

COMMON SENSE



VOICE OF THE AMERICAN ACADEMY OF EMERGENCY MEDICINE

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Mission Statement

The American Academy of Emergency Medicine (AAEM) is the specialty society of emergency medicine. AAEM is a democratic organization committed to the following principles:

1. Every individual should have unencumbered access to quality emergency care provided by a specialist in emergency medicine.
2. The practice of emergency medicine is best conducted by a specialist in emergency medicine.
3. A specialist in emergency medicine is a physician who has achieved, through personal dedication and sacrifice, certification by either the American Board of Emergency Medicine (ABEM) or the American Osteopathic Board of Emergency Medicine (AOBEM).
4. The personal and professional welfare of the individual specialist in emergency medicine is a primary concern to the AAEM.
5. The Academy supports fair and equitable practice environments necessary to allow the specialist in emergency medicine to deliver the highest quality of patient care. Such an environment includes provisions for due process and the absence of restrictive covenants.
6. The Academy supports residency programs and graduate medical education, which are essential to the continued enrichment of emergency medicine and to ensure a high quality of care for the patients.
7. The Academy is committed to providing affordable high quality continuing medical education in emergency medicine for its members.
8. The Academy supports the establishment and recognition of emergency medicine internationally as an independent specialty and is committed to its role in the advancement of emergency medicine worldwide.

Membership Information

Fellow and Full Voting Member (FAAEM): \$525* (Must be ABEM or AOBEM certified, or have recertified for 25 years or more in EM or Pediatric EM)
 Affiliate Member: \$365 (Non-voting status; must have been, but is no longer ABEM or AOBEM certified in EM)
 Associate: \$150 (Limited to graduates of an ACGME or AOA approved emergency medicine program within their first year out of residency) or \$250 (Limited to graduates of an ACGME or AOA approved emergency medicine program more than one year out of residency)
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Taking a Stand on the Independent Practice of APPs

David A. Farcy, MD FAAEM FCCM — President, AAEM



As you are reading this issue, I want to take the time to wish you all and your loved ones, a happy and healthy new year. As you might be aware, AAEM has taken a strong stance around the role of the advanced practice provider (APP) in emergency centers across the nation. The discourse is getting

louder, and in some cases becoming inaccurate, distorted, and divisive. I'd like to clarify a few things, reinforce some of what has already been said, and present the position of AAEM on many aspects of this conversation. While "Advanced Practice Provider (APP)" is referenced in many sources, AAEM recognizes that even this term invokes certain emotions for both physicians and non-physician health care professionals. This term also does not traditionally encompass all non-physicians but for the purposes of consistency, I will use the term APP.

Prior to every board meeting we have, I read the AAEM mission statement for position clarity, and as a reminder of why AAEM was created in 1993:

- every individual should have unencumbered access to quality emergency care provided by a specialist in emergency medicine
- the practice of emergency medicine is best conducted by a specialist in emergency medicine
- a specialist in emergency medicine is a physician who has achieved, through personal dedication and sacrifice, board certification by either ABEM or AOBEM

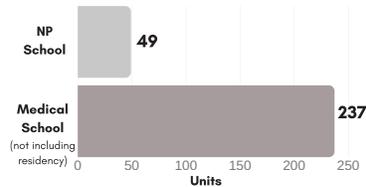
As President of AAEM, my responsibility is to uphold our mission statement and to represent our membership. In January 2019, our board reviewed the revised AAEM APP position statement (<https://www.aaem.org/resources/statements/position/updated-advanced-practice-providers>) written by the AAEM APP Task Force, and approved the new statement to reflect our mission statement. We received positive feedback, including from other physician groups (family medicine, anesthesia, surgery) but most importantly from the APPs within AAEM. Prior to its release we called each nurse practitioner (NP) and physician assistant (PA) and other non-physician members before implementing this to let him or her know that the Allied Health membership category was being dissolved, to be consistent with the AAEM position statement. We discussed our reasons, and individually, they each agreed with our action and supported the team concept of emergency care. They are still involved in AAEM, and are welcomed at the Scientific Assembly as well as other activities that AAEM supports.



WHAT IT TAKES TO MAKE A DOCTOR

The Educational Differences between Medical Doctors and Nurse Practitioners

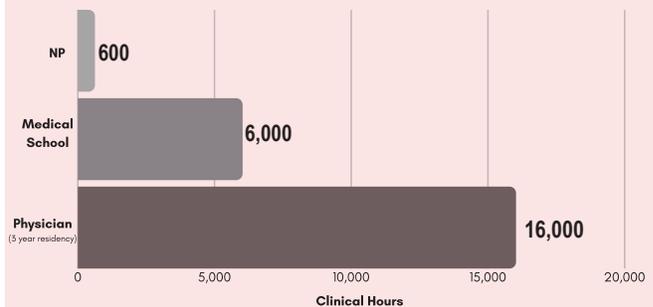
CERTIFICATION BY UNIT REQUIREMENT^{1,2}



- Even without accounting for residency, which is an additional 3-7 years of training, physicians who just graduated medical school had to take nearly 5x the amount of units for their degree compared to NPs.

*Example programs are listed that state their specific unit requirements for graduation. These sources closely resemble other programs of their same degree.

CLINICAL HOURS REQUIRED FOR CERTIFICATION



- While some nurse practitioner degrees can be completed 100% online in as little as 5 years including college, physicians must complete at least 11 years and more than 16,000 hours of hands-on training before treating patients independently.³
- An NP has less than 4% of the clinical hour training of an MD/DO (with the minimum 3 years residency training).⁴
- **A medical student, who is not allowed to treat a patient independently, would have undergone nearly 5x the amount of unit requirements and 10x the amount of clinical training that a fully licensed NP has.**



With the vast amount of education, training, and clinical hours required to produce a single physician (the most of any healthcare team member), physicians can rely on a much larger breadth of knowledge in each of the medical decisions they make. This is why we at AAEM/RSA believe that all healthcare team members, including nurse practitioners, should be under the supervision of a physician in order to ensure the safety and proper health care of our patients.

#ASKTOSEEYOURPHYSICIAN



1. https://www.samuelmeritt.edu/nursing/np_nursing/curriculum
2. <http://med.stanford.edu/medhandbook/section-4-curriculum-overview.html>
3. <https://telp.org/media/default/downloads/advocacy/scope-education.pdf>
4. <https://www.telp.org/Media/Default/Downloads/advocacy/scope-rnms.pdf>

Here's the sentence I want you to read, even if you don't read anything else in this message:

APPs, including nurse practitioners and physician assistants have always been and continue to be an important part of the emergency medicine, physician-led team working side-by-side for the efficient care of patients in the emergency department.

This message has somehow gotten lost in and amongst some of the enmity around this issue. We would not be able to efficiently run our emergency departments without our NP and PA colleagues working side by side with us. In the setting of an ever-increasing volume of patient visits, we need a team approach to effect the safe disposition of so many patients. With the advent and proliferation of the electronic medical record, as well as government oversight regulations on the house of medicine, we are tasked with multiple hours of administrative clerical responsibilities for each shift that we work. The end result is less time spend at the bedside caring for our patients.

The American Association of Nurse Practitioners (AANP) advertises that "patients under the care of NPs have higher patient satisfaction, fewer unnecessary hospital readmissions, fewer potentially preventable hospitalizations and fewer unnecessary emergency room visits than patients under the care of physicians" (ref: AANP) This is an astounding claim, and I had hoped to read literature supporting it. Unfortunately the reference to support this statement from the AANP website is a random sampling from 1991 of physicians and NPs responding to a hypothetical scenario by survey. (Avorn, J., Everitt, D.E. & Baker, M.W. (1991). **The neglected medical history and therapeutic choices for abdominal pain. A nationwide study of 799 physicians and nurses. Archives of Internal Medicine, 151(4), 694-698.**)

Where is the integrity in promoting this kind of statement with a survey? We know that literature such as this, at best is suggestive and certainly not something to support advertisements to the public. The bottom line is that there are no validated scientific studies that have shown the safety and efficacy of non-physicians practicing independently of physician supervision (ref: Physicians for Patient Protection).

Let's talk about the trust relationship between patients and the medical community. The average layperson is not equipped, nor should he/she be expected to read between the lines of advertising that promotes APPs over physicians for emergency health care when the education and training is vastly different for each. Here is what I wish the public understood: The argument to replace physicians with NPs and PAs is at the least, divisive, and at worst, dangerous. Even if AANP supports this and an NP has the "brain of a doctor," he/she certainly doesn't have the education and training of one. Physicians diagnose, treat, and prescribe independently after they have logged 15,000 to 16,000 clinical hours, while NPs who work in states that allow independent practice can diagnose and prescribe independently after logging between 500 and 1,500 clinical

hours (ref: Primary Care Coalition). The amount of supervised clinical training for a physician is 10-30 times that of an NP. It is indefensible to suggest the equality of these two professions for patient care, let alone the superiority of NPs.

Many will argue that APPs are filling the gaps in rural areas where there are physician shortages. The truth is that APPs don't seek employment in these rural areas any more than physicians do. Even in states with independent APRN practice laws, APPs have not expanded into rural areas. (ref: AMA)

So how has this played out? NPs cost less than physicians. Hospitals and urgent care centers that are focused on profits are looking for cost cutting options. Independent practice for NPs certainly fits that requirement. All they have to do is convince state legislators and the public that NPs are equivalent, if not better than physicians. The truth of this position is that NPs and PAs have already been taking care of patients for decades, but with supervision by physicians, which has for the most part been invisible to the patient. If they exploit the perception that APPs are already doing the job independently, the rest falls into place.

Who loses? Patients lose when they falsely believe that the person in the white coat is a physician, or when they believe that a physician is appropriately supervising the APP. They lose when they don't know enough about the medical system to ask questions. Who wins? Administrators do, who are for the most part – not physicians.

In November 2019, around 14-15 physicians were fired from Edward-Elmhurst as the suburban Chicago-based health system replaced them with less costly APPs. When profit margins are prioritized, patients become second and patient safety is not even a part of the equation in private equity firms. What do physicians need to do? A few things:

Contact your state legislator(s), voicing your opinion against the independent practice of APPs. Even if your state is one of the 23 states that have already implemented independent practice for NPs, it is worth writing or calling. If your state is contemplating it (I guarantee they all will eventually), it is even more crucial to write.

Do not agree to sign the chart of an APP unless you have been given ample time to evaluate and examine the patient if necessary. If you are not given this option, you may be signing onto a liability claim for a case you didn't have ample opportunity to evaluate.

Do not agree to sign the charts of patients whom were never presented to you in real time. Depending on the attestation, this may be fraudulent practice, and with the current environment and scrutiny it becomes more likely that you will be involved in litigation if the patient outcome is poor.

Speak out in your department if NPs or PAs are utilizing the title "Doctor" even if they have a PhD or other academic title. This title has a specific meaning in clinical setting of the emergency department, and patients deserve transparency.



There is a need to start collecting data from urgent care, freestanding staff with APPs who are practicing without direct physician supervision and document the un-necessary referral, over ordering of test and rate of complication. We need to let the data speak louder than any words. We love our APPs that work side-by-side and they are part of our family. Independent APPs without direct doctor supervision will not be good for patient care.

Join AAEM in our support for the physician-led team approach to patient care in the emergency department and educate your colleagues, friends, and family on the issue.

I want to personally thank Dr. Evie Marcolini and Dr. Julie Vieth for their contributions to my President's Message, for the countless hours and their dedication to the APP Task Force and every member of the Task Force. ●

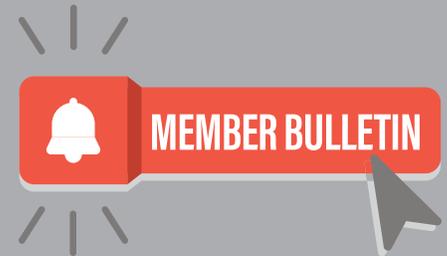
References:

1. American Association of Nurse Practitioners: <https://www.aanp.org/advocacy/advocacy-resource/position-statements/quality-of-nurse-practitioner-practice>
2. Physicians for Patient Protection: <https://www.physiciansforpatientprotection.org/ppp-responds-to-executive-order-regarding-pay-parity-and-scope-of-practice-offers-solutions/?>
3. Primary Care Coalition: <https://www.tafp.org/Media/Default/Downloads/advocacy/scope-education.pdf>
4. AMA: <https://www.ama-assn.org/system/files/corp/media-browser/premium/arc/ama-issue-brief-independent-nursing-practice.pdf>.

Introducing the AAEM Member Bulletin

In an effort to keep our members connected, *Common Sense* will begin a column of member updates submitted by our members. We ask you to submit brief updates related to your career. We will also publish the unfortunate news of the passing of current or former members.

Visit the *Common Sense* website to learn more and submit your updates for publication! www.aaem.org/resources/publications/common-sense ●



Member Bulletin

David A. Farcy, MD FAAEM FCCM

.....
Wednesday, January 15, 2020 Doctor of the Day in the Florida House

Gary M. Gaddis, MD PhD FAAEM FIFEM

.....
Holds the position of chair-elect for the Academic Physicians Section at the American Medical Association

Ziad N. Kazzi, MD FAAEM FACMT FAACT

.....
Elected to serve on the National Council on Radiation Protection and Measurements (six-year term)

Lisa A. Moreno, MD MS MSCR FAAEM FIFEM

.....
Selected for the Association of Academic Chairs in Emergency Medicine Chairs Development Program

Mehruba A. Parris, MD FAAEM

.....
We have a delightful new addition to our AAEM family: our Junior Assistant editor! Dr. Mehruba Anwar Parris and her husband Dr. Brent Parris are proud to introduce their baby boy, Idris Alexander Parris. He was born on August 29th, 2019 and weighed 7lbs 11oz.

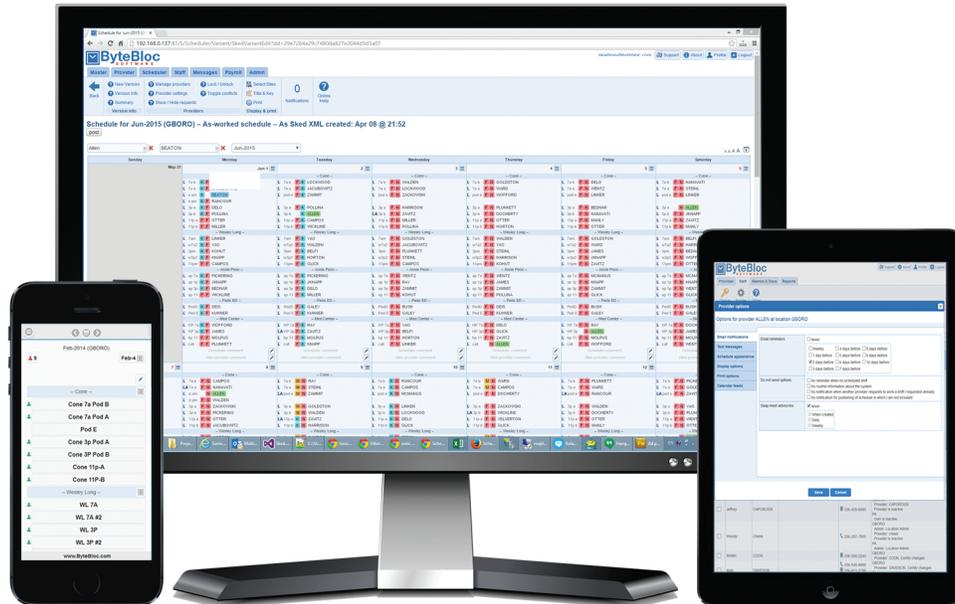


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The Meaning of an Election

Andy Mayer, MD FAAEM



We are approaching election season again, which in our current world brings up many mixed emotions, and sadly can tend to disintegrate into complaints and allegations related to the system and the individuals involved. Certainly, there can be endless discussions related to the Electoral College, the primary system, and outside influence. In this article, I want to foster discussion related to the election process in some of our emergency medicine societies and discuss and contrast some aspects in this process.

One of the founding ideals of AAEM was related to the election of the organization's board of directors and executive committee. A more direct election process was envisioned and established. The structure of the election process is an example of representative democracy where each full member has one vote and is eligible to vote directly for the President-Elect, Secretary-Treasurer and At-Large Directors. There are no councilor or special nominating committee for the election of members of the board of directors for AAEM. Each is elected directly by the members of the organization. This process was felt to represent a more democratic and fair way for a member to become a leader in our organization.

The next AAEM elections will occur in Phoenix at the Scientific Assembly. Elections occur every year in person at the Scientific Assembly. The President-Elect and Secretary-Treasurer are elected every other year along with several At-Large Directors. On the alternate year only At-Large Directors are elected. Candidates for any of these positions can be nominated by a member or can self-nominate if they chose to do so. Each candidate submits a position statement which is published in this publication in advance of the election. Full voting members are encouraged to go to the candidates' forum which is held each year during the Scientific Assembly. During this session, candidates make a statement related to their candidacy and can be asked questions by any member in the audience. I encourage anyone who has not attended one of these sessions to do so and witness democracy in action. However, any member unable to attend the Scientific Assembly is still eligible to vote electronically. The official details of the AAEM election process are below:

AAEM Election Process

Any Academy member may nominate a full voting member for the board and any YPS member may nominate for the YPS director position. You must be a YPS member to be eligible to run for the YPS director position. Self-nominations are allowed and encouraged.

Any emergency physician has to believe that the leadership of the emergency medicine specialty society whom they look up to will represent their interests

The candidate statements from all those running for the board will be featured in an upcoming issue of Common Sense and will be sent to emeritus, full voting, and YPS members.

Elections are held concurrent with the AAEM Scientific Assembly each year. Although balloting arrangements will be made for those unable to attend the Assembly, all members will be encouraged to hold their votes until the time of the meeting.

The Scientific Assembly will feature a Candidates' Forum, in which members will be able to directly question the candidates before casting their ballots. Winners will be announced during the conference, and those elected will begin their terms at the conclusion of the Assembly.

ACEP Election Process

ACEP elections have a different process. I have never attended an ACEP election, but have read and discussed their process and the rules related to them can be viewed on the internet. The process is another form of representative democracy but it seems more in line with a parliamentary system. Each chapter elects or appoints councilors who are the ones who elect the officers. This seems to be analogous to members of parliament in Britain voting on a prime minister. Below are some of ACEP's election rules from their webpage:

Section 8 — President-Elect: Any member of the Board of Directors excluding the president, president-elect, and immediate past president shall be eligible for election to the position of president-elect by the Council. The president-elect shall be a member of the Board of Directors. The president-elect's term of office shall begin at the conclusion of the



meeting at which the election as president-elect occurs and shall end with succession to the office of president. The president-elect shall be elected by a majority vote of the councilors present and voting at the annual meeting of the Council. The president-elect shall succeed to the office of president at the conclusion of the first ensuing annual meeting of the Council following the meeting at which the election as president-elect occurred and shall end at the conclusion of the next annual meeting of the Council, or when a successor is seated.

Rational arguments can be made for and against each system. One might argue that having only seasoned veterans who have been on the council or board of directors for a significant period of time should be eligible for higher office. It can be reasonable to think that institutional knowledge and experience is necessary for high office and that this can only be obtained by a long presence in the council or on the board of directors. Having a young maverick rise too quickly can lead to chaos or lead the organization down the wrong path. The alternative view is that the ability of a member relatively new to the organization or one who had not previously been politically active can passionately feel that a change is necessary and that the organization definitely needs new blood and new ideas at the top. I see both points of view but I personally lean towards having the entire membership decide on what is needed and which direction they want to point their professional organization towards.

The concept of individuals as having paid their dues and deserving a leadership position as a reward or honor related to their years of service to an organization personally bothers me. I do not think that just because a member has spent a certain amount of time on committees or doing the background necessary work needs to be repaid with a title. There

is a danger in sitting in a room with the same faces year after year and thinking that one of them deserves or is entitled to a particular office due to their seniority or dedication to the society. Certainly, any organization needs to have some senior members to help prevent a rash or politically unwise policy or stance on any issue which might misrepresent the general membership's position on a major issue. The balance between seasoned veterans and young and dynamic enthusiasm is probably the correct path but this is an issue to consider.

There cannot be even the perception that an officer is there to represent the interests of anyone or anything other than the membership at large.

The prospect of outside influence on holders of high office also must be considered. ACEP and AAEM I believe want to represent the broad spectrum of emergency physicians and their various practice types. There are many issues which affect every emergency physician and obviously need to be discussed and a platform presented and supported by any society's officers and board. However, emergency medicine is practiced in so many different ways and each can have significant challenges which can be the crucial issue in one practice type and be of no concern for another. Each type of practice needs representation and support from the officers and board of their organization. Both AAEM and ACEP have officers who work for corporate management groups. Their employment type should not exclude them from office, but certainly the board should naturally contain a balance of individuals from

corporate, academic, independent, government, and other practice environments. There is a danger if one type of physician dominates. There cannot be even the perception that an officer is there to represent the interests of anyone or anything other than the membership at large.

I think that an election in either form is crucial to our specialty. Any emergency physician has to believe that the leadership of the emergency medicine specialty society whom they look up to will represent their interests. They need to believe that the said leadership was fairly elected and will represent the interests of the membership. ●

AAEM Antitrust Compliance Plan:

As part of AAEM's antitrust compliance plan, we invite all readers of *Common Sense* to report any AAEM publication or activity which may restrain trade or limit competition. You may confidentially file a report at info@aaem.org or by calling 800-884-AAEM.

AAEM Foundation Contributors – Thank You!



Levels of recognition to those who donate to the AAEM Foundation have been established. The information below includes a list of the different levels of contributions. The Foundation would like to thank the individuals below who contributed from **1-1-2019 to 1-14-2020**.

AAEM established its Foundation for the purposes of (1) studying and providing education relating to the access and availability of emergency medical care and (2) defending the rights of patients to receive such care and emergency physicians to provide such care. The latter purpose may include providing financial support for litigation to further these objectives. The Foundation will limit financial support to cases involving physician practice rights and cases involving a broad public interest. Contributions to the Foundation are tax deductible.

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What stood out to you from this issue of *Common Sense*? Have a question, idea, or opinion? Andy Mayer, MD FAAEM, editor of *Common Sense*, welcomes your comments and suggestions. Submit a letter to the editor and continue the conversation.

Check out the redesigned *Common Sense* online at:
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The AAEM Institute for Leadership, Education & Advancement in the Development of Emergency Medicine, Inc. (LEAD-EM) was established after the tragic and unexpected death of AAEM president, Dr. Kevin G. Rodgers.

The Kevin G. Rodgers Fund and the Institute will LEAD-EM just like Dr. Rodgers did. The funds will support important projects such as development of leadership qualities, and clinical and operational knowledge of emergency physicians with a view toward improving and advancing the quality of medical care in emergency medicine, and public health, safety and well-being overall. LEAD-EM would like to thank the individuals below who contributed from 1-1-2019 to 1-14-2020.

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AAEM Conferences

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26th Annual Scientific Assembly – AAEM20
Phoenix, AZ
www.aaem.org/AAEM20

March 28-29, April 1-2, and April 25-26, 2020

Oral Board Review Course

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February 20, 2020

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(Jointly sponsored by EUS-AAEM)
Jamaica, NY
www.aaem.org/get-involved/chapter-divisions/nyaaem/conference

May 22, 2020

TNAAEM 2020: Updates in Emergency Medicine
Nashville, TN
www.aaem.org/get-involved/chapter-divisions/tnaaem/updates-in-em

May 22-23, 2020

9th Annual FLAAEM Scientific Assembly
Miami Beach, FL
www.aaem.org/flaaem/scientific-assembly

AAEM Recommended Conferences

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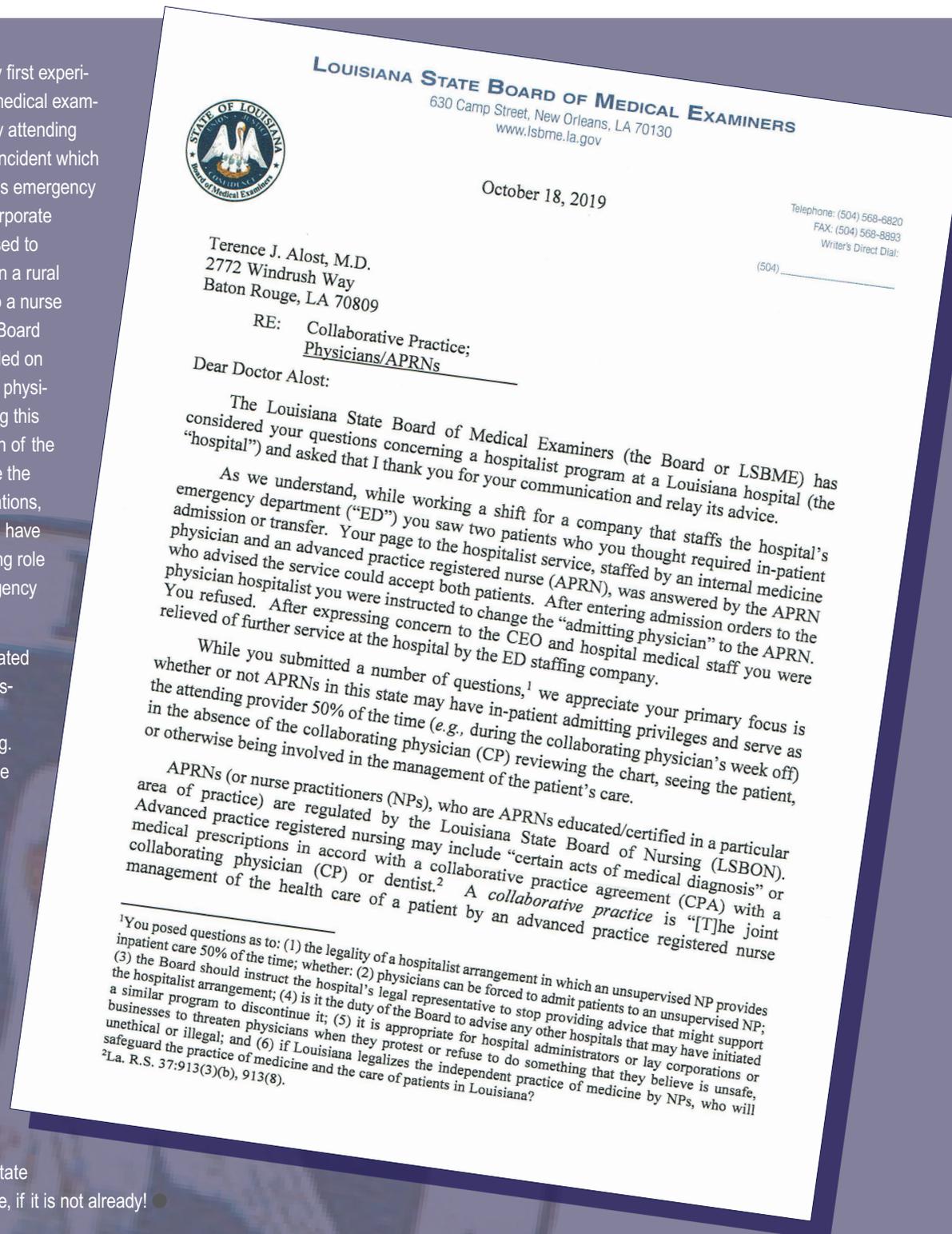
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Louisiana State Board of Medical Examiners Letter

Andy Mayer, MD FAAEM — Editor, Common Sense

In my last editorial I discussed my first experience attending a state board of medical examiners meeting. The purpose of my attending was to speak related to a recent incident which affected one of our members. This emergency physician was terminated by a corporate management group after he refused to admit patients he had evaluated in a rural emergency department directly to a nurse practitioner. The Louisiana State Board of Medical Examiners recently ruled on this in a letter sent to the involved physician. *Common Sense* is publishing this legalistic letter with the permission of the involved physician to demonstrate the tangled web of laws, rules, regulations, and regulatory agencies which all have a part to play in the ever expanding role which midlevels play in our emergency departments.

The letter is detailed and complicated and quite frankly, to me it is confusing. Please consider reading it so you can see what we are all facing. What do you think it means? Is the game lost? I called and spoke to the executive director of the state board who was the author of the letter. He was incredibly informed concerning this issue and seemed to be very involved with this case. Frankly, it seems that the state boards in the U.S. are legally constrained concerning many issue related to midlevel providers. Physicians quite honestly have been out-lobbied in our state legislators. Please become involved in your state medical politics before it is too late, if it is not already! ●



Another Successful MEMC!

Moreno, MD MS MSCR FAAEM FIFEM — President-Elect, American Academy of Emergency Medicine
Executive Chair, Mediterranean Emergency Medicine Congress



I want to thank the AAEM community, the Mediterranean Academy of Emergency Medicine (MAEM), and the 742 delegates from the 43

countries represented at the Xth Mediterranean Emergency Medicine Congress in Dubrovnik, Croatia this past September, for an incredible Congress. Without exception, this was overall the most successful MEMC ever and AAEM is truly proud to have sponsored it with our first international chapter, MAEM. We held seven pre-congress courses, organized by our At-Large Director, Dr. Bobby Kapur, taught by an outstanding team of educators, and attended by 67 delegates. 346 abstracts were submitted and reviewed by our dedicated team headed by Drs. Mark Langdorf and Ed Panacek. 304 of these abstracts were presented in either oral or poster format. Dr. Stephen Hayden, Editor-in-Chief of our official journal, *Journal of Emergency Medicine*, sponsored the Oral Abstract Competition. The top three (of four) oral abstracts presented their abstracts at the Opening Ceremony at the Sun Gardens Resort in Dubrovnik. Dr. Langdorf, Editor-in-Chief of the *Western Journal of Emergency Medicine*, sponsored the Poster Competition, with textbook prizes generously donated by Dr. Judith Tintinalli, Dr. David Farcy, and AAEM/RSA.

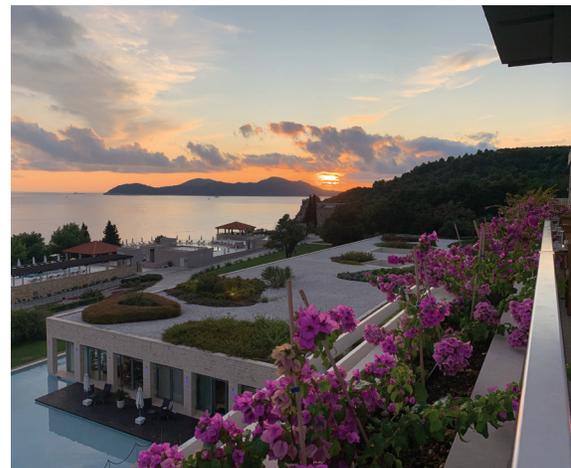
The Keynote Address of this Congress was presented by Dr. Terry Kowalenko, the Immediate Past President of the American Board of Emergency Medicine. Dr. Kowalenko addressed at topic core to the values of AAEM: the importance of board certification, and why it must be integrated early into the plan to develop EM as a specialty in every country. Plenary addresses were provided by Dr. Melanie Stander, this year's winner of the Dr. Cristina Costin International Emergency Medicine Award; Dr. Saleh Fares, winner of the Founder's Award; Dr. Ian Martin, President of the Society for Academic Emergency Medicine; Dr. Vik Kapil of the CDC, Dr. Billy Mallon from Stony Brook University, and Mr. Nishant Kishore, a PhD candidate at Harvard University.

In an all-out effort at inclusivity, we held seven contemporaneous tracks daily: three main tracks, two Breve Dulce tracks, and two oral abstract tracks. Despite the lovely weather, the tempting recreational offerings of the Sun Garden, and the tantalizing tourist options available in the city of Dubrovnik, most rooms were well filled in every track, every day, and many tracks had standing room only. A new session was introduced at this Congress, focused on the career development of women in EM. Drs. Megan Healy, Eveline Hitti and Judy Tintinalli provided me with invaluable assistance in creating a safe space for women and HeForShe supporters to talk about everything from microaggressions, overt disparities, dating, pregnancy, fertility, and domestic tethers. We hosted a panel of women of power who shared their winning strategies, followed by a workshop on negotiating the work place facilitated by American University of Beirut.

Evaluations indicate that delegates found the educational offerings at MEMC to be superior, and the content to be practice changing. Evaluations further indicate that delegates rate MEMC as the premier, standard setting international Congress in Emergency Medicine. Our reputation is so substantial as to have attracted 47% new attendees to MEMC. Our room block filled up months before the Congress; several weeks prior to the closure of the discounted room rate.

Social events at the MEMC took advantage of the opportunities unique to Dubrovnik. The city is one of the few spared during the World War II bombings, and so not only medieval, but even Roman Era structures still stand throughout the Old City. The city itself enjoys a metropolitan, urban atmosphere while also being a seaside village. As many of you know, most the episodes of the incomparable *Game of Thrones* series were filmed here. MEMC sponsored a Faculty Leadership Dinner at a beautiful beachside venue, Arsenal, and our Gala Dinner at the Revelin Fortress, which was one of the original fortresses protecting the city during the

medieval period and was the site of the Red Wedding episode of *Game of Thrones*. The events were well attended and provided an opportunity for me and my fellow members of the Executive Committee, Drs. Antoine Kazzi and David Farcy, to thank the Track Chairs, main track speakers and pre-Congress faculty for their tireless efforts to make this the amazing Congress that it was.



Fellowship trained emergency physicians also continue to develop new ways to improve the use of POCUS and to study best practices for use on shift.



“This exciting development will likely continue to evolve over the next few years as ultrasound societies nationwide work together to develop the exam and fellowship credentialing guidelines.”



Several sponsors generously supported MEMC. In addition to the journals and their editors, MEMC received support of sponsoring institutions. These sponsors included American University of Beirut through the generosity of their Dean, Dr. Mohamad Sayegh and ED Chair Dr. Eveline Hitti, the University of California - Irvine through the generosity of ED Chair Dr. Christopher Fox, King Faisal Specialist Hospital & Research Center Jeddah through the generosity of Dr. Yasser Qureshi and Van Meter and Associates physician group from New Orleans through the generosity of Dr. Keith Van Meter. Corporate sponsorship from Bayer U.S. Crop Science was facilitated by Dr. S. Eliza Dunn (Halcomb).

You may recall that we asked you to vote on the venue for the next MEMC. You voted, and we responded: the XIth MEMC will take place in the island nation of Malta in 2021. It will be my pleasure to announce the exact dates and specific hotel details as soon as we have negotiated them.

The work of a Congress Chair is entirely supported by her colleagues and her staff, and I am most blessed to have a team of talented, smart and dedicated individuals sharing the work of MEMC with me. Best of all, most of them are my friends! In addition to my physician colleagues, the Executive Director and Associate Executive Director of AAEM, Mrs. Kay Whalen and Mrs. Missy Zagroba and meeting manager extraordinaire, Ms. Leah Skogman, work with us to create the magic that is MEMC. When you see them, remember to thank them, and I know you will see them, since I know you will not miss the XIth Mediterranean Emergency Medicine Congress in Malta in 2021. I look forward to seeing you there! ●





It's Election Time: Cast Your Votes or Run for a Position!

California Chapter Division of AAEM (CAL/AAEM)

Nominations open: January 6, 2020
Nominations close: April 1, 2020 at 11:59pm PT

Elections Open: April 15, 2020
Elections Close: May 29, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/CALAAEM



SECTIONS

Delaware Valley Chapter Division of AAEM (DVAAEM)

Nominations open: March 6, 2020
Nominations close: March 27, 2020 at 11:59pm ET

Elections open: April 10, 2020
Elections close: May 4, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/DVAAEM



Critical Care Medicine Section of AAEM (CCMS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/CCMS



Florida Chapter Division of AAEM (FLAAEM)

Nominations open: March 16, 2020
Nominations close: April 8, 2020 at 11:59pm ET

Elections open: April 27, 2020
Elections close: May 23, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/FLAAEM



Emergency Medical Services Section of AAEM (EMSS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/EMSS



Great Lakes Chapter Division of AAEM (GLAAEM)

Nominations open: December 16, 2019
Nominations close: March 18, 2020 at 11:59pm CT

Elections open: April 12, 2020
Elections close: May 23, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/GLAAEM



Emergency Ultrasound Section of AAEM (EUS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/EUS



New York Chapter Division of AAEM (NYAAEM)

Nominations open: Friday, March 6, 2020
Nominations close: Friday, March 27, 2020 at 11:59pm ET

Elections open: Friday, April 10, 2020
Elections close: Monday, May 4, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/NYAAEM



Women in Emergency Medicine Section of AAEM (WiEMS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/WiEMS



Uniformed Services Chapter Division of AAEM (USAAEM)

Nominations open May 4, 2020
Nominations close: May 27, 2020 at 11:59pm CT

Elections open: June 10, 2020
Elections close: July 1, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/USAAEM



Young Physicians Section of AAEM (YPS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/YPS



The Deliberate Elimination of Racism from Clinical Practice

L.E. Gomez, MD MBA FAAEM — Diversity and Inclusion Committee Chair



It is well past time we admitted that physicians and the U.S. health care system in general, is no more post-racial than the rest of our society. We are

afraid to talk about racism and can only go as far as to use “culture” as a proxy for race, and “diversity” as a proxy for non-white skin color. Yet we have ample evidence that health disparities by race persist despite decades of awareness around cultural competence. A summary of this fact can be found in recent reports such as the one from National Academies of Sciences, *Communities in Action: Pathways to Health Equity*.¹

Why is this? My view is that we are paying lip service to the concept while not holding ourselves accountable to measurable modification of skills. We need a new strategy. But I’m getting ahead of myself. Let’s start by taking a look at where we are, since we already mentioned a bit about why. The founding principles behind cultural competence have been around for at least thirty years.² Most of us wouldn’t know that unless we did some digging, since the exponentially increasing buzz around this term makes it seem like everyone has been made accountable. Nothing could be further from the truth.

The concept of cultural competence in training wasn’t even broadly adopted in health care until about fifteen years later, around the time Betancore et. al. published their analysis for *The Commonwealth Fund*.³ Cultural competence, as applied to clinical practice, is the ability of an emergency physician to effectively deliver care to every patient in an increasingly racially and ethnically diverse population. It was clear from Betancore et. al. that access to and quality of health care are impacted by cultural competence. There is general agreement that effective care cannot be provided without it. Although some of the framework for practical approaches they laid out over a decade and a half ago have been adopted, especially at the level of medical schools, these have been limited. Are there any realistic alternative approaches? I believe that our standard of care needs to be modified to reconcile the hypocrisy of stating that we expect the competency, but cannot do more to ensure it is acquired. We can start by specifically modeling that skill set in our specialty.

Enter the Model of the Practice of Clinical Emergency Medicine. First let’s take a brief look at the history of the document which

contains all of the knowledge and skills required to practice emergency medicine.⁴ In 1975, ACEP and the University Association for Emergency Medicine (now SAEM), conducted a survey of our emerging specialty and the Core Content of EM. It has since been revised and expanded four times and is in the process of being revised for the fifth time. The Task Force is composed of one voting member from ABEM, ACEP, SAEM, CORD, ACGME-RRC, EMRA, and AAEM. Our own Dr. Jonathan S. Jones was AAEM’s representative to this EM Model Task Force this past spring, and he shared that most changes were simple and minor.

This latter observation may be one of the reasons why we do not see significant change in our cultural competence skills and hence, no



Cultural competence, as applied to clinical practice, is the ability of an emergency physician to effectively deliver care to every patient in an increasingly racially and ethnically diverse population.



change in persistent health disparities experienced by non-white patients. The concept of cultural competence itself may reflect its association with dominant culture thinking, but let us focus on the goal at hand: improving training in emergency medicine such as to decrease racism.⁵

Whereas the most current 2016 updated version of the Model of Clinical Practice of EM delineates that patient-centered care requires communication skills that include the ability to establish rapport with patients and their families as described in introductory Table 3. “Physician Task Definitions” notes that the “performance of focused history and physical examination is a requirement,” which cannot be successfully performed if biased or not centered culturally.⁴ The present recommendation proposed is that Physician Task Definitions be modified to specifically require four aspects of cultural competence: 1) awareness of differences by race, 2) attention to attitude towards race discordant patients, 3) knowledge of cultural differences with non-white patients, and 4) skills to address aspects 1-3, and that these be specifically included and expanded in the sections and subsections which will be described below.

Similar recommendations to improve cultural competence addressing the four aspects listed above have been made for the purpose of improving medical education. As noted by Sorensen et. al. “enhancing cultural competence in medical education is justified based on attention to diversity issues, and should be considered at all stages of health care planning, including the recruiting and training of health care staff and organizing and providing health care.”⁶

Further, researchers from schools of public health such as Padela et. al. have made such recommendations specifically with regard to potential positive impact of improving cultural competence in emergency medicine practice:

“three processes are proposed that may improve the quality of care delivered to minority populations: 1) increase cultural awareness and reduce provider biases, enabling providers to interact more effectively with different patient populations; 2) accommodate patient preferences and needs in medical settings through practice adjustments and cultural modifications; and 3) increase provider diversity to raise levels of tolerance, awareness, and understanding for other cultures and create more racially and/or ethnically concordant patient-physician relationships.”⁷

Additionally, some state legislatures have required medical boards to adopt and expand such competency. For example, in 2005, the NJ Legislature “enacted law requiring the New Jersey Board of Medical Examiners in consultation with the Commission on Higher Education to prescribe requirements, by regulation, for physician training in cultural competency. Regulations related to cultural competency training were adopted in final form on April 7, 2007. The legislation requires all medical schools in NJ to provide specific instruction to current and future students in cultural competency as a condition of receiving a diploma from the College of Medicine of NJ. It also required cultural competency CME instruction for licensed physicians who did not receive it in their medical school curriculum.”⁸

Specific initial recommendations are as follow:

That section 20.1 of the Model of the Practice of Clinical Emergency Medicine be changed to “Interpersonal and Communication Skills with Cultural Competency” such that the cultural competence principle clearly applies and is included in all aspects of patient care, as well as all areas covered by 20.1 Interpersonal Skills

I realize my proposal is ambitious, but if you consider the positive repercussions and potential for reducing human suffering, I believe you will all agree, it is worth the fight.

Sub-categories to reflect cultural competence with application to the following areas:

- 20.1.1.1 Inter-departmental and Medical Staff Relations
- 20.1.1.2 Teamwork and Collaboration
- 20.1.1.3 Patient & Family Experience of Care
- 20.1.2.1 Complaint Management
- 20.1.2.2 Conflict Management
- 20.1.2.3 Crisis Resource Management
- 20.1.2.4 Delivering Bad News

That 20.1.2.5 “Cultural Competence” be replaced with “Institutionalized Racism Awareness” including understanding of the physiologic impact of chronically elevated allostatic load that results from this stress in certain populations of patients.

It is further recommended that “Cultural Competence” be applied to evaluation of scientific evidence:

- 20.2.1 Evidence-Based Medicine
- 20.2.2 Interpretation of Literature
- 20.2.3 Performance of Evaluation & Feedback
- 20.2.4 Research
- 20.2.2 Education & Professionalism (including requirement diversity in role



models)

...that the requirement on “Diversity Awareness” be expanded to imply awareness of the above; that the section on “Medical Ethics” specifically include consideration of the unethical practice of discriminatory assessment such as that of pain tolerance by race; that the incremental stress experienced by inner city communities be acknowledged and considered; the well-being of minority physicians requires incremental consideration as a result of under-representation particularly in the context of 20.3.4.1 Fatigue & Impairment (in consideration of the aforementioned increased allostatic load); that consideration of cultural competence be given to areas of subjective evaluation such as 14.7 “Personality Disorders;” and finally that the scant attention given testable content areas that address these skill sets be expanded to include the four major areas of cultural competence named above.

Of course this will require significant collaboration with the all of the other Task Force members. I realize my proposal is ambitious, but if you consider the positive repercussions and potential for reducing human suffering, I believe you will all agree, it is worth the fight.

* I would like to acknowledge Melissa Faith Merritt for her help in editing this and several previous articles published in *Common Sense*. ●

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Emergency Department Management Solutions: Principles and Practice – Round Two

Kraftin Schreyer, MD CMQ FAAEM — Operations Management Committee Co-Chair



For those of us feeling the start of fall just after Labor Day, making the trip to hot, sunny New Orleans for the second annual Emergency Department Management Solutions: Principles and Practice course on September 5th and 6th was more than welcome. 49 healthcare providers from all over

the country attended the two-day conference to take the next steps in their respective careers in administration and operations. The conference featured course director Joseph Twanmoh, MD MBA FAAEM, and speakers Joseph S. Guarisco, MD FAAEM FACEP; Ben White, MD FAAEM; Jim Blakeman; Kraftin Schreyer, MD CMQ FAAEM; and Tom Scaletta, MD MAAEM FAAEM, who brought experience in different areas of emergency medicine from all over the country. The course was not just for new or inexperienced providers. Past, present, and future presidents of AAEM: Robert McNamara, MD MAAEM FAAEM; Lisa A. Moreno, MD MS MSCR FAAEM FIFEM; and Tom Scaletta, MD MAAEM FAAEM were all in attendance, as was AAEM board member Robert A. Frolichstein, MD FAAEM.

The first day of the conference was jam-packed with great material. The morning sessions focused on process improvement, including the Plan Do Study Act (PDSA) and LEAN methodologies, ED flow, including intake systems, throughput, and output models, and how queuing theory and constraints impact each of those processes. In the afternoon, the focus shifted to patient experience and how the increase in Advanced Practice Providers has impacted EM, and how those providers can be best utilized for different types of EDs. The second day featured more high-yield topics, including



Each session was accompanied by a robust group discussion, which took various forms including shared solutions, question and answer, and case studies and workshops.

change management, revenue generation, and negotiation. Each session was accompanied by a robust group discussion, which took various forms including shared solutions, question and answer, and case studies and workshops.

In addition to the conference sessions, thanks to the AAEM Physician Group, there was also a formal networking event that allowed conference speakers and attendees to get to know one another and presented another opportunity exchange and discuss operational and administrative problems and solutions.

Overall, attendees had great things to say about their experience:

- “This was my first conference like this, and I feel like I learned so much!”
- “It was great getting to meet like-minded people and share solutions. I am definitely leaving with things I can bring back to my group and implement right away.”
- “Did I enjoy EDMS? Of course - all of the topics were really high yield. Can’t believe I got so much out of this in only two days!”
- “I’ve heard a lot of talks on [patient experience] and this one was one of the best!”
- “This is my second time attending this conference, and I got something new out of every session!”

The planning committee is already hard at work on preparations for next year’s conference. Be sure to mark your calendars early for Emergency Department Management Solutions: Principles and Practice 2020! ●



Be sure to mark your calendars early for Emergency Department Management Solutions: Principles and Practice 2020!

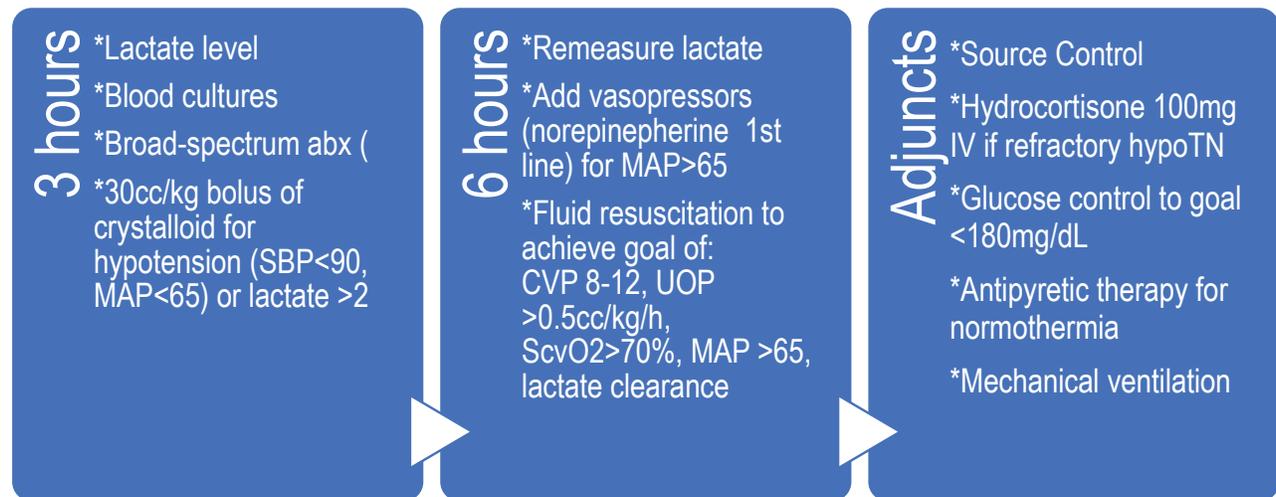


DEFINING AND TREATING SEPSIS



a) SIRS criteria: Temp >38C or <36C, HR >90bpm, RR >20 or PaCO₂ <32, WBC >12k or <4k

b) End organ dysfunction is marked by acute respiratory failure inc. ARDS, AKI: elevated Cr or oliguria, Encephalopathy, Coagulopathy: PT>16 sec or PTT >60 sec, Thrombocytopenia: plt <100k, Hyperbilirubinemia: serum bilirubin >4, clinical malperfusion: delayed cap refill and cool extremities, lactate >2



Can't keep track of how much fluid you have given? Try our easy hack to keep track. Scan the QR code to see the AAEM Critical Care Hacks video.

Navigating to Success: Wisdom from Tiffany Murano, MD

Amanda Tramutola, DO



Residency is a challenging time, and as I look ahead to the future, I can't help but wonder how to go about carving out a path to a successful career.

Fortunately, I had the privilege to discuss this topic with Tiffany Murano, MD, and learned how she navigated her choices to become the incredibly successful physician who she is today.

Dr. Murano, a Bronx native, graduated from Mount Sinai School of Medicine in New York and completed her residency at Jacobi Medical Center. In choosing her first attending position after residency, she had the opportunity to start at Rutgers (formerly known as UMDNJ) at a time in which the emergency department at that institution consisted of nine beds run by internists and surgeons. Rather than feeling overwhelmed, Dr. Murano realized that this was an occasion for personal and professional growth. She recalls "witnessing the birth of a specialty" as her new position allowed her to enter on the ground level. She was able to establish an emergency medicine presence through the medical school, creating a functional emergency department and residency program.

Dr. Murano did not have well-established local emergency medicine mentors available at the start of her career. She was determined, however, to put Rutgers "on the map." Dr. Murano realized that having a professional network would be critical for her success. She found local mentors, and although they were from different specialties, they were champions in their fields and supportive of Dr. Murano's pursuits. She also began a search for career guidance and connections in emergency medicine through national organizations, especially the Council of Residency Directors in Emergency Medicine (CORD) and the American Board of Emergency Medicine (ABEM). She reminisces about presenting a poster at an annual CORD Academic Assembly and having a member of the board stop by to discuss it with her, and how this became the beginning of a long-standing mentorship. In meeting others with similar interests through her involvement in national organizations, Dr. Murano established formidable relationships with regional and national mentors. Her involvement with CORD and ABEM has led her to other opportunities for further development, and she now sits on the Residency Review Committee (RRC) for the Emergency Medicine section of the Accreditation Council for Graduate Medical Education (ACGME). In a similar manner, her involvement with AAEM and her recognition as a nationally acclaimed speaker have given her the chance to speak at the Mediterranean Emergency Medicine Conference (MEMC) both in 2017 and 2019.

Dr. Murano has successively served as clerkship director and then

program director of the Rutgers emergency medicine residency.

Throughout her seven-year journey as program director, she learned that mistakes are not failures, but rather are learning occasions with long-term benefits for improvement. Perfecting her skills and applying them, Dr. Murano has founded two separate residency programs as well as fellowships in toxicology, administration, and ultrasound. Currently, she is working on a medical education fellowship set to launch next year. Dr. Murano has not just made her mark in the local (NY/NJ) residency realm. She holds executive board positions at the regional and national levels in CORD and NJACEP. She also serves on several graduate medical education committees including Milestone 2.0, a work group aimed to improve residency foundations and learning.

Dr. Murano is a team player and her present and former "teammates" respect her abilities and hard work. A former colleague, Mr. Brian Dolan, praises her: "Dr. Murano is an excellent physician as well as an excellent mentor, colleague, and friend. Her compassion for her patients is second to none and her willingness to teach all levels of healthcare is truly heart-warming. Witnessing Dr. Murano take the time to explain things to the patients as well as to all levels of the staff to help continue the ever-growing 'thirst for knowledge' is exemplary. Having worked side-by-side with Dr. Murano for several years, I can truly say that the patients and team are in great hands with Dr. Murano and was honored to have had the ability to work with her."

As we all know, stability is comforting, but Dr. Murano urges us to walk through each door hoping for a new opportunity behind it.



Dr. Murano suggests thinking carefully about planning a career, particularly focusing on potential areas of growth. She notes that turns and obstacles on the path may provide new, previously unrealized opportunities. Dr. Murano has shared some important lessons:

Seek out mentorship early Dr. Murano believes mentorship is key, and attributes a large part of her success to support from family, friends, and colleagues. She found guidance through CORD and ABEM – large networks of physicians looking out for each other, recognizing strengths, and pushing each other towards amazing opportunities.

Don't say no to opportunities Dr. Murano recalls saying “yes” to everything early in her career. She went on to say, “various part of careers are like Brussel sprouts – might not taste good, might never want another dish again, but it won't harm you and you might actually like it!” Dr. Murano encourages “just say yes” even it's something you don't want to do or that doesn't exactly “float your boat.” Dr. Murano did not see herself working with medical students and eventually residents, but she realized how much she truly enjoyed education.

Dream big Dr. Murano admits part of her success stems from her own drive and ambition. As we all know, stability is comforting, but Dr. Murano urges us to walk through each door hoping for a new opportunity behind it. She states, “you know what you've got, but you don't always know what you'll get.” By setting your standards high, you can strive for greatness and attain it if you work hard enough.

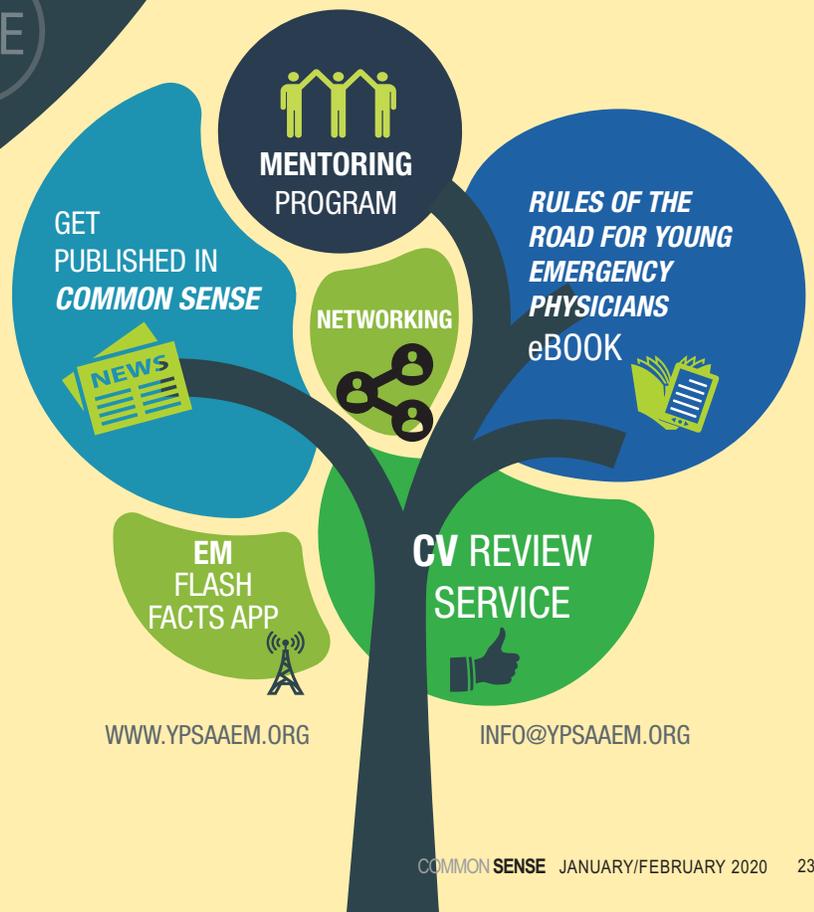
Don't limit yourself Dr. Murano humbly admits the most frightening thing she did throughout her career was leaving Rutgers. She was terrified to leave Rutgers to evaluate a new position after 16 years, but she learned much about herself, people, business, and life. She advocates that stepping outside of a comfort zone is a “life check.” She has now returned to her home base at Rutgers, but learned the value of change as well as finding appreciation for what she has available to her now. ●



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Reimbursement and Coding of Point of Care Ultrasound: Bringing Your Ultrasound Program to the Next Level

Jason Adler, MD FAAEM and Alexis Salerno, MD



Introduction

The use of point of care ultrasound (POCUS) in the emergency department (ED) has increased significantly over the past 5-10 years. As our specialty evolves, so do the tools in our diagnostic toolbox. The use of ultrasound is more than an extension of our stethoscope - it is a diagnostic study that supports the rapid assimilation of data and diagnoses. Many of these procedures are also reimbursable.

Similar to other services provided in the ED and medicine in general, the process of reimbursement begins with coding the medical record. Coders use Current Procedural Terminology (CPT®), which is maintained by the American Medical Association (AMA), to apply an accurate code for the service rendered. Codes are then processed for reimbursement depending on their value. Each year, the codes are updated by the AMA CPT Advisory Committee with representation from each specialty society.

I interviewed Dr. Jason Adler to find out more about ED coding and reimbursement for POCUS. Dr. Adler is a board certified emergency physician and subject matter expert in coding and reimbursement. After spending the early part of his career at an independent democratic group, he now works clinically as a Clinical Assistant Professor at the University Of Maryland School Of Medicine. Dr. Adler is also the Vice President of Practice Improvement at Brault, an acute care coding, revenue cycle, and practice management firm.

Question 1: Which ultrasound examinations can emergency physicians be reimbursed for?

Board certified emergency physicians (EP) are frequently using ultrasound in their clinical practice. Our specialty training includes many ultrasound exams, which when performed, are considered a separately billable procedure.

One of the most common examples of ultrasound done by the EP is for trauma patients. The FAST exam is used to rapidly evaluate a trauma patient for bleeding around the heart or in the abdomen. There is no single CPT® for this study; it is coded as a combination of a limited transthoracic echo (93308, -26) and limited abdomen (76705, -26). You can also perform an ultrasound of the chest (76604, -26) to evaluate for pneumothorax.

For the medical patient, the chest ultrasound (76604, -26) can evaluate a patient for pulmonary edema. A limited abdominal ultrasound (76705, -26) can be done to look for gallbladder disease and a limited retroperitoneal study (76775, -26) to evaluate for aortic aneurysm or renal disease. In other cases, for example, a pregnant patient with vaginal bleeding, a transabdominal (76815, -26) can be used to diagnose an ectopic pregnancy, a time sensitive and critical diagnosis.

Ultrasound exams are also being used to improve the safety and accuracy of critical procedures. These exams include central line placement (76937, -26) using a dynamic technique (where the ultrasound is used to identify the vessel through needle entry). Ultrasound can also be used as guidance for needle placement, for example, lumbar puncture (76942, -26), thoracentesis (32555, -26), and paracentesis (49083, -26).

Question 2: What is involved in setting up an ultrasound program which captures reimbursement?

A few steps are recommended to start an ultrasound program and appropriately capture reimbursement. The clinician should be credentialed by the hospital to perform the procedure but it is not necessarily required for reimbursement purposes by CPT®. You need to have a mechanism in place to retain and store images. Then, you would need to discuss policies and procedures with your coding vendor and have a process in place to document why you are performing the study, what you find, and demonstrate the medical necessity of the exam.

Question 3: What is the difference between professional and technical components of ultrasound billing?

The professional component of the ultrasound exam is performed by the clinician and covers the supervision, interpretation, and documentation of the results. When only reporting the professional component, a -26 modifier is added to the procedure code. The technical component is typically captured by the facility with a -TC modifier, and includes the cost of equipment, supplies, clinical staff, practice, and malpractice expenses.

Although we are seeing some EDs purchasing machines for dedicated use in the ED, and individual clinicians purchasing portable devices, it is generally not recommended to report the technical fee in this setting.



Question 4: Can you explain the difference between a limited and complete ultrasound examination from a coding perspective?

A complete ultrasound exam, per CPT®, is intended to visualize and diagnostically evaluate all the major structures within the anatomic description. There are specifications related to the area studied and type of imaging (e.g. B-mode vs Doppler). In contrast to a complete exam, a limited ultrasound exam, per CPT®, is one in which less than the required elements are performed and documented. Therefore, most ED ultrasounds are considered limited exams since exams are focused to answer a particular diagnostic question.

The abdominal ultrasound exam is a frequently cited example to describe the differences between the complete exam (76700) and the limited exam (76705). The complete abdominal exam, often performed by a radiologist, would include images and comments on the liver, gallbladder, common bile duct, pancreas, spleen, kidneys, the upper abdominal aorta, and inferior vena cava, with specific pertinent positive and negative findings for each or the reason why the exam element could not be visualized. In contrast, a limited abdominal ultrasound, (76705), may be performed to look at one single organ or quadrant where the gallbladder or spleen is evaluated for acute cholecystitis or splenic injury. Generally, best practice for documenting the written report includes 2-3 interpretive comments for each exam element.

A common exception to the complete or limited exam is a transvaginal ultrasound for the pregnant patient (76817) and non-pregnant patient (76830). These studies do not have corresponding limited procedure codes. In these cases, a complete exam would include comments and images for the uterus, endometrium, ovaries, and adnexa. A correlating focused ultrasound exam in the ED would seek to identify the location of the pregnancy, presence of an ovarian cyst, or fetal heart activity. In this case, the modifier (-52) would be added to indicate reduced service and to demonstrate the study is less than complete when a CPT® code for a limited study is not available (e.g. 76817-26,52).

“The use of ultrasound is more than an extension of our stethoscope - it is a diagnostic study that supports the rapid assimilation of data and diagnoses.”

Question 5: Do the ultrasound images need to be saved and, if so, for how long? Do they have to be saved in the chart or can they be somewhere else like the cloud?

Image retention is important from a reimbursement and medicolegal perspective. While there are no formal guidelines on the location of the images (e.g., cloud based, hard drive, or otherwise), CPT® does require that images from the exam be stored and retained. The number of images and the length of storage time should be discussed with your medical records department.

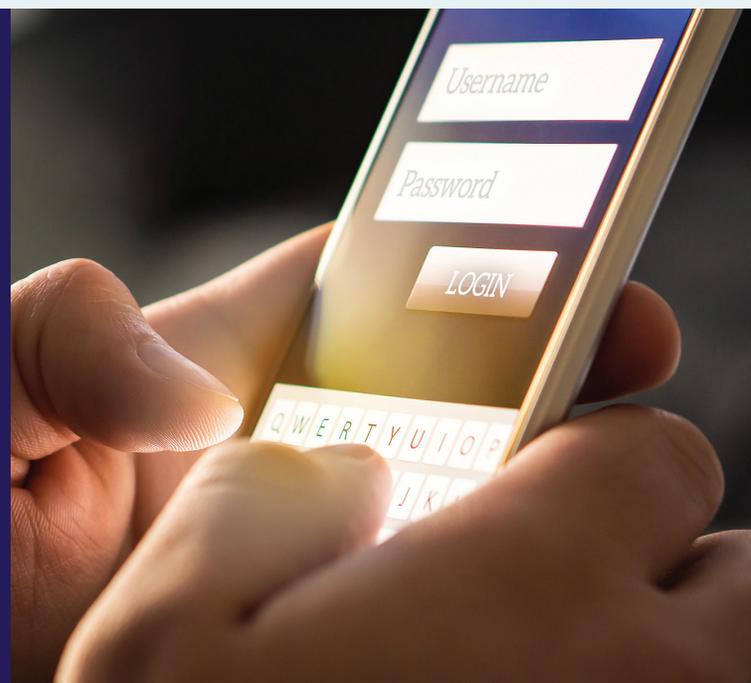
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Question 6: Could both an emergency physician and a radiologist each do their own ultrasound exam and bill for it on the same patient?

In some cases, the answer is yes. But the most important factor is the medical necessity of the exams. If an emergency physician does a limited ultrasound and either has an inconclusive result or identifies a reason for an additional study in the same anatomical region, there may be a medical necessity for a complete exam to be performed by another clinician (e.g., radiologist). However, there may still be payor specific policies that lead to a denied claim on the second complete study and variation does exist. If you repeated multiple limited exams on the same patient, such as a FAST, you need to demonstrate the medical necessity of those repeated exams. CPT® modifier -76 is added for repeat procedure by the same provider during the same encounter (e.g. 93308-26, 76). Modifier -77 is added for a repeat procedure by a different physician during the same encounter.

“Our specialty training includes many ultrasound exams, which when performed, are considered a separately billable procedure.”

Question 7: Is there a difference for billing ultrasound guided procedures?

Ultrasound has significantly improved our abilities as emergency physicians to safely and accurately perform procedures. The most common examples of ultrasound assisted procedures in the ED are ultrasound guidance for vascular access (76937, -26). Compared to the exams mentioned previously, this study uses ultrasound dynamically and it may not be safe to capture an image while the vessel is cannulated. In this case, a pre and post procedure image is sufficient to demonstrate the dynamic nature of the exam. The following exams require static images, where ultrasound is used to landmark the location for entry: ultrasound guidance for needle placement prior to abscess drainage (cutaneous, peritonsillar), lumbar puncture, and central line placement. CPT® also provides code options with and without ultrasound guidance for several procedures. Examples include arthrocentesis (20600, 20604-20606, 20610 - 20611), thoracentesis (32554, 32555) and paracentesis (49082, 49083).

Question 8: What is the value of the commonly performed ultrasounds in the ED?

RVUs based on the Medicare Physician Fee Schedule (MPFS) eff 4/1/19

Ultrasound Ordered	CPT Code	RVU
FAST Trauma: ex. TTE- to check for hemopericardium Abdominal; limited to check for hemoperitoneum; *Chest or lung (if performed) usu. Checking for pneumothorax	93308	0.73
	76705	0.83
	*76604	0.77
	Total RVU's	2.33
Pregnant Transabdominal	76815	0.93
Pelvic or Post void Residual (Non-Obstetric); limited	76857	0.71
AAA or Abdomen Back Wall or Urinary Tract; limited	76775	0.82
Cardiac or Transthoracic Echo (TTE) or F/U TTE; limited	93308	0.73
Biliary or Abdominal; limited	76705	0.83
Thoracic or Chest (includes mediastinum)	76604	0.8
Ocular or Ophthalmic B-Scan	76512	0.99
**U/S guided needle placement; (e.g. Aspiration, Injection, FB Removal, LP)	76942	0.91
**U/S guided vascular access placement	76937	0.41
**U/S guided pericardiocentesis	76930	0.94

**Report the US Guided Codes with their corresponding procedure codes
If any readers have further questions on billing or suggestions for administrative corner topics, please email us at EUS@aaem.org. ●

New Physician Finance: 101

Fred E. Kency Jr., MD FAAEM



It is July, you have just graduated from residency and it is time to get the first “real” check of your career. If you are anything like me, you have absolutely no idea how to save for the future. Should I call a financial advisor or phone a friend? When should I start saving for the future? Most physicians

have little knowledge of savings and informed financial planning by the time they graduate residency. While family or friends may give somewhat helpful advice, you may be in very different financial situations than they are. However, with the potential for a large injection of cash into your bank account with a new attending job, it is critical to plan for a sound financial future.

Like many emergency physicians, I started my career as an independent contractor. I quickly learned that I had quite a few decisions to make about retirement and options for pre-tax savings. 403b, Solo 401K, Sep IRA, and 529’s can sound like a foreign language. Let’s take a quick look at the options available to ensure a sound financial future for our generation.

Let’s start with the Solo 401K. If you are an independent contractor, a Solo 401K may pique your interest for retirement planning. A Solo 401K is an IRS qualified retirement plan for employers with no employees besides themselves and a spouse. In this plan, you contribute both as an employer and employee. The plan contributions are made pre-tax, reducing your taxable income for that year. Maximum contribution in 2019 for a Solo 401K is \$56,000. Individuals over the age of 50 may contribute an additional \$5,000 each year.¹

Similar to the 401K is the Sep IRA. The Sep IRA holds the same maximum contribution as the Solo 401K for 2019. The difference is how the money is contributed. In a Sep IRA, you contribute only as an employee. An employee can contribute up to 25% of their net income to a maximum of \$56,000. Like the Solo 401K, contributions are made pre-tax, reducing a person’s taxable income for that year.² Sep IRA’s are considered the “easier” retirement planning tool and there are plenty of online brokers that can help open accounts and get you started.

I quickly learned that I had quite a few decisions to make about retirement and options for pre-tax savings.

There is also the Roth IRA, where you can make post tax contributions. With this option, there is no immediate reduction in your taxable income for the current year. The advantage of the Roth IRA is that the money and interest grows tax-free. The 2019 contribution limits for Roth IRAs is \$6,000. After the age of 50 you can contribute an extra \$1,000 each year. Most attending physicians will not be able to contribute to a Roth IRA directly due to income limits but residents may be interested in contributing to a Roth IRA. Ask your CPA or tax lawyer about rolling over your SEP IRA or Solo 401K into a Roth IRA.

The Solo 401K, Sep IRA, and Roth IRA can all be withdrawn without penalty at age 59 ½. The Roth IRA has an additional requirement of “5

year aging” which means that there is no 10% penalty if withdrawals are taken out after 5 years after establishing the account.

If you have children, another method for tax savings is starting a 529 Educational plan. The 529 “Qualified Tuition Program” started in 1996 by Congress and named after section 529 of the Internal Revenue Code gives you another option for saving money with federal tax free growth. As of 2018, the 529 plan allows up to \$10,000 to be used for “qualified higher education expenses.” These funds can be used to pay for elementary and secondary schooling.⁴



Most physicians have little knowledge of savings and informed financial planning by the time they graduate residency.

Lastly, another useful resource for the newly graduated physician is the Health Savings Account (HSA). Health care expenses are an inevitable part of life. HSAs provide immediate tax savings as contributions are pre-tax. In order to qualify for an HSA, a few qualifications must be met. For 2019, you must have a high deductible health insurance policy. Single taxpayers must have a minimum deductible of \$1,350 and maximum out of pocket of \$6,750. The maximum pre-tax contribution is \$3,500. Married taxpayers must have a minimum deductible of \$2,700 and maximum out of pocket of \$13,500. Maximum pre-tax contribution is \$7,000.⁵

As you can see, we have many options for tax savings and investment growth. The above summaries are only a general overview of the programs that may be available to you and your family. Please remember all investment decisions have benefits and drawbacks. Before initiating your financial plan, discuss these with your financial advisor, CPA, or tax lawyer to ensure you qualify for these programs and to know if they will provide you with a good return on your investment portfolio.

Follow @AAEMYPS on twitter for weekly finance tips every Friday. ●

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What is Happening to Our Specialty? An Open and Honest Look at the Chaos in Our Trade.

Your Advocate, AAEM/RSA

As physicians, we all subscribe to the four tenets of medical ethics: autonomy, justice, beneficence, and non-maleficence. These ideals are integral in providing ethical care to all our patients, from the weakest and most vulnerable, to the most astute and medically literate. Our patients deserve these moral characteristics in their physician in order to get the best care possible. But what do physicians deserve?

If we were to apply these factors to ourselves as EM physicians, we'd see a grim trend of unethical practices occurring in our own specialty. Corporate greed, poor educational transparency, loss of autonomy – and the illegitimization of the emergency physician.

Let's start in chronology from residency. Today's medical students applying to emergency medicine are already in an ethical dilemma, especially those that are less competitive. The huge flux of for-profit emergency medicine programs offers just about any medical student the opportunity to become an EM physician. In 2009, there were 1,472 spots in the NRMP Match. This year, it's 2,488 – a rise of more than one thousand spots.^{1,2} A key player in this massive expansion of programs – for-profit non-physician owned corporate medical groups. As a medical student that cannot match a reputable, non-corporate program, you're left with the decision of “do I not follow my dream of matching EM?” or “do I match into EM even though it is under the influence of an unethical training model?” The vast majority of non-competitive applicants, based on our match rates, choose the latter – many not knowing that they're even in a for-profit corporate program.

If this weren't enough, these programs are undermining simple supply and demand economics. Despite data showing that our EM workforce is reaching a plateau, our specialty has been having a rapidly expanding number of residency positions – the most of any specialty in the house of medicine.^{3,4} Why? Some theorize this is to cheapen labor,

These same entities undermine your education by introducing one-year family medicine fellowships in emergency medicine and PA and NP “residencies” - in a degraded use of the term - that are directly competing with EM resident education in the institutions that host these programs.



both via implementing residents (underpaid and overworked high-skilled commodities) into a hospital system and also to increase the supply of EM physicians to the point that oversupply leads to lower wages for physicians to the benefit of for-profit entities as they increase their revenue. **Ethical Principle #1: Autonomy.**

And then there is the issue of residency closures. This trend of poorly run, poorly staffed, vaguely structured for-profit corporate systems producing residency programs across the U.S. is being showcased with each residency closure that falls on the back of trainees. After undergoing the difficulties and financial burden of medical school, many residents are in the limbo of unstable residency training. Profits aren't doing as well as hoped? The corporation pulls out and the most impacted bystanders are residents. If that weren't enough, residents in the aftermath are treated like well-groomed sheep, having their residency funding auctioned

If you're not swayed by what you're reading, take off the white coat and roll up your sleeves, our generation has a lot of cleaning up to do.



off to the highest bidder.⁵⁻⁸ **Ethical Principle #2: Justice.**

And next, enter the practice of emergency medicine. Your options at jobs are limited to working for non-physician for-profit corporations with metrics and bottom lines and your due process waived as soon as you sign on, to “medicine” or democratic physician-led groups that may

But what do physicians deserve?

lose their contract to the former in the coming years.^{9,10} Many of these corporations are also now replacing traditionally EM staffed jobs with midlevel providers, both with the expectation that the few staffed EM physicians will sign charts blindly, and with the understanding that despite significant lapses in education when compared to physicians, these MLPs are much cheaper labor that bring in the same revenue when their charts are signed by an attending physician.¹¹ For many years, our specialty has fought long and hard to establish the importance of being a board certified EM-trained physician. To other physician specialties’ detriment, we did away with the notion that non-EM trained physicians were okay to practice in the ED and thus solidified the EM *specialty*. The irony, however, is that now we’re okay with subjecting our vulnerable patients to family-trained nurse practitioners with substantially less training than family medicine physicians? Even more, we do so knowing that these same practitioners are fighting actively to replace our profession with bills of independent practice and claims that their care is equivalent to ours.¹² Is this not a fallacy? **Ethical Principle #3: Beneficence.**

And now enter surprise billing: an issue so clearly the fault of corporate medicine greed that has of course, conveniently fallen on the eroding reputation of doctors.¹³⁻¹⁷ The fallout of which is on the backs of EM physicians – with

expectations that our salaries will go down if our government finds ways to further regulate EM reimbursement. **Ethical Principle #4: Non-Maleficence.**

At the end of the day, whether from a 60,000 foot view or a 6mm view, our specialty has become infected by the parasitic behavior of for-profit corporations. Corporate medicine has infiltrated all aspects of our specialty, from our training programs, to our staffing, to our patient’s care, and even most concerning – they’ve infiltrated our specialty societies. Whether we, as the next generation of EM physicians, recognize and stop this bastardization of our specialty is up to us.

To all the medical students thinking of pursuing emergency medicine, we invite you to choose this as your specialty - to us and many others, the best specialty. But we also caution you to recognize what you’re getting into. If you’re not swayed by what you’re reading, take off the white coat and roll up your sleeves, our generation has a lot of cleaning up to do. ●

For many years, our specialty has fought long and hard to establish the importance of being a board certified EM-trained physician.

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My First "Sick" Patient

Alexandria Gregory, MD — AAEM/RSA Publications & Social Media Committee Chair



Everyone knows the most fundamental part of emergency medicine residency is learning how to determine "sick versus not sick," which is often easier

said than done. One night, at the end of my shift, a nurse grabbed me, saying the patient in room six needed a doctor *now*. The patient was a young asthmatic who had apparently walked into the emergency department minutes earlier, but was now unresponsive, gray, and with an oxygen saturation in the 50s. I had no trouble determining she was sick; as a relatively new intern, the bigger problem was figuring out what to do next. To quote Michael Scott from *The Office* episode "Stress Relief," in that moment, "I knew exactly what to do, but in a much more real sense I had no idea what to do." I knew I needed to focus on the ABCs and I knew what medications the patient needed in terms of asthma management, but in the acuity of that moment, it all jumbled together. I quickly grabbed an attending and we worked through the ABCs together as the proper medications were administered and the patient stabilized.

That patient taught me several important lessons about intern year and residency as a whole:

- **You know more than you think you do, but you're not expected to know everything.** Looking back on that case, the first thing that struck me was that the nurses had enough faith in me to see this critically ill patient. Perhaps it was simply because I was the closest physician in proximity, but it still serves as an important reminder that even as an intern, people may look to you to make critical decisions. At the same time, no one expects that you have all the answers—after all, that is the point of residency. Someone should always be available to have your back and you should not be afraid to ask for help when you feel stuck.
- **Slow down, even when you feel there is no time to do so.** Inevitably, as you start to see critical patients as a beginner, just knowing that the patient needs quick interventions will tempt you to rush. However, the best decisions are usually made when you take a step back and look at the big picture. While taking a moment to think may feel like you are wasting precious time, making the right decision for the patient is usually more important than saving a few seconds.
- **Your demeanor can have real impact on patient outcomes.** Similar to the above, the way you handle yourself in critical moments

Someone should always be available to have your back and you should not be afraid to ask for help when you feel stuck.

is almost as important as the actual decisions you make. While it is natural to be flustered in unfamiliar situations as a new learner, being able to remain calm and compassionate in such scenarios is part of what makes an emergency medicine physician. Medicine, and perhaps emergency medicine especially, is unique in that our day-to-day decisions, even seemingly small ones, have direct impact on people's *lives*. Mastering the way you carry yourself as you make such decisions is just as important as learning the medicine itself.

- **Emergency medicine is a team sport.** I have known this for a while, and it is part of why I chose to practice emergency medicine specifically, but cases like this are always a good reminder. When I was asked to see the patient with asthma, I was far from alone. I was surrounded by nurses, medics, respiratory therapists, and multiple attendings who came to assist. Everyone had his or her own role, but at the end of the day, we were all there to save our dying patient. While being a resident can feel isolating and challenging at times, remembering that you are part of a team with a shared goal can go a long way. ●

While taking a moment to think may feel like you are wasting precious time, making the right decision for the patient is usually more important than saving a few seconds.



Utility of Ultrasound Measurements in Assessing Fluid Responsiveness

Samantha J. Yarmis, MD; Robert Brown, MD; Jordan Parker, MD; Caleb Chan, MD; Akilesh Honasoge, MD
Editors: Kami M. Hu, MD FAAEM, Kelly Maurelus, MD FAAEM

Clinical Question

How can we utilize ultrasound measurements to accurately determine which patients are fluid responsive? Does any single ultrasound measurement accurately predict fluid responsiveness?

Introduction

Volume expansion is a cornerstone of resuscitation in the ED and is currently one of the main recommended components of septic shock management. The ability to predict fluid responsiveness has been a highly debated issue within emergency and critical care medicine. Early studies found inferior vena cava (IVC) diameter and variability could predict fluid responsiveness in intubated, mechanically-ventilated septic patients.^{1,2} The applicability of these findings to other populations is unknown and subsequent studies have called these findings into question.³ At the other end of the spectrum, the existence of a volume overloaded state may be detected by measuring indices in the liver and kidneys such as portal vein pulsatility,^{4,5} hepatic venous flow velocity,⁶ and intrarenal venous flow.⁷ Confirmation of increased stroke volume with passive leg raise or a small fluid challenge is currently one of the better, albeit imperfect, existing methods to ensure true volume responsiveness.^{8,9,10}

More recent studies have evaluated other ultrasound measurements such as change in carotid corrected flow time, internal jugular vein distensibility, and left ventricular outflow tract velocity time integral in an attempt to find a method of determining volume responsiveness that is both accurate and easy to do at the bedside.

Airapetian N, Maizel J, Alyamani O, et al. Does inferior vena cava respiratory variability predict fluid responsiveness in spontaneously breathing patients? *Crit Care*. 2015; 19:400.

Airapetian et al. sought to assess whether the respiratory variability of the IVC could be used to predict fluid responsiveness in spontaneously breathing (i.e., not intubated) patients. They conducted a prospective study performed in two ICUs from a single center in France. The cohort was made up of 59 consecutive patients who received volume expansion as ordered by an attending physician, generally based on criteria such as hypotension, oligoanuria, skin mottling, "and/or clinical and laboratory signs of extracellular dehydration." Patients who had signs of hemorrhage, arrhythmias, an immediate need for the fluid challenge, compression stockings, or a contraindication to passive leg raising (PLR) were excluded. After baseline blood pressure (measured using an invasive arterial monitoring system), heart rate, cardiac output (CO, as calculated using the measured aortic area and velocity-time integral, VTI), and IVC diameters were recorded, the bed automatically induced a PLR of 30 degrees. Measurements were then repeated two minutes later, and the patient was returned to their initial semi-recumbent position. 500 mL of

saline was then given over 15 minutes and measurements were then repeated again.

Responders (29/59, 49%) were defined as those who had a CO increase of 10% or more following the 500 mL bolus. Responders and non-responders had statistically similar baseline characteristics including percentage of non-surgical (versus surgical) admissions and rates of preexisting heart failure and chronic obstructive pulmonary disease. At baseline, responders had a higher aortic VTI (16 vs. 19 cm, $p=0.03$), smaller minimum IVC diameter on inspiration (IVCmin, 11 ± 5 vs. 14 ± 5 mm, $p = 0.04$), as well as greater IVC variability (cIVC 35 ± 16 vs. 27 ± 10 %, $p = 0.04$). Data analysis revealed that maximum IVC diameter upon expiration (IVCmax) did not predict fluid responsiveness (<2.1 cm: PPV of 57%, LR+ of 1.4), with an area under the receiver operating characteristic curve (AUROC) of 0.62 ± 0.07 (95 %CI 0.49-0.75). Similarly, the AUROC for cIVC at baseline was 0.62 ± 0.07 (95 %CI 0.49-0.74). However, at a threshold of cIVC $>42\%$ there was a specificity of 97% and a PPV of 90% (with a sensitivity of 31%) in distinguishing responders from non-responders.

The authors conclude that IVC diameter and IVC variability are not reliable predictors of fluid responsiveness in spontaneously breathing patients. Inspiratory variation $>42\%$ was a specific but non-sensitive predictor of fluid responsiveness.

Overall, this study's biggest limitation is its small sample size. Another point of caution is that accurate ultrasound measurements are highly operator dependent particularly when measuring aortic VTI. In this study, CO was calculated using the average VTI over three to five consecutive measurements over one respiratory cycle. In addition, the high-level of inter-observer reliability suggests that the ultrasonographers were highly skilled, which may not be the case with all emergency physicians and may limit generalizability. It should be noted that the baseline MAP in this small cohort was 86 ± 19 and 87 ± 33 mmHg for responders and non-responders respectively, not hypotensive and actually higher than the typical MAP goal of 65 mmHg. There was also no comparator gold standard measurement used to confirm the CO measurements. In addition, this cohort of patients were ill, but also were thought to be stable enough not to need the fluid immediately, although this exclusion criteria as well as the inclusion criteria of "signs of extracellular dehydration" were poorly defined. While ultimately there is debate about the utility of IVC measurements in fluid responsiveness given its use as a surrogate value for central venous pressure, based on this study, a cIVC $>42\%$ in spontaneously breathing patients may predict an increase in CO after fluid infusion.



Corl KA, George NR, Romanoff J, et al. Inferior vena cava collapsibility detects fluid responsiveness among spontaneously breathing critically-ill patients. *J Crit Care*. 2017; 41:130-137.

This study investigated if IVC collapsibility measure using POCUS was able to detect fluid responsiveness among critically ill but spontaneously breathing patients. The study was a prospective observational study that enrolled a convenience sample of patients admitted to a medical ICU. A total of 124 patients were included who demonstrated signs of “acute circulatory failure” defined in this study as hypotension (systolic blood pressure <90 or MAP <65 mmHg for at least 30 minutes), persistent tachycardia (HR >120 for at least 30 minutes), and/or laboratory tests indicative of organ hypoperfusion (serum pH <7.3 or lactic acid >2).

The authors defined fluid responsiveness as an at least 10% increase in cardiac index following a 500 mL bolus of normal saline as measured by the Non-Invasive Bioreactance Cardiac Output Monitoring System (NICOM; Cheetah Medical, Newton Center, MA). The NICOM measures the change in phase of a 75kHz alternating current across the chest which predictably varies with blood flow through the aorta when compared to thermodilution with a pulmonary artery (PA) catheter as the gold standard¹¹ and was subsequently validated in a multi-center follow up study.¹²

One of three study physicians obtained subcostal long axis views of the IVC. IVC diameter was measured at maximum expiratory and minimum inspiratory diameter 3 cm caudal from the junction of the IVC and the right atrium. Caval index (cIVC) was defined as (IVC expiratory diameter – IVC inspiratory diameter)/IVC expiratory diameter.

The primary outcome was AUC for cIVC. The AUC was found to be 0.84 (CI 0.76 – 0.91) — indicative of a fair level of discrimination. The optimal cIVC found to maximize sensitivity and specificity for fluid responsiveness was 25%. Secondary investigations included comparison of this cutoff to previously suggested cutoff values and to evaluate if incorporating a passive leg raise helps detect fluid responsiveness. The authors found that a cIVC of 25%, which was lower than previously suggested cutoff values of 40-42%, produced a lower misclassification rate. Incorporating a passive leg raise did not result in fewer misclassifications compared to baseline cIVC alone.

One limitation of this study was that the exclusion criteria included “if the clinical team felt that they had active pulmonary edema” and if the clinical team “believed that further IVFs might pose a clinical risk.” The specific criteria used to determine patients excluded for these reasons are not given. Another limitation is that the authors report the median time from ED triage to first ultrasound was 17 hours during which a mean of 4060 mL of fluids was administered to each patient. In contrast, the mean fluid given during the study, including the 500 mL bolus to assess fluid responsiveness, was only 525 mL. This suggests that the vast majority of volume resuscitation occurred prior to study enrollment and ultrasound images thus limiting the applicability of the study to patients

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who present to the ED prior to any volume resuscitation. It may make the results more applicable to patients on arrival to the ICU, however, similar to patients who have already received fluids in the ED.

The authors conclude that their results support the use of cIVC, as the AUC of 0.84 is indicative of fair discrimination. In addition, this AUC is reasonably higher than that for PLR, which indicates that cIVC outperforms PLR as a measure of fluid responsiveness. While debate still exists as to the optimal cutoff for cIVC to predict fluid responsiveness, this study also suggests that it may be a useful tool in guiding fluid resuscitation.

Barjaktarevic I, Toppen W, Hu S, et al. Ultrasound assessment of the change in carotid corrected flow time in fluid responsiveness in undifferentiated shock. *Crit Care Med.* 2018; 46(11):e1040-46

The authors of this study questioned whether point-of-care doppler ultrasound measuring the change in carotid corrected flow time (Δ ccFT) during a passive leg raise (PLR) accurately predicted fluid responsiveness in ICU patients with undifferentiated shock. The flow time is the time from ejection of blood into the aorta until the closing of the aortic valve as measured at the carotid. It predates modern ultrasound and was developed in conjunction with heart sounds and ECG tracings to determine the cardiac cycle. As a surrogate measurement for stroke volume, it can be measured using a pulse waveform analysis of the carotid artery and it can be corrected for heart rate variability.¹³

For their prospective observational study, Barjaktarevic et al. enrolled 77 consecutive patients with early (< 24 hours) undifferentiated shock (requiring vasopressors despite > 1L fluid resuscitation) as they presented to the UCLA medical or surgical ICUs. They excluded patients with heart failure, any rhythm other than normal sinus, pulmonary hypertension, recent history of thromboembolism, or increased intracranial pressure. A single physician sonographer measured ccFT before and after PLR and a second physician blinded to the clinical environment measured the same unprocessed images to assess inter-rater variability. Results from the two physicians were not significantly different when compared with a Bland-Altman plot demonstrating a mean difference score = 0ms at baseline and -0.2ms after PLR (95% limits of agreement from -6.6 to + 6.4ms).

They divided the patients into responders and non-responders based on whether stroke volume increased 10% or more on PLR as measured by NICOM. Using a two-sample t-test they found a significant difference in the Δ ccFT between responders (14.1ms +/- 19ms[SD]) and non-responders (-4.0ms +/- 8ms) with $p < 0.001$. They used a cutoff of 7ms to calculate a ROC curve for predicting fluid responsiveness with Δ ccFT and found that it was 68% sensitive and 96% specific. Subgroup analyses of mechanical ventilation, PEEP > 5cmH₂O, and respiratory rate demonstrated no significant impact on test performance.

The authors conclude Δ ccFT is “an acceptable and reproducible” measure of fluid responsiveness in patients with undifferentiated shock, and this evidence is supportive but weak. It is plausible that this test should be

reproducible given that a longitudinal view of the carotid with a linear probe is not difficult to achieve but the conclusion is undermined by having only two operators and only one set of images. The importance of doppler ultrasound agreement with NICOM as a gold standard is also questionable because NICOM was not validated in this specific population. The mathematical significance of the findings lacks a clinically-relevant outcome like duration of ICU admission, duration of vasopressor use, volume of crystalloid given, rates of renal failure, or mortality, and the significant variance in the Δ ccFT shows overlap between responders and non-responders.

Guarracino F, Ferro B, Forfori F, et al. Jugular vein distensibility predicts fluid responsiveness in septic patients. *Critical Care.* 2014; 18:647.

The authors of this study sought to elucidate if respiratory changes in internal jugular vein (IJV) diameter in mechanically-ventilated septic patients can predict fluid responsiveness. In mechanically-ventilated patients, the positive pressure from the ventilator causes distension of the extrathoracic vasculature during inspiration. Measuring this respiratory change in diameter of the IVC has been previously suggested to be an accurate measurement of fluid responsiveness.¹ The internal jugular vein is an easily accessible vessel using ultrasound and is thought to be technically easier to image than the IVC.

In this prospective study, Guarracino et al. enrolled 50 patients aged 18 years or older who presented with sepsis and required intubation. They excluded patients with cardiac disease, atrial fibrillation, or any sign of IJV thrombosis. All patients were mechanically-ventilated with a mandatory minute ventilation setting and similar parameters (PEEP, FiO₂, TV). During acquisition of measurements patients remained in a semi-recumbent position with the head of bed at 30 degrees elevation. All enrolled patients had an indwelling radial artery catheter to monitor hemodynamics including pulse pressure (PP), cardiac index (CI), and MAP. Pulse pressure variation (PPV) was defined as the ratio of the maximum difference in PP averaged over three respiratory cycles. All patients were given a 7 mL/kg crystalloid infusion over 30 minutes. Ultrasound measurements were performed just prior to and immediately following the fluid administration. The authors determined that responders would be patients who had a PPV > 13%. For their ultrasound measurements, a single operator used a 12-MHz linear transducer placed at the level of the cricoid cartilage to evaluate the diameter of the IJV in the anterior-posterior plane using M-mode. An IJV distensibility index (%) was calculated using the following formula: (maximal IJV inspiratory diameter - minimum IJV expiratory diameter) / minimum IJV expiratory diameter X 100. IJV distensibility measurements were performed by personnel blinded to the patient's response to volume expansion.

The authors found that 30 patients were responders and 20 were non-responders. The median IJV distensibility index prior to fluid administration in the responders was 24.15% (IQR 20 to 29) and 9.8% (IQR 7.6 to 13.8) in the non-responders (p -value <0.0001). This difference between IJV distensibility was not present following volume expansion (p -value=0.07). The authors utilized ROC curves to determine the



sensitivity and specificity for IJV distensibility and PPV to predict fluid responsiveness. They found that the sensitivity and specificity for predicting fluid responsiveness with an IJV distensibility > 18% was 80% (95% CI 61.4 -92.3) and 95% (95% CI 75.1 – 99.9), respectively. The data also showed that the responders had a median PPV that was greater than the non-responders, 22.5% vs 12.2% (p-value < 0.0001). A PPV > 12.5% was shown to predict fluid responsiveness with a sensitivity and specificity of 96% and 95%, respectively. Using an IJV distensibility index >9.9% and a PPV >12%, the authors found that the sensitivity and specificity for predicting fluid responsiveness was 100% and 95%, respectively. Interobserver variability was assessed by taking two measurements of IJV diameter before and after fluid administration in the first 15 patients and showed significant agreement in measurements.

The authors concluded that utilizing IJV distensibility can predict fluid responsiveness in septic, mechanically ventilated patients. They further described that combining IJV distensibility with PPV can improve the sensitivity and specificity for predicting fluid responsiveness. The major limitations of this study are the size of the study, restriction to only mechanically ventilated septic patients, and lack of analysis of patients with cardiac disease. Furthermore, the authors used PPV as their gold standard for fluid responsiveness, which, while validated in a small sample of similar patients, is far from a widely accepted gold standard.¹⁴ Additionally, while identifying patients who respond to fluids is beneficial more clinically relevant endpoints should be evaluated as well, such as mortality and ICU length of stay.

Murthi SB, Fatima S, Menne AR et al. Ultrasound assessment of volume responsiveness in critically ill surgical patients: Two measurements are better than one. *J Trauma Acute Care Surg.* 2017; 82(3): 505-11.

Murthi et al. attempted to address the large variation between POCUS volume response measurements by using multiple different methods on the same patients. They utilized a convenience sample of patients in surgical and trauma ICU and performed testing on 242 patients. Ultimately 199 patients completed the study and were used for data analysis. 68% of patients were trauma/emergency surgery patients while the rest were a combination of other surgical services. The average injury severity score was 25. The majority of patients were mechanically ventilated (68%) with multiple different ventilatory modes used. The patients were identified as anyone who would be receiving a fluid infusion including crystalloid, blood products, or albumin. Ultimately, 64% received crystalloid while 21% received blood products. Within 30 minutes prior to infusion and within 30 minutes after infusion completion a TTE was performed in addition to multiple other testing modalities. They defined an increase in stroke volume by >15% as evidence of a volume response. The team used 6 different POCUS measures of volume responsiveness: 1) Left ventricular outflow tract velocity time integral (LVOT VTI), 2) relative positional change in IJV diameter between 0 degrees and 90 degrees

head of bed, 3) respiratory variation in IJV diameter at 90 degrees head of bed, 4) respiratory stroke volume variation, 5) passive leg raise stroke volume variation, 6) respiratory variation of the IVC.

Overall, they found LVOT VTI to be the most predictive single measure of volume responsiveness with their interpretation of the ROC indicating the best threshold to detect volume responders is a VTI <18cm, and the best threshold for non-responders is a VTI >22cm. This resulted in a sensitivity of 75% and specificity of 70%. They also found respiratory variation of the IJV at 90 degrees head of bed (the left IJV measured at mid-neck in this study) was associated with an increased stroke volume after a fluid infusion. The authors found that the combination of these 2 metrics into a value called the CAVS (combined assessment of volume status) increased the area under the receiver operator curve to 76% (higher than either alone).

Importantly, they found that IVC variation was not associated with volume responsiveness although only 78% of patients had an IVC that was able to be measured. Subgroup analysis also showed that mechanically ventilated patients (not controlling for ventilator mode) had more accurate measures across all modalities. In addition, they found that pre-bolus EF and diastolic function were not associated with volume responsiveness.

The authors argued that studies on POCUS assessment of volume status should not use absolute thresholds, but rather ranges. This would help one of the main weaknesses of this study and many others like this, study population heterogeneity. Other weaknesses of the study included the limited ability to properly assess the IVC (only seen in 78% of patients) and inability to assess stroke volume (11% could not assess SV) as many patients were either obese or had undergone abdominal/thoracic surgeries that resulted in subcutaneous air. Passive leg raise could not reliably be measured as well and was largely excluded from the study as many patients had injuries that would prevent safe mobility of the legs. This study also had a limited sample size with disease processes largely limited to surgical hypovolemic states (54% were trauma patients).

Conclusions

The studies reviewed above demonstrate potential utility for several ultrasound methods of assessing volume responsiveness. Overall, measurements that are easier to obtain, such as IVC variability and IJV distensibility, may be less reliable, especially in spontaneously breathing patients. Other limitations include the inability of these measurements to exclude patients who might be volume responsive, notably in patients with elevated right-atrial pressure. Multiple measurements used in combination, as demonstrated in the latter two articles above, may be more reliable measures of volume responsiveness. Many studies are weakened by small sample sizes and the exclusion of highly relevant patient populations, such as those with heart failure and pulmonary hypertension. There remains a need for a controlled trial using a validated gold-standard measurement of fluid responsiveness to determine the



best ultrasound method to not only predict a response to volume but to differentiate between volume need and volume “tolerance.”

Answer

Measurements of IVC diameter and distensibility, carotid corrected flow time, IJV distensibility, and LVOT VTI can predict volume responsiveness, but each method has its own sensitivity, specificity, and limitations that can make its application and interpretation cumbersome. Recent existing studies demonstrate that a single, easily acquired ultrasound measurement that reliably predicts fluid responsiveness in the broad spectrum of patients managed in EDs and ICUs remains elusive. LVOT VTI demonstrates promise independently and with the use of PLR, but could use a direct, prospective, high-quality study validating it in conjunction with PLR. ●

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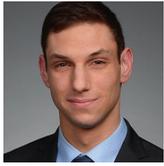
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Reading Around Your Reading

David Fine — Medical Student Council President



If the primary goal of undergraduate education is aimed at teaching students how to think then the primary goal of medical school is to teach students where to look for information. In both environments you must develop a base of knowledge, but in the broad scope of medicine there is bound to be a situation that you are unfamiliar with. For an overview of information, UpToDate can be a great resource and the citations at the bottom of each webpage can help you narrow your focus. Podcasts such as EM:RAP can help you re-familiarize yourself with concepts and can be a great way to learn about new papers in the field of emergency medicine.

The art of medicine stems from the many options that we have access to. Deciding what treatment is best for which patient is often more complicated than a one-drug-fits-all approach. PubMed is a phenomenal database for a literature review aimed to answer a specific question. Finding an article is a great first step, but recognizing how it applies to your patients can be a challenge. Are the findings clinically significant or are they only statistically significant? Does the test have enough power or is the sample size so small that any findings can be explained by random chance? What biases are you bringing to the table and what biases exist in the field of medicine? It is important to be a skeptic, because articles can be misleading regardless of the intentions behind them.

Ironically, I'd like to direct you to an article. "A Decade of Reversal: An Analysis of 146 Contracted Medical Practices,"¹ takes a look at studies that assess old standard practices and comparative therapies. Results

were broken down into four categories: replacement, reaffirmation, reversal, and inconclusive. One result that I found fascinating was that of the 363 articles testing standard of care practices, 40.2% reversed that practice whereas 38.0% reaffirmed it. We like to believe that our standards of care are based on facts, which come from the conclusions we draw from the raw data. How can it be possible that scrutiny to these standards can illuminate so many inaccuracies? I'll once again refer you to the original manuscript rather than have you rely on my summary.

Despite all this, the study is not without limitations itself. I do believe it brings up a great point in that we must work to understand our biases. There are standards of care that we are taking for granted, and these innate biases affect our patients. Whether you are looking up tPA use in strokes or Tamsulosin use for kidney stones, I have full confidence that you can find arguments both for and against the treatment. This can frustratingly create a gray area, however, an instant counterpoint is that knowing where your practices are coming from as well as the limitations to those studies is what will make you an adaptable physician. For those of us still in our training, I encourage us to not only read around our patients, but also to read around our reading so that we can truly provide the best evidence-based medicine to our patients. ●

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Finding an article is a great first step, but recognizing how it applies to your patients can be a challenge.



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Mission Statement

The American Academy of Emergency Medicine (AAEM) is the specialty society of emergency medicine. AAEM is a democratic organization committed to the following principles:

1. Every individual should have unencumbered access to quality emergency care provided by a specialist in emergency medicine.
2. The practice of emergency medicine is best conducted by a specialist in emergency medicine.
3. A specialist in emergency medicine is a physician who has achieved, through personal dedication and sacrifice, certification by either the American Board of Emergency Medicine (ABEM) or the American Osteopathic Board of Emergency Medicine (AOBEM).
4. The personal and professional welfare of the individual specialist in emergency medicine is a primary concern to the AAEM.
5. The Academy supports fair and equitable practice environments necessary to allow the specialist in emergency medicine to deliver the highest quality of patient care. Such an environment includes provisions for due process and the absence of restrictive covenants.
6. The Academy supports residency programs and graduate medical education, which are essential to the continued enrichment of emergency medicine and to ensure a high quality of care for the patients.
7. The Academy is committed to providing affordable high quality continuing medical education in emergency medicine for its members.
8. The Academy supports the establishment and recognition of emergency medicine internationally as an independent specialty and is committed to its role in the advancement of emergency medicine worldwide.

Membership Information

Fellow and Full Voting Member (FAAEM): \$525* (Must be ABEM or AOBEM certified, or have recertified for 25 years or more in EM or Pediatric EM)
 Affiliate Member: \$365 (Non-voting status; must have been, but is no longer ABEM or AOBEM certified in EM)
 Associate: \$150 (Limited to graduates of an ACGME or AOA approved emergency medicine program within their first year out of residency) or \$250 (Limited to graduates of an ACGME or AOA approved emergency medicine program more than one year out of residency)
 Fellow-in-Training Member: \$75 (Must be graduates of an ACGME or AOA approved emergency medicine program and be enrolled in a fellowship)
 Emeritus Member: \$250 (Please visit www.aaem.org for special eligibility criteria)
 International Member: \$150 (Non-voting status)
 Resident Member: \$60 (voting in AAEM/RSA elections only)
 Transitional Member: \$60 (voting in AAEM/RSA elections only)
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 Student Member: \$40 (voting in AAEM/RSA elections only)
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Taking a Stand on the Independent Practice of APPs

David A. Farcy, MD FAAEM FCCM — President, AAEM



As you are reading this issue, I want to take the time to wish you all and your loved ones, a happy and healthy new year. As you might be aware, AAEM has taken a strong stance around the role of the advanced practice provider (APP) in emergency centers across the nation. The discourse is getting

louder, and in some cases becoming inaccurate, distorted, and divisive. I'd like to clarify a few things, reinforce some of what has already been said, and present the position of AAEM on many aspects of this conversation. While "Advanced Practice Provider (APP)" is referenced in many sources, AAEM recognizes that even this term invokes certain emotions for both physicians and non-physician health care professionals. This term also does not traditionally encompass all non-physicians but for the purposes of consistency, I will use the term APP.

Prior to every board meeting we have, I read the AAEM mission statement for position clarity, and as a reminder of why AAEM was created in 1993:

- every individual should have unencumbered access to quality emergency care provided by a specialist in emergency medicine
- the practice of emergency medicine is best conducted by a specialist in emergency medicine
- a specialist in emergency medicine is a physician who has achieved, through personal dedication and sacrifice, board certification by either ABEM or AOBEM

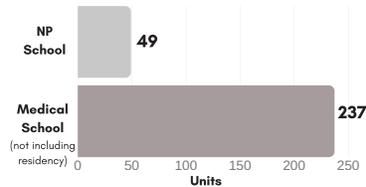
As President of AAEM, my responsibility is to uphold our mission statement and to represent our membership. In January 2019, our board reviewed the revised AAEM APP position statement (<https://www.aaem.org/resources/statements/position/updated-advanced-practice-providers>) written by the AAEM APP Task Force, and approved the new statement to reflect our mission statement. We received positive feedback, including from other physician groups (family medicine, anesthesia, surgery) but most importantly from the APPs within AAEM. Prior to its release we called each nurse practitioner (NP) and physician assistant (PA) and other non-physician members before implementing this to let him or her know that the Allied Health membership category was being dissolved, to be consistent with the AAEM position statement. We discussed our reasons, and individually, they each agreed with our action and supported the team concept of emergency care. They are still involved in AAEM, and are welcomed at the Scientific Assembly as well as other activities that AAEM supports.



WHAT IT TAKES TO MAKE A DOCTOR

The Educational Differences between Medical Doctors and Nurse Practitioners

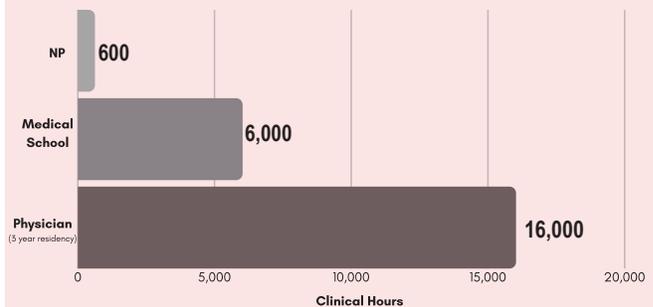
CERTIFICATION BY UNIT REQUIREMENT^{1,2}



- Even without accounting for residency, which is an additional 3-7 years of training, physicians who just graduated medical school had to take nearly 5x the amount of units for their degree compared to NPs.

*Example programs are listed that state their specific unit requirements for graduation. These sources closely resemble other programs of their same degree.

CLINICAL HOURS REQUIRED FOR CERTIFICATION



- While some nurse practitioner degrees can be completed 100% online in as little as 5 years including college, physicians must complete at least 11 years and more than 16,000 hours of hands-on training before treating patients independently.³
- An NP has less than 4% of the clinical hour training of an MD/DO (with the minimum 3 years residency training).⁴
- **A medical student, who is not allowed to treat a patient independently, would have undergone nearly 5x the amount of unit requirements and 10x the amount of clinical training that a fully licensed NP has.**



With the vast amount of education, training, and clinical hours required to produce a single physician (the most of any healthcare team member), physicians can rely on a much larger breadth of knowledge in each of the medical decisions they make. This is why we at AAEM/RSA believe that all healthcare team members, including nurse practitioners, should be under the supervision of a physician in order to ensure the safety and proper health care of our patients.

#ASKTOSEEYOURPHYSICIAN



1. https://www.samuelmeritt.edu/nursing/np_nursing/curriculum
2. <http://med.stanford.edu/medhandbook/section-4-curriculum-overview.html>
3. <https://telp.org/media/default/downloads/advocacy/scope-education.pdf>
4. <https://www.telp.org/Media/Default/Downloads/advocacy/scope-rnms.pdf>

Here's the sentence I want you to read, even if you don't read anything else in this message:

APPs, including nurse practitioners and physician assistants have always been and continue to be an important part of the emergency medicine, physician-led team working side-by-side for the efficient care of patients in the emergency department.

This message has somehow gotten lost in and amongst some of the enmity around this issue. We would not be able to efficiently run our emergency departments without our NP and PA colleagues working side by side with us. In the setting of an ever-increasing volume of patient visits, we need a team approach to effect the safe disposition of so many patients. With the advent and proliferation of the electronic medical record, as well as government oversight regulations on the house of medicine, we are tasked with multiple hours of administrative clerical responsibilities for each shift that we work. The end result is less time spend at the bedside caring for our patients.

The American Association of Nurse Practitioners (AANP) advertises that "patients under the care of NPs have higher patient satisfaction, fewer unnecessary hospital readmissions, fewer potentially preventable hospitalizations and fewer unnecessary emergency room visits than patients under the care of physicians" (ref: AANP) This is an astounding claim, and I had hoped to read literature supporting it. Unfortunately the reference to support this statement from the AANP website is a random sampling from 1991 of physicians and NPs responding to a hypothetical scenario by survey. (Avorn, J., Everitt, D.E. & Baker, M.W. (1991). **The neglected medical history and therapeutic choices for abdominal pain. A nationwide study of 799 physicians and nurses. Archives of Internal Medicine, 151(4), 694-698.**)

Where is the integrity in promoting this kind of statement with a survey? We know that literature such as this, at best is suggestive and certainly not something to support advertisements to the public. The bottom line is that there are no validated scientific studies that have shown the safety and efficacy of non-physicians practicing independently of physician supervision (ref: Physicians for Patient Protection).

Let's talk about the trust relationship between patients and the medical community. The average layperson is not equipped, nor should he/she be expected to read between the lines of advertising that promotes APPs over physicians for emergency health care when the education and training is vastly different for each. Here is what I wish the public understood: The argument to replace physicians with NPs and PAs is at the least, divisive, and at worst, dangerous. Even if AANP supports this and an NP has the "brain of a doctor," he/she certainly doesn't have the education and training of one. Physicians diagnose, treat, and prescribe independently after they have logged 15,000 to 16,000 clinical hours, while NPs who work in states that allow independent practice can diagnose and prescribe independently after logging between 500 and 1,500 clinical

hours (ref: Primary Care Coalition). The amount of supervised clinical training for a physician is 10-30 times that of an NP. It is indefensible to suggest the equality of these two professions for patient care, let alone the superiority of NPs.

Many will argue that APPs are filling the gaps in rural areas where there are physician shortages. The truth is that APPs don't seek employment in these rural areas any more than physicians do. Even in states with independent APRN practice laws, APPs have not expanded into rural areas. (ref: AMA)

So how has this played out? NPs cost less than physicians. Hospitals and urgent care centers that are focused on profits are looking for cost cutting options. Independent practice for NPs certainly fits that requirement. All they have to do is convince state legislators and the public that NPs are equivalent, if not better than physicians. The truth of this position is that NPs and PAs have already been taking care of patients for decades, but with supervision by physicians, which has for the most part been invisible to the patient. If they exploit the perception that APPs are already doing the job independently, the rest falls into place.

Who loses? Patients lose when they falsely believe that the person in the white coat is a physician, or when they believe that a physician is appropriately supervising the APP. They lose when they don't know enough about the medical system to ask questions. Who wins? Administrators do, who are for the most part – not physicians.

In November 2019, around 14-15 physicians were fired from Edward-Elmhurst as the suburban Chicago-based health system replaced them with less costly APPs. When profit margins are prioritized, patients become second and patient safety is not even a part of the equation in private equity firms. What do physicians need to do? A few things:

Contact your state legislator(s), voicing your opinion against the independent practice of APPs. Even if your state is one of the 23 states that have already implemented independent practice for NPs, it is worth writing or calling. If your state is contemplating it (I guarantee they all will eventually), it is even more crucial to write.

Do not agree to sign the chart of an APP unless you have been given ample time to evaluate and examine the patient if necessary. If you are not given this option, you may be signing onto a liability claim for a case you didn't have ample opportunity to evaluate.

Do not agree to sign the charts of patients whom were never presented to you in real time. Depending on the attestation, this may be fraudulent practice, and with the current environment and scrutiny it becomes more likely that you will be involved in litigation if the patient outcome is poor.

Speak out in your department if NPs or PAs are utilizing the title "Doctor" even if they have a PhD or other academic title. This title has a specific meaning in clinical setting of the emergency department, and patients deserve transparency.



There is a need to start collecting data from urgent care, freestanding staff with APPs who are practicing without direct physician supervision and document the un-necessary referral, over ordering of test and rate of complication. We need to let the data speak louder than any words. We love our APPs that work side-by-side and they are part of our family. Independent APPs without direct doctor supervision will not be good for patient care.

Join AAEM in our support for the physician-led team approach to patient care in the emergency department and educate your colleagues, friends, and family on the issue.

I want to personally thank Dr. Evie Marcolini and Dr. Julie Vieth for their contributions to my President's Message, for the countless hours and their dedication to the APP Task Force and every member of the Task Force. ●

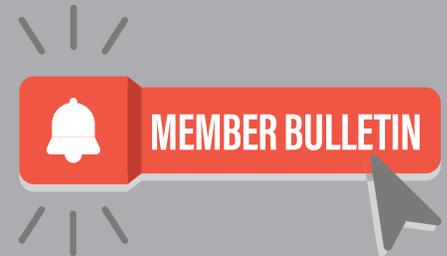
References:

1. American Association of Nurse Practitioners: <https://www.aanp.org/advocacy/advocacy-resource/position-statements/quality-of-nurse-practitioner-practice>
2. Physicians for Patient Protection: <https://www.physiciansforpatientprotection.org/ppp-responds-to-executive-order-regarding-pay-parity-and-scope-of-practice-offers-solutions/?>
3. Primary Care Coalition: <https://www.taftp.org/Media/Default/Downloads/advocacy/scope-education.pdf>
4. AMA: <https://www.ama-assn.org/system/files/corp/media-browser/premium/arc/ama-issue-brief-independent-nursing-practice.pdf>.

Introducing the AAEM Member Bulletin

In an effort to keep our members connected, *Common Sense* will begin a column of member updates submitted by our members. We ask you to submit brief updates related to your career. We will also publish the unfortunate news of the passing of current or former members.

Visit the *Common Sense* website to learn more and submit your updates for publication! www.aaem.org/resources/publications/common-sense ●



Member Bulletin

David A. Farcy, MD FAAEM FCCM

.....
Wednesday, January 15, 2020 Doctor of the Day in the Florida House

Gary M. Gaddis, MD PhD FAAEM FIFEM

.....
Holds the position of chair-elect for the Academic Physicians Section at the American Medical Association

Ziad N. Kazzi, MD FAAEM FACMT FAACT

.....
Elected to serve on the National Council on Radiation Protection and Measurements (six-year term)

Lisa A. Moreno, MD MS MSCR FAAEM FIFEM

.....
Selected for the Association of Academic Chairs in Emergency Medicine Chairs Development Program

Mehruba A. Parris, MD FAAEM

.....
We have a delightful new addition to our AAEM family: our Junior Assistant editor! Dr. Mehruba Anwar Parris and her husband Dr. Brent Parris are proud to introduce their baby boy, Idris Alexander Parris. He was born on August 29th, 2019 and weighed 7lbs 11oz.

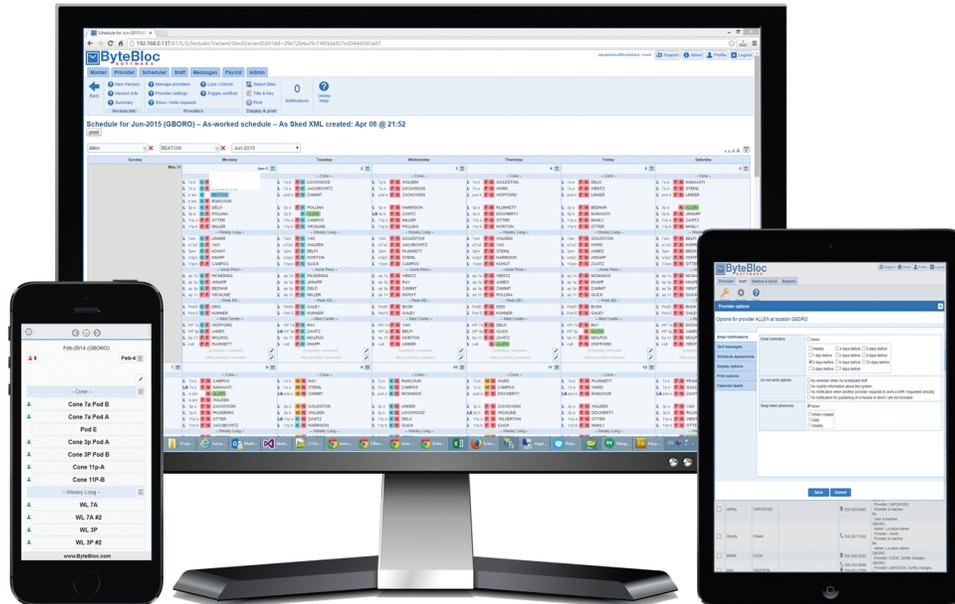


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The Meaning of an Election

Andy Mayer, MD FAAEM



We are approaching election season again, which in our current world brings up many mixed emotions, and sadly can tend to disintegrate into complaints and allegations related to the system and the individuals involved. Certainly, there can be endless discussions related to the Electoral College, the primary system, and outside influence. In this article, I want to foster discussion related to the election process in some of our emergency medicine societies and discuss and contrast some aspects in this process.

One of the founding ideals of AAEM was related to the election of the organization's board of directors and executive committee. A more direct election process was envisioned and established. The structure of the election process is an example of representative democracy where each full member has one vote and is eligible to vote directly for the President-Elect, Secretary-Treasurer and At-Large Directors. There are no councilor or special nominating committee for the election of members of the board of directors for AAEM. Each is elected directly by the members of the organization. This process was felt to represent a more democratic and fair way for a member to become a leader in our organization.

The next AAEM elections will occur in Phoenix at the Scientific Assembly. Elections occur every year in person at the Scientific Assembly. The President-Elect and Secretary-Treasurer are elected every other year along with several At-Large Directors. On the alternate year only At-Large Directors are elected. Candidates for any of these positions can be nominated by a member or can self-nominate if they chose to do so. Each candidate submits a position statement which is published in this publication in advance of the election. Full voting members are encouraged to go to the candidates' forum which is held each year during the Scientific Assembly. During this session, candidates make a statement related to their candidacy and can be asked questions by any member in the audience. I encourage anyone who has not attended one of these sessions to do so and witness democracy in action. However, any member unable to attend the Scientific Assembly is still eligible to vote electronically. The official details of the AAEM election process are below:

AAEM Election Process

Any Academy member may nominate a full voting member for the board and any YPS member may nominate for the YPS director position. You must be a YPS member to be eligible to run for the YPS director position. Self-nominations are allowed and encouraged.

Any emergency physician has to believe that the leadership of the emergency medicine specialty society whom they look up to will represent their interests

The candidate statements from all those running for the board will be featured in an upcoming issue of Common Sense and will be sent to emeritus, full voting, and YPS members.

Elections are held concurrent with the AAEM Scientific Assembly each year. Although balloting arrangements will be made for those unable to attend the Assembly, all members will be encouraged to hold their votes until the time of the meeting.

The Scientific Assembly will feature a Candidates' Forum, in which members will be able to directly question the candidates before casting their ballots. Winners will be announced during the conference, and those elected will begin their terms at the conclusion of the Assembly.

ACEP Election Process

ACEP elections have a different process. I have never attended an ACEP election, but have read and discussed their process and the rules related to them can be viewed on the internet. The process is another form of representative democracy but it seems more in line with a parliamentary system. Each chapter elects or appoints councilors who are the ones who elect the officers. This seems to be analogous to members of parliament in Britain voting on a prime minister. Below are some of ACEP's election rules from their webpage:

Section 8 — President-Elect: Any member of the Board of Directors excluding the president, president-elect, and immediate past president shall be eligible for election to the position of president-elect by the Council. The president-elect shall be a member of the Board of Directors. The president-elect's term of office shall begin at the conclusion of the



meeting at which the election as president-elect occurs and shall end with succession to the office of president. The president-elect shall be elected by a majority vote of the councilors present and voting at the annual meeting of the Council. The president-elect shall succeed to the office of president at the conclusion of the first ensuing annual meeting of the Council following the meeting at which the election as president-elect occurred and shall end at the conclusion of the next annual meeting of the Council, or when a successor is seated.

Rational arguments can be made for and against each system. One might argue that having only seasoned veterans who have been on the council or board of directors for a significant period of time should be eligible for higher office. It can be reasonable to think that institutional knowledge and experience is necessary for high office and that this can only be obtained by a long presence in the council or on the board of directors. Having a young maverick rise too quickly can lead to chaos or lead the organization down the wrong path. The alternative view is that the ability of a member relatively new to the organization or one who had not previously been politically active can passionately feel that a change is necessary and that the organization definitely needs new blood and new ideas at the top. I see both points of view but I personally lean towards having the entire membership decide on what is needed and which direction they want to point their professional organization towards.

The concept of individuals as having paid their dues and deserving a leadership position as a reward or honor related to their years of service to an organization personally bothers me. I do not think that just because a member has spent a certain amount of time on committees or doing the background necessary work needs to be repaid with a title. There

is a danger in sitting in a room with the same faces year after year and thinking that one of them deserves or is entitled to a particular office due to their seniority or dedication to the society. Certainly, any organization needs to have some senior members to help prevent a rash or politically unwise policy or stance on any issue which might misrepresent the general membership's position on a major issue. The balance between seasoned veterans and young and dynamic enthusiasm is probably the correct path but this is an issue to consider.

There cannot be even the perception that an officer is there to represent the interests of anyone or anything other than the membership at large.

The prospect of outside influence on holders of high office also must be considered. ACEP and AAEM I believe want to represent the broad spectrum of emergency physicians and their various practice types. There are many issues which affect every emergency physician and obviously need to be discussed and a platform presented and supported by any society's officers and board. However, emergency medicine is practiced in so many different ways and each can have significant challenges which can be the crucial issue in one practice type and be of no concern for another. Each type of practice needs representation and support from the officers and board of their organization. Both AAEM and ACEP have officers who work for corporate management groups. Their employment type should not exclude them from office, but certainly the board should naturally contain a balance of individuals from

corporate, academic, independent, government, and other practice environments. There is a danger if one type of physician dominates. There cannot be even the perception that an officer is there to represent the interests of anyone or anything other than the membership at large.

I think that an election in either form is crucial to our specialty. Any emergency physician has to believe that the leadership of the emergency medicine specialty society whom they look up to will represent their interests. They need to believe that the said leadership was fairly elected and will represent the interests of the membership. ●

AAEM Antitrust Compliance Plan:

As part of AAEM's antitrust compliance plan, we invite all readers of *Common Sense* to report any AAEM publication or activity which may restrain trade or limit competition. You may confidentially file a report at info@aaem.org or by calling 800-884-AAEM.

AAEM Foundation Contributors – Thank You!



Levels of recognition to those who donate to the AAEM Foundation have been established. The information below includes a list of the different levels of contributions. The Foundation would like to thank the individuals below who contributed from **1-1-2019 to 1-14-2020**.

AAEM established its Foundation for the purposes of (1) studying and providing education relating to the access and availability of emergency medical care and (2) defending the rights of patients to receive such care and emergency physicians to provide such care. The latter purpose may include providing financial support for litigation to further these objectives. The Foundation will limit financial support to cases involving physician practice rights and cases involving a broad public interest. Contributions to the Foundation are tax deductible.

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What stood out to you from this issue of *Common Sense*? Have a question, idea, or opinion? Andy Mayer, MD FAAEM, editor of *Common Sense*, welcomes your comments and suggestions. Submit a letter to the editor and continue the conversation.

Check out the redesigned *Common Sense* online at:
www.aem.org/resources/publications/common-sense



LEAD-EM Contributors – Thank You!



The AAEM Institute for Leadership, Education & Advancement in the Development of Emergency Medicine, Inc. (LEAD-EM) was established after the tragic and unexpected death of AAEM president, Dr. Kevin G. Rodgers.

The Kevin G. Rodgers Fund and the Institute will LEAD-EM just like Dr. Rodgers did. The funds will support important projects such as development of leadership qualities, and clinical and operational knowledge of emergency physicians with a view toward improving and advancing the quality of medical care in emergency medicine, and public health, safety and well-being overall. LEAD-EM would like to thank the individuals below who contributed from 1-1-2019 to 1-14-2020.

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AAEM is featuring the following upcoming conferences and activities for your consideration. For a complete listing of upcoming conferences and other meetings, please visit: www.aaem.org/education/aaem-recommended-conferences-and-activities.

AAEM Conferences

April 19-23, 2020

26th Annual Scientific Assembly – AAEM20
Phoenix, AZ
www.aaem.org/AAEM20

March 28-29, April 1-2, and April 25-26, 2020

Oral Board Review Course

Jointly Provided

February 20, 2020

NYAAEM Regional Ultrasound Conference
(Jointly sponsored by EUS-AAEM)
Jamaica, NY
www.aaem.org/get-involved/chapter-divisions/nyaaem/conference

May 22, 2020

TNAAEM 2020: Updates in Emergency Medicine
Nashville, TN
www.aaem.org/get-involved/chapter-divisions/tnaaem/updates-in-em

May 22-23, 2020

9th Annual FLAAEM Scientific Assembly
Miami Beach, FL
www.aaem.org/flaaem/scientific-assembly

AAEM Recommended Conferences

February 7-11, 2020

SASEM 2020
Al Khobar, Saudi Arabia
www.sasem2020.com

February 13, 2020

Advances in Cancer Immunotherapy™ – SITC
Washington, DC
www.sitcancer.org/education/aci

March 14, 2020

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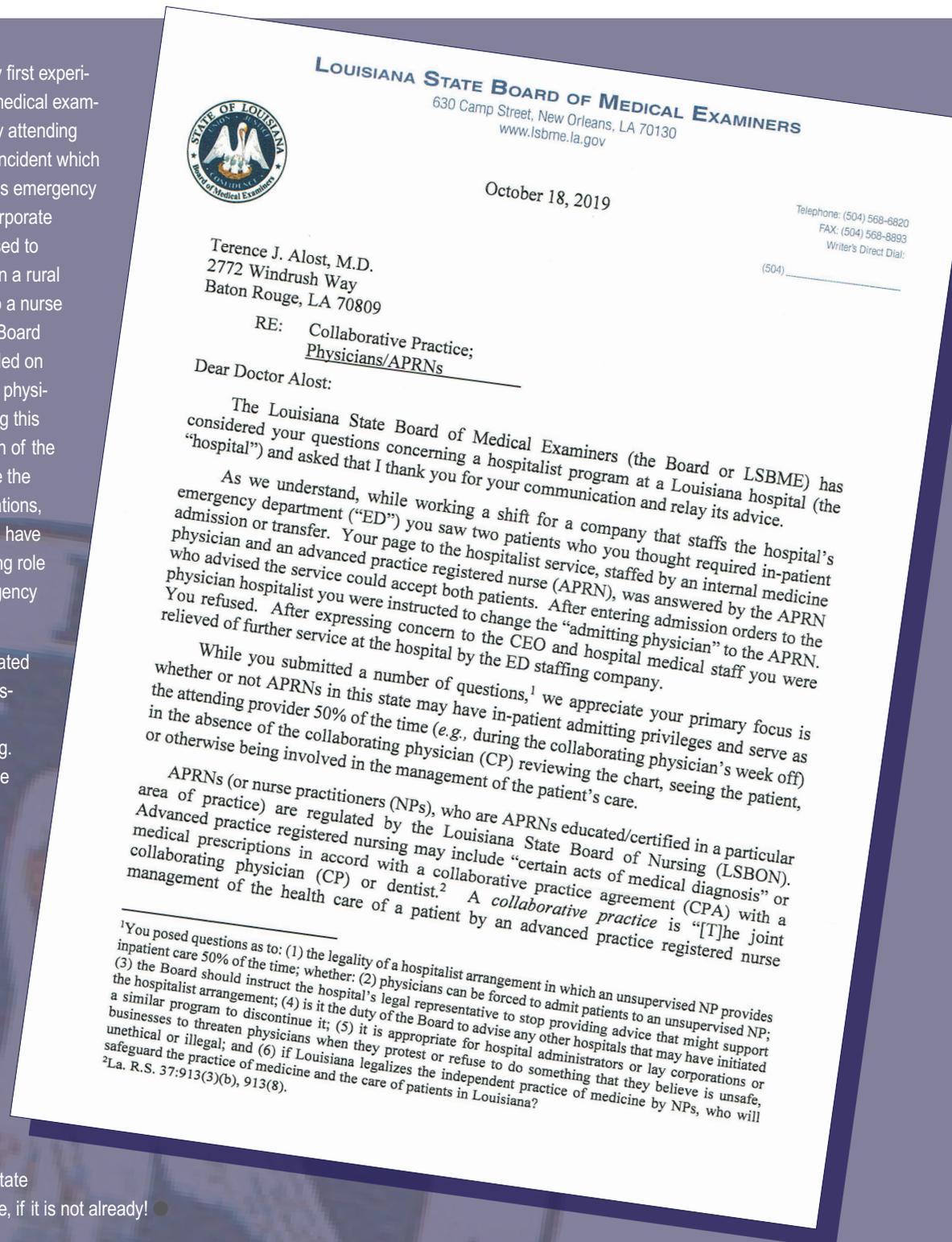
WWW.AAEM.ORG/ORAL-BOARD-REVIEW

Louisiana State Board of Medical Examiners Letter

Andy Mayer, MD FAAEM — Editor, Common Sense

In my last editorial I discussed my first experience attending a state board of medical examiners meeting. The purpose of my attending was to speak related to a recent incident which affected one of our members. This emergency physician was terminated by a corporate management group after he refused to admit patients he had evaluated in a rural emergency department directly to a nurse practitioner. The Louisiana State Board of Medical Examiners recently ruled on this in a letter sent to the involved physician. *Common Sense* is publishing this legalistic letter with the permission of the involved physician to demonstrate the tangled web of laws, rules, regulations, and regulatory agencies which all have a part to play in the ever expanding role which midlevels play in our emergency departments.

The letter is detailed and complicated and quite frankly, to me it is confusing. Please consider reading it so you can see what we are all facing. What do you think it means? Is the game lost? I called and spoke to the executive director of the state board who was the author of the letter. He was incredibly informed concerning this issue and seemed to be very involved with this case. Frankly, it seems that the state boards in the U.S. are legally constrained concerning many issue related to midlevel providers. Physicians quite honestly have been out-lobbied in our state legislators. Please become involved in your state medical politics before it is too late, if it is not already! ●



Another Successful MEMC!

Moreno, MD MS MSCR FAAEM FIFEM — President-Elect, American Academy of Emergency Medicine
Executive Chair, Mediterranean Emergency Medicine Congress



I want to thank the AAEM community, the Mediterranean Academy of Emergency Medicine (MAEM), and the 742 delegates from the 43

countries represented at the Xth Mediterranean Emergency Medicine Congress in Dubrovnik, Croatia this past September, for an incredible Congress. Without exception, this was overall the most successful MEMC ever and AAEM is truly proud to have sponsored it with our first international chapter, MAEM. We held seven pre-congress courses, organized by our At-Large Director, Dr. Bobby Kapur, taught by an outstanding team of educators, and attended by 67 delegates. 346 abstracts were submitted and reviewed by our dedicated team headed by Drs. Mark Langdorf and Ed Panacek. 304 of these abstracts were presented in either oral or poster format. Dr. Stephen Hayden, Editor-in-Chief of our official journal, *Journal of Emergency Medicine*, sponsored the Oral Abstract Competition. The top three (of four) oral abstracts presented their abstracts at the Opening Ceremony at the Sun Gardens Resort in Dubrovnik. Dr. Langdorf, Editor-in-Chief of the *Western Journal of Emergency Medicine*, sponsored the Poster Competition, with textbook prizes generously donated by Dr. Judith Tintinalli, Dr. David Farcy, and AAEM/RSA.

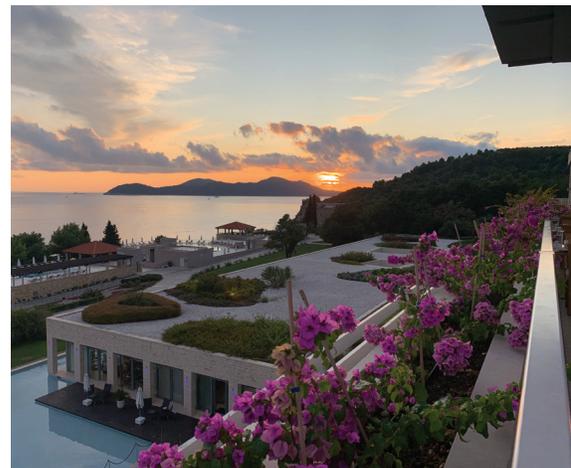
The Keynote Address of this Congress was presented by Dr. Terry Kowalenko, the Immediate Past President of the American Board of Emergency Medicine. Dr. Kowalenko addressed at topic core to the values of AAEM: the importance of board certification, and why it must be integrated early into the plan to develop EM as a specialty in every country. Plenary addresses were provided by Dr. Melanie Stander, this year's winner of the Dr. Cristina Costin International Emergency Medicine Award; Dr. Saleh Fares, winner of the Founder's Award; Dr. Ian Martin, President of the Society for Academic Emergency Medicine; Dr. Vik Kapil of the CDC, Dr. Billy Mallon from Stony Brook University, and Mr. Nishant Kishore, a PhD candidate at Harvard University.

In an all-out effort at inclusivity, we held seven contemporaneous tracks daily: three main tracks, two Breve Dulce tracks, and two oral abstract tracks. Despite the lovely weather, the tempting recreational offerings of the Sun Garden, and the tantalizing tourist options available in the city of Dubrovnik, most rooms were well filled in every track, every day, and many tracks had standing room only. A new session was introduced at this Congress, focused on the career development of women in EM. Drs. Megan Healy, Eveline Hitti and Judy Tintinalli provided me with invaluable assistance in creating a safe space for women and HeForShe supporters to talk about everything from microaggressions, overt disparities, dating, pregnancy, fertility, and domestic tethers. We hosted a panel of women of power who shared their winning strategies, followed by a workshop on negotiating the work place facilitated by American University of Beirut.

Evaluations indicate that delegates found the educational offerings at MEMC to be superior, and the content to be practice changing. Evaluations further indicate that delegates rate MEMC as the premier, standard setting international Congress in Emergency Medicine. Our reputation is so substantial as to have attracted 47% new attendees to MEMC. Our room block filled up months before the Congress; several weeks prior to the closure of the discounted room rate.

Social events at the MEMC took advantage of the opportunities unique to Dubrovnik. The city is one of the few spared during the World War II bombings, and so not only medieval, but even Roman Era structures still stand throughout the Old City. The city itself enjoys a metropolitan, urban atmosphere while also being a seaside village. As many of you know, most the episodes of the incomparable *Game of Thrones* series were filmed here. MEMC sponsored a Faculty Leadership Dinner at a beautiful beachside venue, Arsenal, and our Gala Dinner at the Revelin Fortress, which was one of the original fortresses protecting the city during the

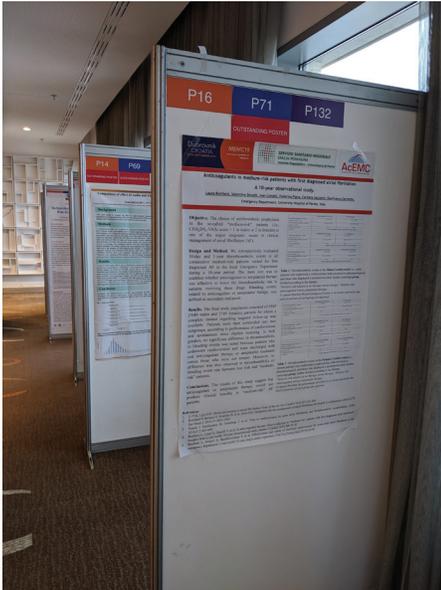
medieval period and was the site of the Red Wedding episode of *Game of Thrones*. The events were well attended and provided an opportunity for me and my fellow members of the Executive Committee, Drs. Antoine Kazzi and David Farcy, to thank the Track Chairs, main track speakers and pre-Congress faculty for their tireless efforts to make this the amazing Congress that it was.



Fellowship trained emergency physicians also continue to develop new ways to improve the use of POCUS and to study best practices for use on shift.



“This exciting development will likely continue to evolve over the next few years as ultrasound societies nationwide work together to develop the exam and fellowship credentialing guidelines.”



Several sponsors generously supported MEMC. In addition to the journals and their editors, MEMC received support of sponsoring institutions. These sponsors included American University of Beirut through the generosity of their Dean, Dr. Mohamad Sayegh and ED Chair Dr. Eveline Hitti, the University of California - Irvine through the generosity of ED Chair Dr. Christopher Fox, King Faisal Specialist Hospital & Research Center Jeddah through the generosity of Dr. Yasser Qureshi and Van Meter and Associates physician group from New Orleans through the generosity of Dr. Keith Van Meter. Corporate sponsorship from Bayer U.S. Crop Science was facilitated by Dr. S. Eliza Dunn (Halcomb).

You may recall that we asked you to vote on the venue for the next MEMC. You voted, and we responded: the XIth MEMC will take place in the island nation of Malta in 2021. It will be my pleasure to announce the exact dates and specific hotel details as soon as we have negotiated them.

The work of a Congress Chair is entirely supported by her colleagues and her staff, and I am most blessed to have a team of talented, smart and dedicated individuals sharing the work of MEMC with me. Best of all, most of them are my friends! In addition to my physician colleagues, the Executive Director and Associate Executive Director of AAEM, Mrs. Kay Whalen and Mrs. Missy Zagroba and meeting manager extraordinaire, Ms. Leah Skogman, work with us to create the magic that is MEMC. When you see them, remember to thank them, and I know you will see them, since I know you will not miss the XIth Mediterranean Emergency Medicine Congress in Malta in 2021. I look forward to seeing you there! ●





It's Election Time: Cast Your Votes or Run for a Position!

California Chapter Division of AAEM (CAL/AAEM)

Nominations open: January 6, 2020
Nominations close: April 1, 2020 at 11:59pm PT

Elections Open: April 15, 2020
Elections Close: May 29, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/CALAAEM



SECTIONS

Delaware Valley Chapter Division of AAEM (DVAAEM)

Nominations open: March 6, 2020
Nominations close: March 27, 2020 at 11:59pm ET

Elections open: April 10, 2020
Elections close: May 4, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/DVAAEM



Critical Care Medicine Section of AAEM (CCMS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/CCMS



Florida Chapter Division of AAEM (FLAAEM)

Nominations open: March 16, 2020
Nominations close: April 8, 2020 at 11:59pm ET

Elections open: April 27, 2020
Elections close: May 23, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/FLAAEM



Emergency Medical Services Section of AAEM (EMSS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/EMSS



Great Lakes Chapter Division of AAEM (GLAAEM)

Nominations open: December 16, 2019
Nominations close: March 18, 2020 at 11:59pm CT

Elections open: April 12, 2020
Elections close: May 23, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/GLAAEM



Emergency Ultrasound Section of AAEM (EUS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/EUS



New York Chapter Division of AAEM (NYAAEM)

Nominations open: Friday, March 6, 2020
Nominations close: Friday, March 27, 2020 at 11:59pm ET

Elections open: Friday, April 10, 2020
Elections close: Monday, May 4, 2020 at 11:59pm ET

LEARN MORE: www.aem.org/NYAAEM



Women in Emergency Medicine Section of AAEM (WiEMS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/WiEMS



Uniformed Services Chapter Division of AAEM (USAAEM)

Nominations open May 4, 2020
Nominations close: May 27, 2020 at 11:59pm CT

Elections open: June 10, 2020
Elections close: July 1, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/USAAEM



Young Physicians Section of AAEM (YPS-AAEM)

Nominations open: January 6, 2020
Nominations close: January 27, 2020 at 11:59pm CT

Elections open: February 10, 2020
Elections close: February 24, 2020 at 11:59pm CT

LEARN MORE: www.aem.org/YPS



The Deliberate Elimination of Racism from Clinical Practice

L.E. Gomez, MD MBA FAAEM — Diversity and Inclusion Committee Chair



It is well past time we admitted that physicians and the U.S. health care system in general, is no more post-racial than the rest of our society. We are

afraid to talk about racism and can only go as far as to use “culture” as a proxy for race, and “diversity” as a proxy for non-white skin color. Yet we have ample evidence that health disparities by race persist despite decades of awareness around cultural competence. A summary of this fact can be found in recent reports such as the one from National Academies of Sciences, *Communities in Action: Pathways to Health Equity*.¹

Why is this? My view is that we are paying lip service to the concept while not holding ourselves accountable to measurable modification of skills. We need a new strategy. But I’m getting ahead of myself. Let’s start by taking a look at where we are, since we already mentioned a bit about why. The founding principles behind cultural competence have been around for at least thirty years.² Most of us wouldn’t know that unless we did some digging, since the exponentially increasing buzz around this term makes it seem like everyone has been made accountable. Nothing could be further from the truth.

The concept of cultural competence in training wasn’t even broadly adopted in health care until about fifteen years later, around the time Betancore et. al. published their analysis for *The Commonwealth Fund*.³ Cultural competence, as applied to clinical practice, is the ability of an emergency physician to effectively deliver care to every patient in an increasingly racially and ethnically diverse population. It was clear from Betancore et. al. that access to and quality of health care are impacted by cultural competence. There is general agreement that effective care cannot be provided without it. Although some of the framework for practical approaches they laid out over a decade and a half ago have been adopted, especially at the level of medical schools, these have been limited. Are there any realistic alternative approaches? I believe that our standard of care needs to be modified to reconcile the hypocrisy of stating that we expect the competency, but cannot do more to ensure it is acquired. We can start by specifically modeling that skill set in our specialty.

Enter the Model of the Practice of Clinical Emergency Medicine. First let’s take a brief look at the history of the document which

contains all of the knowledge and skills required to practice emergency medicine.⁴ In 1975, ACEP and the University Association for Emergency Medicine (now SAEM), conducted a survey of our emerging specialty and the Core Content of EM. It has since been revised and expanded four times and is in the process of being revised for the fifth time. The Task Force is composed of one voting member from ABEM, ACEP, SAEM, CORD, ACGME-RRC, EMRA, and AAEM. Our own Dr. Jonathan S. Jones was AAEM’s representative to this EM Model Task Force this past spring, and he shared that most changes were simple and minor.

This latter observation may be one of the reasons why we do not see significant change in our cultural competence skills and hence, no



Cultural competence, as applied to clinical practice, is the ability of an emergency physician to effectively deliver care to every patient in an increasingly racially and ethnically diverse population.



change in persistent health disparities experienced by non-white patients. The concept of cultural competence itself may reflect its association with dominant culture thinking, but let us focus on the goal at hand: improving training in emergency medicine such as to decrease racism.⁵

Whereas the most current 2016 updated version of the Model of Clinical Practice of EM delineates that patient-centered care requires communication skills that include the ability to establish rapport with patients and their families as described in introductory Table 3. “Physician Task Definitions” notes that the “performance of focused history and physical examination is a requirement,” which cannot be successfully performed if biased or not centered culturally.⁴ The present recommendation proposed is that Physician Task Definitions be modified to specifically require four aspects of cultural competence: 1) awareness of differences by race, 2) attention to attitude towards race discordant patients, 3) knowledge of cultural differences with non-white patients, and 4) skills to address aspects 1-3, and that these be specifically included and expanded in the sections and subsections which will be described below.

Similar recommendations to improve cultural competence addressing the four aspects listed above have been made for the purpose of improving medical education. As noted by Sorensen et. al. “enhancing cultural competence in medical education is justified based on attention to diversity issues, and should be considered at all stages of health care planning, including the recruiting and training of health care staff and organizing and providing health care.”⁶

Further, researchers from schools of public health such as Padela et. al. have made such recommendations specifically with regard to potential positive impact of improving cultural competence in emergency medicine practice:

“three processes are proposed that may improve the quality of care delivered to minority populations: 1) increase cultural awareness and reduce provider biases, enabling providers to interact more effectively with different patient populations; 2) accommodate patient preferences and needs in medical settings through practice adjustments and cultural modifications; and 3) increase provider diversity to raise levels of tolerance, awareness, and understanding for other cultures and create more racially and/or ethnically concordant patient-physician relationships.”⁷

Additionally, some state legislatures have required medical boards to adopt and expand such competency. For example, in 2005, the NJ Legislature “enacted law requiring the New Jersey Board of Medical Examiners in consultation with the Commission on Higher Education to prescribe requirements, by regulation, for physician training in cultural competency. Regulations related to cultural competency training were adopted in final form on April 7, 2007. The legislation requires all medical schools in NJ to provide specific instruction to current and future students in cultural competency as a condition of receiving a diploma from the College of Medicine of NJ. It also required cultural competency CME instruction for licensed physicians who did not receive it in their medical school curriculum.”⁸

Specific initial recommendations are as follow:

That section 20.1 of the Model of the Practice of Clinical Emergency Medicine be changed to “Interpersonal and Communication Skills with Cultural Competency” such that the cultural competence principle clearly applies and is included in all aspects of patient care, as well as all areas covered by 20.1 Interpersonal Skills

I realize my proposal is ambitious, but if you consider the positive repercussions and potential for reducing human suffering, I believe you will all agree, it is worth the fight.

Sub-categories to reflect cultural competence with application to the following areas:

- 20.1.1.1 Inter-departmental and Medical Staff Relations
- 20.1.1.2 Teamwork and Collaboration
- 20.1.1.3 Patient & Family Experience of Care
- 20.1.2.1 Complaint Management
- 20.1.2.2 Conflict Management
- 20.1.2.3 Crisis Resource Management
- 20.1.2.4 Delivering Bad News

That 20.1.2.5 “Cultural Competence” be replaced with “Institutionalized Racism Awareness” including understanding of the physiologic impact of chronically elevated allostatic load that results from this stress in certain populations of patients.

It is further recommended that “Cultural Competence” be applied to evaluation of scientific evidence:

- 20.2.1 Evidence-Based Medicine
- 20.2.2 Interpretation of Literature
- 20.2.3 Performance of Evaluation & Feedback
- 20.2.4 Research
- 20.2.2 Education & Professionalism (including requirement diversity in role



models)

...that the requirement on “Diversity Awareness” be expanded to imply awareness of the above; that the section on “Medical Ethics” specifically include consideration of the unethical practice of discriminatory assessment such as that of pain tolerance by race; that the incremental stress experienced by inner city communities be acknowledged and considered; the well-being of minority physicians requires incremental consideration as a result of under-representation particularly in the context of 20.3.4.1 Fatigue & Impairment (in consideration of the aforementioned increased allostatic load); that consideration of cultural competence be given to areas of subjective evaluation such as 14.7 “Personality Disorders;” and finally that the scant attention given testable content areas that address these skill sets be expanded to include the four major areas of cultural competence named above.

Of course this will require significant collaboration with the all of the other Task Force members. I realize my proposal is ambitious, but if you consider the positive repercussions and potential for reducing human suffering, I believe you will all agree, it is worth the fight.

* I would like to acknowledge Melissa Faith Merritt for her help in editing this and several previous articles published in *Common Sense*. ●

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Emergency Department Management Solutions: Principles and Practice – Round Two

Kraftin Schreyer, MD CMQ FAAEM — Operations Management Committee Co-Chair



For those of us feeling the start of fall just after Labor Day, making the trip to hot, sunny New Orleans for the second annual Emergency Department Management Solutions: Principles and Practice course on September 5th and 6th was more than welcome. 49 healthcare providers from all over

the country attended the two-day conference to take the next steps in their respective careers in administration and operations. The conference featured course director Joseph Twanmoh, MD MBA FAAEM, and speakers Joseph S. Guarisco, MD FAAEM FACEP; Ben White, MD FAAEM; Jim Blakeman; Kraftin Schreyer, MD CMQ FAAEM; and Tom Scaletta, MD MAAEM FAAEM, who brought experience in different areas of emergency medicine from all over the country. The course was not just for new or inexperienced providers. Past, present, and future presidents of AAEM: Robert McNamara, MD MAAEM FAAEM; Lisa A. Moreno, MD MS MSCR FAAEM FIFEM; and Tom Scaletta, MD MAAEM FAAEM were all in attendance, as was AAEM board member Robert A. Frolichstein, MD FAAEM.

The first day of the conference was jam-packed with great material. The morning sessions focused on process improvement, including the Plan Do Study Act (PDSA) and LEAN methodologies, ED flow, including intake systems, throughput, and output models, and how queuing theory and constraints impact each of those processes. In the afternoon, the focus shifted to patient experience and how the increase in Advanced Practice Providers has impacted EM, and how those providers can be best utilized for different types of EDs. The second day featured more high-yield topics, including



Each session was accompanied by a robust group discussion, which took various forms including shared solutions, question and answer, and case studies and workshops.

change management, revenue generation, and negotiation. Each session was accompanied by a robust group discussion, which took various forms including shared solutions, question and answer, and case studies and workshops.

In addition to the conference sessions, thanks to the AAEM Physician Group, there was also a formal networking event that allowed conference speakers and attendees to get to know one another and presented another opportunity exchange and discuss operational and administrative problems and solutions.

Overall, attendees had great things to say about their experience:

- “This was my first conference like this, and I feel like I learned so much!”
- “It was great getting to meet like-minded people and share solutions. I am definitely leaving with things I can bring back to my group and implement right away.”
- “Did I enjoy EDMS? Of course - all of the topics were really high yield. Can’t believe I got so much out of this in only two days!”
- “I’ve heard a lot of talks on [patient experience] and this one was one of the best!”
- “This is my second time attending this conference, and I got something new out of every session!”

The planning committee is already hard at work on preparations for next year’s conference. Be sure to mark your calendars early for Emergency Department Management Solutions: Principles and Practice 2020! ●



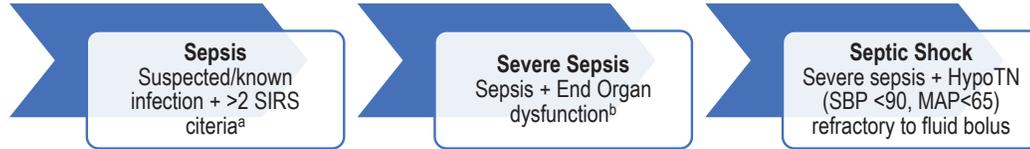
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Critical Care Hacks: Sepsis

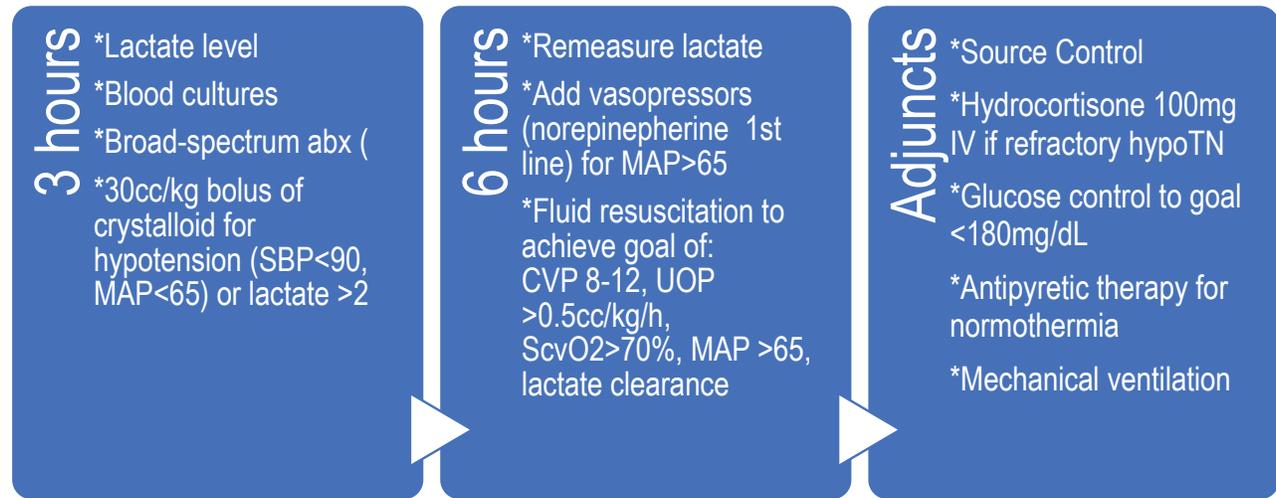
Leena Ramadan, MD

DEFINING AND TREATING SEPSIS



a) SIRS criteria: Temp >38C or <36C, HR >90bpm, RR >20 or PaCO₂ <32, WBC >12k or <4k

b) End organ dysfunction is marked by acute respiratory failure inc. ARDS, AKI: elevated Cr or oliguria, Encephalopathy, Coagulopathy: PT>16 sec or PTT >60 sec, Thrombocytopenia: plt <100k, Hyperbilirubinemia: serum bilirubin >4, clinical malperfusion: delayed cap refill and cool extremities, lactate >2



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Navigating to Success: Wisdom from Tiffany Murano, MD

Amanda Tramutola, DO



Residency is a challenging time, and as I look ahead to the future, I can't help but wonder how to go about carving out a path to a successful career.

Fortunately, I had the privilege to discuss this topic with Tiffany Murano, MD, and learned how she navigated her choices to become the incredibly successful physician who she is today.

Dr. Murano, a Bronx native, graduated from Mount Sinai School of Medicine in New York and completed her residency at Jacobi Medical Center. In choosing her first attending position after residency, she had the opportunity to start at Rutgers (formerly known as UMDNJ) at a time in which the emergency department at that institution consisted of nine beds run by internists and surgeons. Rather than feeling overwhelmed, Dr. Murano realized that this was an occasion for personal and professional growth. She recalls "witnessing the birth of a specialty" as her new position allowed her to enter on the ground level. She was able to establish an emergency medicine presence through the medical school, creating a functional emergency department and residency program.

Dr. Murano did not have well-established local emergency medicine mentors available at the start of her career. She was determined, however, to put Rutgers "on the map." Dr. Murano realized that having a professional network would be critical for her success. She found local mentors, and although they were from different specialties, they were champions in their fields and supportive of Dr. Murano's pursuits. She also began a search for career guidance and connections in emergency medicine through national organizations, especially the Council of Residency Directors in Emergency Medicine (CORD) and the American Board of Emergency Medicine (ABEM). She reminisces about presenting a poster at an annual CORD Academic Assembly and having a member of the board stop by to discuss it with her, and how this became the beginning of a long-standing mentorship. In meeting others with similar interests through her involvement in national organizations, Dr. Murano established formidable relationships with regional and national mentors. Her involvement with CORD and ABEM has led her to other opportunities for further development, and she now sits on the Residency Review Committee (RRC) for the Emergency Medicine section of the Accreditation Council for Graduate Medical Education (ACGME). In a similar manner, her involvement with AAEM and her recognition as a nationally acclaimed speaker have given her the chance to speak at the Mediterranean Emergency Medicine Conference (MEMC) both in 2017 and 2019.

Dr. Murano has successively served as clerkship director and then

program director of the Rutgers emergency medicine residency.

Throughout her seven-year journey as program director, she learned that mistakes are not failures, but rather are learning occasions with long-term benefits for improvement. Perfecting her skills and applying them, Dr. Murano has founded two separate residency programs as well as fellowships in toxicology, administration, and ultrasound. Currently, she is working on a medical education fellowship set to launch next year. Dr. Murano has not just made her mark in the local (NY/NJ) residency realm. She holds executive board positions at the regional and national levels in CORD and NJACEP. She also serves on several graduate medical education committees including Milestone 2.0, a work group aimed to improve residency foundations and learning.

Dr. Murano is a team player and her present and former "teammates" respect her abilities and hard work. A former colleague, Mr. Brian Dolan, praises her: "Dr. Murano is an excellent physician as well as an excellent mentor, colleague, and friend. Her compassion for her patients is second to none and her willingness to teach all levels of healthcare is truly heart-warming. Witnessing Dr. Murano take the time to explain things to the patients as well as to all levels of the staff to help continue the ever-growing 'thirst for knowledge' is exemplary. Having worked side-by-side with Dr. Murano for several years, I can truly say that the patients and team are in great hands with Dr. Murano and was honored to have had the ability to work with her."

As we all know, stability is comforting, but Dr. Murano urges us to walk through each door hoping for a new opportunity behind it.



Dr. Murano suggests thinking carefully about planning a career, particularly focusing on potential areas of growth. She notes that turns and obstacles on the path may provide new, previously unrealized opportunities. Dr. Murano has shared some important lessons:

Seek out mentorship early Dr. Murano believes mentorship is key, and attributes a large part of her success to support from family, friends, and colleagues. She found guidance through CORD and ABEM – large networks of physicians looking out for each other, recognizing strengths, and pushing each other towards amazing opportunities.

Don't say no to opportunities Dr. Murano recalls saying “yes” to everything early in her career. She went on to say, “various part of careers are like Brussel sprouts – might not taste good, might never want another dish again, but it won't harm you and you might actually like it!” Dr. Murano encourages “just say yes” even it's something you don't want to do or that doesn't exactly “float your boat.” Dr. Murano did not see herself working with medical students and eventually residents, but she realized how much she truly enjoyed education.

Dream big Dr. Murano admits part of her success stems from her own drive and ambition. As we all know, stability is comforting, but Dr. Murano urges us to walk through each door hoping for a new opportunity behind it. She states, “you know what you've got, but you don't always know what you'll get.” By setting your standards high, you can strive for greatness and attain it if you work hard enough.

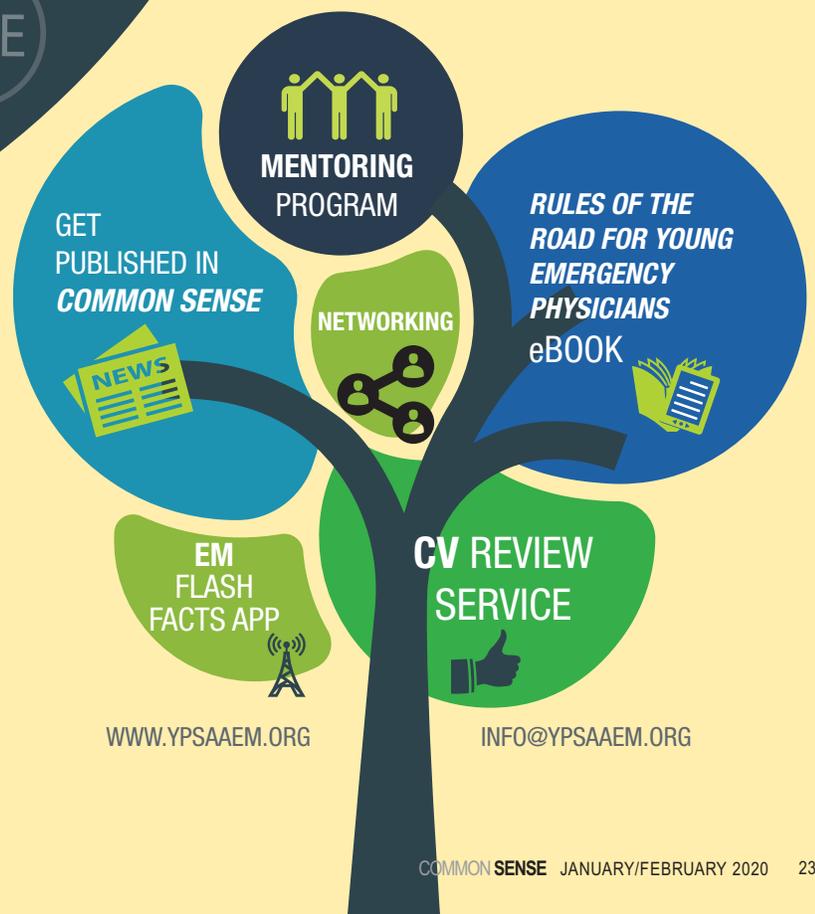
Don't limit yourself Dr. Murano humbly admits the most frightening thing she did throughout her career was leaving Rutgers. She was terrified to leave Rutgers to evaluate a new position after 16 years, but she learned much about herself, people, business, and life. She advocates that stepping outside of a comfort zone is a “life check.” She has now returned to her home base at Rutgers, but learned the value of change as well as finding appreciation for what she has available to her now. ●



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Reimbursement and Coding of Point of Care Ultrasound: Bringing Your Ultrasound Program to the Next Level

Jason Adler, MD FAAEM and Alexis Salerno, MD



Introduction

The use of point of care ultrasound (POCUS) in the emergency department (ED) has increased significantly over the past 5-10 years. As our specialty evolves, so do the tools in our diagnostic toolbox. The use of ultrasound is more than an extension of our stethoscope - it is a diagnostic study that supports the rapid assimilation of data and diagnoses. Many of these procedures are also reimbursable.

Similar to other services provided in the ED and medicine in general, the process of reimbursement begins with coding the medical record. Coders use Current Procedural Terminology (CPT®), which is maintained by the American Medical Association (AMA), to apply an accurate code for the service rendered. Codes are then processed for reimbursement depending on their value. Each year, the codes are updated by the AMA CPT Advisory Committee with representation from each specialty society.

I interviewed Dr. Jason Adler to find out more about ED coding and reimbursement for POCUS. Dr. Adler is a board certified emergency physician and subject matter expert in coding and reimbursement. After spending the early part of his career at an independent democratic group, he now works clinically as a Clinical Assistant Professor at the University Of Maryland School Of Medicine. Dr. Adler is also the Vice President of Practice Improvement at Brault, an acute care coding, revenue cycle, and practice management firm.

Question 1: Which ultrasound examinations can emergency physicians be reimbursed for?

Board certified emergency physicians (EP) are frequently using ultrasound in their clinical practice. Our specialty training includes many ultrasound exams, which when performed, are considered a separately billable procedure.

One of the most common examples of ultrasound done by the EP is for trauma patients. The FAST exam is used to rapidly evaluate a trauma patient for bleeding around the heart or in the abdomen. There is no single CPT® for this study; it is coded as a combination of a limited transthoracic echo (93308, -26) and limited abdomen (76705, -26). You can also perform an ultrasound of the chest (76604, -26) to evaluate for pneumothorax.

For the medical patient, the chest ultrasound (76604, -26) can evaluate a patient for pulmonary edema. A limited abdominal ultrasound (76705, -26) can be done to look for gallbladder disease and a limited retroperitoneal study (76775, -26) to evaluate for aortic aneurysm or renal disease. In other cases, for example, a pregnant patient with vaginal bleeding, a transabdominal (76815, -26) can be used to diagnose an ectopic pregnancy, a time sensitive and critical diagnosis.

Ultrasound exams are also being used to improve the safety and accuracy of critical procedures. These exams include central line placement (76937, -26) using a dynamic technique (where the ultrasound is used to identify the vessel through needle entry). Ultrasound can also be used as guidance for needle placement, for example, lumbar puncture (76942, -26), thoracentesis (32555, -26), and paracentesis (49083, -26).

Question 2: What is involved in setting up an ultrasound program which captures reimbursement?

A few steps are recommended to start an ultrasound program and appropriately capture reimbursement. The clinician should be credentialed by the hospital to perform the procedure but it is not necessarily required for reimbursement purposes by CPT®. You need to have a mechanism in place to retain and store images. Then, you would need to discuss policies and procedures with your coding vendor and have a process in place to document why you are performing the study, what you find, and demonstrate the medical necessity of the exam.

Question 3: What is the difference between professional and technical components of ultrasound billing?

The professional component of the ultrasound exam is performed by the clinician and covers the supervision, interpretation, and documentation of the results. When only reporting the professional component, a -26 modifier is added to the procedure code. The technical component is typically captured by the facility with a -TC modifier, and includes the cost of equipment, supplies, clinical staff, practice, and malpractice expenses.

Although we are seeing some EDs purchasing machines for dedicated use in the ED, and individual clinicians purchasing portable devices, it is generally not recommended to report the technical fee in this setting.



Question 4: Can you explain the difference between a limited and complete ultrasound examination from a coding perspective?

A complete ultrasound exam, per CPT®, is intended to visualize and diagnostically evaluate all the major structures within the anatomic description. There are specifications related to the area studied and type of imaging (e.g. B-mode vs Doppler). In contrast to a complete exam, a limited ultrasound exam, per CPT®, is one in which less than the required elements are performed and documented. Therefore, most ED ultrasounds are considered limited exams since exams are focused to answer a particular diagnostic question.

The abdominal ultrasound exam is a frequently cited example to describe the differences between the complete exam (76700) and the limited exam (76705). The complete abdominal exam, often performed by a radiologist, would include images and comments on the liver, gallbladder, common bile duct, pancreas, spleen, kidneys, the upper abdominal aorta, and inferior vena cava, with specific pertinent positive and negative findings for each or the reason why the exam element could not be visualized. In contrast, a limited abdominal ultrasound, (76705), may be performed to look at one single organ or quadrant where the gallbladder or spleen is evaluated for acute cholecystitis or splenic injury. Generally, best practice for documenting the written report includes 2-3 interpretive comments for each exam element.

A common exception to the complete or limited exam is a transvaginal ultrasound for the pregnant patient (76817) and non-pregnant patient (76830). These studies do not have corresponding limited procedure codes. In these cases, a complete exam would include comments and images for the uterus, endometrium, ovaries, and adnexa. A correlating focused ultrasound exam in the ED would seek to identify the location of the pregnancy, presence of an ovarian cyst, or fetal heart activity. In this case, the modifier (-52) would be added to indicate reduced service and to demonstrate the study is less than complete when a CPT® code for a limited study is not available (e.g. 76817-26,52).

“The use of ultrasound is more than an extension of our stethoscope - it is a diagnostic study that supports the rapid assimilation of data and diagnoses.”

Question 5: Do the ultrasound images need to be saved and, if so, for how long? Do they have to be saved in the chart or can they be somewhere else like the cloud?

Image retention is important from a reimbursement and medicolegal perspective. While there are no formal guidelines on the location of the images (e.g., cloud based, hard drive, or otherwise), CPT® does require that images from the exam be stored and retained. The number of images and the length of storage time should be discussed with your medical records department.

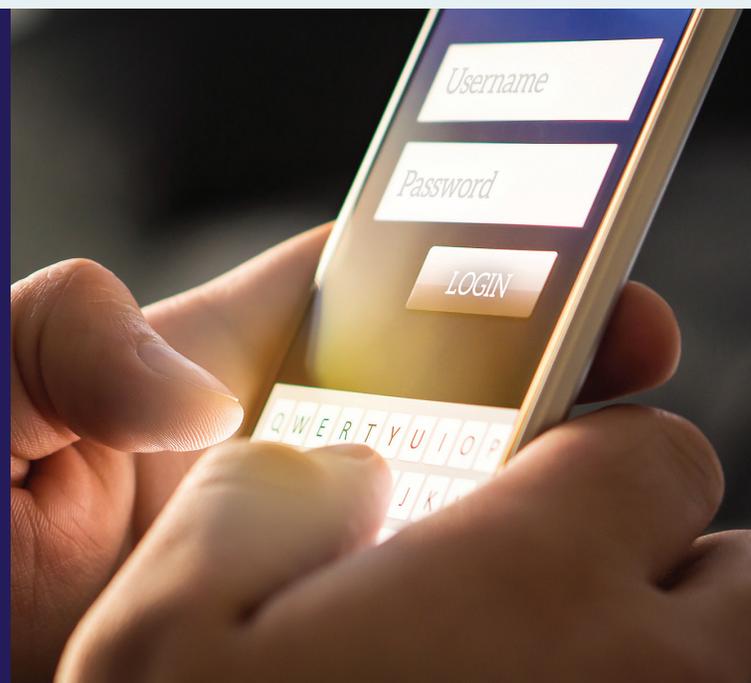
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Our academic and career-based benefits range from discounts on AAEM educational meetings to free and discounted publications and other resources.



Question 6: Could both an emergency physician and a radiologist each do their own ultrasound exam and bill for it on the same patient?

In some cases, the answer is yes. But the most important factor is the medical necessity of the exams. If an emergency physician does a limited ultrasound and either has an inconclusive result or identifies a reason for an additional study in the same anatomical region, there may be a medical necessity for a complete exam to be performed by another clinician (e.g., radiologist). However, there may still be payor specific policies that lead to a denied claim on the second complete study and variation does exist. If you repeated multiple limited exams on the same patient, such as a FAST, you need to demonstrate the medical necessity of those repeated exams. CPT® modifier -76 is added for repeat procedure by the same provider during the same encounter (e.g. 93308-26, 76). Modifier -77 is added for a repeat procedure by a different physician during the same encounter.

“Our specialty training includes many ultrasound exams, which when performed, are considered a separately billable procedure.”

Question 7: Is there a difference for billing ultrasound guided procedures?

Ultrasound has significantly improved our abilities as emergency physicians to safely and accurately perform procedures. The most common examples of ultrasound assisted procedures in the ED are ultrasound guidance for vascular access (76937, -26). Compared to the exams mentioned previously, this study uses ultrasound dynamically and it may not be safe to capture an image while the vessel is cannulated. In this case, a pre and post procedure image is sufficient to demonstrate the dynamic nature of the exam. The following exams require static images, where ultrasound is used to landmark the location for entry: ultrasound guidance for needle placement prior to abscess drainage (cutaneous, peritonsillar), lumbar puncture, and central line placement. CPT® also provides code options with and without ultrasound guidance for several procedures. Examples include arthrocentesis (20600, 20604-20606, 20610 - 20611), thoracentesis (32554, 32555) and paracentesis (49082, 49083).

Question 8: What is the value of the commonly performed ultrasounds in the ED?

RVUs based on the Medicare Physician Fee Schedule (MPFS) eff 4/1/19

Ultrasound Ordered	CPT Code	RVU
FAST Trauma: ex. TTE- to check for hemopericardium Abdominal; limited to check for hemoperitoneum; *Chest or lung (if performed) usu. Checking for pneumothorax	93308	0.73
	76705	0.83
	*76604	0.77
	Total RVU's	2.33
Pregnant Transabdominal	76815	0.93
Pelvic or Post void Residual (Non-Obstetric); limited	76857	0.71
AAA or Abdomen Back Wall or Urinary Tract; limited	76775	0.82
Cardiac or Transthoracic Echo (TTE) or F/U TTE; limited	93308	0.73
Biliary or Abdominal; limited	76705	0.83
Thoracic or Chest (includes mediastinum)	76604	0.8
Ocular or Ophthalmic B-Scan	76512	0.99
**U/S guided needle placement; (e.g. Aspiration, Injection, FB Removal, LP)	76942	0.91
**U/S guided vascular access placement	76937	0.41
**U/S guided pericardiocentesis	76930	0.94

**Report the US Guided Codes with their corresponding procedure codes
If any readers have further questions on billing or suggestions for administrative corner topics, please email us at EUS@aaem.org. ●

New Physician Finance: 101

Fred E. Kency Jr., MD FAAEM



It is July, you have just graduated from residency and it is time to get the first “real” check of your career. If you are anything like me, you have absolutely no idea how to save for the future. Should I call a financial advisor or phone a friend? When should I start saving for the future? Most physicians

have little knowledge of savings and informed financial planning by the time they graduate residency. While family or friends may give somewhat helpful advice, you may be in very different financial situations than they are. However, with the potential for a large injection of cash into your bank account with a new attending job, it is critical to plan for a sound financial future.

Like many emergency physicians, I started my career as an independent contractor. I quickly learned that I had quite a few decisions to make about retirement and options for pre-tax savings. 403b, Solo 401K, Sep IRA, and 529’s can sound like a foreign language. Let’s take a quick look at the options available to ensure a sound financial future for our generation.

Let’s start with the Solo 401K. If you are an independent contractor, a Solo 401K may pique your interest for retirement planning. A Solo 401K is an IRS qualified retirement plan for employers with no employees besides themselves and a spouse. In this plan, you contribute both as an employer and employee. The plan contributions are made pre-tax, reducing your taxable income for that year. Maximum contribution in 2019 for a Solo 401K is \$56,000. Individuals over the age of 50 may contribute an additional \$5,000 each year.¹

Similar to the 401K is the Sep IRA. The Sep IRA holds the same maximum contribution as the Solo 401K for 2019. The difference is how the money is contributed. In a Sep IRA, you contribute only as an employee. An employee can contribute up to 25% of their net income to a maximum of \$56,000. Like the Solo 401K, contributions are made pre-tax, reducing a person’s taxable income for that year.² Sep IRA’s are considered the “easier” retirement planning tool and there are plenty of online brokers that can help open accounts and get you started.

I quickly learned that I had quite a few decisions to make about retirement and options for pre-tax savings.

There is also the Roth IRA, where you can make post tax contributions. With this option, there is no immediate reduction in your taxable income for the current year. The advantage of the Roth IRA is that the money and interest grows tax-free. The 2019 contribution limits for Roth IRAs is \$6,000. After the age of 50 you can contribute an extra \$1,000 each year. Most attending physicians will not be able to contribute to a Roth IRA directly due to income limits but residents may be interested in contributing to a Roth IRA. Ask your CPA or tax lawyer about rolling over your SEP IRA or Solo 401K into a Roth IRA.

The Solo 401K, Sep IRA, and Roth IRA can all be withdrawn without penalty at age 59 ½. The Roth IRA has an additional requirement of “5

year aging” which means that there is no 10% penalty if withdrawals are taken out after 5 years after establishing the account.

If you have children, another method for tax savings is starting a 529 Educational plan. The 529 “Qualified Tuition Program” started in 1996 by Congress and named after section 529 of the Internal Revenue Code gives you another option for saving money with federal tax free growth. As of 2018, the 529 plan allows up to \$10,000 to be used for “qualified higher education expenses.” These funds can be used to pay for elementary and secondary schooling.⁴



Most physicians have little knowledge of savings and informed financial planning by the time they graduate residency.

Lastly, another useful resource for the newly graduated physician is the Health Savings Account (HSA). Health care expenses are an inevitable part of life. HSAs provide immediate tax savings as contributions are pre-tax. In order to qualify for an HSA, a few qualifications must be met. For 2019, you must have a high deductible health insurance policy. Single taxpayers must have a minimum deductible of \$1,350 and maximum out of pocket of \$6,750. The maximum pre-tax contribution is \$3,500. Married taxpayers must have a minimum deductible of \$2,700 and maximum out of pocket of \$13,500. Maximum pre-tax contribution is \$7,000.⁵

As you can see, we have many options for tax savings and investment growth. The above summaries are only a general overview of the programs that may be available to you and your family. Please remember all investment decisions have benefits and drawbacks. Before initiating your financial plan, discuss these with your financial advisor, CPA, or tax lawyer to ensure you qualify for these programs and to know if they will provide you with a good return on your investment portfolio.

Follow @AAEMYPS on twitter for weekly finance tips every Friday. ●

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What is Happening to Our Specialty? An Open and Honest Look at the Chaos in Our Trade.

Your Advocate, AAEM/RSA

As physicians, we all subscribe to the four tenets of medical ethics: autonomy, justice, beneficence, and non-maleficence. These ideals are integral in providing ethical care to all our patients, from the weakest and most vulnerable, to the most astute and medically literate. Our patients deserve these moral characteristics in their physician in order to get the best care possible. But what do physicians deserve?

If we were to apply these factors to ourselves as EM physicians, we'd see a grim trend of unethical practices occurring in our own specialty. Corporate greed, poor educational transparency, loss of autonomy – and the illegitimization of the emergency physician.

Let's start in chronology from residency. Today's medical students applying to emergency medicine are already in an ethical dilemma, especially those that are less competitive. The huge flux of for-profit emergency medicine programs offers just about any medical student the opportunity to become an EM physician. In 2009, there were 1,472 spots in the NRMP Match. This year, it's 2,488 – a rise of more than one thousand spots.^{1,2} A key player in this massive expansion of programs – for-profit non-physician owned corporate medical groups. As a medical student that cannot match a reputable, non-corporate program, you're left with the decision of “do I not follow my dream of matching EM?” or “do I match into EM even though it is under the influence of an unethical training model?” The vast majority of non-competitive applicants, based on our match rates, choose the latter – many not knowing that they're even in a for-profit corporate program.

If this weren't enough, these programs are undermining simple supply and demand economics. Despite data showing that our EM workforce is reaching a plateau, our specialty has been having a rapidly expanding number of residency positions – the most of any specialty in the house of medicine.^{3,4} Why? Some theorize this is to cheapen labor,

These same entities undermine your education by introducing one-year family medicine fellowships in emergency medicine and PA and NP “residencies” - in a degraded use of the term - that are directly competing with EM resident education in the institutions that host these programs.



both via implementing residents (underpaid and overworked high-skilled commodities) into a hospital system and also to increase the supply of EM physicians to the point that oversupply leads to lower wages for physicians to the benefit of for-profit entities as they increase their revenue. **Ethical Principle #1: Autonomy.**

And then there is the issue of residency closures. This trend of poorly run, poorly staffed, vaguely structured for-profit corporate systems producing residency programs across the U.S. is being showcased with each residency closure that falls on the back of trainees. After undergoing the difficulties and financial burden of medical school, many residents are in the limbo of unstable residency training. Profits aren't doing as well as hoped? The corporation pulls out and the most impacted bystanders are residents. If that weren't enough, residents in the aftermath are treated like well-groomed sheep, having their residency funding auctioned

If you're not swayed by what you're reading, take off the white coat and roll up your sleeves, our generation has a lot of cleaning up to do.



off to the highest bidder.⁵⁻⁸ **Ethical Principle #2: Justice.**

And next, enter the practice of emergency medicine. Your options at jobs are limited to working for non-physician for-profit corporations with metrics and bottom lines and your due process waived as soon as you sign on, to “medicine” or democratic physician-led groups that may

But what do physicians deserve?

lose their contract to the former in the coming years.^{9,10} Many of these corporations are also now replacing traditionally EM staffed jobs with midlevel providers, both with the expectation that the few staffed EM physicians will sign charts blindly, and with the understanding that despite significant lapses in education when compared to physicians, these MLPs are much cheaper labor that bring in the same revenue when their charts are signed by an attending physician.¹¹ For many years, our specialty has fought long and hard to establish the importance of being a board certified EM-trained physician. To other physician specialties’ detriment, we did away with the notion that non-EM trained physicians were okay to practice in the ED and thus solidified the EM *specialty*. The irony, however, is that now we’re okay with subjecting our vulnerable patients to family-trained nurse practitioners with substantially less training than family medicine physicians? Even more, we do so knowing that these same practitioners are fighting actively to replace our profession with bills of independent practice and claims that their care is equivalent to ours.¹² Is this not a fallacy? **Ethical Principle #3: Beneficence.**

And now enter surprise billing: an issue so clearly the fault of corporate medicine greed that has of course, conveniently fallen on the eroding reputation of doctors.¹³⁻¹⁷ The fallout of which is on the backs of EM physicians – with

expectations that our salaries will go down if our government finds ways to further regulate EM reimbursement. **Ethical Principle #4: Non-Maleficence.**

At the end of the day, whether from a 60,000 foot view or a 6mm view, our specialty has become infected by the parasitic behavior of for-profit corporations. Corporate medicine has infiltrated all aspects of our specialty, from our training programs, to our staffing, to our patient’s care, and even most concerning – they’ve infiltrated our specialty societies. Whether we, as the next generation of EM physicians, recognize and stop this bastardization of our specialty is up to us.

To all the medical students thinking of pursuing emergency medicine, we invite you to choose this as your specialty - to us and many others, the best specialty. But we also caution you to recognize what you’re getting into. If you’re not swayed by what you’re reading, take off the white coat and roll up your sleeves, our generation has a lot of cleaning up to do. ●

For many years, our specialty has fought long and hard to establish the importance of being a board certified EM-trained physician.

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My First "Sick" Patient

Alexandria Gregory, MD — AAEM/RSA Publications & Social Media Committee Chair



Everyone knows the most fundamental part of emergency medicine residency is learning how to determine "sick versus not sick," which is often easier

said than done. One night, at the end of my shift, a nurse grabbed me, saying the patient in room six needed a doctor *now*. The patient was a young asthmatic who had apparently walked into the emergency department minutes earlier, but was now unresponsive, gray, and with an oxygen saturation in the 50s. I had no trouble determining she was sick; as a relatively new intern, the bigger problem was figuring out what to do next. To quote Michael Scott from *The Office* episode "Stress Relief," in that moment, "I knew exactly what to do, but in a much more real sense I had no idea what to do." I knew I needed to focus on the ABCs and I knew what medications the patient needed in terms of asthma management, but in the acuity of that moment, it all jumbled together. I quickly grabbed an attending and we worked through the ABCs together as the proper medications were administered and the patient stabilized.

That patient taught me several important lessons about intern year and residency as a whole:

- **You know more than you think you do, but you're not expected to know everything.** Looking back on that case, the first thing that struck me was that the nurses had enough faith in me to see this critically ill patient. Perhaps it was simply because I was the closest physician in proximity, but it still serves as an important reminder that even as an intern, people may look to you to make critical decisions. At the same time, no one expects that you have all the answers—after all, that is the point of residency. Someone should always be available to have your back and you should not be afraid to ask for help when you feel stuck.
- **Slow down, even when you feel there is no time to do so.** Inevitably, as you start to see critical patients as a beginner, just knowing that the patient needs quick interventions will tempt you to rush. However, the best decisions are usually made when you take a step back and look at the big picture. While taking a moment to think may feel like you are wasting precious time, making the right decision for the patient is usually more important than saving a few seconds.
- **Your demeanor can have real impact on patient outcomes.** Similar to the above, the way you handle yourself in critical moments

Someone should always be available to have your back and you should not be afraid to ask for help when you feel stuck.

is almost as important as the actual decisions you make. While it is natural to be flustered in unfamiliar situations as a new learner, being able to remain calm and compassionate in such scenarios is part of what makes an emergency medicine physician. Medicine, and perhaps emergency medicine especially, is unique in that our day-to-day decisions, even seemingly small ones, have direct impact on people's *lives*. Mastering the way you carry yourself as you make such decisions is just as important as learning the medicine itself.

- **Emergency medicine is a team sport.** I have known this for a while, and it is part of why I chose to practice emergency medicine specifically, but cases like this are always a good reminder. When I was asked to see the patient with asthma, I was far from alone. I was surrounded by nurses, medics, respiratory therapists, and multiple attendings who came to assist. Everyone had his or her own role, but at the end of the day, we were all there to save our dying patient. While being a resident can feel isolating and challenging at times, remembering that you are part of a team with a shared goal can go a long way. ●

While taking a moment to think may feel like you are wasting precious time, making the right decision for the patient is usually more important than saving a few seconds.



Utility of Ultrasound Measurements in Assessing Fluid Responsiveness

Samantha J. Yarmis, MD; Robert Brown, MD; Jordan Parker, MD; Caleb Chan, MD; Akilesh Honasoge, MD
Editors: Kami M. Hu, MD FAAEM, Kelly Maurelus, MD FAAEM

Clinical Question

How can we utilize ultrasound measurements to accurately determine which patients are fluid responsive? Does any single ultrasound measurement accurately predict fluid responsiveness?

Introduction

Volume expansion is a cornerstone of resuscitation in the ED and is currently one of the main recommended components of septic shock management. The ability to predict fluid responsiveness has been a highly debated issue within emergency and critical care medicine. Early studies found inferior vena cava (IVC) diameter and variability could predict fluid responsiveness in intubated, mechanically-ventilated septic patients.^{1,2} The applicability of these findings to other populations is unknown and subsequent studies have called these findings into question.³ At the other end of the spectrum, the existence of a volume overloaded state may be detected by measuring indices in the liver and kidneys such as portal vein pulsatility,^{4,5} hepatic venous flow velocity,⁶ and intrarenal venous flow.⁷ Confirmation of increased stroke volume with passive leg raise or a small fluid challenge is currently one of the better, albeit imperfect, existing methods to ensure true volume responsiveness.^{8,9,10}

More recent studies have evaluated other ultrasound measurements such as change in carotid corrected flow time, internal jugular vein distensibility, and left ventricular outflow tract velocity time integral in an attempt to find a method of determining volume responsiveness that is both accurate and easy to do at the bedside.

Airapetian N, Maizel J, Alyamani O, et al. Does inferior vena cava respiratory variability predict fluid responsiveness in spontaneously breathing patients? *Crit Care*. 2015; 19:400.

Airapetian et al. sought to assess whether the respiratory variability of the IVC could be used to predict fluid responsiveness in spontaneously breathing (i.e., not intubated) patients. They conducted a prospective study performed in two ICUs from a single center in France. The cohort was made up of 59 consecutive patients who received volume expansion as ordered by an attending physician, generally based on criteria such as hypotension, oligoanuria, skin mottling, "and/or clinical and laboratory signs of extracellular dehydration." Patients who had signs of hemorrhage, arrhythmias, an immediate need for the fluid challenge, compression stockings, or a contraindication to passive leg raising (PLR) were excluded. After baseline blood pressure (measured using an invasive arterial monitoring system), heart rate, cardiac output (CO, as calculated using the measured aortic area and velocity-time integral, VTI), and IVC diameters were recorded, the bed automatically induced a PLR of 30 degrees. Measurements were then repeated two minutes later, and the patient was returned to their initial semi-recumbent position. 500 mL of

saline was then given over 15 minutes and measurements were then repeated again.

Responders (29/59, 49%) were defined as those who had a CO increase of 10% or more following the 500 mL bolus. Responders and non-responders had statistically similar baseline characteristics including percentage of non-surgical (versus surgical) admissions and rates of preexisting heart failure and chronic obstructive pulmonary disease. At baseline, responders had a higher aortic VTI (16 vs. 19 cm, $p=0.03$), smaller minimum IVC diameter on inspiration (IVCmin, 11 ± 5 vs. 14 ± 5 mm, $p = 0.04$), as well as greater IVC variability (cIVC 35 ± 16 vs. 27 ± 10 %, $p = 0.04$). Data analysis revealed that maximum IVC diameter upon expiration (IVCmax) did not predict fluid responsiveness (<2.1 cm: PPV of 57%, LR+ of 1.4), with an area under the receiver operating characteristic curve (AUROC) of 0.62 ± 0.07 (95 %CI 0.49-0.75). Similarly, the AUROC for cIVC at baseline was 0.62 ± 0.07 (95 %CI 0.49-0.74). However, at a threshold of cIVC $>42\%$ there was a specificity of 97% and a PPV of 90% (with a sensitivity of 31%) in distinguishing responders from non-responders.

The authors conclude that IVC diameter and IVC variability are not reliable predictors of fluid responsiveness in spontaneously breathing patients. Inspiratory variation $>42\%$ was a specific but non-sensitive predictor of fluid responsiveness.

Overall, this study's biggest limitation is its small sample size. Another point of caution is that accurate ultrasound measurements are highly operator dependent particularly when measuring aortic VTI. In this study, CO was calculated using the average VTI over three to five consecutive measurements over one respiratory cycle. In addition, the high-level of inter-observer reliability suggests that the ultrasonographers were highly skilled, which may not be the case with all emergency physicians and may limit generalizability. It should be noted that the baseline MAP in this small cohort was 86 ± 19 and 87 ± 33 mmHg for responders and non-responders respectively, not hypotensive and actually higher than the typical MAP goal of 65 mmHg. There was also no comparator gold standard measurement used to confirm the CO measurements. In addition, this cohort of patients were ill, but also were thought to be stable enough not to need the fluid immediately, although this exclusion criteria as well as the inclusion criteria of "signs of extracellular dehydration" were poorly defined. While ultimately there is debate about the utility of IVC measurements in fluid responsiveness given its use as a surrogate value for central venous pressure, based on this study, a cIVC $>42\%$ in spontaneously breathing patients may predict an increase in CO after fluid infusion.



Corl KA, George NR, Romanoff J, et al. Inferior vena cava collapsibility detects fluid responsiveness among spontaneously breathing critically-ill patients. *J Crit Care*. 2017; 41:130-137.

This study investigated if IVC collapsibility measure using POCUS was able to detect fluid responsiveness among critically ill but spontaneously breathing patients. The study was a prospective observational study that enrolled a convenience sample of patients admitted to a medical ICU. A total of 124 patients were included who demonstrated signs of “acute circulatory failure” defined in this study as hypotension (systolic blood pressure <90 or MAP <65 mmHg for at least 30 minutes), persistent tachycardia (HR >120 for at least 30 minutes), and/or laboratory tests indicative of organ hypoperfusion (serum pH <7.3 or lactic acid >2).

The authors defined fluid responsiveness as an at least 10% increase in cardiac index following a 500 mL bolus of normal saline as measured by the Non-Invasive Bioreactance Cardiac Output Monitoring System (NICOM; Cheetah Medical, Newton Center, MA). The NICOM measures the change in phase of a 75kHz alternating current across the chest which predictably varies with blood flow through the aorta when compared to thermodilution with a pulmonary artery (PA) catheter as the gold standard¹¹ and was subsequently validated in a multi-center follow up study.¹²

One of three study physicians obtained subcostal long axis views of the IVC. IVC diameter was measured at maximum expiratory and minimum inspiratory diameter 3 cm caudal from the junction of the IVC and the right atrium. Caval index (cIVC) was defined as (IVC expiratory diameter – IVC inspiratory diameter)/IVC expiratory diameter.

The primary outcome was AUC for cIVC. The AUC was found to be 0.84 (CI 0.76 – 0.91) — indicative of a fair level of discrimination. The optimal cIVC found to maximize sensitivity and specificity for fluid responsiveness was 25%. Secondary investigations included comparison of this cutoff to previously suggested cutoff values and to evaluate if incorporating a passive leg raise helps detect fluid responsiveness. The authors found that a cIVC of 25%, which was lower than previously suggested cutoff values of 40-42%, produced a lower misclassification rate. Incorporating a passive leg raise did not result in fewer misclassifications compared to baseline cIVC alone.

One limitation of this study was that the exclusion criteria included “if the clinical team felt that they had active pulmonary edema” and if the clinical team “believed that further IVFs might pose a clinical risk.” The specific criteria used to determine patients excluded for these reasons are not given. Another limitation is that the authors report the median time from ED triage to first ultrasound was 17 hours during which a mean of 4060 mL of fluids was administered to each patient. In contrast, the mean fluid given during the study, including the 500 mL bolus to assess fluid responsiveness, was only 525 mL. This suggests that the vast majority of volume resuscitation occurred prior to study enrollment and ultrasound images thus limiting the applicability of the study to patients

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NEW: Resident Breve Dulce Competition

AAEM/RSA is excited to bring resident members a new Breve Dulce competition! The theme of this competition is “Hindsight is 20/20.” Please submit an experience from your emergency medicine training, clinical or otherwise, where you learned an important lesson that is much clearer now than it was in the past.

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who present to the ED prior to any volume resuscitation. It may make the results more applicable to patients on arrival to the ICU, however, similar to patients who have already received fluids in the ED.

The authors conclude that their results support the use of cIVC, as the AUC of 0.84 is indicative of fair discrimination. In addition, this AUC is reasonably higher than that for PLR, which indicates that cIVC outperforms PLR as a measure of fluid responsiveness. While debate still exists as to the optimal cutoff for cIVC to predict fluid responsiveness, this study also suggests that it may be a useful tool in guiding fluid resuscitation.

Barjaktarevic I, Toppen W, Hu S, et al. Ultrasound assessment of the change in carotid corrected flow time in fluid responsiveness in undifferentiated shock. *Crit Care Med.* 2018; 46(11):e1040-46

The authors of this study questioned whether point-of-care doppler ultrasound measuring the change in carotid corrected flow time (Δ ccFT) during a passive leg raise (PLR) accurately predicted fluid responsiveness in ICU patients with undifferentiated shock. The flow time is the time from ejection of blood into the aorta until the closing of the aortic valve as measured at the carotid. It predates modern ultrasound and was developed in conjunction with heart sounds and ECG tracings to determine the cardiac cycle. As a surrogate measurement for stroke volume, it can be measured using a pulse waveform analysis of the carotid artery and it can be corrected for heart rate variability.¹³

For their prospective observational study, Barjaktarevic et al. enrolled 77 consecutive patients with early (< 24 hours) undifferentiated shock (requiring vasopressors despite > 1L fluid resuscitation) as they presented to the UCLA medical or surgical ICUs. They excluded patients with heart failure, any rhythm other than normal sinus, pulmonary hypertension, recent history of thromboembolism, or increased intracranial pressure. A single physician sonographer measured ccFT before and after PLR and a second physician blinded to the clinical environment measured the same unprocessed images to assess inter-rater variability. Results from the two physicians were not significantly different when compared with a Bland-Altman plot demonstrating a mean difference score = 0ms at baseline and -0.2ms after PLR (95% limits of agreement from -6.6 to + 6.4ms).

They divided the patients into responders and non-responders based on whether stroke volume increased 10% or more on PLR as measured by NICOM. Using a two-sample t-test they found a significant difference in the Δ ccFT between responders (14.1ms +/- 19ms[SD]) and non-responders (-4.0ms +/- 8ms) with $p < 0.001$. They used a cutoff of 7ms to calculate a ROC curve for predicting fluid responsiveness with Δ ccFT and found that it was 68% sensitive and 96% specific. Subgroup analyses of mechanical ventilation, PEEP > 5cmH₂O, and respiratory rate demonstrated no significant impact on test performance.

The authors conclude Δ ccFT is “an acceptable and reproducible” measure of fluid responsiveness in patients with undifferentiated shock, and this evidence is supportive but weak. It is plausible that this test should be

reproducible given that a longitudinal view of the carotid with a linear probe is not difficult to achieve but the conclusion is undermined by having only two operators and only one set of images. The importance of doppler ultrasound agreement with NICOM as a gold standard is also questionable because NICOM was not validated in this specific population. The mathematical significance of the findings lacks a clinically-relevant outcome like duration of ICU admission, duration of vasopressor use, volume of crystalloid given, rates of renal failure, or mortality, and the significant variance in the Δ ccFT shows overlap between responders and non-responders.

Guarracino F, Ferro B, Forfori F, et al. Jugular vein distensibility predicts fluid responsiveness in septic patients. *Critical Care.* 2014; 18:647.

The authors of this study sought to elucidate if respiratory changes in internal jugular vein (IJV) diameter in mechanically-ventilated septic patients can predict fluid responsiveness. In mechanically-ventilated patients, the positive pressure from the ventilator causes distension of the extrathoracic vasculature during inspiration. Measuring this respiratory change in diameter of the IVC has been previously suggested to be an accurate measurement of fluid responsiveness.¹ The internal jugular vein is an easily accessible vessel using ultrasound and is thought to be technically easier to image than the IVC.

In this prospective study, Guarracino et al. enrolled 50 patients aged 18 years or older who presented with sepsis and required intubation. They excluded patients with cardiac disease, atrial fibrillation, or any sign of IJV thrombosis. All patients were mechanically-ventilated with a mandatory minute ventilation setting and similar parameters (PEEP, FiO₂, TV). During acquisition of measurements patients remained in a semi-recumbent position with the head of bed at 30 degrees elevation. All enrolled patients had an indwelling radial artery catheter to monitor hemodynamics including pulse pressure (PP), cardiac index (CI), and MAP. Pulse pressure variation (PPV) was defined as the ratio of the maximum difference in PP averaged over three respiratory cycles. All patients were given a 7 mL/kg crystalloid infusion over 30 minutes. Ultrasound measurements were performed just prior to and immediately following the fluid administration. The authors determined that responders would be patients who had a PPV > 13%. For their ultrasound measurements, a single operator used a 12-MHz linear transducer placed at the level of the cricoid cartilage to evaluate the diameter of the IJV in the anterior-posterior plane using M-mode. An IJV distensibility index (%) was calculated using the following formula: (maximal IJV inspiratory diameter - minimum IJV expiratory diameter) / minimum IJV expiratory diameter X 100. IJV distensibility measurements were performed by personnel blinded to the patient's response to volume expansion.

The authors found that 30 patients were responders and 20 were non-responders. The median IJV distensibility index prior to fluid administration in the responders was 24.15% (IQR 20 to 29) and 9.8% (IQR 7.6 to 13.8) in the non-responders (p -value <0.0001). This difference between IJV distensibility was not present following volume expansion (p -value=0.07). The authors utilized ROC curves to determine the

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sensitivity and specificity for IJV distensibility and PPV to predict fluid responsiveness. They found that the sensitivity and specificity for predicting fluid responsiveness with an IJV distensibility > 18% was 80% (95% CI 61.4 -92.3) and 95% (95% CI 75.1 – 99.9), respectively. The data also showed that the responders had a median PPV that was greater than the non-responders, 22.5% vs 12.2% (p-value < 0.0001). A PPV > 12.5% was shown to predict fluid responsiveness with a sensitivity and specificity of 96% and 95%, respectively. Using an IJV distensibility index >9.9% and a PPV >12%, the authors found that the sensitivity and specificity for predicting fluid responsiveness was 100% and 95%, respectively. Interobserver variability was assessed by taking two measurements of IJV diameter before and after fluid administration in the first 15 patients and showed significant agreement in measurements.

The authors concluded that utilizing IJV distensibility can predict fluid responsiveness in septic, mechanically ventilated patients. They further described that combining IJV distensibility with PPV can improve the sensitivity and specificity for predicting fluid responsiveness. The major limitations of this study are the size of the study, restriction to only mechanically ventilated septic patients, and lack of analysis of patients with cardiac disease. Furthermore, the authors used PPV as their gold standard for fluid responsiveness, which, while validated in a small sample of similar patients, is far from a widely accepted gold standard.¹⁴ Additionally, while identifying patients who respond to fluids is beneficial more clinically relevant endpoints should be evaluated as well, such as mortality and ICU length of stay.

Murthi SB, Fatima S, Menne AR et al. Ultrasound assessment of volume responsiveness in critically ill surgical patients: Two measurements are better than one. *J Trauma Acute Care Surg.* 2017; 82(3): 505-11.

Murthi et al. attempted to address the large variation between POCUS volume response measurements by using multiple different methods on the same patients. They utilized a convenience sample of patients in surgical and trauma ICU and performed testing on 242 patients. Ultimately 199 patients completed the study and were used for data analysis. 68% of patients were trauma/emergency surgery patients while the rest were a combination of other surgical services. The average injury severity score was 25. The majority of patients were mechanically ventilated (68%) with multiple different ventilatory modes used. The patients were identified as anyone who would be receiving a fluid infusion including crystalloid, blood products, or albumin. Ultimately, 64% received crystalloid while 21% received blood products. Within 30 minutes prior to infusion and within 30 minutes after infusion completion a TTE was performed in addition to multiple other testing modalities. They defined an increase in stroke volume by >15% as evidence of a volume response. The team used 6 different POCUS measures of volume responsiveness: 1) Left ventricular outflow tract velocity time integral (LVOT VTI), 2) relative positional change in IJV diameter between 0 degrees and 90 degrees

head of bed, 3) respiratory variation in IJV diameter at 90 degrees head of bed, 4) respiratory stroke volume variation, 5) passive leg raise stroke volume variation, 6) respiratory variation of the IVC.

Overall, they found LVOT VTI to be the most predictive single measure of volume responsiveness with their interpretation of the ROC indicating the best threshold to detect volume responders is a VTI <18cm, and the best threshold for non-responders is a VTI >22cm. This resulted in a sensitivity of 75% and specificity of 70%. They also found respiratory variation of the IJV at 90 degrees head of bed (the left IJV measured at mid-neck in this study) was associated with an increased stroke volume after a fluid infusion. The authors found that the combination of these 2 metrics into a value called the CAVS (combined assessment of volume status) increased the area under the receiver operator curve to 76% (higher than either alone).

Importantly, they found that IVC variation was not associated with volume responsiveness although only 78% of patients had an IVC that was able to be measured. Subgroup analysis also showed that mechanically ventilated patients (not controlling for ventilator mode) had more accurate measures across all modalities. In addition, they found that pre-bolus EF and diastolic function were not associated with volume responsiveness.

The authors argued that studies on POCUS assessment of volume status should not use absolute thresholds, but rather ranges. This would help one of the main weaknesses of this study and many others like this, study population heterogeneity. Other weaknesses of the study included the limited ability to properly assess the IVC (only seen in 78% of patients) and inability to assess stroke volume (11% could not assess SV) as many patients were either obese or had undergone abdominal/thoracic surgeries that resulted in subcutaneous air. Passive leg raise could not reliably be measured as well and was largely excluded from the study as many patients had injuries that would prevent safe mobility of the legs. This study also had a limited sample size with disease processes largely limited to surgical hypovolemic states (54% were trauma patients).

Conclusions

The studies reviewed above demonstrate potential utility for several ultrasound methods of assessing volume responsiveness. Overall, measurements that are easier to obtain, such as IVC variability and IJV distensibility, may be less reliable, especially in spontaneously breathing patients. Other limitations include the inability of these measurements to exclude patients who might be volume responsive, notably in patients with elevated right-atrial pressure. Multiple measurements used in combination, as demonstrated in the latter two articles above, may be more reliable measures of volume responsiveness. Many studies are weakened by small sample sizes and the exclusion of highly relevant patient populations, such as those with heart failure and pulmonary hypertension. There remains a need for a controlled trial using a validated gold-standard measurement of fluid responsiveness to determine the



best ultrasound method to not only predict a response to volume but to differentiate between volume need and volume “tolerance.”

Answer

Measurements of IVC diameter and distensibility, carotid corrected flow time, IJV distensibility, and LVOT VTI can predict volume responsiveness, but each method has its own sensitivity, specificity, and limitations that can make its application and interpretation cumbersome. Recent existing studies demonstrate that a single, easily acquired ultrasound measurement that reliably predicts fluid responsiveness in the broad spectrum of patients managed in EDs and ICUs remains elusive. LVOT VTI demonstrates promise independently and with the use of PLR, but could use a direct, prospective, high-quality study validating it in conjunction with PLR. ●

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Reading Around Your Reading

David Fine — Medical Student Council President



If the primary goal of undergraduate education is aimed at teaching students how to think then the primary goal of medical school is to teach students where to look for information. In both environments you must develop a base of knowledge, but in the broad scope of medicine there is bound to be a situation that you are unfamiliar with. For an overview of information, UpToDate can be a great resource and the citations at the bottom of each webpage can help you narrow your focus. Podcasts such as EM:RAP can help you re-familiarize yourself with concepts and can be a great way to learn about new papers in the field of emergency medicine.

The art of medicine stems from the many options that we have access to. Deciding what treatment is best for which patient is often more complicated than a one-drug-fits-all approach. PubMed is a phenomenal database for a literature review aimed to answer a specific question. Finding an article is a great first step, but recognizing how it applies to your patients can be a challenge. Are the findings clinically significant or are they only statistically significant? Does the test have enough power or is the sample size so small that any findings can be explained by random chance? What biases are you bringing to the table and what biases exist in the field of medicine? It is important to be a skeptic, because articles can be misleading regardless of the intentions behind them.

Ironically, I'd like to direct you to an article. "A Decade of Reversal: An Analysis of 146 Contracted Medical Practices,"¹ takes a look at studies that assess old standard practices and comparative therapies. Results

were broken down into four categories: replacement, reaffirmation, reversal, and inconclusive. One result that I found fascinating was that of the 363 articles testing standard of care practices, 40.2% reversed that practice whereas 38.0% reaffirmed it. We like to believe that our standards of care are based on facts, which come from the conclusions we draw from the raw data. How can it be possible that scrutiny to these standards can illuminate so many inaccuracies? I'll once again refer you to the original manuscript rather than have you rely on my summary.

Despite all this, the study is not without limitations itself. I do believe it brings up a great point in that we must work to understand our biases. There are standards of care that we are taking for granted, and these innate biases affect our patients. Whether you are looking up tPA use in strokes or Tamsulosin use for kidney stones, I have full confidence that you can find arguments both for and against the treatment. This can frustratingly create a gray area, however, an instant counterpoint is that knowing where your practices are coming from as well as the limitations to those studies is what will make you an adaptable physician. For those of us still in our training, I encourage us to not only read around our patients, but also to read around our reading so that we can truly provide the best evidence-based medicine to our patients. ●

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Finding an article is a great first step, but recognizing how it applies to your patients can be a challenge.



There are standards of care that we are taking for granted, and these innate biases affect our patients.

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