

IS #ANESTHESIOLOGY RIGHT FOR YOU?

By Brian Park, M3 Drexel School of Medicine

How do you know, with certainty, if anesthesiology is right for you? Some recommend shadowing, attending conferences or simply talking to an anesthesiologist. Lucky students may have a few weeks to rotate through during their third year or may have the freedom to spend time scouring through articles in the field. But who really has time to do all of this?

Wouldn't it be great to have...

- all of this information distilled down to an easily consumable snippet?
- a glimpse of the highlights of an article and to see what people think about it?
- a curated feed with a user-friendly interface and the ability to discuss the content with others?

One platform that we are all familiar with is known for its succinct 140 character limit. You might be one of @KatyPerry's nearly billion followers, or just use it to stay up to date with sports. So you may be wondering, "Who uses that anymore?" and "Why should I start using it now?"

Twitter users in the anesthesiology world aren't vastly different from those outside it – from celebrities and presidents, to enthusiasts and lurkers. Active users in the anesthesiology field may be well-known attendings in a private or academic setting, budding students and established hospitals, organizations, or societies. Tweet content can range from news, opinions and discussions that go beyond our local and institutional boundaries

If you're like me, there's a pile of anesthesiology journals in places you had planned to read, like on your desk, coffee table, or in the bathroom. It can be overwhelming to pick up a journal and see the mountains of text sitting amidst the sparse tables and graphs. Sure, we can jump to

the figures and read a few sentences of each section, but we would be missing a lot of the content and, more importantly, the nuances that help us fall in love with the field.

On Twitter, journals like *Anesthesiology* and *British Journal of Anaesthesia* share the most noteworthy articles on a regular basis, making it easier for you to focus your attention to one article at a time. You can use the volume of retweets and likes to help you decide which articles may be worth reading. The replies can provide a framework of ideas as you read the article. Some users also add images of the article in their retweets, highlighting important points that sparked their interest. It's kind of like how Harry Potter performed better in his Potions class by following the scribbles written all over his book. Twitter, too, is magical: articles organize themselves in your feed like a dynamic list of journals and conversations based on who you follow.

One of the ways that academic articles are curated is through journal clubs. We're encouraged to read and discuss an article to enhance our medical education. One limitation of journal club might be its physical location. My medical school held one almost every week, but with the rigorous coursework, it became very easy to miss the meetings. Moreover, if you're trying to attend one of the department journal clubs, it can be difficult to find out where they meet and fit it into your schedule. If you can make it the department journal clubs, you'll stand out to the residents and attendings and, more importantly, you might discover that the content sparks interest in your potential future career. Twitter provides a virtual classroom that encourages this kind of learning, while recording it to use as future reference.

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Duke's Anesthesiology program began a Twitter-enhanced journal club back in January 2015. You can join in using #AnesJC or read a case report about it in *Anesthesia & Analgesia Case Report* (here). The format is usually the same – they publicly link the article, share a few questions and announce the date to join on Twitter. Duke hosts a classroom discussion first, then moderates the Twitter discussion. In case you miss it, there is a post-production bundle packaged into a storyline with curated tweets. In the past two years, they have nearly doubled the users in the discussions while providing a solution to the physical barriers of a traditional journal club.

Another way to find out if anesthesiology is right for you is to read about current events in the field. On Twitter, breakthroughs in the field are curated by leaders and societies, and users with vested interests. Even when you sign up for Twitter, you can mark what topics you're interested in and get suggestions of users to follow. People also share curated sets of Twitter handles based on topics. Did you miss the ANESTHESIOLOGY® 2016 annual meeting this past October? You can easily follow the events of conferences that you might have missed by utilizing simple hashtags.

Check out #ANES2016. Are you interested in particular doctors? Find their Twitter handle and follow them! They tend to retweet topics that they are interested in and doing this research can provide the opportunity to start a dialogue with them. This can be useful if you have zero connections to them, especially if they work at another institution or live in a different state or even country!

As Millennials that are becoming physicians, social media is a familiar space. Twitter, with less bells and whistles than other social platforms, simplifies interactions down to reading, liking, sharing, retweeting, replying. Twitter makes it easier to have live conversations beyond the classroom walls. There are a small but growing number of users in the anesthesiology Twitter-verse, but more and more attendings tweet to engage patients and other professionals. Twitter provides a simple way to explore interests in anesthesiology and to create a network early in our career. So what are you waiting for? @ParkBrianH, signing off.

Don't forget to check out @ASALifeline, @ASAGrassroots, @AnesthesiaNews, @AnesthesiaHQ.

Subspecialty Highlight

Regional Anesthesia and Acute Pain Medicine

By Melvin Yeung, M3 University of Missouri Kansas City School of Medicine



*Brian F.S. Allen, M.D.
Regional Anesthesia and Acute Pain Medicine
Anesthesiologist
Assistant Professor and Director of the Regional
Anesthesiology and Acute Pain Medicine fellowship,
Department of Anesthesiology, Vanderbilt
University Medical Center, Nashville, TN*

1.) What's your name? Profession? Where do you currently work?

Brian F.S. Allen, Assistant Professor and Director of the Regional Anesthesiology and Acute Pain Medicine fellowship, Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, TN.

2.) Where did you go for medical school? Residency? Fellowship?

I graduated from medical school at Washington University in St. Louis, completed an internship at Mercy Medical Center in St. Louis, and did residency at Vanderbilt University.

My fellowship training in Regional Anesthesiology and Acute Pain Medicine took place at Oregon Health and Science University in Portland, OR.

3.) How long have you practiced?

I have practiced anesthesiology since completing residency in 2010 with a 1-year hiatus in 2011 for fellowship.

4.) *When did you know you wanted to do anesthesiology?*

I struggled with the decision to go into anesthesiology or radiology. Anatomy and physiology fascinated me, especially in procedural fields such as interventional radiology or regional anesthesiology. Residency applications were due before I decided on anesthesiology, so I applied and interviewed in both fields. Fourth year medical school rotations in neuroanesthesia and cardiac anesthesia truly helped me to select anesthesiology as a career.

5.) *Why did you decide to do a subspecialty in anesthesia?*

While I debated going into private practice straight out of residency, I have always loved the environment of inquiry present at academic medical centers. Colleagues are always pursuing new, interesting projects. Some of the smartest clinicians around are eager to share their ideas and research in a way that sustains my own personal curiosity.

6.) *What attracted you to pursue training in regional anesthesia and acute pain?*

A number of aspects influenced my subspecialty choice. A love of anatomy and procedural performance led me down the path to regional anesthesiology. The field resonated well with my desire to be prepared for any clinical scenario and optimize patient recovery, safety and pain control. Stories of opioid abuse and dependence, rife in my native Tennessee, led me to do my small part in providing patients with alternatives to narcotics.

7.) *Can you describe your typical work day?*

My work takes me to a variety of places. I rotate between ambulatory surgery centers, the main university hospital, regional anesthesia, non-O.R. anesthesia sites, obstetric anesthesia calls, attending on the perioperative medicine service, and the inpatient acute and chronic pain services. One day is very different than the next. While on the perioperative medicine or pain services, I care for a large number of mostly surgical patients, selecting regional blocks that will help minimize pain and designing multimodal analgesic regimens to optimize recovery. I work with fellows and residents to do blocks and then follow patients onto the wards.

8.) *How do you balance work and personal life?*

It can be a challenge. Administrative and clinical responsibilities require time to perform well. My department has made conscious choices to allow faculty the flexibility to work more or less and be compensated accordingly. Personally, I try to take advantage of the time I have away from work to lounge, play board games with friends, eat out or go to concerts.

9.) *What's your favorite aspect of your work? Least favorite aspect?*

My favorite thing is seeing someone before surgery, starting a pain regimen and doing a nerve block, then following that patient through the perioperative course where they require no opioids and have minimal pain, leaving the hospital a day early. The surprise a patient exhibits after waking up pain-free postop is stunning. Much of managing a regional anesthesiology service is about relationships: with surgeons, colleagues, patients and other professionals. This work is often harder (and far less pleasant) than the simpler clinical work of ordering medications and performing blocks.

10.) *What advice do you have for aspiring anesthesiologists?*

Make sure you go to a program that focuses on education and is forward-thinking about the place of our specialty in the world. These are uncertain times for medicine, and it always helps to go to a place where clinicians and researchers are helping to define the future of our specialty. Considering a subspecialty like regional anesthesiology and acute pain medicine will broaden your skillsets and make you a more complete, well-rounded and adaptable physician.

Introduction to Perioperative Surgical Home and Our Role as Providers

By Omar Qayum, M3 University of Missouri Kansas City School of Medicine

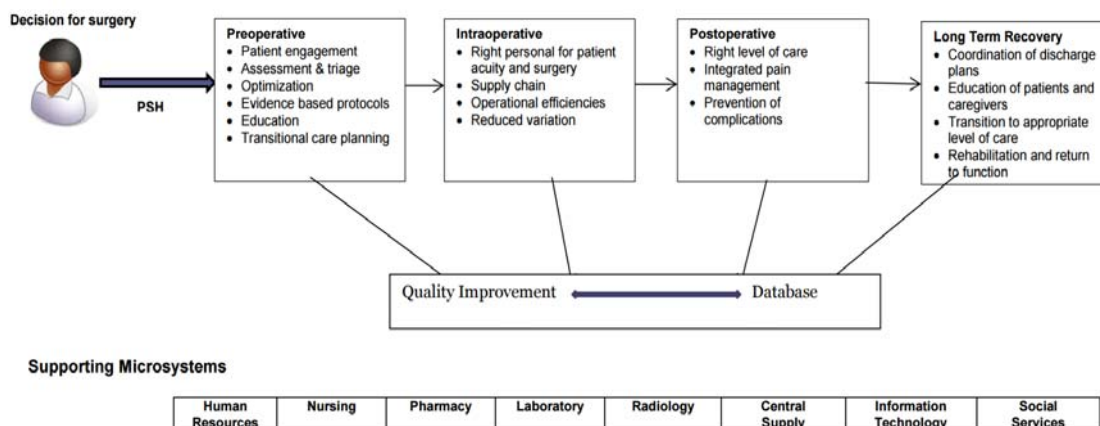
Any student who has rotated in anesthesiology has seen firsthand the number of moving parts involved in surgical care; this process begins with the decision to have surgery and extends until the postoperative period, with any number of nurses, physicians and other providers contributing to care along the way. In recent years, the American Society of Anesthesiologists has looked into deficiencies in surgical care and found that there are plenty of opportunities to decrease variability in the surgical process, minimize avoidable adverse events, improve communication and coordination among health care providers, and ultimately create a more cohesive and positive experience for surgical patients. The result of this research is the creation of a patient-centered, multidisciplinary model of patient care known as the Perioperative Surgical Home (PSH).

The primary goal of PSH is to achieve a triple aim of better patient experience, better health care, and lower cost of care for all patients undergoing surgery and invasive procedures. The transition into surgical care can often disconnect patients from their regular health care providers, which is why the PSH process begins from the moment the decision to have surgery is made and coordinates decision-making between all members of the care team. Effective preoperative planning is intended to reduce unnecessary testing, optimize risk prior to surgery, and provide multidisciplinary support to the patient

In the O.R., an evidence-based approach is intended to lead to a more standardized operative course, with a goal of decreasing discrepancies in care and optimizing positive outcomes. When surgery is complete, the PSH process continues into coordinating postoperative care as well as discharge and follow-up planning. Overall, the goal is to maintain a patient-centered approach to what can be an intimidating and busy process.

The natural role of anesthesiologists in this process is clear: they are present when the patient arrives to have surgery, during the entire operative course and well into the recovery period. While PSH is a multidisciplinary system, it relies heavily on physician leadership to maintain effective communication, planning and patient advocacy. As students planning to enter the field of anesthesiology, it is paramount for us to recognize this future direction of perioperative care and cement our role as the coordinating body for this system of care. We will not only be part of the implementation of this care model but also responsible for critical review and quality improvement as potential problems and limitations become evident. Overall, this model has provided a framework for an improved process of patient care that will ultimately be of greater benefit to patients and providers alike.

To learn more about PSH,
visit <https://www.asahq.org/psb>.



Figure—schematic demonstrating the component microsystems of a patient's surgical/procedural experience. With the PSH model, the patient's experience of care is coordinated by a Director of Perioperative Services, additional Surgical Home Leadership, and supportive personal which constitute an interdisciplinary team. The expected metrics includes improved operational efficiencies, decreased resource utilization, a reduction in length of stay and readmission, and a decrease in complications and mortality---resulting in a better patient experience of care.

Sugammadex and Rocuronium Reversal

By Tyler Phillips, M3 University of Oklahoma College of Medicine

With the development of rapid-onset, short-acting, nondepolarizing, neuromuscular blocking agents in the 1960s, there has been a search for a superior reversal agent. For the last several decades, rocuronium has been reversed with the combination of neostigmine (anticholinesterase) and glycopyrrolate (antimuscarinic). One problem with this approach is the potential for autonomic side effects associated with each agent. A second problem arose when studies showed that neostigmine was ineffective at reversing deep neuromuscular block (no train-of-four response). Both of these have led to a search for a reversal agent that would be both effective against all levels of neuromuscular block and free from the potential autonomic side effects. The search has now lead to the development of sugammadex.

Sugammadex was first approved for use in 2008 by the European Union. However, the FDA did not approve sugammadex in the U.S. until December 2015. This delay in approval was largely due to the potential for adverse reactions like anaphylaxis and hypersensitivity. Anaphylaxis has been documented to occur in very high doses (16 mg/kg). In post-marketing surveillance, there were 273 reports of anaphylaxis out of 11.5 million cases of sugammadex exposure. In the majority of these cases, patients recovered with standard therapy.

Now we are able to use sugammadex. What are important contraindications, adverse reactions and drug-drug interactions that we need to be aware of? First, the

only known contraindication to sugammadex use is in patients who have previously developed anaphylaxis to sugammadex exposure. Sugammadex cannot be used for reversal of nonsteroidal neuromuscular blocking agents (succinylcholine) or steroidal agents other than rocuronium or vecuronium. Next, there are other adverse reactions to sugammadex besides anaphylaxis which include hypotension, headache, nausea and vomiting. Finally, we need to be aware of some drug-drug interactions associated with use of sugammadex. It has been shown that sugammadex can decrease serum concentrations of both estrogen and progesterone contraceptives. It is advised that female patients of child bearing age use an alternative form of non-hormonal contraceptive use for seven days following sugammadex administration.

Is sugammadex better than neostigmine and glycopyrrolate? When comparing the time it takes to reach a train-of-four value equal to 0.9 for both superficial and deep block, sugammadex has shorter time periods consisting of 2.2 minutes and 2.7 minutes. Neostigmine, on the other hand, has times of 6.9 minutes and 16.2 minutes. It has also been shown that use of sugammadex can reduce O.R. discharge time when compared to neostigmine. It is hard to give a definitive answer to whether or not sugammadex is better than using neostigmine and glycopyrrolate. However, there is no denying that sugammadex is very efficacious and safe to use in reversal of rocuronium or vecuronium induced neuromuscular block with relatively few associated side effects.

Number of Women Enrolling in Medical School Reaches 10 Year High

By Brooke Bergen, Association of American Medical Colleges

The number of women enrolling in medical school in 2016 increased 6.2 percent over last year to 10,474 according to data released November 1 by the AAMC. This represents the largest increase since 2006.

Overall, more students are applying to U.S. medical schools, with applications in 2016 reaching a new high of 53,042. First-time applicants—an important indicator that demonstrates interest in careers in medicine—topped previous years' numbers at 38,782. In addition, the total number of enrollees at the nation's medical schools surpassed 20,000 (21,030) for the fourth year in a row, a 27.5 percent increase since 2002. Among first-time applicants, the number of women increased by 5.3 percent over 2015, reaching 19,682. In 2016, enrollment in medical school was evenly divided between women (49.8 percent) and men (50.2 percent).

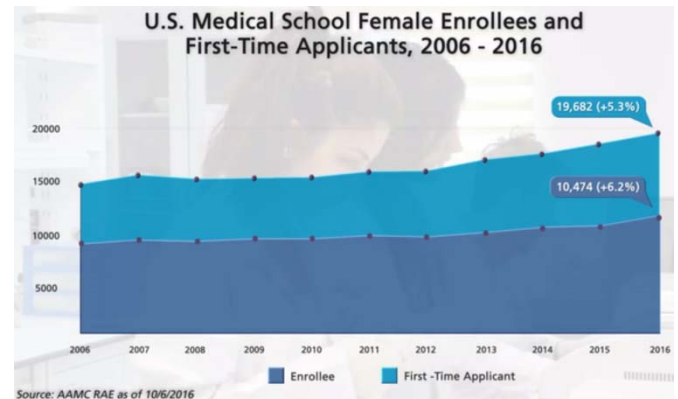
“It is gratifying to see a record number of women enrolling in medical school, and that more students than ever are answering the call to serve their communities. This growth in applicants and enrollees is good news for our growing, aging population, particularly given the real and significant doctor shortage the country is facing in the coming decade.”

Darrell G. Kirch, M.D.
AAMC President and CEO

“The many K–12 pipeline programs and undergraduate efforts that encourage young women and girls to apply to and enter medicine and science fields could certainly be contributing to the increase in the growth in the number of female medical school applicants and enrollees,” said Diana Lautenberger, AAMC director of women in medicine and science. “These programs, along with recent social media campaigns, such as #ilooklikeasurgeon, are having an impact on generating interest among young women to pursue a career in medicine and science.”

“It is gratifying to see a record number of women enrolling in medical school, and that more students than ever are answering the call to serve their communities. This growth in applicants and enrollees is good news for our growing, aging population, particularly given the real and significant doctor shortage the country is facing in the coming decade,” said Darrell G. Kirch, M.D., AAMC president and CEO.

According to a comprehensive study released by the AAMC earlier this year, the United States will face a shortage of between 61,700 and 94,700 physicians by 2025. To help ensure physician supply meets future patient demand, 22 new medical schools have opened over the past 20 years.



“While medical schools have done their part to address the shortage, for nearly two decades there has been a cap on federal support for physician training that was supposed to be temporary. Congress needs to step in and lift this cap,” said Karen Fisher, J.D., AAMC chief public policy officer. “The AAMC supports legislation that has been introduced to increase federal support for residency training so that patients will have access to care when they need it.”

Moving toward a more diverse workforce.

In 2016, the nation’s medical schools continued to build diverse classes across a number of racial and ethnic backgrounds. More than 2,000 Hispanic, Latino or people of Spanish origin enrolled in medical school in 2016, and the number of black and African Americans enrollees surpassed 1,700. In addition, more than 5,400 Hispanic, Latino or individuals of Spanish origin, and nearly 5,000 black or African-American students applied to medical school this year.

“We are optimistic that these data show an increase in diversity among medical school enrollees, but we’re also cautious about drawing conclusions about whether these findings mean a true increase because of a change in methodology,” Kirch said. “What we do know is that AAMC-member medical schools are leading pipeline programs, outreach efforts, and new and creative admissions initiatives to create a future workforce that reflects the diversity of our population and is best suited to meet the needs of patients.”

Finding a well-rounded student.

Students also are coming into medical school with backgrounds in the health sciences. In a slight increase over last year, more than three-quarters of applicants had research experience. The same percentage, 76 percent, reported volunteer community service in medical or clinical settings.

The average undergraduate grade point average of 2016 applicants remained unchanged at 3.55; the median score on the Medical College Admissions Test® (MCAT®) was 502 for students who took only the new exam, which launched in 2015. This year, most medical schools accepted scores from either the old or the new MCAT exam. The new exam tests a broader range of knowledge and reasoning skills and required different preparation than the previous version. Applicants were advised to take the MCAT exam that they were best prepared for and to test when they were ready.

“Students are entering medical school with strong academic credentials and impressive research and community service experience,” said Kirch.

Test scores and grades, however, are not the only focus for admissions officers. “More than one-third of the nation’s medical schools are using holistic review to look, not just at grades and test scores, but also at an applicant’s personal characteristics, experiences, and attributes,” Kirch said.

OPPORTUNITIES AND UPCOMING EVENTS



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CHECK OUT THIS LINK

Dr. Jeffrey Plagenhoef, ASA President-Elect, discusses professional citizenship, physician-led anesthesia, and out-of-town network payments.

<https://www.youtube.com/watch?v=ryPpM7SntNA>