocate," Dr. Vasquez said. "I can be kind to you right now. I can listen to you right now. I can hear you ... I can get to the place where [patients are] regretting losing something, and I can call to them and say, 'I hope better for you. How can I help you to do better?'"

MS. GRANTHAM was formerly the Senior Communications Manager at ACEP. The ACEP Now Team would like to thank her for her five years of service to the College. She currently works in corporate communications with a national building company.

vices, require sepsis bundle timeline cut-offs for a health care entity to receive reimbursement. Despite many years of sepsis research, physicians still receive continuous updates suggesting new strategies to increase overall survival and decrease mortality in this patient population. A summary of these recommendations can be found in Table 1.

What Is “Sepsis”?

In sepsis, a pathogen triggers an initial exaggerated inflammatory-immune response that leads to activation or suppression of multiple pathways, in turn leading to circulatory and metabolic dysfunction.⁴ The clinical definition of sepsis is the recognition of two SIRS criteria with evidence of infection. Severe sepsis is defined as sepsis with evidence of organ dysfunction. One result of this dysregulated response is hemodynamic instability despite fluid resuscitation, ultimately classified as “septic shock,” which persistently remains a significant cause of mortality.⁵

What Can I Do to Combat Sepsis in 2024?

1. Screening tools

Multiple screening tools in the emergency department (ED) have been studied, including qSOFA, SIRS, NEWS, and MEWS. Sepsis-3 first considered the qSOFA score to be the superior screening tool to utilize in early sepsis identification.⁶ The SSC guidelines for 2021 recommend against the use of qSOFA when compared to SIRS, NEWS, or MEWS.⁷ A more recent study compared SIRS (body temperature above 38°C or below 36°C, heart rate greater than 90 beats per minute, respiratory rate greater than 20 breaths per minute, neutrophilia above 12,000 mm³ or below 4000 mm³) and qSOFA (systolic blood pressure <100 mmHg, respiratory rate >22, and Glasgow coma scale <15) to a Sepsis Prediction Model, which generates a sepsis score based on electronic health record-confirmed sepsis; however, its application in the clinical setting was limited by poor timeliness in comparison to SIRS and qSOFA.⁸

In summary, qSOFA should not be used as a single screening tool for sepsis. NEWS, MEWS, or SIRS may be more beneficial at this time.

2. Lactate clearance and capillary refill time (CRT)

Most institutions are beginning to transition to electronic health record-generated order sets for sepsis when it is suspected by the practitioner; however, the “necessary” labs to obtain have varied by clinical center. Specifically, lactate clearance has been a debatable topic since its inception. The SSC guidelines for 2021 weakly recommended measuring blood lactate and, if elevated (defined as ≥4 mmol/L), guiding resuscitation by a decrease in its value over time.⁷ The ANDROMEDA-SHOCK study evaluated whether targeting resuscitation towards a CRT versus lactate clearance led to a reduced mortality at 28 days; ultimately, there was no detectable difference. The CRT group’s mortality rate was 34.9 percent versus 43.4 percent in the lactate group.⁹ A concern raised with both strategies was whether volume overload and its early recognition was key to preventing further complications as a result of over-resuscitation. ACEP’s own clinical policy does not recommend the use of se-

Table 1. Summary of current sepsis guidelines

Screening Tools	SIRS, NEWS, or MEWS > qSOFA
Lactate and capillary refill time	Capillary refill time or lactate clearance can be considered.
Intravenous fluids	30 mL/kg of lactated ringers within the first three hours of resuscitation, with the caveat of utilizing clinical acumen to prevent fluid overload
Antibiotics	Administration of a “broad” antimicrobial regimen within one hour of recognizing septic shock or within three hours in sepsis without shock
Vasopressors	Algorithmic approach to achieve a MAP >65: intravenous fluid bolus, followed by norepinephrine, vasopressin, and then epinephrine if there is no underlying cardiac dysfunction
Steroids	Use of corticosteroids with ongoing vasopressor therapy or hypotension despite vasopressors
Vitamin C	SSC suggests against intravenous vitamin C.
Albumin	SSC suggests utilizing albumin in patients who have received large volumes of crystalloid.
Protein C	There are no current recommendations.
ECMO	Utilization of VV-ECMO in the setting of severe acute respiratory distress syndrome when conventional mechanical ventilation fails

rum lactate levels to guide ongoing IV fluid resuscitation, as it has not been found to be an accurate marker of ongoing fluid needs.¹⁰

In summary, there is no good “endpoint” guiding resuscitation in septic shock, but CRT or lactate clearance can be considered.

3. Intravenous fluids

One of the greatest controversies in the care of sepsis has been intravenous fluid management during the acute stages of septic shock. For patients in septic shock or exhibiting signs of hypoperfusion, SSC guidelines weakly recommend at least 30 mL/kg of intravenous crystalloid within the first three hours of resuscitation.⁷ The current fluid recommendation is a balanced crystalloid, with lactated ringers being superior to normal saline.⁵ The CLOVERS trial investigated conventional fluid resuscitation versus early vasopressor use and intravenous fluid restriction, with the conventional group receiving approximately 3.8 L and the fluid restriction group receiving 1.8 L. Researchers concluded that at 90 days, mortality and adverse events of the aforementioned volumes were similar between the two groups.¹¹ Notably, ACEP’s clinical policy does not endorse an empirical fluid bolus but, rather, individualized fluid resuscitation needs for each patient.¹⁰ The judicious amount of intravenous fluids cited by the SSC should also be liberalized for patients with clinical findings of volume overload or a known reduced ejection fraction.

In summary, the current recommendation is 30 mL/kg of lactated ringers within the first three hours of resuscitation, with the caveat of utilizing clinical judgment to prevent fluid overload.

4. Antibiotics

Empiric broad-spectrum antibiotic regimens in the acute stages of severe sepsis and septic shock are becoming a mainstay of treatment. The SSC guidelines base antimicrobial administration recommendations on the following: likelihood of a current infectious process based on clinical examination, suspicion for MRSA or MDR organisms, and viral or fungal sources.⁷ MRSA nasal swabs, when negative, can eliminate the need for MRSA coverage in sepsis patients.⁵ There is no current recom-

Table 2. Summary of possible considerations/recommendations for prophylactic antibiotic coverage in early sepsis recognition. Please consider the microbiome in one’s respective institution/region⁵

Empiric antibiotic regimen	Piperacillin-tazobactam OR cefepime AND vancomycin
Patients with high-risk beta-lactam allergy	Aztreonam AND vancomycin

Consider adding an aminoglycoside in cases of severe hemodynamic instability or high risk of infection with resistant gram-negative organisms

mendation for a specific antibiotic regimen, but administration of broad-spectrum coverage must be completed within one hour of recognizing septic shock (strong recommendation) or within three hours of recognizing sepsis without shock.⁵ Each institution will have its own unique microbiome, but, as an example, a suggested antibiotic regimen is presented in tabular form based on Michigan Medicine’s recommendations (Table 2).⁵ Ferrer and colleagues investigated time to antibiotic administration in severe sepsis and septic shock, concluding that for every hour a physician delays antibiotic coverage, there was a statistically significant increase in mortality.¹² Another retrospective cohort study investigated the association between door-to-antibiotic time of patients with clinical sepsis and long-term mortality. Their median door-to-antibiotic time averaged 166 minutes, leading to a one-year mortality risk of 19 percent. Each additional hour delay in antibiotic administration was associated with 10 percent increased odds of one-year mortality.¹³

In summary, the current recommendations for antibiotic coverage are based on suspicion for an acute bacterial process, and administration of a “broad” antimicrobial regimen is recommended within one hour of recognizing septic shock or within three hours in sepsis without shock.

5. Vasopressors

Current recommendations by the SSC follow a stepwise pattern when considering vasopressor therapy after adequate volume resuscitation. The first recommendation is the use of norepinephrine, followed by vasopressin and then epinephrine if a MAP >65 mmHg cannot be obtained. If there is cardiac dysfunction, one may add dobutamine to supplement nor-

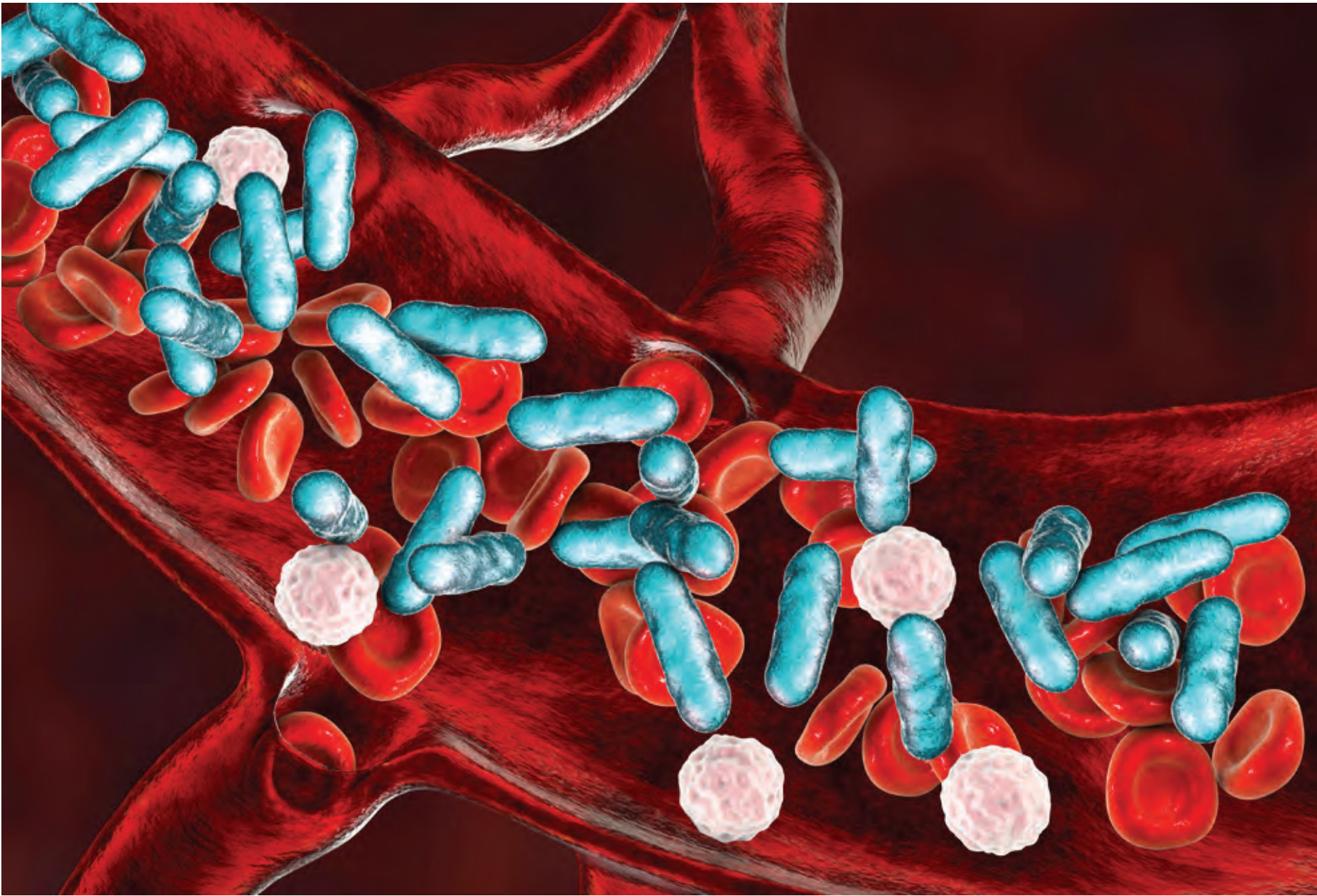
epinephrine or utilize epinephrine alone.⁷ It is important to mention that both the CENSER and CLOVERS trials investigated standard sepsis management (intravenous fluids followed by vasopressors) versus the early use of norepinephrine. CENSER determined that early norepinephrine use was associated with increased shock control by six hours compared to standard therapy, and CLOVERS concluded that mortality and adverse events were similar between the two groups.^{11,14} For adults with septic shock on norepinephrine with inadequate MAP levels (<65 mmHg), vasopressin is recommended rather than escalating doses of norepinephrine.⁵

In summary, the current recommendations for vasopressor use in severe sepsis and septic shock follow an algorithmic approach, titrating a MAP >65 mmHg: intravenous fluid bolus, followed by norepinephrine, vasopressin, and then epinephrine if there is no underlying cardiac dysfunction.

6. Steroids

Another controversial topic in sepsis management has been the use of corticosteroids. The current recommendation by the SSC is the use of intravenous corticosteroids with ongoing vasopressor therapy.⁷ One regimen includes hydrocortisone 200 mg/day, 50 mg every six hours or as a continuous infusion.¹⁵ Interestingly, the HYPRESS trial studied the early use of hydrocortisone therapy in patients with severe sepsis who had not yet developed septic shock. They concluded that hydrocortisone compared with placebo did not reduce the risk of septic shock within 14 days.¹⁶

The current recommendation is the use of corticosteroids with ongoing vasopressor therapy or hypotension despite vasopressors.



7. Random facts

Vitamin C

A study by Lamontagne and colleagues found that in adults with sepsis currently receiving vasopressor therapy in the ICU, administration of intravenous vitamin C had a higher risk of death at 28 days compared to placebo.¹⁷

The current recommendation from the SSC suggests against intravenous vitamin C.⁷

Albumin

The ALBIOS study investigated albumin replacement in addition to crystalloids compared to crystalloids alone in overall survival of patients with severe sepsis. They concluded that the addition of albumin did not improve overall survival at 28 and 90 days.¹⁸

The current recommendation from the SSC suggests utilizing albumin in patients who have received large volumes of crystalloid.⁷

Protein C

The PROWESS-SHOCK trial compared recombinant human activated protein C versus placebo and concluded there was no significant reduction in mortality at 28 or 90 days compared to placebo.¹⁹

There are no current recommendations from the SSC to use activated protein C.

ECMO

A study conducted by Helwani and colleagues demonstrated the use of VA-ECMO in patients with sepsis-induced cardiomyopathy. In the setting of persistent hypotension despite standard management of septic shock with evidence of severe cardiac systolic dysfunction and end-organ perfusion, VA-ECMO should be considered.²⁰

Current recommendations by the SSC are the utilization of VV-ECMO in the setting of severe acute respiratory distress syndrome when con-

Table 3. Commonly used abbreviations

Abbreviation	Meaning
CRT	Capillary refill time
ICU	Intensive care unit
MAP	Mean arterial pressure
MDR	Multidrug-resistant
MEWS	Modified Early Warning Score
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
NEWS	National Early Warning Score
qSOFA	quick Sequential Organ Failure Assessment
SIRS	Systemic Inflammatory Response Syndrome
SSC	Surviving Sepsis Campaign
VA-ECMO	Venoarterial-Extracorporeal Membrane Oxygenation
VV-ECMO	Venovenous-Extracorporeal Membrane Oxygenation

ventional mechanical ventilation fails, without mention of VA-ECMO.⁷ +



DR. CARVEY is a resident at MetroHealth/Cleveland Clinic Residency Emergency Medicine.



DR. GLAUSER is an emergency physician at MetroHealth Medical Center, Cleveland, Ohio and professor of emergency medicine at Case Western Reserve University.

References

1. Rudd KE, Johnson SC, Agesa KM, et al. Global, regional, and national sepsis incidence and mortality, 1990–2017: analysis for the Global Burden of Disease Study. *Lancet*. 2020;395(10219):200–211.
2. Kumar A, Roberts D, Wood KE, et al. Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. *Crit Care Med*. 2006;34(6):1589–1596.
3. Rivers E, Nguyen B, Havstad S, et al. Early goal-directed therapy in the treatment of severe sepsis and septic shock. *N Engl J Med*. 2001;345(19):1368–1377.
4. Arina P, Singer M. Pathophysiology of sepsis. *Curr Opin Anaesthesiol*. 2021;34(2):77–84.
5. King J, Chenoweth CE, England PC, et al. *Early Recognition and Initial Management of Sepsis in Adult Patients* [Internet]. Ann Arbor, Mich.: Michigan Medicine University of Michigan; 2023. <https://www.ncbi.nlm.nih.gov/books/NBK598311/>.
6. Singer M, Deutschman CS, Seymour CW, et al. The third international consensus definitions for sepsis and septic shock (Sepsis-3). *JAMA*. 2016;315(8):801–810.
7. Evans L, Rhodes A, Alhazzani W, et al. Surviving sepsis

campaign: International guidelines for management of sepsis and septic shock 2021. *Crit Care Med*. 2021;49(11):e1063–e1143.
8. Schertz AR, Lenoir KM, Bertoni AG, et al. Sepsis prediction model for determining sepsis vs SIRS, qSOFA, and SOFA. *JAMA Netw Open*. 2023;6(8):e2329729.
9. Hernández G, Ospina-Tascón GA, Damiani LP, et al. Effect of a resuscitation strategy targeting peripheral perfusion status vs serum lactate levels on 28-day mortality among patients with septic shock: the ANDROMEDA-SHOCK randomized clinical trial. *JAMA*. 2019;321(7):654–664.
10. Spiegel R, Farkas JD, Rola P, et al. The 2018 surviving sepsis campaign's treatment bundle: when guidelines outpace the evidence supporting their use. *Ann Emerg Med*. 2019;73(4):356–358.
11. Shapiro NI, Douglas IS, Brower RG, et al. Early restrictive or liberal fluid management for sepsis-induced hypotension (CLOVERS). *N Engl J Med*. 2023;388(6):499–510.
12. Ferrer R, Martin-Loeches I, Phillips G, et al. Empiric antibiotic treatment reduces mortality in severe sepsis and septic shock from the first hour: results from a guideline-based performance improvement program. *Crit Care Med*. 2014;42(8):1749–1755.
13. Peltan ID, Brown SM, Bledsoe JR, et al. ED door-to-antibiotic time and long-term mortality in sepsis. *Chest*. 2019;155(5):938–946.
14. Pempikul C, Tongyoo S, Viarasilpa T, et al. Early use of norepinephrine in septic shock resuscitation (CENSER). A randomized trial. *Am J Respir Crit Care Med*. 2019;199(9):1097–1105.
15. Srčić I, Neseck Adam V, Tunjić Pejaj D. Sepsis definition: What's new in the treatment guidelines. *Acta Clin Croat*. 2022;61(Suppl 1):67–72.
16. Keh D, Trips E, Marx G, et al. Effect of hydrocortisone on development of shock among patients with severe sepsis: The HYPRESS randomized clinical trial. *JAMA*. 2016;316(17):1775–1785.
17. Lamontagne F, Masse MH, Menard J, et al. Intravenous vitamin C in adults with sepsis in the intensive care unit. *N Engl J Med*. 2022;386(25):2387–2398.
18. Caironi P, Tognoni G, Masson S, et al. Albumin replacement in patients with severe sepsis or septic shock. *N Engl J Med*. 2014;370(15):1412–1421.
19. Ranieri VM, Thompson BT, Barie PS, et al. Drotrecogin alfa (activated) in adults with septic shock. *N Engl J Med*. 2012;366(22):2055–2064.
20. Helwani MA, Lim A. Is venoarterial extracorporeal membrane oxygenation an option for managing septic shock. *Curr Opin Anaesthesiol*. 2023;36(1):45–49.

Is It Time to Unionize?

Some physicians find unions a viable negotiating option

by LEON C. ADELMAN, MD, MBA, FACEP

For more than three weeks, the emergency physicians at Ascension St. John Hospital in Detroit, Mich., have been on strike against what they say are unfair labor practices that put patients at risk.

The emergency department (ED) remains fully staffed during the strike (which as of press time in mid-May was still unresolved), so patient care is not interrupted; however, the union, the Greater Detroit Association of Physicians, says understaffing and poor working conditions have created an unsafe staffing situation in the ED, which has led to excessively long wait times for patients in need of care.

One way such grievances and unresolved complaints can be reconciled is through a physician union. And there are a growing number of conditions in the emergency medicine landscape that need to be addressed.

Emergency physicians have the lowest rate of practice ownership among specialties, per the American Medical Association 2020 Physician Practice Benchmark Survey. Only 27.9 percent of emergency physicians reported having an ownership stake in their clinical practice.

For nearly three-fourths of U.S. emergency physicians who are non-practice owners, working conditions are determined through negotiations between employees and employers.

The Medscape Physician Burnout and Depression Report 2024 showed that emergency physicians have had the highest burnout rates in the House of Medicine for two consecutive years. Emergency medicine's burnout rate was 63 percent, 10 percent higher than any other specialty. Emergency medicine has not historically been the most burned-out specialty, however. In 2018, for example, emergency medicine had a burnout rate of 45 percent, ranking sixth among specialties.

Falling wages are fanning the flames of burnout. According to the Medscape Physician Compensation Reports, the last five years have brought decreased real wages for emergency physicians. Inflation-adjusted compensation decreased annually between 1.0 percent (2019) and 12.1 percent (2023). Anecdotally, emergency medicine has also seen decreasing rates of group-level financial transparency and decreases in the value of benefits over the past decade.

Meanwhile, hospitals are increasingly relying upon EDs to provide more of their inpatient medical and psychiatric care, thereby limiting the resources available for emergency clinicians to care for incoming patients. "Boarding times had been stuck at around 120 minutes from 2013 to 2019. The pandemic saw the time interval increase. In the year 2021, the ED boarding time was 167 minutes, and in 2022 it soared to the 190-minute mark," reported James Augustine, MD, FACEP, in a previous column in *ACEP Now*. "The average ED boarding time of 190 minutes accounted for about 47 percent of the time the admitted patient spent in the ED."

For these reasons and more, many employed emergency physicians are looking for ways to improve their working conditions.

The option of converting from an employed group model to a physician-owned practice may seem tempting; however, hospital CEOs, rather than practicing emergency physicians, determine emergency medicine group contracts. Practice ownership simply may not be an option for employed emergency physicians in most EDs in the U.S.

The current negotiating power dynamic favors employers and hospitals over employed physicians, which is reflected in the working conditions employed emergency physicians face.

William Ury and Roger Fisher popularized the importance of understanding negotiators' best alternatives to a negotiated agreement (BATNA) in their 1981 bestselling book, *Getting to Yes: Negotiating Agreement Without Giving In*. They wrote, "If you have not thought carefully about what you will do if you fail to reach an agreement, you are negotiating with your eyes closed."

The BATNA for an individual emergency physician negotiating with an employer over working conditions or compensation would likely be finding a new job, often a destabilizing life event. But for many employers, the loss of a single physician



Doctors in the emergency room at Ascension St. John Hospital began a one-day strike to protest understaffing and unsafe conditions. The emergency room is operated by Team Health, which is owned by the private equity firm Blackstone. The 43 emergency doctors, physician assistants, and nurse practitioners organized the Greater Detroit Association of Emergency Physicians nearly a year ago.

is only a minor hiccup. Large emergency medicine employers have well-funded recruiting apparatuses ready to replace a departing physician.

Other elements of negotiating power also benefit large employers and health systems over individual emergency physician employees. For example, employers tend to have access to salary benchmarking data through organizations such as the Medical Group Management Association (MGMA), on which they can base compensation negotiations. Individual physicians usually can only rely on a limited amount of anecdotal comparator salary information or perhaps *ACEP Now*'s annual salary survey.

Some emergency physicians have started exploring the option of unionizing to gain power in contract negotiations with their employers and hospitals.

"Decisions were being made by administration that affected us and our patients without seeking input from the people with the best understanding of the situation, the emergency physicians," said Bryce Pulliam, MD, a founding member of the Southern Oregon Providers Association union. "When we tried to reach out and share our views and concerns, our efforts were met with silence. We saw a union as a means to guarantee that we have a seat at the table to advocate not only for ourselves but, more importantly, for our patients."

Collective bargaining is not new to health care. In October 2023, more than 75,000 unionized health care workers participated in what has been reported as the largest medical sector strike in U.S. history. Shortly afterward, a four-year contract was ratified that included wage increases and addressed staffing and training concerns.

About a fifth of U.S. interns and resident physicians are union members. The Committee of Interns and Residents (CIR), part of the Service Employees International Union (SEIU), has a membership of over 30,000 residents and fellows across 56 residencies. CIR has notched a number of negotiating victories.

Attending physicians, however, have historically been reticent on the subject of unionization for a variety of reasons, including ineligibility (practice ownership), public perception, practice autonomy, and moral or ethical concerns. As the predominant practice model shifts to employed and the face of the health care system continues to change, many physicians are re-evaluating the advantages that collective bargaining may be able to provide.

Collective bargaining broadens clinicians' comparative BATNA when negotiating with employers. If a negotiated agreement is not reached, an employer may face losing access to their entire workforce for an indefinite period through a strike.

A strike could cause major financial and reputational damage to the employer, disrupt essential services, and negatively impact goodwill. Additional legal protections, including prohibitions against retaliatory termination, provided by the National Labor Relations Act (NLRA) also strengthen negotiation leverage in collective bargaining.

Unions have the scale and structures to obtain and leverage information needed for successful negotiations. Unions may have the staff and resources to obtain more market-level information than individuals and can ask for a significant amount of information from employers as part of collective bargaining.

Unions can also offer individual physicians protections from health system retribution when advocating for improved patient care through appropriate staffing. This power stems from "joint employer" rules. Per the National Federation of Independent Businesses, "If two businesses are joint employers under the NLRA, both must bargain with the union that represents the jointly employed workers, both are liable for unfair labor practices, and both are subject to union picketing during a labor dispute."

"We can have our voice heard," said Sean Codier, DO, an emergency physician with the Salem Physicians Union, "if we collect together and represent each other in our groups, our hospitals, and hopefully together as a larger group as unionized emergency physicians."

A panel discussion during the 2024 ACEP Leadership and Advocacy Conference, "In Order to Form a More Perfect Union...ization?" featured several members speaking about the issue.

Panelist Bing S. Pao, MD, FACEP, noted that physician-owned groups (like his employer Vituity) offer their physicians access to payment transparency, as well as other decision-making abilities within the group.

"I see unionization as one solution, but not the solution for everyone," Dr Pao said, adding that there are global issues in emergency medicine "that we need to address holistically with a number of solutions."

"It is yet to be determined how well (physician unions) will improve the environment," he added.

Nancy Calaway, CAE, ACEP's Managing Director for Content and Communications Integration, contributed to this article. +



DR. ADELMAN (@LEONADELMAN) is cofounder and chief executive officer of Ivy Clinicians (ivyclinicians.io).

Evaluating Chronic Obstructive Pulmonary Disease

COPD is responsible for about three million deaths per year globally

by JONATHAN GLAUSER, MD, FACEP,
AND JAMES O'HORA, MD

Chronic obstructive pulmonary disease (COPD) is a chronic disease of the lungs caused by inflammatory and structural changes of the small airways and parenchyma of the lungs that result in chronic airflow obstruction and gas trapping. In 2019, the global prevalence of COPD was estimated to be 10.3 percent, and COPD is responsible for about three million deaths per year globally.^{2,17} COPD is diagnosed by spirometry with a forced expiratory volume in one second to forced vital capacity (FEV1/FVC) ratio of less than 0.7.⁴ Acute exacerbations of COPD (AECOPD) are a common presentation in emergency medicine. Exacerbations accelerate disease progression and can lead to increased rates of hospitalization and death.^{4,14} As these exacerbations represent a critical point in the progression of COPD, it is important for emergency physicians to understand the approach to diagnosis and management of AECOPD.

Severity of Disease Based on FEV1

Severity	FEV1
Mild	greater than or equal to 80 percent predicted
Moderate	50-79 percent predicted
Severe	30-49 percent predicted
Very Severe	less than 30 percent

Adapted from GOLD severity of airflow obstruction in COPD

Initial Evaluation

As with all critical emergency medicine patients, AECOPD patients should be placed on cardiac monitoring and pulse oximetry, and initial evaluation should focus on vital signs and assessment of airway, breathing, and circulation.

History

The history should focus on assessing for the possible trigger, confirming AECOPD, assessing severity of baseline disease, and evaluating for symptoms that may point toward an

alternative diagnosis.

Common triggers include infections, recent medication changes, colder weather or air pollution, and medication non-adherence. Presenting symptoms of AECOPD include increased shortness of breath, increased frequency of cough, and increased volume of sputum or change in sputum color or consistency. Exacerbations are more commonly caused by viral infections; however, bacterial infections need to be considered. AECOPD associated with purulent sputum production is most commonly due to bacterial infection.

Determining the severity of the patient's baseline COPD is important in guiding management of the exacerbation. Reviewing the patient's most recent FEV1, if it is available, is an easy way to determine the severity of obstruction. Other historical items that can assess for severity of disease include history of intubations, frequency of exacerbations and hospitalizations, home O2 flow rate, and comorbidities. Recent hospitalization is important for choosing antibiotic coverage.

And, finally, patients with a history of COPD frequently present to the emergency department with dyspnea. Although dyspnea in this setting likely represents an AECOPD, other emergent differentials must be considered. Some of the critical differentials include pulmonary embolism, acute decompensated heart failure, pneumonia, pneumothorax, and acute coronary syndrome. Sudden symptom onset suggests pulmonary embolism or pneumothorax. Signs and symptoms of systemic infection (e.g., fevers, chills) suggest pneumonia. Anginal chest pain, chest heaviness, or evidence of fluid overload suggest acute

CONTINUED on page 14

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coronary syndrome or acute decompensated heart failure.^{4,10,11}

Physical Exam

Vital sign abnormalities in AECOPD include tachypnea, tachycardia, hypoxemia, and fever if an underlying infection is present. Physical exam should focus on assessment of work of breathing and the cardiopulmonary system. Work of breathing can be assessed by looking for tachypnea, tripodding, accessory muscle use, inability to speak in full sentences, and decreasing level of consciousness. Wheeze and decreased air entry on auscultation are common findings in AECOPD. Focal lung findings (focal rales or dullness to percussion) point more toward pneumonia. Unilateral decreased breath sounds can indicate pneumothorax. An S3 on cardiac auscultation, jugular venous distension, or lower extremity edema suggests heart failure.^{4,10,11}

Diagnostic Workup

Although AECOPD is largely a clinical diagnosis, some diagnostic modalities are useful to help rule in or rule out alternative diagnoses.^{4,10,11}

- **Chest X-ray** is used to evaluate for pneumothorax, pulmonary edema, or pneumonia.
- **Ultrasound** evaluates for global heart function, right heart strain, pulmonary edema, and lung sliding.
- **Complete blood count** evaluates for leukocytosis or anemia.
- **Basic metabolic panel** evaluates for electrolyte abnormalities.
- **ECG** evaluates for dysrhythmias, acute coronary syndrome, or signs of right heart strain.
- **Viral polymerase chain reaction (PCR)** can be considered in evaluating for a viral infection, such as COVID-19 or influenza.
- **Clinical decision tools** such as PERC +/- d-dimer or CT angiography of the chest are used if pulmonary embolism is considered likely.
- **Brain natriuretic peptide** can be considered to evaluate for heart failure.
- **Troponin** can be considered to evaluate for acute coronary syndrome.
- **Blood gas** (venous or arterial) can be considered to evaluate for extent of hypercapnia or in patients with decreased level of consciousness to assess for hypercapnic encephalopathy.

Management

Oxygen

- Supplemental oxygen should not be withheld despite risk of hypercapnia.⁴
 - » Hypercapnia worsens with higher oxygen saturations largely because of increased shunting of blood away from well-ventilated alveoli into poorly ventilated alveoli.¹
- Titrate to oxygen saturation of 88-92 percent.^{1,4,11}
- Common methods of oxygen delivery:
 - » Nasal cannula (1-6 L/min, about 24-45 percent FiO2);
 - » Heated high flow nasal cannula (10-60 L/min, 21-100 percent FiO2);
 - » Simple mask (6-10 L/min, 35-50 percent FiO2);
 - » Venturi mask (2-15 L/min, 24-60 percent FiO2); and

AECOPD Emergency Department (ED) Management

Oxygen		Supplemental Oxygen	Titrate to SpO ₂ 88-92 percent
Bronchodilators		Albuterol Ipratropium	2.5-5 mg q30min 0.5 mg q30min x3 doses
Corticosteroids		Prednisone Methylprednisolone Dexamethasone	40-60 mg per os/by mouth (PO) 32-125 mg IV 6-12 mg IV
Antibiotics	Outpatient	Azithromycin Doxycycline TMP/SMX Amoxicillin-clavulanate ^a Ciprofloxacin ^b	500 mg PO x1 then 250 mg PO quaque die/once a day (QD) x4d 100 mg PO bis en die/twice a day (BID) x5d DS (160 mg/800 mg) PO BID x5d 875 mg/125 mg PO BID x5d 500 mg BID x5d
	Inpatient	Ceftriaxone Cefotaxime Moxifloxacin Levofloxacin ^b Cefepime ^b Piperacillin-tazobactam ^b	1 g q24h x5d 1 g q24h x5d 400 mg PO/IV q24h x5d 500 mg PO/IV q24h x5d 2 g IV q8h x5d 4.5 g IV q8h x5d
NIV		BPAP	Starting settings: iPAP 8-12 cmH ₂ O ePAP 4-5 cmH ₂ O Increase iPAP as tolerated, titrate to tidal volume and improved work of breathing
Intubation		Volume assist control	Tidal volume 8 cc/kg ideal body weight (IBW) Respiratory rate (RR) 10-14, adjust to allow full expiration Positive end-expiratory pressure (PEEP) 0-5 FiO ₂ 40 percent, titrate to SpO ₂ greater than 88 percent

a: Complicated: age greater than 65, FEV1 less than 50 percent, comorbid cardiac disease, greater than or equal to two exacerbations per year
b: Pseudomonas risk factors: prior sputum cultures growing pseudomonas, severe disease, multiple recent hospital admissions, frequent antibiotic use, or systemic steroid use

» Non-rebreather (10-15 L/min, about 80 percent FiO2).⁸

Bronchodilators

- Albuterol 2.5-5 mg plus ipratropium 0.5 mg every 30 minutes x3 doses;
- No significant difference in FEV1 improvement between metered dose inhalers (MDI) and air-driven nebulizers; and
- Can be administered in-line through high-flow nasal cannula or BPAP.^{4,10,11,12}

Corticosteroids

- Systemic corticosteroids shorten recovery time and improve FEV1, oxygenation, risk of early relapse, treatment failure, and length of hospitalization.^{4,14}
- Oral prednisone 40-60 mg (or equivalent) daily for five days.^{4,11}
- Oral corticosteroids are as effective as intravenous steroids, but a one-time dose of intravenous methylprednisolone 125 mg in the ED is useful for patients who obviously cannot tolerate oral medications.^{4,6,11}

Antibiotics

Antibiotic use for AECOPD patients remains a contentious topic; however, data suggests AECOPD patients requiring admission, particularly to the ICU, should receive antibiotics.^{10,12} It's important to note that there is still no consensus on which discharged AECOPD patients require antibiotics and which antibiotics are the most effective; however, limited data suggests outpatient antibiotics reduce risk of treatment failure, shorten recovery time and hospitalization duration, and increase time between exacerbations.^{4,14}

GOLD guidelines recommend antibiotics in patients with three of the cardinal symptoms (increased dyspnea, sputum volume, and purulent sputum), or purulent sputum plus another of the cardinal symptoms, or in those requiring mechanical ventilation (invasive or non-invasive). While the American Thoracic Society (ATS) agrees that purulent sputum is associated with the need for antibiotics, ATS also suggests considering disease severity when deciding which discharged AECOPD patient gets antibiotics.¹⁴ Overall, those with non-severe baseline COPD, no significant comorbidities, minor AECOPD symptoms, and no purulent sputum can likely be discharged without antibiotics.^{4,7,10,14} There is also emerging data evaluating C-reactive proteins (CRP) cutoffs as a potential guide for antibiotic prescription.⁷

In uncomplicated discharged AECOPD patients who are receiving antibiotics, data suggests initial empiric azithromycin, doxycycline, or trimethoprim-sulfamethoxazole are all appropriate options.^{3,4,7} Fluoroquinolones and amoxicillin-clavulanate were shown to be more effective than macrolides and many of the cephalosporins.³ Those who are elderly (greater than 65 years) or have severe disease (FEV1 less than 50 percent), comorbid cardiac disease, or frequent exacerbations (greater than or equal to two per year) are considered higher risk, and a course of amoxicillin-clavulanate should be considered.^{3,4,7} AECOPD patients with pseudomonas risk factors (prior sputum cultures growing pseudomonas, severe disease, multiple recent hospital admissions, frequent antibiotic use, or systemic steroid use) should receive pseudomonas

coverage with a fluoroquinolone such as ciprofloxacin or levofloxacin.^{3,4,7,14,16} GOLD guidelines recommend a less than or equal to five-day course of antibiotics.

Non-Invasive Positive Pressure Ventilation (NIV)

- Bilevel positive airway pressure (BPAP) preferred over continuous positive airway pressure (CPAP) for AECOPD.
- NIV decreases mortality and intubation rate and improves oxygenation, respiratory acidosis, and work of breathing.^{4,14}
- BPAP initial settings:
 - » Inspiratory positive airway pressure (iPAP): 8-12 cmH2o
 - Maintain iPAPs less than 20 cmH2o to avoid gastric distension.
 - » Expiratory positive airway pressure (ePAP): 4-5 cmH2O
 - » Titrate driving pressure (iPAP-ePAP) to adequate tidal volume and improved work of breathing via increased iPAP.^{11,14}
- Consider light sedation for patients who cannot tolerate NIV.⁴

Intubation

- No specific recommendations on which induction agents to use. Some evidence from asthma literature suggests ketamine has some bronchodilatory activity.⁵
- Some evidence suggests using larger diameter endotracheal tubes to avoid increasing airway resistance.¹¹
- Ventilator settings should be targeted toward avoiding auto-PEEP and permissive hypercapnia.¹⁵

Disposition

Discharge

Generally, patients with mild to moderate symptoms on presentation, good response to ED management, no new or increased supplemental oxygen requirement, and no desaturation with ambulation can be considered for discharge. It’s good practice to address several areas of outpatient management prior to discharge to help prevent recurrence of exacerbations and ED bouncebacks: Inhaler technique should be assessed; the patient’s current maintenance therapy and their understanding of this therapy should be checked to ensure the patient is using his or her medications appropriately; counseling on smoking cessation should be performed; and close follow-up should be arranged for the patient. Good discharge instructions and strict return precautions should be provided.⁴

Admission or Placement in Observation Unit


Patients who present with severe symptoms, show evidence of acute respiratory failure (e.g., respiratory rate greater than 24, heart

Indications for NIV in AECOPD*

- Respiratory acidosis (PaCO₂ greater than or equal to 45 and pH less than or equal to 7.35)
- Severe dyspnea with increased work of breathing and/or clinical signs of respiratory muscle fatigue
- Persistent hypoxemia despite supplemental O₂

Adapted from GOLD indications for non-invasive mechanical ventilation

rate greater than 95, use of accessory muscles, new or increased supplemental oxygen requirement, hypercapnia above baseline, altered level of consciousness), have symptoms refractory to aggressive initial medical management, have serious comorbidities, or have a lack of home support should be strongly considered for admission or at least placement in an ED observation unit if available.⁴

Those with severe dyspnea, significantly decreased level of consciousness, persistent or worsening hypoxemia and/or severe or worsening respiratory acidosis (e.g., pH less than 7.25) despite supplemental oxygen and NIV, respiratory failure requiring intubation, or hemodynamic instability requiring vasoactive medications should be admitted to an intensive care unit for further careful management.⁴ 



DR. GLAUSER is professor of emergency medicine at Case Western Reserve University at MetroHealth Cleveland Clinic in Cleveland.



DR. O'HORA is an emergency medicine physician in Cleveland Heights, Ohio.

References

1. Abdo WF, Heunks LMA. Oxygen-induced hypercapnia in COPD: myths and facts. *Crit Care*. 2012;16(5):323.
2. Adeloje D, Song P, Zhu Y, et al. Global, regional, and national prevalence of, and risk factors for, chronic obstructive pulmonary disease (COPD) in 2019: a systematic review and modelling analysis. *Lancet Respir Med*. 2022;10(5):447–458.
3. Canut A, Martín-Herrero JE, Labora A, et al. What are the most appropriate antibiotics for the treatment of acute exacerbation of chronic obstructive pulmonary disease? A therapeutic outcomes model. *J Antimicrob Chemother*. 2007;60(3):605–612.
4. Global Initiative for Chronic Obstructive Lung Disease. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease (2023 report). <https://goldcopd.org/2023-gold-report-2/>. Updated Feb. 17, 2023. Accessed May 19, 2024.
5. Howton JC, Rose J, Duffy S, et al. Randomized, double-blind, placebo-controlled trial of intravenous ketamine in acute asthma. *Ann Emerg Med*. 1996;27(2):170–175.
6. Leuppi JD, Schuetz P, Bingisser R, et al. Short-term vs conventional glucocorticoid therapy in acute exacerbations of chronic obstructive pulmonary disease: the REDUCE randomized clinical trial. *JAMA*. 2013;309(21):2223–2231.
7. Miravittles M, Moragas A, Hernández S, et al. Is it possible to identify exacerbations of mild to moderate COPD that do not require antibiotic treatment? *Chest*. 2013;144(5):1571–1577.
8. O'Driscoll BR, Smith R. Oxygen use in critical illness. *Respir Care*. 2019;64(10):1293–1307.
9. Parrilla FJ, Morán I, Roche-Campo F, et al. Ventilatory strategies in obstructive lung disease. *Semin Respir Crit Care Med*. 2014;35(4):431–440.
10. Quon BS, Gan WQ, Sin DD. Contemporary management of acute exacerbations of COPD: a systematic review and metaanalysis. *Chest*. 2008;133(3):756–766.
11. Tintinalli JE, Stapczynski JS, Ma OJ, et al, eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide*. Ninth edition. New York, NY: McGraw-Hill Education; 2020.
12. van Geffen WH, Douma WR, Slebos DJ, et al. Bronchodilators delivered by nebuliser versus pMDI with spacer or DPI for exacerbations of COPD. *Cochrane Database Syst Rev*. 2016;2016(8):CD011826.
13. Vollenweider DJ, Frei A, Steurer-Stey CA, et al. Antibiotics for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev*. 2018;10(10):CD010257.
14. Wedzicha JA, Miravittles M, Hurst JR, et al. Management of COPD exacerbations: a European Respiratory Society/American Thoracic Society guideline. *Eur Respir J*. 2017;49(3):1600791.
15. Weingart SD. Managing initial mechanical ventilation in the emergency department. *Ann Emerg Med*. 2016;68(5):614–617.
16. Wilson R, Jones P, Schaberg T, et al. Antibiotic treatment and factors influencing short and long term outcomes of acute exacerbations of chronic bronchitis. *Thorax*. 2006;61(4):337–342.
17. Naghavi M, Wang H, Lozano R, et al. Global, regional, and national age–sex specific all-cause and cause-specific mortality for 240 causes of death, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2015;385(9963):117–171.



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Indications for Intubation in AECOPD

- Inability to tolerate non-invasive ventilation (NIV) or NIV failure
- Respiratory or cardiac arrest
- Worsening level of consciousness or psychomotor agitation inadequately controlled by light sedation
- Massive aspiration or persistent vomiting
- Persistent inability to remove respiratory secretions
- Severe hemodynamic instability refractory to fluids and vasopressors
- Severe ventricular or supraventricular dysrhythmias
- Life-threatening hypoxemia in patients unable to tolerate NIV

Adapted from GOLD indications for invasive mechanical ventilation

Initial Ventilator Settings for AECOPD	
Mode	Volume assist control
Tidal volume	8 cc/kg IBW
Respiratory rate	10–14, adjust to allow for full expiration
PEEP	0–5
FiO ₂	Start at 40 percent, titrate to SpO ₂ greater than 88%



DR. KENDALL is the chief of clinician engagement at US Acute Care Solutions and has 15 years of emergency department leadership experience. She is the chair of the USACS diversity, equity, and inclusion committee, the social issues and equity in medicine committee co-chair, and leads physician leadership development for USACS.



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The Power of Two (Chromosomes)

Why sex and gender matter in medicine

by JAYNE KENDALL, MD, MBA, FACEP, CPE

For centuries, we've tended to view specific groups through simplified lenses. We see children as miniature adults, lacking the complexities and nuances of their elders. On the other hand, women are sometimes defined in relation to men, their experiences and identities framed as the opposite of a masculine norm. However, these reductive perspectives limit our understanding of these groups and can harm health care.



Recognition of pediatrics as a distinct and separate medical field happened gradually, unfolding over centuries with crucial turning points and ongoing progress. The 17th century saw the emergence of figures like Nils Rosén von Rosenstein (1706-1773) in Sweden, who authored *The Diseases of Children and their Remedies* (1764). Although there were others before this, this was considered the first modern textbook on

pediatrics. Its publication marked a shift toward recognizing the distinct features of childhood illnesses.

Only very recently have we seen a similar shift toward sex-based and gender-based medicine. In 2016, the National Institutes of Health (NIH) released a policy stating that research designs and analyses must include "sex as a biological variable."¹⁴ Even though we are increasingly conscious of specific differences between the male and female bodies when we think of gender, and the spectrum of genders based on social constructs, medicine has lagged in recognizing how biologic and hormonal differences can significantly influence health and disease. For too long in medicine, women's health has been painted as a mere counterpoint to men's—a mirror image on the opposite end of the medical spectrum, except with a uterus. But this approach fails to capture the rich tapestry of women's experiences, leading to misdiagnoses, missed opportunities, and an understanding that doesn't fit.

Here is where sex and gender medicine enter. Sex-based medicine focuses on biological differences between men and women, typically in anatomy, physiology, and hormones. On the other hand, gender (gender-based) medicine is broader, in-

cluding social and cultural factors influencing health care outcomes. This field explores how gender roles, power dynamics, and societal expectations impact health outcomes for different groups. Considering these differences, gender medicine can improve health care for all people, regardless of gender identity. Sex and gender medicine focuses on personalized health care that recognizes individual differences in biology and social experiences, offering tailored treatments and interventions. By promoting an inclusive and equitable approach to health care, sex and gender medicine can potentially improve health outcomes for everyone.

So why should we care about this in emergency medicine?

Several compelling reasons demonstrate why focusing on sex and gender medicine within the emergency department holds significant value. I recently interviewed Alyson McGregor, MD, an emergency physician, a sex and gender medicine expert, and author of the book, *Sex Matters: How Male-Centric Medicine Endangers Women's Health and What We Can Do About It*, who provided additional insight.

First, Dr. McGregor emphasized that we can **improve our clinical accuracy**. Men and women often present with differ-

ent symptoms and respond differently to treatments for the same condition. Understanding these sex-based differences can help emergency clinicians arrive at a faster and more accurate diagnosis, leading to quicker and more effective interventions.

Second, we may be able to **avoid some adverse drug reactions**. Studies have shown that women experience adverse drug reactions, including nausea and seizures, at nearly twice the rate of men.² These reactions are significantly more likely to lead to hospitalization in women as well.⁹ The practice of prescribing equal drug doses to women and men fails to account for sex differences in pharmacokinetics, body fat percentages, and weight, ultimately leading to overmedication of women.¹²

Third, we can **create a more equitable and effective health care system**. Historically, medical research and practice have often overlooked or minimized the unique health needs of women and people of diverse genders. Gender medicine helps close this gap by providing a more comprehensive understanding of health and disease across the gender spectrum.

For what kinds of diagnoses should we consider gender differences when seeing patients on shift?

1. **Cardiac disease**—Although females are affected by the traditional risk factors for ischemic heart disease, such as hypertension and smoking, there are sex-specific non-Framingham risk factors that put certain females at higher risk. For example, if a female had pre-eclampsia in her pregnancy, this doubles the risk of future strokes and quadruples the risk of hypertension later in life. Thus, when considering a female's cardiac risk, it is important to obtain a pregnancy history.^{8,11}
2. **Atrial fibrillation and stroke**—Several studies have shown a higher risk of stroke in females than in males who have atrial fibrillation. American atrial fibrillation guidelines have included female sex as part of risk stratification models, including the CHA₂DS₂-VASc score.^{4,10}

3. **Seizures**—Catamenial epilepsy, which is characterized by seizures that worsen during certain phases of the menstrual cycle, affects around 40 percent of females with epilepsy.^{6,7} Circulating levels of estrogen and progesterone play a role in seizure susceptibility. Females with these types of seizures may require hormonal adjuncts or a temporary increase in their anti-epileptic drug during a specific part of the menstrual cycle to control their seizures. Furthermore, as Dr. McGregor noted, the pharmacokinetics of some anti-epileptic medications such as lamotrigine may play a role in seizure activity around the time of menstruation in epileptic females.³

4. **Pain management**—Studies have shown sex differences in nociception across multiple stimulus modalities. Women tend to have higher pain sensitivity compared with males and perceive more pain than men. Estrogen and progesterone's roles in this finding are multifactorial, but studies have also shown that testosterone may have an anti-nociceptive effect.¹

We now understand that gender medicine is essential in our practice. What can we do about it? Dr. McGregor provided a few resources:

- Dr. McGregor keeps a PubMed search tool on sexandgenderhealth.org up during her shift. Here, you can see updated evidence on multiple disease processes that will help you care for your patients at the bedside.
- A new textbook, *How Sex and Gender Impact Clinical Practice*, provides tables, charts, and evidenced-based information about gender differences.
- Dr. McGregor also wrote a book, *Sex and Gender in Acute Care Medicine*, which is a reference for sex and gender differences in patients presenting to the emergency department.

Sex and gender medicine is not about treating men and women differently for everything. It's about recognizing that biological and social factors influence health differently in each sex and gender identity. By embracing this

knowledge, we, as emergency physicians, can provide better care for all our patients, regardless of their biology and background. +

References

1. Cairns BE, Gazerani P. Sex-related differences in pain. *Maturitas*. 2009;63(4):292-296.
2. Chase S. *Radicle Science: Pioneering Diversity, equity and inclusion in clinical trials*. Radicle Science. 2023 Aug 15. <https://radiclescience.com/blog/radicle-science-pioneering-diversity-equity-and-inclusion-in-clinical-trials/>.
3. Herzog AG, Klein P, Rand BJ. Three patterns of catamenial epilepsy. *Epilepsia*. 1997;38(10):1082-1088.
4. Lip GYH, Nieuwlaet R, Pisters R, et al. Refining clinical risk stratification for predicting stroke and thromboembolism in atrial fibrillation using a novel risk factor-based approach: the Euro Heart Survey on Atrial Fibrillation. *Chest*. 2010;137(2):263-272.
5. Loryan I, Lindqvist M, Johansson I, et al. Influence of sex on propofol metabolism, a pilot study: implications for propofol anesthesia. *Eur J Clin Pharmacol*. 2012;68(4):397-406. <https://pubmed.ncbi.nlm.nih.gov/22006347/>.
6. Lukić S. Catamenial epilepsy – update on practical management. *Acta Medica Medianae*. 2018;57(4):117-121.
7. Maguire MJ, Nevitt SJ. Treatments for seizures in catamenial (menstrual-related) epilepsy. *Cochrane Database Syst Rev*. 2021;9(9):CD013225.
8. Mehta PK, Wei J, Wenger NK. Ischemic heart disease in women: A focus on risk factors. *Trends Cardiovasc Med*. 2015;25(2):140-151. <https://doi.org/10.1016/j.tcm.2014.10.005>.
9. Nakagawa K, Kajiura A. [Female sex as a risk factor for adverse drug reactions.] *Nihon Rinsho*. 2015;73(4):581-585.
10. Nielsen PB, Skjøth F, Overvad TF, Larsen TB, Lip GY. Female sex is a risk modifier rather than a risk factor for stroke in atrial fibrillation: should we use a CHA₂DS₂-VA score rather than a CHA₂DS₂-VASc? *Circulation*. 2018;137(8):832-840.
11. Ospel JM, Schaafsma JD, Leslie-Mazwi TM, et al. Toward a better understanding of sex- and gender-related differences in endovascular stroke treatment: a scientific statement from the American Heart Association/American Stroke Association. *Stroke*. 2022;53(8):e396-e406.
12. Zucker I, Prendergast BJ. Sex differences in pharmacokinetics predict adverse drug reactions in women. *Biol Sex Differ*. 2020;11(1):32.
13. Savic I. Sex differences in the human brain, their underpinnings and implications. *Prog Brain Res*. 2010;186:113-204.
14. U.S. Department of Health and Human Services (n.d.). *NIH policy on sex as a biological variable*. National Institutes of Health. <https://orwh.od.nih.gov/sex-gender/orwh-mission-area-sex-gender-in-research/nih-policy-on-sex-as-biological-variable>.



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DR. WESTAFER (@Lwestafer) is an attending physician and research fellow at Baystate Medical Center, clinical instructor at the University of Massachusetts Medical School in Worcester, and co-host of FOAMcast.

Updated Urology Guidelines for Priapism

Not uncommonly encountered in the emergency department

by LAUREN M. WESTAFER, DO, MPH, MS, FACEP

Ischemic priapism is not uncommonly encountered in the emergency department (ED) and essentially results in a compartment syndrome of the penis. Thus, time is erectile tissue. The prolonged erection in ischemic priapism leads to tissue edema and ultimately necrosis of the corpus cavernosa, with irreversible damage occurring after 24 hours. The best chance to reduce long-term sequelae is through rapid detumescence.

The American Urological Association (AUA) released updated guidelines for the management of acute ischemic priapism that take a stab at treating the condition more efficiently. There are two primary takeaways. First, don't waste time with conservative treatment in the ED. If you use conservative measures, at least use them concurrently with more definitive treatment. Second, an intracavernosal injection of phenylephrine or another sympathomimetic should be used up front in the treatment of ischemic priapism.¹

Conservative measures, such as exercise or oral agents (pseudoephedrine, an alpha-adrenergic agonist or terbutaline, a beta-agonist), for the treatment of ischemic priapism are alluring. Aspiration and injection generally require a multistep process of dorsal nerve blocks and instrumentation of the penis. And, of course, patients would much prefer a pill over management involving injection of an extremely sensitive area. For physicians, aspiration and injection can be time consuming. Despite the allure, it seems unlikely that an oral agent could achieve sufficient concentrations in an area with reduced blood flow due to outflow obstruction; studies confirm inconsistent effects.

In one study of 53 patients who had prolonged erections after receiving intracavernosal injections for evaluation of erectile dysfunction, approximately 66% of prolonged erections resolved after 30 minutes of exercise—walking up and down stairs (39.6%)—or an oral beta-agonist (26.9%).² Although many patients did not require aspiration and/or intracavernosal injections, these patients are likely different than those who present to the ED. These conservative treatments delay definitive management. In another study of 75 patients who had a prolonged erection after receiving prostaglandin injections for erectile dysfunction, oral medical therapy (pseudoephedrine, terbutaline, or placebo) was unsuccessful in 75 percent of patients.³ Other small studies found no benefit to terbutaline over placebo.⁴ The data on the effectiveness of conservative measures for patients who present to the ED for care are minimal, incon-



Fresco in Pompeii depicting Priapus, the Greek god of fertility and male genitalia, for whom the condition is named after.

sistent, or derived from a different population than general ED patients with acute ischemic priapism. Given the time-critical nature of acute ischemic priapism, current data do not support routine use of these conservative measures in the ED population.

The presurgical management of ischemic priapism has often involved a stepwise approach, with initial aspiration of blood from the corpus cavernosa to relieve the venous outflow obstruction, followed by intracavernosal injections of a sympathomimetic, usually phenylephrine, if aspiration was unsuccessful. However, data suggest that resolution rates are higher with initial combined strategies (i.e.,

aspiration and phenylephrine) compared with either alone. In fact, injections of phenylephrine alone (with a 31-gauge needle) are sufficient for some patients. The guidelines state, “Clinicians treating acute ischemic priapism may elect to proceed with alpha adrenergics, aspiration with saline irrigation, or a combination of both therapies, based on clinical judgment.” The guidelines also now recommend that, in patients with prolonged erections after intracavernosal injections of vasoactives for erectile dysfunction, clinicians use intracavernosal injections of phenylephrine as first-line treatment.¹

Phenylephrine is a pure alpha-adrenergic

agonist, which can contract the cavernosa smooth muscle and alleviate the venous outflow obstruction of ischemic priapism. The guidelines recommend injection of 100-500 mcg of phenylephrine every three to five minutes because there is insufficient evidence to support an optimal dose. However, several retrospective studies provide insight on how much phenylephrine it typically takes.

One study of 136 cases of priapism in 58 patients revealed that 65 percent were treated with phenylephrine alone, with a median total dosage of 1,500 mcg (range 300–12,000 mcg). Of note, patients with priapism fewer than 36 hours in duration received less phenylephrine (median of 1,400 mcg) compared with those with a duration greater than 36 hours (median 3,500 mcg).⁵ In another study of 74 patient encounters, the median dose of phenylephrine was 1,000 mcg (IQR 500-2000 mcg).⁶ Despite relatively large doses of phenylephrine, no adverse events or increases in heart rate or blood pressure were reported in either study.^{5,6} Although dose adjustments may be prudent in those with significant cardiovascular disease and in pediatric patients, 500 mcg is likely the most efficient initial dose.

The guidance to use phenylephrine up front for most patients may help reduce morbidity by decreasing time to detumescence; however, a plan for an injectable phenylephrine-first approach (plus or minus aspiration) may help with ED efficiency. Clinicians can ensure that the proper phenylephrine concentration (500 mcg/mL or 1,000 mcg/mL, ideally pre-mixed for safety) is available and ready. Further, targeting the initial dose to 500 mcg in most patients may reduce the number of attempts and the time to detumescence.

References

1. Bivalacqua TJ, Allen BK, Brock GB, et al. The diagnosis and management of recurrent ischemic priapism, priapism in sickle cell patients, and non-ischemic priapism: an AUA/SMSNA guideline. *J Urol.* 2022;208(1):43-52.
2. Habous M, Elkhouly M, Abdelwahab O, et al. Noninvasive treatments for iatrogenic priapism: Do they really work? A prospective multicenter study. *Urol Ann.* 2016;8(2):193-196.
3. Lowe FC, Jarow JP. Placebo-controlled study of oral terbutaline and pseudoephedrine in management of prostaglandin E1-induced prolonged erections. *Urology.* 1993;42(1):51-53.
4. Govier FE, Jonsson E, Kramer-Levien D. Oral terbutaline for the treatment of priapism. *J Urol.* 1994;151(4):878-879.
5. Ridyard DG, Phillips EA, Vincent W, et al. Use of high-dose phenylephrine in the treatment of ischemic priapism: Five-year experience at a single institution. *J Sex Med.* 2016;13(11):1704-1707.
6. Sidhu AS, Wayne GF, Kim BJ, et al. The hemodynamic effects of intracavernosal phenylephrine for the treatment of ischemic priapism. *J Sex Med.* 2018;15(7):990-996.

Toxicology Q&A Answer

QUESTION ON PAGE 6

ANSWER: White-Marked Tussock Moth Caterpillar
Orgyia leucostigma

There are three species of white-marked tussock moths, *Orgyia detrita*, *Orgyia leucostigma*, and *Orgyia definita*, found across the eastern United States. *Orgyia* is Greek for a unit of measurement “the length between outstretched arms.” Their life cycle begins in the winter as eggs, from which caterpillars hatch from April to June. These mature over 30 days and create cocoons. Adults emerge two weeks later and mate; new eggs are laid on the surface of old cocoons by the flightless females.

All three species have similar characteristics, and while their adult form is gray and drab, their larval or caterpillar form is striking. *Orgyia leucostigma* (illustrated here) has a deep red-colored head and matching red dots (glands) on its back, coupled with clumps of short, vertical yellow hairs (called dorsal tussocks) on the first four abdominal segments, all surrounded by an inviting covering of fluffy long black ‘plume hairs’ (images 1,2). They look friendly and fuzzy, especially when they raise the front of their body to search for their next path forward, the “hair pencils” looking like arms reaching out (hence the name *Orgyia*; image 3). They are most commonly encountered by people in spring and early summer; however, your reaction of “how cute, I must pick it up” should be tempered by the knowledge that looks can be deceiving. Those hairs and warning colors are a clear announcement that they should be treated with avoidance, not petting, as these structures can cause injury to skin, eyes, and mucous membranes. There are 52 species of moths spanning 10 families of Lepidoptera that are known to have structures that can cause injury to humans—including *Orgyia*.³

Although they look benign, those attractive hairlike structures covering the caterpillar, especially the tussocks, are specially designed to act as passive armor to protect the caterpillar from predators. They cause injury, and therefore avoidance, among animals intending to eat them—or cause pain and problems in those curious enough to touch them.

The Hairs (Setae)

The brittle tussock hairs from the clumps on the caterpillar’s back (called urticating hairs) have backwards-angled barbs along their length, which, once they have poked into your skin or landed in your eyes, break off and travel deep into your tissues in a linear fashion, resisting withdrawal once imbedded.^{1,5}

As an additional defense, these urticating hairs have a venom gland at their base that can cause significant erythema and pronounced swelling.⁴ The toxin is not well characterized but can cause a local release of histamine and a broad itchy rash in sensitive individuals.

These hairs (and fragments) are also found in the cocoon matrix—the egg-laying female rubs her setae on the structure to embed them as protection for the maturing insects. These hairs have also been found floating in the air of forests with high caterpillar concentration.

Injury

The eye is the organ most sensitive to caterpillar hairs. These hairs cause severe local discomfort and pain, foreign body sensation, photophobia, lacrimation, lid edema,



They are most commonly encountered by people in spring and early summer.

conjunctival injection, and blepharospasm; conjunctival irritation and congestion; chemosis; linear corneal abrasions; and punctate corneal lesions.

There is a well-described ocular disease process from this injury—ophthalmia nodosa. Schön first described it as an inflammatory reaction of the eyes to the mechanical and toxicologic attributes of caterpillar hairs that causes a characteristic immunologically mediated granulomatous nodular response primarily of the conjunctiva.⁸ These appear as small yellowish-red conjunctival nodules surrounding an embedded hair. When these fine, pointed hairs contact the surface of the eye, they can travel more deeply due to movement of the globe, blinking, and eye rubbing, which leads to further injury.

Symptoms usually begin between 30 minutes and three hours.³

These injuries are so common, a five-degree ocular injury scale, designed to measure injury caused by caterpillars, was developed and ranges from Type 1 (acute inflammation: chemosis, inflammation, epiphora, foreign body sensation) to Type 5 (vitreoretinal involvement with migration of the hair into the anterior chamber, iris, or lens).²

Skin and Mucous Membrane Exposures

Contact with the caterpillar hairs can result in imbedding, causing mild to severe local urticaria. This is made worse with rubbing, which further embeds the spines.

Treatment

Initial care is copious irrigation of the eyes or exposed skin and an attempt to locate the hairs and remove them. Further care depends on the extent of the injury; because the hairs do not dissolve with time, the setae will require physical removal from the eye—often using fine needle techniques.

Topical medications for erythema, irritation, and swelling include ice, topical steroids, and topical antibiotics if superinfection is suspected.



Symptoms usually begin between 30 minutes and three hours.

Most eye injuries will need ophthalmologic referral for a second examination to search for retained hairs and due to the risk of migration of hairs causing intra-ophthalmologic insults evidenced by cells and flare, such as vitritis and lens injury, which may require invasive interventions.^{6,9,7}

There have been cases of ocular caterpillar injury requiring enucleation.¹ +



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

References

1. Agarwal M, Acharya MC, Majumdar S, et al. Managing

multiple caterpillar hair in the eye. *Indian J Ophthalmol*. 2017;65(3):248-250.
2. Cadera W, Pachtnan MA, Fountain JA, et al. Ocular lesions caused by caterpillar hairs (ophthalmia nodosa). *Can J Ophthalmol*. 1984;19(1):40-44.
3. Doshi PY, Usgaonkar U, Kamat P. A hairy affair: ophthalmia nodosa due to caterpillar hairs. *Ocul Immunol Inflamm*. 2018;26(1):136-141.
4. Gilmer PM. A comparative study of the poison apparatus of certain lepidopterous larvae. *Ann Entomol Soc Am*. 1925;18(2):203-239.
5. Jullienne R, He Z, Manoli P, et al. In vivo confocal microscopy of pine processionary caterpillar hair-induced keratitis. *Cornea*. 2015;34(3):350-352.
6. Levy S, Posa M, Kelly M, et al. Ophthalmia nodosa secondary to intraocular, white-marked tussock caterpillar setae (*Orgyia leucostigma*) in a 15-year-old. *SAGE Open Med Case Rep*. 2023;11:2050313X231172563.
7. Sahay P, Bari A, Maharana PK, et al. Missed caterpillar cilia in the eye: cause for ongoing ocular inflammation. *BMJ Case Rep*. 2019;12(4):e230275.
8. Schön J. *Bieträge zur Praktische Augenheilkunde*. Hamburg, Germany: Hoffman & Campe; 1861.
9. Watson PG, Sevel D. Ophthalmia nodosa. *Br J Ophthalmol*. 1966;50(4):209-217.



Why Performance Chasing Doesn't Work

by JAMES M. DAHLE, MD, FACEP

Q: I'm now eligible for my 401(k), and I need to pick which mutual funds to invest my contributions into. I'm not sure exactly how to do this, but I can see which ones had the best returns over the last one, three, and five years, so I just thought I'd put all my money into the top two or three of them so I'm diversified. Is that the right approach?

A: "Performance chasing" is widely recognized by behavioral economists as a serious investing error. In fact, it's such a bad idea that mutual funds are required by law to include a statement in their paperwork saying something to the effect that past performance is no guarantee of future results. I wish the statement were even stronger, saying something like, "Outsized past performance is highly likely to reverse in the near future." But, alas, investing is a *caveat emptor* activity.

Performance chasing is easy to do. It is often driven by FOMO—fear of missing out. We hear about our friends making money in ARK funds, meme stocks, Beanie Babies, or Bitcoin and pile in, only to suffer through the inevitable downturn inherent in popular investment booms. At that point, fear of loss usually kicks in and we sell low. "Buy high and sell low" is not a recipe for investment success.

The truth is that the outperformance of a few mutual funds in your 401(k) is far more likely due to what they invest in than the skill of their managers. For example, over the last five to 10 years, U.S. stocks have generally outperformed international stocks, bonds, and real estate, especially the large cap "growth" and "tech" stocks, like NVIDIA, Meta (Facebook), Amazon, and Alphabet (Google). So any mutual fund that was invested heavily in those stocks will demonstrate excellent results over the last few years, no matter what their investment strategy. Chances are, the top two or three funds in your 401(k) are all invested in those same types of stocks, and buying three funds that all invest in the same stocks is just false diversification.

The data are very clear that the outperformance of active mutual fund managers does not persist. Well, it may, but only among the worst ones. Some studies show that the top quintile of managers for a given year are no more likely to be in the top quintile the next year than any other manager, but the bottom quintile managers are actually more likely to be in the bottom quintile the next year. Sometimes their funds simply close and disappear from the historical record. A more recent study by the mutual fund gurus at Morningstar concluded:

Over the long term, there is no meaningful relationship between past and future fund performance. In most cases, the odds of picking a future long-term winner from the best-performing quintile in each category aren't mate-



rially different than selecting from the bottom quintile. The results strongly indicate that long-term investors should not select funds based on past performance alone.

As a rule, the more you pay for an investment, the worse its future returns will be. If you can buy a rental property with a net income of \$20,000 for \$200,000, that will probably be a great investment. Not so much if you pay \$600,000 for that same property. That's exactly what is happening when you buy any other investment after a recent run-up in price. You're paying more for every dollar of earnings it generates, and thus your return must be lower than that of an investor who bought it at a lower price.

Any student of the markets will quickly see that there is a pendulum effect as different types of investments come in and out of favor. Sometimes growth stocks do well. Sometimes value stocks do well. Sometimes small stocks or Chinese stocks or utility stocks do well. Sometimes bonds or real estate perform well. Predicting which will do best in the near

future is extraordinarily difficult. In my opinion, it's so difficult that it is probably not worth trying to do so. Certainly, there is no evidence that just buying whatever did best in the last year, three years, or even five years is going to lead to investment success. But doing the opposite isn't any more successful; you can't just take a contrarian approach and buy whatever did most poorly last year, either. Sometimes stocks have gone down in value for a reason—because the company is en route to bankruptcy. Perhaps if it recovers, you will make out like a bandit by buying low. The company behind the stock often does not rebound; good or bad performance may persist longer than expected.

So what should an investor do if they can't just pick the best performing funds out of their 401(k)? How about creating a reasonable, written investment plan instead? Determine *a priori* how much of the portfolio will be invested into U.S. stocks, international stocks, bonds, real estate, and other investments. Then look "under the hood" at what the available funds

in your 401(k) actually invest in and choose them based on the underlying investments. Among funds that invest in similar investments, the best predictor of future performance is low costs, so choose the one with the lowest expenses. These will usually be index funds.

If you need help doing so, consider hiring a fiduciary, fee-only financial planner who provides good advice at a fair price. While this stuff is not that hard to learn, the consequences of doing it poorly (or not doing it at all) compound over time. It may be well worth paying a few thousand dollars to get started on the right foot. Alternatively, come to the ACEP-sponsored workshop the Saturday prior to ACEP24 in Las Vegas, and I'll help you walk through the process of writing your own financial plan.

Whatever you do, don't just buy the hottest performing stock, mutual fund, or other investment available—that approach does not necessarily lead to long-term investing success. +

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DR. AUGUSTINE is a member of the *ACEP Now* Editorial Board; Clinical Professor of Emergency Medicine at Wright State University in Dayton, Ohio; and Vice President of the Emergency Department Benchmarking Alliance.

Transfer Capabilities Still Pose Major Issues

Over 5 million emergency patients must transfer facilities each year



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by JAMES J. AUGUSTINE, MD, FACEP

Transferring patients from one ED to another hospital is an established part of emergency medicine practice. Patients who need inpatient services do not match the index hospitals' capabilities, or the patient requests such a transfer, or the hospital has no available inpatient space. The rate of transfers was stable for many years, typically around 2 percent.

Transfers have always been an area of concern to hospital administrators and emergency physicians. In 1986, Congress enacted the Emergency Medical Treatment and Labor Act (EMTALA) to ensure public access to emergency services regardless of ability to pay. Section 1867 of the Social Security Act imposes specific obligations on Medicare-participating hospitals that offer emergency services to provide a medical screening examination (MSE) when a request is made for examination or

treatment for an emergency medical condition (EMC), including active labor, regardless of an individual's ability to pay. Participating hospitals are then required to provide stabilizing treatment for patients with EMCs. If a hospital is unable to stabilize a patient within its capability, or if the patient requests, an appropriate transfer should be implemented. This law, along with many court rulings since its enactment, makes all patient transfers an area of review and concern.

Two years ago, an *ACEP Now* article covered the issue of transfer challenges resulting from early pandemic operations. As fresh challenges of the pandemic and hospital operations changed emergency medicine practice, one of the more challenging areas was the movement of admitted patients out of the first emergency department (ED). Many EDs have been unable

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Table 1. Trends in Transfers of ED Patients

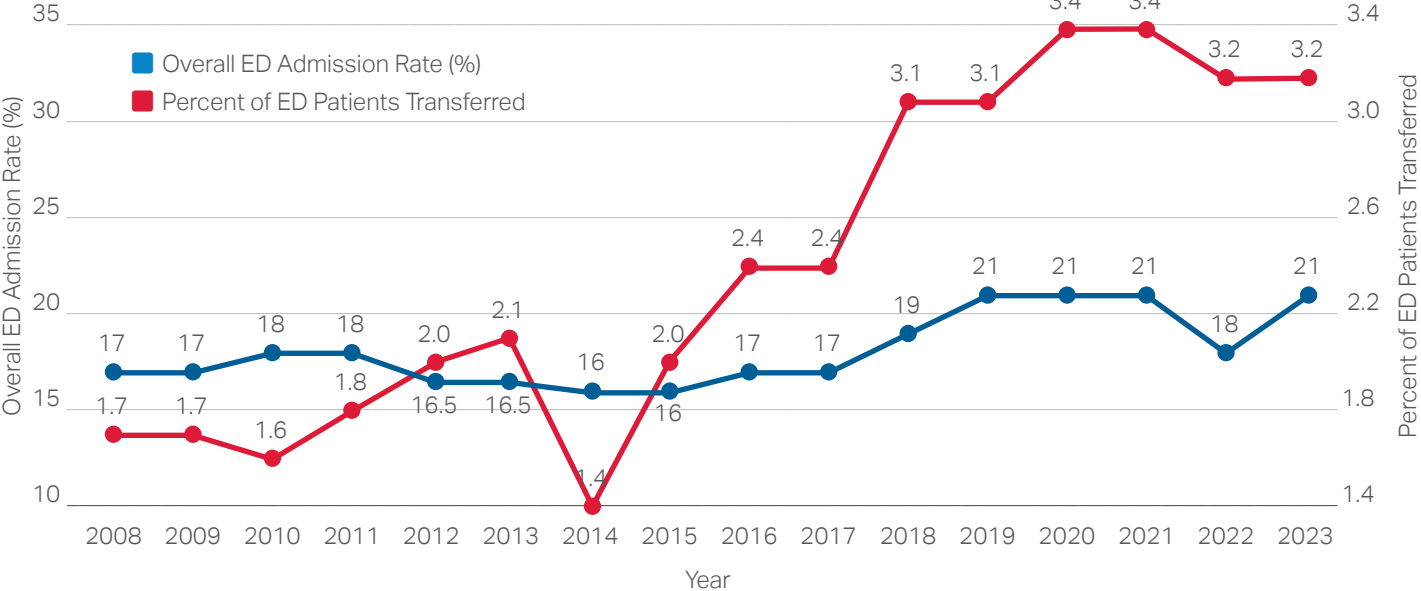
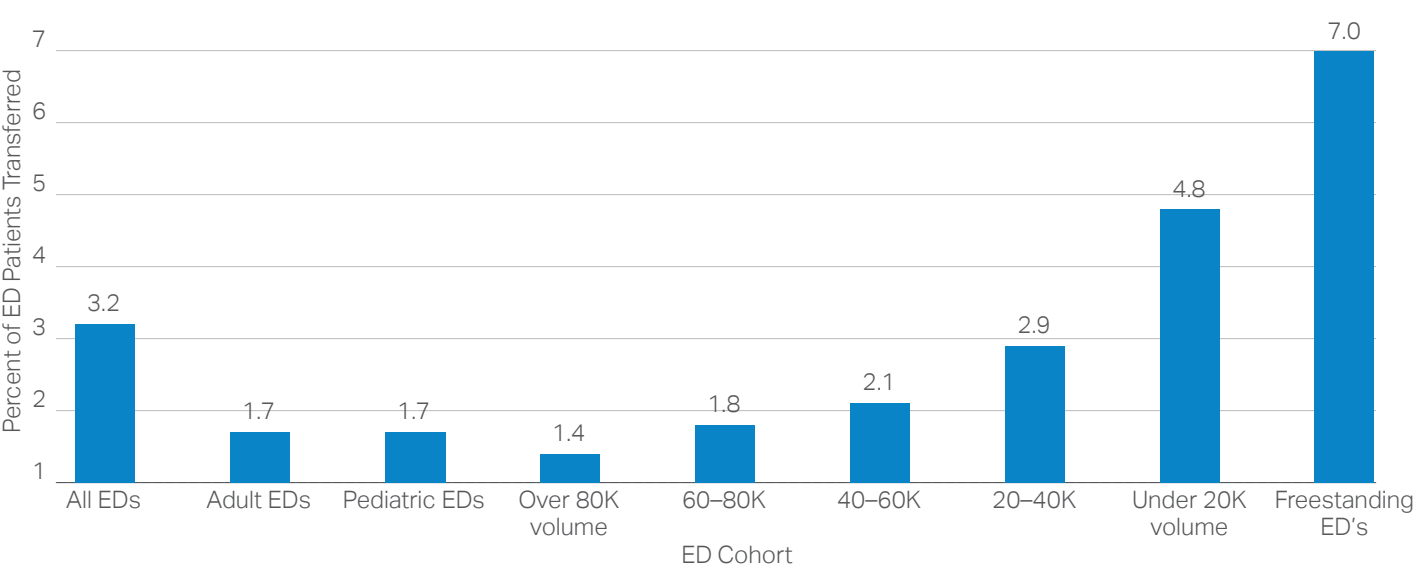


Table 2: ED Patients Transferred, by Cohort of EDs, in 2022



BENCHMARKING

CONTINUED FROM PAGE 21

to move admitted patients into appropriate inpatient beds in any hospital, and the result has been inpatients stacked in hallway beds in the ED.

A recent study from *JAMA Network Open* highlighted the issues of patient transfers, particularly for small rural hospitals.² Their study was limited to 681 hospitals and characterized transfer patterns related to case-load-constrained hospitals. They reported concerns related to overcoming barriers to transferring patients in future surges.

In fact, that study underestimated the ongoing challenges affecting patient transfers in U.S. emergency departments. Transfer rates are up across all types of EDs. In the last couple of years, EDs have transferred 3.2 percent of patients—twice the rate in 2010 (Table 1).

The data additionally show the ongoing transfer rate is higher in small volume EDs (4.7 percent). ED transfer rates vary dramatically by cohorts, increasing by nearly a factor of three for hospital-based EDs with decreasing volume (Table 2).

What Is the Burden of These Patients on EDs and Ambulance Providers?

The ED volumes seen in the U.S. in 2023 will be reported at around 160 million patients. At a 3.2 percent transfer rate, that is about 5.1 million patients being transferred in a year, or almost 14,000 patients a day. That patient



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movement stresses all types of hospitals and requires consideration of EMTALA requirements with each one. These tallies do not include freestanding EDs, which have an estimated transfer rate of about 7 percent.

This only represents ED transfers. Some hospitals also must transfer patients out of inpatient units when patient needs cannot be managed in the original hospital. This results in a significant caseload for ambulance transport services that provide the bulk of patient movement.


Moving Toward Solutions to Flow of Admitted and Transfer Patients

The management of admitted patients for prolonged periods of time is a current prob-

lem for all EDs. The issue of inpatient boarding compromising ED operations has been widely reported.³ The additional lengthy ED stays for transfer patients are equally resource-intensive for emergency physicians and especially emergency nurses. Some hospital systems have developed transfer centers or flow centers, which attempt to coordinate patient movement to the best site of care within the system. But for independent, and particularly smaller and rural hospitals, the process of finding an accepting hospital for patients needing transfer is a huge burden that involves placing one phone call or digital request at a time. Once a patient is accepted somewhere, the facility must then begin the process of finding a transport resource, coor-

ordinating the right time of transfer with the receiving facility, and completing the required documentation.

This points to a need for centers that may specialize in regional patient movement, to include all hospitals and systems. In regions like San Antonio, Texas, this innovation has taken place already and serves needs across a large geographic region and many patient types (<https://www.strac.org/>). The state of Georgia has developed and funded a coordinating center for patient movement and EMS communications on hospital capabilities (<https://georgiarcc.org/>). These coordinating centers have been advantageous when patient surges occurred, such as those experienced during the most stressful days of the COVID-19 pandemic.

Emergency physicians have ongoing leadership opportunities in changing and regionalizing the acute care delivery system. The need to serve ED patients who must be transferred for ongoing care is an important management priority that was recognized widely during the pandemic and will continue into the future. 

References

1. Augustine JJ. Another COVID casualty: The emergency department transfer process. *ACEP Now*. 2022;41(2):15.
2. Sarzynski SH, Mancera AG, Yek C, et al. Trends in patient transfers from overall and caseload-strained US hospitals during the COVID-19 pandemic. *JAMA Netw Open*. 2024;7(2):e2356174. doi:10.1001/jama-networkopen.2023.56174
3. Augustine JJ. A sobering year for EDs and their patients. *ACEP Now*. 2023;42(12):19.

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