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DECEMBER 2023 Volume 42 Number 12

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TACKLING ED CROWDING

A CALL FOR ADMINISTRATIVE ACTION

by MONISHA DILIP, MD; HUIFENG SU; LESLEY
MENG, MPH, PHD; AND ROHIT B. SANGAL, MD, MBA

Emergency departments (EDs) are currently dealing with big problems of overcrowding and boarding. The number of patients keeps growing, putting more pressure on EDs to find innovative solutions. One approach some EDs try is using hallway beds to handle the overflow. But here's the thing—it is unknown how this practice impacts patient outcomes and how well the EDs function.

More people are showing up at the ED seeking help for emergencies, social crises, or even routine care. Patients leave without being seen, and those waiting longer often have even worse medical conditions.¹ And it's not just the patients who suffer—ED staff experience burnout, productivity

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ACEP Chapter Roundup: Highlights and Updates from 2023

As we close out 2023, ACEP's chapters were invited to share news from the past year and a preview what's to come. Chapters have been busy advocating for physician autonomy, hosting educational events, and continuing to support their members on a variety of workplace issues.



Alabama

The Alabama Chapter partnered with other health organizations in its state to launch the "Odds Are" Campaign to address fentanyl overdoses. During the campaign's launch, Alabama Chapter Board Member Bobby Lewis, MD, FACEP, detailed the emergency department perspective and insight into the state's fentanyl crisis. Find more on the "Odds Are" Campaign at <https://vital-alabama.com/get-information/odds-are-alabama/>.

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Gardeners Beware!

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NEWS FROM THE COLLEGE

UPDATES AND ALERTS FROM ACEP

ACEP Blunts Medicare Cuts in 2024 Physician Fee Schedule

CMS recently released the Physician Fee Schedule PFS for calendar year 2024, which includes some wins for you and your patients, thanks to ACEP’s involvement. Other provisions are concerning and ACEP continues to fight for favorable solutions. Our goal is to ensure your work is valued appropriately. Read more at acep.org/2024physicianfeeschedule.

Annals Moves to Digital in January

As part of your membership, you receive *Annals of Emergency Medicine*, which is transitioning to a digital-only publication beginning with the January issue. If you prefer print, you can subscribe separately to print-on-demand for \$75/year at ussocieties@elsevier.com or call 800-654-2452, option 2. If you are not a member, you can subscribe through *Annals* journal website www.annemergmed.com/.

Noms Open for ACEP/EMRA Med Student Awards

Do you work with an amazing 4th-year EM-bound medical student? Do they deserve national recognition? Nominations for the ACEP/EMRA National Outstanding Medical Student Award are now open through Jan. 7 at acep.org/msawards.

Enroll Today to Improve Care: Venous Thromboembolism, Substance Use Disorder and Stroke

Want to improve clinical outcomes, coordinate care, & reduce costs in your ED? E-QUAL, a FREE online, low-burden quality-improvement program is now enrolling for its 2024 initiatives on venous thromboembolism, substance use disorder, and stroke. Learn more and sign up today at acep.org/equal.

Benefit Spotlight: My Financial Coach

Map out your spending and investment accounts, retirement projections, and goal projections in one secure online platform with My Financial Coach. Learn more at myfinancialcoach.com/acep/.

Learn How to Be Your Own Boss at ACEP Indy Class, Feb 6-8

As emergency medicine continues to evolve, more and more of your colleagues continue to disrupt the current landscape and establish their dream practice. If you’re ready to be your own boss, the ACEP/EMBC Independent EM Group Master Class will help make your dream a reality. Find out more and register at acep.org/indyclass.

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FROM THE EDITOR

‘Burnout Champions & The Boarder Crisis’



DR. DARK (@RealCedricDark) is associate professor of emergency medicine at Baylor College of Medicine and the medical editor in chief of *ACEP Now*.

by CEDRIC DARK, MD, MPH, FACEP

Recently several administrators, wealthy donors, and prominent politicians gathered to cut the red velvet ribbon on a freshly renovated emergency department complete with gold plated scissors. Beyond the façade of cherry accents and brushed glass placards embossed with the names of well-connected members of the community was a crew of nurses, techs, nurse practitioners, physician assistants, and emergency physicians who, for the past several years, have toiled away in obscurity, only visible to the patients crowded into repurposed “care spaces” with whom we have daily contact.

Whether it’s due to the great resignation of nurses on the floors or sicker seniors necessitating more hospital admissions, the boarding of inpatients has crushed emergency departments across the country. Still reeling from the pandemic, blood splattering on our floors, we have

been unable to catch our collective breath. Yet, those in the c-suites looking at sterile spreadsheets suggest “the numbers have never been better.” They say we’re seeing more patients and seeing them quicker. Those in government feel we can do our work even cheaper—recently cutting Medicare reimbursement even though, inflation adjusted, Medicare is paying us 26 percent less than a generation ago!¹

And yet we fight on.

We are the most burnt out specialty in back-to-back years, suffering from declining interest in our specialty from medical students. Those of us left in emergency departments hold the line, converting new single-patient rooms adorned with faux wood paneling and glass doors into internal waiting rooms. We conduct interviews in a manner dangerously close to killing the mandate of patient privacy to which we swore an oath and examine patients in reclining chairs (if we’re lucky). All this as we sift through the haystack of patients to find the need-

le whose life dangles dangerously close to the precipice.

This is modern day emergency medicine.

As researchers in this issue note on the cover, hallway medicine is not equal to the medicine we should be practicing. Boarding is getting worse (see page 19), but ACEP (page 4) and others (page 17) are working to solve the problem. Let’s hope the administrators, our government leaders, and the public will heed our siren call from “in the trenches”—as one of the higher ups recently praised my team while touring the emergency department on a *quiet* Monday morning. Upon reflection, it must have been nice to tour our emergency department before the blitz of patients the rest of us knew would soon arrive. +

References

1. Medicare physician payment is NOT keeping up with inflation. American Medical Association. Available at: <https://www.ama-assn.org/system/files/medicare-updates-inflation-chart.pdf>. Accessed Nov. 10, 2023.

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ACEP4U: ACEP Leads National Summit on the Boarding Crisis

by STEVE ARNOFF

Boarding in the emergency department is a systemic crisis with emergency physicians at the center. While the challenges related to boarding have persisted for decades, the dangers today are unprecedented, and solutions are beyond any individual physician or hospital effort.

ACEP said as much to the White House by writing a powerful letter in November 2022 supported by 34 organizations to show how serious the issue has become. To date, there has been no formal response from the Administration.

Absent federal action, the College took the lead to identify and pursue collaborative solutions.

On Sept. 27, ACEP organized and led the first national stakeholder summit on boarding. Medical societies, state and federal government leaders, hospital and nursing home representatives, and patient advocates assembled in the ACEP DC office for a day-long dialogue on the boarding crisis.

“Boarding is a disaster, but there’s no disaster plan for it,” said David Sklar, MD, FACEP the chair of the ACEP Boarding Task Force. “This can be prevented.”

The summit participants examined the multifactorial causes of boarding through the lens of transparency, regulatory challenges, mental health, financial drivers, operational modifications, workforce, and other categories. A detailed summary of the proceedings is available at acep.org/boarding.

Participants began by going around the room, highlighting current efforts that are working and other measures that fall short, with a focus on local, state and national government actions that could mitigate the crisis.

Summit participants agreed that better data collection could inform and improve processes and decision making in many ways.

Centralized and standardized resource tracking, increased state and local access to preparedness data, and better information sharing across systems regarding capacity, staffed bed availability, and other important measures were prominent among suggestions that could greatly improve efficiencies. The critical importance of interoperability and transparency was noted.

The discussion revealed worrisome gaps in federal efforts to address factors that exacerbate the crisis.

“Most of the causes are outside of the emergency department, we just end up being ground zero,” said Laura Wooster, ACEP Senior Vice President, Advocacy and Practice Affairs.

Special focus was paid to workforce issues, an area in which ACEP has been sounding the alarm for months.

Multiple stakeholders emphasized the importance of sharpening the focus, as well as refining the federal and state review of training programs for nurses and long-term care workers. Support was broadly affirmed for practical measures such as increasing nursing program

slots and increasing incentives for workers in rural communities.

With heads nodding in agreement, the stakeholders acknowledged the need for increased investment in public health, more emphasis on evidence-based policy, and a re-alignment of the financial incentives that could better encourage coordination across hospitals and other care settings, from specialty referrals to enhanced mental health care support.

Still, there are concerns that systemic factors degrade the quality of the care that emergency physicians and others know they can deliver.

“This crisis is causing moral injury,” said Christopher Kang, MD, FACEP, Immediate Past President of ACEP. “It hurts me to my core if I can’t do what I’m trained to do, especially in those instances where I might be the only one available to help. We have to do better.”

As recognition of ubiquitous challenges shifted toward the talk of solutions, progress on several fronts was noted.

Multiple initiatives were recognized for their ability to stabilize mental health crises, including EmPATH units and the coordinated crisis response model used by Northwell Health, which involves schools working closely with the hospital to make sure students get the medical attention they need.

At the local level, the participants acknowledged the largely untapped potential for patient advocacy groups to raise awareness and work toward tailored solutions that resonate where they are needed most.

“Boarding is a disease causing widespread dysfunction and we feel it every day. Until we make everyone aware of what’s going on, we are doing a disservice to our patients,” said ACEP President Aisha Terry, MD, MPH, FACEP.

Everyone recognized the detrimental impact of emergency department violence on staffing constraints and burnout, with stakeholders voicing enthusiasm for legislative solutions such as the SAVE Act, which ACEP directly informed and strongly supports.

The Summit is one important piece of ACEP’s comprehensive campaign to address boarding in the emergency department.

Beyond writing to the White House, ACEP gathered more than 140 troubling stories from members on the frontlines and is actively involved in developing federal legislation to close gaps in mental health care, as well as tackle the broader boarding issue more systemically.

There are hopes for another summit in the months ahead as these discussions continue.

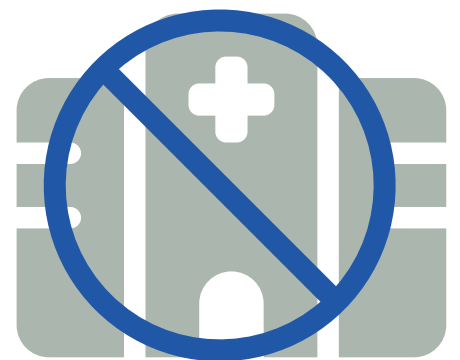
ACEP leadership on difficult issues like this is invigorating emergency physicians across the country. As a result, there are new chances to address longstanding issues head-on with emergency physicians driving meaningful change. +

STEVE ARNOFF is a senior communications manager at ACEP.

THE U.S. BOARDING CRISIS PUTS PATIENT CARE AT RISK



43% would delay or avoid emergency care if they knew they could face a long wait before being admitted or transferred.

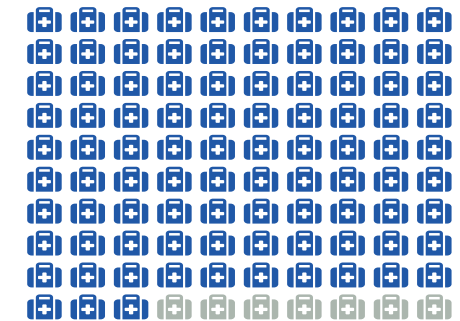


44% have prolonged waits after initially receiving care in the ED.

16% waited 13 or more hours.



93% agree that emergency medical services are essential.



89% believe additional government funding for emergency departments and emergency medical services should be a priority.

Data from an October 2023 poll by ACEP/Morning Consult

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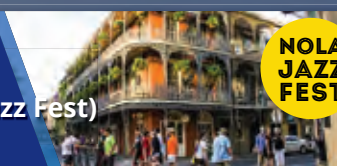
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Alaska

The Alaska Chapter has worked hard to enhance the impact of emergency physicians throughout the state through legislative advocacy in Juneau, including the 80 percent rule and other reimbursement issues. Additionally, the chapter collaborated on clinical guidelines such as frostbite, trauma, and stroke.



Arizona

AzCEP achieved several legislative victories that were enacted into law, benefiting various health care professionals, including rural clinicians and the EMS community. Many of these successes were championed by AzCEP Board Member, State Rep. Amish Shah, MD, FACEP. These laws were collective wins for the hospitals, emergency physicians, and patients.



Arkansas

Arkansas ACEP has been busy at work with outreach activities, including an upcoming visit to the University of Arkansas for Medical Sciences (UAMS) Emergency Medicine Residency program and an Arkansas ACEP event planned for Northwest Arkansas. The chapter also plans CME opportunities in emergency obstetrical care and treatment of opioid use disorder.



California

The State Legislature passed the first Medi-Cal rate increase in 20 years. The initial proposal included increases for primary care and mental health clinicians but did not include emergency physicians, who care for a disproportionate share of this patient population. (One-third of the state's population is insured by Medi-Cal, yet 42 percent of ED visits are made by Medi-Cal patients.) CalACEP staff and member physicians engaged in aggressive lobbying and grassroots efforts on this access, equity, and reimbursement issue—and their advocacy efforts literally paid off. Starting in 2025, \$200 million will be devoted annually to increase emergency physician reimbursement. This would not have happened without the chapter's work, which resulted in emergency physicians being the only physician specialty specifically identified in the legislation!



Colorado

During the 2023 legislative session, physician assistants (PAs) pursued the ability to practice medicine without physician supervision. CO ACEP fought hard to assure that PAs are liable for the care they provide and requiring supervisory agreements for new PAs, PAs changing their specialty and PAs practicing in the ED at Level I and II trauma centers. The chapter continues to work on this scope of practice issue as the rules and regulations for its imple-

mentation are developed. In addition to the change in the PAs scope of practice, CO ACEP worked to enhance extreme risk protection orders while preserving patients' HIPAA right and ensuring emergency physicians carry no liability in such circumstances.



Connecticut

CCEP was actively involved in many pieces of legislation during the 2023 session, including establishing a task force to examine the increase of patient boarding in emergency departments statewide. The task force is charged with providing recommendations to the CT General Assembly during the 2024 and 2025 legislative sessions.



Delaware

During ACEP's Leadership and Advocacy Conference, the Delaware Chapter members had successful meetings with Rep. Lisa Blunt-Rochester's team, Sen. Chris Coons and his team, and Sen. Tom Carper and his team regarding emergency department crowding and boarding, workplace violence in the ED, and the Medicare Physician Fee Schedule. Delaware ACEP sponsored several members to attend a pediatric skills course this year.



District of Columbia

The DCACEP Chapter submitted two resolutions that were passed by the ACEP Council in October 2023: "Declaring Firearm Violence a Public Health Crisis" and "Clarification of and Taking a Position Against Use of Excited Delirium Syndrome." The DCACEP Chapter is also the proud chapter of the new national ACEP President, Aisha T. Terry, MD, MPH, FACEP.



Florida

FCEP's events and annual conference continue to grow exponentially in attendance and member value. During its Emergency Medicine Days event, 25 attendees met with more than 30 state legislators to discuss the chapter's 2023 legislative priorities. The Life After Residency conference provided more than 60 PGY-2 & PGY-3 EM residents the opportunity to meet employers, learn valuable life lessons and spend time together outside of the hospital in a relaxed but educational environment. Symposium by the Sea 2023 featured a balance of scientific presentations, networking/social events, resident competitions, and unique opportunities for attendees to engage with their peers in a family-friendly atmosphere.



Georgia

GCEP completed the second year of applications for its Georgia Diversity Scholarship, designed to help an underrepresented, minority, 4th year medical student participate in an

emergency medicine rotation in the state. GCEP continues to support a successful leadership fellowship program that equips its participants for advocacy at multiple levels. The chapter will have three new leadership fellows in 2024, and many graduates are actively involved in GCEP, ACEP, and the AMA. GCEP hosted three excellent CME conferences. The Rural Emergency & Critical Care Conference continues to draw attendees from many states and is considered the premier course for this topic. The chapter also hosted a Leadership and Advocacy conference, as well as the Coastal Emergency Medicine Conference, which is a tri-state event among Georgia, South Carolina, and North Carolina.



Government Services

In 2023, GSACEP hosted its largest Government Services Symposium in Austin, Texas, welcoming more than 150 participants. The event featured three days of outstanding educational programming, product exhibits, a research showcase, KSA labs, friendly residency program competition in its annual SimWars, and the opportunity for collaboration between active duty and reserve military, VA and other federal agency physicians. GSACEP also selected CPT Katey Osborne, MD as the inaugural COL (Dr.) Dave Barry Leadership Development Fellow, designed to develop and prepare future military and federal EM leaders by combining elements of coaching with skills in organization, education, advocacy, and involvement. At the ACEP23 Council meeting, GSACEP also sponsored two resolutions - Metric Shaming and Compensation for Required Training - which both passed with minor amendments. GSACEP also continued its advocacy efforts to decrease boarding in military and federal hospital facilities, ensuring health care readiness in the military, and providing mental health resources and support for GSACEP physicians, their patients, and members of the U.S. armed forces.



Hawaii

Hawaii ACEP had several legislative successes this year, including:

- Incorporation of Senate Bill 397 into the state budget (originally SB397), which mandates an increase in Medicaid reimbursements to be equal to Medicare reimbursements.
- Passage of SB674, the Interstate Medical Licensure Compact, which creates an expedited pathway for currently licensed physicians to become licensed in multiple states.
- Incorporation of HB661 into the state budget, which provides an addition of \$10 million in fiscal year 2024 and \$20 million in 2025 for the Hawaii State Loan Repayment Program for Healthcare Professionals.



Idaho

With the partnership of the Idaho Academy of Family Physicians, the Idaho Medical Association, and the American College of Obstetricians

and Gynecologists, the Idaho chapter achieved greater clarity on abortion-related language. HB 374 eliminates the affirmative defense standard (guilty until proven innocent), but solely focuses on the life, not the health, of the mother. The bill includes exceptions for ectopic or molar pregnancy, the removal of a deceased unborn child, and the treatment of a woman who is no longer pregnant. For the upcoming year, the chapter plans to collaborate with IMA to designate EMS as an essential service and reform the process for mental health holds, aiming to enable physicians to release the hold, aligning with practices in other states.



Illinois

During the past year, ICEP has made significant strides in advancing the chapter's advocacy priorities:

- The introduction of Illinois Senate Bills 1621 and 1622 marked a pivotal moment in the chapter's fight against violence targeting health care workers in the emergency department.
- The chapter's efforts to combat boarding issues have resulted in constructive dialogues with health care leaders and policy makers.
- In the chapter's campaign against scope creep, chapter leaders successfully established a foundation for future regulatory clarity.



Indiana

The Indiana Chapter advocated for the passage of SEA 400, which states that emergency departments must have an on-site and on-duty physician at all times that is responsible for the emergency department.



Iowa

The Iowa Chapter advocated for tort reform and non-economic damage caps.



Kansas

Kansas ACEP worked in close collaboration with the state's elected officials and helped push for increased funding for behavioral health emergencies, securing \$22.5 million dollars in funding to help create a new Behavioral Health Emergency Department. The chapter is also arranging a large advocacy event in Topeka, where many KSACEP members will meet with legislators to discuss issues currently impacting emergency medicine.



Kentucky

Kentucky ACEP has focused on physician scope of practice. In addition to this work, the chapter added an emergency pediatric section to its Board of Directors to further involve that community. The chapter's annual meeting has

provided a venue for statewide research poster presentations and the “Battle of the Bluegrass” emergency medicine residency competition.



Louisiana

During 2023, the Louisiana Chapter celebrated its members’ achievements in excellence, including Dr. Nicole McCain’s honor as recipient of the ACEP National Emergency Medicine Faculty Teaching Award. Dr. Keith Van Meter was elected by the LA-ACEP Board to serve as its representative on the Governor’s Louisiana Emergency Response Network. Dr. Jamie Kuo was elected by the chapter Board to represent LA-ACEP at the 2023 Louisiana State Medical Society House of Delegates. She was also appointed to serve on the National ACEP State Legislative and Regulatory Committee, where she joins veteran members Dr. Debbie Fletcher and Dr. Luke LeBas.



Maine

This year, the Maine Chapter created a new political action committee (PAC). The chapter PAC will focus on state legislative issues related to emergency medicine and Maine emergency physicians.



Maryland

The Maryland ACEP Chapter Practice Management Committee successfully organized two highly attended virtual events. The first event centered on the current and future state of EMS offloading, and the second event explored potential strategies for the future of the Global Budget Revenue program in emergency medicine. Additionally, prominent chapter leaders regularly participate in the HSCRC ED Flow Committee, advocating for emergency physicians in Maryland.



Massachusetts

MACEP is known as a strong advocate for emergency medicine and was invited by the State Legislature to participate in several State workgroups focused on boarding and crowding, as well as stroke.



Michigan

MCEP hosted another successful Michigan Emergency Medicine Assembly that was well attended and featured a balanced mix of exceptional educational presentations, networking/social events, resident rapid-fire lectures, family fun, and ended with a special reception to honor the chapter’s past presidents and 2023 award recipients. MCEP’s continued advocacy efforts include:

- Celebrated having the largest chapter contingency at ACEP’s Leadership and Advocacy Conference.
- Applauded the House passing the chapter’s Violence in the ED bills. Members of MCEP’s leadership testified at the House Criminal Justice Committee hearing on the legislation.
- Started conversations about pursuing an

MORE CHAPTER RESOURCES ONLINE

In addition to each chapter’s 2023 accomplishments and highlights, the chapters also provided their 2024 legislative priorities. Many states are dealing with similar issues, including:

- scope of practice
- physician reimbursement
- boarding
- violence in the ED

ACEP’s state advocacy team has also compiled toolkits based on model legislation, including the latest related to physician staffing in emergency departments.

Based on Indiana’s law requiring a physician be on-site, on-duty, and responsible for the emergency department, the new toolkit offers key considerations when crafting and lobbying for a bill or regulation related to physician-led, team-based care.

Find this [toolkit](#) and more at www.acep.org/stateadvocacy.

increase in Medicaid reimbursement with the state’s Medical Services Administration, which is part of the DHHS.

- Continuing to support ACEP’s efforts working with the FTC on consolidation’s effects on the emergency physician.



Minnesota

The Minnesota Chapter is committed to advocating for emergency physicians at the Capitol each year—fighting not just for the professionals in this specialty, but also for patients. This year, the chapter started significant initiatives to enhance its presence and reach, including the development of a new logo and website. These changes reflect the chapter’s commitment to adapt and grow in response to the evolving needs of the members and the communities they serve. Also, the chapter will host the MN Emergency Medicine Summit for the first time post-pandemic.



Mississippi

The Mississippi Chapter of ACEP has been able to strengthen its engagement with its lobbyist, establishing frontline access to EM-relevant legislation. Each week during Mississippi’s legislative session the chapter’s Board of Directors receives an itemization of relative initiatives, as well as a comprehensive summary, and timelines for tracking of initiatives from the lobbyist. The chapter Board gets informed early to monitor and identify potential threats, as well as opportunities for growth, to best serve emergency medicine in the state.



Missouri

MOCEP had a productive legislative year where the chapter battled and protected the scope of practice. Chapter leaders recognize that this will be an ongoing effort for many years to come, and are committed to continuing the fight. The chapter reported an excellent turnout at the Missouri Emergency Medicine Summit, its Advocacy Day, and the Missouri Reception at ACEP23. The chapter’s EPIC newsletter was revamped this year to provide more content that the members want to read. For more about the chapter’s 2022-23 work, their annual report is on MOCEP.org.



Montana

Montana ACEP held a successful Spring Symposium in Bozeman, showcasing local EM experts in a sunny outdoor setting beneath the Bridger Mountain range. Chapter members advocated at the State Capitol for the prioritization of physician-led teams, worked with state leaders to expand mental health services and eliminate ED mental health boarding, and embarked on an advocacy campaign opposing legislation of medical practice standards.



Nevada

NV ACEP is committed to advocating for emergency physicians at the state capital during the biennial Legislative Sessions. In 2023, without a budget for a lobbyist, the chapter successfully interfaced with other organizations to yield reasonable outcomes on two issues: med-mal reform and PA practice independence. As a small state chapter with limited resources and availability, it has been challenging to have the chapter’s interests represented in Carson City when it counts most. The chapter has avoided some onerous bills over the years, which have been significant threats to both patients and physicians’ livelihood, but the challenges are not over. The chapter’s goal for 2024 is to increase membership and re-engage the current members to leave a mark at the next Legislative session. The ACEP24 Scientific Assembly will come to Las Vegas, Nevada, Sept. 29 - Oct. 2 next year.



New Hampshire

Signed by Gov. Christopher Sununu, SB 58 allows law enforcement to arrest people engaged in threatened or actual violence, while in the care of a medical professional on the premises of a residential care or health care facility. A physician member of NHACEP testified and helped get this important legislation passed.



New Jersey

New Jersey ACEP advocates for emergency physicians by actively engaging with legislators on critical legislative priorities, addressing matters related to scope of practice and other issues affecting members and their patients. Additionally, chapter leaders regularly visit medical schools and residency programs



New Mexico

The chapter’s commitment to the future of emergency medicine continues to grow with the establishment of the New Mexico Medical Student Council. The chapter’s recently formed Recruitment and Retention Committee is dedicated to amplifying member engagement in legislative and advocacy activities. NM ACEP was represented at the ACEP Leadership and Advocacy Conference by six members who met with House and Senate officials’ staff on Capitol Hill to advocate on issues related to ED boarding, workplace violence in the ED, and Medicare reimbursement for ED care. The NM ACEP Political Action Committee welcomed new Board members and is set to undergo revitalization.



New York

New York ACEP Chapter advocacy efforts included defeating independent practice for physician assistants, supporting and passing authorization for the Community-Based Paramedicine Demonstration program, as well supporting non-patient specific orders a registered professional nurse may perform. New York ACEP continues to work on advancing legislation to address violence in the emergency department, as well as practitioner identification and advertising.



North Carolina

After many years of work, Medicaid expansion is set to begin in North Carolina on December 1, 2023. The chapter also was able to get substantial legislation approved in the General Assembly to combat violence in the ED by requiring each hospital to have a law enforcement officer on site or conduct a security assessment. The new law also requires that data be collected each year on the number of assaults, any charges made and convictions for those charges. NCCEP member Dr. Seth Bleier was invited to speak to Congress about the implementation of the No Surprises Act and NCCEP is actively working on related issues. The chapter is also proud that NCCEP Past President Dr. Abhi Mehrotra was elected to the ACEP Board of Directors during ACEP Council 2023!



North Dakota

Members’ voices are essential to identifying and solving the problems that emergency physicians face throughout the state and country.



Ohio

Ohio ACEP members met with 36 legislators on Advocacy Day to discuss strengthening the prudent layperson law, violence in the ED and ED boarding. The chapter hosted both the Midwest Medical Student Symposium

CONTINUED on page 8

and Residents' Assembly, attended by more than 360 individuals. Multiple Ultrasound, LLSA Review and Simulation Based Neonatal & Maternal Skills Courses were also offered, and Dr. Amal Mattu oversaw updates to the Carol Rivers' Emergency Medicine textbook for a 2024 release of the 11th Edition.

Oklahoma

The Oklahoma College of Emergency Physicians has a new website coming in early 2024, with a revision in look and user-friendly content, featuring member spotlights and advocacy updates. OCEP reports a successful 2023 legislative session in which OCEP members communicated directly with Gov. Kevin Stitt to effectively advocate against nursing practitioner independent practice. OCEP leadership continues to prioritize a voting resident member on its chapter Board of Directors and a full Councillor spot dedicated to a resident member, highlighting OCEP leadership development of our next generation of Oklahoma emergency physicians. OCEP is proud to support its members Dr. Bo Burns as President-Elect of CORD, Dr. Derek Martinez as Director of Leadership on the EMRA Board of Directors, and Dr. Jeffrey M. Goodloe as Chair of the ACEP Board of Directors.

Oregon

The Oregon Chapter's biggest accomplishment in 2023 was developing, advocating for, and shepherding through the State Legislature a bill to greatly expand Narcan availability throughout the state.

Pennsylvania

In May of 2023, PACEP hosted our largest PACEP23 Scientific Assembly at Kalahari Resorts & Convention Center with a record attendance of 282! Great educational sessions, PACEP Olympics, and Spivey, CPC, and the Keystone Case Competition were just a few of the highlights.

Puerto Rico

Through grassroots efforts and national ACEP's support, ACEP PR was able to derail Senate Bill 1134 that proposed an alternate pathway to emergency medicine specialty certification.

Rhode Island

The chapter's executive board actively worked on the boarding crisis in our emergency departments with the Governor's office and authored an op-ed featured on the front page of *The Boston Globe*. The chapter is nearing success working with the Executive Office of Health and Human Services to raise the rates of Medicaid reimbursements for critical care

billing. Additionally, chapter members successfully advocated for emergency medical dispatch statewide, which will increase bystander CPR rates and subsequent improved outcomes from out-of-hospital cardiac arrest. The chapter also actively engaged in several initiatives to address climate change's impact on human health. Chapter members testified before the U. S. Senate Finance Committee, hosted an Earth Day event, secured funding for a 2024 climate change and health symposium, contributed to environmentally friendly design planning for Alpert Medical School's new life sciences research building, and aided in the development of a Planetary Health curriculum for Alpert Medical School.

South Carolina

The South Carolina Chapter is experiencing sustained growth and success, including a flourishing Leadership Fellows program and dynamic Legislative Day. The chapter maintains involvement in the Coastal Emergency Medicine Conference. On the legislative front, SCCEP successfully advocated against allowing APRNs and PAs to establish independent practice. Additionally, the chapter supported legislation aimed at helping emergency physicians and obstetricians find career pathways in rural areas, while also paving the way for potential freestanding emergency centers to bolster the strength of the state's safety net.

South Dakota

With the assistance of local resources and national ACEP, the South Dakota Chapter was successfully able to defeat SD SB 175, which would have allowed for a path to independent PA practice, as well as SD SB 87, which would have allowed for optometrists to perform eye and laser surgeries. Going forward, scope of practice legislation will continue to be SD ACEP's top priority.

Tennessee

TCEP hosted a successful 2023 educational symposium featuring presentations on various topics and issues impacting emergency medicine in Tennessee. The chapter is committed to the future of emergency medicine as continues to mentor and provide support for residents attending ACEP's Leadership and Advocacy Conference. All Tennessee ACEP Chapter Councillors demonstrated their personal commitment to the political future and research initiatives of the specialty by supporting NEMPAC and EMF.

Texas

Texas is a great state for both practicing and receiving medical care because of its amazing tort law that was passed in 2003. Being involved with TCEP helps ensure that the chapter continues to protect this tort law every legislative session.

Utah

UCEP hosted its annual Emergency Physician Summit in Salt Lake City, headlined by Dr. Scott Weingart of EM:RAP and EMCrit, and Dr. Christopher Kang, then-ACEP President, among other esteemed speakers. The event brought top-notch education and EM insights, along with free CME, to Utah's emergency physicians. UCEP also sent five delegates to ACEP's Leadership and Advocacy Conference to lobby the Utah legislators on Capitol Hill for decreased ED boarding, increased opiate use disorder resources, and maintaining current Medicare and Medicaid rates. UCEP's jail clearance task force met with state law enforcement administrators and establish an improved process that eliminates the detailed forms emergency physicians were required to complete that made them liable for "clearing" a patient for jail and now allows emergency physicians to perform an MSE to determine if an arrested person has an emergency medical condition, just as with any patient.

Vermont

Multiple chapter members have been involved in active advocacy to pass VT S36 which relates to crimes against health care workers at hospitals and against emergency medical treatment professionals. This allows law enforcement to remove individuals who assault or engage in violent, tumultuous, or threatening behavior directed at emergency physicians with a warrantless arrest. Additionally, in October, the ACEP Council passed Resolution 27, "Addressing Interhospital Transfer Challenges for Rural EDs," which was co-sponsored by Vermont ACEP.

Virginia

In 2023, the Virginia Chapter,

- Ended a state budget policy known as the "downcoding" provision that reduced 790 of the most common ED diagnoses to a Level 1 reimbursement of \$15, costing Virginia ED groups millions annually. After years of VACEP advocacy, a federal judge ruled in favor of emergency physicians, saying the policy is not in accordance with federal law and the prudent layperson standard. ED groups are in the process of being reimbursed for downcoded visits.
- Passed legislation requiring off-duty police or security officers trained in de-escalation and restraint in every ED 24/7. The bill passed with bipartisan support and was the first of its kind in the nation.
- Prevented NPs from gaining the ability to practice independently with only two years of training.
- Passed a bill allowing paramedics to administer medications in an ED within their scope of training.
- Improved the process for emergency physicians to gain temporary medical detention orders.

Washington

The chapter's biggest accomplishment was holding a re-envisioned and revitalized Annual Meeting at Suncadia Resort. This new, family-friendly location proved to be a hit with attendees and was accompanied by increased registration and exciting speakers on topics ranging from reproductive care in the ED to rural health. Additionally, in the chapter's efforts to reengage membership, a new Membership Committee was established with the goal to make sure the chapter is meeting the needs of its members and demonstrating value. As part of the chapter's outreach campaign, chapter leaders are working to directly engage EDs across the state. Legislatively, the chapter said goodbye to its lobbyist of many years and embarked on a new lobbying relationship with the Washington State Medical Society, an arrangement that will help facilitate the chapter's access to legislators and increase its leverage on key issues. Through the generosity of its membership, WA ACEP supported two senior medical students going into EM to attend the ACEP Leadership and Advocacy Conference.

West Virginia

The chapter's Emergency Medicine Summit took place on September 7, 2023, at Stonewall Resort and approximately 25 percent of WVACEP's membership attended. WVACEP has had watchful eye on the state capital. The continuing concern of the state's opioid epidemic is emerging from the shadows of COVID, along with other issues such as EMS coverage, payment and tort reform, sexual assault, child abuse, helmet use, and ATV use. More recently, topics such as issues of vaccine mandates and scope of practice are pushing to the forefront. WVACEP is at the table and actively involved in these important matters on behalf of its members.

Wisconsin

The Wisconsin Chapter continued to prioritize increasing the Medicaid reimbursement rates associated with emergency codes. Largely because of grassroots efforts by WI-ACEP members, another increase was approved to help bring Wisconsin more in line with other states. WI-ACEP continues to collaborate with state residency programs to present the Annual Wisconsin Emergency Medicine Research Forum. The chapter is focused on overall member engagement and increasing its support to those in more rural areas of the state.

Wyoming

The Wyoming Chapter is using 2024 to begin re-engaging the WY ACEP chapter members and identifying the most pressing topics and membership needs within the state. +

Providing HIV and Hepatitis C Testing, Counseling to Underserved Communities

Yvette Calderon, MD, FACEP, understood health disparities from an early age. Born to Puerto Rican parents who raised her in New York, she saw firsthand how language barriers and a lack of access to health care disadvantaged her family and others in her unprivileged Manhattan neighborhood. That's when her desire to help people was born, and that desire still motivates her.

Today Dr. Calderon is known for her research into HIV and Hepatitis C prevention,

THE EQUALIZERS

**YVETTE
CALDERON
MD, FACEP**

Celebrating equity
champions in
emergency care

but she didn't start off on an academic track. She was 10 years into being an attending physician when she realized that to make an impact on the problems she was

seeing in her ED, she would need a better understanding of how to do research.

"I also knew that in order to solve some of these problems, it would need some assistance in terms of finances," Dr. Calderon explained. "I would only get that if I had a skillset that the grants people would see and say, 'Oh, okay, so she knows what she's doing,' and would take a chance on me." She got a fellowship with the Hispanic Center of Excellence at Albert Einstein College of Medicine that kickstarted her long, successful research career.

In the early 90s, Dr. Calderon was working in the Bronx and was seeing a lot of end-stage HIV in the ED. She wanted to reach patients earlier in the course of their disease so she could make a bigger difference.

At the time, those who wanted to get tested for HIV had to go to receive an hour of counseling and then wait a week for their results. As the science was progressing into point-of-care testing, Dr. Calderon and her colleagues started testing different options for providing HIV counseling in the ED. Wanting to be unintrusive to the flow of the ED, they developed educational and counseling videos and translated them into the common languages of their ED patients. Videos explained why to get tested, how to talk to your partner about testing, contraceptive options and more, and they could be watched while waiting the 20 minutes to receive test results.

"It was actually better to do video counseling," Dr. Calderon explained. "Patients understood it better, and it could be done in different languages, and they were getting consistent messaging."

Her work was funded by the Department of Health for the first 7-8 years of the program, allowing them to expand their screenings to different access points in the community—the local pharmacy, dental clinics, etc. Not everyone was on board with her project because they thought it was outside the scope of the emergency care team. But Dr. Calderon's problem-solving instincts were too strong to ignore, and she felt strongly that her community would really benefit from proactive screenings.

"My position was always, it depends on where you are. If you have a high prevalence of a disease that you are taking care of in your ED, it's absolutely a missed opportunity if we



Yvette Calderon

don't offer some of these things that can actually help our patients either avoid and prevent disease or, at the very least, catch them early on so you can treat them," she said. "That's what's happened with HIV. The face of HIV has changed totally because it's now looked at as a chronic disease, people want to find it earlier. They want to treat it so that they can have as normal life as they can."

When she took a new job as the chair and professor of emergency medicine at Mount Sinai Beth Israel, she brought this model of intervention with her. Her new community has a higher prevalence of Hepatitis C than HIV, so they began screening for that in the ED as well. Today, their patients can be screened for HIV, Hepatitis C and substance use disorder.

Dr. Calderon's outreach program uses a health educator model, bringing in those who are interested in public health or medical school and are passionate about finding patients who need help and linking them to care. Though the health educators often stay only two or three years, Dr. Calderon thinks that turnover rate is ideal because they can operate with full emotional commitment to the program and then move on to new roles in public health. It also allows her to get more underrepresented individuals involved in the program.

"It was a pipeline program to diversify med-

icine," Dr. Calderon said. "And we need that in the most desperate way." She's passionate about helping the next generation because without the encouragement of her mentors, Dr. Calderon never would have gone into medicine. Over the 20 years she's worked on this project, most of her mentees have kept in touch and stayed in the public health sector.

Her impact on her local community and the broader medical community has not gone unnoticed. In 2022, Dr. Calderon received one of the highest honors in health care when she was elected to the National Academy of Medicine. What fuels her to keep going?

"I don't like injustice," Dr. Calderon explained. "If there are health outcomes that are not the same, and one group is benefiting more than another, one has to find that and then correct it. That's our obligation."

"And I really believe emergency medicine signifies the social justice part of medicine because we see everything," she emphasized. "We see humanity as its rawness come through the doors, and there are days that are harder than others, but we're committed to taking care of those patients. We also need to be committed to making sure that our outcomes are equitable and that we're doing as much as we can to eliminate any inequities."

Looking back on her career to this point, Dr. Calderon says moving into research became a

way to impact a whole community, instead of helping individual patients.

So, what's next for Dr. Calderon's research? She wants to expand her mission even further. Her goal is to figure out how to identify high-risk young people in prevalent HIV areas—those who don't go to the doctor very often—so they can be linked to health care. Dr. Calderon's Beth Israel team also wants to expand their outreach beyond HIV and Hepatitis C into a literal pain point for health equity—pain management.

It can be overwhelming work, she agrees, but she prefers to take a methodical approach to health equity problems, similar to the "organized chaos" she's used to from the emergency department. Dr. Calderon encourages others to get involved in health equity efforts because "Every little bit that someone does adds to the correction of some of the things that are not right in medicine," she said.

Her inner drive to help others, first sparked when she was a child living in the Manhattan projects, still burns bright today. Dr. Calderon focuses on the next step forward, one inch of progress at a time. One day, she'll look back at how far she's come.

"Ultimately, I want to be able to say that medicine is a little bit better off because people like me and my colleagues have invested ourselves in doing this work." +

Maryland's 2023 Alternative Payment Model for Emergency Physicians

EMERGENCY MEDICINE INCHES TOWARD VALUE-BASED CARE

by ANDREW LEUBITZ, DO, MBA; AND
JESSE M. PINES, MD, MBA, MSCE,
FACEP

In January 2023, the state of Maryland launched the first-ever government-based emergency medicine alternative payment model. An alternative payment model is a different way of paying for physician services from the usual model: see a patient, send a bill, and get paid, also known as fee-for-service. In the program, Medicare patients who visit a participating emergency department (ED) with specific diagnoses will have their 14-day total cost of care measured across all settings by the state regulatory agency, also known as the Health Services Cost Review Commission (HSCRC). The ED diagnoses chosen for the program include conditions like chest pain, syncope, pneumonia, and others where there are differences between physicians in which patients get admitted, i.e., admissions that seem at times subjective.¹ In total, the program includes 535 ED diagnoses. Broad categories of diagnoses in the 2023 model are listed on the related chart. If Medicare patients have any of those diagnosis when they enter a participating ED, they are included in the cost calculations.² More than 600 emergency department (ED) clinicians in the state are participating in the program.

Here's How It Works

Average 14-day Medicare costs of care by diagnoses are measured at the hospital-level and calculated by the HSCRC. This includes the ED visit, hospital admission (should it occur), and any post-acute costs. These costs are compared to 2019 costs, adjusted for inflation, which is also calculated by the HSCRC. If costs are reduced more than 3 percent relative to the baseline, participating physician groups will receive a proportion of the savings. As an example, let's say 14-day costs for chest pain – one of the included diagnoses—for a physician group were \$3,000 on average in 2019. In 2023, that number falls to \$2,500 based on ED protocols to increase outpatient management and safely avoid hospital admission. The physician group gets a certain proportion of the \$500 savings for each chest pain patient—either 20, 50 percent, or 80 percent. That proportion is determined by the state regulatory agency based on how efficient the group was in 2019, compared to other groups in the state. So, let's say the group sees 500 chest pain patients in 2023, saves \$500 on each, gets 50 percent of the savings back. That means the group gets a payment of \$125,000 from the state. Importantly, there are no penalties if costs rise in this model; that is, if the cost goes from \$3,000 in 2019 to \$3,500 in 2023.

Nevertheless, the primary way groups will be successful under this model is through implementing evidence-based protocols surrounding hospital admission because that is the primary vector for 14-day total cost of care after an ED visit. Examples include using the HEART score for chest pain admissions or atrial fibrillation discharge pathways.³ Groups also should identify high admitting emergency phy-



sicians in their practices who can be coached on using evidence-based decision rules.

Ground Zero for Payment Models

Maryland is ground zero for payment reform because it has dedicated local mechanisms in place to administer programs through the HSCRC. Since the 1970s, a Centers for Medicare and Medicaid Services (CMS) waiver has allowed all hospital payments in Maryland to be regulated by the state's HSCRC. This allows HSCRC to be nimble and experiment with new payment models proposed by local stakeholders. In the case of this program, it was designed by ED physicians in a partnership between state clinical leaders through the Maryland ACEP, HSCRC, MedChi (the Maryland physician society), and the Maryland Hospital Association. Additionally, the program is classified as an advanced alternative payment model (AAPM). Thus, participating physicians will also receive a 3.5 percent bonus on all Medicare claims, on top of any shared savings. Participating physicians are also not required to submit data to the Merit-based Incentive Payment System (MIPS) program through CMS, nor be subject to its rewards or penalties.

While the Maryland program is a step in the right direction for ED value-based care, it will likely serve as a temporary program, lasting only a few years. This is because all shared savings programs, like accountable care organizations (ACOs) and others, tend to have a limited shelf life. The basis of shared savings models is reducing costs of care compared to a prior baseline. This cannot occur indefinitely. Ultimately, the only durable long-term alternative payment model is global budgets for emergency physicians, similar to capitation for primary care physicians. Emergency physician global budgets would be designed to align physician payments directly with population health goals. Maryland would be a great place to test ED physician global budgets because hospitals already receive all-payer

global budgets for both inpatient and outpatient services through the state's Global Budget Revenue (GBR) program through HSCRC. Hospital GBR has been by far the most successful alternative payment in reducing costs.⁴ Additionally because hospitals are already on GBR, they are already aligned with population health goals.

Here's how it would work. Imagine an ED has a fixed amount of money to hire emergency physicians to manage care for a population. Under this model, it is unlikely that we would choose to only sit in crowded EDs and deliver care only when available treatment spaces opened. We would move beyond the ED, where our patients could benefit from our skills in helping them decide where to seek care and ensuring continuity after their ED visit. Other elements of an ED physician global budget that would facilitate the move to population health would include additional payments for emergency telehealth to help guide patients to the ideal site of care, follow-up telehealth – or other digital connections—to ensure patients have recovered after their ED visit, and resources for programs that focus on ED frequent users. Other elements could include mandating specific staffing levels to allow for reserve capacity and working to align metrics with hospitals around ED flow, including addressing boarding.

Kaiser Permanente (KP), an integrated delivery system, works through capitation. It has focused efforts on population health through alignment of incentives across their health plan, hospital foundation, and medical group.⁴ Population-level ED utilization is about one-third lower than the rest of California in adults less younger than 65. For older adults, ED use is similar, but admission rates are one-third lower. KP has a demand management strategy, actively optimizing efficient use of health care resources through their on-call advice line, and access to same or next day outpatient appointments. A central feature is chronic disease management, focusing on treatment in the ED and

Diagnoses That Trigger ED Episodes in Maryland's 2023 Alternative Payment Model

Abdominal pain
COPD/Asthma
Atrial fibrillation
Chest pain
Deep vein thrombosis
Dehydration/electrolyte derangements
Diverticulitis
Fever / fatigue / weakness
Hyperglycemia
Hypertension
Nephrolithiasis
Pneumonia
Shortness of breath
Skin and soft tissue infection
Syncope
Urinary tract infection

coordination with outpatient specialists rather than hospital admission. While the KP model is not perfect, it aligns the incentives of acute care with providing the best value for a fixed budget.

Ultimately, how will value-based programs affect the day-to-day role of emergency physicians? That answer depends on whether these models take hold broadly, which is currently unknown, or how emergency medicine is integrated into other value-based care models that focus on primary care, hospitals, and specialists. But what is increasingly certain is that the role of the emergency physician in the health care continuum may change dramatically as these payment models evolve. +

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Suicide Attempt in the Terminally Ill Cancer Patient with Advance Directive

Do you intervene, or allow him to comfortably pass?

by JOHN DETHERAGE III, MD; AND JOHN O'NEILL, MD

A middle-aged male with squamous cell carcinoma and extensive metastases is brought to the emergency department (ED) after being found unresponsive following a believed suicide attempt (SA) by methadone ingestion. He had a recent month-long hospital stay complicated by severe cancer-related pain. Though paramedics administered naloxone, he remained somnolent. Paramedics hand you a Physician Orders for Life-Sustaining Treatment (POLST) form. The nurse asks, "You don't want us to put him through anymore, right? His POLST says comfort measure only (CMO) and we should respect his wishes."

You find yourself in a situation which is ethically, emotionally, and legally challenging for all physicians.¹ Do you intervene, or allow him to comfortably pass? You want to respect patient autonomy, but is it legal to let him die without any emergency resuscitation? The answer is no, you cannot allow this patient to die by withholding resuscitative efforts.

Suicide is not considered a rational choice, and therefore the POLST holds no legal authority in this situation, as his POLST was created in regards to his terminal illness, not his SA.² An emergency physician (EP) is in no position to determine if a POLST was made in sound mind. In regard to treating SA patients, EPs should focus on building rapport, completing a comprehensive history and physical exam, performing laboratory testing if clinically indicated, and placing patients under observation if at continued risk for self-harm.³

You order toxicology labs, an EKG, and a sitter to observe. The initial QTc is normal, but on repeat becomes prolonged. CMP reveals hypokalemia. You order IV potassium and magnesium. The patient's respiratory rate decreases and he becomes more somnolent. You ultimately begin a slow naloxone infusion and admit him to the medical ICU. You question yourself for ordering IV potassium and starting a naloxone infusion, knowing you are causing discomfort for the patient who has known significant cancer-related pain. However, EPs are legally and morally obligated to resuscitate all patients after SA.

The goal in this situation was to resuscitate the patient to a level of alert awareness where inpatient physicians can continue goal-oriented care. Patients after SA who require intubation, continuous life support, or are permanently obtunded, pose a different challenge for physicians. In these situations, the hospital ethics committee must determine if

the POLST was made in a rational manner to guide next steps. Some authors suggest it is reasonable to let patients die from SA if they have clearly expressed they would not want extensive resuscitation, have terminal illness, and would have a worse quality of life after the SA (such as a new permanent disability).⁵ This cannot feasibly be performed in the ED as it requires a significant amount of time and a multi-disciplinary assessment.

Fortunately, this patient became responsive enough for reevaluation by psychiatry and palliative medicine, and retained CMO status. DNR/DNI status should not necessarily be rescinded after SA, especially in patients with comorbid terminal conditions. Although the majority of SA patients do not have decision making capacity (DMC), a minority are still capable of decision making. The physician's determination of DMC must be made from evaluation of the patient's persistent wishes throughout time, discussion with family and friends, and if terminal illness is present.⁶ This patient was discharged three days later and died within two weeks.

In summary, EPs must resuscitate all patients presenting to the ED for SA, including those with terminal illness and advance directive forms for CMO. After resuscitation, the patient should be evaluated by a multi-disciplinary team in the hospital to re-affirm the patient's code status and medical treatment goals. +



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TOXICOLOGY Q&A



PHOTO: JASON HACK (GLEADER PHOTOGRAPHY)

Gardeners Beware!

by JASON B. HACK, MD, FACEP

QUESTION: Which plant's sap causes severe contact dermatitis and must be washed off skin immediately after contact?

CONTINUED on page 22

Pancreatitis Mimicking STEMI

Only a handful of cases have reported ST-elevations

FIGURE 1: Initial EKG were notable for a leukocytosis of 23.19 k/uL, lipase of 87 U/L and an initial negative troponin of 3 ng/L HEART score of 1. The patient denied any chest pain or shortness of breath. A repeat EKG completed shortly after epigastric pain was controlled showed dynamic STE in aVL, V1 and aVR with diffuse ST depressions (see Figure 2).

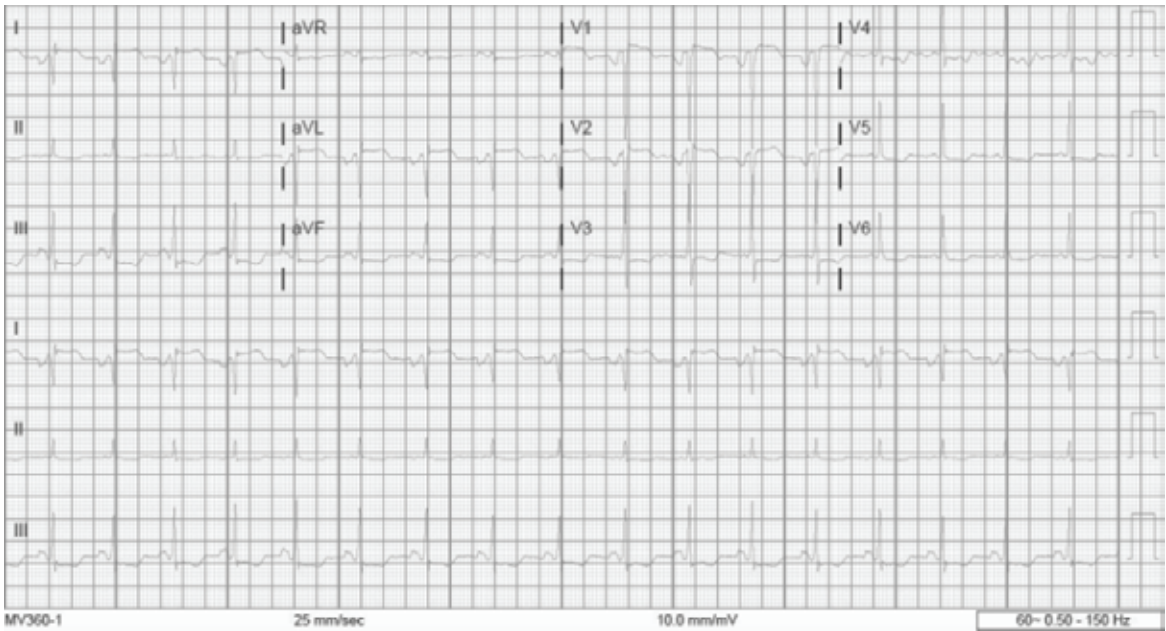


FIGURE 2: Given concern for myocardial ischemia, cardiology was consulted and the patient was placed on ticagrelor and aspirin with transport arranged for emergent cardiac catheterization. Near complete pain control was achieved with a combination of nitroglycerin and morphine. During the delay to transport, a CT angiogram of the chest, abdomen and pelvis was completed and notable for peripancreatic acute on chronic inflammatory changes (see Figure 3). No evidence of pulmonary embolism, aneurysm or dissection was found.

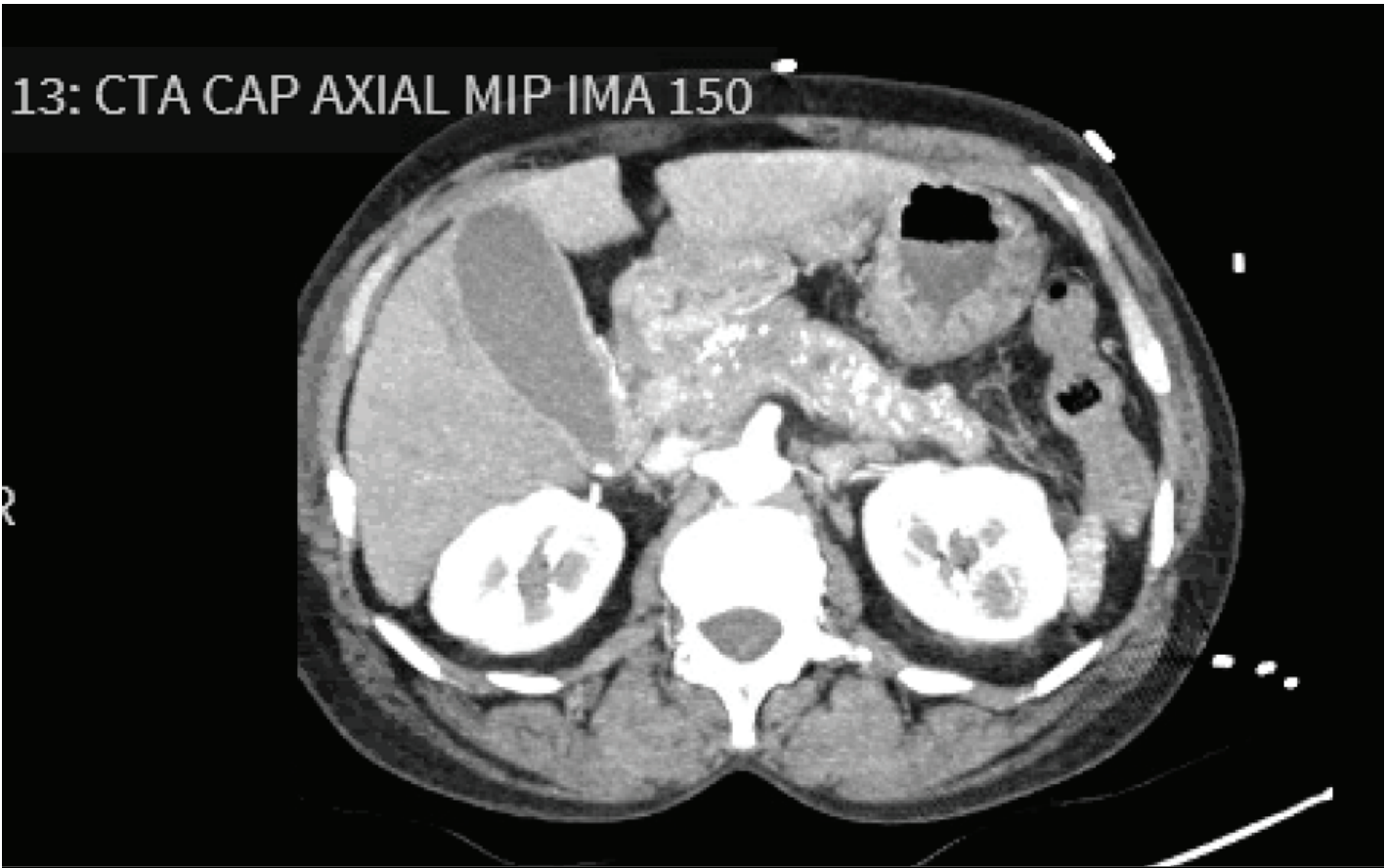
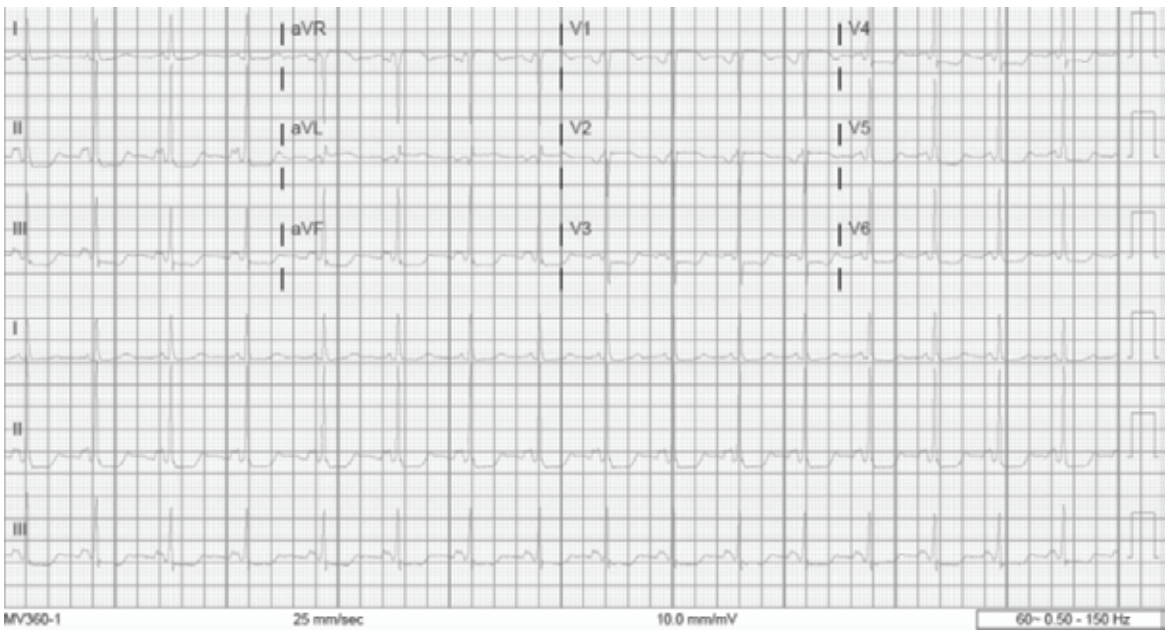


FIGURE 3: The patient was taken for left heart catheterization given the dynamic ECG changes in the setting of epigastric pain. Findings were without obstructive lesions and notable only for 20-30 percent stenosis of the left anterior descending artery. An echocardiogram soon after demonstrated a normal left ventricular systolic function with minimal pericardial effusion and no major valvular abnormalities.

by BRYAN KNOEDLER, MD; ALEX KOO, MD, FACEP; MAX HOCKSTEIN, MD, FACEP

Many conditions outside of acute coronary syndrome (ACS) mimic ST-elevation myocardial infarction (STEMI), but only a handful of cases have reported ST-elevations (STE) in the setting of pancreatic inflammation where underlying ACS was excluded.^{1,2} While acute pancreatitis can involve electrocardiographic changes in up to 50 percent of cases, the exact mechanism causing STE remains unknown.^{3,4} Patients with ST segment elevation in the absence of classic ACS symptoms presents a dilemma for emergency physicians. Epigastric pain often raises concern for both cardiovascular and abdominal pathologies, including pancreatitis. Given the paucity of data and mechanistic uncertainty, a standard management protocol does not currently exist for patients with coexisting pancreatitis and ST segment elevation. Our case seeks to make emergency physicians aware of this phenomenon as recognition is essential in reducing patient exposure to unnecessary and potentially harmful interventions.

The Case

A 60-year-old female presented to the emergency department with acute epigastric pain radiating to the back, nausea and vomiting. Pertinent medical history included atrial fibrillation with unclear adherence to apixaban, hypertension, peripheral artery disease status-post superficial femoral artery stent placement and chronic pancreatitis. The day prior to presentation, the patient was in her usual state of health and had been drinking wine coolers. Symptoms had been ongoing for nearly 22 hours prior to presentation. She was hypertensive and tachycardic with otherwise normal vital signs. On physical exam, she had epigastric pain to deep palpation without peritoneal signs or skin changes.

During the initial work-up, her ECG revealed STE measuring approximately 1 mm in V1, V2. There was also STE approximately 1 mm in I and aVL with diffuse ST depressions in the inferior leads, V3-V6 and aVR (see Figure 1).

The patient symptomatically improved throughout her stay, vitals stabilized, and repeat troponins remained negative. Her leukocytosis and elevated lipase both trended down to within normal values. Her repeat ECG prior to discharge was normal sinus rhythm with resolution of ST changes. She was ultimately discharged on aspirin and atorvastatin, with continuation of apixaban and discontinuation of ticagrelor.

Discussion

Intra-abdominal etiologies with occurrence of ST-elevation myocardial infarction are rare. With 36 cases involving pancreatic inflammation described in literature, the pathophysiology remains unknown. Interestingly, an inferior wall ST-elevation myocardial infarction has been the most frequent pattern reported.² Proposed hypothesis as described by Hsu et al., include (1)

vagally mediated reflexes, (2) metabolic and electrolyte abnormalities, (3) direct toxic effects of pancreatic enzymes on myocardium, (4) coronary artery vasospasm, (5) hemodynamic instability or systemic inflammatory response, (6) prothrombotic derangement, and others including (7) takotsubo cardiomyopathy.^{2,4,5,6} In our case, STE in I, aVL and inferior depressions suggested a lateral infarction with a repeat ECG with STE in aVR with diffuse ST-depressions. The patient's normal electrolytes, catheterization and echocardiogram lead us to suspect the etiology could be related to direct toxic effects, vasospasm or systemic inflammatory response.

Despite the low frequency, acuity remains high when considering the importance of misdiagnosis leading to invasive treatment and testing. Missing ACS has fatal consequences, as does converting acute pancreatitis to hemorrhagic pancreatitis with thrombolytics.^{7,8} Catheterization itself carries the complications of dissections, perforations and bleeding. Yu et al.² describe their patient developing a stroke following PCI, in the setting of pancreatitis induced STE. In the absence of guidelines, a multidisciplinary approach to the clinical situation may be most appropriate. Even still, pseudo-myocardial infarction associated with acute pancreatitis must be a diagnosis of exclusion.^{9,10} The lethality of true myocardial infarction warrants cardiology consultation for angiography, as opposed to use of thrombolytics.

The presentation serves as another in-

KEY POINTS

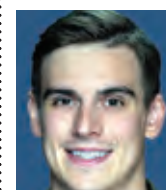
- Acute pancreatitis can be associated with ST-elevation electrocardiography changes, awareness of this presentation is necessary to avoid erroneous PCI, thrombolysis or anticoagulation.
- Proposed mechanisms for this phenomenon include: (1) vagally mediated reflexes, (2) metabolic and electrolyte abnormalities, (3) direct toxic effects of pancreatic enzymes on myocardium, (4) coronary artery vasospasm, (5) hemodynamic instability or systemic inflammatory response, (6) prothrombotic derangement, and others including (7) takotsubo cardiomyopathy.
- Pseudo-myocardial infarction must be a diagnosis of exclusion, the clinical context is key and cardiology consultation for possible angiography is recommended.

stance where STE signaled systemic disease unrelated to a flow-limiting coronary lesion.¹¹ While our patient's ECG findings could have represented occlusion, the clinical context proved to be an important factor in avoiding thrombolytics as transport was arranged for angiography. There is both a circumspect and nuanced approach to diagnosing and managing myocardial infarctions. To guide clinical management, the risks and benefits of cardiac interventions must be weighed with factors such as the patient's stability and likelihood of other diagnoses to make the most appropriate disposition. +

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Charting a New Course for Emergency Department Triage

INFORMATION AND TIME ARE MOST INTENSE AT TRIAGE

by JEREMIAH S. HINSON, MD, PHD; AND
SCOTT LEVIN, MD

Emergency medicine involves a density of decision-making that exceeds that of any other medical specialty. Emergency physicians face high-stakes decisions related to diagnosis, treatment, and disposition with limited information and under intense time pressure during every shift. However, the first critical decision in the emergency department (ED) is often not made by physicians, but by emergency nurses. Within minutes of a patient's arrival, these frontline clinicians are tasked with assigning triage acuity levels that dictate the course of care for individuals and shape the operational efficiency of the entire department.^{1,2} Information and time constraints are most intense at triage and variability in decision making is high.³ Such challenging circumstances are where data-driven clinical decision support (CDS) is most beneficial.

The most commonly used triage tool in the US is the Emergency Severity Index (ESI).^{4,5} ESI is a five-level triage scale that relies heavily on operator intuition with an associated risk for bias and untoward variability.^{3,6-9} Vital signs are the only objective data considered, with severe derangements signaling that assignment to high acuity (Level 1 or 2) should be contemplated. Differentiation between Levels 3 through 5 is determined based on anticipated ED resource utilization, with limited consideration of risk for adverse clinical outcome.⁴ Patients assigned to high or low ESI acuity have definitive care trajectories; high-acuity patients are seen within minutes of arrival⁴ and low-acuity patients are often diverted to separate workstreams for rapid treatment and disposition.² In contrast, those triaged to the mid-point (ESI Level 3) have an uncertain clinical course and experience extended wait times. Unfortunately, 50 to 70 percent of all ED patients are assigned to ESI Level 3.¹⁰⁻¹²

Very recently, Sax et al., performed the largest study of ED triage in history. "Evaluation of the Emergency Severity Index in US Emergency Departments for the Rate of Mistriage," published in JAMA Network Open, included 5.3 million ED encounters from 21 hospitals, all of which used ESI.¹³ Its authors utilized a granular electronic health record (EHR)-derived database and developed rigorous objective criteria to determine the accuracy of triage. They reported that one in three patients was mistriaged using ESI. Alarming, just 66 percent of ED patients who required life-stabilizing interventions were properly identified as high-risk (Level 1 or 2). They also found that several vulnerable populations—including those with complex medical histories, those living in poorer neighborhoods, and those who self-identified as Black—were at particularly high risk for mistriage.

The findings of Sax et al., are concerning, but not surprising. Two recent systematic reviews revealed similar deficiencies.^{3,14} They demonstrated that ESI, along with all other legacy triage scales in use across the globe, has



poor sensitivity for critical illness and is subject to high variability. Sax et al.'s findings also add to a multitude of studies reporting inequity in triage under ESI, including those demonstrating lower triage acuity assignment for Black and Hispanic patient and under-estimation of illness severity in elderly populations.^{9,15-19}

In their supplement, Sax et al. provide evidence that ESI, even if optimally applied, has limited capacity for patient differentiation in our current practice environment. Less than half of patients in their health system met objective ESI criteria for high (3.1 percent) or low (37.2 percent) acuity under ESI; the majority (59.7 percent) were left to a single category: Level 3.¹³ This is similar to the proportion of patients triaged to ESI Level 3 in a report that included 25 EDs from 11 different US health-care organizations in 10 states.¹⁰ Majority allocation to a single ambiguous midpoint within a 5-Level triage system runs counter to the fundamental objectives of triage: to differentiate and prioritize.³

We can do better. It is possible to make triage more accurate and equitable. It is possible to distribute patients more effectively across triage levels, and to match those levels to operational capacity and needs of individual departments. All these things can be achieved, but they require charting a new course in our approach to ED triage.

First, we must abandon the notion that resource utilization is a sufficient proxy for illness severity, patient complexity or even ED care intensity. Instead, as with every other decision in emergency medicine, risk of adverse outcome should guide decision-making for ED triage. Under our current approach to triage, a 20-year-old with no medical problems and a 70-year-old with hypertension, hyperlipidemia, and diabetes who both present with chest pain and have similar vital signs would each be triaged to Level 3. In a crowded ED, they would wait with identical prioritization. This should not be the case; their clinical risk profiles are dramatically different. Protocolized front-end care pathways can be used to expedite diagnostic evaluation and without abnormal results, our 20-year-old

with chest pain could be quickly treated and dispositioned in a 'vertical care' or 'fast-track' area. Often, less time in treatment space is required for such a patient than for an abscess, laceration, or strep throat. None of these patients should compete for care with an elderly patient with chest pain.

Second, as highlighted by Sax et al., in their Conclusion, we must embrace a more data-driven and objective approach to ED triage.¹³ Widespread adoption of the EHR has generated continuously growing pools of clinical data with potential to inform and improve ED care delivery. Artificial intelligence (AI) applications that leverage these data to provide easily accessible (i.e., embedded within EHR workflow) decision support are a promising means to achieve more accurate triage.^{11,20,21} AI algorithms can use historical data to rapidly estimate clinical risk for individual patients in real-time and can provide decision rationale. These algorithms can be adapted to each ED site to account for differences in patient populations, resource availability, and operational objectives.

AI-driven approaches also generate opportunities for increasing triage equity. AI in medicine has been met with justified concern for perpetuation of bias and exacerbation of social inequities.²²⁻²³ However, most risk for algorithmic bias is conferred from datasets used for algorithm development; datasets that were created by human-based structures and systems. The same data science methods that empower AI can provide a means to interrogate, expose, and understand existing bias. Once uncovered, AI-based methods can be used to mitigate bias.^{24,25} This includes the power to intervene on potential biases directly at the point-of-care. The need for such an approach to ED triage is clear.

Nearly a decade ago, through a federally funded collaboration between data scientists, emergency nurses and physicians, our institution developed a CDS tool that leverages AI to generate risk-driven triage acuity recommendations embedded into the EHR workflow.^{11,12} In 2017, we implemented this tool in place of

ESI. Using it, we have been able to more reliably identify patients with critical illness and reduce the time these patients wait for care. We have decreased the proportion of patients allocated to mid-point Level 3 by increasing our usage of Levels 4 and 5—without increasing risk or length of stay for this low-acuity group.^{26,27} Our data-driven approach has also generated outcome-rich data streams that inform quality and nursing leadership and facilitate practice-based learning. In 2018, the tool became the cornerstone for our department's Nursing Magnet Designation. With support from the National Science Foundation, it has since been commercialized and is now being introduced to other EDs worldwide. +

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Disclosure

Dr. Hinson, Dr. Levin and Johns Hopkins University are entitled to royalty distributions related to CDS technology that was evaluated. This arrangement has been reviewed and approved by Johns Hopkins University in accordance with conflict-of-interest policies.

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decreases, errors increase, and costs increase.²

We explored the impact of placing patients in hallways on bread-and-butter ED operations. We looked at things like how long it takes to get a bed, how long it takes to see a clinician, and what happens to the patients downstream. Understanding these factors will help us determine if hallway placement is actually helping or if there are hidden costs.

But let's not forget the bigger picture. Any care in the hallway is undignified, and ED crowding is a complex issue requiring a comprehensive solution. It's time for hospital administrators, physicians, policymakers, and everyone involved to come together and find ways to reduce crowding, improve patient flow, and deliver high-quality care.

Our Findings

In a retrospective observational study encompassing two EDs within a larger health system, more than 320,000 patient visits were analyzed. Data were collected on demographics, emergency severity index (ESI), chief complaint, and operational factors. The study's primary outcomes were door-to-bed time, bed-to-emergency physician, and emergency physician-to-disposition time. The results demonstrated that hallway placement reduced door-to-bed time but significantly increased bed-to-emergency physician time and emergency physician-to-disposition time.

Additional regression analysis found that male patients and patients with Medicaid or self-pay were more likely to be placed in hallways.³ While door-to-bed time decreased, unfortunately, it led to a considerable increase in bed-to-emergency physician and emergency physician-to-disposition time. This resulted in a statistically significant increase in length-of-stay in the ED for patients placed in the hallway. There were no discernible differences in return visits between hallway placement and traditional room assignment.

Hallway use may hasten access to treatment spaces, patients experience prolonged bed-to-emergency physician time and emergency physician-to-disposition times, leading to extended ED stays and potentially impacting outcomes and patient satisfaction. This prompts further investigation into the underlying causes and the development of strategies that optimize patient flow and enhance care delivery.

Possible Reasons Why

- 1. Our systems are overwhelmed:** As previous studies have demonstrated, running our emergency system at capacity levels higher than 85-90 percent results in resources becoming overwhelmed and, as a result, increased boarding and hallway utilization.⁴ This ultimately leads to medical errors and threats to patient safety and privacy.
- 2. Implicit biases in health care:** The disparities observed in the study, with males and patients on Medicaid or self-pay insurance being more likely to be placed in hallway beds, could be attributed to inherent biases within the health care system. Unconscious stereotypes or assumptions about specific patient populations can influence decision making, leading to differential treatment and bed assignment.



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3. Barriers to accessing primary medical care:

Limited access to timely primary care services may result in higher ED visits for lower acuity complaints. When these patients present to the ED, their lower acuity level may influence decisions regarding bed placement, making hallway beds suitable for less urgent cases.

4. Limited access to resources and monitoring equipment:

Hallway beds often lack the equipment and resources that dedicated treatment spaces provide. This can lead to delays in providing specific procedures, pelvic exams, ensuring privacy, access to oxygen, suction, and other essential care.

5. Transient residents waiting for space:

Junior or rotating residents sometimes may wait for a dedicated treatment area to take medical histories or perform procedures or interventions. This inadvertently prolongs the stay of patients in the hallway, unaware that their history or procedure can be conducted in the hallway itself.

6. Limited privacy and patient discomfort:

The lack of privacy in hallway spaces can make patients feel uncomfortable and self-conscious. Patients may also find it harder to focus on their care because of the commotion and activity around them. Discussing sensitive medical information may become challenging, affecting the patient's overall experience and future willingness to seek care. Ideally, any sensitive chief complaint should result in a private exam space for evaluation.

Hallway placement poses significant challenges and potential drawbacks. It's crucial for hospital administrators and policymakers to challenge the common mantras that justify this practice. Instead, they should work toward finding comprehensive solutions prioritizing patient safety, privacy, and efficient care delivery. By addressing these issues head-on, we can strive for an ED environment that genuinely prioritizes the well-being and needs of every patient.

Possible Steps for Administration

Given the detrimental effects of hallway placement on ED efficiency and patient care, hospital administrators must take proactive measures to combat crowding. We recognize, of course, that much of ED crowding stems from increased hospital boarding, which ED leaders can't solve. In the interim, we recommend the following steps:

- 1. Enhance resource allocation:** Allocate sufficient resources, including staff, treatment spaces, and equipment, to meet the increasing demand in the ED. Implement effective triage systems to prioritize patients based on acuity and optimize the utilization of available resources.
- 2. Data-driven decision making:** Leverage data analytics to identify patterns, bottlenecks, and areas for improvement within the ED. Regularly evaluate key performance indicators and employ evidence-based strategies to drive decision-making and quality improvement initiatives.
- 3. Redesign front-end flow:** Consider implementing triage practices or standardized order sets for patients who are more likely placed in a hallway bed.
- 4. Staff support and well-being:** Recognize the immense pressure ED staff face due to overcrowding and hallway care. Provide support mechanisms, such as sufficient breaks, access to mental health resources, and regular debriefing sessions, to mitigate burnout and promote staff well-being.

Hospital leaders must urgently address the burden of ED crowding and its effects on hallway care. They can create a more efficient and patient-centered emergency department by implementing strategic measures to enhance resource allocation, prioritize staff well-being, and embrace data-driven decision-making. Let's take action to optimize care delivery, support physicians, and improve patient outcomes.

Acknowledgment

Thank you to Arjun Venkatesh, Andrew Ulrich, Vivek Parwani, Reinier Van Tonder, Edieal Pinker, Beth Liebhardt for their support of this work and commitment to improving care of patients in the emergency department. +

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Bringing the Heat to the Boarding Crisis

An actionable visual dashboard approach

by HOPE SCHWARTZ, BA; AMANDA REILLY, MD, MPH; CAROLINE BURKE, MD; SOJUNG YI, MD; MALINI SINGH, MD, MPH, MBA; STEVEN STRAUBE, MD, MBA; AND CHRISTOPHER R. PEABODY, MD, MPH

Boarding has reached crisis levels across the United States, recently culminating in a letter from ACEP and other national organizations to the President outlining the drastic harms to patients, staff, and clinicians.¹ However, despite widespread agreement that boarding is a threat to our specialty and patients, there is lack of consensus on how to visualize, and even define, the boarding crisis. In our emergency department, we recognized that our current metrics do not allow for the many diverse stakeholders—including frontline clinicians, staff, and administrators—to engage with up-to-date boarding data and generate solutions.^{2,3} Our team aimed to create a blueprint for visualizing boarding that is accessible and scalable at any institution across the United States.

The Gap

Health systems typically rely on validated scoring systems such as the National Emergency department Overcrowding Score (NEDOCS).⁴ While these can help quantify boarding severity in real-time, they have limitations when it comes to generating system-level interventions. First, they do not allow for visualization of trends over time, which is critical to identifying drivers of boarding and directing potential interventions. Boarding is associated with several upstream factors, including hospital occupancy and inpatient capacity, and identifying these factors within an institution are critical to implementing the multidisciplinary solutions this problem requires.^{5,6} Second, NEDOCS rely on several complex inputs that require institutional and real-time operational knowledge, which may limit usability to a small subset of emergency department leadership. Given the broad impact of boarding, democratizing access to information is a powerful tool to create inclusion and source potentially innovative ideas from a diverse group of stakeholders.

Our Approach

We used a design thinking approach to develop an accessible and interpretable visual boarding dashboard for both daily operational and quality improvement use by a broad audience. Design thinking centers the experience of the end-user to create usable products, including iterative prototyping and rapid incorporation of feedback.⁷ We conducted a comprehensive literature review, 13 stakeholder interviews, and consultation with experts in data management and visualization, aiming to design a single dashboard for utilization by three distinct groups of end-users: frontline clinicians, emergency department management, and hospital-level administrators.

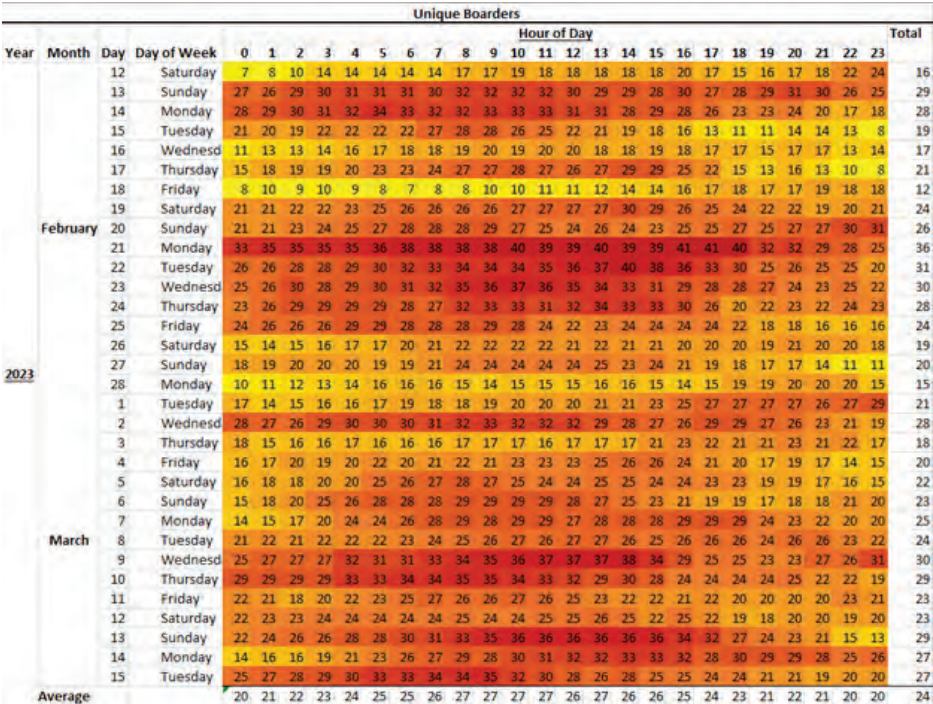


FIGURE 1: Mock-up of internal dashboard displaying boarding heatmap by day and hour

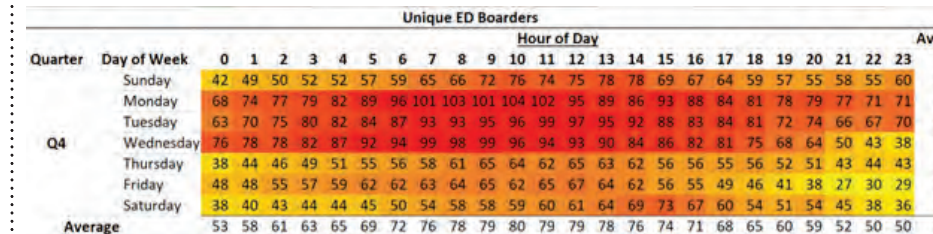


FIGURE 2: Mock-up of internal dashboard collapsed to average boarding by day and hour

The Final Product

The ZSFG boarding dashboard is a web-based platform that visualizes boarding as a temporal heatmap. The dashboard displays the number of boarded patients by hour in a single snapshot that defaults to the past 32 days (Figure 1) and can also be collapsed to show average boarding by several time periods including by day, week, month, quarter and year (Figure 2). Boarding is defined as any patient still in the emergency department more than 120 minutes from admission request.⁸ The dashboard can be stratified by age, emergency severity index (ESI), and emergency department length of stay, and other key variables. Data are updated in near real-time from our electronic medical record (Epic Systems) and visualized using Tableau (Tableau Software Version: 2019, Mountain View, CA).

From October 1, 2022 to March 16, 2023, the dashboard had 963 views, with 13 high-volume users accounting for 374 views. The heatmap allows any end-user, including clinicians and staff, to quickly assess key features of boarding at our institution, including predictability, temporality, and cyclicity. In our department, boarding reliably peaks during the middle of the day and during mid-week (Tues-Thurs). We also find that our levels of emergency department boarding are correlated strongly with inpatient census. Making these trends more accessible for all users helped lead to several multidisciplinary interventions, including: staffing the

ED with medical-surgical nurses during predicted boarding peaks, facilitating inpatient hallway boarding, and supplementing inpatient capacity and discharge planning. The success of these interventions has relied on collaboration with our inpatient colleagues, and making these trends broadly accessible to stakeholders outside the emergency department was critical to generating institutional support.

Sharing Our Approach

Boarding is a national problem, but trends and drivers may be institution specific. Though our emergency department, an urban Level I trauma center and safety net hospital, may be different than others facing similar throughput issues, our approach is dynamic and applicable in a variety of settings. Even with variability across institutions, efficiently visualizing institution specific trends can help direct root cause analyses.⁹ Our boarding heatmap allows any emergency department stakeholder to quickly identify trends in and the severity of boarding to inform interventions. The heatmap enables frontline clinicians to better predict boarding and shift practice patterns appropriately, while also engaging a broader audience to understand the problem and generate ideas for institution-wide responses.

While there is lack of consensus in the literature on how to best define and visualize boarding, we propose the heatmap as an effective, accessible method for informing local inter-

vention that is both standardized and flexible to institutional trends and variability. Solving the boarding crisis will require multidisciplinary collaboration between departments and across stakeholder groups—democratizing boarding data is an important first step. +

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Stanford's Innovation Exchange

EM competition provides platform for innovative startups to shine



Torrey Smith presenting Endiatx (bottom left square) to hosts Dr. Gabrielle Bunney and Dr. John Dayton (top left square) and to judges Dr. Saumitra Thakur (MedMountain Ventures), Jamie Tremaine (Mechatronics Engineer), and Dr. Peter Clardy (Google Clinicians) and Dr. Justin Norden (GSR Ventures) who are not pictured.

by CONNOR GRANT, MD; RAHYL NAYAK, MD, MTM; DIANE HAN, MD; SHARON WULFOVICH, MD; AND JOHN DAYTON, MD

The third annual Stanford Emergency Medicine Innovation Symposium (STEMI X) took place on June 22nd, 2023. This year's Symposium featured a keynote presentation on digital transformation in emergency medicine from Dr. Jared Conley, multiple expert panels and round table discussions, and innovation workshops. Topics covered included doctor-driven disruption, innovation through entrepreneurship, and the revolutionary power of AI in the ED. Rapidly becoming a yearly staple among health care innovators, STEMI X attracted several hundred physicians and other health care stakeholders

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BRINGING DATA
TO THE
BEDSIDE

BENCHMARKING
ALLIANCE



DR. AUGUSTINE is national director of prehospital strategy for US Acute Care Solutions based in Canton, Ohio; clinical professor of emergency medicine at Wright State University in Dayton, Ohio; and vice president of the Emergency Department Benchmarking Alliance.

A Sobering Year for Emergency Departments and Their Patients

Preliminary 2022 data guide from the Emergency Department Benchmarking Alliance

by JAMES AUGUSTINE, MD, FACEP

The Emergency Department Benchmarking Alliance (EDBA) is a membership organization composed of high-performance emergency departments (EDs) that share a commitment to quality. The preliminary 2022 report contained performance measures for 938 EDs that managed more than 46 million patient visits, plus 222 additional free-standing EDs that served more than 4 million patients. Thus, the survey included data for about one-third of all patients seen in US ED's in 2022.

Most Important Data Trends for Emergency Physicians and ED Leaders

Large losses (around 14 percent) in ED volume in 2020 reversed in 2021 and volumes increased further during 2022. In 2023, ED volumes are approaching those seen pre-pandemic at 66 percent.

EMS arrivals increased; many of those patients (35 percent) were admitted. A lower volume of walk-in patients resulted in a relative increase in patients arriving by EMS. Patient intake remained steady with median "Door to Bed" time decreasing to about eight minutes and "Door to Doctor" time to about 20 minutes. Long term trends remain intact, as these intake processing times decreased in most years since 2008, when the intake time was about 41 minutes.

Overall length of stay increased in EDs, with a subsequent large increase in the ED walkaway rate. The overall length of stay for all ED patients increased to 211 minutes in 2022, up from 194 minutes in 2021, 184 minutes in 2020, and 182 minutes in 2019. ED process times remain tightly correlated with volume of patients seen. Patients who require inpatient boarding remain

a significant challenge to ed operations. About 19 percent of ED visits result in hospital admission and 66 percent of hospital admissions are processed through the ED. These numbers have been trending higher and 2022 was no exception.

The time interval referred to as ED boarding time has been part of the hospital's required data submission to CMS since 2013. This is the time from "Decision to Admit" until the patient physically leaves the ED. Despite the work of ED and hospital leaders to reduce this time interval, 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. This time interval is very cohort-dependent, ranging from 116 minutes in the smallest volume EDs, to 295 minutes in EDs that see more than 80,000 patients. The average ED Boarding Time of 190 minutes accounted for about 47 percent of the time the admitted patient spent in the ED. Unfortunately, the ED boarding measure is no longer required to be reported to CMS.¹

Boarding time increases led to unprecedented ed walkaway rates. The percentage of patients who leave the ED prior to the completion of treatment increased to a stunning 4.9 percent in 2022, continuing its upward climb from 4.0 percent in 2021, 2.8 percent in 2020 and 2.7 percent in 2019. Even freestanding EDs saw a significant increase in walkaway rates, from 1.6 percent in 2019, to 2.7 percent in 2022. The overall rate of 4.9 percent in 2022 is unprecedented, troubling, and indicates significant dissatisfaction with the delivery of acute, unscheduled care. In 2020, U.S. EDs saw a total of 137 million patients. The walkaway rate of 2.8 percent that year meant that about 3.84 million ED visits ended prematurely. The increase in LBTC rates to 4.9 percent in 2022, combined with an estimated 155 million ED

visits, means that about 7.6 million patients walked away. That is almost double in just two years.

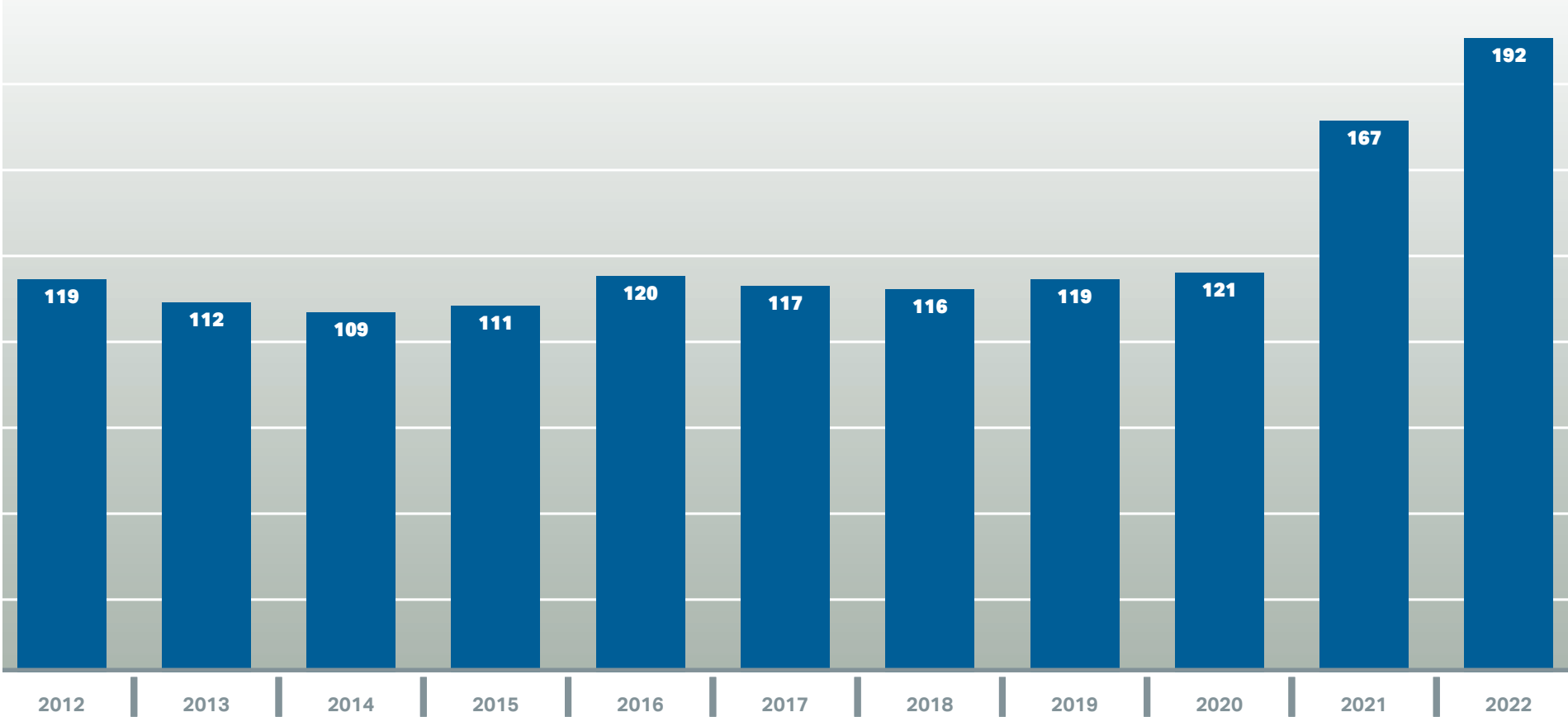
Due to hospital boarding, it appears that ED leaders and emergency physicians cannot provide care that is timely and satisfies patients if the ED remains congested with inpatients. Inpatient boarders also take significant time and energy of the available ED nurses and techs, which leaves those individuals unable to assist in caring for the steady flow of new patients. Prior research shows that boarders worsen mortality; anecdotes from ACEP members echo the data.^{2,3} A solution to the boarding crisis is needed.

Emergency physicians have an opportunity to reduce walkaway rates by improving the timing to get to a decision, either to discharge or to admit. Many EDs have reduced the door to provider time, as evidenced in the reduction in that metric over many years. But if the admitted patient cannot be moved out of an ED bed, and it remains the responsibility of the ED nurses and techs to provide care for boarded patients, emergency physicians cannot marshal the resources to make the flow work, patients of all types have their hospital care compromised, and a large number will walk away not knowing if they have an emergency medical condition or not. +

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ED Median Boarding Time





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What Happened to Phenylephrine?

The efficacy of nasal decongestants

by RYAN RADECKI, MD, MS, FACEP

In September, a surprising publication by the U.S. Food and Drug Administration regarding the efficacy of oral phenylephrine as a nasal decongestant, caused a ruckus.¹ This publication would not come as a surprise to those following the past 15 years of efforts by the research teams examining phenylephrine. While they conclude that phenylephrine lacks efficacy, there remain important limitations to the scope of this action.

The GRASE Pathway

Phenylephrine has been available for oral administration within the FDA scope of non-prescription drugs under the designation Generally Recognized as Safe and Effective (GRASE).



The GRASE pathway traces its origins back to the Kefauver-Harris Amendment signed into law by President Kennedy in 1962, which charged the FDA with establishing a process for reviewing the evidence surrounding classes of non-prescription pharmaceuticals.

Phenylephrine, along with its cousin pseudoephedrine, was approved for use in a Tentative Final monograph in 1985, ultimately finalized in 1994. These included oral and nasal spray formulations of these two decongestants, but a third, phenylpropanolamine, was excluded due to safety concerns relating to hemorrhagic strokes.

Recently, the 2020 Coronavirus Aid, Relief, and Economic Security Act provided resources and processes to relieve some of the burden for review of these monographs. Changes to the administrative order process, reaffirming specific FDA authority to amend the prior monographs, ultimately paved the way for this most recent announcement. These changes are of note because data regarding limited efficacy

were presented to the FDA in 2007 and 2015. Despite the cumulative weight of evidence, until now the feasibility of action was limited.

The original FDA review relied upon 14 studies, conducted primarily between 1959 and 1975. Most of these comprised a handful of participants and 10 of the 14 conducted by the original pharmaceutical manufacturer, the Sterling-Winthrop Research Institute. The outcomes measured in these studies usually entailed subjective nasal symptoms, but also “change in nasal airway resistance,” following single or repeated administration of oral phenylephrine. The studies demonstrated mixed positive and negative results while remaining difficult to assess due to sparse reporting of study methods. Phenylephrine was, however, clearly safe, and the original review leaned toward its inclusion in the monograph based on the class effect seen with pseudoephedrine and phenylpropanolamine.

Much has since changed, however, since these virtually prehistoric data. Primarily, and the most obviously damning concern, pertains to oral bioavailability for phenylephrine. An internal Schering-Plough study, first presented in 2007, described the metabolism and pharmacokinetics of a single oral dose of phenylephrine in 14 healthy volunteers. Compared to the previously estimated oral bioavailability of about 38 percent, this study found an oral bioavailability of less than one percent, with virtually all of the phenylephrine parent drug converted to three metabolites on hepatic first-pass metabolism. With respect to five alpha-adrenergic receptors upon which phenylephrine is biologically active, each of the three primary metabolites demonstrates no activity.

This is, effectively, where the story ends for phenylephrine. How could a medication be effective if converted to inactive metabolites immediately upon ingestion? The flaws in the original evidence base, the problematic nature of the methodology used, and these pharmacokinetic data were all presented over a decade ago. Incredulously, the FDA panel re-

viewing the data at the time voted, with 11 of 12 members voting “yes,” that the evidence for phenylephrine was still “suggestive of efficacy.” The panel noted further clinical data would be required to reverse the prevailing opinion.

Since the 2007 meeting, several clinical trials were performed. These studies, performed by the same Schering-Plough group, now in partnership with Merck, had twofold intent. First, given the precarious pharmacokinetic data supporting the efficacy of phenylephrine in oral formulation, these studies tested the hypothesis clinically meaningful effects might be obtained from higher doses of the oral formulation. Second, as a much higher dose of phenylephrine is associated with iatrogenic hypertension, the trials aimed to confirm the safety of a higher dosage.

The first study, published in 2015, was a simple placebo-controlled trial of a 30mg modified-release phenylephrine tablet taken every 12 hours for seven days.² With a primary outcome of “daily reflective nasal congestion score,” there was no difference in the primary outcome.

Each group improved a small amount across the length of the trial, consistent with a placebo effect. The second trial, published in 2016, was a placebo-controlled dose-ranging trial, with immediate-release phenylephrine doses ranging from 10 to 40mg.³ In this latter trial, again, improvements in the primary outcome directly mirrored placebo, with no differences between any of the doses.

Clearly, now, both pharmacokinetic and clinical data confirm phenylephrine-containing oral preparations are of no value. The question remains: what obstacle prevents the removal of phenylephrine from the FDA decongestant monograph? The simple answer is economic. In 2022, at least 250 million individual packages of over-the-counter phenylephrine-containing products were sold in the United States alone. These sales easily exceed two billion dollars (USD) in annual value, a non-trivial dent in the direct-to-consumer

pharmaceutical industry. The ramifications go beyond simply sales, as these findings affect the entire manufacturing and supply chain. There remains stock of these medicines on the shelf, in warehouses, and presently undergoing manufacture. The authors of the review report note these findings ought to be disseminated with some delicacy, and phenylephrine transitioned off the monograph.

An important note is that these findings only pertain to the oral preparation of phenylephrine. The intranasal spray bypasses first-pass hepatic metabolism by virtue of the route of delivery, and ought still be considered efficacious. Pseudoephedrine does not possess the same hepatic metabolism as phenylephrine and retains demonstrable beneficial clinical effects. However, access to pseudoephedrine has been restricted since the Combat Methamphetamine Epidemic Act of 2005, the enactment of which resulted in phenylephrine’s rapid rise in consumption.

The means of widespread notification of the lack of efficacy of oral phenylephrine, primarily through lay media coverage, was likely not the intended effect of the FDA advisory report. However, the recommendations for its removal from the monograph are now widely known. Despite the barriers to access, pseudoephedrine is presently the only efficacious oral over-the-counter decongestant available, physicians should educate patients to this effect. 📌

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Patients with Severe Agitation in the ED

How to manage de-escalating and sedation



by LAUREN WESTAFER, DO, MPH, MS, FACEP

Patients with severe agitation are frequently encountered in the emergency department (ED) setting. The first steps in the management of agitation are de-escalation and calming techniques, situational modifications, and, if needed, oral medications. Unfortunately, these techniques may be insufficient. Emergency departments can be crowded and chaotic, further exacerbating mental health issues. Intoxication with drugs and/or alcohol can inhibit comprehension. As a result, patients with severe agitation may require sedating medication for the safety of the patient and treating clinicians.

When this happens—what medication(s) do you reach for? Is it haloperidol and lorazepam (known as “5 and 2”)? A “B52” (the prior combination plus diphenhydramine)? Monotherapy with olanzapine, droperidol, haloperidol, ketamine, or midazolam? The ideal medications work very quickly, does not require additional dosing or rescue medications, and does not overly sedate a patient or cause respiratory depression.

Choices in the ED

The choice of sedating or calming medication is often an inherited or local practice, rather than rooted in evidence. We reach for what we are comfortable with, which is usually what we learned during training. Additionally, the evidence is complex—studies compare various combinations of medications, different doses, and different routes (intravenous [IV] versus intramuscular [IM]). A new clinical policy from the American College of Emergency

Physicians (ACEP) seeks to distill the often indirect evidence and guide clinicians in choosing the best parenteral agents for patients with severe agitation.¹ The winners: droperidol/midazolam and ketamine.

The clinical policy gives a Level B recommendation, which carries a moderate level of scientific certainty, to the use of a combination of droperidol and midazolam (or another atypical antipsychotic plus midazolam) for “more rapid and efficacious treatment of severe agitation.” This is a critical point. Rapid and efficacious. Many agents can sedate patients sufficiently to proceed with medical evaluation and treatment safely. However, we should only use these medications when other options have failed and the need is critical. Under these circumstances, rapidity is critical for the safety of the patient, the treating team, and other nearby patients.

Speed Matters

The combination of droperidol and midazolam appears to result in rapid sedation, requires fewer additional medications, and has a favorable safety profile in agitated ED patients. Though once maligned due to a black box warning, droperidol has an extensive safety record.² A randomized study found that droperidol (5 mg IV) plus midazolam (5 mg IV) resulted in a higher proportion of patients adequately sedated at 10 minutes compared with droperidol (10 mg IV) or olanzapine (10 mg IV) alone.³ In a similar vein, another randomized study found that a combination of droperidol 5 mg IV with midazolam or olanzapine 5 mg IV and midazolam resulted in quicker time to adequate sedation than intravenous midazolam alone. Both droperidol and olanzapine prob-

ably work slightly more quickly than haloperidol.³

The key and perhaps overlooked ingredient in the recommended combination is midazolam. This point becomes apparent when juxtaposing another Level B recommendation in the clinical policy that states, “For efficacious treatment of severe agitation in the emergency department, use the above agents as described or haloperidol alone or in combination with lorazepam.” Notably this recommendation is for efficacious, not efficacious and more rapid. Midazolam works quickly. A 2018 study by Klein et al., found that more patients were adequately sedated at 15 minutes with 5 mg of intramuscular midazolam compared with haloperidol 5 mg, haloperidol 10 mg, and ziprasidone 20 mg. Midazolam also outperformed olanzapine 10 mg, but this did not reach statistical significance.⁴ The onset of action of lorazepam is longer, which is less ideal when attempting to achieve safety. The data on midazolam is mixed, likely due to differences in patient population and dosing; however, benzodiazepine monotherapy appears to have a less favorable profile, necessitating rescue medications.

Ketamine, at a dose of 3 to 5 mg/kg intramuscularly, achieves sedation in two–10 minutes. Few, if any medications, reliably achieve effective sedation this quickly following a single dose. The trade-off, however, is the potential for adverse effects including respiratory depression and laryngospasm. An ED study found that ketamine 5mg/kg IM resulted in sedation in about 6 minutes, almost nine minutes quicker than haloperidol 5 mg plus midazolam 5 mg IM.⁵ The policy provides a Level C recommendation (consensus) for the

use of ketamine in critical circumstances stating, “In situations where safety of the patient, bystanders, or staff is a concern, consider ketamine to rapidly treat severe agitation in the ED.”

The “5 and 2” combination of haloperidol and lorazepam was the sedation regime I was trained to use and works fine. However, I’ve traded in this combination for medications that are likely to work more quickly and retain an excellent safety profile: droperidol 5mg/midazolam 5 mg IM or ketamine when there is a substantial safety risk. Unfortunately, we still have minimal data to support recommendations for older adults, the prehospital setting, and pediatric patients.

Disclaimer: Although Dr. Westafer is a member of the ACEP Clinical Policy Committee, the views in this article do not represent the views of ACEP or the ACEP Clinical Policy Committee. +

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Toxicology Q&A Answer

QUESTION ON PAGE 11

ANSWER: Milkweed (Asclepias)

Milkweed, genus *Asclepias*, (named by Linnaeus as *Asclepius* (Ἀσκληπιός) in 1753) is a plant widely distributed across the United States containing about 140 species. The name pays homage to the Greek god Asclepius, the deity associated with medicine and symbolized by the wand of Asclepius. This plant has everything—ecological importance, toxic constituents, historical medical uses, human toxicity, and plays a role in the defense mechanisms of several insects, especially the Monarch butterfly.

The Plant

The milkweed is an upright, light green colored, large perennial, that can grow up to 6 feet tall (see image 1). Its large, oblong leaves and stems are covered in fine hairs which serve as a defense against insect predation (although more than 450 species of insects are known to dine on it). When the plant is cracked or lacerated it exudes an opaque, milky sap the plant is named for (see images 2,3). The plant's flowers display in spherical clusters (umbels) near the top of the plant and are rosy to pink with strong sweet scent. The comma shaped green seed pods are about four inches long and covered in little finger-like projections (see image 4). They turn brown as they mature and split open revealing white fluffy fibers with seeds attached that distributes on the wind.

Toxins

Milkweed contains a group of cardioactive steroids, including calotropin and calactin, and voruscharin, highly potent cardenolides that are similar to steroidal cardenolides found in other toxic plants such as foxglove (*Digitalis purpurea*), oleander (*Nerium spp.*), azalea and rhododendron (*Rhododendron spp.*) and Lily of the valley (*Convallaria majalis*). These cardenolide molecules are distributed throughout the plant, from the stems to the leaf tips. However, not all milkweed species have the same toxic cardenolide concentrations with some differing by orders of magnitude—from *A. exaltata*, *A. tuberosa*, *A. purpurascens*, and *A. incarnata* having virtually no detectable cardenolide levels in the leaves or latex, to *A. curassavica*, *A. linaria*, and *A. perennis* with the highest levels of toxin.¹⁻³

Medical Uses

Historically, various *Asclepias* species were used for a variety of medical purposes in the 1800s and early 1900s. These included expectorants, treatments for asthma, as an emetic, as a cathartic, as a diaphoretic for fever, and to 'lower the actions of the heart.' The sap was used as dressing for wounds and superficial ulcers to promote cicatrization (causing fibrous tissue at a wound site to reduce the size of a wound).⁴

Human Toxicity

Ingestion of plants containing cardioactive steroids have resulted in detectable digoxin concentrations, toxicity, and even death. Although cases of human milkweed exposure are rare, a 2013 case reported a 42-year-old man experiencing cardiac symptoms and nausea after consuming fried milkweed pods from a recipe he found online. In the ED, he was found to have a heart rate in the 40s, and



IMAGE 1



IMAGE 3



IMAGE 5

a digoxin level of 1.0 ng/mL (cross reactivity of the assay) and a potassium of 4.2 mEq/L. He was observed for several hours and eventually discharged with minimal intervention.⁵

Symptoms of milkweed poisoning may include abdominal discomfort, nausea, vomiting, diarrhea, weakness, lethargy, and confusion, progressing to seizures, heart rhythm changes, and bradycardia.

Corneal injury and defects have been documented from direct contact of milkweed sap to the eye and any exposure should be immediately treated with copious water irrigation.

Yang, in 2021, reported local milkweed toxicity resulting in a large corneal epithelial defect and diffuse stromal edema in a 13-year-old boy who presented to the emergency department after direct corneal exposure to milkweed latex. He was treated with antibiotic and steroid eye drops and had complete resolution in 18 days from injury.

Milkweed sap exposure to the skin can cause a significant contact dermatitis and poses a hazard for gardeners. Sap exposed areas should be cleaned soon after exposure with soap and copious water.



IMAGE 2



IMAGE 4

Antidote

There is no systemic antidote. It is unknown if digoxin specific antibody antidotal therapy would have any effect. Would likely recommend supportive care and cardiac observation for symptomatic patients.

Traditional Use

While common milkweed is well known to be toxic to humans, various Native American communities have consumed it for centuries (including the Tsalagi, Anishinaabe, Haudenoshonee, Lakota, Menominee, and Myaamia people) when prepared in a specific way. These culinary practices are very specific and result in minimal to no toxic exposure—only young plants are harvested and they are repeatedly boiled with several changes of water ridding the desired plant material of the water-soluble toxins.⁶

Animal World

The results of the milkweed species containing toxic cardenolides has far reaching effects into animal world. Plant strategies for survival are often a key factor of plant-insect coevolution by herbivorous insects evolving offensive strategies by making use of the plant defenses for their own benefit.

One classic example are Monarch but-

terflies (*Danaus plexippus*) (image 5). They have no natural defenses—no fangs, claws, armor, or electric zaps. They also do not construct toxins from material they ingest. However, they do have one trick not to get eaten. They drink the sap of the milkweed while in their caterpillar stage and concentrate the cardioactive toxins from the plant in their bodies. These accumulated toxins do not affect them, as they have developed through time substitutions within the alpha subunit of their Na⁺/K⁺ ATPase, rendering the pump insensitive to cardiac glycosides otherwise known as ‘target-site-insensitivity.’⁷⁵ The concentrated toxins persist in their tissues through their metamorphosis into butterflies and cause predators, primarily blue jays,

to vomit and avoid eating them in the future. This technique, of making themselves unpalatable and very easy to be seen with their bright aposematic coloring, figures prominently into several fascinating defense mechanisms for an otherwise defenseless animal—including conditioned food aversion (it made me ill, I won’t eat that again), observational learning (others of your species see what happened to you and avoid the source), social transmission of preference (I see what you eat and follow your lead), neophobia (fear of new things, as in, I’m not going to eat that new food source), innate avoidance of bitter tastes (many animals don’t eat things that are bitter!).⁷

Conclusion

Milkweed (*Asclepias* spp) are plants of multifaceted importance, contributing to the environment, medicine, culture, and the balanced relationship between predators and prey in the animal kingdom. It’s truly an extraordinary plant worthy of carrying the rod of Asclepius. ☺

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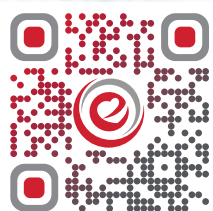
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