



LSA LOUISIANA SOCIETY OF ANESTHESIOLOGISTS
 Physician Anesthesiologists • Wisdom • Expertise
 Medical Student Committee

THE LSA NEWSLETTER

Medical Student Takeover Edition



Welcome

Jay Shah, Editor-in-Chief, MS4, UQ-Ochsner

I am pleased to present the 2021 Louisiana Society of Anesthesiologists Annual Newsletter – Medical Student Takeover Edition. Every year, medical students, and budding anesthesiologists, from schools across Louisiana come together to collaborate on an informative and exciting newsletter. As an author last year, and a chief editor this year, it has been nothing short of inspiring to see this project come together so wonderfully.

I would like to thank Dr. Joseph Koveleskie, our current LSA president for giving us the opportunity to put this together and guiding our efforts every step of the way. The work done by the LSA to advocate for the specialty and continue to advance anesthesia care in Louisiana is essential to the future of our practice. I hope this newsletter highlights the efforts of physician anesthesiologists across the state, as well as the efforts of our many advocacy leaders, to continue driving our field forward.

Earlier this month, in the midst of rising COVID-19 numbers, our state was hit with yet another challenge, Hurricane Ida. This has significantly affected not just New Orleans, but also the many Bayou communities across southeastern Louisiana. Please consider giving your time and support to these communities as they face a long road ahead to recovery. Louisiana remains resilient as ever. I have no doubt that, together, we will come back as we have many times before. You may find a list of organizations to donate to the right of this message.

On behalf of our medical student editorial team, myself, Madison Boudreaux, and Christian Lee, we hope you enjoy the newsletter. Please feel free to reach out if you'd like to be involved in this project next year!



IDA RELIEF Ways to Help

SECOND HARVEST FOOD BANK

Thousands have been impacted and displaced by Hurricane Ida. Every \$1 donated helps Second Harvest provide 4 meals to our neighbors facing hunger. [More information on Donating](#)

UNITED WAY OF SOUTHEAST LOUISIANA

United Way of Southeast Louisiana is here before, during, and after disasters. When a disaster strikes, your gift helps families get back in their homes, rebuild schools and businesses, and give our vulnerable neighbors the care they need. All proceeds will fund immediate relief efforts already underway and long-term rebuilding and community grants to partner organizations providing direct services to assist with recovery. <https://www.unitedwaysela.org/hurricane-ida-relief>

UNITED WAY OF ST. CHARLES

Hurricane Ida relief efforts in the Luling area. [Learn More](#)

WORLD CENTRAL KITCHEN

WCK's Relief Team was in New Orleans and immediately following the storm's passing, began preparing hot, fresh meals along with sandwiches and fruit for first responders and families impacted. The WCK Team continues to expand operations to reach more people in need across Louisiana. [More Information on Donating to WCK](#)

SALVATION ARMY

When disaster strikes, The Salvation Army is there to provide food, drinks, shelter, emotional and spiritual care and other emergency services to survivors and rescue workers. [Learn More](#)

EDITORIAL TEAM

Madison Boudreaux, Section Editor, MS4, UQ-Ochsner
 Christian Lee, Section Editor, MS4, UQ-Ochsner
 Jay Shah, Editor-in-Chief, MS4, UQ-Ochsner

STAY CONNECTED WITH LSA!

@LSA_HQ LSAHQ LSAHQ

LSAHQ.org



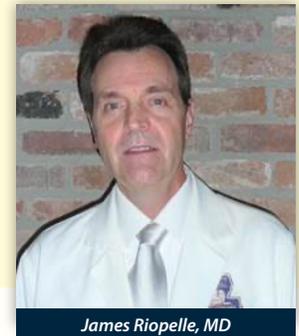
These real-life stories from physician anesthesiologists and patients demonstrate how these medical doctors are made for critical moments, using their extensive education and training to change and save lives.

Section Editor: Madison Boudreaux, MS4, UQ-Ochsner



Progression in the Field of Anesthesiology

Merica Vorachitti, MS4, UQ-Ochsner



James Riopelle, MD

I was able to interview Dr. James Riopelle regarding his journey into pursuing a career in Anesthesiology. Over the years he has taught numerous anesthesiology residents in Louisiana through LSU. He completed an internship at Sydney Hospital in Sydney, Australia after graduating from Emory University School of Medicine in Atlanta, GA to gain a different cultural experience. As a Psychology major in college, he considered a career in psychiatry but found that it was troublesome to make real progress at the time given the techniques and drugs in the 1970s. During his time in medical school, he described that few people were interested in Anesthesia as a career.

It was the field for people who did not quite fit in with the other specialties, "a place for the oddballs." Through authoring a paper for which he won best paper of the year in medical school through the Anesthesia department, he found that the people in the field were very welcoming and had a successful range of treatments with quick and reliably good results.

As technology progressed, he observed that death from human error had begun to decrease in the field with the incorporation of pulse oximetry, ultrasound for nerve blocks, and end-tidal CO2 monitoring.

Dr. Riopelle has worked with the underserved community at Charity Hospital while pursuing research projects and teaching new residents. He also ran the pain management clinic at Charity for years, but explains his interest stays with being a general anesthesiologist. Some of his most interesting projects have included introducing the bougie to numerous countries around the world by showing how it can be affordably created by using

plastic rods, utilizing a single wall puncture technique for central lines at Ochsner Kenner, as well as improving epidural techniques to reduce the risk of inadvertent dural punctures resulting in 400 consecutive epidurals by new residents which have not resulted in a wet tap.

He finds that a career in anesthesia offers the satisfaction of being able to obtain reliably good results for patients and the ability to pursue serious interest outside of the field of medicine, such as a family life, avocation, and participation in improving some aspect of the world.

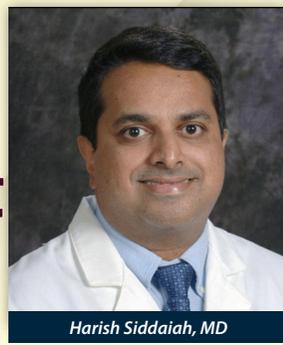
Some frustrations in the field can include rarely playing a starring role as part of the medical team and often having your work taken for granted by patients and colleagues.

Aside from his numerous interests in improving the field of anesthesia, Dr. Riopelle advocates for animal rights in Louisiana. One of his memorable contributions was being an instrumental figure in changing the law to make cock fighting illegal in Louisiana. He supports the Humane Society of Louisiana and the Jane Goodall Institute for protection of chimpanzees, gorillas, and orangutans. He has rescued up to 22 cats at one time. Although Anesthesiology may have once been a field for the eccentric, it is now a field with interesting people whose contributions to the community spans well outside of the hospital setting.



Made for the Moment

Zach Palowsky, MS4, LSU-Shreveport



Harish Siddaiah, MD



Adapting to COVID and Thoughts on the Future

Sava Turcan, MS3, UQ-Ochsner



Mathew Eng, MD

Dr. Harish Siddaiah began his medical training by attending medical school in India before doing research for 2 years at the Cleveland Clinic/Case Western University in Anesthesia. Following this, he completed his residency in Anesthesiology at what is now Ochsner LSU Shreveport before doing a fellowship at the University of Miami/Jackson Memorial hospital in critical care. He returned to Ochsner LSU Shreveport in 2015 where he has worked since then doing both anesthesia and critical care in the surgical ICU and neuro ICU. He was on the front lines of physicians in Louisiana when COVID-19 surged in March 2020. When asked to discuss the impact of the pandemic on working in the field of anesthesia, he had several points to make.

“We, as physicians, expected there to be a surge here (in Shreveport), and that’s exactly what happened,” he stated. “The hospital administration decided to move the healthy women and children to our St Mary’s campus. In doing so, we opened up three different ICU floors with beds to accommodate the COVID patients.”

The weeks to follow were also as he expected, at one point caring for 120 infected patients with close to half being intubated or on some form of respiratory support. At LSU-Shreveport, the anesthesiologists were doing all airways and lines for patients infected with COVID-19.

“We were noticing that there was a very small window for intubation in these patients before they would crash, mainly because of the tenuous cardiac and respiratory physiology.”

Dr. Siddaiah was an important member of the airway team during the worst surges of cases in Shreveport and developed rapid sequence intubation and PPE protocols for treating COVID patients after consultation with other faculty at LSU-Shreveport.

In addition to the airway team, Dr Siddaiah was a key player in developing ICU treatment protocols for COVID patients used at our institution. He worked to publish his observations on infected patients hoping that this would be helpful to physicians elsewhere seeing similar trends. COVID did not just impact his life at the hospital, as both he and his wife are practicing anesthesiologists with children at home. He would sleep isolated in the upstairs of his home in order to reduce the likelihood of exposing his family to the virus. The medical community is fortunate to have someone like Dr. Siddaiah working tirelessly to lead the care of some of our most vulnerable patients.

I was able to interview Dr. Mathew Eng about his background of medical training and his experiences during the COVID-19 pandemic. Dr. Eng graduated from the University of Texas Southwestern Medical School and completed his anesthesiology residency and fellowship in Acute Pain and Regional Anesthesia at Cedars-Sinai Medical Center in Los Angeles. Since 2016, Dr. Eng has served on faculty with LSU Health Science in New Orleans and is practicing anesthesiology at Ochsner-Kenner where he also serves as Chief of Surgery. During the pandemic, Dr. Eng worked with the emergency response team as many anesthesiologists switched from operating room management to providing care for patients on the floor and in the ICU.

On reflection, Dr. Eng placed great prominence on the efforts of the residents:

“We are very proud of the way the LSU anesthesiology residents stepped up during the COVID surge. Without complaint, they were on the front lines delivering ICU care and emergency operating room care of patients with COVID. The crisis brought back memories of Katrina for a lot of our faculty, and again, we saw residents and faculty rise to the occasion to serve in need”.

The adaptability of the LSU residents and anesthesiologists was greatly appreciated by Dr. Eng and many others.

Regarding the future of the COVID-19 pandemic, Dr. Eng states:

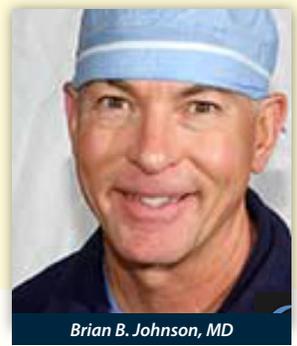
“The fourth wave is going to be challenging because many physicians have exhausted so much energy through the pandemic. However, we are prepared to take on the next phase of the crisis. We have recognized our expanded role as anesthesiologists in the operating room, resource management consultants by prioritizing surgical cases with limited resources, ICU physicians, and public health educators to hospital staff and the community”.

With over a year since the start of the pandemic, Dr. Eng recognizes the value of learned experiences and is cautiously optimistic for the medical field’s response to incoming challenges.



It's Been Very Rewarding to Take Care of Patients

Kevin Malone, MS2, LSU-Shreveport



Brian B. Johnson, MD

Dr. Brian B. Johnson is a Physician Anesthesiologist and assistant professor at Ochsner LSU Health Monroe Medical Center in Monroe, Louisiana. Dr. Johnson has been practicing for nearly thirty years in the field of anesthesiology. He states that in both college and medical school he really enjoyed physiology and that the practice of anesthesiology is a great mix between hands-on practice and physiology. He also enjoys the pharmacology that is involved with manipulation of the physiology and loves the biochemistry and procedures in this practice. He states that there have been some challenges working in anesthesiology during the COVID-19 pandemic within the last year and a half. In chatting with Dr. Johnson, I truly understood why he was made for this moment.

He explains that COVID-19 has "absolutely" affected his practice. Last year, routine elective surgeries were put on hold, and while it was not as bad this year, it still affected many outpatient procedures. Besides being busier, he explains that anesthesiologists have had to do more things outside of the operating room, and that has "certainly been a new challenge." Sometimes they do not have the full complement of equipment they are used to having in the operating room, requiring them to make do with what they have or carry equipment up to the floors. Dr. Johnson explains he has had to do many more intubations since the pandemic began, citing the initial phase being very busy. In particular, he states that he has ended up needing to do more fiberoptic intubations this year, due to the increased number of complex airways on the floors. Additionally, prior to COVID-19, he did not have to use the type of protective gear that is being used now. In some cases, especially early on, he explains they had to use an entire bunny suit. He also states that sometimes they had to use plexiglass boxes for intubations.

He states "fortunately, very few of us became COVID positive. For many of us, there was always that fear that we would contract the disease ourselves, but I am very thankful our staff has rarely contracted COVID."

Regarding working in Monroe, LA, Dr. Johnson explains "it has its own challenges." The obesity epidemic has affected the area tremendously. Many patients present for anesthesia and surgery with undiagnosed hypoventilation syndrome and obstructive sleep apnea. Though Dr. Johnson realizes that this problem is not unique to Monroe, there is a greater population of patients with these conditions and are especially affected by COVID-19.

He also reflects that "frankly, I am thankful that I have been able to participate in the care of our local population. The people here are great, and I love working in this town. My work here has been and continues to be very rewarding."

Why say "physician anesthesiologist?"

Physician Anesthesiologists

Made for This Moment

Register now

the **ANESTHESIOLOGY** annual meeting
SAN DIEGO | OCTOBER 8-12, 2021

Novel Technologies in Anesthesiology

Section Editor: Jay Shah, MS4, UQ-Ochsner



Augmented Reality and the Future of Medicine

Joseph Queen, MS4, UQ-Ochsner

Over the last 50 years, augmented reality (AR) has reshaped the way that people interact with the real world. From its use in interactive mobile games to its utilization in military combat training, AR is quickly becoming a mainstream medium for enhancing our real-world experiences.

The capability to seamlessly blend digital information with a user's sensory experience of the real world is groundbreaking for the medical field. With a market that's projected to reach nearly \$300 billion by 2025, it's no surprise that tech giants like Microsoft and Google have begun investing heavily in developing this powerful technology and its many potential applications.

One of the most exciting uses of AR technology in medicine is its application to healthcare education. By combining computer-generated image overlays with multiple sensory feedback modalities, AR facilitates an authentic method for learning while providing a safeguard in the event of any mistakes during training.

Augmented reality has proven useful in medical courses like anatomy, with some schools replacing cadavers with AR-assisted training. Moreover, it is being used to provide real-time feedback in training scenarios in order to optimize performance. In fact, McGovern et al. found that AR-assisted CPR training produced similar results to that of the gold standard CPR training protocols¹. At Ochsner Health System, medical students can utilize AR for a number of advanced training scenarios such as lumbar punctures and subclavian vein cannulations.

The future of AR in medicine is promising. As the technology improves, its uses will be further explored and will likely become part of standard patient care.

Imagine being able to visualize and assess a patient's internal organs without making an incision. How about performing a surgery on the other side of the world from the comfort of your own home? What was once regarded as fiction, AR technology is at the forefront of making applications like these a very real possibility.

Louisiana Society
of Anesthesiologists

Research Day

Register Here

VIRTUAL

October 21, 2021



Artificial Intelligence in Anesthesiology

Chris McKenna, MS4, UQ-Ochsner; Jared Ong, MS3, UQ-Ochsner

Artificial intelligence (AI) and machine learning (ML) have become a hot topic in various areas around medicine, particularly in the past year with the COVID pandemic highlighting the need for efficient, scalable healthcare. Improvements have been seen with AI, particularly in radiology, but what is its role in Anesthesiology and how can it be incorporated to deliver care safely?

The field of AI and ML are following the trends of tech and slowly integrating Deep Learning, which is the use of increasingly detailed hidden networks/filters to parse information and determine connections, mimicking how it is theorized that brains process information (Matava 2019). While an exciting prospect, it does pose some interesting questions on the ethics and safety of handing over vital functions to a machine. What follows will be a brief overview of the literature/technology available and what uses might be available.

AI and anesthesia took a leap forward in the last few decades with the introduction of the SEDASYS System—a computer assisted sedation system. While certainly not at the same level of AI, it operated within a specific set of parameters to assist with sedation during EGD and colonoscopy procedures. This was studied by measuring the time spent below a certain level of SpO2 and apnea events, with the SEDASYS system showing better outcomes within the parameters above (Pambianco 2011). Given the autonomous nature of this system, it was a proof-of-concept that has since been built upon with the inclusion of furthering monitoring modalities and increasing autonomy. Certainly, SEDASYS was extremely controversial and over time, it was shown that the system, in its original form, may not safely administer care to patients. However, it was a foundation for innovation and AI in anesthesiology.

Over the past five years, multiple groups approached these topics to explore what AI technology is available and possible applications to the current and future practice of Anesthesia. Hashimoto et al highlight the current applications of AI and the limitations within the practice of anesthesia. They found that low BIS, burst suppression on EEG, and low MAPs were associated with post operative mortality, but that the neural networks that are often utilized predicted awareness 66% of the time with 98% specificity (Hashimoto 2020).

One of the major criticisms of neural networks highlighted by this group is that it can help notify the clinicians with signs/predictions but cannot provide information as to how or the prediction was made—this highlights the need for transparency with these models.

While models are good at identifying correlations they are not great at determining causal relationships. That being said, AI is efficient and accurate at determining dose response curves, and the current technologies are optimized for maintaining medications.

AI in its current form can be utilized as an additional resource when planning for cases, with validated models being used in pediatric anesthesia to predict difficult airways, which are often difficult to assess during a pre-op exam (Matava 2020). These can also be utilized to augment clinical decision making, helping reduce the multiple streams of information into distilled forms.

As the field of Anesthesia evolves, new technologies are poised to address the needs of increasingly accurate and timely patient care. Although AI and ML are not necessarily new, their application to practice is still being studied. In AI and ML, there is undoubtedly great potential to improve the delivery and management of anesthesia. However, the literature shows we are not yet at the stage where machines can serve as surrogate decision makers for physicians. Rather, the analytic power and ability to gather large amounts of data are great tools to inform a physician's clinical decisions by providing a second, quantitative opinion.

Hashimoto, D. A., Witkowski, E., Gao, L., Meireles, O., & Rosman, G. (2020). Artificial Intelligence in Anesthesiology: Current Techniques, Clinical Applications, and Limitations. *Anesthesiology*, 132(2), 379–394. <https://doi.org/10.1097/ALN.0000000000002960> Matava, C., Pankiv, E., Ahumada, L., Weingarten, B., & Simpao, A. (2020). Artificial intelligence, machine learning and the pediatric airway. *Paediatric anaesthesia*, 30(3), 264–268. <https://doi.org/10.1111/pan.13792> Pambianco, D. J., Vargo, J. J., Pruitt, R. E., Hardi, R., & Martin, J. F. (2011). Computer-assisted personalized sedation for upper endoscopy and colonoscopy: a comparative, multicenter randomized study. *Gastrointestinal endoscopy*, 73(4), 765–772. <https://doi.org/10.1016/j.gie.2010.10.031> Wei, C. N., Wang, L. Y., Chang, X. Y., & Zhou, Q. H. (2021). A prediction model using machine-learning algorithm for assessing intrathecal hyperbaric bupivacaine dose during cesarean section. *BMC anesthesiology*, 21(1), 116. <https://doi.org/10.1186/s12871-021-01331-8>



Ochsner's AIG participates in first annual Augmented Reality Assisted Lumbar Puncture Simulation, Hologurgical Inc.'s ARAI System for Spinal Procedures - Augmented reality image overlay utilizing AR connected goggles



The Emergence of POCUS in Anesthesiology, Perioperative Medicine, and Critical Care

Vamsi Budur, MS4, UQ-Ochsner; Jay Shah, MS4, UQ-Ochsner

Point-of-Care Ultrasound (POCUS) is a new, more efficient bedside utilization of ultrasound for diagnosis and treatment of patients.

Providing anesthesia for some of the sickest and most complex patients can often be a challenge and innovations may help bridge the gap in patient evaluation in care. For anesthesiologists, POCUS is an important addition to the toolkit to better manage patients from pre-operative assessment through extubation. The idea behind this bedside utilization of ultrasound is to speed up the diagnostic process while optimizing the time and cost of patient care. In an era where healthcare costs continue to rise and better patient outcomes are not significantly associated with increased expenditure, the application of POCUS to anesthesia is a dramatic innovation which can help reverse these trends (3).

There are many different point-of-care utilizations for ultrasound. Some examples of this include Focused Assessment with Sonography in Trauma (FAST), thoracic POCUS, and cardiac POCUS. FAST is used in an emergency trauma setting to detect free fluid in blunt trauma (and occasionally penetrative trauma as well.) It can be used in conjunction with a thoracic POCUS exam, which can visualize a pneumothorax or pleural effusion in a trauma setting. Cardiac POCUS can be used to see wall motion abnormalities, valve function, and volume status.

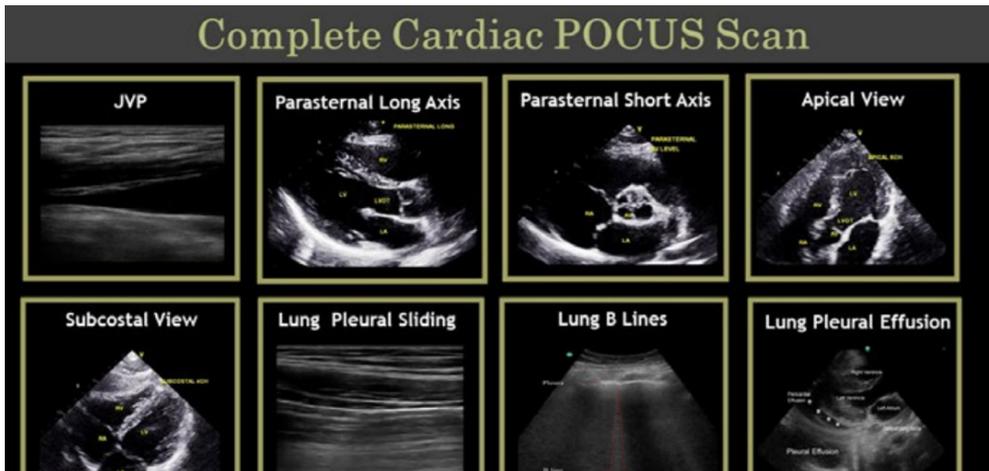
As part of the perioperative assessment, the role of the anesthesiologist is to optimize and evaluate the patient to “minimize risk and maximize the quality of recovery” (4). Although pre-op laboratory work as a method for screening for signs of poor outcome is not frequently useful, the practice still exists amongst physicians for medicolegal reasons (along with tradition and a lack of knowledge of recent guidelines.) POCUS has a role in optimizing this process. In conjunction with a history and physical exam, a cardiac POCUS can be used to effectively determine if patients require further assessment of cardiac function. Typically, an ECG is used to screen for cardiac abnormalities. However, a normal ECG doesn’t exclude cardiac disease, and the reliability of an ECG abnormality predicting an adverse post-op cardiac event is less than 40% (4). In a study comparing diagnostic accuracy between first year medical students with 18 hours of POCUS training and cardiologists using standard physical exams, the medical students were more accurately able to diagnose cardiac disease (75% vs 49%). POCUS can also be useful in assessing the aspiration risk of patients before surgery, by measuring the gastric antral cross-sectional

area. Historically, aspiration has accounted for close to 9% of all anesthetic related deaths, so use of POCUS in patients where the fasting status is unknown (e.g. emergent trauma, altered mental status) may be vital to patient safety (3).

POCUS can be useful for evaluating cardiovascular status and screening for events of acute cardiac ischemia (3). While cardiac anesthesia cases already have this capability through the intraoperative TEE, POCUS may be an adjunct used in non-cardiac cases if the degree of suspicion for an event is not insignificant. This capability is useful in operative anesthesia as well as critical care medicine. In cases of shock or undifferentiated hypotension, the intravascular volume status (and the patient’s response to fluid boluses) may be easily assessed. In a study looking at the time to diagnosis of undifferentiated hypotension, POCUS increased the rate of correct diagnosis of shock and its cause from 50% to 80% with an average diagnosis time of 5.8 minutes (5). Another interesting utilization of POCUS is for assessment of pulmonologic pathology. A study done in patients admitted to the ICU for respiratory failure were evaluated with ultrasound scans which showed the scan had a 88% sensitivity and 100% specificity for diagnosis of pneumothorax. The study also showed that the scan has a 81% sensitivity and 99% for diagnosing a pulmonary embolism (1).

For years POCUS was not widely used due to a variety of factors including lack of access to trained experts, lack of availability of machines (and associated probes), and minimal incorporation into residency training. Fortunately, new pathways to training are being created, such as the ASA Certificate of Completion in Diagnostic POCUS. The program started in early 2021 and offers training in image acquisition and interpretation using a platform with hundreds of different cases. ACGME has also updated anesthesia training requirements to include POCUS training as well (2). Moving forward, POCUS will play an important role in perioperative care and improve patient management for anesthesiologists.

References 1) Lichtenstein DA, Mezière GA. Relevance of lung ultrasound in the diagnosis of acute respiratory failure: the BLUE protocol [published correction appears in Chest. 2013 Aug;144(2):721]. Chest. 2008;134(1):117-125. doi:10.1378/chest.07-2800 2) McKenzie Hollon, William Manson; ASA’s Certificate of Completion in Diagnostic POCUS: Providing the Pathway to Competence for Anesthesiologists. ASA Monitor 2021; 85:10 doi: https://doi.org/10.1097/01.ASM.0000737036.54117.1d 3) Naji A, Chappidi M, Ahmed A, Monga A, Sanders J. Perioperative Point-of-Care Ultrasound Use by Anesthesiologists. Cureus. 2021;13(5):e15217. Published 2021 May 24. doi:10.7759/cureus.15217 4) Pardo MC, Miller RD. Basics of Anesthesia. Philadelphia: Elsevier; 2018. 5) Smallwood N, Dachsel M. Point-of-care ultrasound (POCUS): unnecessary gadgetry or evidence-based medicine?. Clin Med (Lond). 2018;18(3):219-224. doi:10.7861/clinmedicine.18-3-219



POTENTIALLY USEFUL PoCUS APPLICATIONS in COVID-19 PATIENTS

- RESPIRATORY FAILURE DIAGNOSIS / TRIAGE at ADMISSION (LUS, POCUS, DVT)
- COVID-19 PNEUMONIA PHENOTYPE IDENTIFICATION (LUS, MONITORING (LUS, ECHO))
- MECHANICAL VENTILATION GUIDANCE (Recruitment Assessment, PEEP Titration, Pronation Response Prediction) (LUS, ECHO)
- CARDIOVASCULAR ASSESSMENT (SCREENING FOR PRE-EXISTING DISEASE, SEVERE-RELATED MYOCARDIAL DYSFUNCTION, MYOCARDIITIS DIAGNOSIS, RV DYSFUNCTION DIAGNOSIS, INCL. ACP) (FOCUS, ECHO)
- MECHANICAL VENTILATION COMPLICATIONS SCREENING (SUPERINFECTION, ATELECTASIS, PNEUMOTHORAX) (LUS)
- FLUID STATUS ASSESSMENT (SCREENING FOR SEVERE HYPOVOLEMIA, VOLUME OVERLOAD) (FOCUS, ECHO)
- VENTILATION WEANING (Readiness, Prediction, FAILURE CAUSE DIAGNOSIS) (LUS, ECHO, DUS, MUS)
- DEEP VEIN THROMBOSIS SCREENING & DIAGNOSIS (DVT, FOCUS)
- SECONDARY ORGAN DYSFUNCTION DIAGNOSIS (AKI, ABNORMAL COMPLICATIONS) (FOCUS, ECHO, PORTAL / HEPATIC VEIN DOPPLER, ABD)
- STROKE DIAGNOSIS, NEURO-MONITORING (TCD, ONSD ULTRASOUND)
- TELE-ULTRASOUND (GUIDANCE, SECOND OPINION & REMOTE TRAINING)

Citation: Hussain A, Via G, Melniker L, Goffi A, Tavazzi G, Neri L, Villen T, Hoppmann R, Mojoli F, Noble V, Zieleskiewicz L. Multi-organ point-of-care ultrasound for COVID-19 (PoCUS4COVID): international expert consensus. Critical care. 2020 Dec;24(1):1-8.



Novel Combined Erythrocyte and Platelet Autotransfusion Device: i-SEP

Morgan Vivano, MS4, UQ-Ochsner; Christian Lee, MS4, UQ-Ochsner



Autotransfusion has been used intraoperatively to maintain patient homeostasis since the 1920s, and over the decades the technology for it has been improved and refined¹. The devices are cost-effective and demonstrate a proven reduction in the need for perioperative allogeneic blood transfusion in high hemorrhagic risk surgery. However, previous devices have been limited in their ability to wash red blood cells and platelets together. It has been shown that large amounts of intraoperative cell salvage blood transfusion can be associated with thrombocytopenia and increased use of allogeneic platelet transfusion.

The novel SAME (Smart Autotransfusion for Me; i-SEP) filtration-based autotransfusion device has broken this barrier, salvaging both red blood cells and platelets without significantly impacting cell integrity and function, with the recovery of 88.1% and 36.8%, respectively². The filtration and washing also prevented reinfusion of high concentrations of heparin and did not activate leukocytes.

The SAME device uses a hollow fiber filtration technology similar to filters used for plasmapheresis or filters used for ultrafiltration. A combination of washing and filtration separates out red blood cells and platelets from the blood. The device also facilitates the removal of heparin, free hemoglobin, coagulation factors, and inflammatory mediators such as complement proteins.

A recent study by Mansour et al titled “Combined Platelet and Erythrocyte Salvage: Evaluation of a New Filtration-based Autotransfusion Device” demonstrated that the SAME(i-SEP) device was able to recover and wash both red blood cells and platelets with a processing time of less than 5 minutes. This new autotransfusion device allowed washed red blood cells and platelets to retain normal function similar to packed red blood cells. The i-SEP device also showed promising rates of hemolysis. These rates remained far below the standards for fresh packed red blood cells in Europe and the US. Compared to centrifugation-based devices, the i-SEP device demonstrated a 6- to 7-fold higher platelet yield. The study also showed that this device did not lead to significant leukocyte cell death or activation during processing, which would be a major concern if activation caused a massive inflammatory reaction. The results of this study cannot yet be generalized to the clinical setting because the study used diluted whole human blood units and the study was not performed in vivo. These results demonstrate the in vitro performance of i-SEP new autotransfusion technology, but future trials will be necessary to assess the clinical efficacy and safety of the device.

References 1. Thies, H. J. (1914), “Zur Behandlung der Extrauterin graviditar”, ZBL Gynaek, 38: 1190
2. Mansour, Alexandre, et al. “Combined Platelet and Erythrocyte Salvage: Evaluation of a New Filtration-Based Autotransfusion Device.” *Anesthesiology*, American Society of Anesthesiologists, 1 Aug. 2021, pubs.asahq.org/anesthesiology/article/135/2/246/115741/Combined-Platelet-and-Erythrocyte-Salvage.

Advocacy – Promoting Quality Care by Physician Anesthesiologists

Section Editor: Christian Lee, MS4, UQ-Ochsner



Rural Pass Through with Physician Anesthesiologists Included proposed by Congressman Emanuel Cleaver (D-MO-05) and Congressman Jason Smith (R-MO-08)



The Rural Pass-Through Dilemma

Katelyn Parker, MS3, LSU-Shreveport; Rama Mouhaffel, MS3, LSU-Shreveport

Nearly 20% of Americans live in rural towns and rely on one of the 1,844 rural hospitals for their medical care. A large majority of these hospitals are at risk of closure due to insufficient Medicare payments, low employment rates, and low patient volume. To combat this issue and to make rural hospitals a more attractive workplace for healthcare providers, Congress enacted a temporary solution known as the “Rural Pass-Through”. This solution sought to preserve access to anesthesia services in rural areas, which has since become a permanent antidote in over 600 rural hospitals across the United States. Unfortunately, “Rural Pass-Through” only included nurse anesthetists (CRNAs) and assistants to anesthesiologists (AAs), thereby inhibiting the involvement of physician anesthesiologists and exacerbating the short supply of physician health care providers in rural areas.

Originally, anesthesia providers were compensated for their services via the Medicare Part B payments. When combined with the low patient volume of rural hospitals, however, most anesthesia providers were not willing to maintain employment. Since the Rural Pass Through came into effect, eligible hospitals may use reasonable-costs based Part A payments rather than Part B payments in order to attract more anesthesia providers.

For a hospital to utilize this alternative arrangement, it must abide by the following:

- The hospital must be considered a rural hospital.
- The hospital must employ or contract with no more than one full-time anesthesia provider.
- The qualified anesthesia provider must sign an agreement that states he or she will not bill under Part B for anesthesia services.
- The hospital’s inpatient and outpatient procedures that require anesthesia cannot exceed 800 per year.

Due to the fact that the concept of “Rural pass-through” was not inclusive of physician anesthesiologists, Representative Emanuel Cleaver introduced the Medicare Access to Rural Anesthesiology Act of 2019. This required the Centers for Medicare and Medicaid Services (CMS) to provide Medicare payment on a reasonable-cost basis for all anesthesia providers – including physician anesthesiologists.

By extending the “Rural Pass-Through” to anesthesiologists, the rural patient population would be provided with a full range of services and ultimately better health care.

Cate, Amada. “Rural Pass Through Legislation.” American Society of Anesthesiologists, May 2021, www.asahq.org/advocating-for-you/rural-pass-through.
Cleaver, Emanuel. “H.R.2666 - 116th Congress (2019-2020): Medicare Access to RURAL Anesthesiology Act of 2019.” Congress.gov, 10 May 2019, www.congress.gov/bill/116th-congress/house-bill/2666?s=1&r=3. “Fast Facts on U.S. Hospitals, 2021: AHA.” American Hospital Association, www.aha.org/statistics/fast-facts-us-hospitals.



33% Problem - Past, Present & Future

Christine McEvoy, MS4, Tulane; John Cox, MS3, LSU New Orleans

What exactly is the 33% problem?

Medicare reimbursement rates for services provided by anesthesiologists dropped to about 33% of commercial payor rates in 1992 and have remained quite low in the years since this initial reduction. Compare this with the Medicare reimbursement rates for care provided by other medical specialties: these providers' reimbursement rates have been about 80% of commercial payor rates. In 1992, Medicare sought to modulate program costs for care across all medical specialties. The initial calculations only considered three cross linked services provided by anesthesiologists, which was significantly less than the 12-15 services utilized when calculating reimbursement rates for services performed by other medical specialties. In a letter to Congress in 2019, the American Society of Anesthesiologists highlighted, "The formula used for Medicare payments for anesthesia services is unique and unlike the formula used for other physician payments. The formula is based on procedure time and is limited to time actually spent in direct patient care."¹

Who are the main players involved in setting Medicare reimbursement rates?

The Resource-based Relative Value Scale was developed by Dr. William Hsiao, Ph.D. The American Medical Association (AMA)/ Specialty Society Relative Value Scale Update Committee (RUC) has since been responsible for the Center for Medicare and Medicaid Services (CMS) reimbursement adjustments.

How has this problem evolved?

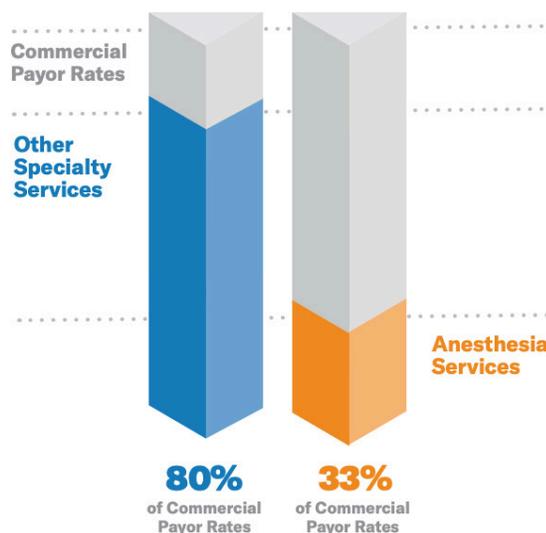
The ASA has commissioned reimbursement studies and appealed to the bodies governing Medicare reimbursement rates multiple times since 1992. Each appeal to the RUC has only yielded small

increases in reimbursement rates: 16% in 1995, 1.6% in 2000, and a 23% increase in 2005. These increases do not account for inflation. Continuing to underpay will lead to many medical practices struggling to be sustainable. ASA noted in their 2019 letter to Congress that the Medicare conversion factor in 2018 for anesthesia services was \$22.19, which was 29.1% of the average commercial conversion factor of \$76.32.

Why is the 33% problem still a problem in 2021? Shouldn't we be content with the fact that reimbursements have gone up over time?

In 2020, Medicare reimbursement rates for anesthesia services were only 27% of commercial reimbursements. The average Medicare reimbursement rate for other specialties has remained around 80% of commercial reimbursements. This is even worse than when the problem started. Within the coming years, a larger percentage of the population will become eligible for Medicare and likely require anesthesia services. Anesthesia providers need to maintain a vocal seat at the table during healthcare reform discussions and during the ongoing transition to value based care payment models. The CMS and the Bureau of Labor Statistics (BLS) started collecting data from hospitals and providers in February 2021 to drive wider economic decisions and fee for service reimbursement models. It is important for providers to participate in these surveys, so that CMS and BLS have more accurate data than has been used in the past to dictate anesthesia reimbursement rates.

References: 1. Medicare Physician Payments: Medicare and Private Payment Differences for Anesthesia Services. GAO-07-463, Published: Jul 27, 2007. Publicly Released: Aug 27, 2007. Johnathan Pregler, Vijay Saluja, Mahesh Vaidyanathan, Christopher (Kit) Young, Jonathan Gal, Sharon Merrick, Christopher Troianos; The 33% Problem: Origins and Actions Committee on Economics 33% Workgroup Report ASA Economic Strategic Plan Initiative—October 2020. ASA Monitor 2020; 84:28–33 doi: <https://doi.org/10.1097/01.ASM.0000724064.38204.e5>



What you can do to help

- Participate in the ASA's Annual Conversion Factors Survey.
- Educate yourself on this issue, so you can help others understand the problem.
- Connect with the public to raise awareness of the important role anesthesiology holds throughout the health care continuum.
- Discuss the value of anesthesia with your colleagues in medicine.
- Engage with local lawmakers and share the 33% Working Group Report.



Louisiana House Bill 495 Defeated

Shannon Pai, MS4, UQ-Ochsner; Christian Lee, MS4, UQ-Ochsner

The Louisiana House Bill 495 (HB495) was a bill outlining an increased scope of practice for advanced practice nurses and would have allowed for the full practice authority for advanced practice registered nurses through the repeal of collaborative practice agreement requirements (House Bill 495; Regular Session 2021).

The bill was sent to the Louisiana House of Representatives on May 5, 2021 and would have paved the way for independent practice requirements for registered nurses and other midlevel providers. The present law defines advanced practice registered nurses in a way that requires these medical professionals to consult with, or refer patients to, licensed physicians or other equals. The proposed law in this bill would have repealed all listed references to collaborative practice agreements between licensed physicians and mid-level providers (including advanced registered nurses.) Another facet of the proposed bill would have required the Louisiana State Board of Nursing to grant prescribing authority through the advanced nurse license. The bill was initially approved to be seen by the full senate in a 4 to 3 vote in the Louisiana State Senate Health and Welfare committee.

Specific bills and acts in the Louisiana legislature and state legislatures across the country have paved the way for the creation of this bill. Louisiana HB 442 provided licensure of physician assistants by the La. State Board of Medical Examiners and approved the healthcare services that physician assistants (PAs) may perform. It required continuous supervision of PAs by physicians and outlined these supervising physicians obligations and responsibilities.

In various other states, advanced practice registered nurses already have full practice authority. They are permitted to diagnose and treat patients without physician supervision. In Washington State, these conditions were set in 2005 in Chapter 18.79 of state law and were revised to allow advanced practice registered nurses to prescribe Schedule II to V controlled substances without physician supervision or delegation. Recently, Arkansas passed Act 607 in 2021 which allows nurse-midwives full practice authority in prenatal, delivery, postnatal, and gynecological settings. Other states have restricted practice. For example, Georgia does not allow nurse practitioners to prescribe Schedule II controlled substances. Physician anesthesiologists understood the need for reducing the number of healthcare deserts, but were committed to ensuring that those issues were dealt with safely and not rashly (i.e. not with HB495.)

HB495 reached a full senate vote and was met with much contention. The Louisiana Association of Nurse Practitioners argued that the bill would address the state's shortage of healthcare providers. On the other side, the Louisiana State Medical Society and other physician organizations argued that the bill would compromise patient safety due to the inadequate level of training nurse practitioners receive. Ultimately, HB294 did not pass in the Senate and was ultimately declared a failed bill.

FALL
into
Giving



LSA-PAC
LOUISIANA SOCIETY OF ANESTHESIOLOGISTS
POLITICAL ACTION COMMITTEE

**OCTOBER
18-31, 2021**

VIRTUAL MATCH DAY 2021

Program Director Interview Series **Virtual Match** **Residency Applications and Virtual Match Tips**

Section Editor: *Madison Boudreaux, MS4, UQ-Ochsner*



Tulane Anesthesiology

Madison Boudreaux, MS4, UQ-Ochsner



Katherine Cox, MD, FASA

I was able to chat via Zoom with Dr. Katherine Cox, the Tulane Anesthesiology program director, to discuss her experiences and advice regarding the virtual interview process.

Tulane University School of Medicine in New Orleans, LA is described by Dr. Cox as a “smaller program with six categorical residency positions per year that offers hands-on experience and a familial environment between faculty and residents.”

Reflecting on last year’s virtual interview process, Dr. Cox explains that Tulane, like most programs, had to quickly figure out how they were going to interview students remotely. Tulane Anesthesiology used the Thalamus online platform, which allowed “ease in scheduling throughout the interview cycle without any glitches, as well as good feedback from the applicants.” Dr. Cox also explained that Tulane Anesthesiology did not change their usual number of interviews offered due to going virtual.

Reflecting on last year’s match, Dr. Cox said that there was an increase in local applicants that were interviewed compared to previous years but explained that the program still “matched very broadly with residents from diverse backgrounds and regions.”

For this upcoming cycle, Dr. Cox recommended that applicants should “set themselves up in a quiet room with a good internet connection and no background distractions.” But she also explains that “things happen and have happened before, so don’t stress too much if you lose connection during the interview!” She advises that students should “gain as much as they can by meeting the staff and residents of the program to see if a program is a good fit for them.”

When asked whether any changes will be made to this upcoming virtual Match cycle, Dr. Cox explained that Tulane Anesthesiology hopes to provide applicants with more options to better understand what the program and hospital are like. This includes their “Ask the Chief Resident” page on the Tulane Anesthesiology residency website, upcoming virtual open houses, and video recordings from current residents. Dr. Cox also mentioned Tulane Anesthesiology plans to attend the ASA Meet and Greet for medical students on October 2nd. She also expressed that Tulane Anesthesiology plans to invite applicants to come and tour the facilities, pending COVID of course, after interviews and rank lists have been finalized.

Regarding how students should demonstrate their interest in the program, Dr. Cox explained that applicants should state their interest in the program through their personal statements. Additionally, emailing program directors about their interest is useful, especially since students have had increased difficulty in obtaining away rotations during the COVID-19 pandemic.

Dr. Cox said that the Tulane Anesthesiology program continues to look for individuals that are “motivated, interested, self-sufficient, and are willing to become the best anesthesiologists that they can be.” I look forward to using this advice for the upcoming interview cycle!



LSU Health Shreveport Anesthesiology

Benjamin Young, MS4, LSU-Shreveport



Shilpadevi Patil, MD

I had the opportunity to speak with Dr. Shilpadevi Patil about what to expect for the upcoming 2021-2022 virtual match season. Dr. Patil has been a practicing Pediatric Anesthesiologist for 10 years and, for the last 5 years, has served as the residency Program Director at LSU Health Shreveport.

Last year's cycle being completely virtual did present some new challenges for the department. Dr. Patil states, "We were a little anxious in the beginning, since our program had never solely relied on virtual interviews; however, I believe that the process went better than we initially expected." She adds that the program has worked diligently to ensure that this year's process will improve upon the successes of last year. Dr. Patil praises the work of the residency coordinator, Mr. Ben Strickland, who has been "instrumental in making the virtual process run as smoothly as possible." She thanks the Chairman of the Department of Anesthesiology, Dr. Charles Fox, the GME, and all her residents for their continuous support, guidance, and help.

Discussing what to expect for the interview process, Dr. Patil states, "After trials with several virtual communication platforms, we experienced Zoom to be the most effective platform." When not engaged in one-on-one interviews, applicants will be held in a "breakout room," where Mr. Strickland will be present throughout the day. Here, Dr. Patil gives her first tip on how to be successful. She states, "The 'breakout room' is a place where applicants can socially interact with each other as well as with Mr. Strickland, and it serves as an opportunity for applicants to show their personalities."

Dr. Patil further explains that in addition to an impressive academic application, the program is looking for applicants that have good character, show interest in the program, and have knowledge about the program and the city of Shreveport.

Dr. Patil reiterated several times the importance of following "virtual etiquette." She says, "Applicants should dress professionally, as if this were an in-person interview, and have a neutral background in a quiet environment." Applicants should be aware of their camera and microphone settings, ensuring that they are on and off at the correct times. Also, it is very important that we feel the applicant is engaged throughout this process and asks good questions."

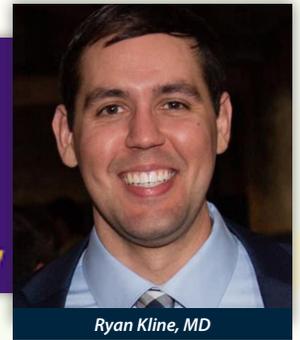
To prepare for the interviews, Dr. Patil suggests that applicants have a strong internet connection and test their connection prior to their interviews; however, she confirms that the department has a contingency plan in place if a connection issue occurs during an applicant's interview.

When asked about things to avoid during the virtual interview process, she stated, "Try to refrain from certain things such as yawning as this may be perceived as a display of disinterest to your interviewer." Dr. Patil believes that there are obvious pros and cons to the virtual match process. Nevertheless, she feels confident in the ongoing preparation for the virtual match process by the Department of Anesthesiology at LSU Health Shreveport, and she looks forward to a successful cycle this year.



LSU Health New Orleans Anesthesiology

Wil Perkins, MS4, LSU-New Orleans



Ryan Kline, MD

As another crop of fourth year medical students prepares for interview season, many residency programs have announced that they are continuing virtual interviews and anesthesiology is no different. Having experienced a virtual interview season last year, programs and applicants alike are looking at the previous interview cycle to see what went well and what did not.

I was able to sit down with the program director at Louisiana State University-New Orleans, Dr. Ryan Kline, to gain insight on the virtual interview process.

Reminiscing on the past year, Dr. Kline remarked that virtual interviews went without issue. He states, “I don’t think it [virtual interviewing] was much different from the normal. It was probably more efficient, and students were allowed to attend more interviews while saving money. Additionally, the program was able to interview 20 to 30 more applicants than in the 2019 interview cycle.”

Dr. Kline further explained that “last year, we limited the interviews to two virtual rooms-- one for resident interviews and one for faculty interviews, which was efficient and avoided repeat questions. We had a program director talk and social event the night before interviews. Interviewees were sent the times they would interview beforehand, which meant they were not waiting around in a virtual lobby.”

When asked about what changes LSU-New Orleans was planning to make for interviews this year, Dr. Kline remarked “we are considering adding a third virtual room this year to introduce applicants to more faculty members on interview day, as well as revamping the social event the night before to include more resident input.”

Dr. Kline also helped to provide insight into what LSU-New Orleans is looking for in applicants to their anesthesiology program.

“We are looking for hard working, driven, and intelligent individuals with good interpersonal skills that will treat patients and their coworkers with respect.”

When asked about any tips for the general applicant pool, Dr. Kline advised, “just be honest-- programs can tell if you are not genuine in your interests, so find programs that fit your interests and align with your goals.” Hopefully these tips will be useful to anyone applying this year!



Ochsner Health System Anesthesiology

Sahar Niazi, MS4, UQ-Ochsner, Kimberly Rich, MS3, UQ-Ochsner



Kelly Ural, MD, FASA

We had the opportunity to speak with Dr. Kelly Ural, cardiothoracic anesthesiologist and program director of the anesthesiology residency program at Ochsner Health System in New Orleans, Louisiana about her thoughts regarding the 2021 virtual interview and Match process. Dr. Ural also provided insight into what future applicants can do to stand out and ensure that the programs they rank are a good fit for them.

Compared to the days of in-person interviews, Dr. Ural stated that the virtual match process went smoothly at Ochsner. Transitions between interview day activities were seamless and interviewers felt they were able to get to know students just as well as in-person. Additionally, more students were able to be interviewed and accessibility increased for those who may have experienced financial or time constraints involved with travel. Historically, this program interviews approximately ten students per available residency position, though with the efficiency and decreased restrictions regarding physical space that virtual interviews provide, Ochsner was able to interview 10% more students in 2021 than in previous years.

With changes to audition rotations and inability to collaborate with researchers at different institutions due to restrictions on travel, last year was more of a regional match for Ochsner anesthesia. A larger proportion of applications received and interviews extended were from the Southeast region, due to their familiarity with the program and ties to the region. For those students hoping to interview in an area where they do not currently live, have not attended school or otherwise have ties to the area, Dr. Ural encourages expressing interest in those programs around late September before interview invites are extended by emailing program coordinators or directors.

Regarding downsides of the virtual interview process, the main concern for Dr. Ural focused on students' lack of opportunities to experience the hospital environment for specific programs. This especially holds true at Ochsner, where Dr. Ural states the camaraderie and collegiality between the anesthesia department's attending physicians, residents, and fellows is so prominent and integral to the training goals of the program.

In terms of advice for 2022 Match applicants, Dr. Ural provided many words of wisdom.

For the application itself, the admissions team appreciated when students included a specific paragraph in their personal statement detailing their interest in the program. While currently not a requirement, Ochsner may include instructions in future applications to do so, so keep your eye out! For virtual interviews and social hours, Zoom etiquette still stands in 2021, so double check time zones, internet connection, and try to minimize background distractions. Importantly, treat virtual interviews with the same level of interest and formality as one would treat an in-person interview (i.e. always keep your camera on, remain engaged, and have a list of questions ready for interviewers).

For virtual socials, Dr. Ural stated that Ochsner anesthesia intends to continue to schedule socials for each interview date. Although these are purely informational, she encourages students to attend to get to know residents. Lastly, check out ASA's virtual information sessions in October to learn more about programs of interest. Good luck to those applying this year!



Tips for Matching into Anesthesiology by Recent OCS Graduates

Madison Boudreaux, MS4, UQ-Ochsner; Jay Shah, MS4, UQ-Ochsner

In March 2021 the University of Queensland-Ochsner Clinical School's (UQ-OCS) Anesthesiology Interest Group hosted a virtual post-Match panel with recent UQ-OCS graduates that matched into anesthesiology residency programs. OCS successfully matched 5 students into anesthesiology this year. Participants included Brandon Hoard (matched at Ochsner Health), Dan Olix (matched at Ochsner Health), Alan Boiangu (matched at Ochsner Health), James O'Malley (matched at University at Buffalo), and Jackie Edelson (matched at University of Chicago). A few of the topics we covered included away rotations, tips for rotation success, getting involved in anesthesia, and application tips.

Away Rotations

Away rotations have historically been a hotly debated topic in anesthesiology residency applications. The general consensus from the panel was to prioritize getting to know your home institution well prior to arranging an away rotation anywhere else. However, if you are interested in an away rotation, planning in advance is a key to being successful at securing one. Away rotations can be useful for securing a letter of recommendation (LoR) from an outside institution as well as getting exposure to a more diverse set of research opportunities. While most programs participate in AAMC's VSAS system for away rotations, those that do not will generally have a separate application that may be obtained by contacting the program coordinator early. The panel agreed that while away rotations may be useful for establishing regional ties or getting your foot in the door at another program, they are not required to successfully match to an anesthesiology residency program. 4 of the 5 students who matched into anesthesiology from OCS did not complete an away rotation due to COVID-19.

OCS medical students have the option to arrange an elective between their third and fourth years, which was highly recommended by the panelists to confirm interest in the specialty as well as get early exposure and learning prior to starting fourth-year anesthesiology rotations and the elective block.

Tips for Success During an Anesthesiology Rotation

- 1) Be yourself:** Anesthesiology is a highly personable field and the best way to be successful is to be kind, helpful, willing to learn, and receptive to feedback.
- 2) Read up on cases and basic anesthetic guidelines:** The panelists recommend the pocketbook 'Anesthesia Made Easy' for quick reference. Other resources that can be useful are the Stanford CA-1 Guide, Baby Miller, and Jaffe's Anesthesiologists' Manual for Surgical Procedures.
- 3) Show up early:** Being prepared and showing up early to assist the resident in setting up the OR in the morning shows initiative and hopefully makes the resident's day a little bit easier. It also helps you understand the tasks and thought processes that residents go through in order to get through each case successfully.
- 4) Stay engaged and show interest:** Oftentimes, long cases will have a bit of down time - use this time to chat with the residents, ask meaningful questions, and engage in teaching opportunities with residents and attendings. If a room finishes early, see if you can help out or learn in another room.
- 5) Have fun!** Anesthesiologists generally love what they do. Enjoy the process so you know you made the right choice in picking the best specialty in the world.

How to Get Involved

Panelists agreed that this was a common question that medical students face when they decide they are interested in anesthesiology. Here are some ways to get involved and learn about different aspects of anesthesiology and perioperative medicine:

1) Research: Helping a PI out with research initiatives is a great way to build your CV and dive deeper into important topics that are relevant to advancing anesthesia care in the future. Residency interviewers will often be very interested in your research activities and ask you to talk more about your findings and what you learned. It makes for great conversation during the interview and gives you a depth of knowledge you can then share with others!

2) Quality Improvement: If basic science, clinical trials, or retrospective studies aren't your cup of tea, no problem! Anesthesiologists constantly seek to deliver higher quality and safer care and a part of that process is to engage in process improvement and quality and safety studies.

3) Advocacy: Get involved with the Louisiana Society of Anesthesiologists (LSA) and the American Society of Anesthesiologists (ASA). Advocacy is an essential part of advancing the physician anesthesiology practice and interviewers are often interested in your opinions of important topics in anesthesia care. Examples of questions which were asked include: "what got you interested in advocacy through LSA?" and "why is advocacy important in anesthesiology?"

Application Tips

Letters of Recommendation

Obtaining letters of recommendations can often be intimidating, but attendings understand that oftentimes there will be limited interactions with students throughout a rotation. Don't be afraid to ask an attending you had a few great days of cases with! Additionally, if you can have a non-anesthesiology LoR from someone who knows you well, this can prove to be beneficial for your application. Be sure to provide a copy of your personal statement and CV to the letter writer as well as a summary of important cases, interactions, and things you learned from them!

Number of Programs to Apply To

Panelists agreed that this is an extremely important aspect of the ERAS application process. OCS graduates averaged between 44 and 94 anesthesiology program applications and ten preliminary program applications. A useful tool to determine the number of programs right for you is the Charting Outcomes Tool on the NRMP website. The dashboard allows you to input your USMLE scores and other aspects of your application and shows the probability of matching based on the number of applications and interviews. Regarding preliminary positions, the panelists recommended being selective in your approach (i.e. not apply to every preliminary program in the country) and apply early enough to be offered an interview.

Connecting with Programs Virtually

As the 2021 and now 2022 Match cycles transitioned to virtual, one of the biggest concerns for applicants was the difficulty in assessing programs through zoom. Some of the things that our panelists suggested to address this included attending all virtual meet and greets as those were a more informal way to know the residents and faculty, without the pressure of an interview. Doing so not only gives you more information about them, but also gets your name out there.

Panelists remarked that they chose programs based on regional ties and areas of the country where they would hope to train. They also recommended that letters of interest be sent out to program directors within one week of ERAS application submission, as this may determine whether or not an interview is granted. As most programs seemed to interview earlier in the season, getting your name out there early was considered essential to being considered for an interview.

We really appreciated having our panelists speak to the Anesthesiology Interest Group and we wish the best of luck to all of our Louisiana medical students considering a career in anesthesiology!



Choosing a Subspecialty Things to Consider

Alexander Van Erp, MS4, UQ-Ochsner; Jay Shah, MS4, UQ-Ochsner

Few fields in medicine provide as much variety and depth as anesthesiology. This specialty offers a wide range of career paths due to sub-specialties that are available. Early trainees may feel it is too early in their career to think about choosing a subspecialty, but the fact is that the application process for most fellowships occurs during CA-2 year. So, it's never too early to start thinking about what lies ahead. Here are a few of the most popular career choices:

Cardiothoracic Anesthesiology

Cardiothoracic surgery requires some of the most highly skilled anesthesiologists as they are working with some of the sickest patients. As noted by the ASA Physical Status Classification System, patients with "Recent (<3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction" automatically fall in the Class IV category¹. It should come as no surprise, then, that highly skilled anesthesiologists are needed to guide the procedure.

Residents who pursue fellowships in cardiothoracic anesthesia can expect to become experts in cardiac anatomy, physiology, and pathology. They will also become highly skilled in using transesophageal echocardiograms to assess cardiac function and valvular pathology. Vascular access is crucial in cardiothoracic anesthesia, so specialists in this field will master their skills in placing central and arterial lines and using the information they provide to assess their patients hemodynamic status².

Pediatric Anesthesiology

Anesthesiology is already one of the most precise fields in medicine. Pediatric anesthesiology, however, takes this precision to another level. According to the UCSF Pediatric Pocket Card³, the total blood volume of an average one-year-old is 70 ml/kg. This means that for a one-year-old weighing 9 kilograms, their total blood volume is just 630 mls. Pediatric anesthesiologists simply have less room for error and need to be extremely detail oriented. Additionally, the smaller airways and vessels of children require high levels of procedural skills from their treating anesthesiologist. In addition to clinical skills, pediatric anesthesiologists need strong interpersonal skills to make their young patients feel comfortable pre-operatively and be able to quickly build rapport with their parents/guardians.

Obstetric Anesthesiology

There are few medical careers where you are regularly present for the most memorable moments in your patients' lives. In obstetric anesthesiology, you help families safely welcome their newest member into the world. Anesthesiologists in this field must also be experts in handling dangerous obstetric emergencies, such as postpartum hemorrhage. In addition, Obstetric specialists become experts in a specific type of regional anesthesia called neuraxial anesthesia, which includes epidural and spinal anesthesia. Whether easing labor pain using epidural anesthesia or calling on their knowledge of general anesthetic during a "crash" C-section, obstetric anesthesiologists are vital leaders in the obstetric team. Obstetric Anesthesiology is the perfect career choice for those interested in combining their knowledge of anesthetic techniques with their passion for obstetrics.

Regional Anesthesiology

Regional anesthesia is a rapidly growing sub-specialty. A fellowship in this field can help you become a top-notch proceduralist who uses ultrasound-guided techniques to perform a variety of nerve blocks. Femoral nerve, lumbar plexus, interscalene brachial plexus, supraclavicular brachial plexus, popliteal sciatic, these are just a few of the common nerve block techniques you will become an expert at performing⁴. Nerve blocks vary not only in location, but type as well. A single injection nerve block will help cover immediate perioperative pain, but placement of a catheter for a continuous block can help relieve postoperative pain for days⁵.

Regional anesthesia has been identified as a component of perioperative pain management that can minimize the use of opioids, giving the field an important role in fighting the opioid epidemic⁶. If you love procedures and are interested in being part of a field that is growing rapidly in variety and importance, a regional anesthesia fellowship may be for you.

Neuroanesthesiology

Working alongside neurosurgeons, neuroanesthesiologists play a crucial role in some of the most complex surgeries in the OR. Operating on the brain can have drastic effects on hemodynamic parameters. Anesthesiologists in neurosurgery therefore must have a deep understanding of both neurological anatomy and physiology. Choosing an appropriate anesthetic plan is crucial to neuroanesthesiology, however there are a multitude of other factors to consider.

Technology is key to the practice of neuroanesthesia, as the neurophysiologic monitoring modalities used in both CNS and PNS cases are being constantly innovated and improved on. Additionally, neurosurgical anesthesia requires creativity and careful planning, as positioning, choices for invasive monitoring and sedation, and ICP control are essential to the safety of the procedure and strong patient outcomes. If you are interested in operating like a pilot in the OR, providing anesthesia for the most complex cases, and leveraging new technology to do it then a one-year neuroanesthesiology fellowship may be for you.

Interventional Pain Management

In the United States, about 20% of adults live with chronic pain⁸. A chronic pain medicine fellowship will help you bring much-needed relief to your patients. You will build long-term relationships with patients who experience chronic pain and work closely with them to find a pain management regimen that is effective for their concerns.

With the recent opioid epidemic in the United States, interventional pain management physicians have had an important role in identifying and implementing opioid sparing strategies for patient care. For example, procedures such as radiofrequency ablation, epidural blocks, medial branch blocks are routine and key to short and medium term alleviation of pain. For chronic back pain due to spinal stenosis, new and innovative procedures such as ligamentum flavum dissection, and percutaneous spinous spacers have provided patients with minimally invasive surgical solutions. Interventional pain management is a field ripe with innovation and anesthesiologists with an interest in procedural medicine and continuity of care will enjoy pursuing a fellowship in this space.

Critical Care Anesthesiology

Combining the procedural skills of an anesthesiologist and the medical knowledge of a critical care physician, critical care anesthesiologists are often referred to as the most well-rounded doctors in a hospital. Common procedures you will perform as a critical care anesthesiologist include intubations and other forms of airway management; as well as placing lines for vascular access and invasive monitoring. A critical care fellowship can provide variety in your career; you will be dividing your time between the ICU and the Operating Room. This field provides a best of both worlds with continuity of complex patient care as well as traditional anesthesiology practice. Oftentimes, anesthesiology residents will consider a dual-fellowship application in critical care and cardiothoracic anesthesia.

Liver Transplant Anesthesiology

It is often said that if you can handle a liver transplant case, you can handle anything. A liver transplant fellowship helps you hone your skills while becoming an expert in one of the most complex and acute surgeries an anesthesiologist can come across. The core of liver transplant anesthesia is understanding the hemodynamics and important considerations of every step of the liver transplant - managing physiologic response in a very dynamic fashion. Programs with a strong transplant infrastructure often enable the anesthesiologist to perfect their skills with a high volume of cases. Not only will this fellowship help prepare you to perform transplant cases, but you will also feel better equipped to handle other cases in the O.R..

Pediatric Cardiothoracic Anesthesiology

Pediatric cardiac anesthesiology fellowships are unique in that they can be done over the span of two years (one pediatric year, one cardiac year), 18 months (hybrid fellowship), or at prestigious childrens' hospitals with enough volume, 12 months. This is a speciality managing some of the most complex pediatric cases in multiple operational settings, including electrophysiologic suites, imaging suites, and general operating room non-cardiac cases (for children with resolved or unresolved congenital heart disease.) Importantly they also care for patients undergoing heart & lung transplants as well as children undergoing congenital heart surgery. Certain centers with more cutting edge cases may also care for patients undergoing fetal and intrapartum surgery (e.g. ex-utero intrapartum treatment) and immediate postpartum access to cardiac therapy (IMPACT) cases. It is a fellowship and speciality dedicated to caring for some of the sickest pediatric patients and significantly impacting their quality of life.

In summary, there are an abundance of career options for those pursuing anesthesiology, including fellowship combinations not listed here. While these options are exciting, the choice can be overwhelming. Visit the ASA's Guide to a Career in Anesthesiology (cited below) for a more detailed guide on the options⁹.

Resources:

- 1: American Society of Anesthesiologists. ASA Physical Status Classification System. www.asahq.org, 2014, www.asahq.org/standards-and-guidelines/asa-physical-status-classification-system.
- 2: Kukafka MD, Jeremy D. & Milas MD, Bonnie L. "Chapter 17: Cardiac Anesthesiology," ASA Guide to Anesthesiology for Medical Students.
- 3: UCSF Anesthesiology. Pediatric Pocket Reference Card. 2017, anesthesia.ucsf.edu/sites/anesthesia.ucsf.edu/files/wysiwyg/pdfs/PediRefCard_Dec-2017.pdf.
- 4: Machi, Anthony T., and Brian M. Ilfield. "Continuous peripheral nerve blocks in the ambulatory setting: an update of the published evidence." Current Opinion In Anaesthesiology, Sept. 2015.
- 5: "Types of Nerve Blocks." Stanford Medicine: Regional Anesthesia, med.stanford.edu/ra-apm/for-patients/nerve-block-types.html.
- 6: "Opioid Crisis: Advocating for You: Focusing on the Role Physician Anesthesiologists Play in Addressing the Opioid Crisis." American Society of Anesthesiologists, edited by Ashley Walton, ASA, www.asahq.org/advocating-for-you/opioid-crisis.
- 7: Jaffe MD PhD, Richard A. "Chapter 18: Neuroanesthesia." ASA Guide to Anesthesiology for Medical Students.
- 8: Dalhamer PhD, James, et al. "Prevalence of Chronic Pain and High-Impact Chronic Pain Among Adults — United States, 2016." CDC: Morbidity and Mortality Weekly Report, 14 Sept. 2018.
- 9: "Guide to a Career in Anesthesiology." ASA Medical Student Component, American Society of Anesthesiologists, www.asahq.org/education-and-career/asa-medical-student-component/guide-to-a-career-in-anesthesiology.



Ochsner Anesthesiology Interest Group Wins 'Best New AIG' at ASA 2021!

Joseph Queen, MS4, UQ-Ochsner; Jay Shah, MS4, UQ-Ochsner

Earlier this month, Ochsner's AIG was notified that they had been selected as the 'Best New AIG' for the 2020-2021 Academic Year! This represents the culmination of a highly productive and successful year for Ochsner's AIG and their executive board. Highlights of their year include a virtual reality lumbar puncture simulation, multiple difficult airway simulations, journal clubs, and the establishment of a new resident-medical student mentorship program! This would not have been possible without the support of Ochsner Faculty Sponsor, Dr. Jason Park, Dr. Joseph Koveleskie, and the many residents and attending physicians at Ochsner who gave their time and expertise to engage the medical student community. Please join us in congratulating the executive board of AIG!

President: Joseph Queen, MS4 University of Queensland - Ochsner

Vice President: Vamsi Budur, MS4 University of Queensland - Ochsner

Treasurer: Jay Shah, MS4, University of Queensland - Ochsner

Secretary: Merica Vorachitti, MS4, University of Queensland - Ochsner

Alumni Chair: Madison Boudreaux, MS4, University of Queensland - Ochsner

