Dollars & Sense

The Investment Company Price War

Joel M. Schofer, MD MBA CPE FAAEM
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Vanguard has been the low-cost leader in the investment industry. Recently, though, its major competitors, Fidelity and Charles Schwab, have been lowering the cost of their index mutual funds and exchanged traded funds. In some cases, Vanguard is no longer the low-cost leader.

For example, Vanguard's S&P 500 Index Fund (Vanguard 500 Index Fund Admiral Shares) has an expense ratio of 0.04%. Remember that the expense ratio according to Investopedia is "a measure of what it costs an investment company to operate a mutual fund." When I went to Charles Schwab's website (Schwab.com), their site said, "Think Vanguard has the lowest costs? Think again."

They tout, "Schwab market cap index funds and ETFs are up to 80% less than comparable funds at Vanguard and 70% less than Fidelity. Everyone pays the same — whether you have $5 or $5 million to invest, you get the same low cost for Schwab market cap index funds." Here is a comparison chart on the S&P 500 index funds:

As you can see, the Schwab fund is cheaper. In addition, in order to get into Vanguard's Admiral share class and get the lowest cost, you need to invest $10,000. At Schwab, everyone gets the lowest cost shares. You'll notice as well that Fidelity's funds are all cheaper than Vanguard's.

Why are they doing this? Does this mean that Schwab and Fidelity are the new sheriff in town and Vanguard, where I do all my investing outside of the military retirement plan, should be put out to pasture?

The same thing has happened in the past with brokerage commissions. While it used to cost $50-100 to execute a brokerage trade over the phone, now they are less than $10 and often free. This is the evolution that occurs in a free, competitive market.

Part of the reason for this price war among Vanguard, Fidelity, and Schwab is that investors are moving billions of dollars from actively-managed funds, where managers are trying to beat the market, to index funds that passively track the market. And Vanguard has been all about index funds since its inception and is practically synonymous with the term "index fund." Schwab and Fidelity are doing everything they can to get investors in the door, even potentially operating these funds at very low profit margins or even at a loss.

Should everyone switch to Schwab or Fidelity? I'd argue no for two reasons.

First, the difference between a 0.03% expense ratio at Schwab and a 0.04% expense ratio at Vanguard on a $1 million portfolio is only $100. On $100,000 it is only $10. In other words, we are talking about small amounts of money relative to the overall size of the portfolio.

Second, while Schwab and Fidelity are lowering expenses on their most popular index funds, Vanguard has a unique structure. It is owned by its shareholders. This makes it equivalent to a non-profit investment company, and ensures it will have low costs across the board no matter what product you are looking to invest in. For example, the Vanguard Target Retirement 2030 fund has an expense ratio of 0.15%. The equivalent at Fidelity, the Fidelity Freedom 2030 fund, has an expense ratio of 0.7%, which is more than four times more expensive. How about Schwab? Schwab's Target 2030 Index Fund has an expense ratio of 0.08%, lower than Vanguard's.

What's the bottom line? This price war among Schwab, Fidelity, and Vanguard benefits the investor as costs come down. All three are large, well-established companies managing trillions of dollars, and you can likely do well investing with any of them if you know what you are doing.

Will I switch from Vanguard? No, because I know that no matter what investment I pick the cost may not be the lowest, but it'll be among the lowest in the industry.

Reference

1. https://www.schwab.com/public/schwab/investing/accounts_products/schwab_index_funds_etfs

If you'd like to contact me, please email me at jschofer@gmail.com or check out the two blogs I write for, MCCareer.org and MilitaryMillions.com.

The views expressed in this article are those of the author and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense or the United States Government. ■

S&P 500® Index			
	Schwab® S&P 500 Index Fund	Vanguard 500 Index Fund	Fidelity 500 Index Fund
$3K Investment	SWPPX 0.03%	VFINX 0.14%	FUSEX 0.09%
$10K Investment		VFIAX 0.04%	FUSVX 0.035%
$5M Investment		N/A	FXSIX 0.03%

Figure 1. A comparison of the cost of the S&P 500 index funds at Charles Schwab, Vanguard, and Fidelity.[1]

New Series: The Masters Column

Anthony DeMond, MD MAAEM
Former Board Member; Chair, AAEM Membership Committee
ED Staff Physician, Pagosa Springs Medical Center

Editor's Note:

This is the first article in a new column in this publication named the "Masters Column." These articles will be submitted by AAEM 's recognized leaders who have the honor of having being identified as Masters of the American Academy of Emergency Medicine.

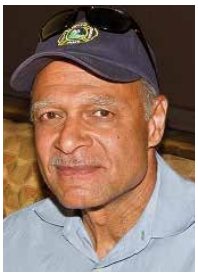
The criteria for MAAEM are:

Master of the American Academy of Emergency Medicine (MAAEM)

Active members of AAEM may also recommend nominees to the AAEM executive committee for the Master of the American Academy of Emergency Medicine (MAAEM). This recognition of senior AAEM fellows shall be extended to those who demonstrated a long career of extraordinary

1. *Service to AAEM*
2. *Service as an exemplary clinician and/or teacher of emergency medicine*
3. *Service to emergency medicine in the area of research and/or published works*
4. *Service as a leader in the hospital, the community or organized medicine*
5. *Service in the areas of health policy and advocacy*
6. *Volunteerism*
7. *Other activities or high honors that distinguished the physician as preeminent in the field of emergency medicine.*

— Andy Mayer, MD FAAEM
Editor, Common Sense



Steve Fraser wrote a book called *The Age of Acquiescence*. Sure there are always individual outliers. Not everyone is caught up thinking that capitalism and free markets as they are configured now must stay that way, but I believe that phrase also defines where we are in emergency medicine. Many of us have acquiesced to the way our job market is currently configured. Yes, there are individual outliers who are not willing to resign themselves to acacquiescence, but these individuals won't have an impact unless they act in a coordinated, that is, in an organized manner. Hence the role of AAEM. Get us outliers organized and acting in a coordinated manner to defend our profession and our patients.

So what do you think? Are you just hoping to stay happy with your individual practice? Will you just accept that the majority of emergency medicine jobs falls under the corporate practice of medicine? Do you have due process? Will you just accept whatever the hospital CEO wants? For CEOs and corporations we are labor and you know how labor has been and gets treated in the USA. Management currently holds labor hostage. And labor has mostly decided to dream of becoming management rather than try to regain some of its lost power and dignity. Some of us will recoil at being called labor. Well, then own your practice, build your repertoire, get involved in your organization. Or you could acquiesce and try to rise into management at the hospital or within the corporation holding the emergency medicine contract. Will you do this on the backs of your peers in the pit or do you take your peers with you?

Friday, September 15th, *The Wall Street Journal* featured on the front page an article entitled "The Flip Side of the New Economy, Millions of Contractors Struggle for Career Advancement and Stability." Doesn't sound like you? Tell me this. Are you paid fees for your service? Do you get paid vacation? Do you get health insurance through your employer? Does your employer pay into a retirement fund for you? How stable is your employment situation? Can you or your group only be fired on 30 day notice, 60 day notice, 90 day notice, with due process cause? If you have multiple no's then you must consider what defenses you have. You must consider AAEM membership. You must recruit others to join AAEM with you because with numbers come greater bargaining power. Otherwise you have no defenses against the rules of the "New Economy" which looks at physicians as contract labor. Let me reiterate. Management sees the ED doc as labor. I do not use the word "doc"

Continued on next page

kindly. We are the group of physicians most likely to be called doc. When management calls me "hey doc," I cringe. You can of course collude with management and become an exploiter of your fellow docs. That may be the career advancement you have chosen. In my opinion ACEP's support of contact management companies is collusion. Rise through the ranks of TeamHealth and who are you abetting besides yourself? This is what the "New Economy" wants from you. To be so in love with individualistic pursuits that you don't achieve power through the clout of numbers. You have your own private relationship with management and you do what you can not to rock that boat. Management wants you to see yourself as an individual entrepreneur happy with the niche it allows you to have. And maybe management will choose you for a role where you can earn off the backs of your colleagues. Yea! I have been coopted out of labor. Or you could become head of your department and attempt to put due process procedures into place. You could organize your fellow docs and become stewards in AAEM. You could build a group that has bargaining clout in the face of an economy stacked heavily in favor of management. Power to the pit! ■

AAEM18 Wellness Activities

Be well with us at AAEM18

STAY TUNED for more information on wellness events available at the 24th Annual Scientific Assembly in San Diego — including the return of the Airway at AAEM storytelling event!

24th Annual Scientific Assembly

April 7-11, 2018

MARRIOTT MARQUIS SAN DIEGO MARINA

View the full preliminary program online!

www.aaem.org/aaem18/program

Check out this year's Wellness Events

www.aaem.org/aaem18/wellness

Book Your Hotel Room

www.aaem.org/aaem18/register/hotel

Register for a Pre-Conference Course! View the 10 engaging options on the AAEM18 website. http://www.aaem.org/aaem18/program/precons

Call for 2018 AAEM Board of Directors Election Nominations

Nomination Deadline: January 7, 2018 — 11:59pm CT

AAEM encourages candidates for election to the board of directors who have a previous record of service and commitment to the Academy.

Open Positions for the 2018 Election:

- President-Elect
- Secretary-Treasurer
- Three At-Large Directors
- Young Physicians Section (YPS) Director

Nominations

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

In order to nominate yourself or another full voting member for a board position, please go to www.aaem.org/about-aaem/elections to provide the following information and complete the nomination form and attestation statement.

1. Name of nominee. Each nominee may have only three individuals as nominators/endorsers.
2. Name of nominee's medical school and year graduated.
3. Board certification status of nominee, including Board and year completed.
4. Number of ED clinical hours worked each week by the nominee.
5. A candidate statement (written by the nominee, 500 word max.) listing recent AAEM contributions, accomplishments, activities, or any other information detailing why the nominee should be elected to the board. A photo for publication may accompany the statement if the nominee wishes.
6. Any emergency medicine related business activity in which the nominee has a financial interest.
7. A current CV for the nominee.
8. AAEM Attestation Statement filled out by the nominee.
9. **Conflict of Interest Form must be completed by the nominee prior to the nomination deadline**.

The information listed above must be submitted to the AAEM office before 11:59pm CT, on January 7, 2018. The nomination form and required information is the same as that for a board position.

The candidate statements from all those running for the board will be available online and also featured in the March/April 2018 issue of *Common Sense*.

Online Voting

2018 voting will occur online only. The online ballots will be available prior to Scientific Assembly and online voting will be available onsite. WiFi will be available in the meeting space and we encourage members to bring a device or computer to cast their ballot.

Elections

Elections for these positions will be held at AAEM's 24th Annual Scientific Assembly, April 7-11, 2018 in San Diego, CA.. Although online balloting arrangements will be made for those unable to attend the Assembly, all members are encouraged to hold their votes until the time of the meeting. Online voting will be available leading up to Scientific Assembly and onsite

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.

These nomination and election procedures are what set AAEM apart from other professional medical associations. We believe the democratic principles that guide them are one of AAEM's greatest strengths and are an integral part of what makes us the organization of specialists in emergency medicine. In AAEM, any individual, full voting or YPS member can be nominated and elected to the AAEM board of directors. ■

DEADLINE: January 7, 2018 – 11:59pm CT

CALL FOR AAEM Award Nominations!

DEADLINE:
JANUARY 7, 2018
11:59pm CT

AAEM is pleased to announce that we are currently accepting nominations for our annual awards. Award presentations will be made to the recipients at the 24th Annual Scientific Assembly to be held April 7-11, 2018 in San Diego, CA.

Complete nomination criteria and the required online nomination form are found at www.aaem.org/about-aaem/awards. Self-nominations are not accepted. The AAEM Executive Committee will review the nominees and select recipients for all awards.

Individuals can be nominated for the following awards:

Administrator of the Year Award — AAEM encourages members to nominate an administrator deserving special recognition for their dedication to emergency medicine and patient care.

Amin Kazzi International Emergency Medicine Leadership Award — The international leadership award recognizes an individual who has made an exceptional, longstanding, and profound leadership contribution to the international development of emergency medicine (EM) or to the advancement of EM education worldwide.

David K. Wagner Award — As an organization, AAEM recognizes Dr. Wagner's contributions to the specialty by offering an award named in his honor to individuals who have had a meaningful impact on the field of emergency medicine and who have contributed significantly to the promotion of AAEM's goals and objectives. Dr. Wagner himself was given the first such award in 1995.

Young Educator Award — Nominees must be out of residency less than five years and must be AAEM members. This award recognizes an individual who has made an outstanding contribution to AAEM through work on educational programs.

Resident of the Year Award — Nominees for this award must be AAEM resident members and must be enrolled in an EM residency training program. This award recognizes a resident member who has made an outstanding contribution to AAEM.

James Keaney Award — Nominees for this award must have 10 or more years of experience in EM clinical practice and must be AAEM members. Named after the founder of AAEM, this award recognizes an individual who has made an outstanding contribution to our organization.

Robert McNamara Award — Nominees for this award must have 10 or more years of experience in an EM academic leadership position and must be AAEM members. This award recognizes an individual who has made an outstanding contribution to AAEM in the area of academic leadership.

Joe Lex Educator of the Year Award — This award recognizes an individual who has made an outstanding contribution to AAEM through work on educational programs. Nominees must be AAEM members who have been out of their residency for more than five years.

Master of the American Academy of Emergency Medicine (MAAEM) — Active members of AAEM may also recommend nominees to the AAEM executive committee for the Master of the American Academy of Emergency Medicine (MAAEM). Full criteria for this designation are available on the AAEM website.

Program Director of the Year Award — This award recognizes an EM program director who has made an outstanding contribution to the field of emergency medicine and AAEM. The winner of this award will be chosen by the AAEM Resident and Student Association (AAEM/RSA). Nominations will be accepted for all awards until 11:59pm CT, December 17, 2016. All nominations should be submitted in writing and include:

1. Name of the nominee.
2. Name of the person submitting the nomination.
3. Reasons why the person submitting the nomination believes the nominee should receive the award.

Kick off AAEM18 with an Engaging Pre-Conference Course!

Resuscitation for Emergency Physicians — Two Day Course

9 AMA PRA Category 1 Credit(s)™

Saturday, April 7, 2018 - 7:30am-5:00pm
Sunday, April 8, 2018 - 8:00am-11:00am

Course Description

In recent years, it has become all too common for critically ill patients to remain in the emergency department for exceedingly long periods of time. It is during these early hours of illness that many detrimental processes begin to take hold. It is during these early hours of illness that lives can be saved … or lost! In order to prevent unnecessary morbidity and mortality, the emergency physician must be an expert at resuscitating the critically ill patient.

Resuscitation for Emergency Physicians (REP) is an outstanding resuscitation course for the emergency physician that encompasses a broad spectrum of topics including cardiac arrest, rapid sequence intubation, post-intubation hypotension, cardiogenic shock, pediatric resuscitation, CNS catastrophes, toxicologic disasters, ECPR, and REBOA. REP is the first integrated resuscitation course developed by an emergency medicine professional society that is tailored to the needs of emergency physicians. Emergency physicians who want to take a single resuscitation course taught at an advanced level, rather than taking ACLS, PALS and ATLS, will find REP to be an outstanding experience. Quite simply, this course will help you save lives!

Special DelivERies – Managing Births in the Emergency Setting

Jointly provided by Special DelivERies

3.5 AMA PRA Category 1 Credit(s)™

Saturday, April 7, 2018 - 8:00am-12:30pm

Course Description

This course is designed to provide hands on training in the management of normal and complicated deliveries in the emergency setting. The station simulations will educate emergency providers on managing high risk and low frequency events around deliveries. Participants will be given the opportunity to practice complications including shoulder dystocia, breech delivery, eclampsia, postpartum hemorrhage and multiple gestation. Participants will be actively involved in hands-on practice as well as small group discussions.

Tactical Combat Casualty Care for the Civilian Emergency Physician

Jointly provided by USAAEM

7 AMA PRA Category 1 Credit(s)™

Saturday, April 7, 2018 - 8:00am-3:30pm

Course Description

Tactical Combat Casualty Care (TCCC) focuses on reduction of morbidity and mortality of trauma patients at the point of injury. Since their inception in 1995, TCCC has saved thousands of lives on the battlefield. Many of the practices and principles of TCCC can be applied to the civilian emergency care system. This pre-conference will enable civilian physicians, residents, medical students, nurse practitioners, emergency medical technicians and other safety personnel to understand the principles and algorithms of TCCC as well as the science behind their derivation and adoption by the Committee on Tactical Combat Casualty Care. In addition, participants will have the opportunity to practice the skills and techniques expected of military emergency physicians in a realistic, high-fidelity, combat simulation environment.

Participant Information: The course will be held outdoors and includes active participation including physical activity and potential for clothing to be stained. In our effort to ensure your safety and the safety of others, course participants are asked to wear "old" clothing that they won't mind getting soiled: long pants, hiking boots or sneakers, shirt with light jacket are suggested.

Transportation from Marriott Marquis San Diego Marina to facility will be provided.

SPECIAL OFFER: Add the Ultrasound – Advanced Course when you register for no additional fee!

Ultrasound — Beginner

6.5 AMA PRA Category 1 Credit(s)™

Saturday, April 7, 2018 - 8:00am-3:45pm

Course Description

This year's AAEM pre-conference ultrasound course has been fully updated with participants' wishes to design the ultimate ultrasound course. Each year after reviewing participant comments, we construct a new course to address their needs.

Beginner participants have wanted more imaging of the heart and central line placement. This year, didactic lectures will provide state of the art audiovisual presentation by a veteran faculty, followed by small groups of a maximum four participants / one instructor allowing each individual participant ample time with their hand on the probe.

Modules

Echo & Aorta, eFAST, Vascular Access

Think You Can Interpret an EKG?

4 AMA PRA Category 1 Credit(s)™

Saturday, April 7, 2018 - 1:00pm-5:00pm

Course Description

This Advanced EKG interpretation course is designed for emergency physicians seeking more experience in critical EKG analysis for acute care settings. The course will encourage systematic review of EKGs with emphasis of important differentials, including prolonged QRS, ST-segment elevation and T-wave inversion.

The course will present an approach to difficult and challenging EKG assessment. Topics to be covered include a review of basic interpretation, ischemia and infarction, as well as various important EKG diagnoses. A series of challenging EKGs will be provided for discussion.

Continued on next page

Emergency Neurological Life Support (ENLS)

Jointly provided by the Neurocritical Care Society

Sunday, April 8, 2018 - 7:30am-12:00pm

3 AMA PRA Category 1 Credit(s)™

Course Description

Emergency Neurological Life Support (ENLS) offers a set of protocols, practical checklists, decision points and communication tools to improve patient care and outcomes during the critical first hours of a patient's neurological emergency. ENLS is designed for all health care providers who care for patients with emergent neurological conditions.

Participants of this course may obtain ENLS certification and additional 15 AMA PRA Category 1 Credits™ or 15 continuing education hours with completion of self-directed online modules through the Neurocritical Care Society.

2017 LLSA Review Course — FREE for AAEM Members!

Sunday, April 8, 2018 - 8:00am-12:00pm

3.75 AMA PRA Category 1 Credit(s)™

Course Description

This course is designed to provide the experienced emergency physician with an evidence-based review course for all of the required readings for the 2017 LLSA Review. Course content will be discussed both via PowerPoint® and through small group discussion on key topics for each mandated journal article.

State of the Art Pain Management in Emergency Medicine

Sunday, April 8, 2018 - 8:00am-12:00pm

3.75 AMA PRA Category 1 Credit(s)™

Course Description

We in the United States are in the midst of a public health crisis that centers around an opioid addiction epidemic. Our task as emergency providers is to develop strategies that allow us to fulfill our mandates to both relieve pain and manage the potential for analgesics to cause harm.

This workshop focuses on providing emergency department-relevant tools that providers can immediately take to bedside in the management of acute pain, chronic pain and opioid addiction. We will begin by describing how opioids cause harm and the genesis of the current addiction epidemic. Next, we will tackle emergency department approaches to acute and chronic pain, with a focus on practical advice and phraseology that can be used to frame difficult conversations with patients in pain. The central piece of the workshop is a comprehensive discussion of opioid alternatives that can be used in acute and chronic pain, both in the emergency department and prescribed to patients being discharged. We will then have a practical presentation of the most important applications of regional anesthesia for emergency medicine, with real-time demonstration using ultrasound. We will conclude with a discussion of a rising agent in opioid addiction management, buprenorphine, and a summary open panel forum will follow.

Ultrasound — Advanced

Sunday, April 8, 2018 - 8:00am-12:30pm

4.25 AMA PRA Category 1 Credit(s)™

Course Description

This year's AAEM pre-conference ultrasound course has been fully updated with participants' wishes to design the ultimate ultrasound course. Each year after reviewing participant comments we construct a new course to address their needs.

Participants loved last year's course and we have added more modules. Didactic lectures will take place online at your convenience. The lectures will be available one month prior and one month following the advanced US course. There will be a maximum four participants to one instructor allowing each individual participant ample time with their hand on the probe.

Modules – Select Five

Aorta & IVC, Cardiac-Advanced, DVT, eFast, Gallbladder & Renal, Gastrointestinal, Head & Neck, Image Acquisition and Instrumentation, Landmark Documentation, Musculoskeletal — General, Musculoskeletal — Shoulder, Ocular, Procedures — Nerve Blocks, Procedures — Non-Vascular, Procedures — Vascular Access, Pulmonary, Shock, Ultrasound Equipment

Visit the AAEM18 website for course faculty, learning objectives and the full course schedule.

REGISTER TODAY!

http://www.aaem.org/aaem18/program/precons

Sepsis and CMS

David A. Farcy, MD FAAEM FACEP FCCM Interim President/President-Elect, AAEM
Ashika Jain, MD FAAEM, President-Elect, Critical Care Medicine Section

Sepsis is the physiologic response to a systemic infection. Since the concept of Early Goal Directed Therapy (EGDT) was introduced by Rivers in 2001, sepsis has gained considerable notoriety. There have been many attempts to optimize care for patients with a systemic response to infection. While some studies have looked at optimizing therapies, the "Sepsis – 3: The Third International Consensus Definitions for Sepsis and Septic Shock," which was presented at the 45th Annual SCCM Critical Care Congress in 2016 attempted to redefine sepsis and its categories.[1]

Sepsis holds a high mortality when not properly treated. This mortality can be reduced with early intervention. In the U.S. in the early 1990s, sepsis, severe sepsis, and septic shock cases exceeded 750,000 per year with mortality averaging 28%, 50%, and 80% respectively.[2] In 1997, Rivers felt that this set of patients were either identified too late, or did not receive aggressive care. In 2001, Rivers et al., introduced EGDT, an algorithmic approach for the treatment of severe sepsis and septic shock. Results were significant with absolute mortality reductions of 15.9% and 12.6% at 28 and 60 days respectively.[3] From that moment, sepsis began to be recognized as a time sensitive disease. In 2002, the Surviving Sepsis Campaign (SSC) was initiated with goals of building awareness and improving diagnosis to define appropriate treatment bundles. Subsequently, hospitals created rapid detection initiatives and early sepsis screening, which led to increased incidence, namely due to increased recognition.

Prompt identification of patients who warrant early intervention is a difficult task. Since the EGDT paper was published, early antibiotics have become a crucial step in the algorithm. Kumar et al. showed that for every hour without antibiotics, sepsis related mortality increased by 7.6%.[4] Aggressive fluid resuscitation is now another mainstay of treatment. Recent new evidence including the most recent sepsis trilogy, the ProCESS, ARISE, ProMISE trials, compared the new standard care to EGDT and showed no difference and declared EGDT ineffective.[5,6,7] They reported an unadjusted mortality between 19-30%. The sepsis trilogy standard group is an example of how medical knowledge penetrates among physicians. It takes an average of 13-19 years for 90% of physicians to adopt pivotal clinical evidence.[8] Now, 14 years after Rivers first described EGDT and after multiple SSC guidelines, it can be stated that the current standard care is not the same as it was prior to 2001. With greater recognition, a new concern is proper resource allocation. Now the difficulty is determining which patients need these early interventions.

Rivers et al. and the SSC used systemic inflammatory response syndrome (SIRS) criteria with suspected or known infection as the inclusion criteria. The sensitivity of SIRS ranges from 69-93% with a specificity nearing 35%.[9,10,11,12] Despite a low specificity, the positive predictive value (PPV) of SIRS is close to 90.[9] Comparatively, the Sequential Organ Failure Assessment (SOFA) score, which was originally defined as a predictor of mortality for ICU patients, has a significantly higher specificity, 67% but the sensitivity is only 54%.[13] The Sepsis-3 guidelines have taken the SOFA score to represent triage methodology.

CRITICAL CARE MEDICINE SECTION
AMERICAN ACADEMY OF EMERGENCY MEDICINE

The main goal of the EP is to rule out severe processes, as opposed to necessarily ruling in an exact diagnosis. Using SIRS criteria allows the triage process to cast a wide net. SIRS criteria may not be particularly specific, but it does have a higher sensitivity, thereby including more people into the criterion standard. The Sepsis-3 consensus definition is more specific and helps to identify patients for whom resources should be allocated for early intervention. However, identification using SOFA or qSOFA promotes delayed diagnosis as end organ dysfunction is needed.

The Sepsis-3 consensus statement noted that this scoring system was studied in ICU patients, not ED patients, which impacts the application of the scoring system in the ED. It is most useful for patients that have already been in the hospital. Generally, 50 to 60% of sepsis cases are identified in the emergency department. Therefore, it would seem prudent to establish triage guidelines that are better suited for ED identification and risk stratification.

Recognizing the potential lives at risk with lack of systematic early screening and sepsis protocols the CMS launched the Sepsis Core Measures in late 2015 as a value based purchase (VBP), creating a frenzy for fear of lost revenue. Hospitals across the nation are trying to meet these requirements given the VBP's all or nothing nature. While these measures are simple and rooted in evidence, they are resource intensive (see table 1). The core measure are broken down into two bundles for severe sepsis and septic shock to accomplish at 3 and 6 hours (see table 2). Given the time sensitive nature of the core measure, defining time zero, while challenging, is the most crucial step in initiating aggressive lifesaving therapies. CMS continues to use SIRS criteria as inclusion criteria for this VBP measure.

Critical to the CMS measure is checking serum lactate. In its current state, the CMS bundle advocates early serum lactate measurements to stratify patients with organ dysfunction. However, the Sepsis-3 criteria uses lactate in the septic shock category, not as a definer for early or occult organ dysfunction. In this setting, SOFA score promotes delayed diagnosis of organ dysfunction.

While the consensus unanimously agreed that the SIRS criteria is fraught with poor specificity, the SOFA and qSOFA scores do not provide a

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superior alterative for non-ICU patients. There is still more work to be done to better identify ill patients in a timely matter to optimize interventions and resources.

	Established Definition (used by CMS)	Sepsis-3 Definition	SSC Guidelines
Sepsis	Suspected/ known infection + >2 SIRS	>2 SOFA criteria (present/ increased) Includes: hypotension + normal lactate	Sepsis = Severe Sepsis
Severe Sepsis	Sepsis + End Organ Dysfunction, lactate >2 mmol/L	Not a category	The new Sepsis category
Septic Shock	Sepsis + Refractory hypotension (+/- lactate)	Vasopressors AND lactate >2 mmol/L	Sepsis + Refractory hypotension (+/- lactate)
Mortality Ratio=Observed mortality/Expected morality	Sepsis=low acuity Observed mortality low/ expected mortality low	Sepsis=higher acuity Observed mortality higher/ expected mortality low	NA

Table 1, Comparisons of established definition, SEPSIS-3 definitions, and SSC guidelines adopted from Tiffany Osborn, MD MPH FAAEM.

SEP-1: Completing the Bundles

Required Action	Severe Sepsis		Septic Shock	
	Thee Hour Bundle	Six Hour Bundle	Thee Hour Bundle	Six Hour Bundle
Initial Antibiotic Started	Yes	Must be completed within three hours of severe sepsis presentation		
Blood Culture Collection	Yes			
Initial Lactate Collection	Yes			
Repeat Lactate Collection (if initial lactate is greater than two)	Yes		Must be completed within six hours of severe sepsis presentation	
30mL/kg Crystalloid Fluids Started	N/A	N/A	Yes	Must be completed within three hours of hypotension
Vasopressor Given (if decreased BP persists)	N/A	N/A	Must be completed within six hours of septic shock	Yes
Repeat Volume Status / Tissue Perfusion Assessment	N/A	N/A		Yes

Table 2: CMS core measure bundle this need to be redone

References

1. Singer M et al. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3). JAMA 2016; 315(8): 801 – 810.
2. Angus DC, Linde-Zwirble WT, Lidicker J, Clermont G, Carcillo J, Pinsky MR. Epidemiology of severe sepsis in the United States: analysis of incidence, outcome, and associated costs of care. Crit Care Med 2001;29:1303-1310.
3. Rivers E, Nguyen B, Havstad S, et al. Early goal-directed therapy in the treatment of severe sepsis and septic shock. N Engl J Med 2001;345:1368-137
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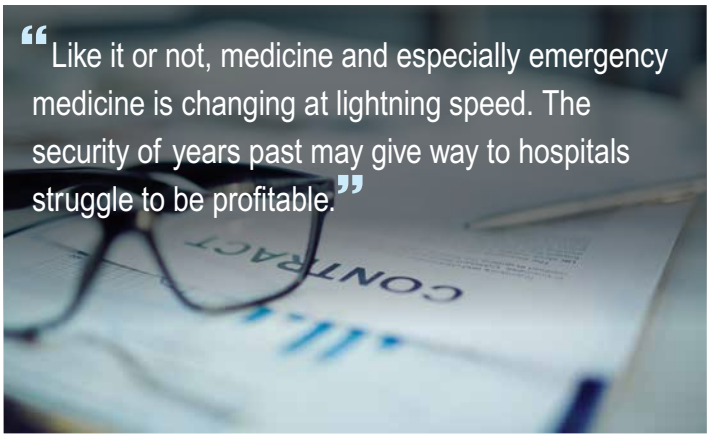
What to do when a Contract Management Company Comes to Staff your ED?

Leslie Zun, MD FAAEM

What do you do when the rumor mill comes to your department that you and your group are being replaced by a contract management company? Can it be true after all this time with all the service we provided to the hospital, the community, and the medical staff? The information may be public, private or some combination of both. Sometimes this information is overt and everyone knows that the department was up for bid; other times you find out only when the secret is out. Notification of your contract termination may have already been received or it is on the way. The termination notice found in your employment contract may give you days to months to prepare for this transition. The first thought that comes to mind; is it is too late to change the course of events or is it set in stone? Although many physicians think that they can somehow change the course of events by meeting with medical staff leadership, hospital president or other hospital leaders, it is rare that these events can or will be reversed.



Between the feelings of shock and dismay, the first thing to do is to take a step back and think about the impact to you, your career and your family. This is time to think through your priorities and be aware of how you respond to change in general and your work environment in specific. Change frequently comes with stress of the unknown. You may feel concerned, depressed or even devastated and it is important to identify your response. It is natural to have lots of questions and concerns about what is about to come.

The next step is to get more information, talk to your friends, colleagues, and spouse and review the materials that are provided or available. This is the time to find out the more about the physicians, staff, and management team of the new group. What is known about this new group? How do I find that information? Start with a Google search of the new contract management company. Maybe a call to another ED that are they are staffing would be valuable. Will there be a meeting of the new group with the current staff to determine the salaries, shift hours and coverage?

How will the work environment change? Whether you have been there for a few months or for decades, this is the time for personal and family reflection. It is important to determine whether a change in location, ED, or work environment is right for you and your family.

There may be little change or wholesale change in the provision of emergency care after the new group comes to the ED. What will the compensation be? Will the academic programs, research, and other services stay intact or be jettisoned? Will the management of the department may be local or nationally based? Will the new group involve physicians in administrative, teaching, and research activities?

Where will I go? What will I do? Are they going to offer me a position? Do I want to stay? The essential decision is whether it is best to stay at that hospital. This decision may be superseded by the evidence of a non-compete or restrictive covenant. The non-compete or restrictive covenant may be between you and your group/hospital/medical group or between the hospital and the group. In this later situation, you may not know if there is restrictive covenant or a non-compete. If you want to start with the new group, find your current contract to see if there is a non-compete. For those that that want to stay, it is worth exploring what the new group has to offer and whether they require these contract terms. Should the new group want to hire you, how much time do you have to decide? The usual time frame is a few weeks to a month or two depending on the start of the new contract. If you need more time to decide you can ask for it but they may not agree to an extension.

Like it or not, medicine and especially emergency medicine is changing at lightning speed. The security of years past may give way to hospitals struggle to be profitable. Some say that there is no longer any job security and physician or group loyalty. We must be diligent to keep our eyes and ears open to these changes and react appropriately when confronted by it.

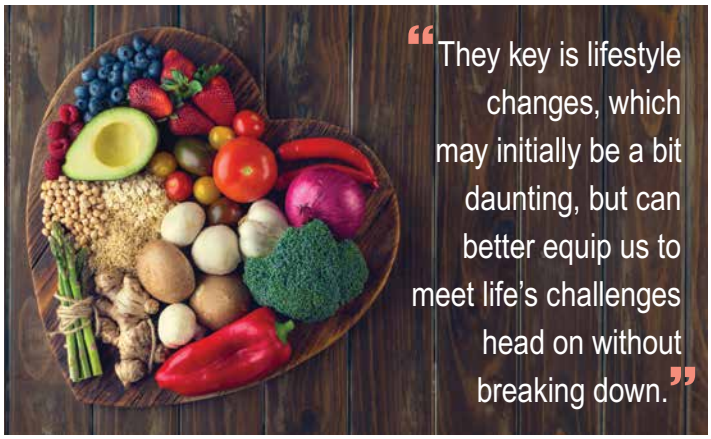
But there is help … AAEM and the board are committed to assisting and supporting physicians found in this predicament. Should you be in this situation, feel free to call AAEM to get some advice or a referral to one of the board members. ■

Building Resilience Through Food

Madhu Hardasmalani, MD FAAEM
AAEM Physician Wellness and Burnout Prevention Committee

Resilience is the ability to bounce back from an adverse life situation. Some individuals are born with this trait and we are all envious. However, the majority of us need a little help. Even those individuals with the inborn resilience trait, need help maintaining it.

Now having and maintaining this trait is not very simple — there is no magic "resilience pill." They key is lifestyle changes, which may initially be a bit daunting, but can better equip us to meet life's challenges head on without breaking down.



The basic lifestyle factor is diet. You are what you eat. What you eat effects how you will feel. Eat junk, feel junk. Eat healthy, feel healthy. It's as simple as that.

Making healthy "clean" food choices should be a priority. Including more fruits and vegetables and less red meat in our diet is known as the "Mediterranean diet" which is known to be anti-inflammatory and is the key in maintaining healthy physical and mental health.[1] Junk food is processed food. Processed meats and frozen entrees that we grab-and-go are heavily laden with pesticides, endocrine disruptors, and poorly laden with nutrients. This will soon make our bodies nutrient deficient and when this happens symptoms of anxiety, feeling overwhelmed, and depression develop.

An important food component that is detrimental to our brain health is sugar.[2] Sugar, especially the simple sugars such as glucose, cause rapid increase in blood sugar are very inflammatory to every cell including neurons. Complex sugars, on the other hand like beans, lentils, sweet potatoes are beneficial because they do not cause acute rise of blood sugars and hence less inflammation.

So, making this choice of not consuming processed and sugar laden foods but instead spending a little time doing some grocery shopping and cooking is investing in long-term physical and mental wellbeing. And this well-being will translate to longevity of our careers. Isn't this what we want?

In addition to eating wholesome foods, are there any food/supplements that can help us maintain our body and mind? Few supplements are proven to support our mind and body effectively.

One of these is probiotics. Probiotics are healthy bacteria or actually life enhancing bacteria. These bacteria are present in our digestive tracts in abundance, about 100 trillion of them. These not only line up our GI tract intestinal walls, but research has now proven that these little creatures secrete substances that are transported to the brain where they exert anti-anxiety, anti-depressive effects. This gut-brain connection is truly a two way street.[3] In fact this is the basis of nutritional psychiatry — an exciting new field to manage mental disorders. Their presence in each of us is individualized and is based on genetics, diet, age, and guess what? Stress! So even if we are born with the most robust microbiome, the stress we experience, especially circadian disruption, can kill tons of these. It is important to replenish these little bugs with probiotics. Now probiotics can be in the form of supplement but better is food. Foods like plain yogurt, not the sugar laden "fruit at the bottom" kind, unsweetened kefir, fermented foods like kimchi, sauerkraut, and pickles all will replenish our microbiota so that we function optimally. If getting these healthy probiotics feels like a chore, then by all means at least take the supplement which there are plenty in the market.

Another nutrient that is essential for our brain health are fatty acids. Now for decades we were made to believe that fats are bad for us but sugars are ok. Now since the research has been exposed, we know that the reverse is true. Fats are good for us. In fact phospholipids form the wall of each and every cell in our body. By fats, I mean healthy fats, both saturated and unsaturated in moderation. Trans-fats are pro-inflammatory and are bad fats, but good fats are olive oil, butter, coconut oil, avocados and ghee. So don't eliminate fat from your diet but consume these good fats in moderation and improve cognition and emotional health.

Brain is 80% lipids and 30% of these lipids are polyunsaturated fatty acids (PUFA) and these are known to significantly modulate our neuronal function. These PUFA are essential (EFA) since these are exclusively obtained from our diet. Omega 3 primarily the DHA and EPA and Omega 6 mainly arachidonic acid are the principal CNS EFA's. Both Omega 3 and 6 are essential but the ratio needs to 3:1, unfortunately our typical western diet has significantly reversed this ratio and hence the rise of mental illness in our country. Bottom line, increase intake of Omega 3 fatty acids.[4] These acids are abundantly found in fish, walnuts, chia and flax seeds. Include these rich foods in your diet for healthy brains.

In summary, what you eat is how you feel. Include a rainbow of fruits, vegetables, unprocessed grains and fish in your diet. Supplement with probiotics and essential fatty acids.

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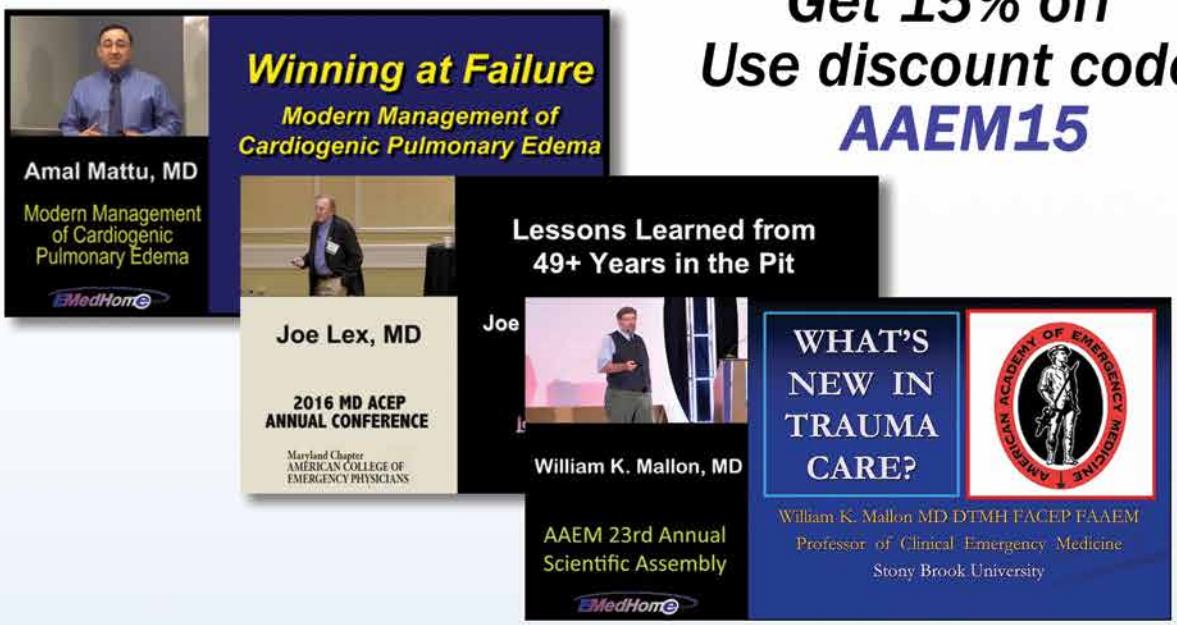

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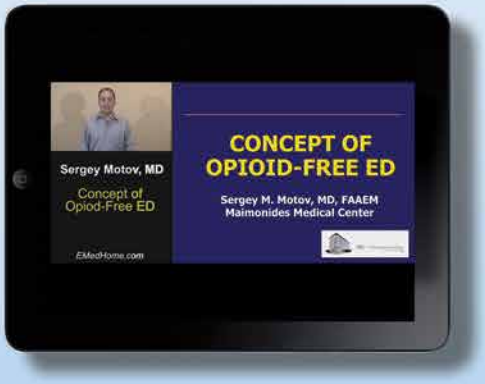

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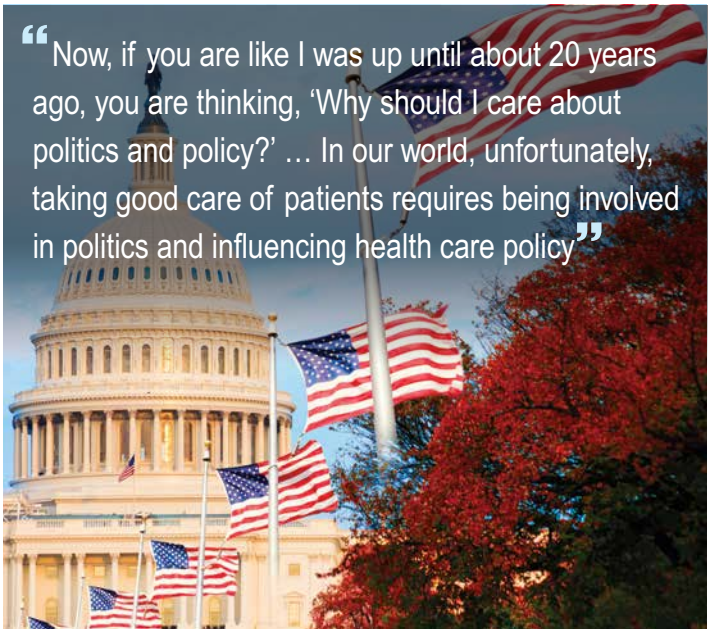
Government and National Affairs Committee Update

Andy Walker, MD FAAEM
Chair, Government and National Affairs Committee

Because I am the new chair of the Government and National Affairs Committee (GNAC), Andy Mayer, editor of *Common Sense*, asked me to brief you on what GNAC does, what I plan for it in the future, and how you might help.

The committee's biggest job is working with AAEM's leadership and the Academy's lobbying firm, Williams & Jensen (http://www.williamsandjensen.com), to support the Academy's lobbying efforts in Washington. A major part of this is the Advocacy Day the Academy holds at least once a year, when AAEM's leadership gathers in Washington, D.C. to meet with members of Congress, congressional staffers, and sometimes executive branch regulators (e.g., CMS, the HHS Office of Inspector General, and even the Justice Department).

We divide up into groups of three or four people, and along with a professional lobbyist from Williams & Jensen, make visits all over Capitol Hill. Each year, one of the Advocacy Days is targeted to AAEM/RSA members, as we hope to promote a lifelong interest in policy and politics in emergency medicine residents. The most recent RSA Advocacy Day, in June, was combined with something new: the Health Policy in Emergency Medicine Symposium. This was a day-long series of lectures and discussions on health care policy relevant to emergency medicine — including due process rights, out-of-network fees and balance billing, EMTALA, quality standards and measures, MACRA and new models of reimbursement, open books and financial transparency, and the implications for emergency medicine of the Trump administration. The Symposium awarded CME credit and proved to be immensely popular. It will certainly grow in the future.



Now, if you are like I was up until about 20 years ago, you are thinking, "Why should I care about politics and policy? All I want to do is take care of seriously ill and injured patients in the ED and be paid fairly for my work." Believe me, I understand. I didn't get involved in organized medicine, politics, and health care policy because I enjoy that world. I did it because a lot of clueless people who are too arrogant to recognize their ignorance are interfering with my ability to take good care of my patients. In our world, unfortunately, taking good care of patients **requires** being involved in politics and influencing health care policy.

Physicians should be free to exercise their professional judgment as they think best for their patients. After all, it took years of training, hard work, and experience to acquire that judgment, and it cost a fortune. However, the practice of medicine is now controlled by non-physicians who just don't know what they are doing. And in emergency medicine, our practice is not only controlled by others, we seem to be micromanaged every second by hospital administrators, insurers, government bureaucrats, EMR designers, and lawyers. Some of these people are self-interested, and we will never change their behavior. However, most of these people are well intentioned but dangerously ignorant, and we have an ethical obligation to our patients and profession to educate them on the real-world effects of their decisions. That is our only hope of making things better, and that is why more of us have to be politically active.

In the near future I would like GNAC to do several things.

1. Expand our focus to state-level threats to our practice, professional independence, and reimbursement. While federal regulation is important, especially in regard to Medicare, most of the action on medical issues is at the state level. A good example of this is the insurance industry's crusade to cap out-of-network (OON) fees and restrict or ban balance billing. Insurers pretend this is an effort to protect patients from "surprise bills," but in reality it is an effort to increase insurance company profit margins. We must make sure that legislators and regulators understand the economic realities of emergency medicine: emergency departments and physicians lose money on Medicaid and uninsured patients, roughly break even on Medicare patients, and depend on the small minority of patients who have commercial insurance to support ourselves, our families, and our federally mandated but unfunded charity mission — EMTALA.

Continued on next page

Government Acronyms

CMS: the Centers for Medicare/Medicaid Services
HHS: the Department of Health and Human Services
EMTALA: the Emergency Medical Treatment and Active Labor Act
MACRA: the Medicare Access and CHIP Reauthorization Act
(CHIP is the Children's Health Insurance Program)

Capping out-of-network fees would have the practical effect of giving insurers the power to pay both in- and out-of-network emergency physicians whatever they want. All of us know how that will turn out — the nation's medical safety net will unravel. If government is going to require that we take care of everybody, regardless of a patient's ability or willingness to pay the bill, it has only three choices: 1) fund that mandate; 2) allow cost-shifting onto privately insured patients, which means no cap on OON fees; or 3) watch EDs and hospitals close. At the moment, I believe this issue represents the single greatest threat to the economic survival of independent, physician-owned, emergency medicine groups. For more on this, please see the paper from AAEM's Independent Practice Support Committee: http://www.aaem.org/UserFiles/BalanceBillingPaper.pdf.

2. Develop a corps of knowledgeable people, beyond our hard-working board of directors, who are willing and able to go to D.C. on fairly short notice to lobby regulators and Congress.

3. In cooperation with the Academy's State Chapter Divisions, develop a large group of AAEM members who regularly communicate with their state legislators and members of Congress on behalf of our specialty and our patients, and who are politically active in other ways too. This means being active in your local and state medical societies, staying informed and aware, contributing to candidates who support our mission — even very small contributions get you on a legislator's radar — and maybe even running for office yourself or serving as a health care advisor to a legislator. There are lots of websites that make it easy to stay informed and even track bills. You can track bills in Congress at both of these websites: https://www.govtrack.us and https://www.congress.gov, and in your state legislature at these websites: http://www.ncsl.org/research/telecommunications-and-information-technology/bill-tracking-and-subscription-services.aspx and http://www.statelocalgov.net.

4. Build on the success of the Health Policy in Emergency Medicine Symposium. This might mean expanding it or making it available more than once a year, or both. I would definitely like to attract more practicing emergency physicians, in addition to residents.

5. And finally, work with Academy members and AAEM's PAC to identify and support candidates who share our values.

If I have overlooked anything you think GNAC should be doing, please let me know or write Andy Mayer a letter to the editor. Most of all, if you have information I need about a regulatory or policy issue affecting your practice or well-being, know a political candidate worthy of support, or want to get involved in our efforts to affect public policy — please send me an email (info@aaem.org). I depend on AAEM's members to be my intelligence network. ■

Update on AAEM's Collaboration Agreement with American College of Medical Toxicology (ACMT)

Isabel Malone, MD

Last year, AAEM member Ziad Kazzi, MD, who is also on the board of directors of the American College of Medical Toxicology (ACMT) collaborated with Dr. Lisa Moreno-Walton, AAEM's secretary-treasurer, to write a Memorandum of Understanding (MOU) which would outline areas in which the two societies might collaborate for mutual benefit. The MOU outlined an agreement to endorse each other's conferences, to share speakers, to serve as advisors when expert opinion or education is needed, and to work jointly to increase diversity in both emergency medicine and medical toxicology. In March, we had our first opportunity to put the MOU into action during the 2017 Annual Scientific Meeting of the American College of Medical Toxicology. ACMT's annual meeting was held in San Juan, Puerto Rico from March 30-April 2, 2017. The theme of the meeting was: "Toxicologic Impact: Research, Practice, Teach" and the meeting was structured so that Day 1 focused exclusively on research, Day 2 on professional development and the practice of medical toxicology, and finally Day 3 on education and teaching future teachers in toxicology. It was on Day 3 that the Medical Student and Resident Track took place. The location of the meeting and the collaboration that the boards of the two organizations have established with our MOU created a wonderful opportunity for us to begin work together, advancing interest in EM and toxicology, and increasing diversity in both specialties.

The Medical School and Resident Track was jointly organized by the ACMT and the American Academy of Emergency Medicine (AAEM) with the purpose of exposing current medical students and residents to the field of medical toxicology. AAEM, represented by the Diversity and Inclusion Task Force as well as the Resident and Student Association (RSA), strongly supported medical student and resident mentorship and appreciates the opportunity to collaborate with ACMT under the existing MOU to foster relationships with medical students and emergency medicine residents in Puerto Rico.

The Medical Student and Resident Track was a half day program and registration was open to all medical students and residents who wished to attend. It opened with a brief overview of medical toxicology and then spanned a variety of topics ranging from: emerging drugs of abuse and drug smuggling to a rapid fire visual diagnosis review of toxicology to tropical toxins in Puerto Rico. Throughout the entire day multiple members from AAEM and ACMT encouraged those in attendance to seek out mentorship and rotation opportunities. Overall, a total of 70 students and residents were in attendance: 35 from Puerto Rico and 35 residents from the U.S. mainland. Stay tuned for our future collaborations during the 2018 Annual Scientific Meeting of the ACMT which will be held in Washington D.C. April 5-8th (http://www.acmt.net/2018_Annual_Scientific_Meeting.html).

If you are interested in participating in this event, please contact Dr. Ziad Kazzi at Zkazzi@emory.edu. ■

Payment, RVUs, and How We're Valued — Perspective of a Young Physician

Jason Hine, MD
Operations Management Committee Member

As a recent graduate working in a non-incentivized practice environment, I have developed an interest in Relative Value Unit (RVU) based compensation plans. This interest, quite simply, has come from the fact that I have a reasonably strong work ethic, which I feel is a valuable asset in a practitioner. With this desire to work, see patients, and care for the critically ill, I have seen personal satisfaction in carrying a high average ESI level and number of patients per hour, but the satisfaction does indeed end there.

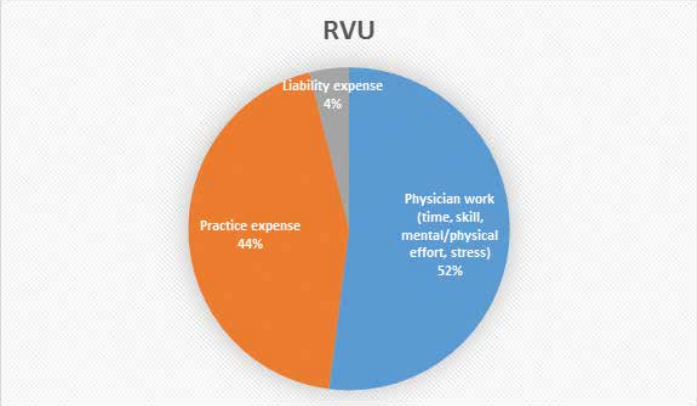
While a sense of pride and accomplishment is a great motivator, let's face it — feeling appropriately and fairly compensated for the work you do and the effort you give leads to longevity and physician retention. This may be in part why the RVU incentivized compensation plan has become so popular.

From the years 2007 to 2010, the Medical Group Management Association (MGMA) saw a near doubling of the number of physicians whose compensation and/or productivity assessments were tied to RVUs (from 34% to 61%).[1] Sadly, despite how common this form of compensation and evaluation is, it is poorly understood by many practicing physicians. Here is a simplified explanation:

As with most things in medicine, the Centers for Medicare and Medicaid Services (CMS) sets the standard. This is no different for RVUs. CMS outlines thousands of services in its physician fee schedule and creates a relative value for each specific service. This list is updated annually in the Current Procedure Terminology (CPT) book. The component pieces of an RVU are **physician work, practice expense, and malpractice coverage.** The physician work is further subdivided into components of **time, skill, mental and/or physical effort, and stress**. Practice expense represents any overhead costs to running the practice or department (nonclinical labor, space, etc). The final piece, malpractice coverage or professional liability insurance, is simply the premiums to remain insured.

Taking all of the above into account, CMS creates a relative value to the service or procedure we complete. Each component piece is not equal, however, and the value of each is probably best visualized graphically: See Image 1.

After the following components of a service are calculated, an adjustment is made with regard to the relative cost of living and business in the region where the services was completed; this has been coined the geographical practice cost index (GPCI). Finally, a conversion factor (CF) is applied, which is a dollar amount predetermined each year by Congress. This collective tallying process, called the Resource-based Relative Value Scale (RBRVS), is used by CMS to reimburse for physician services.



*Note: relative % value of each component an estimate only.

CMS has been using the RBRVS system for reimbursement since 1992. Physician compensation being tied to RVU production, however, is a more recent phenomenon, especially in Emergency Medicine. It is important to recognize that the formula for compensation is not the same as RBRVS and the modifications within it will differ from practice to practice. A multitude of pros and cons exist for RVU-based compensation plans and will vary in level of influence depending on how strongly the RVU returns dictates a physician's take home. The more consistent pros include incentivizing productivity, improving returns per patient, and increasing earnings for high performance physicians. The argument can then be made that this improves satisfaction and therefore retention of this type of physician. The cons include the potential creation of a competitive work environment, deterring citizenship, and an increasing draw to higher utilization.

As a self-proclaimed high performance physician, the idea of RVU based compensation intrigues me, but I am wary of the effects it may have on community. I love my job and am happy with the collegial, laid back work environment I walk into each day. On the other side of that coin, our workhorse physicians will at times be palpably irritated at the disparity in effort without a difference in compensation. To me, the balance lies in a carefully crafted salary plus incentives plan. In it, the plodding physician maintains his or her security in their paycheck while the nose to the grindstone doc fairly earns their salary plus some. The delicate dance therefore lies in creating that perfect incentive to entice some without slighting others.

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The Difficult Consultant

Roya Zolnoor Caloia, DO, MPH, FACEP, FAAEM
Core Faculty, Genesys Regional Medical Center, Grand Blanc, MI; Associate Clinical Faculty, Michigan State University College of Osteopathic Medicine

Every hospital has one, every specialty has one, inevitably, while working in emergency medicine, you will come across the difficult consultant. The following tips have gotten me through even the most challenging interactions.

Tip #1: Know why you are calling.

This is the single most important thing to remember. Rehearse it if you have to. Make sure there is something you need them to do or something they need to know. If it's an unstable GI bleed and it's 2am and you think they are going to go south while in the ICU, it's important to let the GI doc know before they get to the floor and crash — so they know a little about the patient and they can do their job better. If it's 2am and there's a completely stable possible GI bleed going to OBS with serial H/Hs, please do not call the GI doc unless there are explicit instructions that they want to be notified on every single patient.

Tip #2: KISS. Keep it short and simple.

Start with the problem. To the surgeon: I have a 66 year-old with acute appendicitis. Okay, now they are hooked. If they say nothing, give them the most important info next: he/she is not on blood thinners, no cardiac history, no previous abdominal surgeries, vital signs are stable right now, white count is 14, abdomen is soft but tender. A surgeon does not want to hear: "I have a 66-year -old Type 2 Diabetic with a history of Bipolar disorder who hasn't been taking his psych meds presenting with 3 days of right lower quadrant pain and 3 episodes of emesis prior to arrival. He ate McDonald's and the pain got worse, so he came in. He states the pain migrated from his umbilicus to his right lower quadrant. I gave him some fluids and antiemetics and debated between an ultrasound and a CT and finally chose the CT."

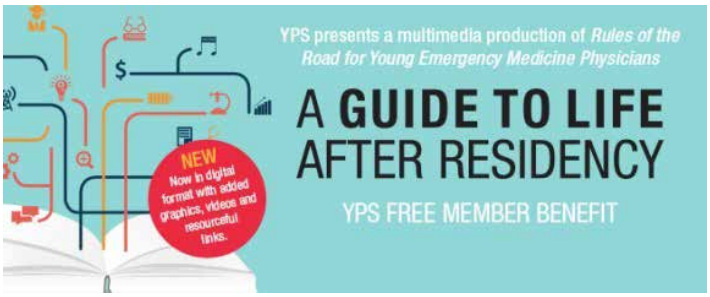
Tip #3: Always know your back-ups and always do what's right for the patient.

If a patient needs to go to cath and the on-call interventional cardiologist is refusing because he always refuses, call him again, tell him the patient is becoming more unstable, tell him you are just trying to do the right thing for the patient. If he still won't come in, call a different cardiologist. Call your ED director, call the administrator on call. Know the chain of command. Know what the right thing to do is and do it. Don't get angry, don't start yelling, and don't throw things. Take it from me, it gets you nowhere.

Tip #4: Be pleasant and respectful of their time.

If you see the consultant lost in the ER, introduce yourself and offer to help. If you are calling at 4am, apologize for waking them and definitely know why you are calling. Don't over-utilize the consultants. They will be less likely to take you seriously when you need something if you call them for every single patient. If you are pleasant and develop a rapport with them, they will be more likely to help you when/if you are stuck in the situation above.

Be prepared, be pleasant, know why you are calling, keep it short, know your back-ups, always do the right thing for the patient and appeal to the reason we all went into medicine: to help people. ■



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Dying to Save Lives

Ashely Alker, MD MSc, PGY-3
AAEM/RSA President

I remember the day I was accepted to medical school. It was one of the happiest days of my life. The first six months of medical school I fought against the imposter syndrome that plagued my incredible reality: I was going to be a doctor. To this day I feel privileged to do my job.

The only match to the privilege of being a physician is the challenge. The immense responsibility for human life, sleep deprivation, and loss of balance are challenges that plague all physicians. I have questioned my career choice and even considered quitting. And just as studies have shown that diabetes, hypertension, and hyperlipidemia are risk factors for coronary artery disease, the stress, isolation, and sleep deprivation of the physician lifestyle are a perfect storm of precursors to depression.

The mental health crisis runs deep, from the spring mouth of medical school, to the rivers of residency, and then to the surprise and dismay of fledgling physicians, into the ocean of attending life. This is a pandemic infecting the minds of our healers, and may result in consequences even more detrimental than broken health,are policy.

Current estimates of physician suicide are as high as the loss of a doctor a day.[1] It has been well documented that suicide is the second most common cause of death among medical students, after accidents.[2] Physician mental health is also increasingly being acknowledged as an international issue, with studies in Norway, Australia, Finland, China, Singapore, Taiwan, and Sir Lanka all showing increase anxiety, depression and suicidal ideation among medical practitioners.[3,4,5]

Why do physicians become depressed?

Some may argue that resident depression is expected, even seemingly accepted by the medical community. The mental, physical and emotional sacrifices of residency are a hardship that all physicians have endured. A system exposed in the 1970's novel *House of God*, has changed very little since the book's publication.

At the end of years of sacrifice and dedication when residents are released into the "real world," there is a promise of a more balanced life. Unfortunately, the hardships of attending physicians include burnout, aging and night shifts, litigation, and the invariable obstacles in the business and policy aspects of medicine. And unlike residency, these challenges will last a lifetime.

But there is hope. The versatility, flexibility, and ingenuity of emergency medicine has brought us leaders that are fighting for the acknowledgement of these issues and are working for solutions. Emergency medicine is on the forefront of mental wellness. In spring 2016, emergency medicine leadership, including AAEM/RSA, convened at the Wellness Summit where a plan was set into motion to address the crumbling mental health of the medical profession.

Individual physicians also are taking matters into their own hands. In New York, a group of inspiring emergency medicine physicians created Airway physician storytelling, where doctors gather to speak about the challenges, humor, and losses physicians face daily. Airway was featured by AAEM/RSA at the 2017 AAEM Scientific Assembly.

AAEM's own Dr. Loice Swisher is a mental health crusader who has greatly mentored RSA's initiatives in suicide prevention. During suicide awareness month in September 2017, RSA signed on to the #Bethe1To campaign, an initiative to #Bethe1To to prevent suicide. Additionally, RSA and CORD have created a public service announcement concerning suicide prevention for residents and medical students. RSA also continues to participate in Take 5's Suicide Prevention Day on September 10.

If physician mental health is an issue that speaks to you, please join RSA's wellness committee and help us expand our suicide prevention and mental health initiatives for medical students and residents. Whether you are battling with depression or simply need an outlet during residency, RSA is here to help and we are always ready to listen.

Watch AAEM/RSA's PSA videos at: www.aaemrsa.org/current-news/world-suicide-prevention-day-2017.

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Young, Black & A Doctor: The Job Search

Joshua A. Sherman, MD
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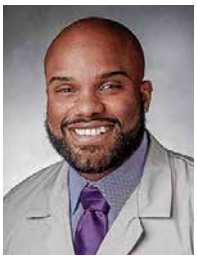
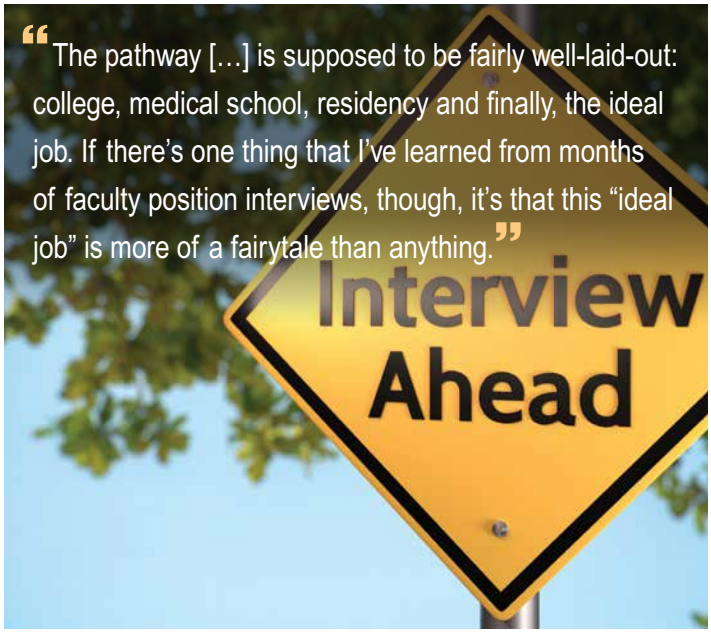


My story isn't unique, but that in and of itself makes it worth writing. My name is Joshua Sherman; a New Orleans native, Chicago transplant and newly-minted Attending Emergency Physician in a busy Level 1 Trauma Center on Chicago's south side. I, like most everyone reading this, spent seemingly endless years, days and hours in pursuit of this career and have yet to stop replaying in my mind the feeling that I felt as I walked across the stage on June 8th, 2017, to receive my final 'diploma' (aka residency completion certificate). It was the uncertainty of the months immediately before and after this date, however, that have continually been at the forefront of my thoughts and that, ultimately, contributed to my desire to write this.

The pathway — though difficult, time-consuming, and wrought with sacrifice at every stage — is supposed to be fairly well-laid-out: college, medical school, residency and finally, the ideal job. If there's one thing that I've learned from months of faculty position interviews, though, it's that this "ideal job" is more of a fairytale than anything.



"The pathway […] is supposed to be fairly well-laid-out: college, medical school, residency and finally, the ideal job. If there's one thing that I've learned from months of faculty position interviews, though, it's that this "ideal job" is more of a fairytale than anything."

According to U.S. Census Bureau Data, as of 2016, the United States' population was reported to be a little over 323 million. Of that number, roughly 13% self-identified as *Black or African-American* and ~18% as *Hispanic or Latino*. Compare that to the population of physicians in the U.S., of which African Americans constitute only ~4%. This, in the context of a job search, makes for an interesting experience for someone such as myself: a 30-year-old African-American male, raised in the public housing system of inner-city New Orleans by a single mother of two.

I, like most people who choose emergency medicine, think myself to be a strong leader, sociable, personable, non-judgmental, caring, etc. While I certainly have a thing for academic pursuits — i.e., knowledge acquisition and the furthering of our beloved specialty in the name of providing the very best in emergency patient care — I also appreciate the *intangibles* in the workplace: the laughs, the hugs, the cries, the potlucks, the sports talk … as well as the non-hospital-based aspects of emergency medicine such as patient advocacy, social activism, and community outreach. The former — the academic and scientific aspects — can be found *almost* anywhere; it's the latter — the *personal component* — that made the job search a lot less straight forward.

Perhaps I'm a bit spoiled and unrealistic; I mean, I did my emergency medicine training in a very diverse city with an intentionally diverse residency-training program. In fact, the program prided itself on its diversity … so much so that there was (and continues to be) a committee that is dedicated to this very mission, year-in and year-out. I entered the academic emergency medicine job market full of enthusiasm, hoping to find a place where I'd fit right in; a place where there were plenty of other physicians that looked like me and shared some of my passion for things such as community engagement, addressing socioeconomic determinants of health outcomes, minority recruitment and retention, etc. Instead, I mostly found places where I would be 'the one,' 'the only,' 'the first;' places where "diversifying the physician workforce" as a concept was there, but had yet to become a reality. While the job offers were plentiful, the "personal component" of my search seemed few and far between.

It wasn't long before I realized that what I initially sought out, though it certainly exists, was not as common as I had thought for a multitude of reasons that are beyond the scope of this brief article. I was searching for an ideal position: a faculty group that was diverse by every measure, fun, inviting and democratic, serving an appreciative patient population that mirrored this diversity. All of that, plus a competitive salary in a desirable city!

Very seldom (if ever) do we get to have it all. Sometimes, we have to create the ideal situation. The job search, for me, became a "self-search" of sorts. While slightly different than what I had initially envisioned my first job being, I have found a place that supports my community and social endeavors while also fostering my academic career development. My excitement and tenacity have been renewed.

As we know, it is well-documented in the literature that minority students and trainees tend to seek out and form bonds with faculty or other trainees with similar backgrounds and experiences. In being amongst a very small number of underrepresented minority faculty in the department which I ultimately chose to grow roots, it is my hope that my presence will not only somehow translate into the betterment of already-superb patient care, but that I can also serve as a familiar face, mentor and inspiration for all levels of students for generations to come. After all, we have to start somewhere, right? ■

Update on Mechanical Ventilation in the ED

Authors: Robert Brown, MD; Adeolu Ogunbodede, MD; Megan Donohue, MD; Hannah Goldberg, MD; Erica Bates, MD
Editors: Michael C. Bond, MD FAAEM; Kelly Maurelus, MD FAAEM

An increasing number of ED patients require critical care time and ICU admission.[1] The ED length of stay for these patients has increased by 60 minutes and the median boarding time is now over five hours with nearly a third of patients waiting more than 6 hours.[1,2] Mortality of critically ill patients, including mechanically ventilated patients, in the ED correlates with increased ED length of stay.[3] Instead of just making the decision to intubate, ED physicians must now manage ventilators for critical hours. This review discusses some of the risks, best practices, and future directions of ED ventilator management.

Bellani G, Laffey JG et al. Epidemiology, patterns of care, and mortality for patients with acute respiratory distress syndrome in intensive care units in 50 countries. *JAMA: Journal of the American Medical Association,* 2016, 315(8), 788-800.

Take home point: Acute Respiratory Distress Syndrome (ARDS) in under-recognized and has a 40% mortality rate.

In this observational prospective cohort study of 12,096 ICU patients from 50 countries, the diagnosis of ARDS was made by a computer algorithm that utilized the Berlin Criteria: (1) presence of acute hypoxemic respiratory failure, (2) which was not the result of cardiac failure, (3) with onset within one week of worsening respiratory symptoms or the initial insult, and (4) bilateral airspace disease on chest X-ray or CT not fully explained by effusions, lobar collapse, or nodules. It compared the algorithmic diagnosis with physicians' clinical impressions at two points in time: on the first day patients developed hypoxemia and on the day patients exited the study. Investigators were asked to indicate the cause for hypoxemia and then asked if the patient had ARDS at any stage during their ICU stay.

Acute hypoxic respiratory failure developed in 4,499 patients with 3,022 having ARDS according to the algorithm. The majority, 2,813 patients, had ARDS on day 1 or 2. The rate of clinician recognition of ARDS was only 40% for all cases. As would be expected, clinician recognition of ARDS increased with increasing severity of ARDS. The patients who tended to develop the most severe ARDS tended to be the youngest patients (those younger than 16 were excluded). The authors attempted to control for population confounders by sampling from 459 ICUs on five continents, and attempted to control for differing disease processes by enrolling patients during winter months in the respective hemispheres for each hospital.

In conclusion, more important that making the diagnosis of ARDS, is treating all mechanically ventilated patients as having an increased risk of developing ARDS.

Fuller BM, Ferguson IT, et al. Pulmonary/Original research: Lung-protective ventilation initiated in the emergency department (LOV-ED): A quasi-experimental, before-after trial. *Annals of Emergency Medicine,* 2017.

Take home point: Despite evidence of a mortality benefit by avoiding supraphysiologic volumes, the adoption of "lung protective" ventilator settings is not yet usual care for all mechanically ventilated patients in the ED. The individual components of lung protective ventilation strategies include low plateau pressure, low tidal volumes, and higher PEEP.[5,4,5,6]

Since publication of the ARMA trial in 2000[7], tidal volumes of 12mL/kg ideal body weight have been thought to contribute to ventilator-induced lung injury due to some combination of volutrauma (over-distention of alveoli), barotrauma (high pressure), biotrauma (release of cytokines causing downstream end organ damage), and atelectrauma (opening and closing trauma to alveoli).

Patients who are intubated and mechanically ventilated in the ED are at risk for subsequent development of ARDS and other ventilator-associated complications. Research in other settings has demonstrated reduction in ventilator-associated lung injury with lung protective ventilation strategies. In the quasi-experimental, before-after LOV-ED study, the authors examined a four-part mechanical ventilator protocol that included lung protective tidal volume, positive end expiratory pressure (PEEP) parameters, rapid oxygen weaning, and elevation of the head of the bed for patients being ventilated in the ED.

Initially data was collected on 1,192 adult patients >18 years old who were intubated and mechanically ventilated through an endotracheal tube in the ED. Patients were excluded if they died or were extubated within 24 hours of presentation, had a tracheostomy or baseline long term ventilator requirement, transferred to another facility, or met criteria for ARDS during their ED course. A lung protective ventilator protocol was then implemented by respiratory therapy per the study protocol, which included tidal volumes of 6-8 ml/kg ideal body weight, guidelines for PEEP 5-10 cm H_2O, goal plateau pressure <30 cm H_2O, and FiO_2 titration to goals of 90-95% by pulse oximetry.

After a run-in period, data was collected on 513 consecutive patients who met inclusion criteria. Data included baseline demographics, comorbidities, laboratory values, initial vital signs, APACHE score, indication for ventilation, ventilator settings including airway pressures, ED length of stay, fluid and blood products received, central line placement, antibiotic use, and pressor requirements. Patients were then followed to death or discharge and ventilator settings and fluid balance were recorded for up to two weeks in the ICU. The primary outcomes were ARDS or another ventilator associated condition, which was defined as two days of stable ventilator settings followed by two days of worsening oxygenation requiring increases in FiO_2 or PEEP. Hospital mortality and ventilator-, ICU-, or hospital-free days were secondary outcomes.

Several variables were identified as important factors which were unbalanced between the two groups, including illness severity, age, body mass index (BMI), trauma, and sepsis, so a propensity score was developed and outcome analysis was done using a final matched sample of 490 patients in each cohort. Lung protective ventilation in the ED increased by 48.5% in the intervention group, and lung protective ventilation increased 30.7%, while in the ICU (OR 5.1, 95% CI 3.76-6.98). Absolute risk reduction for ARDS or ventilator-associated conditions was 7.1% (OR 0.47, CI

0.3-0.7) and absolute risk reduction for mortality was 14.5% (OR 0.47, CI 0.35-0.63). The intervention group also experienced more ventilator free days (mean difference 3.7, CI 2.3-5.1), ICU free days (2.4, CI 1.0-3.7), and hospital free days (2.4, CI 1.2-3.6).

Strengths of the study include a large sample size, broad inclusion criteria, and applicability to an ED population but it had several limitations. The before-after design and relatively long study period (approximately 52 months pre-intervention, 6-month run-in period, and 18-month intervention period) raise the possibility that uncaptured practice changes over time may have independently influenced care and outcomes. There were also some significant differences between the pre-and-post intervention groups. Even after propensity scores were used, there were differences in the number of patients with congestive heart failure, pulmonary edema, and dialysis dependence. The ventilator study protocol itself included goals for several different ventilator settings, so it is not possible to determine which of these variables contributed to the positive outcomes.

In conclusion, evidence supports implementation of an early lung-protective ventilator protocol in the ED to reduce ventilator related complications, mortality, and length of ICU and hospital stay, but the relative importance of each component of lung protective ventilation has not yet been determined.

Chiumello D, Carlesso E, Brioni M, Cressoni M. Airway driving pressure and lung stress in ARDS patients. *Crit Care*. 2016;20:276-276.

Amato MB, Meade MO, Slutsky AS, et al. (2015). Driving pressure and survival in the acute respiratory distress syndrome. *N Engl J Med, 372(8),* 747-55.

Take home point: The amount of lung available to ventilate varies not just by ideal body weight but also by disease state. The proportion of lung available for ventilation in ARDS patients is markedly decreased, resulting in lower respiratory-system compliance. A new index measurement of functional lung size may be a better guide for adjusting mechanical ventilation in the ED and beyond.

This study by Chiumello et al., is a prospective and retrospective study of 150 patients with ARDS which measured lung stress, driving pressure (the difference between plateau pressure and PEEP), lung compliance, and chest wall compliance at 5-10 cm H_2O of PEEP. Lung gas volume was also measured by one of two ways: a helium dilution technique or whole lung CT scan. Patients were divided into high and low driving pressure groups (above or below 15 cm H_2O) and the higher driving pressures were associated with higher mortality and higher evidence of lung stress and elasticity with lower lung volumes. Lung stress was not directly related to tidal volume, even when strictly adhering to lung protective volumes. This study suggests that driving pressure may in fact be a better marker of lung stress and can be used as an adjunct during the management of patients with ARDS.

Amato et al., hypothesized that driving pressure in a mechanically ventilated patient who is not spontaneously breathing gives the best estimate of when we have reached the maximum recruitment of the functional lung volume. They hypothesized that this tidal volume divided by respiratory-system compliance would be more strongly associated with survival than tidal volume or PEEP alone.

To test this hypothesis, data from nine randomized control trials was gathered. Individual data from 3,562 patients with ARDS was analyzed via stepwise multivariate regression modeling and multilevel mediation analysis. The primary outcome was survival in the hospital at 60 days.

The initial survival-prediction model was based on a cohort of 336 patients. This model was then tested and refined from a validation cohort of 861 patients, and retested with a final validation cohort of 2,365 patients. Patient data was classified as either lung protective or control, based on ventilator settings. Patient characteristics, APACHE or SAPS score, PaO_2:FiO_2 were averaged over the first 24 hours and examined as covariates. Age, APACHE or SAPS score, arterial pH, PaO_2:FiO_2 and driving pressure were all independently significant in univariate analysis with $p<0.001$ for each variable respectively. Relative risk of death for driving pressure was 1.41. Stratified analysis examined tidal volume and PEEP studies separately, but again all examined variables were statistically significant with $p<0.05$ and relative risk of driving pressure was 1.35 and 1.50 respectively.

These statistically significant variables (age, APACHE or SAPS, arterial pH, PaO_2:FiO_2 and driving pressure) were then entered into further multivariate models which included tidal volume and PEEP as additional covariates. When driving pressure was included in the model, other ventilation variables including tidal volume and PEEP no longer conferred independent survival benefit. Driving pressure; however, continued to have a statistically significant relationship with survival with a relative risk of 1.40 and 1.41 when examined with tidal volume and PEEP, respectively. Again, both relative risks had a calculated $p<0.001$.

Mediation analysis was then performed to determine whether a specific variable, strongly affected by treatment-group assignments, had an effect on outcomes that explained in whole or in part the effects resulting from the treatment-group assignment. For this level of analysis, the nine original studies were separated into tidal volume or PEEP strategies for analysis. Tidal volume, plateau pressure, PEEP and driving pressure were all examined as mediator candidates. Driving pressure was the only mediator candidate that consistently passed stepwise mediation, and was found to mediate 75% of the benefits in the tidal volume trials. Survival benefits in PEEP and tidal volume trials were proportional to reduction in driving pressure rather than PEEP or tidal volume.

In all models, driving pressure was a strong and non-redundant predictor of survival as higher driving pressures consistently predicted lower survival. Higher plateau pressures were associated with higher mortality, but only when driving pressure was also high. Similarly, the survival benefit associated with higher PEEP was only noted when driving pressure was low. This analysis indicates that driving pressure is the most important component of lung protective ventilation strategies.

These results suggest that aerated lung in ARDS patients is not stiff, but small with nearly normal compliance. Furthermore, functional lung size during this state is better quantified by lower respiratory system compliance than by predicted body weight.

It is important to remember that mediation analysis cannot establish causality, but provides a plausible link. The results of this study are also limited in that they are only applicable to patients not making independent

respiratory efforts, as driving pressure is difficult to interpret during spontaneous respiration. This makes measurements taken directly following intubation in the ED with rapid sequence intubation some of the most important for determining future ventilator settings. These findings are the result of post hoc observational analysis and clinical trials are needed.

Conclusions

As we care for more critically ill patients in the ED and they remain in the ED for longer periods of time, our management of mechanical ventilation takes on greater importance for patient survival. Lung protective ventilator settings likely give our patients the best chance of survival and the latest data suggest we may be able to tailor those settings to the individual patient using driving pressure.

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Medical Student Council President's Message

Interview with Noel Wagner, MD NRP

Chris Ryba, MS3
AAEM/RSA Medical Student Council President

Prior to medical school I worked as a paramedic. Part of what drew me to pursue a career in emergency medicine was my time spent working under various medical directors in my EMS region. I recently rotated at Central Michigan University and had the opportunity to meet with Noel Wagner, MD NRP, who serves as the Emergency Medical Services (EMS) Medical Director for Saginaw Valley Medical Control Authority, Michigan and is the Director of the EMS fellowship at CMU. He graciously agreed to join me for an interview to gain further insight into his role as EMS medical Director and about the EMS fellowship.

Noel Wagner, MD, NRP
EMS Fellowship Director
Director, Saginaw Valley Medical Control Authority
Medical School: The University of Texas Medical Branch at Galveston
EM Residency: SUNY Downstate Medical Center, Kings County Hospital Center, Brooklyn, NY
EMS Fellowship: Allegheny General Hospital, Pittsburgh, PA
ABEM EM/EMS

— Chris Ryba

CR: Tell me about your current position and what you do.

Dr. Wagner: I am Medical Director for the system. Our system is essentially a two-county area about 2,000 square miles total and I'm responsible for all the pre-hospital medical providers in that area. So, whether it's First Responders, BLS transporting, BLS non-transporting, ALS transporting, I'm the medical director for everyone. That's what is unique about Michigan, everybody is under the Medical Control Authority for their medical director, so it's a forced marriage if you will. Neither one of us can walk out on the other.

CR: How is the system set up?

Dr. Wagner: Michigan is very, very diverse. You go to some areas and it will be heavy firebase EMS, you go to other areas and there's a lot of individual providers. Our system has one predominantly not-for-profit ambulance provider .providing over 95% of our ambulance transports. There's a few other smaller ambulance providers in the system. Then our first responder network is predominantly volunteer fire departments with a few paid and a few police departments as well.

CR: Do they all undergo training with you?

Dr. Wagner: Everybody is under us for medical direction. The way our system is set up is we usually task most of the agencies with doing their own training, so we are not as big on training at least in the formal sense as far as continuing education. What we try to focus on is bedside clinical teaching so with me getting out and running calls and actually being able to see patients with the crew members, I found that to be much more beneficial to everybody rather than doing classroom or computer type work. Not that those don't have a place, they do, but if you get a chance to see a patient with your Medics, EMTs, or first responders that's a great opportunity.

CR: Where are you from and where did you get your training?

Dr. Wagner: I'm from Texas. I went to medical school at the University of Texas Medical Branch at Galveston. I did my residency at SUNY Downstate Medical Center, Kings County Hospital Center, Brooklyn, NY. I did my EMS fellowship at Allegheny General Hospital in Pittsburgh, PA. I've lived in a lot of different places, so from there I went to Kansas, Texas, Georgia, back to Texas, and now finally Michigan.

CR: What brought you to Michigan?

Dr. Wagner: This job. There's not that many full-time EMS physician positions in the country. I'm actually the only full-time EMS medical director in the state of Michigan, so it's not a common position.

CR: How long have you been involved with the program?

Dr. Wagner: I finished my fellowship in 2000 and then the fellowship at CMU was started in 2010 with accreditation in 2013 when all the EMS fellowships were eligible.

CR: How did you get involved in the EMS?

Dr. Wagner: I always liked EMS. I thought I wanted to go into EMS before medical school. That never quite happened and I just ended up in medical school. I was always interested in emergency medicine and then about halfway through medical school we were getting to the clinical aspects and I started to realize that you still could be involved in EMS as a physician. I started getting more involved with the local EMS agency down there doing a lot of ride-along's and then just stayed interested and active in EMS through the rest of med school and into residency and into the fellowship.

CR: What attracted you to emergency medicine?

Dr. Wagner: Emergency medicine is just very interesting. I like the variety. An orthopedic surgeon may learn how to do one thing, and they do that thing over and over to perfection. They get a lot of satisfaction out of that, but I'm not that kind of person. I like to do different things and see different aspects. I actually kind of like the erratic hours of emergency medicine. The concept of an 8 to 5, Monday through Friday, job never really appealed to me, and there's just a lot of good things about emergency medicine.

CR: How is the EMS program at CMU set up?

Dr. Wagner: Our fellowship is open to anybody who's completed an ACGME accredited residency in emergency medicine or any other

Continued on next page

specialty. Now having said that, the vast majority of people that go into EMS fellowships are emergency medicine graduates since it just tends to be the ones that have the interest. It's one year of additional training that allows you to become board certified in EMS medicine. EMS is one of the six recognized subspecialties of emergency medicine.

The training I equate to how you learn to be an emergency physician where you are in the emergency department with some physician oversight learning to be an Emergency Physician. The corollary here is in the EMS Fellowship you're learning how to be a medical director so we have our fellows go run calls, do administrative issues, call review, do some research. Really anything that the job would entail as a medical director and EMS physician you get to start doing as a fellow.

CR: Is the fellowship full-time or part-time?

Dr. Wagner: Each program varies but with our program they do have some ED time. The way EMS fellowships by and large are funded throughout the country is there's a set amount of ED time the fellow's going to do and that pays their PGY-4 or -5 salary. Then, if they work additional emergency department shifts they can they can get paid as moonlighting. For example, our program requires 40 hours a month in the emergency department. Those 40 hours pay their salary and insurance and then anything more than that they get as extra income.

CR: Do they ride along on the ambulance?

Dr. Wagner: They have their own vehicle in our program. That's one of the things that's unique about our program is we do have a heavy emphasis on scene response and a heavy emphasis on having vehicles so we have two Fellowship slots and we have two vehicles dedicated to the fellows. Since they have their own vehicle, they not do ride time on the ambulance, unless they are a novice to EMS. If they have any EMS experience we don't usually put them on the ambulance for responding.

They may be on the ambulance when they are helping care for a patient and sometimes they will ride with the patient into the hospital, but as far as getting to the calls they have their own way to do that. That's pretty variable from program to program. Some programs don't have access to a vehicle at all, some have part-time use, and some have shared use. We're lucky in that regard that we got excellent access.

CR: How do you get involved in the EMS fellowship?

Dr. Wagner: You get involved towards the end of your residency right before you're starting your last year. You begin looking for a job at that point or you begin looking for a fellowship. At CMU, if you have interest, you apply and then undergo an interview. There is no match process right now for the EMS fellowship here.

CR: Any advice to those interested in a fellowship in EMS?

Dr. Wagner: If you want to be involved in EMS down the road you should get involved in the track that way you can sit for the boards. The grandfather track is closing in 2 years. People always make the mistake of thinking it's another year of residency and it's really not. It's very different.

CR: I would like to thank Dr. Wagner for his time and participation in this article. ■

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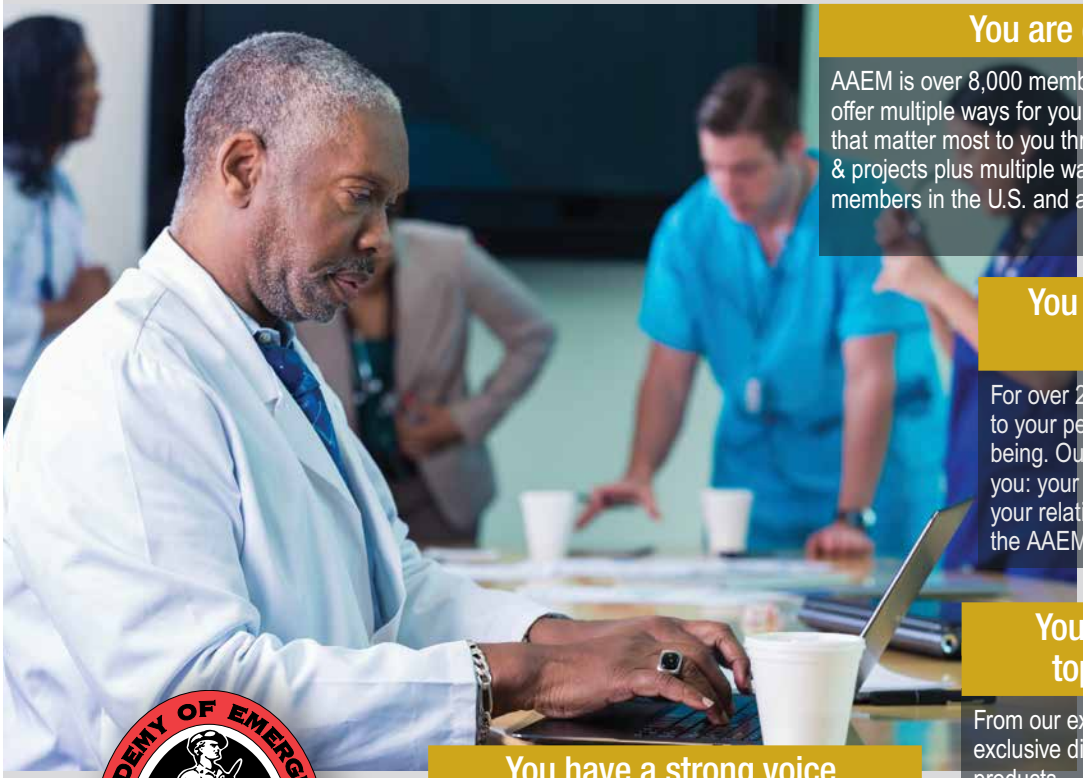

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