

SPRING 2023: PEDIATRIC ANESTHESIOLOGY

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**The Historic Discussion
of Anesthetics in
Children**

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Melissa Leaf, DVM

The unique challenges of providing anesthesia care for infants and children are not new; doctors have noted the profound differences in physiology, pharmacokinetics, and the pharmacodynamics of anesthetic drugs for over a

century.

In 1926, Dr. Harold Sington wrote a charming article called Discussion of Anesthetics in Children, excerpts of which are presented here.

“In general medicine it has been pointed out that to consider the child a miniature adult is to court disaster; that, in fact, the child, by process of development, alters so entirely that he presents a different type for consideration as the various stages of growth are passed through. Thus, the new-born baby is very different to the teething infant, who in turn becomes the toddler, who again advances by means of further development gradually to puberty; the physiological aspect of the infant being as different from that of the adolescent as are the anatomical structures at these two periods of life.

This statement is also applicable to the development of the central nervous system. So much the more nervous and impressionable is the child than the adult that his whole

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Feature Article



**Special Considerations for the
Pediatric Population**

By Meera Gangadharan, MD, FASA, FAAP; Sabina Khan, MD; and Deborah Schwengel, MD, MEHP, FASA



Dr. Meera Gangadharan

Mass casualty incidents (MCIs) have become increasingly common and are the result of many different hazards, including infectious (pandemic), penetrating trauma, chemical, biological, and radiologic

events. The common denominator in all these incidents is a surge in patient volume and the requirement for hospital teams to react swiftly and efficiently and to change the paradigm of care to a Crisis Standard of Care (CSC). CSC is invoked when supplies, staff and space resources are outstripped and patient care decisions must be made to save the most patients possible. Anesthesiolo-



Dr. Sabina Khan, MD

gists must provide the best possible care for the most patients given the circumstances. To do so, anesthesiologists must understand the principles of care during MCIs and prepare and practice.



Dr. Deborah Schwengel

Preparation

Preparation begins before the mass casualty event has occurred. It starts with making plans for one’s own family - having designated people who would take care of one’s

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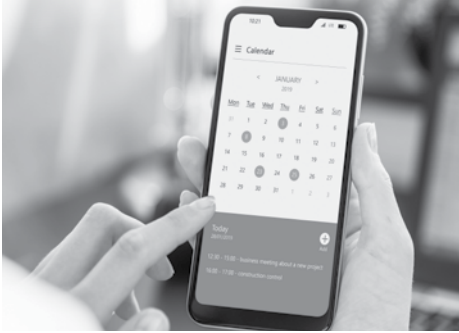
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The *VSA Update* newsletter is the publication of the Virginia Society of Anesthesiologists, Inc. It is published quarterly. The VSA encourages physicians to submit announcements of changes in professional status including name changes, mergers, retirements, and additions to their groups, as well as notices of illness or death. Anecdotes of experiences with carriers, hospital administration, patient complaints, or risk management issues may be useful to share with your colleagues. Editorial comment in italics may, on occasion, accompany articles. Letters to the editor, news and comments are welcome and should be directed to: Brooke Trainer, MD • brooke@vsahq.org.

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SAVE THE DATES



ASA LEGISLATIVE CONFERENCE 2023

May 15 - 17, 2023

ASA Event Hyatt Regency Washington
on Capitol Hill
Washington, DC



MSV 2023 ANNUAL MEETING

October 13 - 15, 2023

Hilton Norfolk the Main
Norfolk, VA



ASA 2023 ANNUAL MEETING

October 13 - 17, 2023

San Francisco, CA



VSA POCUS WORKSHOP

September 16-17, 2023

Hotel Roanoke & Conference Center
Roanoke, VA

See back cover for more details!

President's Message

The Path Ahead

By Craig Stopa, MD

VSA President

ASA Delegate

President, Atlantic Anesthesia Inc.



Dr. Craig Stopa

As I begin my term as president, I want to start by saying thank you. Thank you to the VSA executive board and members for entrusting me to represent you for the next two years. Thank you to all the Virginia anesthesiologists

for providing great care to the residents of the Commonwealth.

As many are aware, anesthesiologists have been facing numerous obstacles that pose challenges to providing that great care: workforce shortages, balance billing (i.e. the No Surprises Act), and Medicare/Medicaid payment cuts are just a few of these issues. Compound that with the COVID pandemic, burn out, early retirements, and difficulty with recruiting, and institutions face the perfect storm leading to our current workforce shortage.

This issue is not just a local or state one, but a national issue. You are not alone in your struggles. Hopefully, the necessary relieve for some of these acute workforce shortages may arrive as the numbers of anesthesia resident, fellow, and advanced practice professional graduates increase in Virginia and the surrounding states.

There is some possible good that can come out of this situation. There is no better time than this to work with your respective hospital administration to improve OR efficiency and through-put and show them the value of an anesthesiologist. I just ask that you please remember to take care of yourself, so that you can take care of your patients.

When it comes to balance billing, the No Surprises Act (NSA) simply does not work, especially the independent dispute resolution (IDR) process. If you have been reading ASA President Dr. Micheal Champeau's Monday Morning Outreach emails through the ASA, you are aware of every solution offered to try and fix this issue. If you are

There is some possible good that can come out of this situation. There is no better time than this to work with your respective hospital administration to improve OR efficiency and through-put and show them the value of an anesthesiologist

not aware, then at the very least, I suggest you start by reading those short briefs, as they are very informative.

To briefly summarize, the main problems lies with how skewed the system favors the insurer payers. Though not originally intended to do so, since the IDR process was developed, insurers have been able to rig the calculation of the QPA; the mandatory, non-refundable administrative fee has been increased from \$50 to \$350; and the ability to batch charges has been restricted. There have been multiple lawsuits and amicus briefs filed. However, there is still much work to be done to get this corrected. Again, I urge you to read the Monday Morning Outreach emails to stay up to date.

Medicare/Medicaid payments continue to decrease. Our "33% problem" is no longer. That could be a celebratory statement, but it is not. It is getting worse. This year there will be a 2% sequestration on Medicare payments further decreasing payment rates. Also, there was a possibility to increase Medicaid payments for specialists in the Commonwealth; however, the state legislature did not include this in their proposed budget. The ASA and VSA still hope to "right the ship" and will not let these setbacks slow our fight to fix this problem.

With a new year, comes new beginnings, and there is no better new beginning than life itself. This makes pediatric anesthesiology the perfect topic for the spring issue. Please enjoy the newsletter and always feel free to reach out me, your new VSA President, with questions, concerns, or comments. And again, thank you for all that you do!

Pediatric Anesthesiology: As Different as Cats and Dogs

By **Brooke Trainer, MD, FASA**
Chief Editor, VSA Newsletter



Dr. Brooke Albright-Trainer

I am proud to present to VSA members this content packed newsletter focused on the specialty of Pediatric Anesthesiology, which is long overdue!

The practice of pediatrics, as one author recalls, spawned out of necessity to treat pediatric patients as the unique little individuals they are, rather than miniature adults. A pediatric anesthesiologist friend of mine explains that caring for children compared to adults is akin to a veterinarian caring for cats compared to dogs...they are a completely different species of animals!

To accomplish the same outcome, the pediatric anatomy, physiology, and pathology not only require altered doses of medications, for example, but may require entirely different medications, therapies, or approaches altogether. Pediatric patients present with their own complex set of considerations that requires expertise, additional training, and experience to appropriately and effectively manage them safely.

In fact, the APRICOT study, a multicenter observational study in 261 hospitals in Europe published in the *Lancet* in 2017 concludes, "Children younger than three years are at increased risk of severe critical events and should be anaesthetized by an adequately experienced anesthesiologist with sufficient pediatric training and ongoing pediatric experience or, if possible, postponed"(1)



This study highlights that anesthesiology is a complex medical specialty, especially in the field of pediatrics. And though technology and innovation, as well as knowledge and education, have steadily improved over the years making it safer for patients, we are still humbled by the unique patients we meet day to day who continue to challenge and surprise us, and give us pause. Speaking for myself, though I am a Critical Care trained anesthesiologist, and consider myself very comfortable managing both cardiac and liver transplants in very sick adult patients in the ICU, I am terrified of the pediatric population, even the straightforward "healthy" cases!

I am thankful there are physician anesthesiologists who specialize in pediatrics and practice it routinely! I have two young healthy children and pray I never need to rely upon a pediatric anesthesiologist's services, but if I do, I'm happy to know you

are out there!

This newsletter is packed with content which elaborates on those special considerations and includes informative discussions on a range of issues including, disaster preparedness from an expert leader with the Society of Pediatric Anesthesiology, gastroenterological pediatric surgery told from the perspective of a renown surgeon and professor of pediatric surgery, to the reasons why one should consider subspecializing in pediatric anesthesiology.

Thank you to all of the authors who volunteered their time and contributed high quality and very informative content for this special newsletter issue. It does not disappoint!

1. APRICOT Group of the European Society of Anesthesiology Clinical Trial Network. *Lancet Respir Med* 2017; 5: 412-25

Become a Contributor to the *VSA Update*

Please send your story or feature ideas about your colleagues, your practices, or issues facing anesthesiologists to

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2, 4, 6, Zero!...and also 1 and 3? The Updated ASA and SPA Fasting Guidelines

By Lyn Wells, MD, FRCA
Issue Editor, VSA Newsletter
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Dr. Lyn Wells

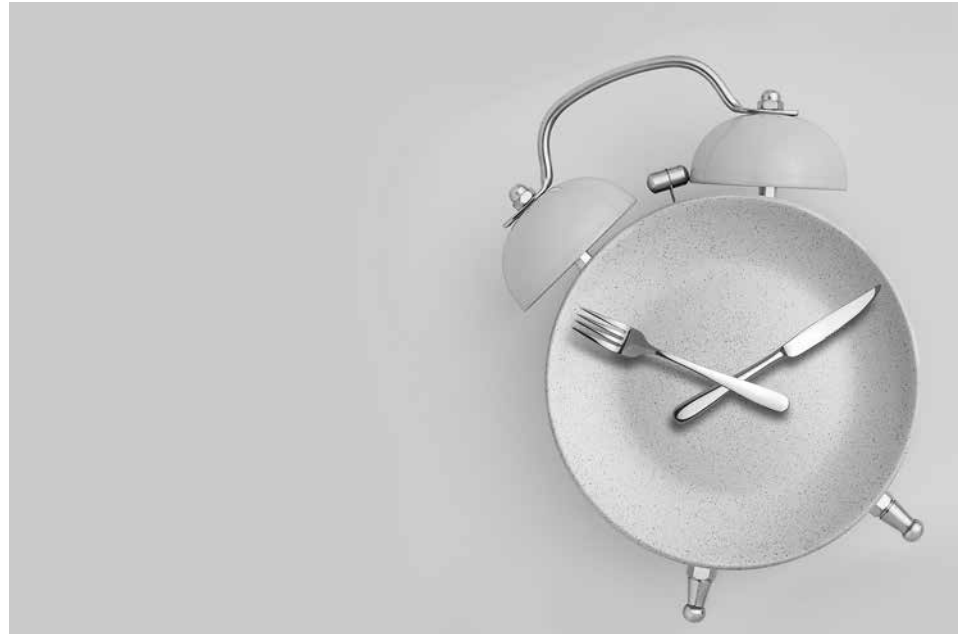
Under Karen Domino's leadership, in 2022, the ASA committee on practice guidelines reviewed the Society's fasting guidelines and updated them using a rigorous, data-driven methodology. In addition to review-

ing the existing guidelines for solids, non-clear and clear liquids, and breast-milk, the committee specifically examined advice on chewing gum and shortening the clear liquid fasting recommendation in pediatric patients from two hours to one.

The updated recommendations are: solids and non-clear liquids six hours; breast milk four hours; clear liquids two hours; chewing gum zero hours (although it must be removed from the mouth prior to induction of anesthesia). These guidelines apply to all patients. Gone is the eight-hour fasting option for large meals and/or greasy foods. There is no data to support this option. In cases of gastroparesis, an extra two hours of fasting time makes no difference to stomach emptying. In the edition of *Miller's Textbook of Anesthesia* I used in the 1990's, there is a lovely graph of gastric emptying times in gastroparetic patients showing that only being given a pro-kinetic, such as metoclopramide, will gastric emptying approximate to a normal stomach.

Shortening the clear liquid fasting interval in pediatric patients from two hours to one generated controversy. There is no data to show one fasting time is superior to the other. In fact, both have been shown to be equally safe. Demonstrating superiority is required to change the ASA's guideline. This will not happen in a situation of equivalence.

The European Fasting Guidelines support



A rigorous review and discussion of the European fasting guidelines at the most recent SPA meeting led to the Society agreeing to adopt the European guideline on fasting for clear liquids in pediatric patients in the USA. The guidelines are already in effect in Canada.

a one-hour fasting interval for clear liquids in children because there is equivalence, and prolonged fasting is so deleterious to children. Studies reporting instances of regurgitation, with or without aspiration, have all occurred more than two hours after last intake. A rigorous review and discussion of the European fasting guidelines at the most recent SPA meeting led to the Society agreeing to adopt the European guideline on

fasting for clear liquids in pediatric patients in the USA. The guidelines are already in effect in Canada. The SPA guidance will be for individual institutions to determine whether they will adopt a one or two-hour fasting interval for clear liquids in children based on their unique circumstances.

So where does "three" come in? The European Fasting Guideline recommends shortening the fasting time for breastmilk from four to three hours. This is based on gastric ultrasound data showing the majority of neonates and infants have clinically irrelevant residual volumes after three hours and there have been no instances of regurgitation or aspiration in any of the patients.

At present, anesthesiologists in the USA have not shown a desire to adopt this part of the European guideline. However, if POC gastric ultrasound becomes a consistent feature of pediatric anesthesia practice, fasting interval may become less important than calculated intra-gastric volume on ultrasound.

The pediatric anesthesiology division at UVA will adopt a "6, 4, 1, 0" fasting policy once the SPA recommendations are published.

dependents (including pets) in case of a mass casualty or disaster event, keeping enough gas in one's car and some cash in hand, having a bag packed and ready with one's medicines, personal items, clothing and equipment needed for work. Knowing alternate routes to the hospital in case some roads are flooded, blocked or inaccessible (1). In a survey study of anesthesiology attendings and residents at three major academic institutions, only 34% of attendings and 28% of residents had assigned a person to take care of their families if they would need to work during a disaster.(2)

Another step in preparation involves educating oneself about the structure of incident command, one's institution's emergency operations plan, and resources such as the American Society of Anesthesiologist's checklist for operating room procedures for mass casualty. (3) This is an easy-to-follow checklist which provides guidance on how to manage and maintain patient flow in the operating room during a mass casualty.

- The checklist begins with instructing the reader to follow the facility's Operation's Manual.
- Activate a call-in tree to bring in more staff; this can be done by a designee.
- Determine staffing for the operating rooms for the next several hours by grouping them into segments. For example, staffing the next two hours, then the next 2-12 hours, 12-24 hours, etc.
- Complete current cases as quickly and as safely as possible and prepare the operating rooms to receive trauma patients.
- Put elective cases on hold or cancel them.
- Send an anesthesiologist to the emergency department to be the "eyes and ears" of the operating room anesthesia coordinator.
- Consider assembling stat teams consisting of an anesthesiologist, surgeon, nursing, and respiratory therapy, to help with triage and treatment in all areas that might need it.
- Discharge or transfer patients from the PACU (reverse triage) to create space for more patients.
- Communicate with intensive care units, and inpatient units.
- Communicate with the blood bank.
- Communicate with hospital incident command.

The ASA Committee on Trauma and

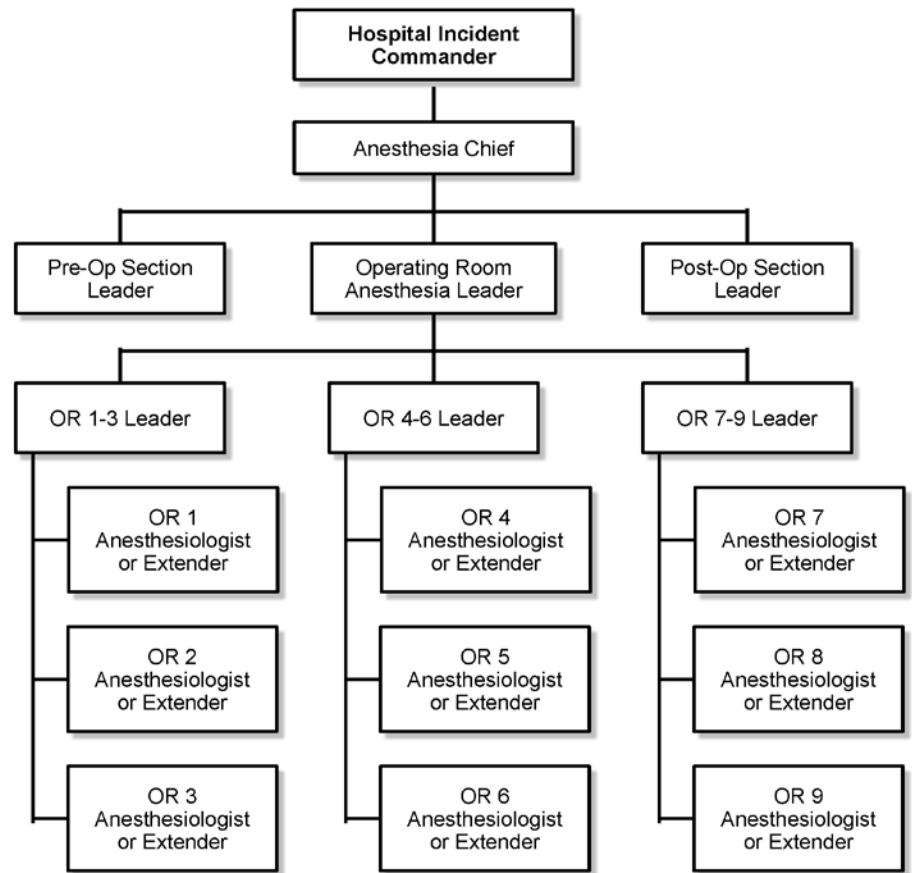


FIGURE 1

Emergency Preparedness website has many more resources on this topic such as a document on emergency preparedness for the anesthesiologist, a checklist for power failure in the operating room and an active shooter guide.

Organizational structure to manage a mass casualty event

The Incident Command System, developed by the National Incident Management Systems of the Federal Emergency Management Agency (FEMA) in response to the September 11, 2001 attacks, is the standardized structure now required for surge events. It is an organizational format that is flexible, scalable, and adaptable. It provides a common terminology to enhance communication and cooperation among agencies when they interact to manage a disaster. It emphasizes command, control, and coordination, and requires that there be an incident commander. This individual is knowledgeable in the principles of disaster management. The incident commander

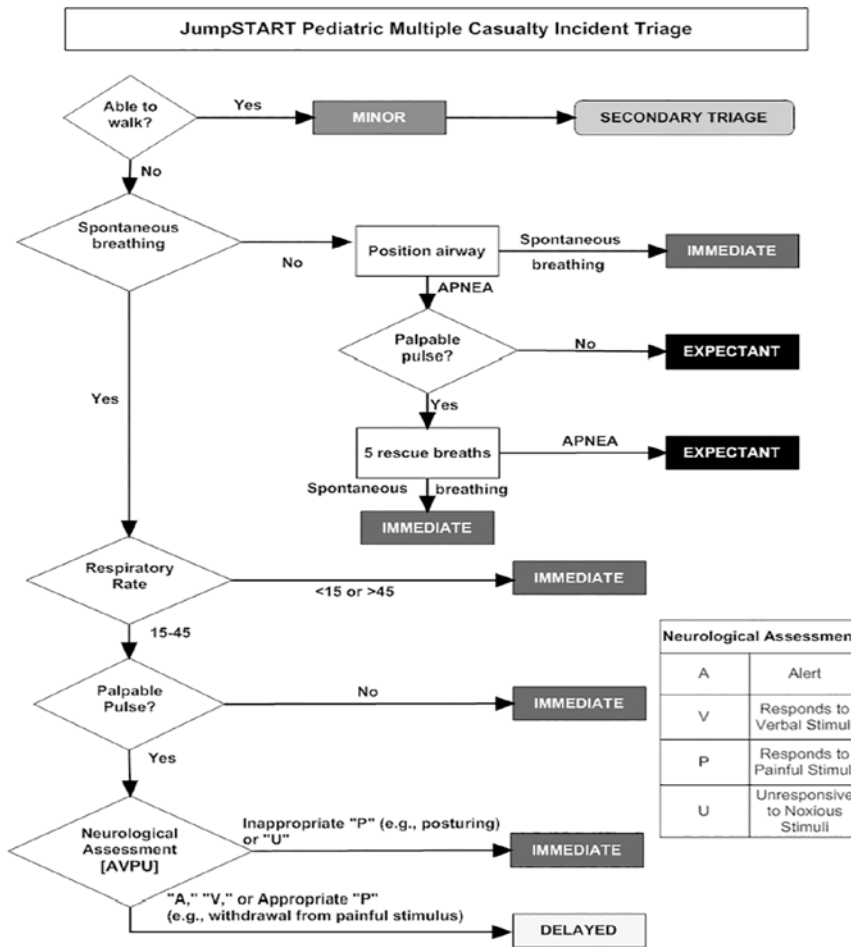
has several officers who report to him/her such as the planning, logistics, finance, and operations chiefs. Each of these people in turn have others who report to them. Every person should report to only one person and no person should have more than five people under his/her command. Some hospitals have modified the incident command structure for the operating room. (4)

Figure 1 illustrates what an incident command system modified for anesthesia operations might look like.

Triage

The primary goal of the response to a mass casualty event is to save as many lives as possible. To save the maximum number of lives, medical personnel need to prioritize treatment to those who need it most urgently and who are expected to derive the most benefit. Patients are assigned to red (urgent/immediate), yellow (delayed), green (minor), grey (expectant) and black (dead/morgue) treatment categories. Most triage

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A	Alert
V	Responds to Verbal Stimuli
P	Responds to Painful Stimuli
U	Unresponsive to Noxious Stimuli

Use JumpSTART if the Patient appears to be a child.
Use an adult system, such as START, if the patient appears to be a young adult.

<p>EXPECTANT Black Triage Tag Color</p> <ul style="list-style-type: none"> Victim unlikely to survive given severity of injuries, level of available care, or both Palliative care and pain relief should be provided 	<p>DELAYED Yellow Triage Tag Color</p> <ul style="list-style-type: none"> Victim's transport can be delayed Includes serious and potentially life-threatening injuries, but status not expected to deteriorate significantly over several hours
<p>IMMEDIATE Red Triage Tag Color</p> <ul style="list-style-type: none"> Victim can be helped by immediate intervention and transport Requires medical attention within minutes for survival (up to 60) Includes compromises to patient's Airway, Breathing, Circulation 	<p>MINOR Green Triage Tag Color</p> <ul style="list-style-type: none"> Victim with relatively minor injuries Status unlikely to deteriorate over days May be able to assist in own care: "Walking Wounded"

Adopted from <http://www.jumpstarttriage.com/>



systems assess the ability to walk as the first step followed by assessment of respiration and then the pulse. The JumpSTART algorithm was created for children and considers respiratory rates that are more appropriate for children and recommends administering 5 rescue breaths in apneic patients with a pulse (see fig 2). Most triage systems were designed for field triage. In 2018, Toida et al. described and validated the Pediatric Physiological Anatomical Scoring System (PPATS) which requires evaluation of the respiratory rate, heart rate, systolic blood pressure, Glasgow coma scale, anatomic abnormality and need for life-saving interventions as a secondary triage method. Secondary triage is done when there are more staff and medical resources available, such as in the hospital. Upon study, PPATS was found to be superior to existing triage methods. There was also a significant association between PPATS and the predicted mortality rate. (5,6)

Life Saving Interventions

At the time of triage, lifesaving interventions such as intubation, chest decompression, hemorrhage control and the administration of antidotes may be performed. Programs like "stop the bleed" have been effective in reducing deaths from hemorrhage. (6) Initial interventions are meant to be quick and stabilizing, rather than full definitive treatment.

Children in disasters

Children are uniquely vulnerable in disasters because of their higher susceptibility to head injury, chest-wall flexibility, higher respiratory rates, greater body surface area, increased susceptibility to dehydration, inability to move away from disasters because of developmental immaturity, and greater likelihood of separation from family members with inability to self-identify etc. (5) A minority of emergency medical services in the US have a mass casualty incident plan for children and disaster medical teams lack pediatric supplies (5,8). All hospitals, including those typically not caring for pediatric patients must anticipate an influx of pediatric patients during widespread MCIs.

Recognizing the need for more education and research about the anesthetic require-

Continued on page 8

Figure 2 : taken from <https://chemm.hhs.gov/StartPediatricTriageAlgorithm.pdf>
Accessed on 3.5.2023

ments of children in disasters, the special interest group (SIG) in disaster preparedness was formed in 2020 at the Society for Pediatric Anesthesia (SPA). Membership in the SIG is open to all SPA members. The SIG has participated in workshops and presentations at the American Society for Anesthesiology and has published a comprehensive review on the topic (5).

The SIG will be conducting a Mass Casualty Workshop at the SPA-AAP Pediatric Anesthesiology 2023 meeting in Austin, Texas on March 31, 2023, from 3-6 pm. It will be an immersive experiential learning opportunity with standardized patients. The faculty include Dr. Stephanie Davidson, who was at the hospital in Las Vegas that received the casualties from one of the worst mass shooting incidents in our recent history, and Dr. Greenberg and Dr. Schwengel who have taken intense three-day onsite FEMA training courses in Anniston, Alabama and will share their expertise.



A video about the workshop can be found at: <https://www.pedsanesthesia.net/wp-content/uploads/2023/02/Workshop-Promo.mp4>.

The workshop has also been discussed in the February 8, 2023, pediatric anesthesia article of the day which can be found at: <https://ronlitman.substack.com/p/mass-casualties>.

Anesthesiologists have a unique skillset to be leaders in MCIs, although they are often overlooked in planning. Anesthesiologists are experts in airway management, vascular access and in the care of critically ill patients of all ages. Anesthesiologists can quickly assess and treat rapidly deteriorating patients, are familiar with all areas of the hospital in which mass casualty patients will receive care and are team leaders. Mass casualty situations require physicians to extend themselves beyond their routine practice. Pediatric facilities may have to take care of adult patients. In free-standing children's hospitals, pediatric anesthesiologists may be the only physician group with resident level training in adult medicine. Anesthesiologists

should prepare themselves to be leaders in mass casualty incidents. Additionally, all hospital teams must be knowledgeable about the MCI recovery process. Most hospitals have an emergency operations plan and protocols that address mass casualty incidents. However, studies have demonstrated that there are knowledge gaps in physicians and that staff do not receive consistent education on this topic. (9) Fatigue and depression are common consequences for staff, especially when CSC have been invoked and not every patient can be saved. The whole cycle of preparation involves mitigation, preparation, response, and recovery. Are you prepared? Is your department prepared? Will you be ready?

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Historic Discussion, from page 1

central nervous system is at a much lower stage of stability, and may the more readily be permanently injured by unpleasant experiences during early life than later on. And the psychologists have pointed out how an improper mental stimulus, a fright, or some painful experience, may make such a mental impression on a child as subconsciously to affect him throughout the whole of his life....

We should use every means at our disposal to be as light and gentle as possible, to encourage the child, and to use only those procedures which will prevent the little patient taking fright or in fact suffering any unpleasantness that can be avoided. No time, patience or trouble should be spared to make the induction of anesthesia as little disagreeable as possible, and to persuade the child to enter into that state of ease and calm which will prevent the occurrence of unpleasant memories when the anesthetist's ministrations come back to his mind after consciousness has returned. And so it should be with the preparation of the patient. The preliminary administration of atropine, when ether is subsequently to be given, is an essential. With adults this is ordered in the form of a hypodermic injection; fortunately this hypodermic injection is unnecessary when the patient is a child, as atropine sulphate, taken by mouth, is equally efficacious in the proper dosage during the earlier years.

Surely for the child it must be a bad beginning to the big adventure of an operation that a... strange nurse should make an assault by puncturing him with a hypodermic needle...

Fortunately, the old fetish of purging before operation has been entirely abolished, I think in all quarters; and the even more unpleasant custom of giving an enema is no longer in vogue; both procedures having passed into oblivion. Also, the old method of starvation has given way to the more rational practice of administering glucose for some hours preceding the operation. So now the anesthetist goes to the child, who is neither weak nor in an emotional state from starvation and purging, nor already in a state of fright caused by the recent puncture of a hypodermic needle. Thus, his task has become in some ways an easier one than formerly.

Now our aim is to induce anesthesia pleasantly; to persuade the child to "take" the anesthetic voluntarily; and, when once he has begun inhalation, to induce unconsciousness as rapidly as possible, of course so far as is compatible with absolute safety. The best means at our disposal to effect this desirable result is the ethyl chloride-ether sequence, and I most strongly urge this practice as being the least unpleasant for the child, as effecting the most rapid method of reaching the unconscious state, and as being wholly

and entirely safe in the hands of an expert anesthetist. Why ethyl chloride has not been more extensively used in this country I cannot understand. I can say emphatically that it is entirely safe when properly administered; that is to say, when that one necessity for all inhalation anesthetics is complied with-- a free airway.

Lastly, the children recover from the anesthetic more quietly, and sleep longer and more peacefully, after the narcosis has worn off, when a sedative is given per rectum. For a child of ten years of age, potassium bromide 20 gr. and aspirin 10 gr., in half a pint of normal saline which contains 5 per cent of glucose, should be given slowly per rectum before consciousness returns, as soon as the child is put back to bed."

Dr. Sington's observations are more than quaintly historic commentary. They demonstrate the fundamental beliefs on which the specialty of pediatric anesthesiology is founded: consider the emotional well-being of the child just as much as the physical, cause no undue distress, and focus on safety. These principles still guide us today.

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The Arts

Pediatric Anesthesia

By Jaikumar Rangappa MD, LTC
Retired Anesthesiologist
Hampton, VA



Dr. Jaikumar Rangappa

It has been a very ancient tradition
New-born male to get circumcision
Done by priests without anesthesia
In a religious Arabia all way to India.

20th century doctors felt the pain
Helped infants & tackled the bane
Using a local anesthetic Lidocaine
To numb prepuce and others train.

Soon Pediatric anesthesia was born
As a sub-speciality in ASA did dawn
Anesthesiologists to keep kids safe
Comfortable under knife ultra-safe.

With new monitors & Apgar score
As Anesthesia research did explore
Educated doctors & brought to fore
Continue to play with kids we adore.

With words of comfort, reassurance
Calm anxious parents in confidence
For child's safety and their wellness
A top priority held in every instance.

With a smallest dose of medication
Can bring a fighting kid to sedation
In experienced hands & dedication
Honest parent doctor conversation.

In sickness & in health we implore
Doctors, don't cause pain anymore
May Lord help all of us to do more
For life's pain that come ashore.

Let us all eliminate violence & gore
For children to sleep in peace & snore.

Pediatric anesthesia is a noble call
Ensures child safety in the OR hall
In all surgery complicated or small
And let children hold their own doll!

What Do You Want to Be When You Grow Up?

By Amy Luke, DO

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Dr. Amy Luke

I was one of those kids who always knew I wanted to be a doctor. What I didn't expect was that I'd still be asking myself this question well into starting my medical career.

My story is not unique. In fact, I have learned that many pediatricians find their way into anesthesia. As often happens, it was an anesthesiologist who encouraged me to consider pediatric anesthesia as an alternative to a fellowship. It was something I never would have considered on my own.

Why would I want to do a second residency? The traditional track of medical education doesn't make these transitions easy. Especially once you've left formal training. Instead, the well-worn pathway is to fellowships or other less formal certifications. Interestingly, anesthesia attracts many people who have done prior residencies. I have a feeling it's because anesthesiologists do an excellent job genuinely promoting their field. That was certainly my experience from the outside looking in.

I enjoyed almost every specialty during medical school, especially working with kids and their families, so I decided to commit to a primary care specialty. I remember feeling like I needed more time to decide. I knew so little about pediatrics, but there wasn't time, so I went with my gut. I see this in many of the students I work with today. Particularly those who have had their clinical time affected by COVID.

Unless you have had a prior career in the medical field, the undergraduate and medical school experience offers only a glimpse into future career options before you must decide on a specialty. Broadly speaking, I think the solution is more clinical time; specifically,

Unless you have had a prior career in the medical field, the undergraduate and medical school experience offers only a glimpse into future career options before you must decide on a specialty.

more elective time before residency applications are due.

While changes to curriculums are being made, medicine is continuing to expand at a rapid pace. Choosing to be a doctor is only the tip of the iceberg. Internationally, medical schools are six years. Imagine having two additional years of clinical time to foster relationships with mentors and commit more confidently to a specialty. Right now, this happens during residency. By then, it's seemingly too late. Even fellowship application deadlines often force premature decisions.

In college, I joined the Air Force as a part of their Health Professions Scholarship Program, so I completed a military based residency in San Antonio, TX. My favorite place as a resident was the cardiac ICU, so I applied for a pediatric cardiology fellowship. As fate would have it, the fellowship opportunity did not pan out and I opted to move to a small base in Japan as one of three general pediatricians.

Although I didn't know it at the time, the community of medical staff and physicians that surrounded me in Japan helped guide my eventual decision to pursue anesthesia.

Fortunately, the obstetrics department was busy, so I worked closely with my anesthesia colleagues who quickly became good friends. They helped me stabilize sick neonates and manage the few critically ill infants and children I took care of outside of the clinic. It helped me establish myself as a physician. These relationships were my

lifeline. They didn't call it mentoring, but that's what it was.

After Japan, I moved to Germany to complete my final two years of military service. The transition out of the Air Force felt like an opportunity to do something new. I know many military physicians who have made various career changes during this time as well. Without a doubt, the military commitment gave me a perspective on where I enjoyed practicing medicine and emphasized the importance of investing in interprofessional relationships. It provided me with a foundation that has helped me survive the world of adult medicine after seven years of pediatrics.

I did miss being a part of an academic center, and I've found the perspective of medical students and new residents refreshing. It just further substantiates the importance of relationships in healthcare.

Many training programs are trying to foster mentoring. In my experience, forming them naturally works best. But naturally doesn't mean passively. It requires an active investment of our time and energy.

Finding people who have challenged and encouraged me in my medical career has sustained me through endlessly long shifts, jobs I didn't necessarily enjoy, and the tedious bureaucracy of medicine. Good mentors have become great friends and have certainly helped me find a job that makes it easy to get out of bed every morning. And that's saying something in anesthesia.

It may also be the secret to preventing further burnout in our profession. The path is otherwise long and arduous. As I've started my second residency in anesthesia, with plans to pursue pediatric anesthesiology fellowship, I've started to view medical education as less of a destination.

The experiences are cumulative. It's a perspective I hope more medical students, residents, and even practicing physicians consider because it provides the freedom to change what you're doing.

If I could do it over again, I'd do everything the same. I would be a doctor, a pediatrician, and an anesthesiologist.

Two Journeys to Pediatric Anesthesia Fellowship

By Kathryn Black, MD,
and Hollie Humphrey, MD

CA-3 Anesthesiology Residents

University of Virginia, Charlottesville, VA



Dr. Kathryn Black

From cardiac to regional to chronic pain, there are numerous options for fellowships in anesthesia. What draws graduating residents to pursue further training in pediatric anesthesia?



Dr. Hollie Humphrey

Two graduating anesthesia residents from the University of Virginia share what motivated them to pursue pediatric anesthesia fellowship. Dr. Kathryn Black will attend fellowship in pediatric anesthesia at Boston Children's Hospital and Dr.

Hollie Humphreys will complete her fellowship at Vanderbilt Children's Hospital. Both share their journeys below.

Dr. Black

My inspiration to pursue pediatrics came from my mom, who worked as a nurse practitioner in Palliative Care, at Cincinnati Children's Hospital. I was so proud of the comfort she gave children and families during the most challenging times of their lives.

Growing up, I took advantage of every opportunity I could to work, shadow, or volunteer at Cincinnati Children's Hospital. The hospital itself was mesmerizing. Every hallway was bursting with colorful murals and thoughtful details. It wasn't just doctors, nurses, and patients traversing the main thoroughfares, but also therapy dogs, magicians, and child life specialists.

The mission of the hospital was clear:



to nurture the child's emotional and social wellbeing as well as their physical health. This holistic approach resonated with me and I knew I wanted to work in a hospital like this someday.

Throughout medical school, I continued to feel most at home on teams taking care of children. Additionally, I found I loved the fast-paced world of anesthesiology. In my anesthesia residency, I found mentors in the pediatric anesthesia faculty who shared my values and encouraged me to pursue my interest in pediatric anesthesia. They invited me to journal clubs, encouraged me to attend conferences, pushed me to conduct research, and shared their decades of knowledge and experiences.

In large part because of their mentorship and encouragement, I secured a pediatric anesthesia fellowship position and I am well on my way to achieving my dream of becoming a pediatric anesthesiologist.

Dr. Humphreys

In contrast to Dr. Black, never in a million years did I think I would choose to work with children as a career. I distinctly remember thinking, when I finished my pediatric rotation in medical school, that children were scary and unpredictable. They could run the gamut of crying babies to nose picking tykes to moody teenagers. Let's not even get started on the additional variable of their parents.

So, coming into residency, pediatrics was nowhere on my radar as a potential option for fellowship, but I think we can all agree that residency can change and teach you a lot about yourself.

During residency, I got to focus on the

elements that made pediatric anesthesia nuanced and uniquely different from adult anesthesia. I learned that adults can also run the gamut of crying, nose-picking, and moodiness just as easily as their younger counterparts, but it is certainly not as cute.

I have found that pediatrics still allows me to find creativity and joy in the art of anesthesia. The care I provide to pediatric patients truly can affect them for the rest of their lives, and I find value in being able to make an impactful difference.

As I reflect on influential experiences that led me to a career in medicine, surprisingly or maybe unsurprisingly, many of them involved being around and working with children.

My first exposure to the healthcare system was volunteering at Vanderbilt Children's Hospital as a high school and college student. While spending time with these patients, I was amazed by how resilient and positive they were, despite spending so much of their time in the hospital.

Throughout college, I was involved in autism research in the pediatric population and as a graduate student, one of the most impactful lectures I have ever listened to was on autism as it related to identity in children.

In medical school, I regularly volunteered at the Target and Ronald McDonald houses for families whose children had long stays in the hospital. I even took part in providing teaching sessions on nutrition to local children through the Children's Hospital.

Despite my early reservations, it seems that I was destined for a career in pediatric anesthesia.

What are the Indications for Preoperative Blood Transfusion and Children with Sickle Cell Disease?

Reprinted with permission from the Summer 2022 issue of Society for Pediatric Anesthesia News

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Chair Quality and Safety Committee



Dr. Rahul Baijal



Dr. Priti Dalal



Dr. Megha Kanjia

Sickle cell disease (SCD) is an autosomal recessive hematologic disease that involves a defect with a substitution of valine for glutamic acid on the beta chain of hemoglobin with approximately 2-6% percent of the population of African, Mediterranean, and Asian descent affected.

SCD occurs in about one out of every 365 Black or African-American births.¹ Individuals who are homozygous (HgbSS) have the disease while those who are heterozygous (HgbAS) are carriers. Red blood cell (RBC) damage can inhibit blood flow and cause ischemic injury, producing the symptoms of sickle cell crisis.

Children with sickle cell disease are at increased risk perioperatively for these complications. Inter-disciplinary team management (anesthesiology, hematology, surgery and nursing) for pre-operative optimization

TABLE 1: Risk stratification based on disease severity and type of surgery	
Severity of SCD	Type of Surgery
<p>Low-risk SCD: Hgb > 9-10 g/dl, SaO₂ > 94%, < 2 acute chest events in last 3 years, No hospitalization for SCD in last 6 months</p> <p>High-risk SCD: All patients who do not meet criteria for low-risk</p>	<p>Low risk surgery: For example, Magnetic resonance imaging, Inguinal hernia repair, Circumcision, Myringotomy tubes, Dental restorations</p> <p>Moderate risk: For example, Tonsillectomy, Cleft palate/cleft lip repair, Laparoscopic procedures, such as an appendectomy</p> <p>High risk: For example Intracavitary procedures (Intracranial, Intrathoracic, Intraabdominal), Major orthopedic and plastic surgery (Scoliosis repair, Free flap, Organ transplant</p>

TABLE 2: Plan for Low-risk SCD	
Low-risk disease AND low-risk surgery	No transfusion needed
Low-risk disease AND high-risk surgery	Transfusion may not be necessary. Consider on a case-by-case basis. If needed, goal of transfusion is hemoglobin of 10 – 11 g/dl. Avoid hemoglobin > 12 g/dl.
Low-risk disease AND high-risk surgery	Transfuse with goal of hemoglobin S < 30%. If possible, administer a series of simple transfusions with or without phlebotomy if surgery is elective, or exchange blood transfusion if surgery is urgent.

TABLE 3: Plan for High-risk SCD	
High-risk disease AND low-risk surgery	Transfusion may not be necessary
High-risk disease AND moderate-risk surgery	Transfuse to hemoglobin goal of 10 – 11 g/dl. Do not exceed hemoglobin 12 g/dl
High-risk disease AND high-risk surgery	Transfuse with goal of hemoglobin S < 30%. Administer a series of simple transfusions with or without phlebotomy if surgery is elective, or exchange blood transfusion if surgery is urgent

and peri-operative care is the key.

The goals of anesthetic management entail minimizing sympathetic stimulation, hypothermia, hypoxemia, acidosis, and hypovolemia.² Routine preoperative preparation may involve red blood cell transfusion to improve the oxygen carrying capacity of blood and dilute circulating sickle hemoglobin containing RBCs.

There is some debate with regards to indications for red blood cell or exchange transfusion in these patients.^{3,4} The decision to transfuse depends on the risk categorization based on the severity of SCD and type of surgery (Table 1).^{5,6,7} The recommended plan based on these considerations is as shown in Table 2 and Table 3 for Low-risk SCD and High-risk SCD respectively.⁴

Take Home Points:

- In children with SCD transfusion

recommendations may be guided by the disease and surgery category

- Multi-disciplinary team management is essential for optimal quality of care in children with SCD presenting for surgery

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Quality and Safety Corner: Can ECPR Provide a Rescue for Your Next Patient?

Reprinted with permission from the Fall 2022 issue of Society for Pediatric Anesthesia News



Dr. Stephanie Ahn



Dr. Alina Lazar



Dr. Premal Trivedi



Dr. Rahul Bajjal



Dr. Joanna Rosing Paquin



Dr. Megha Kanjia

By Stephanie Ahn, MD; Alina Lazar, MD; Premal Trivedi, MD; Rahul Bajjal, MD; Joanna Rosing Paquin, MD; and Megha Kanjia, MD

What is extracorporeal cardiopulmonary resuscitation (ECPR)?

E-CPR is defined as the rapid deployment of venoarterial extracorporeal membrane oxygenation (ECMO) either during conventional CPR or within 20 minutes of return of spontaneous circulation (ROSC).¹

How does ECPR play a role in resuscitation?

ECPR is associated with improved survival in the subset of patients with cardiac arrest refractory to conventional CPR.^{2,3} Its objectives are to provide cardiopulmonary support, minimize ischemia-reperfusion injury, and serve as a bridge to therapy or recovery.¹ Most pediatric ECPRs occur following an in-hospital cardiac arrest (IHCA), and the majority of ECPR recipients are comprised of patients with heart disease.⁵

Importantly, ECPR is most effective when deployed in the context of a clear, effective, and well-rehearsed protocol.¹ Pediatric anesthesiologists should be aware of the specifics of such protocols within their institution, and consider defining the process should one not already exist for the perioperative environment.

Patient selection for ECPR

While criteria for ECPR candidacy remain under investigation, outcomes data suggest that certain patient-specific factors can influence survival.^{1,5} The below table lists

Factors associated with improved outcomes	Factors associated with worse outcomes
Witnessed cardiac arrest ¹	Unwitnessed cardiac arrest ¹
Presence of a reversible condition (electrolyte abnormality due to transfusion or tumor lysis) ¹	Pre-ECPR renal injury ⁵
Primary cardiac disease or cardiac pathology that limits the effectiveness of conventional CPR (severe aortic stenosis, massive pulmonary embolism) ¹	Non-cardiac disease ^{1,5}
<i>*Some with terminal pre-existing disease may also be candidates for ECPR as a bridge to definitive therapy. Examples include patients in heart failure awaiting heart transplant, or the child with end-stage pulmonary hypertension awaiting lung transplant.</i>	

some of these factors.

When to initiate ECPR?

- The SPA's Pedi Crisis Critical Events Checklist⁴ recommends considering the initiation of ECPR as the last resort in numerous crisis situations. However, as protocols for ECPR are institution-dependent, there is wide variation in practice regarding when ECPR is activated, with some using CPR length and others using a specified number of rounds of resuscitation.⁵
- As ECPR is deployed in the setting of refractory arrest, this condition is generally defined as an arrest that persists despite continuous CPR lasting 10–30 minutes or three attempts at defibrillation.
- There is no consensus on optimal timing for ECPR activation. Additionally, there is no consensus on optimal timing from arrest to initiation of ECMO.¹ One systematic review found a mean time from arrest to cannulation was 43 minutes.³ A common goal is to establish flow within 30-40 minutes of ECPR activation.¹
- These benchmarks may be influenced by

a significant decrease in survival seen when ECMO is achieved after CPR > 40 minutes.^{1,5}

Elements for improved outcomes in ECPR¹

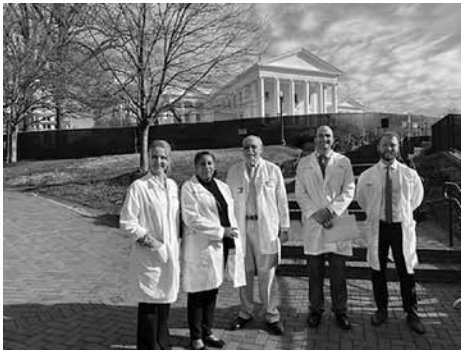
1. Appropriate patient selection
2. Expert team organization and regular training/simulation
3. High quality CPR with minimal interruptions
4. Debriefing each event and examining metrics for improvement

Considerations for an institutional ECPR protocol

1. Organization of expert team: CPR team, ECMO team, surgeon, anesthesiologist, ICU team, OR team, with mechanisms for rapid notification
2. Rapid notification/deployment of team: 24/7 availability
3. Equipment: adaptations based on patient age and size given that circuits, cannulas, and the need for blood vary based on

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White Coats on Call



Dr. Brooke Trainer, Dr. Sharon Sheffield, Dr. Larry Mitchell, Dr. Alex Will and Dr. Jack Craven visited the General Assembly on Tuesday, January 24, 2023 for White Coats on call. Anesthesiologists in their lab coats joined other physicians from the Medical Society of Virginia to discuss key healthcare issues with their representatives.

ECPR, from page 13

- patient height and weight
4. Location: designated sites for cannulation

Take home points

1. ECPR is defined as the rapid institution of ECMO during conventional CPR or within 20 minutes of ROSC without ongoing compressions.
2. ECPR can be considered for refractory cardiac arrest when the conditions are considered reversible and the period of no flow/no chest compression time is brief.
3. Though it remains under investigation, there are some patient-specific conditions to consider for ECPR candidacy.
4. When designing an institutional protocol for ECPR, consider availability of resources and rapid mobilization of those

resources.

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Pediatric Cardiac Catheterization: What's Best in Anesthesia?

By Lyn Wells, MD
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Dr. Lyn Wells



Dr. Ruchika Sharma

In 2016, Odegard, et al (1), published an expert consensus statement stating that only pediatric anesthesiologists with formal training in pediatric cardiac anesthesia should provide anesthetic care to patients in the pediatric cardiac catheterization laboratory (cath lab). This recommendation garnered little support and was even contradicted (2,3,4). The vast majority of pediatric cardiac anesthesiologists agreed that general pediatric anesthesiologists were capable and qualified

to provide safe anesthetic care for pediatric patients in the cath lab, as has been the practice for many decades.

In response to this statement, at UVA, a quality audit by the pediatric cardiac anesthesiologists, pediatric cardiac surgeons and pediatric cardiologists was undertaken to risk stratify case severity, based on our institutional outcomes, so scarce resources, such as pediatric cardiac anesthesiologists, could be put to best use.

This quality audit resulted in the creation of a “traffic light system” to guide resource allocation. Various patient and procedure characteristics are entered into a standardized form (appendix A) by the interventional cardiologist at the pre-procedure visit. Based on data entered, a scoring system shows the patient as low risk “green”, medium risk “yellow”, or high risk “red”. Examples of low-risk patients include asymptomatic, post-heart transplant patients coming for surveillance

Appendix A

right-heart catheterizations and biopsies. Medium-risk patients include non-critical pulmonary stenosis for balloon angioplasty. High risk patients include cyanosed patients with failing Glenn's who are known to have collaterals and significant pulmonary hypertension, and unpalliated single ventricle patients.

The scoring system is used in a number of ways. Firstly, it identifies patients who require one-on-one care from the attending anesthesiologist. Secondly, post-procedure disposition, e.g. PICU, can be arranged prior to the procedure. Thirdly, expectations for monitoring can be established ahead of time. An example of this is the failing Glenn patient mentioned above. In that circumstance, capnography and pulse oximetry are not accurate. Disastrous outcomes can occur if this is not appreciated. These patients require frequent arterial blood gases to guide therapy. Lastly, it allows for a discussion on whether or not a pediatric cardiac anesthesiologist is necessary.

An informal triage system had always existed, but the implementation of this consistent, data-driven approach has resulted in a more efficient service with fewer “surprises” and better outcomes. Patients are treated on a case by case basis with matched resources.

The “traffic-light system” used at UVA is institutionally specific but can be adapted. Faroani et al (5) published a paper in 2016 describing a similar intervention. They used NSQIP-peds data to divide patients with congenital heart disease into 3 categories based on severity. In their study, patients in the middle group were 3 times more likely to die, and patients in the most severe group were 8 times more likely to die, when undergoing non-cardiac surgery than those in the

least severe group. In addition to local data, this paper may be useful in justifying staffing (sedation team v pediatric anesthesiologist v pediatric cardiac anesthesiologist), resource allocation, and the creation of an objective infrastructure to support children with congenital heart disease.

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About the Society for Pediatric Anesthesia

By Peggy P. McNaull, MD

President-elect,

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Frederic A. Berry Professor and Chair

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Charlottesville, VA



Dr. Peggy P. McNaull

Dr. McNaull is the Frederic A. Berry Professor of Pediatric Anesthesia. Fritz Berry, as he was known, was the first pediatric anesthesiologist to work at UVA and founded the division of pediatric anesthesia. He was

a trail blazer in his day and an active member of the SPA. His advocacy for the perioperative care of children was tireless. Sadly, he passed away last year.

The Society for Pediatric Anesthesia (SPA) was founded in 1986 to:

- Encourage research, education, and scientific progress in the field of pediatric anesthesia
- Advance the study of pediatric anesthesia
- Bring together physicians and other health professionals with an interest in pediatric anesthesia
- Serve as a forum for discussion of issues in the field of pediatric anesthesia
- Develop and encourage lifelong personal and professional relationships amongst practitioners with an interest in pediatric anesthesia
- Establish relationships with other organizations that have goals related to the advancement of research, education, and scientific progress in anesthesia and child health.

Over the past three decades, SPA has grown tremendously in size and impact. Now with over 3,500 members, the Society ascribes to the following mission, “The Society for Pediatric Anesthesia advances the safety and quality of anesthesia care, perioperative care, and pain management in children by educating clinicians, supporting research, and fostering collaboration among

Society for Pediatric Anesthesia



education • research • patient safety

The Society for Pediatric Anesthesia is an organization and community determined to meet the needs of its members and patients. We would love to hear from you if you would like to join or have an interest in learning more!

clinicians, patient families, and professional organizations worldwide.”



The Society is consistently delivering on its mission through a robust virtual and in-person education platform. Not only does the Society’s website contain a

wealth of information germane to the specialty of pediatric perioperative care and pain medicine, it also contains material for its members related to medical education, professional development, and wellness.

The site offers resources for patients and their families who may require anesthesia or pain management services. Each year the society hosts two meetings – one associated with the ASA in the fall and the other an independent three-day meeting in the spring. These meetings offer a tremendous opportunity for attendees to learn from national and international experts and to meet with a greater community of clinicians all working to advance the perioperative care of children.



One of the more exciting educational offerings new to the society is the Pediatric Anesthesia Article of the Day. This free sub-

scription, started by the late Ron Litman, is accessible by capturing the code in this paragraph. Three to four times per week the Pediatric Anesthesia Article of the Day sends subscribers a brief summary of new articles (and an occasional “classic” from the past) to keep readers up-to-date and to provide insights into the article’s findings and their meanings as evaluated by experts in the society.

An additional key piece of the Society’s mission is to support research relevant to pediatric perioperative care and pain. The greatest mechanism by which the society supports research is through the SPA Young Investigator Research Grant program. Each year, through the Patient Safety, Education and Research Fund, one or more researchers is awarded up to \$100,000 in grant funding to investigate basic science or clinical research questions, innovations in education, or quality and safety projects.

Another outstanding offering of the Society is the Pedi Crisis App. The Pedi Crisis 2.0 App is a free resource to support clinician responses to pediatric perioperative life-threatening critical events. The human factors design and functionality of the app were optimized for clinician use in real time during actual critical events, and can also be used for self-study or review. The app is available through the Apple App Store and Google Play. It is accessed every day by clinicians from around the world!

As the Society grew in its first two decades, it created two sub-societies, the Congenital Cardiac Anesthesia Society and the Society for Pediatric Pain Medicine. They were founded because of the rapid advancement of highly specialized knowledge in these fields, the great increase in the numbers of patients with these conditions, and the strong desire for collaboration and advocacy for infants, children, and adolescents with congenital heart disease and pain conditions respectively. Beyond these sub-societies, our members are invited to participate in a host of committees and special interest groups all focused on advancing SPA’s mission.

The Society for Pediatric Anesthesia is an organization and community determined to meet the needs of its members and patients. We would love to hear from you if you would like to join or have an interest in learning more!

Thirty Years of Pediatric Surgery: Evolutions and Revolutions

By Eugene McGahren, MD

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Dr. Eugene McGahren

Dr. McGahren's career in pediatric surgery spans 32 years. In this article, he reflects on some of the most significant changes and advances he has experienced during that time.

"Until the late 1980's, congenital diaphragmatic hernia (CDH) was considered a surgical emergency and repair was attempted as soon as possible. The main focus, in those early days, was to try to mitigate pulmonary hypertension by aggressive ventilation to correct hypercarbia and hypoxia at the expense of lung parenchymal injury and hemodynamic stability. Survival rates were poor.

Then two things became clear; the neonates themselves "select" for survival based on their own physiology (which has nothing to do with the surgery), and that permissive hypercarbia was not deleterious. Understanding permissive hypercarbia allowed for more gentle ventilation with lower lung morbidity and greater hemodynamic stability. The target ranges now are pH 7.2, preductal sats 85%, PaCO₂ 50 – 60 mmHg. ECMO and oscillator ventilation are used as needed to allow time for the neonate to "declare" his or herself and develop to a stage where surgical repair will be helpful.

As in all surgical fields, laparoscopic techniques have been used successfully in CDH repair but are reserved for patients with excellent physiology. Over the past few decades, survival rates have improved overall and the National CDH registry data sets show UVA has outcomes above the national average.

Hirschsprung's disease was originally managed with a colostomy formed at the level of the lowest ganglion cells followed by a



pull-through maneuver at six months of age. In 1995, Dr. Keith Georgeson published a paper describing a primary pull-through using a laparoscopic technique.⁽¹⁾ This avoids a colostomy, a second anesthetic/surgery, and laparoscopy reduces physiologic stress enhancing recovery. The Soave pull-through technique is the most commonly used.

Dr. Soave also described a management of omphalocele used today. In 1963, he published a paper describing how silver nitrate was used to prevent infection while the defect was allowed to granulate and epithelialize.⁽²⁾ The ventral hernia left behind can be closed electively. Unfortunately, his work did not catch on until it was repeated and published by Towne, et al, in 1980.⁽³⁾ If the abdominal cavity has formed sufficiently, primary closure is possible.

Gastroschisis repair has also evolved over time. Unlike with omphalocele, in gastroschisis the abdominal cavity is well formed. The limiting factor to replacing the bowel in the abdomen is bowel edema. Originally, within hours of life, neonates were brought to the operating room to have as much bowel put back into their abdomen as possible. Silastic sheets were used to fashion waterproof coverings over any bowel still outside. Surgical clamps were used to close the dead space in the sheets as the edema subsided and the bowel was able to re-enter the abdomen. At the same time, the umbilical stump was removed with the intention of reducing infection risk.

The advent of commercially made silastic

silos with a spring-loaded opening revolutionized the management of gastroschisis. Now, the bowel is put into the silo, the spring is slipped under the edge of the abdominal wall defect and gravity, with gentle compression, is used to allow the bowel to return to the abdomen. No anesthetic is required. Additionally, once the bowel has returned to the abdomen, the umbilical remnant, which is now preserved, can be used to cover the residual abdominal defect. Again, no anesthetic or surgery is required. Once healed, the result looks very like a normal umbilicus.

In the 1980's the diagnosis of solid organ trauma required a laparotomy, and splenectomy for splenic laceration was common. When data relating to increased morbidity and mortality in asplenic individuals became appreciated, splenic preservation whenever possible became the goal. This took the form of avoiding surgery in stable patients with bedrest for 3 weeks. Return to normal activities took 1-3 months. With the advent of CT imaging, better assessment of spleen injuries was possible, and the bedrest times became shorter. Now they are the number of days equal to the level of injury plus one, and perhaps even less in some circumstances. In all things there are pros and cons. The pros were splenic preservation, avoiding surgery and anesthesia, and returning to normal activity sooner. The con was radiation exposure from repeated CT scanning to assess follow up healing. The concept of "As

Continued on page 18

Low As Reasonably Achievable” (ALARA) led to exploration of ultrasound imaging to achieve the same goals. Ultrasound and MRI are now preferred, if follow-up imaging is even needed.

Imaging has also revolutionized the management of acute appendicitis. No longer is it a surgical emergency with fears of death from peritonitis. Neither is it acceptable to have a 10% incidence of finding a normal appendix at operation just to be sure a “real” case is not missed. Today, ultrasound or MRI, if available, are preferably used to confirm the diagnosis. In those circumstances, the incidence of unnecessary surgery is approximately zero. Research exploring non-surgical management using antibiotics in selected circumstances is underway.

This is a shout-out to Dr. Bradley Rodgers, my mentor and friend, who created the Division of Pediatric Surgery at UVA. He introduced thoracoscopy to pediatric surgery by working with medical device companies to build the equipment needed to perform these surgeries safely and correctly. Reducing the morbidity of thoracic surgery coincided with exploration of non-surgical treatments for conditions such as empyema. The current APSA guidelines for the treatment of pediatric empyema recommend TPA administration via chest tube in the first instance. (4)

Pectus excavatum repair was once a major surgery with removal of each abnormal costochondral cartilage, days of bedrest post-operation, and a long recovery time. Now a metal bar is inserted under the skin against the bony skeleton and across the defect. Over time the bar lifts the defect forward, similar to the way braces move teeth over time. After about 3 years, remodeling has occurred and the bar is removed. The surgery is minimally invasive utilizing 2 small incisions on either side of the chest. Recovery is quick and pain is easier to treat and less debilitating.

The approach to cloacal exstrophy has also been revolutionized. In the past, as part of the surgical repair, the testes in male children were removed and individuals were raised as girls. Over time, appreciation for



This is a shout-out to Dr. Bradley Rodgers, my mentor and friend, who created the Division of Pediatric Surgery at UVA. He introduced thoracoscopy to pediatric surgery by working with medical device companies to build the equipment needed to perform these surgeries safely and correctly.

the autonomy of children, personhood, and the right to self-determination have evolved. Now society and medicine agree that this approach is flawed. Orchidectomy and gender re-assignment are no longer performed. These children are now managed with multi-disciplinary teams focused on their physical, emotional, and social wellbeing.

The concept that data bases and standard-

ization would improve survival in children with solid tumors began in 1960 with the National Wilms' Tumor Study Group (affectionately known as “nitwits”). It was joined by the Intergroup Rhabdomyolysis Study, the Children's Cancer Study Group, and the Pediatric Oncology Group. The amalgamation of these entities in 2000 formed the national Children's Oncology Group which still operates today, and which has improved survival and quality of life outcomes for thousands of children.

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Legislative Update

By **Lauren Schmitt**
Commonwealth Strategy Group

The 2023 Virginia General Assembly session adjourned on Saturday February 25th and it was an excellent session for the House of Medicine!

The legislature adjourned but did not complete their work on a final conference budget. The House and Senate could not come to an agreement on how to handle the Governor's proposed tax increases. Instead, they passed a "skinny budget" which only included funding for urgently needed items such as the "rainy day fund" and correcting a financial miscalculation that would have cost schools millions of dollars. The Chairs of Senate Finance, Senator Barker and Senator Howell, and the Chair of House Appropriations, Delegate Knight, said they will continue to meet and negotiate a regular budget. We are hopeful we will see a regular budget in the next few months. However, the legislature does not have to pass a budget in an odd year because they can just use the two-year budget they passed during the 2022 legislative session. If they do negotiate a compromise budget, it then has to go to Governor Youngkin for his amendments or signature. There's a chance that the Governor could amend it if he is not pleased with what the legislature sends him. The upcoming November elections should place some extra pressure on everyone to come to an agreement.

The only thing in the budget that majorly impacts VSA is potential language regarding certified anesthesiologist assistants (CAAs). As you know, INOVA introduced legislation this year to licensure CAAs. They ended up striking the bill but indicated they want to try again next year. Instead, they had language put in the proposed Senate budget to start the regulatory process for licensure. This is essentially to save time, so that if a bill passes next year, they will have already started the administrative procedure at the Department of Health Professions. The Virginia Association of Nurse Anesthetists opposed the bill and also opposes the budget language. Once we have a final budget, we will let you know if it was included or not. Regardless, we know they are coming back with a bill next year to licensure CAAs.

Our biggest focus this session was regarding Certified Registered Nurse Anesthetists (CRNAs). HB 2287 would have allowed



CRNAs to practice without the supervision of a doctor. We had been anticipating this bill for quite some time and in preparation, had meetings with legislators over the last two years to educate them on the importance of a physician-led anesthesia care team. We were thrilled when the patron of the legislation decided to "strike the bill" instead of giving it a legislative hearing. This was a huge win for us, but we know they will also be back next year with this bill or similar legislation. Our work on this issue will only continue!

Another victory this session was the defeat of HB 2183, legislation that would have allowed nurse practitioners to practice autonomously immediately upon licensure. Once they realized that that was bill was not going to pass, they changed it to two years. Fortunately, we were able to defeat that version of the bill. As a result, the current law is still in place. A nurse practitioner must have five years of clinical practice before they can practice autonomously.

We were also thrilled to see the passage of HB 1573 and SB 970. These bills will require the Department of Health Professions to amend their applications for licensure to change the mental health question. This will help reduce the stigma that currently exists for healthcare practitioners to seek mental health treatment.

Another big win was the passage of HB 1835, which increases legal protections for healthcare providers outside of the hospital against verbal threats.

This was a successful legislative session for us, but our work continues as we prepare for the upcoming November elections. All 140 seats in the legislature are up for re-election.

We are also in a unique place in Virginia political history, where an unprecedented number of legislators are retiring or not running again. Out of the 40 seats in the Senate, five incumbents announced they will not seek re-election. There are also several Senators who may lose their election in November due to redistricting. In the House of Delegates, 25 of the 100 Delegates are either not seeking re-election to the House or they are running for the Senate. So what does this mean for us? The 2024 Virginia General Assembly will include many new faces and look very different than 2023. None of the new Senators and Delegates will be familiar with our issues or understand the importance of a physician-led anesthesia care team. We will essentially be starting over on this issue and treating it like it hasn't been heard before. This will be an extremely critical time to educate new legislators and build new champions for healthcare policy.



Now is the time to contribute to our VASAPAC. A strong and robust political action committee will enable us to meet and engage with all of the new and returning legislators.

Dr. Zach Elton and Dr. Henry Wilson Elected to Lead VSA's Resident and Fellow Section



Dr. Zach Elton
President, VSA Resident
and Fellow Section



Dr. Henry Wilson
Vice President, VSA
Resident and Fellow Section

Congratulations to Dr. Zach Elton from the University of Virginia to the position of President and Dr. Henry Wilson from Virginia Commonwealth University to the position of Vice President for the 2023-24 VSA Resident and Fellow Section!

They both bring unique experiences and perspectives to the table and we are looking forward to their contributions to the VSA! Allow us to introduce our rising leaders to VSA members:

VSA RFS President

Dr. Zach Elton is a CA-2 at the University of Virginia. He grew up in Roanoke, VA. He attended William and Mary college for undergrad then Wake Forest for medical school. While at Wake Forest, his interest in anesthesiology began after exposure to the operating room. He enjoyed the physiology and procedures as well as serving as an advocate for the patient in the operating room.

One day, while he was discussing this with one of his attendings at Wake, she asked, "what about advocating for the field of anesthesiology and all of our future patients?" Later that year, he attended ASA 2019 as a North Carolina medical student delegate and it was clear he was hooked!

After an incredible talk from Dr. Jerome Adams, he was inspired and knew advocacy was something he wanted to incorporate into his career. In 2020, he moved back to Virginia for residency at UVA. He has been able to continue his passion for physician advocacy at the state and national levels with this society, the Medical Society of

As president of the resident component of the VSA, Dr. Elton plans to focus on enhancing resident education on advocacy to improve resident involvement in our state and national societies.

Virginia, the ASA Legislative Conference in Washington DC, and the ASA Annual Conferences.

Each time he attends a legislative event, he is reminded how little is known about our field by some people in powerful positions, and that misconceptions of our profession remain prevalent. The idea that anesthesiology is simply giving medication to drift a patient off to a natural sleep persists.

He understands that many do not know of our critical roles throughout the hospital not only in the operating room, but also in critical care, obstetrics, and chronic pain, just to name a few. Anesthesiology is complex, and to give patients optimal care, an anesthesiologist must be present. He sees this daily in residency, and enjoys advocacy because he loves talking about our profession and why we are such valued physicians in the hospital.

As president of the resident component of the VSA, Dr. Elton plans to focus on enhancing resident education on advocacy to improve resident involvement in our state and national societies. Unfortunately, in many residency programs, advocacy is not something that is mentioned. Others may just have a single lecture on it. Dr. Elton believes this limited exposure to advocacy is not enough for residents and fellows to understand why or how to advocate for our field.

As residents, our focus is on taking care of patients, passing board exams, and getting enough experience clinically to become an

adept anesthesiologist. These attributes and skills are attained to achieve safe patient care. Dr. Elton believes advocacy can appropriately be added to this list as our role is essential to patient well-being.

He believes residents need more exposure to the legislative process and need to understand that those who license physicians and other providers to practice may not have medical backgrounds, and therefore will not see and understand the medical system as we do. Advocacy will continue to be an integral part of our field, especially to those early in their careers.

Again, he believes this is a strong argument for resident involvement. VSA is grateful for his enthusiasm and looking to his leadership and increased involvement in our state society, and to organized medicine throughout his career!

VSA RFS Vice President

Dr. Henry Wilson, a CA-1 from Virginia Commonwealth University Health System was born and raised in Charlotte, North Carolina, but was fortunate enough to be able to travel fairly extensively in his teenage years. Because of this, he developed a passion for travel and exploring new cultures, so decided to do his undergraduate studies internationally. He attended the University of Oxford in England, where he obtained a bachelor's and master's degree in chemistry. With a 40% international student body, he was fortunate to meet people from all over the world and explore the differences in their cultures and practices.

While he enjoyed his studies in chemistry, he realized that laboratory work did not allow him to meet and learn from people, which he realized was also one of the reasons for his passion for travel. After discussing with some of his student colleagues studying medicine, he realized that the medical profession could be a perfect career for his goals and aptitudes. During his summer breaks, he shadowed several physicians which confirmed that this was what he wanted to pursue.

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Members in the News, from page 20

While he absolutely loved his time abroad and the experiences it brought, he had missed being close to family, so decided to return to America to attend medical school. Due to differences in the educational systems, he needed to take additional classes to be eligible to apply, so during this time he took additional classes and worked as a clinical research coordinator at Massachusetts General Hospital in Boston. In this role, he worked on clinical trials in new treatments for lymphoma and multiple myeloma and gained valuable experience in the structural and administrative components of conducting successful clinical studies.

He then decided to attend medical school at the University of Virginia. His wife (then girlfriend) was an undergraduate at the time, and through many summer and winter breaks spent visiting her, he had fallen in love with Charlottesville and the beautiful campus. There he obtained an excellent medical education and was also able to engage in their robust international health curriculum, which he had an interest in, given his time

This year, one of Dr. Wilson's main goals is to encourage his fellow residents to directly engage with the VSA, lawmakers, congressmen, and other relevant stakeholders to promote the specialty of physician anesthesiologists.

spent abroad.

Although he enjoyed all of his rotations in medical school, he knew after his first few days of his anesthesia rotation that it was the field he would pursue. He loved the complex, real-time interplay of physiology, anatomy, and pharmacology and felt his background in chemistry was well suited to this. Even more, he loved the operating room

environment and the ability to positively impact patients in very tangible way every day.

Now, as a resident at VCU, he is honored to become the vice-president of the VSA resident section. VSA is excited for him to get more involved and continue the mission of engaging fellow residents in pursuing leadership and advocacy. This year, one of his main goals is to encourage his fellow residents to directly engage with the VSA, lawmakers, congressmen, and other relevant stakeholders to promote the specialty of physician anesthesiologists. The earlier residents can get involved and also more educated about the environment in which they will be practicing, and their ability to influence that environment, the better they will be able to protect and improve our careers for the future.

Dr. Henry Wilson welcomes all residents and fellows to reach out and talk more with him during the coming year and looks forward to the opportunity to connect and keep the VSA resident section engaged in organized medicine!

SAVE THE DATES: September 16-17, 2023!



VSA Schedules POCUS Workshop

By Mike Saccoci, DO, MPH

Co-Director, VSA Region 5 – Southwest Partner, Anesthesiology Consultants of Virginia (ACV), Inc. Roanoke, VA

Did you know that diagnostic Point of Care Ultrasound (POCUS) training is among the hottest and most requested workshop topics among attendees at recent national anesthesiology conferences? In fact, a recent survey of the VSA membership in May of 2022 revealed that 53% of VSA members had “little to no experience with POCUS”, 55% agreed that they were “very likely to attend a regional POCUS workshop”, and 51% would travel “50 to 150 miles” to attend a POCUS workshop.

POCUS techniques have been successfully applied to rescue situations in

the OR, PACU, and ICUs, where rapid answers to a diagnostic dilemma can allow focused treatments to occur. When seconds count, why guess when you can just “look in and see”?

With this information in mind, an ad hoc committee of VSA leaders and educators formed to develop a POCUS workshop designed to meet the needs of anesthesiologists in practice across the Commonwealth. We are very excited to announce the inaugural POCUS hands-on workshop will be held in Roanoke at The Hotel Roanoke & Conference Center by Hilton, over the weekend of September 16-17, 2023!

A unique value to VSA members, this workshop will introduce participants to the hands-on techniques needed to allow them to acquire and interpret bedside POCUS in their practice. Topics such as Fo-

cused Cardiac Ultrasound, Lung and Airway Ultrasound, Gastric Ultrasound, and Focused Abdominal Ultrasound will be introduced. Rotating small group instruction will maximize participants hands-on opportunities.

On completion, this workshop will also enable the participant to meet the requirements of Part 2 and some Part 4 requirements for the ASA's Diagnostic POCUS Certificate Program as well!

So save the date and look for future announcements as registration opens via the VSA website in the coming months ahead!



ASA Board of Directors Summary

By Jeffrey A. Green MD, MSHA, FASA
ASA Director for Virginia
Boyan-Keenan Professor
of Anesthesia Safety
Virginia Commonwealth University
Richmond, VA



Dr. Jeffrey A. Green

I was fortunate to attend the March ASA Board of Directors meeting in Rosemont, Illinois on March 4-5, as your ASA Director from Virginia.

The board meetings are always very interesting, as I learn more about the inner workings

of the ASA and its governance, committees, and foundations. I also had the opportunity to interact with ASA officers, staff, and directors from across the US, where I shared the success story of our recent legislative victory in the General Assembly, and our fantastic public relations campaign to educate legislators, healthcare leaders and patients about anesthesiologists.

During this meeting of the board, the ASA piloted a new parliamentary process to facilitate the many reports that make up the bulk of the business of the meeting. Instead of hearing testimony during reference committees like at the House of Delegates in October, the board heard comments about the reports during informal consideration, a



American Society of
Anesthesiologists

parliamentary process meant to facilitate a more efficient and engaging meeting. While there were some snags, generally the process went well and was positively received overall by the board.

Several key items decided by the board included approval of new association management software to replace the ASA's sunseting system, approval of an ad-hoc committee to select the next ASA CEO to replace our retiring CEO, Paul Pomerantz, and approval of a new framework and process for the ASA to respond to current events and requests for public facing comments.

Additionally, there were many guidelines and statements that were reviewed and addressed that will be acted upon at the next House of Delegates in October.

ASA has been running a small budget deficit for the last several years and the markets have not performed well, so our strategic reserves have been decreasing. However, we heard from ASA's financial stewards and CFO that the financial positions are still very strong. Over the past decade, ASA has been taking advantage of market gains to sell investments and has wisely paid down the mortgage on our Schaumburg headquarters building and invested in long term infrastructure projects using those profits.

Despite headwinds, ASA's membership has increased over the last several years, bucking the trend in other medical special-

ties. The board also heard an update on an ambitious project to strategically improve non-dues revenue growth to help ensure financial longevity of the organization. Despite a deficit budget, the board approved some new expenses for a second ASA workforce summit, retaining a search firm to help find a new CEO, and replacing the new Association Management System.

Also at the meeting, the board received an update on the ASAPAC and our advocacy work. The ASAPAC and VSAPAC both need continued funding to keep our critical advocacy agenda in front of legislators.

One important session was a presentation and Q/A with the American Board of Anesthesiology President and Executive Director. Although closely aligned, the ABA and ASA do not formally interact very often, so this was a welcome strategy and feedback session for both organizations. Finally, the board members met in small groups to discuss and capture the current concerns of ASA members relating to anesthesia practice from the local perspective so the board can guide future strategy sessions to tackle real life problems seen in your practices.

The ASA board meetings in March, August and October are always open to all ASA members and I would encourage those that are interested in the organization to attend when possible.

As always, if you have any questions about the ASA or if the ASA could be doing more to help you in your practice, don't ever hesitate to contact me at Jeffrey.green@vcuhealth.org.

Contribute to the ASAPAC



For those that have contributed to the ASAPAC, we say, THANK YOU! If you do not see your name below, please consider a contribution. Help ASAPAC advance your profession at the federal and state level.

Moses Albert
Eric Albrecht
Ronald Bank
Alison Britton
Alexander Cardenas
Sarah Cardillo
Tiffany Chan
Mathew Ciurash
Joe Clark
Peter Cooper
Bryan Currie
Evan Dabreo
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Matthew Thames
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Brooke Trainer
Samantha Vizzini
Lynda Wells
Anne Wilhite
Granville Work
David Yarnall
Dezheen Zebari

Encourage Your Practice Administrators to Join VSA

VSA encourages your practice administrators to join! We have two options:

1

If 90% or more of a group's physician anesthesiologists are VSA Active Members in good standing and all members will be on a single group bill, the annual dues are FREE.

2

If less than 90% of a group's physician anesthesiologists are ASA Active Members in good standing, or the group does not participate in group dues billing, the annual dues are \$75.00

To have your practice administrator join, go to: <https://www.asahq.org/member-center/join-asa/educational>

- Click on Anesthesia Practice Administrators and Executives – Educational Member
- Click on the + sign next to the title
- The box that opens will contain full details and the membership rate(s)

Upcoming Issue Themes in the

v s a virginiasociety
of anesthesiologists
UPDATE

Summer 2023

**Life Beyond
Anesthesiology**
Submission deadline:
May 26, 2023

Fall 2023 Fellowships

Submission deadline:
August 18, 2023

Please send your story or feature ideas about your colleagues, your practices, or issues facing anesthesiologists to Brooke Trainer, MD, VSA Update Editor at brooke@vsahq.org

A global pandemic,
essential surgery, or
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VSA POCUS WORKSHOP

September 16-17, 2023 | Hotel Roanoke & Conference Center

Learn the hands-on techniques needed to allow you to acquire and interpret bedside POCUS in your practice!

- Focused Cardiac Ultrasound
- Lung and Airway Ultrasound
- Gastric Ultrasound
- Focused Abdominal Ultrasound
- Rotating small group instruction will maximize your' hands-on opportunities

On completion, this workshop will also enable the participant to meet the requirements of Part 2 and some Part 4 requirements for the ASA's Diagnostic POCUS Certificate Program.

