

INTERCHANGE

Society of Critical Care Anesthesiologists Newsletter Volume 30 | Issue 2 | May 2019

PRESIDENT'S MESSAGE

Colleagues,

This contribution to the Interchange is being written before our annual meeting in Montreal. Montreal promises to be an exciting time where SOCCA members will be presented with numerous educational and networking opportunities. This gathering will also see various SOCCA committees meeting to determine goals that will further our mission of supporting and developing anesthesiologists who care for critically ill patients. We have developed our committee structure in a manner that will facilitate member engagement and provide opportunities for members to participate in areas that align with their skill sets and interests.

One example of our new approach would be in the area of education. In the past, various educational activities existed in parallel, with little coordination and integration. Our new Education Committee will be charged with coordinating all of the Society's educational offerings to include our Annual Meeting on Friday, May 17th, the Aligned Meeting Day of the IARS meeting on Saturday, May 18th, critical care topics at the Society of Cardiovascular Anesthesiologists Annual Meeting and a recent collaboration with anesthesiology intensivists at their annual meeting in Bangalore, India. In addition to these



**Daniel R. Brown,
MD, PhD, FCCM**

President
Mayo Clinic
Rochester, Minnesota

traditional education formats, this group is also working with the IARS and their new mini-courses. The pilot mini-course includes content from *Anesthesia & Analgesia*, from the SOCCA-sponsored panel at the 2018 IARS Annual Meeting, and from two external journal articles, and is being offered at no charge for 3 CME credits. Please visit <https://ards.selfstudy.app> for additional details. These types of activities aim to

position SOCCA as a year round source of education for practicing anesthesiologists and intensivists and not just a one day high quality on-site educational meeting. SOCCA members include many high quality, authoritative speakers in multiple areas of clinical practice. Providing easy access to high quality educational content is one way SOCCA looks to demonstrate value to its members.

Another change in our approach to member engagement will be increased and meaningful involvement of program directors, fellows, and those new to the field. SOCCA is increasingly aligned with critical care fellowship directors and the talent and horsepower present in this group highly valued. The future of SOCCA will be heavily influenced by those newest in the field and it is important that this group is well represented as we move forward. Our goal is to have SOCCA viewed as the professional society for all anesthesia

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intensivists and the critical care resource for anesthesiologists not engaged in critical care. Further, our members should be lifetime members, joining early in their career, ideally as trainees.

In order to keep members engaged and to provide value, it is imperative that we are effective communicators. Thankfully, SOCCA is blessed with members adept at various communication platforms. You are able to follow SOCCA on  twitter (@SOCCA_CritCare). At last count, our twitter followers number 687, more than a doubling over the past year. I would refer you to Dr. Hatton's Communications Committee report in this issue of the Interchange for more details, including a variety of hashtags developed for the Annual Meeting as well as a challenge to all SOCCA members active in the twittersphere.

The final area to highlight today involves research. Dr. Robert Stevens chairs this committee and has started conducting conference calls in anticipation of facilitating research activities of SOCCA members. While SOCCA is not in a position to fund independent research, we are able to serve as a coordinating group to link like-minded investigators and facilitate preliminary efforts to secure independent funding. This group is also well positioned to conduct observational investigative work focused specifically on anesthesia intensivists in an effort to better describe our value in today's healthcare environment.

The Research Committee will ideally facilitate investigators as they apply for funding. As an example, the IARS recently started awarding funding for investigators seeking to apply for NIH or similar grants. This award, the Initiative for Multicenter Pragmatic Anesthesiology Trials (IMPACT), aims to stimulate pragmatic research in the U.S. in collaboration with colleagues in Canada and elsewhere. There were many ICU-based proposals recently reviewed during this process. Look to the [IARS website](#) to see those projects receiving funding and consider attending the second annual IMPACT session at this year's IARS program in Montreal.

In closing, activities in Montreal around the SOCCA Annual Meeting should demonstrate how SOCCA is progressing in achieving our strategic goals. We are working to enhance value to our members by fostering and promoting member engagement and contributions. We are also committed to greater transparency and diversity. For those of you unable to attend the meeting in Montreal, look for ongoing educational offerings such as the mini-courses described above as well as social media activity. Finally, you can become involved at any time by reaching out to me directly at brown.daniel@mayo.edu or via the SOCCA website at <https://socca.org/get-involved/>.



JOB BOARD

Have you visited SOCCA's Job Board recently? Recent listings highlight a position with the University of Louisville School of Medicine Department of Cardiovascular and Thoracic Surgery. Read more of the members-only job posts and, if you would like to post a job on this site, please email a description and /or flyer to SOCCA Society Director, Vivian Abalama, CAE, IOM at vabalama@iars.org.

COMMITTEE REPORT

Communication Committee Message



Kevin W. Hatton, MD, FCCM
Division Chief,
Anesthesiology, Critical
Care Medicine
University of Kentucky
College of Medicine
Lexington, Kentucky

Communication is the action of exchanging information and ideas. It is a give and take. It is a part of our everyday lives...in the everyday interactions we have with our families, friends, co-workers, patients and their families. Communication is a two-way street and relies on a free-flowing give and take of ideas. We have honed our conversation skills over many years, starting in infancy, before we could even talk, continuing into through our childhood, adolescence and adulthood. We have all become very adept at reading, writing, and talking...all conventional means of communicating ideas.


Social media is a relatively new communication tool that is increasingly ubiquitous in our society. Social media doesn't exist on any specific platform, rather it exists in an expression of exchanging information. Social media exists in the give and take. It is not the publication of a formal research paper in a peer-reviewed journal, it is the communication of the ideas in the paper, or commentary about those ideas, or discussions about those ideas in your lives or the lives of your patients, or a thousand other things that derive from those ideas in that paper. Social media exists in the exchange of ideas. The back and forth. And SOCCA is building on this. The back and forth between its leadership and its members, between its senior members and its junior members, between its active members and in-training members, between every different permutation of person in our Society. The back and forth of information and ideas.

To help facilitate this back and forth...this exchanging of ideas, the Communication Committee will, at the upcoming 2019 SOCCA Annual Meeting and Critical Care Update, launch three new social media hashtags around the three strategic goals for 2018-2020 (in addition to the #SOCCA19 hashtag for all our SOCCA Annual Meeting events):

- **#SOCCATrainees** = to highlight fellow, resident and student activities
- **#SOCCADiversity** = to highlight diversity in our membership
- **#SOCCAResearch** = to highlight important research conducted by our members

The Communication Committee, in combination with the SOCCA Board of Directors, challenge each of you to do four things at the upcoming 2019 SOCCA Annual Meeting:

1. Register for a Twitter account (kudos to you if you've already done this!)
2. Follow SOCCA (@SOCCA_CritCare) (kudos to you if you've already done this too!)
3. Capture (through words or images) three moments at the 2019 SOCCA Annual Meeting that highlight the three new hashtags for this meeting #SOCCATrainees, #SOCCADiversity, and #SOCCAResearch
4. Re-tweet (with or without comments) at least 1 of these moments from another SOCCA member, thereby facilitating communication of ideas and moments.

This simple 4-step challenge is designed to promoting communication...the give and take between our members. Who knows, maybe your next collaboration can come from a simple re-tweet of something you find interesting... 



COMMITTEE REPORT

Membership Committee Update

As we approach the annual SOCCA meeting, it is a great time to reflect on the benefits of being a member of SOCCA. We, therefore, asked a few current SOCCA members why they belong and this is what we heard:

“I enjoy connecting with physicians who read and write the same literature that affects my patients. Hands down, I learn more at SOCCA than any other meeting”

“I belong to SOCCA because it’s the only organization specifically for critical care anesthesiologists. I think the content at the meetings tend to be the most relevant and it’s my favorite for see friends and colleagues”

“The small community and the meeting with good networking, support for fellows and expertise of members and topics”

“SOCCA are my people”


From these few statements it is easy to see a theme that is very important to SOCCA as an organization: **community**. Two of the three strategic goals for 2019-2021 are to sustain and grow membership and to foster and promote member engagement and contributions, which are essentially descriptions of ways to build up the SOCCA community. As the only society specific



Carlee Clark, MD
Medical University
of South Carolina
Charleston,
South Carolina

to critical care anesthesiologists and those interested in pursuing the field, our member number is in the hundreds rather than the thousands or tens of thousands. We would love to grow our membership as the specialty grows, but being on the smaller side allows some benefits. I remember when I attended my first SOCCA meeting in 2008 and how surprised I was that so many people knew each other and were using the time between presentations, at lunch and other social opportunities to network and plan collaborations for projects and research. I have always been impressed with the way that the concept of the SOCCA community influences the

development of the annual SOCCA meeting program.

Other important reasons to be a member are related to some of the changes that SOCCA has made in the last few years and plan to make in the future. The restructuring of the newsletter with member highlights, research reviews and even wellness articles is adding great value for members. SOCCA has joined Social Media with their twitter handle [@SOCCA_CritCare](#). This is a great way to keep members informed of hot topics and allows members to interact on a regular basis. More than ever before, members will have the ability to be involved. The education committee will be working on content to be provided throughout the year and not just at the meeting. The membership committee is planning on adding more members and working toward more opportunities to provide support and resources for members. 



COMMITTEE REPORT

Nominations Committee Update



AUTHOR:

**Avery Tung, MD,
FCCM**

Professor of Anesthesia
& Critical Care, Quality
Chief, Anesthesia
& Critical Care
The University of Chicago
Chicago, Illinois

*Chair, Committee on
Nominations*

Immediate Past President

Although the roles of other SOCCA committees such as Research and Education are well known to SOCCA members, the work of the nominating committee is relatively less clear.

According to SOCCA bylaws, the work of the nominating committee is to recommend a slate of candidates for board and executive committee elections to the SOCCA board, and to suggest candidates for the two awards given out by SOCCA in alternate years: the Burchardi and Lifetime Achievement awards. The committee is recommended to the Board by the President Elect, and the chair of the committee is the Immediate Past President.

The roles and responsibilities of the membership committee have evolved considerably in the last 2 years. In years past, the membership committee played a relatively minor role, and served mostly as an adjunct to the Board. Elections were often uncontested and nominees were known to all. But as interest in SOCCA (and SOCCA itself) has grown, the committee has taken on added importance. Last year (2018) was the first in which nominations for the SOCCA board were open to all SOCCA members, and the surprisingly high level of talent and interest in participating on the SOCCA board suggested to us that our future was bright.

That interest has grown considerably, and this year we had nearly three times as many nominations. Choosing a slate of candidates was extremely difficult as all nominees were accomplished anesthesiologists and intensivists, and many held leadership positions within their organizations. SOCCA thanks all of the 2019 nominees for being willing to contribute their considerable skills and talents to our organization!

I'd like to take a minute to describe the process by which the Committee chooses candidates from those who are nominated. Our bylaws state that the SOCCA board should be made up of SOCCA members who represent the diversity of ages, skills, expertise, occupations, and community connections of the society as a whole. Board members serve for 3 year terms and may serve up to two terms.

Although no hard criteria for SOCCA board members exist, general qualifications for the Board include:

- Willingness to serve
- Ability to meet projected time commitment
- Ability to participate in group decision-making and support board decisions
- Communication skills
- Integrity and absence of serious conflicts of interest
- Values consistent with the organization's goals
- Community leadership
- Financial and business acumen
- Strategic planning and visioning

The committee also considers the amount and duration of contributions to SOCCA. To keep the slate of nominees at a reasonable level for the size of our organization, we have (arbitrarily) chosen a "2N+1" construct where N= the number of open Board positions. This year, to accommodate the strong interest from SOCCA members the Board was expanded to 11 positions of which 3 are open. Next year 2 slots will open so we anticipate a slate of 5 candidates. In addition, next year the Secretary slot will open up as SOCCA officers transition upward and our current secretary Dr. Nunnally moves to Treasurer.

Let me also mention the Burchardi and Lifetime Achievement awards, which are given out by SOCCA in alternate years. Full descriptions of both awards and past winners are listed on our website, but the Burchardi is jointly sponsored by SOCCA and the SCCM Anesthesiology section and remembers Dr. Hilmar Burchardi, a founding member of the ESICM. Burchardi winners are chosen for their ability to motivate and touch people, and their competence, humility, humanity, and sense of humor. The Lifetime Achievement Award winner recognizes an individual's outstanding and sustained contributions to critical care and to SOCCA and is the highest award given out by our society. This year we will give out both, as the Burchardi award was not given out last year. Please congratulate our 2019 awardees Drs. Michael O'Connor (Burchardi) and Aryeh Shander (Lifetime Achievement)!

If you are considering joining the SOCCA board, now is a good time to start! Join a SOCCA committee, write for our Newsletter, support our research endeavors, and/or contribute to our annual meeting! Our SOCCA "get involved" webpage (<https://socca.org/get-involved/>) will show you how. We welcome and look forward to your contributions! 🏠



REGISTER NOW

2019 ANNUAL MEETING PREVIEW

May 17, 2019 | Montreal, Quebec, Canada

The SOCCA 2019 Annual Meeting is wall-to-wall packed with learning and networking opportunities, addressing the specific questions and concerns of Critical Care Anesthesiologists.

We also want you to be able to make the most of your time – the IARS and AUA Annual Meetings will be at the same location, with shared content on May 18, open to all IARS, AUA and SOCCA attendees.

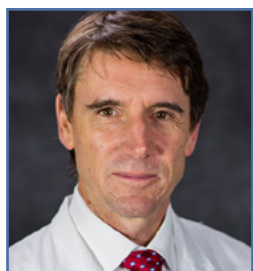
Following is a preview of the 2019 SOCCA Annual Meeting and Critical Care Update. **For more information, visit: <https://socca.org/annual-meeting/>**

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**MODERATOR:****Aalok K. Kacha,
MD, PhD**The University of
Chicago Medicine
Chicago, Illinois

Critical Advances in Critical Care

An important and exciting role for Critical Care Anesthesiologists is the development and utilization of new tools and therapies to treat patients with severe, life-threatening injuries. It seems as though every time I round in the ICU, I encounter something new in one or more of my patients. In this session of the SOCCA 2019 Annual Meeting and Critical Care Update, we will review new approaches to anticoagulation and its reversal, mechanical cardiorespiratory cardiopulmonary support, and new antimicrobial therapy to combat emerging antibiotic resistance in a 60-minute moderated panel discussion entitled "Critical Advances in Critical Care".

In this panel:**Ian Welsby, MD**

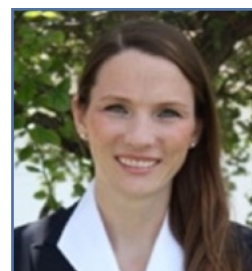
Duke University School of Medicine

Dr. Ian Welsby will discuss the critical care pharmacology of direct acting oral anticoagulants (DOACs). Dr. Welsby will describe the uses of DOACs in the ICU environment and their current and future market penetration. This presentation will include important information regarding DOACs, as well as, options and therapies for emergent reversal.

**Peter Von Homeyer, MD, FASE**

University of Washington Medicine

Dr. Peter von Homeyer will describe advances in mechanical support devices for patients with pulmonary and/or circulatory failure. Options for extracorporeal membrane oxygenation (ECMO) and ventricular assist device (VAD) therapy are expanding rapidly. Dr. von Homeyer will provide a brief overview of important treatment and weaning concepts, as well as, providing a focus on updates in equipment technologies.

**Noreen E. Murphy, MD**University of Wisconsin School
of Medicine and Public Health

Dr. Noreen Murphy will describe new issues antibiotic resistance and describe new antibiotic strategies to combat the development of future antibiotic resistance. Dr. Murphy will define important barriers to the research and development of new antibiotic drugs and then finish with a discussion of the development of non-traditional therapies in the modern era of increasing drug-resistant bacteria.

REGISTER NOW*continued on page 8*

**MODERATOR:****Talia Ben-Jacob, MD**

Cooper Medical School
of Rowan University,
Cooper University
Hospital
Camden, New Jersey

Beyond the Standard: New Resuscitation Paradigms in Critical Care

As a Critical Care Anesthesiologist, do you ever wonder what to say when the nurse asks you what blood pressure you want to target? Or do you ever wonder if all the effort you have put into resuscitating your patients is successful? Are you confused about how to use new and novel technologies to measure end-organ perfusion? Then you definitely need to attend this panel at the upcoming SOCCA 2019 Annual Meeting and Critical Care Update. In this 60-minute panel, I will be moderating a discussion between three experts: Dr. Ashish Khanna, Dr. Kunal Karamchandani and Dr. Mark Nunnally, entitled “Beyond the Standard: New Resuscitation Paradigms in Critical Care”

In this panel:**Kunal Karamchandani, MD, FCCP**

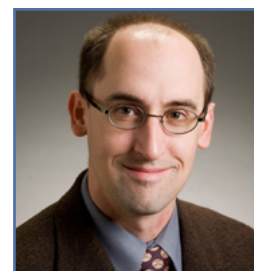
Penn State Milton S. Hershey
Medical Center

Dr. Kunal Karamchandani will describe the utility of using microcirculation monitors to guide ongoing resuscitation and will review the evidence for and against using markers of macro-circulation to determine successful end organ perfusion.

**Ashish K. Khanna, MD, FCCP, FCCM**

Wake Forest University
School of Medicine

Dr. Ashish Khanna will discuss the optimal target blood pressure for patients undergoing resuscitation. His talk will include a review of the literature to assess whether a higher blood pressure target MAP target of 80-90 is better than the standard MAP target of > 65 in critically ill patients. In addition, he will describe important adverse effects in untreated hypotension.

**Mark Nunnally, MD, FCCM**

New York University Langone
Medical Center

Dr. Mark Nunnally will detail recent revisions to the Surviving Sepsis Campaign, highlighting controversies and evolving paradigms. Most importantly, he will underscore areas in the published guidelines that represent key features of sepsis management that have not changed, even though our understanding has changed, highlighting key differences and reasoning for these differences.

REGISTER NOW
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MODERATOR:

Talia Ben-Jacob, MD

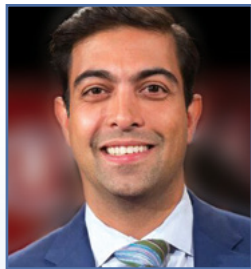
Cooper Medical School
of Rowan University,
Cooper University
Hospital
Camden, New Jersey

Doctoring and Social Media

Many of us grew up in an era prior to the rise of social media and the continuous 24/7 availability that technologies provide (or inflict) on us. As a Critical Care Anesthesiologist, I work to provide the best care to my patients and social media may provide me with an opportunity to learn about new research and to interact with my peers and peer researchers in a more rapid and effective manner. In this 60-minute panel of the 2019 SOCCA Annual Meeting and Critical Care Update, I will be moderating a discussion between Vivek Moitra, Sree Satyapriya and me, titled “Doctoring and Social Media”

In this panel:

I will start with a discussion of termination and etiquette on social media, including introductions to “tweets”, “retweets”, “hashtags” and other new and different ways to interact with the content on Social Media.



Vivek Moitra, MD

Columbia University Medical Center

Dr. Vivek Moitra will then describe critical care in social media, how to interpret what is posted to social media about critical care and how you can join social media conversations.

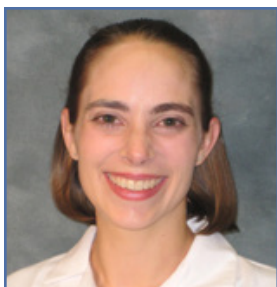


Sree V. Satyapriya, MD

The Ohio State University
– Wexner Medical Center

Dr. Sree Satyapriya will then discuss whether social media, on a host of platforms, provides more of a distraction than benefit for Critical Care Anesthesiologists.

REGISTER NOW



MODERATOR:
Allison Dalton, MD

The University of
Chicago Medicine
Chicago, Illinois

Final Priorities: Ethics and Quality of Life

As Critical Care Anesthesiologists, we are responsible for diagnosing organ dysfunction, treating various pathologies, coordinating care with consultants and nurses, and communication with patients and their families. We support patients and families through the phases of illness and recovery, and, at times, we shepherd them through palliation and changes in goals of care. Ethical considerations in critical care is not always simple or straight forward. In this session at the SOCCA 2019 Annual Meeting and Critical Care Update, we will review aspects of the ethics of caring for critically ill patients including palliative care, ethics committees, and cost at the end of life in a 60-minute moderated panel discussion entitled *Final Priorities: Ethics and Quality of Life*.

In this panel:



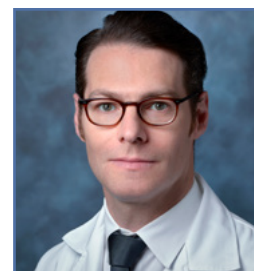
Nicholas Sadovnikoff, MD
Brigham and Women's Hospital

Dr. Nicholas Sadovnikoff will be discussing the historical evolution of ethic committees and ethics consultations. He will discuss the indications for consultation as well as the roles these individuals or teams may play in the care of the critically ill patient.



May Hua, MD
Columbia University Medical Center
New York, New York

Dr. May Hua will be reviewing the evidence base surrounding palliative care in the intensive care unit.



Michael Nurok, MBChB, PhD, FCCM
Cedars-Sinai Medical Center

Dr. Michael Nurok will be investigating whether there can be cost savings at the end of life in the ICU in a system in which the care of critically ill patients can be very expensive.

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REVIEW ARTICLE

Does IV acetaminophen affect delirium after cardiac surgery? Thoughts on the DEXACET trial

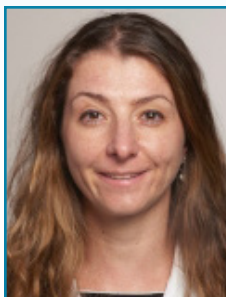
Subramaniam B, Shankar P, Shaefi S, et al. Effect of intravenous acetaminophen vs placebo combined with propofol or dexmedetomidine on postoperative delirium among older patients following cardiac surgery: the DEXACET randomized clinical trial.

JAMA. 2019;321:686-696.

This prospective, randomized, placebo-controlled, double-blinded, factorial trial sought to determine the effect of IV acetaminophen and dexmedetomidine on the incidence of delirium after cardiac surgery as its primary outcome. Secondary outcomes included duration of delirium, postoperative cognition at discharge, postoperative opioid use in the first 48 hours, and ICU and hospital length of stay. Post hoc analyses included delirium severity, median time to ICU discharge in patients with and without delirium, and postoperative pain.

The study enrolled, randomized, and analyzed data from 120 patients that were 60 years or older, undergoing elective coronary artery bypass grafting with or without mitral and/or aortic valve replacements, and who required cardiopulmonary bypass for the procedure. The patients were randomly assigned to one of four groups: IV acetaminophen-dexmedetomidine, placebo (saline)-dexmedetomidine, IV acetaminophen-propofol, and placebo-propofol. Sedation (dexmedetomidine and propofol) was started in the operating room during chest closure and continued for up to 6 hours or until extubation. IV acetaminophen or placebo was administered upon arrival in the ICU and at 6 hour intervals for a total of 8 doses. Patients, clinicians and study staff were blinded to the analgesics administered, but due to the distinctive nature of propofol, blinding to the type of sedation used was not possible.

Patients were assessed for delirium daily using the Confusion Assessment Method (CAM) or CAM-ICU for intubated patients. Postoperative cognition was assessed using the Montreal Cognitive Assessment (MoCA) at baseline and discharge as well as daily cognitive assessments using the Delirium Symptom Interview (DSI).



**Zdravka
Zafirova, MD**

Section of Critical
Care, Department
of Cardiovascular
Surgery

Mount Sinai
Hospital System,
Icahn School
of Medicine
New York,
New York

Patients assigned to the acetaminophen groups had a significantly lower incidence of in-hospital delirium (10% vs 28% with placebo, 95% CI -32% to -5%, $P = 0.01$). In patients who developed delirium, those who received acetaminophen had a statistically shorter duration of symptoms (median 1 vs 2 days, 95% CI -2 to 0 days, $P=0.03$) and longer time to delirium onset (hazard ratio 2.8, 95%CI 1.1-7.8). Although there was no difference in postoperative pain, the group receiving IV acetaminophen had a lower total 48 hour opioid use compared to those receiving placebo (median 322.5 vs 405.3 μg morphine equivalents, 95% CI -154 to -14 μg , $P=0.02$).

There was no significant difference in the primary outcome between sedation with dexmedetomidine vs propofol (17% vs 21%, 95% CI -18% to 10%, $P=0.54$). There was no difference in duration or severity of delirium, cognition at discharge, ICU or hospital stay. Patients receiving propofol sedation

did require a higher total dose of opioids (median 328.8 vs 397.5 μg , 95% CI -155 to -4 μg , $P=0.04$), although pain scores were not significantly different between the groups.

When comparing the combination regimens, the acetaminophen-dexmedetomidine combination did decrease the odds of in-hospital delirium (OR 0.17, 95% CI 0.03-0.87) as compared to placebo-propofol.

Post hoc analysis revealed statistically significant longer ICU stay in patients with delirium as compared to those patients who did not experience delirium (median 52.4 hours vs 29.2 hours, $P=0.01$).

Ultimately, the administration of IV acetaminophen was associated with lower rates and shorter duration of in-hospital delirium after cardiac surgery. In addition, IV acetaminophen is associated with shorter ICU stays possibly due to the minimization of delirium and decreased use of opioids. Given the high rates of morbidity and mortality associated with delirium in the critically ill, prevention of episodes of delirium can greatly improve patient outcomes. 🏠

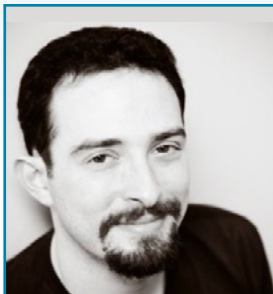
WELLNESS SERIES

Healer, Save Thyself: The Critical Problem of Physician Suicide

Each way to suicide is its own: intensely private, unknowable, and terrible. Suicide will have seemed to its perpetrator the last and best of bad possibilities, and any attempt by the living to chart this final terrain of life can be only a sketch, maddeningly incomplete.

— Kay Redfield Jamison

When discussing physician wellness, it is hard to avoid the most profound expression of unhappiness and despair, that of ending one's own life. Suicide among physicians has been a hot topic lately, and rightly so: it is commonly cited that between 300 and 400 physicians in the United States take their own lives every year. The rate of suicide among physicians is substantially higher than that of the population at large, roughly 41% higher for male physicians when compared to all men and a staggering 127% higher for female physicians when compared to all women.¹ There is some data to suggest that rates are even higher in anesthesiologists and critical care specialists than other physicians, although small numbers make this more difficult



Jordan Brand, MD

San Francisco VA
Health Care System
UC San Francisco
San Francisco,
California

to determine conclusively.² It has also been suggested that suicide rates among physicians are even higher than reported, due to the use of euphemistic descriptions like “died suddenly” and “was found dead at home” to avoid social stigma. While it is frequently impossible to pin down a specific reason for any one suicide, there are certain structural, psychological, and emotional aspects of anesthesiology and critical care medicine that may lead to a greater risk for practitioners in our field.

Substance abuse is one predisposing factor that is unfortunately common, and certainly damaging, in anesthesia practitioners. While some early studies implied a much higher rate of substance abuse among anesthesiologists than other physicians,^{3,4} more recent data has brought this finding into question or at least added more nuance. It seems now that anesthesiologists have a higher rate of abuse of major opioids, but this does not automatically translate into a higher overall rate of substance abuse.⁵ In any case, substance abuse disorders have been shown to be a risk factor for suicidal behavior, although it may be hard to disentangle the effects of the substance use from that of other comorbid psychiatric disorders.⁶ It has also been suggested that opioid abuse may confer a higher risk of suicidality than other illicit drugs. In physicians, drug and alcohol abuse may also result in additional work-related stress from potential loss of licenses, privileges, and career opportunities.

Burnout, as defined by emotional exhaustion, depersonalization, and decreased sense of personal achievement, has also been associated with suicidal ideation in physicians and medical students.⁷ Anesthesiologists in general are at a moderately high risk for burnout with rates in the range of 6-18%.^{8,9} Intensivists are at higher risk, with rates as high as 50% reported.¹⁰ There are several factors that may lead to burnout among anesthesiologists and intensivists, including long hours, high-risk work environments, and elevated levels of physical and emotional stress.¹¹ Lack of control of the work environment, an increasing problem in the age of larger multispecialty practice groups and decreased physician autonomy, has also been closely associated with burnout.¹² One risk factor that is particularly germane to critical care is moral distress, the inability to act according to one's core values due to internal and external constraints. In the ICU, where one must negotiate life-and-death decisions based on the wishes of patients,

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families, physicians, and other stakeholders, this is a common issue. Moral distress has been found to be an independent risk factor for burnout in critical care practitioners.¹³

Compounding these risk factors is the fact that physicians who develop mood, anxiety, or substance use disorders frequently avoid seeking professional help. Even in a field that should theoretically have a heightened awareness of mental disorders and how to address them, concern over the stigmata of seeking help persists.¹⁴ For students and trainees, this often takes the form of worries that mental health problems will become public knowledge and may affect evaluations and career opportunities; for attending physicians, concerns may focus on the loss of one's medical license and hospital privileges. While many states have confidential counseling programs for impaired practitioners, there is a persistent fear (sometimes well-founded) that the line between seeking counseling and being deemed unable to practice safely may become blurred. Moreover, even if an anesthesiologist undergoes treatment for substance abuse and is able to remain sober, this may not allow him or her to return to practice within the same specialty, as some studies have indicated that only a minority of residents who are treated for chemical dependence will be able to go on to practice anesthesiology.^{15,16} All of these factors act as deterrents to pursuing treatment. This is of great importance because lack of treatment-seeking behavior has been identified as a risk factor for suicide attempts in depressed individuals.¹⁷ In many cases, practitioners will choose to risk their lives rather than their careers.

So what are the best approaches for reducing the number of suicides in the medical profession? Harm reduction is attractive, especially since the increased rate of suicide in the medical profession may be in part the result of increased completion, not increased attempts; physicians are uniquely talented at both healing and harming the human body. For instance, while female physicians have a suicide rate much higher than that of other women, they report fewer suicide attempts.¹⁸ Certain methods, such as "red flag laws" that allow the confiscation of firearms from a person deemed to be at risk of causing harm to themselves or others, are attractive and have great potential to reduce suicides in the population as a whole.¹⁹ However, physicians and especially anesthesiologists are particularly adept at obtaining lethal doses of medications and may thus be more able to utilize alternative methods. Taking away access to medications without preventing an at-risk individual from practicing medicine may be impossible.

Improving the underlying conditions that lead to depression and burnout may likewise be difficult. Many sources of increased stress, such as loss of control over work environment and increased patient loads, are side effects of larger shifts in the medical system; while they can be improved via structural changes, such efforts require considerable social and

professional organization and are therefore not a practical solution in the short term. While burnout and job stress cannot be prevented, there are some promising techniques for managing them, such as optimization of work schedules to provide better work-life balance and greater availability of physician wellness resources like gym memberships and mindfulness activities.

The best hope for reducing the rate of physician suicide may be to improve our ability to recognize and intervene with high-risk individuals. The first and most important step in this process will be to remove some of the stigma attached to seeking help for emotional and substance-use problems. This will require measures to ensure that medical board-associated treatment programs are adequately insulated from licensing activities. We need to move towards a world where no physician will forego treatment due to fear for his or her professional standing; this should apply both to trainees and practicing physicians. This is not to say that all impaired physicians should be allowed to practice without limitations, but that our definition of "impaired" needs to be based on ability to care for patients effectively, not just a psychiatric diagnosis. Such an understanding must begin with medical educators so that it becomes part of a larger "culture of wellness." It is incumbent on all of us to take on the responsibility of listening to and healing not just our patients, but ourselves.

If you or anyone you know is at risk of suicide, there are resources available:

National Suicide Prevention Lifeline: 1-800-273-TALK (8255)

American Foundation for Suicide Prevention:

<https://afsp.org/our-work/education/healthcare-professional-burnout-depression-suicide-prevention/>

UC San Diego Healer Education Assessment and Referral (HEAR) Program: <https://medschool.ucsd.edu/som/hear/Pages/default.aspx>

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LITERATURE SURVEY

“Did You See This?”

Wasserstein RL, Lazar NA. The ASA's Statement on p-Values: Context, Process, and Purpose. The American Statistician. 2016;70(2):129-133.

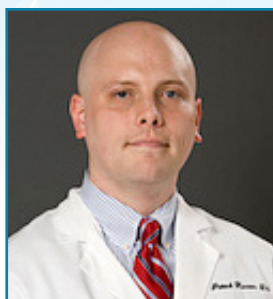
Wasserstein RL, Schirm AL, Lazar NA. Moving to a World Beyond “ $p < 0.05$.” The American Statistician. 2019;73(sup1):1-19.

Statistics is having a bit of a moment. In 2016, the board of the American Statistical Association published a consensus statement in which it shared concerns about misunderstandings and misapplications of the p-value, notably “ $p < 0.05$ ”, the perceived gold standard of statistical significance. In the time since, the statistical community has seemingly become more dismayed with the use of p-values as statistical be-all, and a special March issue of The American Statistician effectively calls for an end to the use of p-value as the test of statistical significance, proposing a more thoughtful approach to evaluation and analysis of research data. More than 40 articles in this supplement editorialize and expand on a “post p-value” world, discussing the effects of both requiring more stringent statistical significance and “tolerating some ambiguity” as we more critically examine the process in the context of the results.

A fascinating look into the history of null hypothesis standard testing and application of p-value, combined with a bit of a whirlwind tour of statistics, this series of publications could go a long way towards expanding the mindset of clinical researchers and editors, as well as the depth of publication, although it is also easy to see a leap to “if everyone is super...then no one is” (thanks, The Incredibles!). The call to improve our understanding of statistical significance is directed at writers, readers, and publishers, and could have significant impact on future clinical research.

Yeung J, Matsuyama T, Bray J, Reynolds J, Skrifvars MB. Does care at a cardiac arrest centre improve outcome after out-of-hospital cardiac arrest? - A systematic review. Resuscitation. 2019;137:102-115.

Specialized and ultra-specialized care is an important consideration for modern medicine. Not all facilities can provide all services, and yet delivering the right patient to the right location consumes resources in an otherwise constrained system. One question is whether patients suffering nontraumatic out-of-hospital cardiac arrest (OHCA) should be preferentially treated at specialized cardiac arrest centers (CAC). Common sense suggests that certainly this must



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be true. In Resuscitation, Yeung et al analyze the available literature in an effort to determine whether patient outcomes in OHCA are indeed better overall following treatment at CACs.

Before discussing the results, it must be stressed that there is no consensus on what defines a CAC. We would assume the full-time availability of cardiac catheterization services, as well as intensive care units capable of managing post-arrest patients, but there is little in the way of data to support a specific set of standards or resources when caring for cardiac arrest patients. In addition, there is a paucity of prospective and randomized data to call upon when discussing this subject. Some of the observational data provides multivariate analyses, which may strengthen the recommendations, but others are limited.

The outcomes of interest in this analysis were: survival to hospital discharge, survival to 30 days and consideration of favorable neurologic status in survivors. It is important to note that a majority of the studies included favored care at a CAC for patients suffering OHCA. Survival to hospital discharge in this analysis favored care at a CAC, with an adjusted OR of 1.85 [CI 1.46-2.34], and all observational studies with unadjusted analyses in favor as well, with OR ranges of 1.54-3.16. In the group of hospital survivors, the odds of favorable neurologic outcome based on CPC or GCS is higher when treated at CAC as well, with adjusted OR 2.22 [CI 1.74-2.84] and comparable rates in unadjusted studies (OR 1.69-2.44). However, when 30-day survival and favorable outcomes are considered, the positive benefits of treatment at a CAC do not achieve statistical significance and occupy a wide confidence interval.

What should we take from this? It is likely that care at a specialized center would improve OHCA outcomes, and perhaps most of the negative associations are due to the variable causes and dismal outcomes of OHCA in general. Also, as we improve field diagnosis and treatment, we are likely to see better triage and redirection of patients to the appropriate facility. The simple question, easily answered is: “Would you want yourself or your family member (or your patient) to be treated at a CAC for OHCA?” And the answer, uniformly, would be “Yes”. However, what if that trip entailed CPR en route while the EMS team passes by 3 other non-CAC hospitals? That answer is less clear. Also, minimal data exists to support the transfer of OHCA patients from one hospital to another, barring the availability of specialized treatments.

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It is unlikely that we will see high-quality randomized data regarding treatment of OHCA at CAC, so future investigators will need to remain innovative with regards to how this issue is studied, and changes may be needed in how regional triage and management for OHCA are structured.

Joseph B, Zeeshan M, Sakran JV, et al. Nationwide Analysis of Resuscitative Endovascular Balloon Occlusion of the Aorta in Civilian Trauma. JAMA Surg. March 2019. Epub ahead of print.

Endovascular balloon occlusion of the aorta (REBOA) is a technique for controlling non-compressible hemorrhage, usually resulting from traumatic injury. Compared to emergency resuscitative thoracotomy, the use of REBOA has been associated with trend toward reduced mortality. However, the indications for REBOA use are broader than those for thoracotomy, so direct comparison may not be appropriate. For this article in JAMA Surgery, Joseph and colleagues queried the ACS-TQIP database for use of REBOA in trauma populations. The group identified 140 instances of REBOA use, and on the whole, these patients were younger, more severely injured, and hemodynamically compromised.

Using 2:1 matching to control for injury severity and mechanism,

age, sex, race and hemodynamics on presentation, Dr. Joseph and his group discovered an increase in mortality in the REBOA group when compared to those patients who did not receive REBOA (35.7% to 18.9%), most significantly in the first 24 hours of hospitalization. In addition, development of AKI (10.7% to 3.2%) and lower limb amputation (3.6% to 0.7%) were significantly higher in the REBOA group relative to control. These findings contradicted the hypothesis that REBOA use would be associated with improved survival in a cohort of trauma patients.

Evident in the data, and commented on by the authors, is the fact that REBOA placement was associated with a prolongation in the time to definitive control of bleeding source, either angiographically or via laparotomy. Increases in mortality are seen with even small delays to source control, and the use of REBOA may reduce the urgency with which patients receive definitive control. In addition, placement of the REBOA device takes minutes on its own, although it is unclear if that delays the time to bleeding control. The increased risk of renal and limb complications in the REBOA group are not perplexing, given the potential for direct arterial injury, plaque mobilization and occlusion of aortoiliac blood flow with balloon occlusion. In short, as REBOA has expanded opportunities for temporizing life-threatening hemorrhage, we should be mindful of its risks and limitations. 

WELLNESS SERIES Healer, Save Thyself *continued from page 13*

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BOOK AND MEDIA REVIEWS

Hematologic Challenges in the Critically Ill

I was pleased to review *Hematologic Challenges in the Critically Ill* (1st edition, October 30, 2018, Springer Publishing, ISBN 13: 978-3319935713, 437 pages, \$159.99) which was edited by Dr. Howard L. Corwin and SOCCA past president Dr. Aryeh Shander. The book was written by dozens of contributors from across the globe. In their comprehensive volume, Drs. Shander and Corwin describe the pathophysiology of hematologic disorders and explore the latest evidence-based assessment and treatment of anemia and coagulopathy in the critically ill. The scope of this text makes it a valuable resource for essentially any physician or advanced practice provider who practices in a medical or surgical ICU. Management of perioperative patients is especially well covered in this text, also making it relevant to the intraoperative management of critically ill patients.

The editors have organized the book into three sections, each of which uses abundant figures, tables, and color illustrations to emphasize key points and simplify complex concepts. The first section focuses on general issues in the ICU including anemia, coagulation abnormalities, and hematologic testing. For example, in the hematologic testing chapter, the strengths, pitfalls, and modern application of both classic and newly developed lab tests are well described. Additionally, there is extensive detail about the utilization and interpretation of novel tests such as VerifyNow test of ADP inhibition and thromboelastographic assays.

The second section, which is the most directly clinically focused of the three parts, breaks down hematologic challenges into nine specific clinical settings and patient populations. For



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example, chapters are dedicated to disease process such as sepsis, liver dysfunction, and cardiovascular disease, as well as clinical situations such as obstetric hemorrhage, trauma, solid organ transplant, and extracorporeal membrane oxygenation. Each chapter delves into the unique hematologic pathophysiology of the clinical scenario, providing a comprehensive review of the disease process, and offering evidence-based strategies for the nuanced and often controversial patient management.

The final section addresses both general and special interest topics such as anti-coagulation and reversal agents, alternative treatments to transfusion, and evidence-based blood management. Chapters are devoted to issues such as the development, rationale, and clinical use of hemoglobin-based oxygen carriers (HBOCs), patient risks of blood transfusion including transmission of pathogens and transfusion reactions and immunomodulation (TRIM), and minimization of iatrogenic blood loss.

The editors and authors have effectively presented a comprehensive, evidence-based overview of the assessment and management of hematologic pathophysiology in critically ill patients, with exceptional utilization articles published in the last 5 years. While the content is inherently dense, well-organized chapters with frequent subheadings and a detailed index make it easy to find and distill information. The abundant utilization of recent literature makes this an excellent reference for clinical practice. This is certainly a text which I will maintain in my personal library, and reference when posed with a hematologic challenge. 🏠

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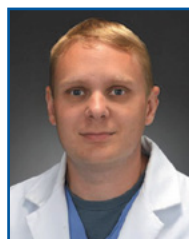
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