

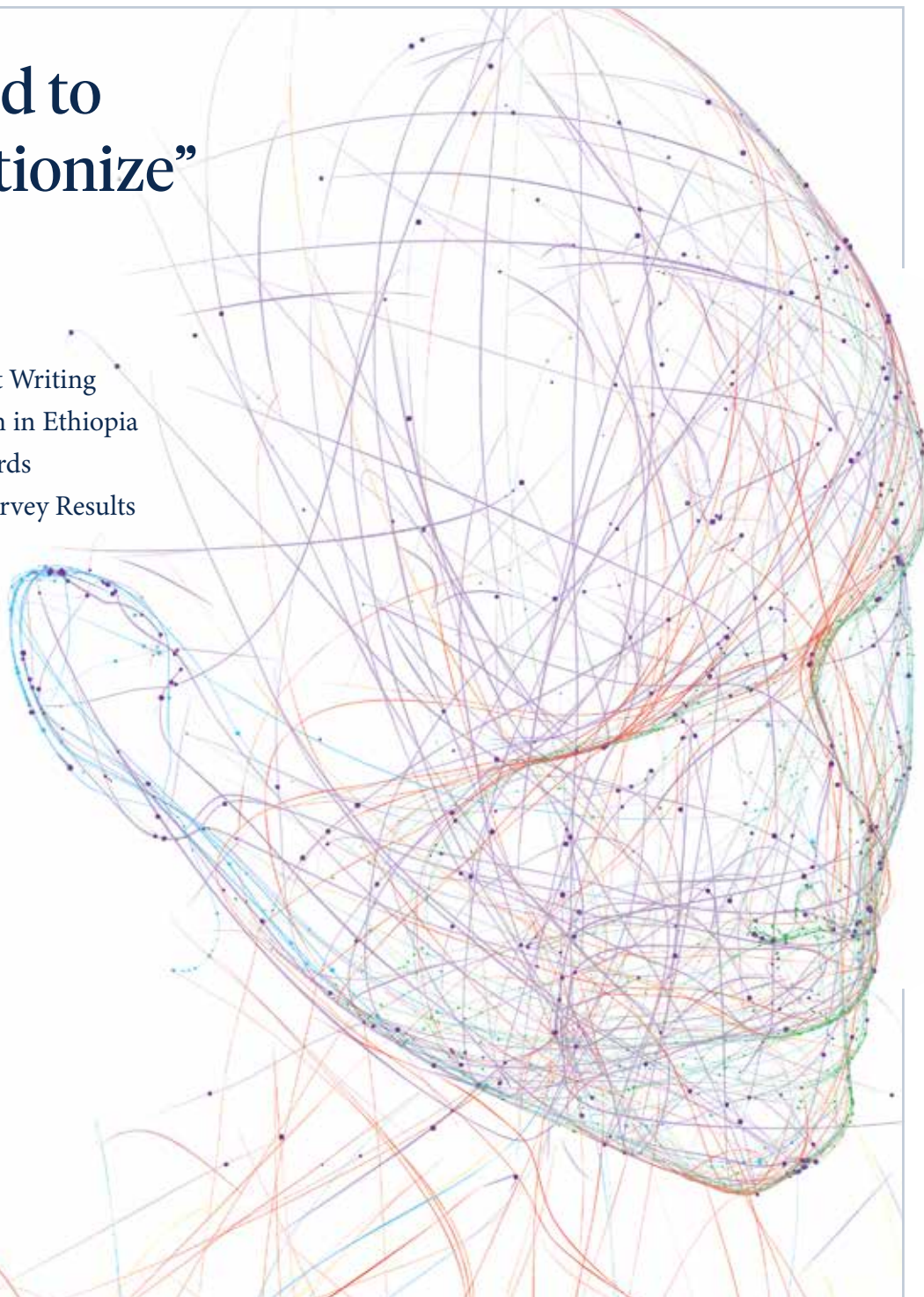
ACS Bulletin

AMERICAN COLLEGE OF SURGEONS

AI Poised to “Revolutionize” Surgery

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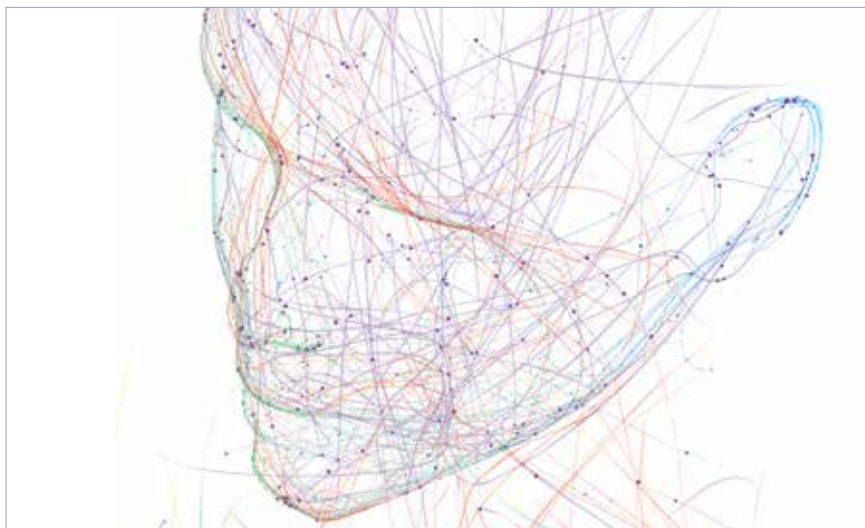
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Making Quality Improvement Frictionless and Ubiquitous

Patricia L. Turner, MD, MBA, FACS

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IT IS NO SECRET that the American College of Surgeons puts great emphasis on quality improvement. Improving the quality of surgery was a key impetus for the College's founding in 1913. Our first formal quality improvement initiative, the Hospital Standardization Program (a precursor of The Joint Commission), was launched in 1918.

More than a century later, nearly every aspect of surgical practice, from technology to decision-making to patient needs, has shifted in ways that our founders might never have predicted—but the College's commitment to quality improvement has remained constant. Today, we have 18 quality improvement programs in thousands of hospitals nationwide. We aim to make quality improvement a seamlessly integrated part of healthcare.

We know that most Americans receive their care in community hospitals, so these healthcare systems are just as important a focus for our Quality Programs as are academic medical centers. So far, we have engaged both types of institutions in our Quality Programs, with some notable successes.

Understanding Ambulatory Care

First is a managed care consortium headquartered on the West Coast, which has 35 sites that participate in one to five ACS Quality Programs each, with many participating in our National Surgical Quality Improvement Program (NSQIP®) as well as geriatric and cancer-focused Quality Programs.

One division has recently partnered with the College to expand its use of NSQIP to evaluate ambulatory surgery centers. The project is still in the pilot phase and is working to scale up across healthcare centers. Early analyses have found somewhat surprising results. Despite ambulatory surgery centers' general focus on lower-risk procedures in patients with fewer comorbidities than those treated as inpatients, their outcomes are not consistently better than inpatient care. Quantified comparisons of NSQIP and ambulatory center data on metrics such as surgical site infections and urinary tract infections offer opportunities for systematic improvements.

This is the kind of valuable information we seek in Quality Programs. As more and more procedures are performed on an outpatient basis, emphasizing quality in outpatient care is progressive and essential. Data demonstrating ways to improve care in this setting have the potential to impact an ever-increasing number of patients.

Improving Geriatric Surgery through Electronic Health Records

A healthcare system in New York state has implemented multiple Quality Programs in six of its hospitals, including the Geriatric Surgical Verification Program in three hospitals. After collaborating with an ACS team, they realized that updating their electronic health records would help create meaningful changes in geriatric surgery. Specifically, they reoriented clinical records to capture essential data on geriatric surgical care and improve communication among surgeons and advanced practice providers.

They added new note templates, banners to identify geriatric surgical patients, and connections between episodes of care, as well as flowsheets for nurses noting important considerations for working with geriatric patients.

When these changes were made available to all team members, the result was that their records now closely match the fields in our Geriatric Surgical Verification Program—giving this healthcare system the means to track its progress in quality improvement and offer their patients the best care possible, as seamlessly as possible.

Leadership as a Key to Change

Finally, there is a healthcare system near Washington, DC, that has enthusiastically adopted ACS Quality Programs and become an exemplar of increasing quality by standardizing care. Standardization, although always a guideline and never a replacement for expert opinion, is often key to improving quality across a healthcare system—enhancing outcomes while reducing cost. This healthcare system has fully embraced this idea, resulting in significant gains in quality.

The key to its success is strong leadership at the system level. This engagement increases buy-in through the healthcare system, makes leadership transitions possible without a loss in momentum, and helps spread successes in one department to others by sharing contextually relevant solutions to practical problems.

Frictionless, Ubiquitous Quality Improvement

In each case, the quality improvement process positions the ACS as a facilitator and champion of healthcare systems. The process of a site visit or verification visit minimizes imposition and emphasizes helping a healthcare system evaluate itself by reviewing its care processes, outcomes, and motivations for change.

Moreover, these efforts can help hospitals survive and thrive. We know that improving quality is imperative because serving patients to the best of our ability is the core of what we as surgeons do—but in these times, when financial issues can challenge community healthcare systems, the solid return on investment associated with quality improvement is vital, too.

Our overall goal is to create a Quality Program that is not just beneficial to clinicians, patients, and the system itself, but also one that is frictionless. Moreover, our aim is also to be ubiquitous. Our newest quality campaign, *The Power of Quality*, endeavors to bring our Quality Programs to every hospital and patient in the nation.

Of course, this means helping hospitals implement Quality Programs across many types of practices,

specialties, and communities. Some hospitals and clinicians are well-versed in the quality improvement tradition already, and we are positioned to help them go from good to great. Others are at the beginning of their quality journey, and for them, we offer roadmaps for engaging in this work, including a brand-new framework, a primer, and didactics for team members. See more on pages 40–43.

Just as all hospitals can (and should) implement Quality Programs, all surgeons can be advocates for quality. Communication is crucial to quality improvement, including to, from, and between frontline clinicians. So, we invite you, as surgeons, to become champions in your own environments, including communicating with hospital executives to amplify the quality conversation—and thereby building on what we as surgeons all want, which is to deliver high-quality care to our patients and be rewarded for exemplary work.


Throughout, the ACS aims to meet everyone where they are. We are all striving to be as effective as possible, and that is the power of quality in surgical care—as reflected in our 110-year-old motto, “To Heal All with Skill and Trust.”

Quality and Safety Conference

For those engaged, intrigued by, or curious about the quality journey, there is still time to register for the Quality and Safety Conference. This year, we will meet in Minneapolis, Minnesota, from July 10 to 13. We look forward to presentations on all 18 ACS Quality Programs, as well as an address by our Director of the Division of Research and Optimal Patient Care, **Clifford Y. Ko, MD, MS, MSHS, FACS, FASCRS**. Register here and invite your colleagues to come along: facs.org/qsc2023.

Clinical Congress

Registration for Clinical Congress 2023, October 22–25, in Boston, Massachusetts, is now also open at facs.org/clincon2023. The schedule includes a huge range of presentations, lectures, and awards from across the House of Surgery. We look forward to seeing you and your colleagues there. In particular, we welcome all of our new initiates who will be inducted this year.

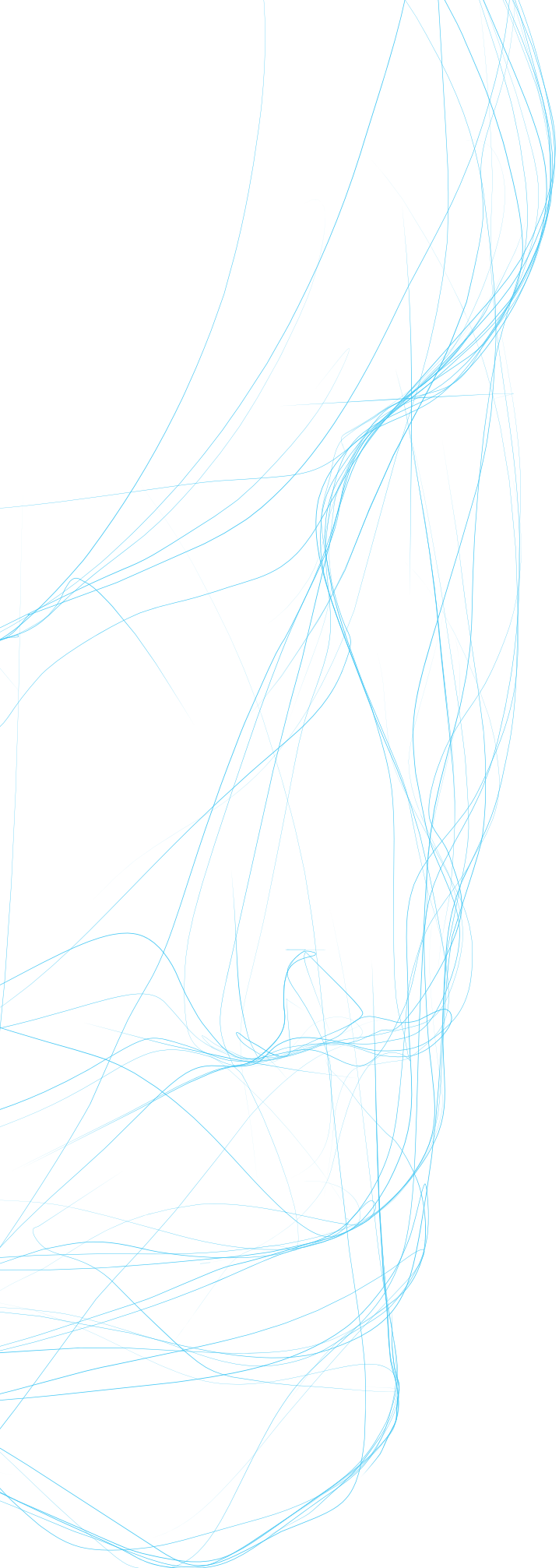
Please note that we are considering adding sessions on quality enhancement at Clinical Congress in the future—so if you are interested in this programming, let us know. 

Dr. Patricia L. Turner is the Executive Director & CEO of the American College of Surgeons. Contact her at executivedirector@facs.org.

AI IS POISED TO “REVOLUTIONIZE” SURGERY

JIM McCARTNEY

The daily barrage of news stories about artificial intelligence (AI) shows that this disruptive technology is here to stay and on the verge of revolutionizing surgical care.



AI IS THE STUDY OF ALGORITHMS that give machines the ability to solve problems, recognize words and visual aspects within images, and make predictions based on statistical inferences. When it comes to medicine, AI is able to review large amounts of data from patient records, radiological scans, or surgical videos, and use that information to detect, classify, and predict.¹

AI will have an expanding role in healthcare administration and patient care, said cardiothoracic surgeon Arman Kilic, MD, FACS, FACC, who is the director of the Harvey and Marcia Schiller Surgical Innovation Center at the Medical University of South Carolina (MUSC) in Charleston.

This technology will make hospital and health system operations more efficient and less costly and help address stresses such as workforce shortages. For example, by estimating how much time is left in the surgery, AI will help hospitals better plan their available hospital bed resources and more accurately inform the patient's family when the surgery might be completed.

AI also could reduce the need to have a nurse on call by providing a chatbot to answer patient questions, said Danielle Saunders Walsh, MD, FACS, FAAP, a pediatric surgeon and vice-chair of surgery for quality and innovation at the University of Kentucky College of Medicine in Lexington.

"A patient who wakes up at 1:00 in the morning 2 days after a surgical operation can contact the chatbot to ask, 'I'm having this symptom, is this normal?'" explained Dr. Walsh, who added that the use of chatbots has already been trialed in obstetrics with 96% of patients viewing the tool positively.



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In addition, AI is expected to help enhance surgical decision-making before, after, and even during a surgical procedure by bringing integrated information from many different data sources—such as the latest surgical guidelines or research insights—to the operating table and bedside. It has the capability to review patient charts and suggest a test or a medication.

“AI can individualize healthcare in a way that we, as surgeons, can’t by ourselves,” she said.

AI Is Used Mainly in Diagnostic Specialties—For Now

AI-based tools typically are used at academic medical centers that have more robust infrastructures and information technology departments. Most often, AI is used to recognize patterns, classify images, or detect objects by analyzing digital images or videos through a process called “computer vision.”

Not surprisingly, the technology’s biggest impact has been in the diagnostic specialties, such as radiology, pathology, and dermatology, said Jennifer Eckhoff, MD, the artificial intelligence and innovation fellow at the Surgical Artificial Intelligence and Innovation Laboratory at Massachusetts General Hospital in Boston.

In fact, most AI healthcare startup funding goes into a diagnostic specialty, according to Dr. Kilic.

The general goal is to identify high-risk cases that radiologists may have missed, such as metastatic nodules in CT scans. One study showed that by using AI, pathologists have decreased their error rate in recognizing cancer-positive lymph nodes from 3.4% to 0.5%.²

“It’s almost like a backup or a failsafe system that

can run in the background to look at the scan and see if we missed anything,” Dr. Kilic said.

AI can help radiologists prioritize the dozens of images they face each day, reviewing in minutes a stack of chest x-rays that might take hours for clinicians to evaluate. Dr. Kilic noted a study that involved board-certified radiologists reading through hundreds of chest x-rays. On average, it took them 4 hours to examine all of the scans, while an AI algorithm developed by the research group was able to complete the same reads with similar accuracy in 90 seconds.

Most research shows that scan interpretation from AI is more robust and more accurate than those from radiologists, often picking up small, rare spots in the images.

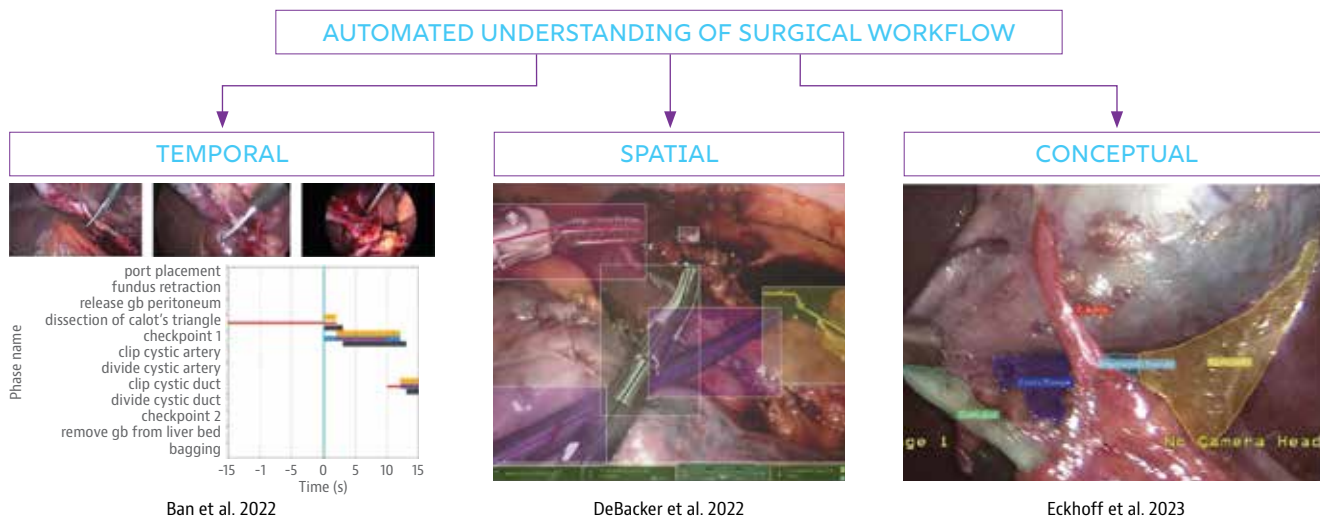
“AI is not intended to replace radiologists—it is there to help them find a needle in the haystack,” Dr. Walsh said.

Predictive Analytics: Delivering the Promise of Personalized Medicine

In the near future, AI is expected to be used increasingly to help assess risks and predict outcomes based on reviews of patient databases and multicenter national registries.

“Simultaneously processing vast amounts of multimodal data, particularly imaging data, and incorporating diverse surgical expertise will be the number one benefit that AI brings to medicine,” Dr. Eckhoff said.

To evaluate a surgical patient’s risks and benefits, including risk of postoperative complications, surgeons have long used patient databases and multicenter registries, such as The Society of Thoracic Surgeons National Database, the ACS



National Quality Improvement Program (NSQIP®), and others, to develop risk models.

Among the risk-assessment tools in use are the ACS NSQIP Surgical Risk Calculator, the University of Florida's MySurgeryRisk algorithm, and the Predictive OpTimal Trees in Emergency Surgery Risk (also known as POTTER) application.

AI and machine learning offer the potential to tap these large, complex data pools to develop even more robust predictive algorithms. By analyzing millions of historic surgeries along with patient characteristics, AI will help surgeons stratify the risks of a particular surgery for a specific patient.

"AI could help inform decisions and better inform patients and providers about their individualized risks and benefits of certain surgeries," said Christopher J. Tignanelli, MD, MS, FACS, FAMIA, a general surgeon and scientific director of the Program for Clinical AI at the University of Minnesota in Minneapolis.

One of the first AI risk models is the Epic Sepsis Model, part of Epic's electronic health record platform, which calculates the probability of sepsis, he said. The model is used by 170 customers representing hundreds of hospitals.³

Dr. Kilic and his team at MUSC are working on developing AI algorithms to help identify high-risk patients in need of organ transplants, evaluate potential donors, and match donor organs and recipients. A visual analytics platform merges interrelated data showing probable outcomes if they accept or reject the donor organ, he said.

"All of that currently is done through just clinician judgment and prior experience," Dr. Kilic said, adding that the ultimate goal is to use AI to make better transplant decisions and optimally allocate scarce resources—donor organs.

Intraoperative Assistance: Guidance and Execution of Simple Tasks

By highlighting tools, monitoring operations, and sending alerts, AI-based surgical systems can map out an approach to each patient's surgical needs and guide and streamline surgical procedures. AI is particularly effective in laparoscopic and robotic surgery, where a video screen can display information or guidance from AI during the operation.

"AI will analyze surgeries as they're being done and potentially provide decision support to surgeons as they're operating," Dr. Tignanelli said. For example, during a colonoscopy, AI will be able to identify a potential polyp.

Based on its review of millions of surgical videos, AI has the ability to anticipate the next 15 to 30 seconds of an operation and provide additional oversight during the surgery, explained Dr. Eckhoff, who is part of a research team that worked on prediction of the next surgical phases in a laparoscopic cystectomy. In the future, anticipation of surgical events could allow surgeons to change their courses of action, if necessary.

There's an international project to use AI to make laparoscopic cholecystectomies safer by placing an overlay on the surgeon's video screen during an operation to suggest where it is safer or less safe to operate, Dr. Walsh said. AI also can guide surgeons if they get lost during an operation. Or it might offer suggestions such as "put in a drain" or "do a bubble test."

"It might say to you, 'Warning, you're about to cut the common bile duct. Do you really want to do that?'" Dr. Walsh said.

Dr. Jennifer Eckhoff says that through comprehension of spatial, temporal, and conceptual aspects of surgical workflow, AI holds the potential to change minimally invasive surgery.



In robotic surgery, AI also will be able to perform simple tasks through the robot, including closing a port site and tying a suture or a knot.

“You get it ready, click the button, and then the robot does that step for you,” Dr. Tiganelli said. Last year, the first laparoscopic surgery without human help, which involved reconnecting two ends of a pig intestine, was performed at The Johns Hopkins University in Baltimore, Maryland.³

Most AI and robotic surgery experts seem to agree that the prospect of an AI-controlled surgical robot completely replacing human surgeons is improbable. After all, AI is intended to augment the surgeon’s decision-making and execution skills, not replace them.

AI’s Role in Medical Education and Training

AI can provide learning tools for surgeons at all stages of their careers, tracking their performance or teaching them new skills.

It also could help supplement the limited teaching capacity of specialized trained surgeons. Earlier this year, ChatGPT—an advanced AI chatbot made available to the public in late 2022—passed the US Medical Licensing Exam. The model achieved the passing threshold of 60% accuracy without specialized input from clinician trainers, according to researchers.

In addition, AI can function as an expert escort of sorts. During an operation, AI may offer information about similar cases, explain what is happening, and predict what may happen next. In this way, AI can serve as a guide not only for medical students, residents, or other surgeons

“AI could help inform decisions and better inform patients and providers about their individualized risks and benefits of certain surgeries.”

CHRISTOPHER J. TIGNANELLI, MD, MS, FACS, FAMIA

who are watching the operation, but also for all the members of the surgical team involved in the operation.

More information about how this technology can inform clinical decision-making and help surgeons more accurately assess risk, predict disease progression, and manage patients is available through the ACS online course, Artificial Intelligence and Machine Learning: Transforming Surgical Practice and Education. The program includes eight modules. Visit facs.org/aicourse/ for more information.

The Perils of AI: Accountability, Trust Issues, Data Bias

Although AI has enormous potential in surgery, it also poses a variety of ethical, legal, and regulatory issues. In addition, the rapid development of AI continues to be ahead of the process to develop the appropriate infrastructural frameworks to deploy it, Dr. Eckhoff said.

The following questions highlight key issues that surgeons may face as AI continues to evolve.

Who is accountable if an AI-guided patient case goes wrong?

Who do we hold responsible if AI leads a physician to a decision that results in a bad outcome? The programmer who created the software? The company that markets the software? The hospital that bought the software? Or the physician who used it? Opinions may differ depending on how the tool is used.

“We may have to look at the degrees of responsibility and how the tool impacts our decision-making,” said Dr. Walsh.

For some, the answer is clear—since AI is a decision-support tool, the ultimate decision must lie with the clinician.

“Anyone who deploys AI models needs to make sure that the people using them understand their performance and their limitations,” Dr. Tignanelli said.

Dr. Eckhoff agreed, “At the end of the day, physicians are accountable.”

How can we overcome resistance to change from surgeons and patients?

AI algorithms and other tools will have little effect if practitioners don’t regularly use them.

Unfortunately, skepticism and the natural resistance to change threatens to slow the incorporation of AI in medicine.

“Everybody is nervous about new technologies,” Dr. Walsh said.

Implementation science—the scientific study of how to facilitate the uptake of evidence-based practice and research—can help promote AI usage, said Dr. Kilic, who is doing research in this area. Simulation exercises can determine what surgeons like or don’t like about various AI tools, and why they would or wouldn’t use them, he added.

Most Americans are already leery of AI—60% of Americans would be uncomfortable if their provider relied on AI for their healthcare, according to a recent Pew Research Center poll.⁴ As a result, surgeons will need to learn how to effectively engage with patients about AI and explain how AI can help assess risks and benefits, Dr. Walsh said.

This apprehension about AI could be reinforced when the inevitable story of a poor patient

Robotic surgery can rely on the ability of AI—which is not constrained by time or memory—to absorb high volumes of data and help reshape the way surgeons learn and perfect their surgical skills.

“If AI is associated with a mistake in somebody’s healthcare, that’s going to be a big deal, and it’ll gather a lot of visibility.”

ARMAN KILIC, MD, FACS, FACC

outcome related to AI garners media attention. It won’t matter how rare the occurrence is or how well AI performs on average, Dr. Kilic shared.

“If AI is associated with a mistake in somebody’s healthcare, that’s going to be a big deal, and it’ll gather a lot of visibility,” he said.

What can we do about data limitations and bias?

“Garbage in, garbage out” has long been axiomatic in computer science. That is, a computer’s output is only as good as the data on which it is based. Research shows that a limited database can lead to biased conclusions.

“If you create AI software based on one population, it may not apply well to another population,”

Dr. Walsh said. “It depends on how big the sample set was, what kind of demographics were involved, where it was done, and what biases were created intentionally or unintentionally in doing so.”

For example, Epic’s Sepsis Model was trained on data from three hospitals. Such a small sampling does not represent the makeup of every hospital in the US, Dr. Tignanelli said.

“AI models are only as good as the data that they were trained on or what they’ve seen before,” he added.

In addition, AI models should be externally validated before they are published. Before those models are put into practice, there should be, at a minimum, evaluations for performance, equity, and fairness.

Like any surgical tool, surgeons need to be educated on the pros and cons, or the limits, of any given AI application.

Developing highly predictive algorithms will depend on improving the depth, quality, and diversity of the data that are being fed into the risk

models, Dr. Kilic said. That means using the entire electronic health record with tens of thousands of variables, rather than a few hundred. The power and accuracy of AI prediction models will depend on access to data from a diverse pool, including rural hospitals, community hospitals, and large academic hospitals, he said.

“That allows us to generate models that are more accurate and work for more people,” Dr. Tignanelli said.

It’s important to note that there are legal, ethical, and regulatory aspects around using data to train algorithms, Dr. Eckhoff explained.

According to Dr. Walsh, a key challenge is providing AI access to large amounts of patient data safely while still protecting the privacy of patient data, but there are several initiatives available to solve issues such as this.

One option that protects patient data is “federated learning,” a machine-learning technique that trains an algorithm through multiple independent sessions, each using its own dataset. Rather than pulling all the data together and developing a singular risk model, each medical center develops its own site-specific risk models and then shares their algorithms in a central repository to enhance the predictive capability of an overarching model.

The Critical View of Safety (CVS) Challenge from the Society of American Gastrointestinal and Endoscopic Surgeons is one of the first substantial efforts to compile large and diverse patient datasets for the development of AI.

The CVS Challenge aims to collect and annotate a worldwide dataset of 1,000 laparoscopic cholecystectomy videos. The initiative then will release the information to conduct a biomedical

data challenge—a competition among the global computer scientist community to develop the most accurate and reliable AI for CVS detection.

“The more diverse and more reflective of the real-world population a dataset is, the more representative and the more widely applicable the result is going to be,” said Dr. Eckhoff, who is one of the project leads. “The diversity of data is as important as the amount of data.”


Data quantity and diversity determine if AI models are widely applicable and reproducible regardless of variations in patient and surgeon factors.

Embracing AI

There’s no question among the experts that AI will revolutionize nearly every area of the surgical profession and ultimately lead to enhanced patient care. But, as with any dramatic innovation, it will face initial resistance before it is widely adopted, according to Dr. Kilic.

“I’m genuinely concerned about the rapid adaptation of AI into our daily lives,” Dr. Eckhoff said. “But with respect to application of AI to medicine and surgery, we’re not moving fast enough.”

When all is said and done, the transition to AI may be as profound as the transition from open to laparoscopic surgery.

Surgeons should look at AI as “an opportunity to augment the great work we do more than as a threat to what we do,” said Dr. Walsh, adding that professional societies, such as the ACS, should lead the effort to bridge the gap between the work of AI data scientists and clinical practice. 

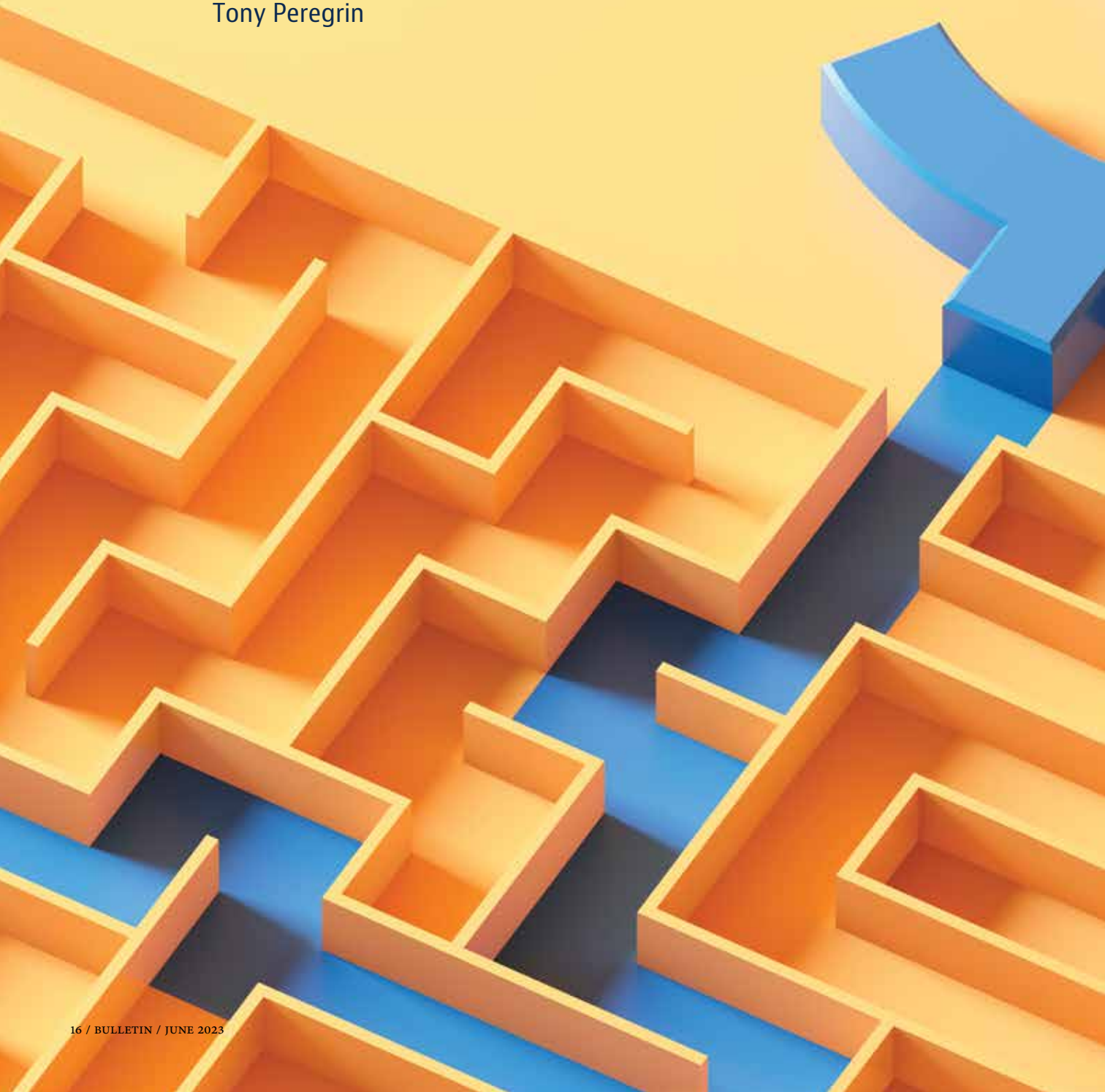
Jim McCartney is a freelance writer.

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Write a Winning Grant

Tony Peregrin





Let's face it— surgical innovation is expensive.

AT LEAST NINE Nobel Prizes have been awarded to surgeon-scientists—including Sir Frederick Banting's for the discovery of insulin in 1921.¹ Of course, today, these types of revolutionary medical advances rely on significant financial support, often in the form of grants provided by the US government, specialty societies, or private foundations.

The early career surgeon may find grant writing to be an intimidating process, especially as these skills are rarely included within the formal curriculum during training.

Fortunately, adhering to good grantsmanship protocols and seeking the advice of experienced mentors can help surgeon-scientists at all stages of their careers pursue funding opportunities, and myriad sources of financial support are available for investigators willing to put in the work.

An article published in the *Journal of the American College of Surgeons* in 2021 revealed an overall increase in National Institutes of Health (NIH) funding for surgeon-scientists from 2010 to 2020.¹

Specifically, in June 2020, surgeons held \$872.5 million in NIH funding compared to \$614.7 million in June 2010. General surgery-based subspecialties topped the funding list, comprising one-quarter of the funded specialties and nearly 40% of the total funding.^{1,2}

Although the NIH is the largest public funder of biomedical research in the world, investing more than \$32 billion per year to “enhance life and reduce illness and disability,” some experts suggest starting with society-based awards to establish a history of recognized research projects.^{3,4}



“I started with non-NIH grants, with smaller society grants, that were a little bit less arduous in terms of the time and energy that it takes to put these together,” said Timothy L. Frankel, MD, FACS, the Maude T. Lane Professor of Surgical Oncology and director of the Center for Basic and Translational Science at the University of Michigan in Ann Arbor. “Then I started to build the initial blocks of how to write a successful grant. With the help of both my primary mentor and co-mentors, I started to establish what I wanted my research career to look like and what I wanted to study, and then I put together my first major grant, which was an NIH K08 career development award.”

Where Do I Start? The Art of Grantsmanship

There are several approaches to good grantsmanship, but generally this term refers to the skills necessary to procure peer-reviewed research funding. One US university research development office defines grantsmanship as the ability to “match your agenda to the mission, culture, and procedures of funders, and doing so in a way that maximizes quality, is innovative, and is a positive representation of the requesting organization.”⁵

According to Luz Maria Rodriguez, MD, FACS, a dual fellowship-trained surgical oncologist and colorectal surgeon with the NIH’s National Cancer Institute, good grantsmanship begins with developing a question that is extraordinary.

“Think about the clinical significance of your proposal: How is it going to benefit the patient, the community, and the world? You need to be able to demonstrate how your idea will move the scientific

needle forward,” said Dr. Rodriguez.

In other words, the grant proposal should address a question that is unknown in the field and that warrants further study.

“Consider whether or not your idea will result in lasting and permanent change,” added Tammy Leonard, president of a grant writing consulting firm based in Orland Park, Illinois. “Whatever you are proposing, it has to be unique and not duplicative of previous work.”

If you’re looking for a source to fuel scientific discovery, attend a conference...and listen.

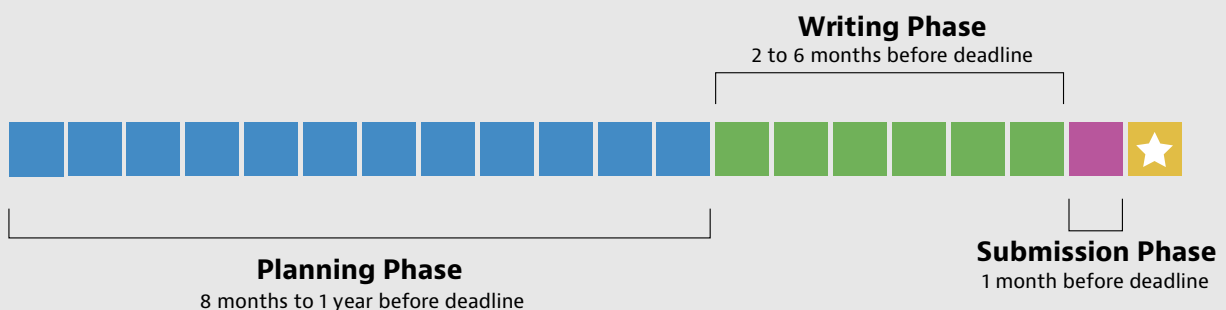
“What I often tell junior faculty members is, if you’re at a lab meeting or conference and you hear, particularly a senior person, say ‘That’s a great question—we just don’t know why,’ that typically means the collective community does not know why either—and that’s something that funding bodies are going to be interested in investing in,” said Dr. Frankel.

Beyond developing an innovative idea, good grantsmanship involves the skills necessary to communicate your proposal in a clear and intentional manner, the ability to engage in strong time management, and a collaborative approach involving mentor feedback and guidance.

In an article presented at the Academic Surgical Congress in 2020, titled “Top Ten Strategies to Enhance Grant-Writing Success,” the authors asserted that “a grant that reads poorly is likely to be set aside long before the final page,” and they suggest writing in a style that is accessible to a general scientific audience.⁶

“Reviewer panels include individuals with different levels and types of expertise within

Figure 1. Three Phases of Grant Writing



your field,” explained Dr. Rodriguez. “You want to make sure that everyone in the room, especially the primary and secondary reviewers, understand precisely what you are talking about.”

“When you’re writing for a government scientific foundation, there’s no fluff, there are no adjectives, there’s no emotion—they don’t want any of that,” added Leonard. “Your writing should feature the fundamentals of good grammar and be clear and engaging, but also remember that the reviewers will be educated in your field, so they will generally know what you are talking about.”

Experienced grant writers also invest the time and resources to ensure there are no overt typos, unusual font changes, or figures and tables that are cumbersome and difficult to comprehend. “All of these can be problematic for institutions that are thinking about giving you millions of dollars to study something,” explained Dr. Frankel.

Ultimately, when it comes to successful grant writing, good science is not enough. A focused, well-written proposal that underscores the novelty of your ideas in an edited and organized manner is essential to winning financial support.

“Help the reviewers, help you,” advised Dr. Rodriguez.

Another facet of good grantsmanship—avoid so-called domino aims, which are goals that are dependent on each other in order to achieve success.⁶

“When I write my grants, I make sure that if any individual aim were to fail, it would have minimal effect on the next aim,” said Dr. Frankel. “A classic mistake is to propose finding an agent in aim one, and then testing that agent in aim two, because if aim one fails, you have nothing to test in aim two.”

Reviewers are more likely to penalize an application if the aims are interdependent. Certainly, the aims should have a common thread, such as studying a disease or process, but they also should be self-contained so that the success of one does not rely on the other.

“These are potential pitfalls of a junior person writing a grant,” said Dr. Frankel, referring to all of the best practices that embody good grantsmanship. Overall, perhaps the most important piece of advice for novice grant writers is to avoid being overly ambitious; in other words, don’t overshoot.

“If you propose things that are outside of your skillset and training, then this will be one of the first things that reviewers are going to comment on,” explained Dr. Frankel. “This is a non-starter that will kill the grant no matter how interesting the question

or proposal. Also, “if a grant reviewer comments that you are overly ambitious, this is not a positive comment in this context,” added Dr. Rodriguez.

Grant-writing experts suggest submitting a more focused proposal rather than an overly elaborate one that could be difficult to complete within the timeframe of the award. The authors of the “Top Ten Strategies to Enhance Grant-Writing Success,” article recommend avoiding “screens, descriptive studies, or ‘fishing expedition’ projects that are open-ended and not hypothesis driven.”⁶ These projects typically involve substantial amounts of work that may not result in significant findings.



Dr. Timothy Frankel

Planning Ahead: Time Management

The process involved in assembling a grant proposal varies widely and is predicated on the type of grant that is being pursued and the mission of its funding agency.

The NIH, the world’s largest source of funding for medical research, has one of the most comprehensive application pathways and, therefore, provides a template for successful grant applications, generally speaking, no matter the source.

Right from the start—in the opening paragraph of NIH’s “Plan Your Application” website—the agency suggests that a research grant can be “subverted by poor planning, preparation, disorganization, and lackluster presentation.”⁷

“You have to have an early start. You may need as few as 2–3 weeks for a small project and as long as a year or more for larger projects,” said Dr. Rodriguez, who suggests approaching proposals in three stages:

- **Planning Phase** (8 months to 1 year before submission phase): Conduct an assessment of yourself, the field, and resources; brainstorm, research your idea, and contact NIH or granting agency program staff; set up your own review committee, collaborators, partners, and mentors.
- **Writing Phase** (6 to 2 months before submission phase): Plan/outline the application’s structure; write your application; get feedback and proofread.
- **Submission Phase** (1 month prior to submission date): Ensure all registrations are in place; meet institutional deadlines, also known as receipt date, due date, or application deadline.

A key component of the Planning Phase should involve researching the agency’s approach to funding, eligibility restrictions, and the types of grants offered by the program. For example, the NIH has 27 institutes and centers, and each has its own mission, priorities, budget, and funding strategy.

The NIH uses “activity codes” to differentiate the various research-related work supported by the organization: R series (research grants); K series (career development awards); T and F series (research training and fellowships); and P series (program project /center grants).⁸

Submitting a Successful Grant Is a Team Effort

“Find experienced staff at your institution who can assist you,” advised Dr. Rodriguez in a blog post for the Association of Women Surgeons.⁹ “This person may be in a central grants support office, or it may be another investigator or department administrator.”

The grants office, sometimes called the Office of Sponsored Research depending on the organization, can provide guidance on registering with the Electronic Research Administration (eRA Commons); inform you of any institutional deadlines

or criteria that must be met prior to submission; and offer advice on developing the application, especially regarding its budget.⁷

Seeking out mentors, specifically colleagues who are funded investigators, also is a key component of the team approach to successful grant writing.

“Mentorship is 100% recommended. After you’ve spent weeks or months working on your proposal, you’re probably not going to see errors, but a colleague reading it in a peer-to-peer review will help flag what you may have missed,” said Leonard.

“I met with my mentor every week in my first 6 months on faculty, just to pitch new ideas of what I wanted to study,” added Dr. Frankel. “The harsh reality was that I didn’t know nearly as much as he did. He would tell me ‘that’s been studied already’ or ‘that’s a dead end.’ That feedback was critical to making sure that I didn’t spin my wheels and waste valuable time.”

An example of an error that a mentor might detect could be something simple, such as a failure to follow directions. “One of the biggest mistakes people make in a grant occurs when there are several questions embedded within one main question,” explained Leonard. “People sometimes answer the first

Dr. Luz Maria Rodriguez



question, when there are actually several more that need to be addressed.”

You Received a Low Score: Now What?

The NIH uses a scoring system based on a 9-point rating scale, with a score of 1 representing the highest score possible, 9 the lowest, and a score of 5 representing a good medium-impact score. The NIH defines “impact” as “the likelihood that your project will exert a powerful influence on its field.”¹⁰


As noted earlier, Dr. Frankel’s first major grant application was for an NIH K08 career development award. “I received a good score, but I didn’t get funded, which I think was an important step in terms of learning how to address criticisms from reviewers and then resubmitting the grant. I was lucky enough to get the grant on the next round,” he said.

The award funded a 5-year study totaling \$875,000 that examined why patients with chronic inflammatory conditions are prone to developing pancreatic cancer.

In fact, rejection on a first submission is so common, grant-writing experts suggest planning for it by building into the overall timeline the days necessary to revise and resubmit a proposal.¹¹

Before embarking on the resubmission process, review the original funding opportunity announcement to learn about any potential new deadlines and eligibility requirements.

When resubmitting a proposal or application, consider the reviewers’ suggestions for change (e.g., the need for more preliminary data). Collaborate with your mentor to determine what is fixable and what may be irreparably flawed, such as a question that wasn’t deemed significant or innovative.

“Being awarded grants takes grit and persistence,” Dr. Frankel said. “It’s very easy to get discouraged by the process because it is difficult and not something that we are typically trained to do. But once you do get your first grant, there’s no feeling like it in the world.” 

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Tammy Leonard

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ATLS Promulgation Is Leading the Way for Trauma Care in Ethiopia

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Tewodros Tadesse, MD
Katherine R. Iverson, MD, MPH

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Chris Dodgion, MD, FACS



Trauma-related injuries are one of the primary causes of death and disability in low- and middle-income countries (LMICs).*

AS A LEADING ORGANIZATION focused on establishing trauma care standards for healthcare facilities and medical providers, the ACS supports the promulgation of its Advanced Trauma Life Support® (ATLS®) course as a way to teach a systematic approach for the care of the injured patient.

This article describes the 2-year process to bring the ATLS program to Ethiopia and serves as an example for further initiation of this program in other LMIC locations.

For the ATLS promulgation in Ethiopia, volunteers and staff with the ACS Operation Giving Back (OGB) program and ACS Committee on Trauma (COT) worked with Hawassa University Comprehensive Specialized Hospital (HUCSH) in Ethiopia, Federal Republic of Ethiopian Ministry of Health (FMOH), and Surgical Society of Ethiopia (SSE).

Timeline

Following the initial request made to OGB to support the initiation of ATLS training at HUCSH, grant funding was secured by the University of Wisconsin Department of Surgery from the Ira and Ineva Reilly Baldwin Wisconsin Idea Endowment.

Once the funding was secured, the next steps were:

- **Identification of local leaders.** In August 2021, HUCSH selected emergency and critical care physician Emnet Tesfaye, MD, and general surgeon Tewodros Tadesse, MD, to be the initial physician ATLS champions. Assistant professor Ephrem Geja, RN, was identified as the ATLS coordinator, given his experience in overseeing simulation courses at HUCSH.
- **Identification of regional ATLS Provider and Instructor courses.** Once the HUCSH champions were identified, in collaboration with

Opposite page: Dr. Belay Mellese, chair of the Department of Surgery at HUCSH, demonstrates the steps of endotracheal intubation for plastic surgeon Dr. Lydya Yonael and emergency care physician Yonas Nakachew, MD.

Ethiopia ATLS Promulgation Planning Timeline

2021

August

ATLS promulgation conversation begins between the ACS and HUCSH

September

Initial ATLS application submitted to COT

November

Ethiopian ATLS champions complete ATLS provider course in Turkey

December

Ethiopian ATLS promulgation approved by COT

2022

Escalating national conflict stalls ATLS planning from January to July

July

ACS faculty conduct in-person meetings with FMOH and HUCSH site visit

November

Ethiopian ATLS champions travel to UAE for secondary ATLS training

Decision that Emergency Critical Care Directorate in FMOH will identify ATLS participants

2023

January

Virtual site visit with COT Region 17 chief and coordinator

February

ECC Directorate selects participants for ATLS provider courses

ATLS promulgation begins

COT Region 17 (Middle East and North Africa), they completed the ATLS Provider Course in Ankara, Turkey, in November 2021, and the instructor course in Dubai, United Arab Emirates (UAE), in November 2022.

- **Assessment of HUCSH site and facilities.**

In November 2022, an in-person assessment of the HUCSH skills lab and course facilities was conducted by visiting ACS faculty to identify any equipment needs. In January 2023, a virtual site visit was conducted via Zoom with COT Region 17 leadership to confirm readiness of the HUCSH skills lab.

- **Scheduling the inaugural ATLS course at HUCSH.**

The inaugural ATLS course at HUCSH occurred February 13–23, 2023, including two Provider Courses and one Instructor Course.

Participant Demographics and Results

Eight emergency and critical care specialists, four orthopaedic surgeons, 14 general surgeons, one colorectal surgeon, and one plastic surgeon attended the inaugural ATLS Provider Courses. In this group, 28 participants passed the course, 16 were identified as having instructor potential, eight completed the ATLS instructor course, and four were certified as ATLS instructors.

The trainees represented eight of the 11 geographic regions of Ethiopia. All providers were attending physicians and financially supported by the FMOH.

Of the multiple factors that contributed to the success of this promulgation, the synchrony and rapport between surgical and emergency departments and across a diverse faculty and participant cohort were imperative.

ATLS faculty represented five countries across three continents and ranged from general surgical trainees participating as instructor candidates, to well-established senior surgeons with decades of experience in ATLS leadership.



The trainees represented eight of the 11 geographic regions of Ethiopia.



Course participants, who traveled across the country to the Sidama region where Hawassa is located, came from colorectal, emergency and critical care, general, orthopaedic, and plastic surgery specialties. This diversity created a unique learning environment for continuous discussion across cultures, specialties, and clinical experience, both in and out of the classroom.

A condensed promulgation time frame was essential to implement the “train-the-trainer” educational model. As the majority of ATLS faculty traveled from outside Ethiopia, the timetable was structured to maximize their time in-country. This promulgation was the first time the ATLS Provider Course was taught to local healthcare providers in their home country within COT Region 17.

In prior COT Region 17 promulgations, the first batch of participants traveled internationally to complete Provider and Instructor Courses before participating in their own country’s promulgation. This promulgation structure eliminated international travel for local participants and maximized the educational potential that could be provided by visiting faculty in a single trip.

Financial Cost

The overall cost for the initial ATLS promulgation was approximately US\$10,000, which was shared by the FMOH and HUCSH. The FMOH and HUCSH also supported the transportation and accommodation costs for course participants who traveled to Hawassa.

Top:
Dr. George Abi Saad, Chief of COT Region 17 and ATLS Provider Course Director, welcomes participants of the inaugural ATLS Provider Course.

Bottom:
Senior faculty of HUCSH General Surgery and ECC departments conduct the disability skills station, alongside ATLS faculty Dr. Chris Dogdjon.

It is through this cooperative work with Ethiopian trauma care champions, FMOH, SSE, Region 17 leadership, and US collaborators, including OGB, that this course promulgation was possible.



Air travel expenses for the international faculty traveling from the US, Egypt, Saudi Arabia, and Lebanon were supported through the Reilly Baldwin Wisconsin Idea Endowment. This grant, in association with multiple donations, also supported the acquisition of ATLS training equipment. ATLS course material and certification were supported by the COT.

Visa Challenges

The promulgation process was not without its challenges. Conflict across Ethiopia was ongoing at the time, highlighting the need for trauma system development and training. Unfortunately, HUCSH physician champions experienced some delays with visa acquisitions for international ATLS training. These delays lengthened the time to certify Dr. Tesfaye and Dr. Tadesse as instructors prior to proceeding with the initial ATLS promulgation in Ethiopia.

Visa acquisition also was challenging for ATLS faculty traveling from the Middle East. Despite planning several months in advance, Ethiopian visas for faculty traveling from Lebanon, Egypt, and Saudi Arabia were obtained only with a letter of invitation from the FMOH and with a slim time margin.

Logistical Challenges

It was essential to select participants for initial ATLS certification who were experienced in the management of trauma patients. As such, the complex logistics of identifying trauma champions



from across the country and coordinating their travel necessitated flexibility with final course rosters and agendas.

For some participants, this limited the availability of precourse material and the time they had to prepare. During the course, intermittent internet and electrical outages at the hospital site required that online educational material be downloaded prior to arrival and required faculty flexibility regarding temporary lapses in presentation visibility during the interactive discussions.

Next Steps

To address the gap in trauma management, the FMOH has identified the need for ongoing provider training.

The Ethiopian National ATLS Committee plans to conduct the ATLS Provider Course at least three times per year. The number of courses could be increased depending on participant interest level and available financial resources.

Fundraising will continue to be a focal priority as the majority of physicians may struggle to afford the minimum course fee. To partially address this, continued collaboration with the FMOH is crucial, as the Ethiopian ATLS initiative aligns with their current 5-year plan to improve critical care capacity nationwide.

It is through this cooperative work with Ethiopian trauma care champions, FMOH, SSE, COT Region 17 leadership, and US collaborators, including OGB, that this course promulgation was possible.

While future dissemination plans are still in development, Ethiopia and HUCSH have emerged as leaders for trauma training at a crucial time in the region. **B**

Note

Special thanks to the international ATLS faculty for their dedication to this project: Abdelhakim T. Elkholy, MD, FACS, Ahmad Zaghal, MD, MSc, FACS, Alliya S. Qazi, MD, Arielle Thomas, MD, MPH, MS, Emmanuel Abebrese MD, MS, Laura T. Withers, MD, and Nisreen Hamza Maghraby, MBBS, FRCPC(EM). Additionally, special thanks to Sharon M. Henry, MD, FACS, and Dany Westerband MD, FACS, for their guidance and support as Chairs of the International ATLS Committee for the COT.

Dr. Emnet Tesfaye is an emergency and critical care specialist at Hawassa University Comprehensive Specialized Hospital in Ethiopia. She currently serves as the national Ethiopia ATLS Director and is a technical advisor to the Emergency, Injury, and Critical Care Directorate of the Ethiopian Ministry of Health.

*World Health Organization. Injuries and violence. Newsroom/fact sheet. March 19, 2021. Available at: <https://www.who.int/newsroom/fact-sheets/detail/injuries-and-violence>. Accessed April 27, 2023.

The participants of the second ATLS Provider Course, with newly certified Ethiopian ATLS instructors, ACS faculty, and a delegate of the FMOH, celebrate the conclusion of a successful ATLS promulgation.

Opposite Page:

Dr. George Abi Saad and Dr. Emnet Tesfaye sign the Ethiopian ATLS memorandum of understanding.





Virtual Tumor Boards Provide Care Access for Rural Cancer Patients

Noel C. Sanchez, MD, FACS
Scott D. Coates, MD, FACS
William C. Cirocco, MD, FACS

ALTHOUGH INITIALLY considered by some to be a disruptive technology in medicine, virtual multidisciplinary tumor boards (MDTs) were not meant to entirely replace conventional practices before the pandemic, but rather complement them. As we emerge from the pandemic, our experience is that the virtual MDT not only has improved coordination and communication among physicians, but it also has allowed increased efficiencies with the potential to improve outcomes for the cancer patient—especially in a rural setting.

Kansas—known for its wide-open spaces, rolling hills,

and prairies that are ideal for farming—is the 15th largest state by area with 82,000 square miles, yet it is only the 34th most populous state in the US, with 3 million citizens. Hence, a large portion of the state is rural, creating challenges in healthcare delivery.

As expected, there is a shortage of healthcare providers in rural areas where patients have limited access to healthcare facilities. Additionally, access to certain specialists (e.g., colorectal surgeons) is limited to the state’s two largest cities, Wichita and the Kansas City metropolitan area.

The ACS Commission on Cancer (CoC) is a consortium of professional organizations dedicated to improving survival and quality of life for patients with cancer by setting and continually raising standards. The CoC promotes cancer prevention, research, education, and monitoring of comprehensive quality care through its National Cancer Database.

CoC accreditation recognizes the commitment of cancer care institutions and programs that provide high-quality, comprehensive, multidisciplinary care for their patients. Kansas has eight CoC programs that carry



Figure 1. In Kansas, CoC programs are located in the cities of Wichita, Lawrence, the state capital Topeka, Kansas City, and two cities in the greater metropolitan Kansas City area—Olathe and Shawnee Mission.

ACS accreditation, but other than Wichita, they are concentrated in the larger urban areas of northeast Kansas: the capital city of Topeka, Lawrence, Kansas City, Shawnee Mission, and Olathe (see Figure 1, page 30).

Access to an MDT is often limited to these CoC programs, further impairing access and treatment of cancer patients across the remainder of the state. It is not unusual for a patient in rural Kansas to travel hundreds of miles to receive specialty cancer care.

Virtual MDTs Enhance Collaboration

The medical community of Wichita—the largest city in Kansas with a population of 390,000—provides tertiary care for a referral area that includes southeast, south central, and western Kansas with a medical catchment area that serves approximately 1 million Kansans.

Ascension Via Christi hospitals of Wichita (AVCW) have a long-standing MDT that meets two to three times each month. However, the COVID-19 pandemic required changes to how MDTs function across the US, including transforming the usual in-person interface between medical colleagues and their patients. At AVCW, in-person MDTs were discontinued in March 2020 and resumed with the benefit of virtual technology in June 2020, using a cloud-based software system that supports the functionality of MDTs.

The platform provides a vehicle for physicians and other healthcare professionals

to collaborate and review patient cases, make treatment recommendations, and track patient outcomes. Although case information and data can be entered or reviewed anytime, individual case presentations are discussed in real time. Having the ability to log on from any location is a major benefit, given the hectic schedules and daily commitments of participating physicians.

In addition, having physicians in neighboring, outside communities and rural hospitals participate virtually in MDTs reduces isolation in decision-making and potentially improves patient care and outcomes. In fact, a standard array of specialists participate in the virtual MDT (see Table 1, this page) from communities outside of Wichita, in central or southeast cities such as Manhattan, Salina, Hutchinson, Fort Scott, and Pittsburg.

While the patient’s definitive treatment (e.g., radiotherapy, chemotherapy, or surgical resection) may occur in their hometown or in Wichita, input from the referring physician(s) who performed the initial evaluation and management is essential. Furthermore, providing feedback to referring physicians is an important component of these communications.

AVCW’s Experience with Virtual MDTs

In 2022, 292 individual cancer patients were reviewed via the virtual AVCW MDT (see Table 2, page 32). AVCW physicians involved in the virtual MDT that year included

Table 1.

List of physician specialty groups that routinely attend MDTs

Medical oncology
Radiation oncology
Pathology
Diagnostic radiology
Interventional radiology
Medical genetics
Surgery

representatives from each of the appropriate specialty areas.

Patients presented for a variety of reasons, but they were typically complex cases that required input from multiple specialists to develop an optimal treatment plan. Also, patients who had multiple viable treatment options or who required a unique approach were considered, as variables such as age or comorbidities also came into play.

The AVCW MDT is open to any patient at the request of the treating physician, to guide optimal decision-making and cancer management. Cancer diagnoses presented in high volume included prostate (39%), rectum (24%), and lung (17%).

An example of a routine MDT process is that all patients with the diagnosis of cancer of the rectum are discussed before and after completion of treatment, which typically includes surgical resection. This is a requirement needed to receive National Accreditation Program for Rectal Cancer (NAPRC) accreditation, one of the quality programs originated and accredited by the ACS.

For the AVCW MDT, cardiothoracic surgery, colorectal surgery, and urology services have the greatest involvement from the affiliated surgeons, radiologists, and oncologists. As one would expect, these three specialty services also represent the vast majority of cases reviewed by the AVCW MDT.

Beyond the three top cancer categories presented (prostate, rectum, and lung), the next major category of cancer cases presented is breast cancer at 4%. However, this small percentage is not a true reflection of the breast cancer volume treated at AVCW, as breast cancer has its own individual community-wide MDT that meets separately from the AVCW MDT.

Prior to the COVID pandemic, in-person MDTs were poorly supported and attended by healthcare providers. There are many factors that explain the poor attendance at MDTs, including lack of time, activity at several different hospitals, emergency cases or familial/personal issues, and other commitments.

Research on Virtual MDTs

The data on virtual MDTs are relatively limited. However, some studies suggest that virtual meetings can be just as effective as in-person MDTs. One study revealed that physician attendance at virtual MDTs after the pandemic increased by 46% over in-person attendance before the pandemic, and there also was a 20% increase in the volume of cancer case presentations.¹

Table 2. AVCW MDT 2022 Case List

Cancer Type (organ)	# (number)	% (percentage)
Accessory sinus	1	0.34%
Anus/anal canal	2	0.68%
Brain	2	0.68%
Breast	13	4.45%
Bronchus/lung	49	16.78%
Cervix	2	0.68%
Colon	1	0.34%
Esophagus	2	0.68%
Gallbladder	1	0.34%
Heart/mediastinum/pleura	1	0.34%
Ill-defined site	2	0.68%
Lip/oral cavity/pharynx	1	0.34%
Liver/intrahepatic bile duct	1	0.34%
Lymph node	3	1.03%
Nasal cavity and middle ear	1	0.34%
Oropharynx	1	0.34%
Ovary	1	0.34%
Pancreas	3	1.03%
Parotid gland	1	0.34%
Prostate	114	39.04%
Rectum	71	24.32%
Retroperitoneum/peritoneum	2	0.68%
Skin	4	1.37%
Small intestine	2	0.68%
Soft tissue	2	0.68%
Testis	1	0.34%
Tongue	1	0.34%
Unknown primary	2	0.68%
Urinary bladder	1	0.34%
Uterine corpus	4	1.37%
Totals	292	99.93%

For the AVCW MDT, cardiothoracic surgery, colorectal surgery, and urology services have the greatest involvement from the affiliated surgeons, radiologists, and oncologists.

Another study showed the participating hospitals were able to run three times as many patients through the virtual MDT process, with a higher level of participation across all specialties than the in-person pre-pandemic counterpart.² This same study noted that the pandemic-era virtual MDT gathered key statistics about each case, which allowed administrators to monitor specific metrics, such as improvements in time from diagnosis to treatment initiation and impact on patient outcomes.

Another study from the University of Pittsburgh found that the majority of MDT participant respondents (58%) preferred the virtual MDT format compared to the traditional in-person format.³ A majority of respondents (79%) also preferred to continue the virtual MDT format once in-person meeting restrictions were lifted.

One of the current goals at AVCW is NAPRC accreditation. The NAPRC *Optimal Resources for Rectal Cancer Care (2020 Standards)*, an education program developed by the ACS, is available online. In the interval between typical cancer program development to NAPRC accreditation, use of these standards may have a significant impact.⁴

A recent review of 40,000 patients from the National Cancer

Database, treated between 2011 and 2014, revealed that compliance with established standards before NAPRC accreditation was associated with a significant reduction in patient mortality.⁵ This study documented the importance of the NAPRC as it relates to improving patient outcomes of cancer care.

Having a virtual MDT has facilitated this process by improving the volume of patient participation and attendance from various physician specialists. In addition, the virtual platform has facilitated tracking of metrics needed for NAPRC accreditation.

Indeed, the AVCW MDT experience is an example of how this technology can drive an increase in case volume, and how it can facilitate physician collaboration in an effort to enhance the care of the cancer patient. **B**

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Survey Highlights Surgeon Compensation, APPs, Diversity, and Other Issues

Danielle E. Katz, MD, FACS
John P. Kirby, MD, FACS

THE ANNUAL Board of Governors Survey was developed to collect demographics, patterns, opinions, and data across the spectrum of issues facing the practicing surgeon. Initiated almost a decade ago, this survey has provided ACS leaders' perspectives on a variety of topics with the goal of translating the data into action across the College.

In 2022, the survey was expanded to include the Advisory Councils, Resident and Associate Society leaders, Young Fellows Association leaders, and various committee and workgroup leaders to better inform, and more importantly, reflect the changing demographics of ACS leadership.

Renamed the ACS Leadership Survey, the 2022 version of this assessment tool was distributed to 743 volunteer leaders and received a 63% response rate (470 responses); 70% of the

respondents were male and primarily from the US (87%). The average age for an ACS leader respondent was 55.

While this response rate is considered high for most surveys, it was much lower than recent surveys sent exclusively to ACS Governors, which generally averaged a 94% to 96% response rate. While a 63% response rate falls short of the target, College leadership expects more robust participation in the survey in the future as its value continues to be promoted to membership.

The 2022 ACS Leadership Survey collected demographics and feedback on the following:

- Leadership communications
- Surgical volunteerism
- Wellness
- Advanced practice providers (APPs)
- Compensation
- Diversity, equity, and inclusion (DEI)

Practice Setting

Trends seen in recent ACS Governors' surveys also were reflected in the 2022 survey, such as the move from private practice into larger group practices. For example, more than 70% of respondents are in an employed practice model and most (64%) work in a university or academic medical center (see Figure 1, this page). A total of 55% are employed in a surgical or private practice multispecialty group practice with five or more surgeons. Approximately two out of three respondents (65%) self-identify as white and are general surgeons. While these employment trends are reflective

Figure 1. Most respondents (64%) work in a university or academic medical center

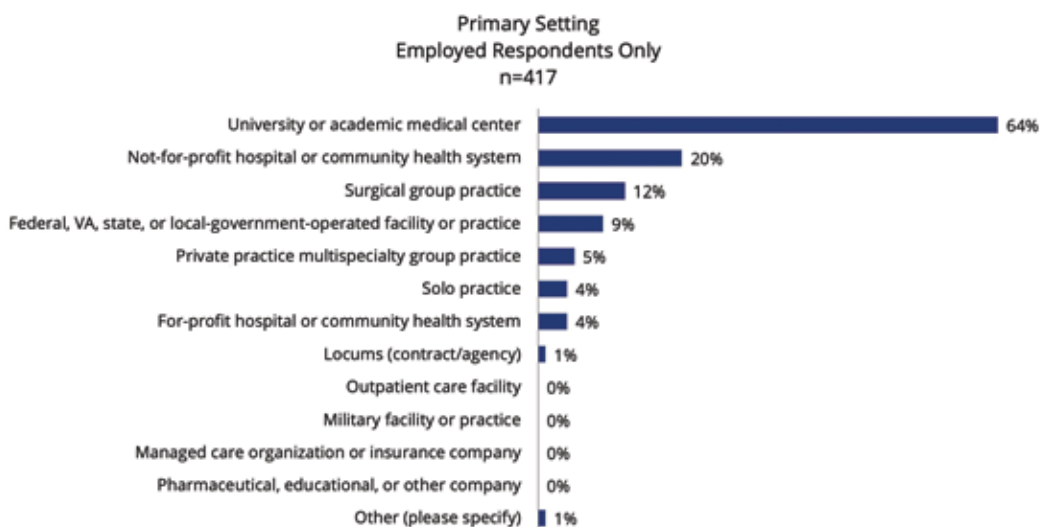
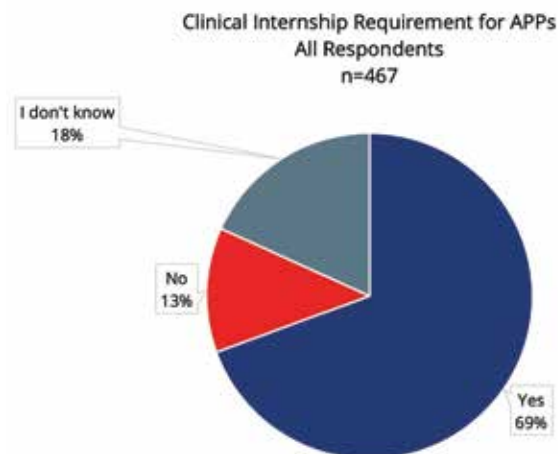


Figure 2. Nearly 7 out of 10 respondents (69%) believe APPs should be required to complete a clinical internship or training period following graduation and before clinical practice



of recent studies, such as the 2022 Association of American Medical Colleges Physician Specialty Data Report, a more heterogeneous sample may provide different perspectives on key issues facing the House of Surgery.

Leadership Communications Assessment

The survey inquired about the use of, and satisfaction with, communication efforts from the College. Respondents overwhelmingly chose email as the most used (95%) and preferred communication format (89%). Most respondents (53%) prefer weekly communication from the ACS. Information on clinical practice or consensus recommendations on surgery from the ACS were the most popular topic areas (69%).

Specific types of content also were more highly valued based on practice setting. For example, employed surgeons expressed more interest in receiving status

reports on key ACS programs, services, or initiatives, while those in private practice ranked receiving updates on ACS political, legislative, or regulatory activities as more important.

Regarding which ACS programs, services, or communication vehicles were used or accessed by the respondents, the ACS website (78%), the *Journal of the American College of Surgeons* (JACS) (77%), and the ACS *Bulletin* (75%) were the top ranked. Satisfaction with ACS resources was highest for the Surgical Education and Self-Assessment Program (SESAP®) with 98% “extremely” or “somewhat satisfied.”

Although there were some slight differences in satisfaction scores among age groups, high satisfaction scores (more than 90%) were received for the following: *Surgical Readings from SRGS* podcast; the *Optimal Resources for Quality and Safety* also known as the (“Red Book”); ACS

SurgeonsVoice; JACS; the ACS *Bulletin*; *Optimal Resources for Surgical Education and Training*; and topic-specific videos.

APPs

Because APPs are an important component of the global delivery of healthcare, and multiple programs have been developed to train and graduate APPs, the survey inquired about the use of, and attitudes toward APPs (see Figure 2, this page).

Most respondents (78%) indicated they use APPs—primarily nurse practitioners and physician assistants—in their organizations/practices, and almost all respondents (95%) were “extremely satisfied” or “somewhat satisfied” with the performance of APPs.

APPs are primarily used in postoperative care (94%), preoperative care (86%), and patient and family communication (77%). APPs allow for an increase in patient capacity (67%) and provide more time for surgeons to focus on acute patients (66%). 70% of

private practice surgeons and 28% of employed surgeons use APPs as surgical assistants.

Employed surgeons (70%) found more value in using APPs to allow residents to comply with duty hours than private practice surgeons (38%). All practice types observed that APPs provided improved communication and enhanced patient/family experience, increased access to patients, and improved work/life integration.

Among the 17% of respondents who do not use APPs, 26% indicated APPs take time away from residents. Other reasons for not using APPs included respondents deeming them unnecessary, lack of hospital support, and difficulty with the availability of APPs in certain geographic areas. Most of these respondents were in private practice.

Although 74% of respondents were “extremely satisfied” or “somewhat satisfied” with the competency of APP program graduates entering surgical practice, 69% believe APPs

should be required to complete a clinical internship or training period following graduation and before clinical practice. 66% of respondents said they believe it is “extremely” or “very important” for the ACS to be involved in establishing requirements for APP training, and approximately 59% of respondents indicated it is “important” for the ACS to be involved in verifying APP training programs.

Surgical Volunteerism

Surgical volunteerism has become an increasingly popular experience for surgeons. More than half of the respondents have been involved in surgical volunteerism and 94% found it “satisfying.” Slightly more men (56%) than women (44%) have participated in surgical volunteerism.

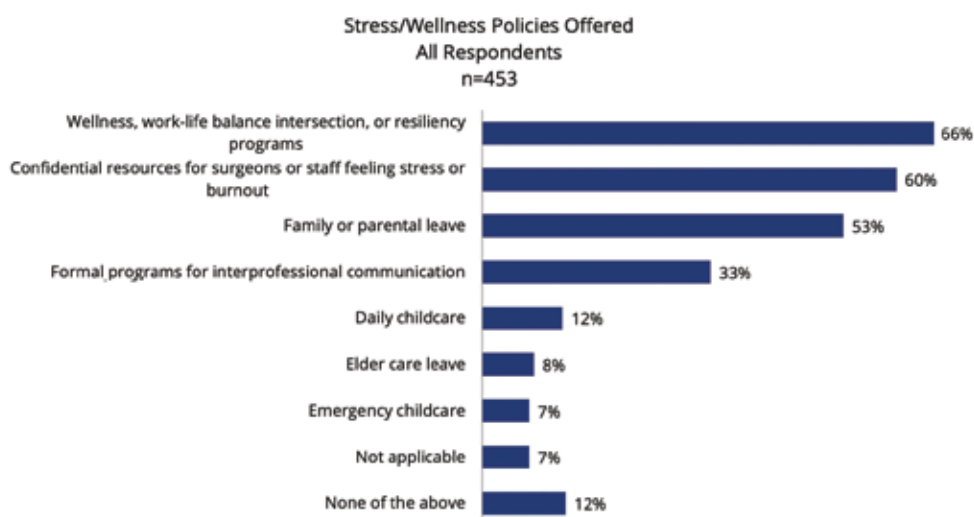
83% reported an experience lasting 2 weeks or less. 69% of respondents who have not participated in volunteerism efforts ranked extended time away as the primary barrier. Locations in the US and Africa have

been the most popular for surgical volunteerism, although opportunities in the Caribbean and Central and South America also were identified.

Residency applicants are increasingly expressing an interest in surgical volunteerism as they choose surgery and specific training programs but only 24% indicated that formal electives are offered by organizations and/or practices. An opportunity exists for the ACS to further help incorporate surgical volunteerism into training programs and practices, especially if further data delineate its impact on increased resiliency and reduced burnout. Supporting time away for surgical volunteerism also could be a model for surgeons who may need to temporarily stop and/or start active practice, such as for health or family reasons.

Operation Giving Back (OGB) is a valuable and well-known member resource with only 27% of the respondents indicating they were unaware of the program. 40% of respondents who have not yet participated

Figure 3. Wellness, work-life balance intersection, or resiliency programs are offered by 66% of respondent organizations/practices



in OGB indicated they were interested in participating in the future.

DEI

The ACS Leadership Survey included questions concerning DEI-related experiences of members and the respective organizations where they practice. Most respondents (81%) incorporate DEI programmatic information into regularly scheduled meetings, such as morbidity and mortality conferences, and these leaders also indicated that they recognize the value of social determinants of health in improving the care of surgical patients.

Although 60% of respondents have a designated DEI officer/ombudsman at their organization/practice, this was not as prevalent in countries outside of the US. Similarly, 63% of US respondents worked at places with formal DEI training sessions compared with only 14% in other countries.

The availability of anonymous reporting systems for DEI concerns also was more prevalent in the US, with 51% able to anonymously report and only 8% in other countries. Of note, only 32% of surgeons underrepresented in medicine (URiM) reported the availability of anonymous reporting systems compared with 53% of White surgeons.

41% of respondents were required to complete DEI education when they began employment. Of these respondents, 82% were required to use online self-directed modules and 48% were required to engage in in-person training. (The survey did not include questions on the length, content, and structure of the in-person training.) 30% were provided or recommended DEI-related reading materials. Only 15% were required to participate in national training efforts.

Fewer respondents suggested that their organization/practice

has demonstrated intentionality to promote URiM faculty to leadership positions (28%). Of these respondents, there was a significant difference between URiM surgeons (21%) and White surgeons (30%). Only 20% reported that their organization/practice has a transparent faculty salary reporting system, and the same number reported “a transparent model for achieving pay parity/equity.”

Wellness

Although 66% of respondents reported their organization/practice offered programs for wellness, work-life balance, or resiliency, these programs were more prevalent in the US (72%) compared with other countries (25%) (see Figure 3, page 37). Similarly, while most (60%) had access to confidential resources for surgeons/staff experiencing stress or burnout, this access was higher in the US (66%) compared

Figure 4. Three-fourths of respondents (75%) indicate that salary is included in their compensation agreements



with other countries (23%).

Family or parental leave was available for 53% of respondents, while only 8% reported the availability of elder care leave. Even fewer had access to daily childcare (12%) and emergency childcare (7%).

While 57% indicated they “somewhat” or “strongly” agreed that they have adequate time for rest, only 42% “somewhat” or “strongly” agreed they had adequate time to complete administrative work. More than half (54%) of surgeons in countries outside the US had adequate time for administrative work compared with only 39% in the US. Although surgeons indicated high levels of administrative burden, 76% indicated patient needs were still adequately covered when surgeons took time off. More women (42%) than men (24%) reported they had an insufficient amount of time off for rest.

Compensation

75% responded that some form of salary is a consideration included in compensation agreements (see Figure 4, page 38). 44% reported relative value unit (RVU)-based or other volume-based compensation is included in their compensation agreements, and 41% reported a productivity bonus. 41% indicated that administrative responsibilities are a consideration when negotiating compensation, and 31% also included contributions to the individual’s educational mission as a key driver.

Fewer respondents reported the inclusion of the following in compensation agreements: research grants (21%); patient experience measures (19%); quality/outcomes measures (14%); stipends or honoraria

(14%); other administrative or contractual revenue (12%); profit-sharing or other practice investment earnings (8%); and DEI metrics (2%). Profit-sharing or other practice investment earning was higher ranked by private practice surgeons (83%) compared with employed surgeons (19%). More US surgeons (67%) ranked administrative responsibilities within institutions such as committee work and departmental leadership higher than surgeons in other countries (40%).

These data provide a basis for discussion and growth opportunities within the College, such as continued focus on work-life balance, improved compensation models, and increased surgical volunteerism opportunities to improve resiliency. Leaders working with DEI-related initiatives will be able to use these data to better address the gaps that members are encountering in their institutions.

As the College continues to enhance its day-to-day relevance to both members and surgical patients, it will continue to use data-driven approaches to communicate opportunities more effectively. Future ACS Leadership Surveys will focus on programs and efforts related to the College’s mission to safeguard standards of care in an optimal and ethical practice environment. **B**

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Commentary

The 2022 ACS Leadership Survey: Encouraged and Disappointed

I HOPE YOU FOUND this article insightful and informative. I did. Many of the points are key for informed action:

- Email remains the best way to communicate timely updates.
- Only 1 in 5 of us is not dependent on advanced practice providers to function.
- Barely 50% of us have the opportunity to report DEI problems anonymously.
- Compensation for the majority remains productivity based, regardless of the many additional responsibilities and tasks allocated.
- And perhaps, most strikingly, the lack of comprehensive family and parental leave and childcare policies, as well their enforcement continues to push the idea of work-life balance in the wrong direction.

The 2022 ACS Leadership Survey provides a great deal of raw data to inform and explain who we are and what we do as surgeons. As with any survey, it can only reflect those included, but our hope is that this sample becomes a more accurate representation of real practice.

The survey also enforces the importance and value of active participation in the ACS. As a leader, you are a representative of your chapter, specialty society, workgroup, or committee. As a member, you must demand from your leadership an active and accurate voice on the issues facing each one of us today.



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New ACS Quality Framework and Toolkit Offer Organized Approach to QI

Karen Pollitt
Lynn Modla

ACS Quality Program hospitals perform more than 3,500 quality improvement (QI) efforts annually as part of the accreditation/verification process. These small-scale efforts are usually local and conducted by frontline clinicians and clinical teams.*†

8 Components of the Quality Framework

Planning	1. Problem Detailing
	2. Aim Specification
	3. Strategic Planning
Conducting	4. Process Evaluation
	5. Outcome Evaluation
	6. Cost Evaluation
Reflecting	7. Knowledge Acquisition
	8. End-of-Project Decision-Making

RESOURCES FOR IMPLEMENTING QI projects vary by local setting but fundamentally include leadership, personnel, time, skills and expertise, access to evidence, and organizational capacity to make improvements.[‡]

To support this QI work, the College released the ACS Quality Framework and Toolkit, which was developed by surgeon and staff representatives from seven ACS accreditation/verification programs—trauma, cancer, breast disease, rectal cancer, children’s surgery, bariatric surgery, and geriatric surgery.

These resources provide an organized approach to guide surgeons and quality teams in planning, conducting, evaluating, and reporting of improvement projects.

The Quality Framework consists of eight components with associated criteria organized around the three phases of a QI initiative—planning, conducting, and reflecting.

Planning Phase

An effective improvement plan begins with assessing the current situation to determine the project focus and implementation process, and then developing strategies to put the plan in place. The three components in the Planning Phase are:

- **Problem detailing:** A problem statement defines the challenge and outlines the scope of the project. The process of problem detailing will guide the project team through analyzing what data are available as a baseline, assessing why the problem matters and who it impacts at a local level, and

determining what stakeholders need to be involved in the project.

- **Aim specification:** Creating an aim statement helps clarify and define the goal of the project. The aim statement should be specific, measurable, achievable, relevant, and time-bound (SMART). An impactful aim statement succinctly describes the project goals and presents them in a manner that is understandable to clinical teams and leadership.
- **Strategic planning:** The strategic plan is the blueprint for carrying out a successful improvement intervention. Discussing implementation strategies with the project team

ensures that all members understand the rationale behind the intervention, which drives stakeholder buy-in throughout the project. Strategic planning also drives the team to define the resources and data needed, and potential limitations and barriers of the plan to ensure an effective project.

Conducting Phase

Developing a plan of action to successfully implement the project and evaluate results at regular intervals is key to a successful project. There are three components in the Conducting Phase:

- **Process Evaluation:** Process evaluation involves periodically checking whether the intervention is being performed as planned (regular data collection within the specified timeframe, and so on). Analyzing the implementation process also can reveal whether any problems encountered were caused by a design flaw in the intervention, an unforeseen barrier in the operating environment, or other factors. This information can be used to adapt the intervention if necessary, and help others understand the mechanisms behind the success of the project so that it can be replicated and developed for other contexts.
- **Outcome Evaluation:** Outcome evaluation helps the team reflect on the results and assess effects on other processes or outcomes. This evaluation includes determining whether the project aims were met and why (or why not); identifying limitations to the outcomes of the project; noting any unintended consequences of the intervention;

and assisting the team with informing stakeholders of the project's results.

- **Cost Evaluation:** Performing cost evaluation can help the team, project sponsors, and stakeholders examine the cost and value of a QI project after implementation. Cost evaluation includes both fiscal (e.g., return on investment) and nonfiscal (e.g., reflections on the implicit value of a project) considerations and can be used to make more informed decisions about resource allocation for future initiatives.

Reflecting Phase

Sharing the results and lessons learned from the project contributes to a culture of QI. The two components of the Reflecting Phase are:

- **Knowledge Acquisition:** Documenting lessons learned enables the team to record the experience gained (both positive and negative) while executing a project. Promoting the process of sharing results also allows organizations to apply the knowledge from previous projects to new initiatives and contributes to a culture of QI.
- **End-of-Project Decision-Making:** The end-of-project stage allows teams to reflect on the overall project and, if needed, determine new strategies for ensuring its continued success. These strategies could include a sustainability plan to evaluate the long-term effectiveness of their intervention, an analysis of how the project might translate to other clinical arenas, or testing the improvement intervention in another care setting.

Developing a plan of action to successfully implement the project and evaluate results at regular intervals is key to a successful project.

The accompanying Toolkit includes a range of optional resources to support QI efforts, including a project charter, communication plan, data plan, and planning worksheet. A User Guide was developed to help QI teams plan and execute QI projects.


The ACS would like to ensure that the initial version of the Quality Framework is improving and evolving to meet the needs of surgeons and clinical teams. The College welcomes your feedback, which is critical to future versions of this tool: surveymonkey.com/r/VR86P7P.

In addition, the ACS has developed a range of resources to help build skills and knowledge and support your team's quality improvement work. The ACS Quality Improvement Course: The Basics is a self-paced, online course on the basic principles of surgical quality and safety. The course—intended for anyone working in a healthcare setting who is learning the foundations of QI—can help QI teams learn the necessary concepts, processes, and tools needed to meet the criteria of the Quality Framework. Visit facs.org/quality-programs/quality-improvement-education for all available resources.

Learn more about the Quality Framework and other resources at the Quality and Safety Conference, July 10-13, in Minneapolis, Minnesota, at facs.org/qsc2023. Three sessions will be dedicated to understanding and implementing the Quality Framework.

For more information about the Quality Framework and Toolkit, contact ACSQualityFramework@facs.org.

Case Study Repository—Coming Soon!

The ACS is launching a case study repository later this summer to share how participating hospitals use programmatic data to improve their performance and outcomes. This collection of QI initiatives will allow the ACS to share lessons learned and educate surgical teams on small-scale quality initiatives that have been deployed in hospitals around the country to improve patient outcomes. 

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Study Analyzes Wrong-Site Surgery Data in Medical Malpractice Complaints

Lenworth M. Jacobs Jr., MD, MPH, FACS

WHILE STRIDES CONTINUE TO BE MADE to reduce wrong-site surgeries, these events persist despite being considered “never events” in healthcare. Wrong-site surgeries are events that can cause serious and possibly permanent medical or emotional harm to a patient, including death.

To understand why these events continue to occur even though there have been many efforts by organizations such as The Joint Commission to reduce them, researchers analyzed closed medical malpractice claims pertaining to wrong-site surgeries during a period of 7 years. The findings were published in an article, “A Contemporary Analysis of Closed Claims Related to Wrong-Site Surgery,” in the May issue of *The Joint Commission Journal on Quality and Patient Safety*.[†]

From 1995 to 2005, The Joint Commission found that wrong-site surgery was the second most frequently reported sentinel event, which is defined as “a patient safety event that results in death, permanent harm, or severe temporary harm.” These data were a factor in The Joint Commission implementing the Universal Protocol for Preventing Wrong-Site, Wrong-Procedure, and Wrong-Person Surgery in 2003 that involves three important steps:

- Conducting a preprocedure verification process
- Marking the procedure site
- Performing a time-out

However, wrong-site surgeries were still happening. In 2022, wrong-site surgery accounted for 6% of the 1,441 sentinel events reviewed by The Joint Commission.[†] Reporting of sentinel events to The Joint Commission is voluntary, meaning no conclusions should be drawn about the actual relative frequency of events or trends in events over time.

To further understand some of the reasons why wrong-site surgeries continue to occur, Joy Tan, MD, and coauthors reviewed a medical malpractice company’s closed claims data from 2013 to 2020.*

“Analysis of malpractice claims can help risk managers and clinicians identify risk factors, patterns, and other circumstances of [wrong-site surgery] with the goal of improving patient safety by identifying interventions to mitigate these risk factors,” the study authors wrote.

In total, 68 wrong-site surgery closed claims cases were examined, revealing:

- The mean age of patients was 55.7 years.
- Average indemnity was \$136,452.84, and approximately 60% of the cases were settled.
- The services most frequently responsible for the wrong-site surgery claims were orthopaedic (35.3%), neurosurgery (22.1%), and urology (8.8%).
- The most common types of procedures that involved wrong-site surgery were spine

surgery, including spinal fusion and excision of intervertebral disc (22.1%); arthroscopy (14.7%); and procedures on muscles and/or tendons (11.8%).

Researchers also found that the most common alleged injuries included the need for additional surgery (45.6%), pain (33.8%), mobility dysfunction (10.3%), aggravated/worsened injury (8.8%), death (7.4%), total loss (7.4%), and scarring (7.4%).

“Our data show that most [wrong-site surgeries] caused significant harm to the patient, with 30.9% causing temporary minor harm, 23.5% causing temporary major harm, and 17.6% causing permanent minor harm,” the study authors stated.

The top contributing factors to wrong-site surgery were:

- Failure to follow policy/protocol
- Failure to read medical records
- Selection/management of surgical treatment
- Inconsistent documentation
- Known complications or technical issues
- Communication among providers

“Across all surgeries, the overwhelming top contributing factor to [wrong-site surgery] was failure to follow policy/protocol...[but] only 14.7% of claims were related to a need for policy/protocol,” the study authors wrote. “This suggests the main issue lies not in creating policies but in the implementation of a policy/protocol, including the use of the World Health Organization’s Surgical Safety Checklist. Indeed, safety measures need to be followed to prevent errors, and determining why they are not being used is key.”

The study authors concluded that healthcare teams must be “more diligent in performing these checklists” without distraction or shortcuts.

“This can effectively be done only with a culture of safety and effective communication among the team,” they wrote. “This includes the patient themselves taking more ownership of their medical care. With these efforts, we can significantly reduce the incidence of these events.”

An accompanying editorial published in the *Journal*, “Understanding A Surgeon’s Worst Nightmare: Wrong Site Surgery,” by Tyler P. Robinson, MD, and coauthors expanded on the

“When a [wrong-site surgery] event occurs, clinicians must be prepared to investigate and disclose these errors to maintain trust among patients and the community at large.”

From the editorial article
“Understanding A Surgeon’s Worst
Nightmare: Wrong Site Surgery”

potential impact of a healthcare team’s failure to follow the established protocol in relation to wrong-site surgeries.[‡]

“When a [wrong-site surgery] event occurs, clinicians must be prepared to investigate and disclose these errors to maintain trust among patients and the community at large,” the editorial authors wrote. “Hospital-level investigation must occur, utilizing methods such as a root cause analysis. Root cause analysis can identify solutions to bolster adherence to the Universal Protocol and incorporate other processes to improve safety.”[‡] **B**

Disclaimer

The thoughts and opinions expressed in this column are solely those of Dr. Jacobs and do not necessarily reflect those of The Joint Commission or the American College of Surgeons.

Dr. Lenworth Jacobs is a professor of surgery and professor of traumatology and emergency medicine at the University of Connecticut and director of the Trauma Institute at Hartford Hospital, CT. He also is the Medical Director of the ACS STOP THE BLEED® program.

*Tan J, Ross JM, Wright D, et al. A contemporary analysis of closed claims related to wrong-site surgery. *Jt Comm J Qual Patient Saf.* 2023;49(5):265-273.

†The Joint Commission. The Joint Commission releases sentinel event data on serious adverse events at US healthcare organizations. April 4, 2023. Available at: <https://www.jointcommission.org/resources/news-and-multimedia/news/2023/04/the-joint-commission-releases-sentinel-event-data>. Accessed May 31, 2023.

‡Robinson TP, Bilimoria KY, Yang AD. Understanding a surgeon’s worst nightmare: Wrong site surgery. *Jt Comm J Qual Patient Saf.* 2023;49(5):237-238.

Achieving Excellence in Surgery Requires Safety and Equity

Bonnie Simpson Mason, MD, FAAOS

Surgical excellence is the highest priority of the ACS, and this pursuit requires ensuring environmental, physical, and psychological safety for those in the workplace (e.g., surgeons, trainees, staff) and our patients.

The initial step is to develop a system of review and accreditation of hospital and DEI programs within departments of surgery.

THESE OBJECTIVES also are essential elements of equitable and inclusive work environments. Having identified alignment of the widely accepted tenets of the ACS Quality Programs and those emerging from the efforts in diversity, equity, and inclusion (DEI), the College is embarking upon a comprehensive strategy to achieve surgical excellence by increasing health equity, decreasing surgical disparities, and improving quality of care by developing safe and inclusive surgical environments.

By partnering with the ACS Division of Research and Optimal Patient Care (DROPC) to create equity standards for the Quality Verification Program (QVP) and subsequently developing means for verification, review, and consultation for our stakeholders, these efforts will compose the Equity in Quality Initiative (EQI), which will replicate known and accepted processes in quality and safety.

The goal of integrating equity into quality and safety standards is not new. It was initially described by the Institute of Medicine (now known as the National Academy of Medicine) in 2001 as one of the six essential domains of quality that states care should be safe, effective, patient-centered, timely, efficient, and equitable.*

Recent external drivers for equity integration into healthcare policies and practices have been issued by The Joint Commission, and efforts to address inequities are being linked to reimbursement via the development of the Centers for Medicare & Medicaid's health equity standards.^{†‡}

Today, the House of Surgery has the opportunity to definitively address health equity in surgery through rigorous and definitive approaches in gathering the data necessary to develop meaningful standards, and supporting and educating our members about how to achieve these standards will benefit all surgical patients—especially those from diverse backgrounds and environments.

The initial step is to develop a system of review and accreditation of hospital and DEI programs within departments of surgery. With the input of leaders in surgery who have expertise in quality and health equity, a consensus statement will guide a formal advisory committee to develop and publish a set of equity standards that will include the implementation and accountability for institutions and their leaders to achieve these standards.

Predicated on building a body of data and evidence based on published consensus frameworks consistent

with current quality verification processes, these standards will be integrated across DROPC's programs. The ultimate goal is to create an ongoing system of review of, and accreditation of, DEI programs in hospitals and departments of surgery. Importantly, codifying goals of health equity into our standards will move the House of Surgery toward achieving health equity for our patients.

Yet, how do we get there? The more effective efforts in achieving health equity have instituted a community approach to engage stakeholders in structured, longitudinal efforts grounded in research and education. By creating communities of excellence, the ACS Office of DEI will convene DEI leaders from academic and community surgical departments, our QVP institutions, ACS chapters, and aligned organizations.

The goal of this collaborative effort is to engage in a longitudinal, educational process of understanding the fundamentals of DEI while building and acquiring skills to implement policies and practices in a trauma-informed and trauma-responsive approach. Fundamental to this process will be a rigorous evaluative program using data to assess progress toward meeting the equity standards.

Indeed, meaningful change designed to build safe, equitable surgical environments so that our increasingly diverse workforce can perform optimally for the benefit of all patients will unfold by pursuing these strategic efforts:

- Create structures and processes to operationalize the equity standards, and use the verification, review, and consultation processes to help hospitals assess their progress
- Support educational and research efforts via the development of communities of excellence—virtually and in-person—for our members
- Engage in continuous evaluation, measurement, and publication of outcomes and impact of the College's DEI efforts to secure resources required to sustain these efforts

If we are to fulfill the ACS mission “To Heal All with Skill and Trust” and maintain our unassailable commitment to surgical excellence, then we must help hospitals thrive in all six domains of quality and that includes delivering equitable care. Excellence and equity go hand in hand. **B**

Dr. Bonnie Simpson Mason is the Medical Director of the ACS Office of Diversity, Equity, and Inclusion in Chicago, IL.

*Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.

†The Joint Commission. R3 Report. June 20, 2022. Available at: [r3_disparities_july2022-6-20-2022.pdf](https://www.jointcommission.org/r3_disparities_july2022-6-20-2022.pdf) (jointcommission.org). Accessed May 19, 2023.

‡US Department of Health and Human Services. Centers for Medicare and Medicaid Services. CMS Framework for Health Equity. April 2022. Available at: <https://www.cms.gov/files/document/cms-framework-health-equity-2022.pdf>. Accessed May 19, 2023.

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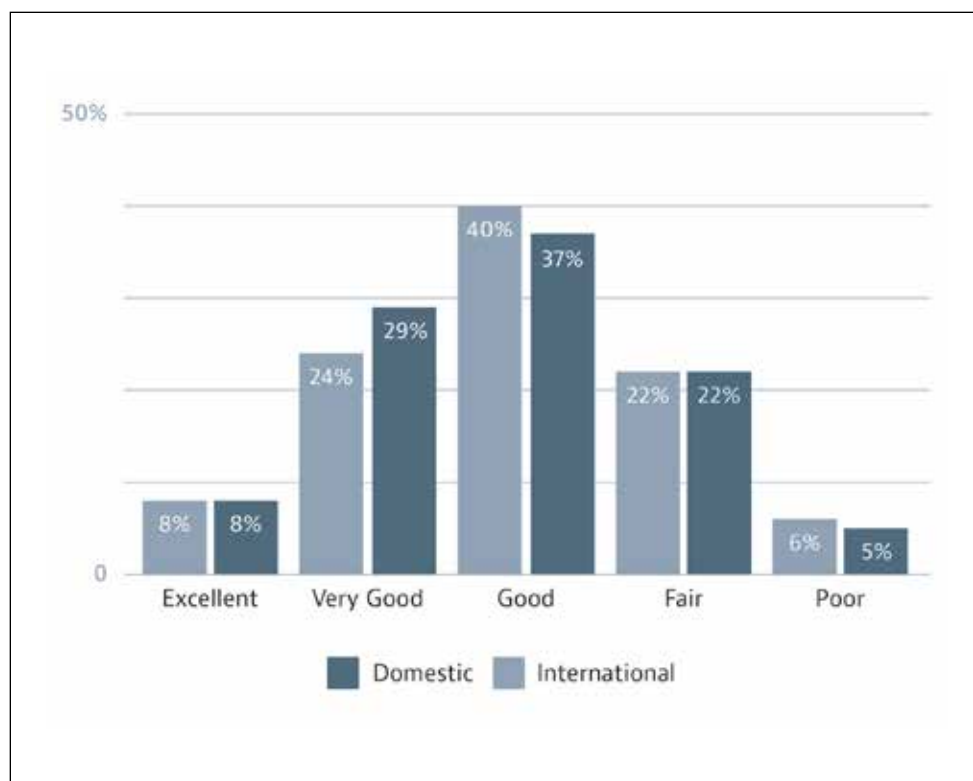
ACS / AMERICAN COLLEGE
OF SURGEONS

Chapter Annual Report Pinpoints Best Practices, New Initiatives

Luke Moreau
Brian Frankel

ACS chapters are a significant benefit of membership and have been a vital part of the College's governance structure for more than 70 years.

Figure 1. Overall Health of ACS Chapters



CURRENTLY, THERE ARE 119 chartered ACS chapters in all 50 states, two US Territories, three Canadian provinces, and 51 countries. On average, one to two new international chapters are chartered by the ACS Board of Regents each year.

International chapter leaders are directly involved in the interview process of Fellowship applicants. Due to the efforts of the ACS international chapter leaders, the College continues to experience year-over-year growth in the number of new international Fellows.

While chapters work closely with the College, they are legally independent and have the autonomy to choose how to support ACS membership at the local level.

The ACS chapters vary significantly in size and scope of activities, but generally offer members the following benefits:

- Networking opportunities to build strong professional relationships with surgical peers
- Opportunities to participate in advocacy activities at the state and federal levels
- Educational meetings that offer continuing medical education (CME)

- Leadership opportunities within the chapter council that can translate to future ACS leadership roles
- Engagement and mentorship opportunities for young surgeons, trainees, and medical students
- Volunteerism opportunities (domestic and international)

Chapter Annual Report

Each January, chapter leaders are sent an “annual report.” Known as the Chapter Annual Report, this series of questions about the chapter’s activities from the previous calendar year allows chapters to highlight accomplishments and success stories while identifying areas where they may benefit from further support.

In addition, the annual report includes assessments in each of the following domains: administration and management; membership recruitment and retention; young surgeon and trainee engagement; communications; finances; educational programming and events; and advocacy (US-based chapters only).

Chapter Services, the unit within the ACS Division of Member Services that supports these regional

Several positive trends emerged from the 2022 reports, including increased engagement to pre-COVID-19 levels, enhanced participation of young Fellows and surgical trainees, and the return of in-person events.

organizations, has developed this report in conjunction with the Board of Governors Chapter Activities Domestic and International Workgroups.

For the sixth consecutive year, 100% of domestic and international chapters completed the Chapter Annual Report. The high completion rate has allowed Chapter Services and Governor Workgroups to benchmark and identify several best practices in chapter management and develop new initiatives to assist chapters. Once the analysis is complete, chapter leaders receive a personalized report on how their chapter compares to the aggregated data of all chapter responses.

“As a chapter leader, the feedback we receive from the Chapter Annual Report is invaluable. It’s like ACS NSQIP® for chapters,” said Mark A. Dobbertien, DO, FACS, a general surgeon and President of the ACS Florida Chapter. “We can see how our chapter compares to the aggregate and make improvements based on what works for other chapters. The Florida Chapter leadership always looks forward to receiving the information each year to guide our innovation and engagement with Fellows for the following year.”

Several positive trends emerged from the 2022 reports, including increased engagement to pre-COVID-19 levels, enhanced participation of young Fellows and surgical trainees, and the return of in-person events. The report also revealed that lower member engagement and financial issues from declining dues collection and exhibitor support persisted in 2022.

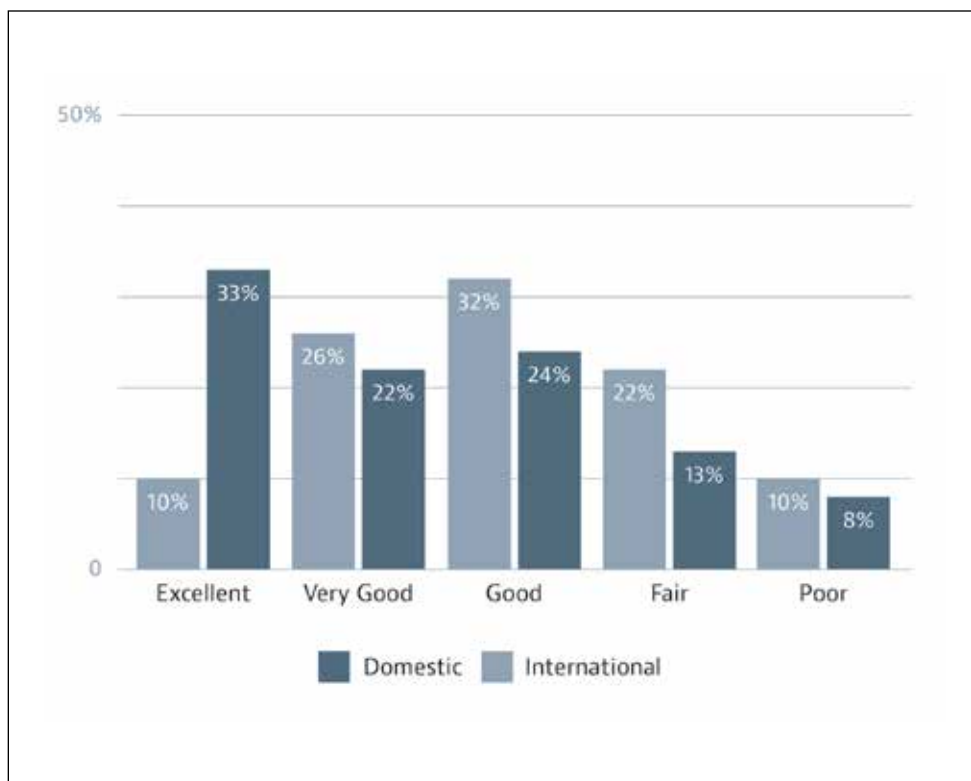
Health of ACS Chapters

Chapter leaders were asked to self-report on a five-point scale (poor, fair, good, very good, excellent) the overall health of their chapters and how they perceive communication, education, recruitment and retention, and advocacy efforts.

- 74% of domestic and 72% of international chapters rated their overall health between good and excellent (see Figure 1, page 51).
- 76% of domestic and 64% of international chapters rated their communication efforts as good to excellent.
- 79% of domestic and 68% of international chapters rated their educational efforts as good to excellent (see Figure 2, page 53).
- 64% of domestic and 68% of international chapters rated their recruitment and retention efforts as good to excellent (see Figure 3, page 54).
- 49% of domestic chapters rated their advocacy efforts as good to excellent. 19% of chapters reported they are not involved in state advocacy.

Overall, chapters are moving in a positive direction post-pandemic, but there are strategies that chapters can adopt to reflect the efforts of highly successful chapters.

Figure 2. Overall Educational Programming for Chapter Members



Strategies for Chapter Success

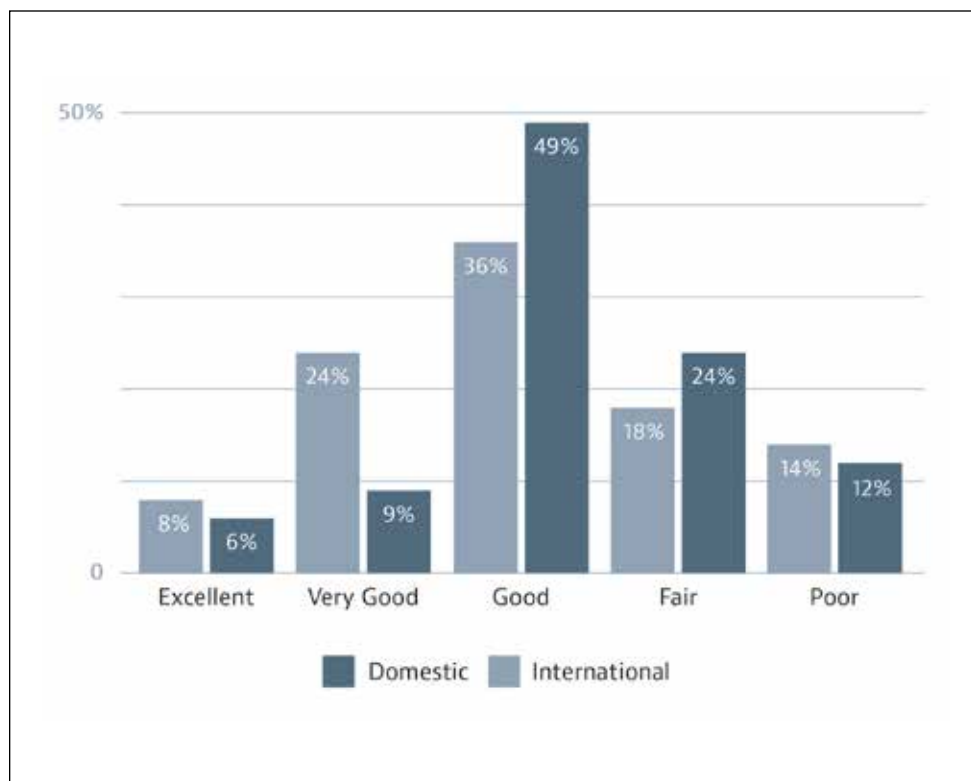
The following strategies for chapter success were developed using previous Chapter Annual Report data. Chapter leaders should consider these best practices for chapter management when developing engagement strategies in the coming years.

- **Develop a strong leadership team.** The leadership team should be composed of dedicated surgeon volunteers, ideally with a succession plan in place. Currently, 75% of domestic and 79% of international chapters have a leadership succession plan in place. Boards/councils should meet at least three times per year to discuss chapter business.
- **Establish and measure goals and objectives.** Setting clear goals and objectives will help guide the chapter's activities and initiatives and ensure that their efforts are aligned with the broader mission of the ACS.
- **Evaluate chapter performance.** Regular assessment and evaluation of chapter performance will help identify areas for improvement and guide strategic planning. This strategy could

include collecting member feedback through surveys and tracking performance metrics (e.g., dues collection, vendor support).

- **Provide leadership opportunities.** Chapters are strongly encouraged to have at least one Young Fellow representative, Associate Fellow representative, and Resident representative on their board/council. 91% of domestic and 77% of international chapters reported that they actively engage Young Fellows. 88% of domestic and 62% of international chapters reported that they engage Resident Members.
- **Foster diversity and inclusivity.** ACS chapters should continue to explore diversity, equity, and inclusion opportunities in their activities and leadership structure. Currently, 46% of domestic and 63% of international chapters noted that they consider a diverse spectrum of individuals when electing or appointing chapter leaders.
- **Provide educational and networking opportunities.** Chapters should hold regular educational and/or networking events for chapter members. It is recommended that at least one

Figure 3. Overall Chapter Efforts to Recruit and Retain Members



annual, in-person, and one virtual meeting be held each year. CME credits should be offered whenever possible.

• Advocate on behalf of surgeons and patients.

Chapters should play an active role in advocating for practicing surgeons and surgical patients, particularly at the state level. Chapters are uniquely positioned to allow members to share their insights into the challenges that surgeons and patients face within the healthcare system. For example, 100% of chapters supported House Legislation (HR 8800) to stop looming Medicare payment cuts of nearly 8.5%. The ACS offers staff and financial resources to all chapters interested in developing a state advocacy program.

• Communicate. Chapter leaders must communicate the value of being a local chapter member through multiple channels, including email, social media, newsletters, and short videos. 49% of domestic and 57% of international chapters use social media as part of their communication plans. Make sure the chapter website is updated regularly.

• Ensure compliance. Chapters should comply with all local regulations governing non-profit organizations. Review chapter bylaws regularly

to ensure proper alignment with the governance structure of the chapter. Chapters must file taxes each year, and each chapter should be incorporated with the state.

All ACS members are encouraged to join their local chapters. A list of chapters can be found on the ACS website.

Chapter leaders should contact Luke Moreau (lmoreau@facs.org), Manager of Domestic Chapter Services, or Brian Frankel (bfrankel@facs.org), Manager of International Chapter Services, with any questions regarding chapter management. **B**

Luke Moreau is Manager of Domestic Chapter Services in the ACS Division of Member Services in Chicago, IL.

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Call for Abstracts

Submissions due by June 30

TQIP²³

Clinical Congress 2023 Registration Is Open

Register now for Clinical Congress October 22–25 in Boston, Massachusetts. Both in-person and virtual attendance options are available, with early bird rates good through August 28.

THIS MEETING—being held Sunday through Wednesday this year—brings together world-renowned surgical experts, as well as leaders in surgical education, research, and technology. In addition to the broad range of outstanding hands-on and didactic learning opportunities and timely discourse on relevant surgical topics, you'll hear about groundbreaking procedures and research, network with peers from around the globe, and gain clinical and nonclinical knowledge that you immediately can put into practice.

Get more information at facs.org/clincon2023. You can explore the program, see the current exhibitor listing, download and use the Social Toolkit, and more.

Once you've registered for Clinical Congress, you can log into the Interactive Program Planner with your registration information and start creating your schedule.

Continuing Medical Education (CME) credits are available: 222 CME credits for in-person attendees and 182.5 CME credits for virtual attendees.

Hotel reservations may be made through onPeak—the only official hotel provider for the Clinical Congress. Reservations have no upfront costs and may be changed or canceled without penalty until October 16.

Check back next month for a July *Bulletin* article that will preview Clinical Congress 2023. **B**

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The ACS has introduced a new member benefit that will help you maximize your leverage during employment negotiations.

For more information about the compensation and productivity reports with exclusive discounts for ACS Members, log in to facs.org and click:

- 1. For Medical Professionals**
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- 3. Employed Surgeons**

An ACS member login is required to access the page.

COMPENSATION DATA REPORTS from the Medical Group Management Association (MGMA) are available to ACS Fellows, Associate Fellows, and Resident Members at a 45% discount. The 2023 reports, based on 2022 data, are ready now.

Across a wide range of surgical specialties, the data reports provide information on base pay, incentives, and benefits, as well as compensation trends by

specialty, subspecialties, region, and organization size. In fact, medical practices and hospital systems rely on MGMA data to benchmark their finances and operations.


Having similar information in your own hands can increase transparency and help ensure fair compensation plans and physician contracts. **B**

ACS 2023 Health Policy Scholars Are Announced

SEVENTEEN SURGEONS have been named Health Policy Scholars and will be attending the Leadership Program in Health Policy and Management presented by the Heller School at Brandeis University in Waltham, Massachusetts, in June.

Each scholarship includes participation in the weeklong intensive course, followed by a year's service in a health policy-related capacity for the ACS and the surgical specialty society that is cosponsoring the awardee.

This year's scholars are:

- **Christy Chai, MD, FACS**, Michael E. DeBakey VA Medical Center in Houston, TX (ACS Health Policy Scholar for General Surgery)
- **Anahita Dua, MD, FACS**, Massachusetts General Hospital in Boston (ACS Health Policy Scholar for General Surgery)
- **Deepa Danan, MD, FACS**, University of Florida in Tampa (American Academy of Otolaryngology-Head and Neck Surgery Health Policy Scholar)
- **Anne Stey, MD, FACS**, Northwestern University in Chicago, IL (The American Association for the Surgery of Trauma Health Policy Scholar)
- **Adnan Alseidi, MD, EdM, FACS**, University of California, San Francisco (Americas Hepato-Pancreato-Biliary Association Health Policy Scholar)
- **Reto Baertschiger, MD, FACS**, The Hospital for Sick Children in Toronto, ON (American Pediatric Surgical Association Health Policy Scholar)
- **Benjamin Poulouse, MD, MPH, FACS**, The Ohio State University in Columbus (American Surgical Association Health Policy Scholar)
- **Dennis Holmes, MD, FACS**, Adventist Health Glendale, CA (American Society of Breast Surgeons Health Policy Scholar)
- **Kerri Ohman, MD, FACS**, Washington State University in St. Louis, MO (American Society of Colon and Rectal Surgeons Health Policy Scholar)
- **Chad Teven, MD, FACS**, Northwestern University in Highland Park, IL (American Society of Plastic Surgeons Health Policy Scholar)
- **Denise Asafu-Adeji, MD, MPH**, Loyola University Medical Center in Chicago (American Urological Association Health Policy Scholar)
- **Melanie Meister, MD, FACS**, University of Kansas in Overland Park (American Urogynecologic Society Health Policy Scholar)
- **Sharven Taghavi, MD, MPH, MS, FACS, FCCP**, Tulane University in New Orleans, LA (Eastern Association for the Surgery of Trauma Health Policy Scholar)
- **Charles Adams, MD, FACS**, Rhode Island Hospital in Providence (New England Surgical Society Health Policy Scholar)
- **Dennis Foretia, MD, FACS**, University of Tennessee in Memphis (Society for Surgery of the Alimentary Tract Health Policy Scholar)
- **Ankit Dhamija, MD, FACS**, Stony Brook University, New York (The Society of Thoracic Surgeons Health Policy Scholar)
- **Caitlin Hicks, MD, FACS**, Johns Hopkins University in Baltimore, MD (Society for Vascular Surgery Health Policy Scholar) 



STOP THE BLEED Program Brings Bleeding Control Education to Wrigley Field

Sheila Lai

EARLIER THIS YEAR, the Chicago Cubs became the first team in Major League Baseball to install STOP THE BLEED® kits, which are now available at 22 wall stations throughout Wrigley Field and in the Cubs' front office.

Marking this historic collaboration between the ACS, the City of Chicago's Office of Emergency Management and Communications, and the Chicago Cubs, ACS staff and

volunteers donned Cubs blue and provided STOP THE BLEED training to baseball fans during a lively public event at the ballpark on May 25, which also happened to be First Responders Night and the sixth annual National STOP THE BLEED Day.

Nearly 40 volunteers braved the bitter Chicago winds to share information, provide education, and demonstrate bleeding control techniques for a few hours before

and during the Cubs game against the New York Mets. Attendees also received a card with a QR code to learn more about STOP THE BLEED training and a customized game day t-shirt emblazoned with the message: "This shirt can save a life."

"An event like today puts STOP THE BLEED in front so that the program isn't just something the public has heard about. It's something that people can see,



touch, and feel,” said Jimm Dodd, ACS Senior Manager of STOP THE BLEED.

Uncontrolled bleeding from trauma is a major cause of preventable death for people of all ages, and the STOP THE BLEED program helps increase public and healthcare professional readiness response to bleeding emergencies. Since the program’s inception more than a decade ago, 2.8 million people worldwide

have been trained in STOP THE BLEED techniques. The program now operates in 138 countries, including Ukraine, where it has been used to help to support those affected by the war.


“From the perspective of a trauma surgeon, the earlier the treatment is started, the better the outcome,” said David S. Shapiro, MD, MHCM, FCCM, FACS, chief medical officer and trauma surgeon at Saint Francis Hospital

in Hartford, Connecticut, who attended the event and supports STOP THE BLEED initiatives in his community. “If a brave bystander can help slow or stop bleeding at the scene of the incident, we preserve resources like blood transfusions or fluids, and lives are saved. STOP THE BLEED just makes sense. I think we need to convey this training to everybody.”

Approximately 35,000 fans attended the game, and ACS volunteers estimate that they passed out 1,300 shirts. Among the visitors were families with young children, outdoor enthusiasts, and a California couple who was visiting Chicago during their nationwide tour of historic baseball stadiums.

Steven Szyndrowski, a professional wrestler who participated in a demonstration, noted that the skills he learned may help if unexpected emergencies arise during a wrestling event.

“I learned how to assess the damage of the wound and how to treat it until paramedics arrive,” he said. “People get cut and mistakes happen. I’ve seen guys who’ve gotten really bad cuts. No one knows what to do and everyone goes into panic mode. It’s nice to have some sort of basic knowledge of what to do to prevent those injuries from getting worse.”

To learn more about STOP THE BLEED or to become an instructor, visit stopthebleed.org. 

Sheila Lai is a Senior Public Information Specialist in the ACS Division of Integrated Communications in Chicago, IL.

Members in the News

Bertagnolli Is Nominated to Lead the NIH



Dr. Monica Bertagnolli

President Biden has nominated Monica Bertagnolli, MD, FACS, a world-renowned oncologic surgeon and cancer researcher, to lead the US National Institutes of Health (NIH).

“Dr. Bertagnolli has spent her career pioneering scientific discovery and pushing the boundaries of what is possible to improve cancer prevention and treatment for patients, and ensuring that patients in every community have access to quality care,” President Biden said in a statement. “Dr. Bertagnolli is a world-class physician-scientist whose vision and leadership will ensure NIH continues to be an engine of innovation to improve the health of the American people.”

If approved by the Senate, she would be the first board-certified surgeon to serve in this role, as well as the second woman.

Dr. Bertagnolli currently is the director of the National Cancer Institute (NCI)—the first woman to serve in that role—to which she was appointed in 2022. Previously, Dr. Bertagnolli served as the Richard E. Wilson Professor of Surgery in surgical oncology at Harvard Medical School, a surgeon at Brigham and Women’s Hospital, and a member of the Gastrointestinal Cancer Treatment and Sarcoma Centers at Dana-Farber Cancer Institute, all in Boston, Massachusetts.

She has decades of experience in clinical research and executive leadership in oncology and cancer policy, including her role as chair of the Alliance for Clinical Trials in Oncology, a clinical trials cooperative group funded through NCI’s National Clinical Trials Network.

An ACS Fellow since 1996, Dr. Bertagnolli delivered the Commission on Cancer Oncology Lecture at Clinical Congress 2011.

Wood Receives NCCN Rodger Winn Award



Dr. Douglas Wood

ACS Regent Douglas E. Wood, MD, FACS, FRCSEd, was awarded the prestigious Rodger Winn Award from the National Comprehensive Cancer Network (NCCN) for his work on the NCCN Clinical Practice Guidelines in Oncology and his leadership in the development of the NCCN Lung Cancer Screening Guidelines. The Rodger Winn Award was named in memory of the first leader of the NCCN Guidelines Program.

Dr. Wood founded and has chaired the NCCN Lung Cancer Screening Guideline Panel since its inception in 2009. As chair, he has been unwavering in his commitment to develop lung cancer screening recommendations and has served as a public representative in many forums to champion the guidelines.

“I am truly honored and humbled by this recognition,” Dr. Wood said. “I am so appreciative of the incredible NCCN staff that I am privileged to work with, and the other volunteers that I learn from year after year. The work we do together at NCCN is so important to minimizing unjustified practice variation, supporting clinicians to keep up to date with rapidly changing practice, educating and empowering patients about their treatment options, and improving cancer care nationally and worldwide.”

The Henry N. Harkins Professor and chair of the Department of Surgery at the University of Washington in Seattle, Dr. Wood is the first cardiothoracic surgeon to receive the Rodger Winn Award.



Have you or an ACS member you know achieved a notable career highlight recently? If so, send potential contributions to Jennifer Bagley, MA, *Bulletin* Editor-in-Chief, at jbagley@facs.org. Submissions will be printed based on content type and available space.

Preventza Will Lead Cardiothoracic Surgery at UVA



Dr. Ourania Preventza


Cardiothoracic surgeon Ourania Preventza, MD, MBA, FACS, has been appointed the new chief of the Division of Cardiothoracic Surgery and co-director of the Heart and Vascular Service Line at the University of Virginia (UVA) Health. She will assume the role on June 19.

Internationally known for her work in complex cardiac and aortic surgery, Dr. Preventza currently is a professor of surgery and assistant program director of the thoracic surgery integrated residency and independent fellowship at Baylor College of Medicine in Waco, Texas. She serves as president of the International Society of Endovascular Specialists and has been a leader in several other organizations, including The Society of Thoracic Surgeons and the American Association for Thoracic Surgery.

Haws Is New President of The Aesthetic Society



Dr. Melinda Haws

Melinda J. Haws, MD, FACS, has been elected president of The Aesthetic Society, the world's leading organization devoted to aesthetic plastic surgery and cosmetic medicine of the face and body. A plastic and reconstructive surgeon at the Plastic Surgery Center of Nashville in Tennessee, Dr. Haws aims to focus on advancing the Aesthetic Society's technology strategy, expanding membership, and positioning the organization for the future. She is board-certified by the American Board of Plastic Surgery. 

NEW COURSE OFFERING

Artificial Intelligence and Machine Learning: *Transforming Surgical Practice and Education*

THIS ONLINE, SELF-PACED COURSE offers surgeons an introduction to principles of artificial intelligence (AI) and machine learning (ML) as they apply to clinical decision-making and risk assessment in managing surgical patients. In addition to laying the groundwork for conversations with technical experts in AI and ML, the course reviews ethical considerations and limitations for the use of these technologies in medicine.

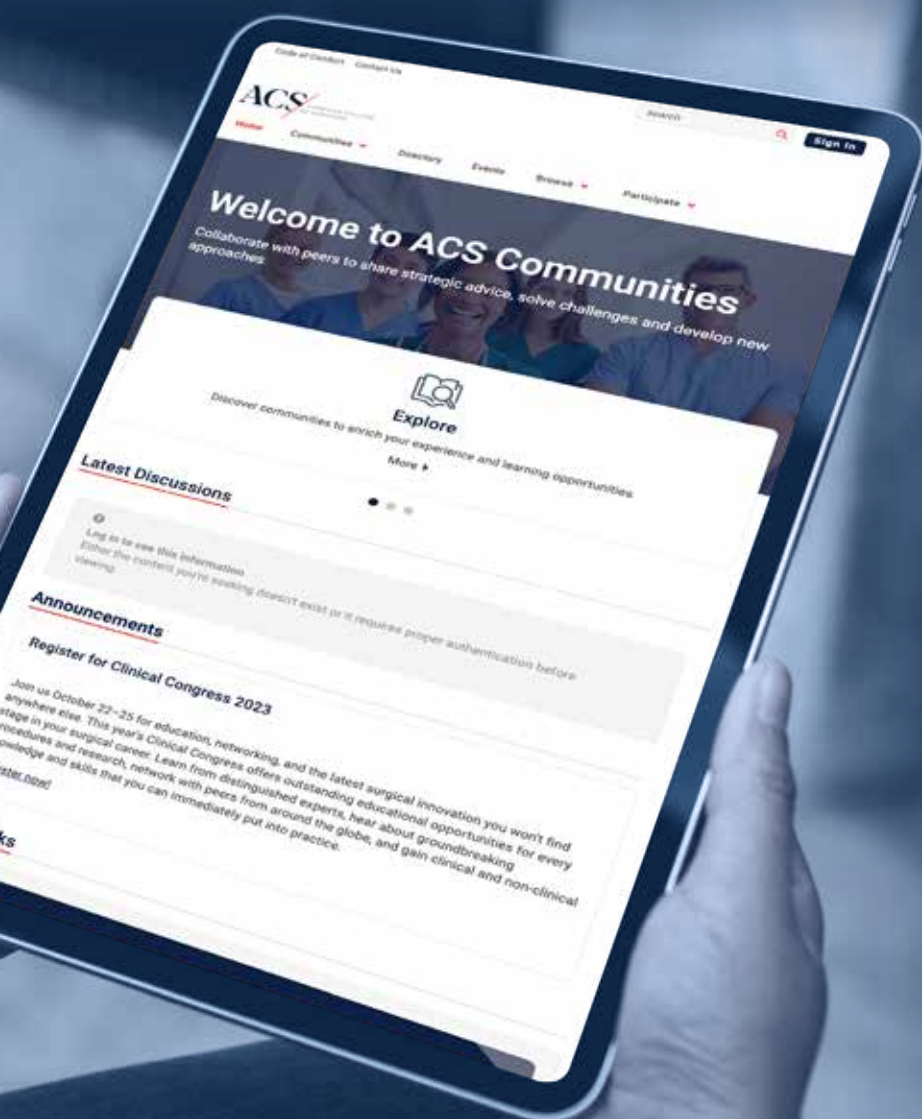
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