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President's Corner: A New Home!



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This winter newsletter comes on the heels of the ASA annual meeting that just concluded in Boston last month, and a Fall meeting of the SOCCA board. The title of this column refers to a big SOCCA change, one which we hope will open the door to an enhanced value of membership.

But first I'd like to celebrate the contributions of SOCCA members to the ASA annual meeting. The Critical Care track this year included 10 refresher courses, 7 panels, 3 pro/con debates and 3 workshops...nearly all delivered by SOCCA members. Although statistics won't be known for a while, I can attest that in the Clinical Forum I attended the room was packed to capacity and people were watching from overflow rooms down the hall! We'll see if that interest translates into more SOCCA members. And why not? SOCCA is and should be your home for critical care Anesthesiology.

During the Fall Board meeting, we discussed multiple issues of interest to SOCCA members. Some highlights:

- SOCCA appears to be in increasingly stronger financial shape. Our two main sources of revenue, membership dues and our Annual Meeting have both performed well this year, and as I noted in the Summer newsletter, attendance at our Annual meeting has returned to pre-IARS levels. The board

voted to restart a \$500 contribution to FAER for research grant support, establish a financial reserve, and codify a (prudent) investment policy.

- In August, Laureen Hill resigned her seat on the SOCCA board to take on a management role with Columbia/Presbyterian Hospital in NYC. The board voted to replace the remainder of her term, which ends in 2018, with Stephen Surgenor, MD, MBA, Professor of Anesthesiology at the Dartmouth Institute and the Dartmouth/Geisel School of Medicine.
- We discussed efforts to better align our meeting with the AUA Annual meeting, which also occurs during the Friday before IARS.

Let me now circle back to the title of this column: "A new home" and highlight SOCCA's burgeoning online presence. Those of you heading to www.socca.org to renew your membership (Don't wait...do it now!) may have already noticed that our website has a new look. In fact we're on a new server ... and the login button in the upper left now allows access to a protected area for members. Try it!

We're still working on what to put in that protected area and welcome any suggestions! SOCCA work products currently include the ICU teaching guide, our Jobs board (available at <https://socca.org/members/job-board/>), the Exchange, and the fellowship Match. One possibility is to put a searchable member directory in that protected area so SOCCA members can communicate with each other. As I've noted before, the diversity and experience of critical care experience among SOCCA members is one of SOCCA's unique strengths ... among our ranks you can find Neuro, Surgical, Cardiac, Trauma, Burn, and Pediatric critical care. A searchable database would allow Neurocritical care specialists to find like-minded SOCCA members for

questions, consultations, or protocols for hard to manage issues. Another idea is to host a message board or other forum to ask questions or share information. We're looking for a web editor to manage that content and enhance our new home! If you are interested or have ideas as to how we can populate our new members section, please email me at atung@dacc.uchicago.edu.

Along those lines, I'd like also to call attention to our SOCCA twitter page, [@SOCCA_Critcare](https://twitter.com/SOCCA_Critcare). Maintained by Michael Fierro at Duke, the page tracks issues of interest to SOCCA members, and along with the Interchange and *Anesthesia & Analgesia* helps to highlight authors of papers published by SOCCA members in A&A. If you are a twitter user, check it out, retweet often, and look for this issue's featured author Roman Dudaryk and his latest publication in A&A: "*Incidence and operative factors associated with discretionary postoperative mechanical ventilation after general surgery*" PMID 2899116.

Let me close this column by reiterating how lucky I feel to lead such a vibrant and

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enthusiastic organization! This past ASA reminded me of the sheer number of active SOCCA members at the meeting ... at the SOCCA subspecialty booth, contributing and delivering outstanding educational

and research content, and participating in committee work at all levels. If you have an idea how to make SOCCA a vital stopping place for critical care anesthesiologists or are interested in contributing, send me an email! I'll try to find you a role. And, as the year ends, do be sure to renew your membership

and keep in mind our upcoming annual meeting April in Chicago! The abstract submission deadline is December 28 and the meeting is Friday April 27, 2018. Hope to see you there!

The Challenge of Defining the “Classic Fluid Challenge”

Messina A, Longhini F, Coppo C, Pagni A, Lungu R, Ronco C, Cattaneo MA, Dore S, Sotgiu G, and Navalesi P. Use of the fluid challenge in critically ill adult patients: a systematic review. Anesthesia and Analgesia 2017; 125: 1532-43.

As much as we want to believe that most medical interventions are carefully researched and based on the best possible evidence, a large proportion of what we do for patients is based on tradition, consensus, or what some refer to as “eminence-based medicine,” i.e. emulating what the most respected physicians do. The fluid challenge (FC) is a diagnostic and therapeutic intervention that has been used for years in critical care as an easy way to determine fluid responsiveness during resuscitation. In general terms, an FC attempts to assess whether a given patient’s hemodynamics will improve with further fluid administration.¹ Any clinicians refer to the use of a “classic” or “typical” fluid challenge, but it seems that this paradigmatic FC has never really been conclusively defined. The FENICE Trial, published in 2015, attempted to survey practices involving the FC and found that there was a great deal of variability regarding the administration of FC and how the results were evaluated.² Variation in the way an FC

is performed can affect its sensitivity and specificity and lead to different therapeutic choices. While fluid administration is essential to maintaining organ perfusion, volume overload can also be detrimental, so inconsistencies in assessment and decision-making can have a significant effect on outcomes.

As we know too well, it is common that real-world practice strays from what is recommended in the medical literature. So is the variability in FC administration a result of translation from evidence to practice, or is it present in the literature as well? Messina and colleagues tried to address this question in the article under discussion, published in November 2017. The researchers reviewed studies published on the FC within the past 20 years and assessed them with regard to the amount and type of fluid administered, duration of infusion, hemodynamic variables measured and determination of fluid responsiveness, and safety limits. They defined FC as the infusion of a specific amount of fluid in a fixed time and searched MEDLINE, EMBASE, and the Cochrane Database of Systematic Reviews to find appropriate studies published between January 1994 and December 2014. Patients were divided into subgroups based on underlying disease process. The researchers

surveyed the practices of the studies and performed a logistic regression to assess the relationship between the percentage of FC “responders” in each study and several independent covariates.

A total of 71 studies were identified that included a total of 3617 patients. Most subjects were receiving mechanical ventilation, although 8.5% of the studies examined enrolled only spontaneously breathing patients. The most common indicators for an FC were hypotension (67.6% of studies), oliguria (52.1%), and physician judgment (49.3%). Only 5.6% of the studies had a predetermined safety limit for stopping an FC.

The median of the mean fluid volume administered in the 17% of studies that reported weight-based dosage was 7 mL/kg; of the remaining studies, the majority (77.5%) infused 500 mL of fluid. Colloids were used in 62% of the studies with the majority utilizing 6% hydroxyethyl starch (HES), and 37.5% administered crystalloids. When studies were grouped by years published, the proportion using colloids decreased over time. There was substantial variation in the duration of fluid administration, with 30 minutes being the most popular choice (45.1%), but 10, 15, and 20 minutes also being prevalent.

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The mean of the mean rates of FC “responders” found across the studies was 52%. An increase in cardiac index or output was used to assess fluid responsiveness in 62% of studies, most commonly using a 15% increase as the criterion. 31% of studies used stroke volume or stroke volume index, again with a 15% increase being the most common standard used to assess response. Not surprisingly, in the 45 studies that reported arterial pressure variation, the amount of variation prior to FC was higher in responders than nonresponders ($11.5 \pm 5.4\%$ vs. $6.1 \pm 3.9\%$, $p < .001$).

When looking at subgroups, the only two subgroups including studies that enrolled more than 75% of patients with the same diagnosis were those examining patients with sepsis and postsurgical patients, so these were the only two included in the regression analysis. The researchers found that none of the variables examined (sepsis, postoperative state, hypotension, oliguria, colloid use, or time of FC administration) were significantly correlated with the number of responders in the study. Notably, there was a trend towards studies with shorter time of administration having a greater proportion of responders, with $p < 0.7$.

So, what are we to make of this study? Does it add anything new to the not-very-controversial observation that there is variation in exactly what a fluid challenge means to different practitioners? One observation is that in the studies reviewed, only about half of the patients responded to an FC, implying that our understanding of who will respond is incomplete, and some of the triggers used (i.e. hypotension) may not be very specific for fluid-responsiveness. It would also be helpful to have some more detailed dose-response studies to better examine different bolus types and

amounts within a given patient population as opposed to across different studies. It is interesting that there was a trend towards having a greater number of responders in studies that gave faster fluid challenges; some studies have shown that the effect of a rapid crystalloid bolus dissipates within 10 minutes of administration.³ This again reinforces the need for more within-study evaluations of technique.

Another issue centers on the changes in FC practice over time. The majority of papers in the review utilized colloids, particularly HESs; these have been less in favor since the SAFE study, which implied that colloids were no more effective than crystalloids in resuscitation and could be harmful in certain populations.⁴ Other studies have suggested a particularly greater risk of renal dysfunction and death with HESs compared to other fluids, and the most recent Surviving Sepsis Campaign guidelines recommend against their use.⁵ In the 2015 FENICE survey, by contrast, crystalloids were preferred in 74% of cases.² This evolution in practice may bring into question whether the results from earlier studies are applicable to modern critical care. Clinical practice and scientific evidence both suffer from a lag between data's creation and its implementation, and the two strains may not progress at the same rate.

While medical decision-making always involves an element of subjectivity, this should not dissuade us from pushing forward and trying to better delineate best practices and standards of care. On the other hand, there are limits on how many resources we can devote to a given clinical problem. Not every corner of the biomedical world can be examined in minute detail. We may still be frustrated by the lack of standardization of the fluid challenge, but 500 mL “pretty fast” may have to suffice for now.

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SOCCA Has Created A New Jobs Bank!

We recognize that one of our members' concerns is identifying job opportunities for critical care anesthesiologists.

You can visit our new site here: <https://socca.org/members/job-board/>. If you would like to post a job on this site, please email a description and /or flyer to SOCCA Society Manager, Vivian Abalama, CAE at vabalama@iars.org.

CALL for ABSTRACTS

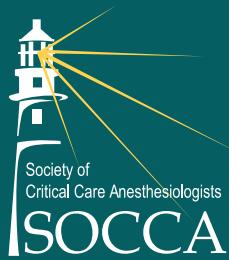
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The Opioid Epidemic and the Role of the ICU



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The use of opioids has increased many times over in the last decade across the United States and has now reached epidemic proportions. After alcohol intoxication, opioids are now the most common cause of poisoning in the United States¹ with an estimated incidence of 177.7/100,000 annual ED admissions related to opioid overdose.² Although effective pain relief is a vital component of modern health care, the public health effects of opioid addiction have escalated sharply. Opioid overdose deaths increased 156% from 21,088 in 2010 to 33,091 in 2015, resulting in decreased life expectancy among users.³ There has been a concurrent dramatic increase in the number of opioid prescriptions over the last few decades, from 76 million in 1991 to 219 million in 2011.⁴

The number of patients presenting to the ICU with acute opioid overdose has increased significantly throughout the opioid epidemic and has put an additional burden on the country's already overextended critical care infrastructure. A recent study found a 34% increase in ICU admissions related to opioid overdose across 162 hospitals in 44 states.⁵ The mortality rate of such patients has previously averaged 7% but increased to 10% in 2015.⁵ These trends are concerning and suggest the need for a national approach to enhancing delivery of critical care services to such patients, providing additional resources in the hospital for patients and families, and to help survivors upon discharge.

Supportive measures and naloxone remain the mainstay of therapy for managing patients admitted to the ICU for acute opioid overdose. Many patients require mechanical ventilation for respiratory support and the use of inotropic drugs and vasopressors is often needed to counter the cardiodepressant and vasodilatory effects of opioids. Naloxone, the antidote for opioid overdose, is a competitive μ opioid-receptor antagonist that reverses all the effects of opioid intoxication. It is active via the parenteral, intranasal, or pulmonary route of administration but has negligible bioavailability after oral administration because of extensive first-pass metabolism.⁶ The effective dose of naloxone depends on the amount of opioid analgesic the patient has taken, the relative affinity of naloxone for the μ opioid receptor and the opioid to be displaced, the patient's weight, and the degree of penetrance of the opioid analgesic into the central nervous system.^{7,8} Frequently this information is not available and clinicians have to use empiric dosing. The suggested initial dose of naloxone for adults is 0.04 mg and the dose is increased every 2-3 minutes in a step wise manner to achieve a target respiratory rate of more than 12 breaths/minute to a maximum of 15 mg.⁹ If there is no reversal of respiratory depression after the administration of 15 mg of naloxone, it is unlikely that the cause of the depression is opioid overdose.^{10,11} Since the half-life of naloxone is extremely short as compared to most of the opioid analgesics, in patients with overdose, the reversal of opioid toxicity after the administration of single doses of naloxone is often transient. Recurrent respiratory depression is often an indication for a continuous infusion of naloxone along with the necessity to protect the airway via orotracheal intubation.

Similarly, the number of opioid tolerant patients being admitted to the ICU has increased significantly. The FDA defines a

patient as opioid tolerant if for at least 1 week he or she has been receiving oral morphine 60 mg/day; transdermal fentanyl 25 mcg/hour; oral oxycodone 30 mg/day; oral hydromorphone 8 mg/day; oral oxymorphone 25 mg/day; or an equianalgesic dose of any other opioid.¹² These patients present additional challenge as managing analgesia and sedation requires a comprehensive multi-modal treatment regimen which may still fall short. They may have varying degrees of experience with opioids; some may have a history of opioid use disorder (OUD) who are not currently using opioids, and some may have a history of OUD and are being maintained on methadone or buprenorphine.

Managing such patients in the ICU can be difficult. It is probably safe to assume that continuing their methadone and buprenorphine while in the ICU can help prevent precipitate an acute withdrawal. Agents such as clonidine and dexmedetomidine might also be helpful in preventing acute opioid withdrawal. They are both alpha-2 adrenergic agonists with sedative and analgesic properties. Clonidine administered via transdermal or oral routes can decrease metabolic, respiratory, and hemodynamic demands associated with opioid withdrawal.¹³ Dexmedetomidine, a more selective alpha-2 agonist, causes sedation, analgesia, and anxiolysis with minimal respiratory depression. In a recent case report, dexmedetomidine infusion was successfully used to control heroin withdrawal-related psychotomimetic symptoms in a critically ill patient.¹⁴

Another class of drugs that can be useful in ICU patients who have developed opioid dependence and tolerance are the N-methyl-D-aspartate (NMDA) receptor antagonists such as ketamine and magnesium that can provide analgesia as well as prevent withdrawal. NMDA and opioid receptors both reside on the spinal cord dorsal horn neurons

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that process nociceptive information.¹⁵ NMDA receptor antagonists block prolonged depolarization of these neurons and prevent hyperalgesia which is often seen with opioid tolerance/dependence. In a recent study looking at opioid requirements in trauma patients who presented to the ICU with a positive urine drug screen, the authors found a trend towards greater ketamine use in such patients.¹⁶ Ketamine administration may reduce perioperative opioid requirements and sensitize opioid receptors, making it an attractive adjunct in trauma and surgical ICU patients.¹⁷⁻²⁰ The biggest disadvantage with the use of ketamine in the ICU is its association with psychotomimetic effects such as nightmares, hallucinations, and development of delirium. Well-designed studies comparing ketamine with other commonly used agents like propofol and dexmedetomidine are urgently needed to help evaluate the potential of ketamine as an ICU sedative and analgesic. Multimodal analgesia techniques including NMDA receptor antagonists and alpha-2 agonists are potentially of great value in managing opioid tolerance and dependence and preventing withdrawal in the ICU.²¹

The other part of the relationship between the ICU and the opioid epidemic lies in what has been aptly described as the clinical conundrum.²¹ Untreated acute pain in the ICU, which can then transition to chronic pain, and the development of opioid tolerance, opioid dependence and acute withdrawal in patients who receive significant doses of opioids in the ICU constitute even bigger challenges for ICU providers. Patients in the ICU experience significant amount of pain irrespective of the admission diagnosis. Pain is also one of the most common memory that patients have of their ICU stay.²² Despite the awareness of the need for analgesia in patients admitted to the

ICU, a significant number of patients remain untreated or undertreated.²³ Although acute pain is protective, warning patients and clinicians of impending or actual tissue injury, it can transition to chronic pain in certain susceptible patients.²¹ In three recent studies, patients were asked about ongoing pain lasting at least 6 months from their stay in the ICU and whether the pain was new since ICU admission.²⁴⁻²⁶ The 6-month post-ICU chronic pain prevalence rates were 12% in post-cardiac surgery patients²⁶ and ranged from 33% to 44% in the mixed med-surgical patient populations.^{24,25} About 45% of these patients considered their ongoing pain to be moderate to severe in intensity.²⁵ Although these numbers are relatively modest, they are significant considering the thousands of patients with multiple diagnoses that are admitted to ICUs each year.

Uncontrolled pain, pain of high intensity, and pain of longer duration are all risk factors for transition from acute to chronic pain and hence every effort should be made to treat pain appropriately in the ICU. Pain in the ICU can be divided into two broad categories: constant background pain and intermittent pain. Background pain includes postoperative pain related to incisions, drains, and dressings; pre-existing pain in patients with arthritis, migraine and other forms of chronic pain; and pain related to trauma (amputations, fractures, pressure sores, soft tissue injuries etc.). Intermittent pain, on the other hand, includes pain associated with commonly performed invasive procedures (central/arterial line placement, intubation, nasogastric and nasoduodenal tube insertion, foley catheter insertion, venous lab draws), as well as routine daily care such as position changes, physiotherapy, tracheal suctioning, and dressing changes. In a large multi-center study,²⁷ the authors found that all of the commonly performed procedures in the ICU were associated with significant increase in

pain intensity compared to baseline. Chest tube removal, wound drain removal and arterial line insertion were the procedures associated with the most pain.

Recognition and assessment of pain in ICU patients is the first step towards management. Assessing pain in the ICU is not easy as verbal reporting is not always possible and physiological changes, such as hypertension and tachycardia, that usually correlate with pain, can be masked or caused by various other factors in the ICU setting (e.g. sepsis, inotropic and vasopressor therapy, beta blockade, arrhythmias, and other pharmacologic interventions). Less than 50% of intensive care professionals actually assess pain, and even when done, it is not done frequently.²⁸ In patients that can self-report, numerical rating scale (NRS) and visual analogue scales (VAS) are the gold standard, however in patients that are unable to self-report but have intact motor function and observable behaviors pain scales such as Behavioral Pain Scale (BPS) and Critical Care Pain Observation Tool (CPOT) have been found to be effective.²⁹ Once pain has been appropriately assessed, multimodal analgesia techniques that include non-opioids and/or non-pharmacological interventions are recommended to reduce opioid requirements, prevent adverse effects of large doses of opioids, and enhance pain relief.^{29,30}

Opioids are still the first line drugs for managing pain in the ICU and many ICU patients, particularly those receiving mechanical ventilation, receive continuous infusions of opioids, not only to prevent pain but to improve ventilator synchrony and minimize agitation. In the aftermath of the introduction and validation of "analgesodation" by the Society of Critical Care Medicine (SCCM),²⁹ there has been a greater focus on recognition and management of pain in the ICU which has

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potentially led to a greater usage of opioids. Long-term use of opioids can cause opioid tolerance and physical dependence, and there is always a concern that the patients who have received significant doses of narcotics in the ICU might develop tolerance. Extensive use of opioids for analgesia could also lead to iatrogenically induced opioid withdrawal during opioid weaning. A small retrospective study looked at the incidence of acute withdrawal syndrome (AWS) in mechanically ventilated trauma patients found that almost 32% of these patients developed AWS.³¹ The key to preventing AWS in critically ill patients is to use a multimodal pain regimen including non-opioid analgesics as well as locoregional analgesia. When using opioids, periodically assessing pain and titrating the medications per individual patient needs is important. An ideal regimen in patients with constant background pain could include a small bolus of IV fentanyl followed by an infusion with the dose increased by 15-20% at a time titrated to a BPS or CPOT score with a slow wean when applicable with a reduction in rate by about 25% each time.

In conclusion, the opioid epidemic has had a significant impact across the country leading to a substantial increase in mortality in the last decade. The critical care community has not only been affected by the significant increase in acute opioid overdose related admissions and the associated morbidity and mortality but also the massive increase in the number of opioid dependent and opioid tolerant patients being treated in the ICUs across the country for myriad of other reasons. The implications of such a change are hard to quantify but the onus remains on the critical care community to provide a holistic, multi-modal and pragmatic approach when caring for these patients. Effectively assessing and treating

pain in the ICU is essential to promote comfort and rehabilitation to the patients as well as preventing the transition from acute to chronic pain. Yet, providing large, continuous doses of opioid analgesics may put patients at risk for opioid dependence and withdrawal during drug tapering. Further research is required to examine how to promote optimal pain management while avoiding opioid withdrawal and thus minimize post-intensive care morbidity.

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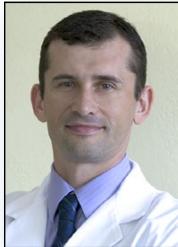
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A Brief Conversation with ... Roman Dudaryk



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Roman Dudaryk, MD is an Associate Professor of Clinical Anesthesiology and Director of Quality Assurance in the Department of Anesthesiology at the University of Miami Miller School of Medicine and Jackson Memorial Hospital. He is also an invaluable member of the Trauma Anesthesiology Faculty at the Ryder Trauma Center in Miami, FL.

1. Can you briefly describe your recent research article¹ for our readers?

In this article, we describe the results from our retrospective study of more than 3500 general surgery patients who were admitted to our intensive care unit (ICU) directly from the operating room over a 7-year period. These patients were retrospectively categorized, based on their intubation status at admission, into one of three groups: extubated (EXT), intubated for medical reasons (MED) or intubated for “discretionary postoperative mechanical ventilation” reasons (DPMV) using criteria defined in our research protocol. From this, we discovered

that approximately 16% of patients admitted to our ICU following surgery were in the DPMV cohort, those patients who were still intubated but not, necessarily, for clear (objective or generally-accepted) medical reasons. We also looked at some factors that may have contributed to this unexpectedly high percentage of DPMV patients, including ASA physical status classification, emergent operation, intraoperative factors and case end times. From this, we determined that the ASA PS classification and emergency operations were significantly associated with DPMV status in our hospital while surgery end time and difficult airway management were not associated with DPMV status.

2. That is really interesting...what were you trying to understand better in this research?

For us, it was difficult to understand why some patients came to our ICU still requiring mechanical ventilation after general surgery despite not meeting conventional requirements for postoperative mechanical ventilation, such as hypoxic or hypercarbic respiratory failure, cardiovascular instability, ongoing resuscitation, etc. We had recognized that there was a frequently vague rationale from our anesthesiology colleagues based, largely, on individual

anecdotal experience attributed to “fluid shifts,” fragility of the patient, or less clearly defined reasons. Therefore, our team wanted to understand what this anecdotal experience constituted in clinical practice. To that end, the most challenging part of this research was recognizing that this phenomenon, that we termed “discretionary postoperative mechanical ventilation,” was real and represented the collected experience and expertise of trusted anesthesiologists in our hospital. We believed that once we understood the incidence of DPMV and the associated risk factors, then we could use this information to provide better clinical care for our patients in the ICU, particularly at the times of critical transitions.

3. Wow ... it's a simple description for an obvious observation...yet novel in concept. So what were your article's most important conclusions?

Based on the results of our analysis, we discovered that a significant number of patients admitted to our ICU required mechanical ventilation for discretionary reasons rather than for conventionally-described medical reasons. In fact, in our study, the majority of patients who were still intubated at ICU admission were in the DPMV cohort (56.4%) compared to the

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A Brief Conversation with ... Roman Dudaryk

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MED cohort. Further analysis demonstrated that ASA physical status and emergency procedures had significantly more predictive effect than did other intraoperative factors such as duration of operation, type or amount of intraoperative fluid administration, difficulty in airway management or operation end time.

4. It seems that DPMV is definitely an important contributor to post-operative mechanical ventilation in your hospital. How might I use this information in my own practice?

Similar to our experience, you, first, have to recognize that DPMV exists and is more than just “laziness” or “inattention” on the part of the anesthesiologists in your hospital. In fact, the exact opposite is true and the fact that 72% of the surgical patients were admitted to ICU extubated despite the fact that the duration of surgery, the amount of fluids given or the difficult airway status were not associated with postoperative ventilation points to the fact that our anesthesiology faculty and staff put a significant effort behind their attempts to liberate patients from mechanical ventilation before ICU admission. Anesthesiologists, therefore, have specific reasons for leaving patients intubated after operative procedures, even if they can only give a vague rationale for their decision. Second, you may want to develop an internal QA/QI process to evaluate DPMV in your hospital. It is possible that these DPMV represent a conscious or even unconscious “work around” for harmful systems-based processes that exist in your hospital. Addressing any of these potential problems or processes could provide significant benefit to your patients. Finally, you should consider ways to highlight the reasons

for DPMV between the intraoperative and postoperative care teams. We believe that this should be a significant focus or highlight in the perioperative handoff process.

5. In many ways, you may have just described a very important role of the perioperative surgical home (PSH). How could members of SOCCA apply your methods to evaluate and consider the role of PSH in their practice?

Improving patient outcomes and continuously evaluating these outcomes for patients in the perioperative period are fundamental goals of the PSH concept. By maintaining the focus of PSH on how perioperative clinicians, including anesthesiologists and anesthesiology critical care specialists, interact to continuously evaluate and improve patient care in the postoperative period, patient care will improve over time. In this way, anesthesiology critical care specialists work every day to simplify increasingly complex care and to bring value to perioperative patient care. Similar to our study, PSH requires perioperative clinicians to evaluate their own practices and develop a different mindset about what is really happening with their patients. To highlight this, postoperative respiratory failure has become one of the key AHRQ reportable quality indicators for hospital performance, also known as PSI-11. In this context both PSH and the role of Critical Care Anesthesiologists have a tremendous potential to improve the quality of care delivered to surgical patients by decreasing incidence and duration of postoperative mechanical ventilation by highlighting their unique value position, knowledge, and experience when compared to other critical care providers. At the end of the day, though, it's a mindset that may provide

different (and better) clinical outcomes in an environment of scientific evaluation but will only come with an understanding of administrative and fiscal leaders that these outcomes must be recognized as valuable to the health of our patients.

6. I want to express my appreciation for taking time to speak with me about your research. As a final thought, what advice do you have about research for junior faculty and fellows that want to try to answer an important research question?

In anesthesiology, there are a lot of things we do exclusively because of “tradition” and we are largely educated through emulation of our “heroes.” Because of this, “easy” and “obvious” questions are still not yet asked... and definitely not answered. Junior faculty and fellows should question everything that comes their way, especially at the beginning. Although it’s hard to believe as a junior faculty or fellow, we all learn with experience and time that very few things are absolute or are absolutely based in evidence. Much of what we do is very vague and based on low quality evidence; yet these very practices are considered gold standard ideas. We should all challenge what we do and consider what is really absolute and what is or should be controversial. Question the simplicity and the basic reality of what we do every day.

References

- Ray JJ, Degnan M, Rao KA, Meizoso JP, Karcutskie CA, Horn DB, Rodriguez L, Dutton RP, Schulman CI, Dudaryk R. Incidence and operative factors associated with discretionary postoperative mechanical ventilation after general surgery. *Anesthesia and Analgesia* 2017; Oct 4, doi:10.1213/ANE.0000000000002533: epub ahead of print.

From AUA, eSAS, FAER, IARS and SOCCA: An Exciting Collaborative Research Initiative for Anesthesiology Clinical and Translational Science: a Call for Letters of Intent



President-Elect
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Introduction

We are pleased to inform you about an important new collaborative approach to Anesthesiology clinical and translational research. For several years, colleagues in Europe, Australasia and Canada have successfully conducted multicenter clinical trials in Anesthesiology, including perioperative medicine, pain management, peri-partum care, and perioperative critical care. These studies have enabled our field to address questions that are important to Anesthesiology and society, and have greatly advanced the quality of care we provide on a daily basis. Currently, no such clinical trials network exists in the United States. To remedy this, a consortium of academic anesthesiology organizations has launched an initiative. This effort has been conceptualized and endorsed by organizations, which have as a common goal the advancement of knowledge in Anesthesiology and the enhancement of care in perioperative medicine, critical care, pain management, and peri- and post-partum care. These organizations include the Association of University Anesthesiologists (AUA), Early Stage Anesthesiology Scholars (eSAS), Foundation for Anesthesia Education and Research (FAER), International Anesthesia Research Society (IARS), and Society of Critical Care Anesthesiologists (SOCCA). We have consulted with several

program officers representing NIH institutes, and they have unanimously expressed enthusiasm regarding the process we have conceptualized. The proposed clinical trials network could naturally collaborate with other existing international networks.

The Process of Grant Selection

In order to launch this process, and to establish a proactive and dynamic agenda, we are embarking on a program to solicit, select, and refine clinical research proposals that will have a high probability of receiving support from the National Institutes of Health or another funding agency. We are therefore extending an invitation to investigators to submit letters of intent for pragmatic clinical trials in perioperative medicine. The trials could focus on any or all of the following areas: preoperative care/optimization, operating room management, postoperative management, perioperative critical care, peri- and post-partum care, and pain management. Outcomes should be clinically relevant and important to society. Letters of intent should no more than 2 pages in length, with 1 page being the Specific Aims Page. They should be single spaced, minimum of size 11 font (Arial or Times New Roman) with minimum borders of 0.5 inches.

- 1) Please send your letters of intent as Microsoft® Word or PDF documents to Vivian Abalama, CAE (vabalama@iars.org) up to the deadline of December 31, 2017.
- 2) A study section has been established for this process, comprising representatives of the following organizations: AUA, eSAS, FAER, IARS, and SOCCA. Members of the study section will review the letters of intent, triage the proposals, and,

on January 15, 2018, solicit expanded research proposals (specific aims page and 5 pages for research plan) from a subset of meritorious LOI submissions.

- 3) Expanded research proposals must be received by March 15, 2018.
- 4) The three selected grants will be announced on April 15, 2018.

The Process of Peer Feedback

On May 1 2018, following the AUA, SOCCA and IARS meetings, there will be a symposium in Chicago to launch this exciting initiative. This meeting will be advertised and will be open to those interested in anesthesiology-related clinical and translational science. The IARS has kindly offered to provide meeting space and information technology support for this event. The principal investigator or another representative of each of the three winning proposals will present their grants to peers, who will provide constructive feedback and suggestions. This will be a structured process in the form of a "Science Garage" or "Grant Boot Camp" and will serve two important functions. First, it will inform the community about the trials, and allow colleagues to become energized about the studies and sign up their sites for participation. Second, it will help to harness the collective intellectual expertise of members of the perioperative research community in order to refine and enhance the grant applications. Apart from the "Science Garage," there will be input from an NIH representative on the importance of this initiative and of the potential to work closely with NIH institutes in advancing this exciting agenda. Representatives of FAER and the IARS will present how such initiatives could provide opportunity to early

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stage Anesthesiology scholars, wishing to pursue clinical and translational research paths. Finally, organizations that could serve as data coordinating centers and provide other “core” support to clinical trials (e.g., Duke Clinical Research Institute [DCRI], Multicenter Perioperative Outcomes Group [MPOG]) would be invited to make brief presentations outlining how they could provide support to the perioperative clinical trials group and provide discussion of resources (and estimation of costs) available to assist in trial conduct.

The Process of Grant Refinement

The Association of University Anesthesiologists (AUA) has generously earmarked \$45,000 to provide seed funding to the three chosen grants (\$15,000 each) so that the grants can be refined, strengthened and streamlined prior to submission to an NIH institute or another appropriate funding agency (e.g., PCORI). These funds can be used to obtain statistical analysis review, preliminary data, grant writing support, or fill any specific need identified by the proposal PI. It has been clearly recognized that steps must be taken to ensure that this venture serves as a unifying force in our field, and supports academic Anesthesiology across the United States, as well as other countries. As such, participation in this endeavor does not require that principal or co-investigators must hail from specific institutions or that their trial will utilize any specific existing infrastructure. However, by participating in and conducting their research through one or several established network/s or institute/s, investigators will have access to additional expertise and resources, which will prove a massive boost to any clinical trial. Indeed a major emphasis for the NIH is that clinical research should be conducted efficiently,

and utilizing existing reliable infrastructures and registries is viewed as a priority. Clinical Trial Support Units (CTSUs, CTCs, CTSCs, CRSUs, CRUs, CTUs, CTIUs, CTSIs, CRTUs) have been established at multiple academic centers and in the private sector, and conceptually allow investigators to focus on the science instead of the administrative tasks when conducting clinical trials. Brief information is provided below on the DCRI and MPOG. More information on these can be obtained from their websites, and information on other trial support mechanisms can often be obtained from research offices at academic institutions. It is our hope that at least one (if not all) of the three selected grants will be successful in garnering federal (or equivalent) funding.

Duke Clinical Research Institute (DCRI)

The inception of the DCRI dates from 1969 and the formation of the Duke Databank for Cardiovascular Disease, from this humble beginning, the DCRI has grown to be the world’s largest academic research organization. The DCRI’s mission is to develop and share knowledge that improves the care of patients around the world through innovative clinical research. The DCRI has a rich history of clinical trial experience and success, with completion of over 1,000 phase I–IV clinical trials, outcomes, comparative effectiveness, and implementation studies. These studies have enrolled over 1.2 million patients in 37,000 distinct sites. DCRI’s faculty includes scientists, statisticians, and practicing physicians who see patients each day. Together with the DCRI’s experienced and knowledgeable operations teams, clinical trial investigators can design and implement innovative clinical trials grounded in the realities of patient care. The DCRI expands

the impact of clinical research beyond regulatory approval by designing trials that advance our fundamental understanding of health and disease and inform efforts to improve the quality of care. The DCRI’s faculty and operational team’s passion is setting new standards for clinical innovation that changes the way healthcare is delivered.

Every day, the DCRI works to address the challenges faced by patients, physicians, government agencies, and research sponsors. The DCRI achieves this by changing the way clinical trials are conducted, by putting knowledge into practice, and by designing educational programs that inspire and prepare the next generation of clinical researchers. Everything the DCRI does is based on collaboration. The DCRI researchers and operational teams work closely with each other and with peers and partners around the world. As an academic research organization associated with the Duke University School of Medicine, the DCRI is able to challenge conventional approaches and explore innovative ways to accelerate the translation of scientific discovery into better care for patients everywhere. What makes the DCRI unique from other clinical research organizations is that it is a non-profit research organization, focused solely on creating and implementing new knowledge in perioperative care and other disciplines. This includes a long history of successful large perioperative trial work.

The DCRI offers the following specific services to investigators:

- Full integration and close collaborations among diverse trial primary investigators at many sites and clinical trial operational leaders/coordinators
- Scalable and Fit-for-purpose trial design support and operations

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- Collaborative approach to academic leadership
- Mature North American site investigator networks that can be leveraged for high-quality enrollment
- Streamlined data collection (including EMR based data collection) and adverse event reporting
- Focused, risk-based monitoring and predictive modeling to minimize costs of trial conduct
- Emphasis on study drug/procedure compliance and complete follow-up
- Shared endpoint adjudication activities
- Long-standing clinical research education and fellowship opportunities to train the next generation of perioperative clinician-scientists
- DCRI commitment to cover upfront costs of clinical trial submission and planning by providing expert grant-writing assistance, budget creation, study manual of operation creation, site contracting and study material generation for the perioperative trial network

A key feature of the DCRI resource is that a clinical trial or trials network can use as much or as little of DCRI's many components as is needed. This can truly be tailored to an individual study or network's needs. This can include utilization of only data management, only clinical coordinating center resources, statistics, regulatory, or any other key trial support functions alone or in combination as needed. The DCRI has a rich experience in coordinating research networks such as the Perioperative Clinical and Translational Science Initiative described in this call for proposals. This includes a history of coordination of 34 distinct networks including the > 110 million patient record PCORnet, The NIH Health Care Systems

Research Collaboratory, The Federally Funded Pediatrics Trial Network, and The NIH CTSA Trials Innovation Network.

The DCRI has recognized that there is a strong need to enhance perioperative clinical and translational research in the U.S. and around the world. For this reason, the DCRI recently recruited a Professor of Anesthesiology, Dr. Paul Wischmeyer, to be its Director of Perioperative Research. Dr. Wischmeyer is a highly accomplished clinical and translational researcher, and can be contacted by e-mail at: paul.wischmeyer@duke.edu. More information on the DCRI can be found at www.dcri.org/about/who-we-are/ and www.dcri.org/our-approach/.

Multicenter Perioperative Outcomes Group (MPOG)

MPOG is a group of passionate individuals from more than 50 hospitals across 18 states and 2 countries, working together to improve care for patients undergoing surgery. MPOG has evolved organically as a labor of love within Anesthesiology, and is committed to advancing the field academically and to providing growth opportunities for future leaders in Anesthesiology. MPOG's members include clinicians, quality improvement experts, software developers, statisticians, researchers, and administrators. Over the last decade, MPOG has built a comprehensive perioperative patient registry based on electronic healthcare data to improve quality of care, conduct research, educate caregivers and guide healthcare administration. MPOG is a collaborative venture that was made possible by the transition in hospitals to electronic medical records. Collaborating institutions contribute electronic data to MPOG, which the MPOG administrative team checks, cleans, and homogenizes. MPOG's mission is to benefit Anesthesiology

and society through the generation of knowledge obtained from this valuable data repository. MPOG has a rotating Executive Board, which includes its Executive Director, Research Director, its Quality Improvement Director and 9 elected chairs, representing Anesthesiology departments in the United States and Europe. MPOG has a track record of successful and high impact observational research in perioperative medicine.

To increase the clinical impact of the existing infrastructure, MPOG founded a quality improvement initiative known as ASPIRE (Anesthesiology Performance Improvement and Reporting Exchange) three years ago, with more than \$2M of external annual funding. ASPIRE sites work together to build quality measures, review best practices, exchange ideas on how to improve patient outcomes. ASPIRE delivers measure performance information to participating sites via the ASPIRE dashboard and regular, automated provider-specific feedback emails.

The logical next step for MPOG is the establishment of IMPACT (Initiative for Multicenter Perioperative Clinical Trials) as an arm that supports and empowers perioperative clinical and translational research. As a stepping-stone to prospective, pragmatic clinical trials, MPOG recently embarked on an enhanced observational study. Chosen through a competitive process, the University of Utah and University of Virginia led a study conducted across 12 US and European medical centers focused on the Acute-to-Chronic pain transition in patients undergoing major surgery. Over the span of just 2 weeks in September 2017, more than 1100 patients were enrolled, consented, and phenotyped using robust, peer-reviewed pain, mood, affect, and opioid use instruments. Follow up

From AUA, eSAS, FAER, IARS and SOCCA: An Exciting Collaborative Research Initiative for Anesthesiology Clinical and Translational Science: a Call for Letters of Intent

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1- and 3-month phone calls have begun. A robust configurable electronic case report form (eCRF) tool, center-specific patient enrollment dashboard, registry-eCRF linkage, and competitive grant administration process have all been created to enable prospective enhanced observational studies and pragmatic randomized controlled trials. MPOG can be contacted by email: anestmpog@med.umich.edu. More information on MPOG can be found at mpog.org/about/.

Conclusion

We look forward to receiving letters of intent from a diverse range of investigators with projects spanning the many areas of perioperative medicine, critical care, and pain management. If you have questions regarding this initiative, please write to Vivian

Abalama (vabalama@iars.org), and she will direct your query to an appropriate person on the ad-hoc coordinating committee.

This article / call for letters of intent has been endorsed by representatives of the following organizations:

- Association of University Anesthesiologists (AUA)
- Early Stage Anesthesiology Scholars (eSAS)
- Foundation for Anesthesia Education and Research (FAER)
- International Anesthesia Research Society (IARS)
- Society of Critical Care Anesthesiologists (SOCCA)

If you would like to learn more about this initiative, you can find information at any of the following sites:

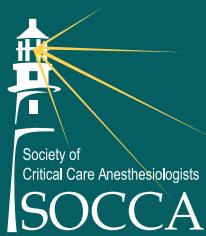
- AUA: bit.ly/2BEQBZJ
- eSAS: bit.ly/2kfKeSs
- IARS: bit.ly/2D0TVfp
- MPOG - <https://mpog.org/ctn/>
- SOCCA: bit.ly/2kHVPte

Preliminary Program

SOCCA 2018 Annual Meeting and Critical Care Update

Friday, April 27, 2018

Hyatt Regency Chicago, Chicago, Illinois



For more information,
visit **www.socca.org**



Welcome to the SOCCA 2018 Annual Meeting and Critical Care Update in Chicago, Illinois!

Welcome to the SOCCA 2018 Annual Meeting and Critical Care Update, a meeting I am confident you will find rewarding with many valuable takeaways and networking opportunities. The members of the SOCCA Committee on Education, Drs. Adam S. Evans, Sheila Pai Cole, and Peter Von Homeyer, have developed a cutting-edge education program, addressing the latest advances in critical care and investigating the most pressing issues in anesthesiology. Plus, stay through Saturday, April 28, for the Aligned Meeting and SOCCA Focus on Critical Care Day education sessions at the IARS 2018 Annual Meeting and International Science Symposium, available complimentary to SOCCA registrants.

Session Highlights:

FRIDAY, APRIL 27

- Breakfast Panel: **Emerging Practice Paradigms in Critical Care Practice** – Review the various practice paradigms for delivering superior care for critical care patients.
- Education Session I: **Metabolic Support for the Postoperative Patient in the ICU** – Learn to formulate a protocol for intensive metabolic support for patients that are postoperative in the ICU.
- SOCCA Lifetime Achievement Award Presentation: **Leadership for Today, Change for Tomorrow** – Uncover insights for leadership and the future of critical care medicine during Award Winner Dr. Jeffrey S. Vender's presentation.
- Education Session II: **Enhancing Recovery from Critical Illness and Life Thereafter** – Examine how to best prepare patients with critical illness and their families for the road to recovery.
- Education Session III: **Wellness for the Anesthesiologist-Intensivist** – Explore wellness initiatives to help with preventing burnout, improving resilience and dealing with grief.
- SOCCA Young Investigator Award Presentation – Examine the groundbreaking research from the Young Investigator Award Winner and first and second runners-up.
- Moderated Poster Discussion Session – Learn about cutting-edge advancements in research and education from abstract presenters.
- Education Session IV: **Innovative Uses of Ultrasound in ICU** – Discuss the new and exciting uses for ultrasound including the treatment of respiratory failure, optic US for ICP monitoring, nutrition and RV strain.

SATURDAY, APRIL 28

Aligned Meeting Day Sessions:

- Opening General Session and T.H. Seldon Memorial Lecture: **Personalizing Health in the Era of Big Data** with Dr. Jeffrey R. Balser
- Alignment Symposium: **AUA: Mitochondria and Bioenergetics in Health and Disease: It's Not Just a Power Failure!**
- IARS Scholars' Program – Education Sessions, Breakfast and Lunch Sessions, and Mentor-Trainee Reception
- IARS, AUA and SOCCA Alignment Reception

Focus on Critical Care Sessions:

Review Course Lectures:

- SOCCA: **The Tele-Vision: Taking Care to the Patient and Expanding the Scope of the Intensivist**
- SOCCA: **Heart Failure with Preserved Ejection Fraction (HFpEF) as a Perioperative Risk**

Problem-Based Learning Discussions:

- SOCCA: **To Intubate or Not: Management of Post-Operative Acute Respiratory Failure**
- SOCCA: **The Sweet Escape: A Complicated Case of DKA**
- SOCCA: **Perioperative Renal Replacement Therapy for the Anesthesiologist: Does It Make a Difference?**

SUNDAY, APRIL 29

Plus, A Bonus Focus on Critical Care Session, Complimentary for SOCCA Attendees:

- Panel: SOCCA: **50 Years of ARDS: An Update**

Visit the SOCCA Tabletop Exhibits for the latest innovations in technology, equipment, and medical publications.

I hope your time with the leaders in critical care anesthesiology and your colleagues will energize you and give you the tools and skills you need to advance your practice and research while enjoying all Chicago has to offer.

Sincerely,

A handwritten signature in black ink, appearing to read "Avery Tung, MD, FCCM".

Avery Tung, MD, FCCM, President, Society of Critical Care Anesthesiologists

Call for Articles for the Winter Issue of *Interchange!*

If you have an interesting case report, an idea for a pro-con discussion, a review idea, or an opinion on a recently published article, please submit your proposal/article to Vivian Abalama, CAE, vabalama@iars.org on or before **Friday, January 12, 2018**. If your article is chosen for the Winter Issue of Interchange 2018, we will contact you then for editing and formatting!

SOCCA Information

Email

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 Visit the SOCCA website at: www.SOCCA.org

Membership

Membership in SOCCA is open to all anesthesiologists who have an interest in critical care medicine; non-anesthesiologist-physicians and scientists who are active in teaching or research relating to critical care medicine; residents and fellows in approved anesthesiology programs; and full-time medical students in an accredited school of medicine.

Membership Benefits

Discounted pricing for the SOCCA Annual Meeting, a forum for the specialist with broad-based interests, including respiratory therapy, postoperative cardiac surgical, neurological and transplant management, and trauma care

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Free ICU Residents' Guide

Free quarterly newsletter *Interchange*, which covers ethically controversial issues, survey of practice patterns, and historical aspects of anesthesiology

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If you would like to contribute a review for a Fellowship Program at your institution in a future issue of the *SOCCA Interchange*, please contact: jbrandmd@gmail.com.

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