Surgeons wield influence on social media

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The last year has been mentally, physically, and emotionally exhausting for health care professionals, particularly those individuals on the front lines of providing care to coronavirus 2019 (COVID-19) patients and those who have had to postpone operations for patients needing nonurgent care. Add to that situation constant threats of payment cuts, hospital and private practice closures, and the rapid movement toward telehealth, and it is unsurprising many surgeons and residents are finding themselves burned out and having a difficult time sustaining the passion they once felt for our profession.

The American College of Surgeons (ACS) offers many resources for surgeons seeking to improve their well-being. They are described in greater detail in the “Your ACS benefits” article on page 77 of this issue of the Bulletin. I have found another resource that might be useful to members of the ACS who are looking for guidance on how another physician overcame what seemed to be insurmountable obstacles to have a fulfilling family life and career in medicine.

In *Gone: A Memoir of Love, Body, and Taking Back My Life,* Linda K. Olson, MD, FACR, diagnostic radiologist, professor of radiology, and director of the breast imaging center at the University of California San Diego (UCSD) for 30 years recounts how she and her husband Dave overcame a tragic event that left Dr. Olson severely disabled and were able to go on to enjoy the life they had dreamed of creating. Dave and I were interns together, and Linda and I worked together when I was a trauma surgeon at UCSD.

**Train wreck**

In 1979, Linda and Dave were recently married and visiting Dave’s family in Germany when a terrible accident occurred. The Volkswagen van in which they were traveling near the Germany-Austria border stopped...
partially on railway tracks, as a train was barreling around a nearby curve. Most of the passengers were able to escape the vehicle with minor cuts and abrasions; however, Linda, seated in the middle seat near a door that was jammed, was not optimally positioned to escape through the front door.

As she describes it, “In one earth-shaking, deafening instant, the locomotive smashed into the van, pushing me down onto my back across the track.” Dave tried to pull her away, but it all happened too quickly. Ultimately, in a matter of seconds, Linda lost both her legs and her dominant arm.

She and Dave, who had broken his fibula trying to save Linda, were taken to the trauma hospital in Salzburg, Austria. The morning after surgery, Linda told Dave she would understand if he wanted to leave her because, at that point, she didn’t believe they would be able to have the family they both wanted and that he couldn’t possibly be attracted to her any longer.

**Indomitable spirit**

She was wrong. She and Dave received excellent trauma and postoperative care in Salzburg, where they were able to share a room and plot out what life would look like after they returned to the U.S. Upon their return, Dr. Olson began her formal rehabilitation at the Naval Regional Medical Center San Diego, CA, where her husband was an active duty Navy Officer and third-year resident in radiation oncology.

When she first arrived at the naval hospital, she felt discouraged. “I’m nobody, a crip [sic], a patient who appears to have nothing ahead of her but life in a wheelchair,” she wrote. “They don’t know I’m one of them, that I’m in my third year of a diagnostic radiology residency in Los Angeles, that I passed part one of my radiology boards just before leaving for Germany.” She resolved to show the orthopaedic team and her fellow patients “that on the inside, I was still a normal person.”

She describes the phantom pain she would get in her legs and missing arm, as well as the struggle to become adept at putting on and using her prosthetic legs and to build up her core strength in order to do her “toy soldier walk” on prostheses with a quad cane. It took two months of hospitalization and physical therapy for Linda to reach a point where she started to accept her limitations and to begin feeling comfortable with her new legs, noting that only 20 percent of amputees with prosthetics master walking with the devices. And remember, this was the late 1970s, early 1980s, long before medical technology had advanced to develop more user-friendly prostheses and passage of the Americans with Disabilities Act—legislation that made shopping, chauffeuring children, and other acts we all take for granted a little easier. She and her husband faced these and other challenges to return to “normal” with grit, positivity, humor, and ingenuity.

Nine months after the incident, she had made enough progress to return to Germany and finish the vacation that had been cut short so abruptly. She went on to complete her residency at White Memorial Medical Center in Los Angeles, CA, living independently during the week as she worked, studied for boards, and, of greatest satisfaction to her and Dave, prepared for the birth of their first of two children.

**Applying the lessons learned from this story**

Linda’s and Dave’s story has much to teach all of us about handling crisis situations with resilience. Here are a few things I learned from reading this memoir:

• **Stay positive.** No matter how insurmountable or unresolvable a problem may seem, try to find the silver lining. Your mental state affects the other members of your team, your family, and friends. Staying positive will help you gain their support and enthusiasm to help you stay on track and heal.
Don’t be afraid to lean on others. Physicians by nature value their autonomy, but sometimes we all need a little help.

• Exercise. To help relieve the stress of being Linda’s primary caregiver, Dave would go for early-morning runs, which were mentally cathartic and ensured he had the physical strength and agility he needed to lift her and even carry her on his back on hiking excursions.

• Set goals and be prepared to adjust them. At first, Linda’s main goal was to be able to go to the bathroom without assistance. Once that goal was achieved, she wanted to try living alone during the week while she finished her training and studied for her oral board examination. She learned to place an intravenous line and to read computed tomography scans and went on to become an award-winning radiologist and academic physician at UCSD. When the children came, she learned to feed them, change their diapers, and hold them with her one good arm. She also learned to drive, cook, and perform other household tasks with little or no help.

• Find solace in nature. Many people, including Linda and Dave, find hiking, canoeing, and camping provide a peaceful respite from the hassles of modern life. They shared their love of national parks, the beach, mountains, and lakes with their children—taking them on trips to these refuges. Their children, now adults whose stories bookend the memoir, both state that they had a wonderful upbringing.

• Don’t be afraid to lean on others. Physicians, by nature, value their autonomy, but sometimes we all need a little help. Linda and Dave are blessed with loving, funny friends and family who have helped guide them throughout their journey.

• Maintain a sense of humor. Linda loves to gently poke fun at herself and her disability, and that is a buoy that has sustained her through triple amputations, childbirth and child-rearing, a broken hip, and, most recently, Parkinson’s disease.

• Accept the reality that the new normal will not look like the old version. This, above all, is an important lesson for everyone these days. Odds are that when cities, businesses, and so on reopen after the pandemic is under control, we will continue to work, play, and live differently than in the past. That doesn’t mean giving up on what always brought us joy. It just means we have to engage differently and adjust our expectations.

I would encourage anyone who is feeling challenged or burned out to read this memoir, both to put their own problems into perspective and to learn the true meaning of resilience in these trying times. I also would encourage anyone who is feeling particularly depressed, despondent, or dismayed to take advantage of the well-being resources the College offers and to get the help you need. Like Linda and Dave, we can get through anything, together.

If you have comments or suggestions about this or other issues, please send them to Dr. Hoyt at lookingforward@facs.org.
Editor’s note: The following comments were received regarding recent articles published in the Bulletin.

Letters should be sent with the writer’s name, address, e-mail address, and daytime telephone number via e-mail to dschneidman@facs.org, or to Diane Schneidman, Editor-in-Chief, Bulletin, American College of Surgeons, 633 N. Saint Clair St., Chicago, IL 60611.

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It’s not the good old days
As surgeons, the coronavirus (COVID-19) pandemic crisis has proven how vulnerable we and our patients are to the fiats of government “mandates.” The mandate that all elective surgery was to be canceled rang out in many states with little or no input from organized surgery with regard to what would be the best plan, and what would be in the best interests of patients. Each state mandated its own plan without any thought toward an organized national policy; many states did not seek or follow input from America’s surgical organizations.

How will the new administration deal with health care? We must wait and follow carefully. All citizens deserve basic health care. Emergency departments are required to take care of patients who seek care. Unfortunately, in some cases, those patients arrive with advanced disease. Many of us have worked in institutions where every patient was a unique individual, regardless of the patient’s diverse background or ability to pay. Local, state, and federal funds underwrote this process. A “sick tax” was built into the system—those who could pay, paid a little more, usually through their insurance programs.

Today, health care has become a business with stakeholders; things are rapidly changing for those who cannot afford health care, and in 2021 that often includes all but the wealthiest of patients. One frustrated response—not just from our poorest patients, but also from working families whose health insurance contributions can cost thousands of dollars a month—is to demand socialized, subsidized, government-directed health care. We warn them to beware. The handling of the pandemic is a clear example of how politicians manage—or don’t manage—health care when they are in charge. As physicians, we had better wake up and come up with a solution quickly.

Corporate medicine makes all of the aforementioned factors worse. The need to make a profit will seriously imperil caring for the poor. The employee-employer relationship will make the physician respond to the financial needs of the employer, and the employee will be graded by the employer on how well the employee has adhered to financial needs. Length of stay is already dictated by the
insurance system. Medicine is increasingly being practiced using protocols established by committees, rather than by physicians meeting the needs of the individual patient. A break in protocol by ordering tests not in the protocol, or not discharging the patient from the hospital in the time dictated by the protocol, is punished financially. This process is gradually creeping into our system of care.

So how do we begin to turn this ship around? First and foremost, we must remember patients don’t care how much you know until they know how much you care. We must start to promote “caring” again across our profession. This requires reinserting professionalism into the profession.

The onset of the 80-hour training workweek, put into place without any thoughtful input from the “House of Surgery,” began the trend of medicine becoming a “job” rather than a sacred profession—sacred because vulnerable humans place their lives in our hands each day. Our selection process for future physicians must become more mindful of the character traits of candidates. Illness does not have a time clock based on 80 hours. Experience cannot be gained effectively by individuals who value leisure time above seeing, spending time with, and listening to patients. These traits must be promoted vigorously before we can begin to design the best health care system for the U.S.

Members of the American College of Surgeons Academy of Master Surgeon Educators have masterfully navigated the COVID crisis to maintain appropriate surgical training within the framework of safety for patients, residents, students, and faculty members. Once the crisis is over, perhaps Academy Members could switch their attention to the concepts of education outlined in this letter.

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First and foremost, we must remember patients don’t care how much you know until they know how much you care. We must start to promote “caring” again across our profession. This requires reinserting professionalism into the profession.
Surgeons wield influence on social media

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Social media, particularly Twitter and Instagram, has played an increasingly prominent role in medicine in recent years. For general surgery in particular, social media platforms have had a unique role in information propagation, mentorship, networking, and research dissemination. With the onset of the coronavirus 2019 (COVID-19) pandemic and resultant social distancing measures broadly instituted in March 2020, the number of health care professionals using social media has grown significantly. Social media allows for near-instantaneous dissemination of information as well as discussion, both pertinent in the current education environment.

As the year progressed and social distancing became further ingrained in our daily lives, social media has become an increasingly powerful means of continuing the dialogue among surgical colleagues who want to share clinical and research findings, as well as patient-management scenarios and questions related to care. Social media also has afforded opportunities to initiate professional relationships and to guide the next generation of applicants to surgical training programs.

We evaluated the role of social media influencers prior to the onset of the COVID-19 pandemic and presented our findings at the virtual American College of Surgeons (ACS) Clinical Congress 2020. In this article, we explore the expanding role of social media in 2020 by analyzing general surgery social media influencers and how they evolved over the first 10 months of social distancing; interconnectivity at virtual conferences and through sharing and discussing research findings; and the activity of trainees and programs participating in the 2020–2021 general surgery residency match cycle.

**General surgery social media influencers**

Social media influencers are defined as users whose interactions create an impact in their respective fields or on topics of discussion. In an attempt to understand who is leading the conversation on Twitter, we analyzed social media influencers in the topic of general surgery using the Right Relevance Insights application programming interface technology on February 7, 2020. The list of social media influencers was derived from a comprehensive ranking through the Right Relevance algorithm, including both connections (followers and who they are following) and engagement (“likes,” retweets, and comments) on the topic of interest.

In that study, we noted some diversity in level of training and gender among the general surgery Twitter influencers. While most were surgeons or trainees, a few influencers were nongeneral surgeons. With approximately one-third of influencers as general surgery trainees, it is important to appreciate the utility of the platform at varying points in one’s training and career.

Most influencers were from North America, but this group included representatives from around the world, highlighting the universal accessibility of the platform. Interestingly, the distribution of self-identified gender was not reflective of the population of practicing or training surgeons; men were likely overrepresented among practicing surgeons, whereas women were overrepresented among trainees. Of note, h-indices of influencers were similar to the means of those reported for academic general surgeons across the U.S.
Subsequently, secondary to the COVID-19 pandemic and resultant social distancing measures, we anticipated changes in general surgery social media influencers because of the increased utility that social media affords. Therefore, for this latest study, we analyzed individuals leading the conversations on Twitter in general surgery again on December 7, 2020, and noted some changes and significant growth in the number of influencers. In this updated analysis, the number of influencers increased by 45.5 percent to 128 individuals in December 2020 from 88 individuals in February 2020. Of those influencers in February, only 49 (55.7 percent) remained influencers 10 months later and were joined by 69 new influencers in this short period of time.

The proportion of influencers who identified as general surgeons and general surgery trainees remained similar with 83 percent (n = 73) in February and 75 percent (n = 96) in December. Most of these influencers were attending general surgeons—50 percent (n = 44) in February and 57.8 percent (n = 74) in December 2020—followed by other physicians and residents in other surgical specialties—11.4 percent (n = 10) of influencers in February and 18.8 percent (n = 24) in December.

Additional influencer categories were as follows (see Figure 1, this page):

- General surgery residents: 30.7 percent (n = 27) in February and 14.1 percent (n = 18) in December
- General surgery fellows: 3.4 percent (n = 3) in February and 3.1 percent (n = 4) in December
- A total of 1.6 percent (n = 2) medical students who emerged in the December rankings

Of those surgeons with fellowship training, representation among general surgeon influencers transitioned from surgical oncology at 18.4 percent (n = 9) in February 2020 to critical care at 17.9 percent (n = 14) in December, previously 14.3 percent (n = 7) of influencers. Therefore, the overall distribution of role and rank of general surgeons was similar, with a small increase in attending general surgeons and surgeons in other specialties. Notably, influencers among general surgery residents decreased, whereas critical care surgeon influencers increased.

Regardless of the changes in the surgical disciplines of influencers, the gender distribution of general surgeons remained stable overall with slight variations by rank. Of the residents and fellows, 72.7 percent (n = 16) in December identified as female versus 70 percent (n = 21) in February 2020. Conversely, 26.7 percent (n = 8) identified as male in December versus 22.7 percent (n = 5) in February. These data are comparable with those for attending general surgeons, with 70.3 percent (n = 52) identifying as male in December versus 79.5 percent (n = 35) in February, and with 28.4 percent (n = 21) identifying as female in December versus 20.5 percent (n = 9) in February (see Figure 2, page 17).

Overall, 44.5 percent (n = 57) of influencers were located in the U.S. compared with the previous 47.7 percent (n = 42), with 46.1 percent (n = 59) located internationally versus 51.1 percent (n = 45).
The states with the highest number of social influencers included New York, Pennsylvania, and Ohio (see Table 1, page 18). The proportion of influencers from Canada decreased from 28.4 percent (n = 25) in February 2020 to 16.4 percent (n = 21), and the number of influencers in the U.K. increased to 13.3 percent (n = 17) in December from 5.7 percent (n = 5).

To further evaluate the relationship with social media and research engagement, we again compared December Twitter influence scores in the topic of general surgery to both h-index and total number of publications. The correlation with both the Twitter influence score and h-index (Pearson’s r = 0.432, p < 0.01) and total publications (Pearson’s r = 0.375, p < 0.01) remained strong (Figure 3, page 19). The academic h-indices for the December influencers in general surgery, including attendings and trainees (n = 96), ranged from 0 to 99 (mean 15.6 ± 9.8, median 7.5) and were similar to the h-indices of February influencers.

In summary, the number of influencers in general surgery on Twitter increased as expected, with increasing use of social media during this socially distanced pandemic. We found a higher number of influencers specializing in critical care, a decrease in resident influencers, and the appearance of two medical student influencers. The influencers were widely distributed geographically and had a correlation of publications and h-indices with the Twitter influence score in the topic of general surgery.

Unfortunately, we lacked the resources to identify topics discussed and what these influencers specifically added to the conversations; however, we believe that these influencers may have a significant impact on broad discussions in social media relevant to general surgery and health care. It is worth noting their presence and the roles they play in guiding these conversations.

Sharing information gathered at conferences
The social distancing parameters of 2020 universally transformed information sharing. Cornerstones of surgical discussion and education, including morbidity and
Twitter has been a particularly popular platform for sharing meeting content because it allows users to share images and key points with an open audience. In addition, tweets are searchable and identifiable via hashtags.

### TABLE 1.
**GEOGRAPHIC DISTRIBUTION**
of general surgery influencers
(December 7, 2020) (n=128)

<table>
<thead>
<tr>
<th>International</th>
<th>59</th>
<th>46%</th>
<th>U.S.</th>
<th>57</th>
<th>45%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>21</td>
<td>16%</td>
<td>New York</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>U.K.</td>
<td>17</td>
<td>13%</td>
<td>Ohio</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>Spain</td>
<td>8</td>
<td>6%</td>
<td>Pennsylvania</td>
<td>5</td>
<td>4%</td>
</tr>
<tr>
<td>India</td>
<td>5</td>
<td>4%</td>
<td>Illinois</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Mexico</td>
<td>2</td>
<td>2%</td>
<td>Michigan</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Haiti</td>
<td>1</td>
<td>1%</td>
<td>Texas</td>
<td>4</td>
<td>3%</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>1%</td>
<td>California</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1</td>
<td>1%</td>
<td>Georgia</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1</td>
<td>1%</td>
<td>Massachusetts</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown, international</td>
<td>2</td>
<td>2%</td>
<td>North Carolina</td>
<td>3</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>12</td>
<td>9%</td>
<td>Colorado</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Florida</td>
<td>2</td>
<td>2%</td>
<td>Maryland</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Washington</td>
<td>2</td>
<td>2%</td>
<td>Washington</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>2</td>
<td>2%</td>
<td>Alabama</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1</td>
<td>1%</td>
<td>Connecticut</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Iowa</td>
<td>1</td>
<td>1%</td>
<td>Iowa</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>1</td>
<td>1%</td>
<td>Minnesota</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>1</td>
<td>1%</td>
<td>New Jersey</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Oregon</td>
<td>1</td>
<td>1%</td>
<td>Oregon</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Virginia</td>
<td>1</td>
<td>1%</td>
<td>Virginia</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1</td>
<td>1%</td>
<td>Wisconsin</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Percentages may not total due to rounding.

The virtual ACS Clinical Congress 2020 was documented to have a record number of registered attendees (more than 30,000 people from approximately 150 countries), perhaps, in part, because registration also was free in the virtual format.² By comparison, 12,370 surgeons, residents, medical students, affiliate health care professionals, exhibitors, staff, guests, and members of the press attended the ACS Clinical Congress 2019.³ Moreover, the recorded presentations from ACS Clinical Congress 2020 were available for access for an extended period of time, through March 31. Because of the positive reviews associated with this experience, Clinical Congress 2021 is likely to include some virtual components.⁴

Although the virtual platform increased accessibility to the information presented, it created an impediment to the conversation, discussion, and social networking stemming from presentations of interest. However, many conversations transitioned from the conference room and hallway to the chat features of the virtual platforms and onto social media. Whereas the chats often can be accessed only during the live meeting with registered attendees, social media platforms allow for the conversation to continue for those individuals unable to attend the meeting and may continue indefinitely for anyone with a social media account.
Twitter has been a particularly popular platform for sharing meeting content because it allows users to share images and key points with an open audience. In addition, tweets are searchable and identifiable via hashtags. For example, many surgeons and trainees followed ACS Clinical Congress 2020 using #ACSCC2020 and #ACSCC20 for updates on groundbreaking studies and hot topics of interest. Participants often continue to follow the current conversations through a more general identifier such as #SoMe4Surgery or another useful hashtag.

Earlier studies have documented the increasing social media engagement of participants during in-person Clinical Congresses and illustrated the ripple effect of these platforms through both the structured hashtag and expansion outside of the hashtag. Clinical Congress 2020 participants visually documented use of social media through conference hashtag use, revealing the expansive interconnectivity and reach of Twitter accounts. Tracking hashtag use through the virtual 2020 ACS Clinical Congress, the specific hashtags #ACSCC20 and #ACSCC2020 were used 13,749 and 2,083 times, respectively, since September 2020 through the time of data collection in December 2020.

Healthcare Analytics has tracked 6,622 conferences through Twitter and their respective data using 14,332 conference hashtags as of December 23, 2020, with continued increase anticipated. With the ACS Clinical Congress as an example, Twitter use has been increasing with time and has had a great impact on dissemination of information from the ACS’ annual clinical education conference. Further analysis is needed to determine the relevance of social media in the setting of a completely virtual conference format with a greater number of participants.

The hashtag #SoMe4Surgery became a pertinent resource during and beyond conferences for those surgeons interested in remaining connected in the research community and keeping up to date on new publications and findings in general surgery, particularly during social distancing. The hashtag was used 323,268 times from its initiation in July 2018 until the time of data collection in December 2020. The research summary in 280 characters forces brevity in relaying pertinent findings or creating visual abstracts.

The pandemic may have resulted in an increase in social media use, but its pertinence to being...
connected as a surgical trainee and surgeon was already increasing in recent years. Social media provides a forum for information sharing, building connections, and sharing discussions on a global level, with universal accessibility and expanding utility. Undoubtedly, social media continues to have an evolving role beyond 2020 and the pandemic.

**Implications and benefits of #SoMe4Surgery for future surgeons**

With the global pandemic arising during the mid-fellowship application cycle, exposure concerns and travel restrictions began to affect the interview process and many training programs quickly transitioned to a virtual format. In order to provide time for residency programs and applicants to prepare, on June 30, 2020, the Association of American Medical Colleges announced a virtual interview format for the 2020 residency application cycle.12

This move led to many concerns, ranging from the ability of both applicants and programs to present themselves, to assess each other, and to have the equipment and space required to participate in the virtual platform. Applicants especially worried about their ability to evaluate those somewhat intangible qualities that contribute to the culture of a program and the gut-feeling instincts gleaned from interactions during the interview experience. These and other concerns were somewhat balanced by the ease of interviewing from home or another local setting, nominal financial burden, and minimal risk of exposure to COVID-19.

To increase awareness of what they have to offer and to gain as much information possible, many residency applicants and residency programs alike turned to social media to supplement their interactions. By October 21, 2020, the date of Electronic Residency Application Service (ERAS) submission, 45 percent of Accreditation Council for Graduate Medical Education (ACGME) general surgery residency programs had a Twitter account—a 26 percent increase from March 2020—and 46 percent had an Instagram account—a 131 percent increase from March 2020 (see Figure 4, this page). Account creation occurred across program structure (academic, hybrid, community, military) and location (Northeast, Midwest, South, West, Puerto Rico) on both Twitter and Instagram (see Tables 2 and 3, respectively, page 21).

Account creation increased significantly because of social distancing measures beginning in March 2020,
as well as the decision to transition to a virtual platform, on June 30, as illustrated in Figure 4. As of December 7, 22 accounts representing the general surgery residency programs or departments of surgery and four accounts representing surgery divisions were included on the influencers list pulled mid-interview season. On February 7, 2020, only six residency programs or surgery departments and just three general surgery divisions were on that list (see Table 4, page 22).

In response to the unparalleled challenges of the application cycle, these programs worked to connect with and inform applicants through posts profiling their programs. Social media played a prominent role in representing programs in previous years, with prior studies analyzing department of surgery social media use, guidelines for content, and benefits. At the time of analysis, social media was determined to be an underused tool. In addition, attending surgeons—often including the program director and other educational faculty, as well as residents—appeared to work to engage future trainees.

Many programs offered virtual meet-and-greets or social hours via video platforms, allowing applicants, residents, and sometimes faculty to interact prior to application submission. These were largely advertised over social media accounts or by institutional e-mails to medical school representatives and program or clerkship directors for dissemination to medical students. Program personnel, including administrative staff, faculty, and residents, invested time and energy into these events, while applicants spent their evenings learning about programs and expressing their interest in a respective program. Some programs even publicly acknowledged that attendance at these events would be factored into ranking decisions.

Through the use of #MedTwitter, #SurgTwitter, and other relevant hashtags on social media, applicants found platforms to connect with one another, somewhat simulating the informal “application trail,” sharing information through likes, comments, and direct messages. Historically, many applicants favored more anonymous platforms, such as Reddit or the Student Doctor Network, to share information throughout the application cycle. Although these platforms continued to have a role, the number of applicants favoring more public social media platforms appears to have grown, making applicants’

#TABLE 2.
ACGME GENERAL SURGERY RESIDENCY PROGRAMS with Twitter accounts (October 21, 2020)

<table>
<thead>
<tr>
<th>Program structure</th>
<th>n</th>
<th>% with account June</th>
<th>% with account October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>123</td>
<td>73.98</td>
<td>78.86</td>
</tr>
<tr>
<td>Hybrid</td>
<td>126</td>
<td>19.05</td>
<td>26.98</td>
</tr>
<tr>
<td>Community</td>
<td>72</td>
<td>9.72</td>
<td>19.44</td>
</tr>
<tr>
<td>Military</td>
<td>9</td>
<td>22.22</td>
<td>22.22</td>
</tr>
<tr>
<td>Program region</td>
<td>n</td>
<td>% with account June</td>
<td>% with account October</td>
</tr>
<tr>
<td>Northeast</td>
<td>99</td>
<td>31.31</td>
<td>37.37</td>
</tr>
<tr>
<td>Midwest</td>
<td>77</td>
<td>36.36</td>
<td>45.45</td>
</tr>
<tr>
<td>South</td>
<td>105</td>
<td>41.9</td>
<td>46.67</td>
</tr>
<tr>
<td>West</td>
<td>47</td>
<td>42.55</td>
<td>53.19</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>2</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

#TABLE 3.
ACGME GENERAL SURGERY RESIDENCY PROGRAMS with Instagram accounts (October 21, 2020)

<table>
<thead>
<tr>
<th>Program structure</th>
<th>n</th>
<th>% with account June</th>
<th>% with account October</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>123</td>
<td>45.53</td>
<td>66.67</td>
</tr>
<tr>
<td>Hybrid</td>
<td>126</td>
<td>15.87</td>
<td>38.89</td>
</tr>
<tr>
<td>Community</td>
<td>72</td>
<td>6.94</td>
<td>23.61</td>
</tr>
<tr>
<td>Military</td>
<td>9</td>
<td>33.33</td>
<td>44.44</td>
</tr>
<tr>
<td>Program region</td>
<td>n</td>
<td>% with account June</td>
<td>% with account October</td>
</tr>
<tr>
<td>Northeast</td>
<td>99</td>
<td>26.26</td>
<td>42.42</td>
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<td>Midwest</td>
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<td>29.87</td>
<td>42.86</td>
</tr>
<tr>
<td>South</td>
<td>105</td>
<td>23.81</td>
<td>49.52</td>
</tr>
<tr>
<td>West</td>
<td>47</td>
<td>25.53</td>
<td>53.19</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
TABLE 4.
GENERAL SURGERY RESIDENCY PROGRAM ACCOUNTS:
Designated influencers on Twitter
(December 7, 2020)

<table>
<thead>
<tr>
<th>Overall rank</th>
<th>Twitter screen name</th>
<th>Twitter name</th>
<th>Twitter influence score</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>columbiaisurgery</td>
<td>Columbia Surgery</td>
<td>83</td>
</tr>
<tr>
<td>23</td>
<td>hopkinssurgery</td>
<td>Hopkins Surgery</td>
<td>82</td>
</tr>
<tr>
<td>26</td>
<td>wiscsurgery</td>
<td>Wisconsin Surgery</td>
<td>81</td>
</tr>
<tr>
<td>28</td>
<td>uwssurgery</td>
<td>University of Washington Department of Surgery</td>
<td>81</td>
</tr>
<tr>
<td>29</td>
<td>utsw_surgery</td>
<td>UTSW Surgery</td>
<td>81</td>
</tr>
<tr>
<td>30</td>
<td>bwhsurgery</td>
<td>BWH Department of Surgery</td>
<td>81</td>
</tr>
<tr>
<td>32</td>
<td>vcu_surgery</td>
<td>VCU Surgery</td>
<td>80</td>
</tr>
<tr>
<td>43</td>
<td>osusurgery</td>
<td>Ohio State Wexner Medical Center Surgery Dept.</td>
<td>77</td>
</tr>
<tr>
<td>46</td>
<td>washusurgres</td>
<td>Wash U General Surgery</td>
<td>77</td>
</tr>
<tr>
<td>52</td>
<td>dukesurgery</td>
<td>Duke Surgery</td>
<td>75</td>
</tr>
<tr>
<td>55</td>
<td>uhealthhasurg</td>
<td>Surgery</td>
<td>75</td>
</tr>
<tr>
<td>60</td>
<td>ucdavis_surgery</td>
<td>UC Davis Surgery Residents</td>
<td>74</td>
</tr>
<tr>
<td>61</td>
<td>bmcisurgery</td>
<td>BMC Surgery</td>
<td>74</td>
</tr>
<tr>
<td>67</td>
<td>njmsr</td>
<td>NJMS Surg Residents</td>
<td>73</td>
</tr>
<tr>
<td>68</td>
<td>uofitsurgery</td>
<td>UofT Dept of Surgery</td>
<td>73</td>
</tr>
<tr>
<td>73</td>
<td>jeffsurgery</td>
<td>Jefferson Surgery</td>
<td>72</td>
</tr>
<tr>
<td>74</td>
<td>ukygensurgery</td>
<td>UK General Surgery Residency Program</td>
<td>72</td>
</tr>
<tr>
<td>85</td>
<td>vumctrauma</td>
<td>Vanderbilt Trauma</td>
<td>69</td>
</tr>
<tr>
<td>88</td>
<td>uncsurgery</td>
<td>UNC Surgery</td>
<td>69</td>
</tr>
<tr>
<td>95</td>
<td>penntrauma</td>
<td>Penn Trauma Center</td>
<td>67</td>
</tr>
<tr>
<td>103</td>
<td>uofazsurgery</td>
<td>University of Arizona Department of Surgery</td>
<td>66</td>
</tr>
<tr>
<td>119</td>
<td>utahgensurgres</td>
<td>Utah General Surgery Residency</td>
<td>61</td>
</tr>
<tr>
<td>122</td>
<td>loyolasurgery</td>
<td>Loyola Surgery</td>
<td>60</td>
</tr>
<tr>
<td>125</td>
<td>uofusurgery</td>
<td>UofUSurgery</td>
<td>58</td>
</tr>
<tr>
<td>127</td>
<td>bostontrauma</td>
<td>Boston Trauma</td>
<td>58</td>
</tr>
<tr>
<td>210</td>
<td>mgh_ri</td>
<td>Mass General Research Institute</td>
<td>31</td>
</tr>
</tbody>
</table>

ERAS applications more traceable and likely allowing them greater visibility and personal interaction. By design, coincidence, or both, social media became tightly intertwined with the 2020 virtual residency application cycle as a resource for applicants to become familiar with programs outside their home institutions.

**Future importance of social media engagement**
Whether looking to stay informed, share data, network, or plan for upcoming education and career changes, social media has helped to close the social distancing gap. Individual and programmatic influencers have increased in 2020, likely in response to...
For those individuals who have not taken the opportunity to engage with influencers and in the social media communities such as #MedTwitter, #SurgTwitter, or #SoMe4Surgery, we recommend developing your social media presence thoughtfully and strategically.

the pandemic to some extent. While the pandemic stimulated the increase in the use of social media in general surgery, its use is likely to continue growing. For those individuals who have not taken the opportunity to engage with influencers and in the social media communities such as #MedTwitter, #SurgTwitter, or #SoMe4Surgery, we recommend developing your social media presence thoughtfully and strategically. Following are some do’s and don’ts for increasing your social media presence.

Do’s

• Use a Twitter or Instagram handle that is short and memorable

• Include a professional photo; trainees should consider using their application photo

• Create a succinct account bio and mention your academic role

• May include witty, catchy details about yourself, but remember this is your public introduction

• Post content about your passions, but think carefully before engaging in discussion about potentially inflammatory or highly controversial topics

• Remember that everything posted on the Internet leaves a lasting mark, even when promptly deleted

• Review your (280 character or less) message or image at least once before sending

• Only post content you would be comfortable being read by your family, future trainee/boss, or patients

• Get involved

• Examine influencers’ profiles and content

REFERENCES


continued on next page
• Create a network of colleagues by following mentors and mentees, colleagues, and programs, organizations, and associations of interest

• Follow journals to stay up to date on current research

• Read and reach out to #MedTwitter, #SurgTwitter, and other communities

• Support your colleagues on their professional social media journey; invite and promote them

• Review and understand institutional guidelines regarding use

Don’ts

• Do not risk a Health Information Portability and Accountability Act violation by referencing your patients; choose topics with care, bearing in mind that social media is a universal platform, and anything posted is viewable by anyone with Internet access

• Do not provide medical advice or guidance over a social media platform

• Do not plagiarize and ensure any non-original content is properly cited, linked, re-tweeted, or reposted

We anticipate continued growth of social media beyond 2020–2021 and the COVID-19 pandemic and continued importance in many aspects of our careers in surgery. It is vital to understand who is influencing the conversations that occur on these platforms and the environment in which they are occurring.

REFERENCES, CONTINUED

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Telemedicine is a rapidly accelerating new avenue for delivering health care services. Although introduced decades ago, adoption and integration into surgical care has been slower than in other medical disciplines. Guidelines for the use of telemedicine in surgery have existed since the early 2000s, but the coronavirus 2019 (COVID-19) pandemic brought a new urgency to providing continued access to safe, socially distanced care. Changes in the regulatory environment, available platforms, and new opportunities for billing and reimbursement have facilitated a tremendous increase in the use of video visits, remote patient monitoring, and even telephone visits.

As surgeons and health systems rapidly expanded care delivery using telemedicine technology, we determined the need for just-in-time education for both surgical patients and professionals. How do we deliver high-quality surgical care via telehealth? What are the barriers to implementation, and how can we integrate this approach into value-based care delivery models? How do we balance convenience and accessibility, setting expectations for new communication channels with patients? What are new ways to conduct patient examinations using telemedicine?

In this article, we discuss the evolving standards for pre- and postoperative video visits, the requirements for operational implementation, the evolving reimbursement landscape, and regulatory considerations. We also explore the innovations that telemedicine brings to outpatient care and surgical decision-making. Finally, we
explore how the American College of Surgeons (ACS) can support surgeons who want to adopt telemedicine in their practice, advocate for the legislation and regulatory reforms required to allow surgeons to serve the greatest number of patients, and foster inclusiveness and continuity of high-quality patient care.

Logistics for surgical telemedicine
What are some logistical considerations surgeons should consider in adopting telemedicine to conduct pre- and postoperative patient visits?

Standards for virtual preoperative evaluation
Before the COVID-19 pandemic, telemedicine was used primarily to facilitate preoperative care when in-person care was difficult because of diminished access to local care providers, such as in rural areas. Shifting portions of preoperative care to telemedicine minimizes patient transportation challenges, avoids work or school absences, and protects providers and patients by minimizing exposure to disease.

Complex referrals or second opinion evaluations are particularly well-suited for virtual visits. A thorough review of the patient’s history can allow for risk assessment, screening for operative eligibility, and prompt additional preoperative testing. Although the gold standard has yet to be established for virtual preoperative evaluation, some general best practices have emerged.

Some specific examinations should be performed in-person preoperatively (for example, a rectal exam before rectal surgery), but much can be accomplished via virtual consultation. For patients isolated geographically from surgical services, virtual presenters can perform a surrogate examination and help present a patient to the surgeon. They can palpate the abdomen, listen to the heart and lungs, and relay their findings, all without requiring the patient to travel to a specific location.

Like video conferencing software in general, many telemedicine platforms allow screen sharing. Images and other data from the electronic health record (EHR) can be reviewed with patients to demonstrate findings and discuss operative planning. Some platforms also provide the ability to document informed consent with electronic signature or video recording. Regardless of the specific content of the preoperative visit, it is imperative to plan ahead for the kind of data that will be reviewed and discussed with the patient, and to prepare the patient for the length and content of the discussion. Adoption of these virtual visit practices represents a significant cultural change in surgery, but we have negotiated radical evolution in practice before, such as with the adoption of laparoscopy.

Postoperative virtual visits: Timing and content
Virtual follow-up visits are a particularly good option for patients who have difficulty with mobility or access, and some centers are considering telehealth as the default process for post-discharge care, with an option to opt out. A recent randomized controlled trial demonstrated that postoperative virtual visits following urgent minimally invasive surgery were more convenient for patients and not associated with higher post-discharge care use than in-person follow-up visits. Family members or other involved care providers may conference-in during the postoperative visit from different locations, obviating the need to take time from work or other responsibilities, while allowing them to stay closely involved in care. Furthermore, surgeons can learn a lot from seeing the patient’s home environment.

In-person postoperative visits typically occur 10–14 days after an operation or hospital discharge. Virtual postoperative visits may be better within the first week of discharge, when the most post-discharge, postoperative complications arise and patients have more questions during early recovery.

The content of a postoperative virtual visit is similar to that which may be performed in person: a brief assessment of the patient’s overall condition since an operation, determination of nutritional recovery and wound healing, and a review of results of the operation. Often a medical assistant can “room a patient” virtually; that is, reconcile medication, enter vital signs obtained from home devices, and confirm any new
diagnoses. This information can be documented in the EHR to maintain a normal surgical clinic workflow. It may be necessary to prepare patients for awkward examinations. Patients who are uncomfortable sharing a physical finding live on video can send a photograph via the secure patient portal. They may even need to ask a family member or caregiver for assistance in taking the photograph. The image then can be reviewed during the visit with the patient and incorporated into the note documenting the visit. For tips on facilitating virtual visits, see Table 1, this page.

### Operational model

How does a practice put telehealth to work and address some of the common concerns about using telemedicine to provide quality care?

Barriers to adopting telehealth into surgical care

Institutional and user-related factors may obstruct adoption of telemedicine and integration into an existing workflow. Examples of barriers that can be traced back to the practice or health care facility include cost of implementation, reimbursement clarity, legal liability, privacy and confidentiality concerns, and data security. Older patients typically experience more challenges in adapting to telehealth communications and may need to rely on caregivers who are more facile with digital technology, but as individuals who routinely use this technology age, this challenge will fade.

Other patient-associated factors associated with adoption include level of education, eHealth or computer literacy, bandwidth of dwelling, and lack of awareness of the existence of several telemedicine products and services. Being technically challenged, resistance to change, lack of licensing, and perceptions of impersonal care ranked among the most frequent staffing-associated challenges for integrating telemedicine into existing work processes. Hardware requirements, Wi-Fi service, and telecommunication-related troubleshooting affect vulnerable populations disproportionately. Elderly, low-income, minority, non-English speakers, and individuals living in rural areas may have more difficulty connecting to providers via telehealth. Even with adequate service, patients may be unfamiliar or frustrated with software installation, e-mail links, patient portal messaging, and password protection.

One potential solution is the collaboration with a third party such as a community pharmacy or urgent care center. Health care systems and practices also might consider establishing information technology

### Table 1. Troubleshooting Virtual Visits

<table>
<thead>
<tr>
<th>Perils/pitfalls</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Wi-Fi connection</td>
<td>Make sure patients have access to broadband and ask them to test it before their visit. Sometimes a cell phone works better if home Wi-Fi is unstable.</td>
</tr>
<tr>
<td>Inefficient timing</td>
<td>Ask patients to be ready during a window of time. Have administrator or nurse check in on patient as the surgeon completes another visit.</td>
</tr>
<tr>
<td>Difficulty with assessing mobility/health for surgical clearance</td>
<td>Always examine the patient in-person before the operating room, even if on the day of an operation.</td>
</tr>
<tr>
<td>Audio difficulty</td>
<td>Use telephone call for audio backup, while using televisits for video (on mute to avoid echo).</td>
</tr>
<tr>
<td>Examining “embarrassing” or hard-to-reach body parts</td>
<td>Encourage patients to take photos before visit instead of live video (for example, picture of external hemorrhoid). May require assistance from caregiver to take photo.</td>
</tr>
<tr>
<td>Privacy</td>
<td>Use a quiet, empty room for video encounters. Make patients comfortable. Dress professionally, consider your background and lighting.</td>
</tr>
</tbody>
</table>
service support for their patients, as patients become increasingly important users of the health information software. These local experts can provide the designated area for the telecommunication platform and assistance with the virtual clinical visit.

Translation services must be available while using telemedicine for both pre- and postoperative care, and multiple platforms offer real-time translation via three-way video visits. Overwhelmingly, available bandwidth is a problem, especially in rural and underserved urban areas. Poor bandwidth can lead to frozen video or a discrepancy between audio and video that may limit the examination or overall consultation. The Federal Communications Commission (FCC) has released significant grant funding to overcome some of these challenges.

Scheduling and documentation
A clear workflow is vital to maximize the value of telehealth service. Scheduling protocols and patient-facing scripts should be created to facilitate the identification of appropriate clinical use cases and patients who would have the most successful virtual visits. Inclusion and exclusion criteria for virtual visits should be created for office staff and schedulers. Templates with block time for telehealth visits should account for the time needed to complete pre-visit staff communications, patient education for connection, and inevitable connection failures.

Planning for integration of telehealth into an existing clinic includes consideration for when and how telehealth visits will fit into the schedule and updating the electronic health record scheduler, as well as identifying triage questions for scheduling appointments. Self-scheduling patient-facing portals should clearly show telemedicine options. Ensuring clinicians are only providing care in states they are licensed, setting expectations for the clinician and the patient, training regarding proper appointment standards, and ensuring that the care being provided is covered in clinicians’ liability insurance are other important organizational factors in setting up a telehealth practice.

Clinicians and billing and coding staff should be aware of the language required to sufficiently document virtual encounters, remote patient monitoring, and other telemedicine services. New Current Procedural Terminology (CPT) codes are available for telehealth reimbursement, and these codes and their appropriate modifiers should be integrated into the EHR.* The available technology should be able to capture and record any necessary patient signatures and consents, including practice privacy notices. The new evaluation and management (E/M) policies that took effect in January now base billing on time and complexity, which removes the documentation barriers of the cumbersome review of symptoms and mandatory multisystem examination. This change represents a significant step forward for telemedicine billing. Some special provisions are in place for billing and coding during the COVID-19 pandemic, and it is unclear how long these policies will endure.5

Equipment
Hardware requirements exist for both the provider and the patient. Successful video telehealth encounters require devices such as a cellular- or Wi-Fi-enabled smartphone or tablet, desktop computer with a webcam and microphone, or laptop computer with integrated camera and microphone. Platforms such as MyChart, Doximity, FaceTime, Zoom, and Skype facilitate the virtual encounter. Some of these platforms now can be used under the Public Health Emergency (PHE) set to expire in late April 2021.

Platforms that are not integrated into commercially available EHR systems generally are more lightweight and accessible to new users, but quality monitoring and outcomes tracking are somewhat more challenging. Surgeons should test drive their virtual visit platform and telehealth workflow before engaging with their first patient using the system. Many providers find that using more than one video monitor with the EHR note window on one screen and the virtual platform on another allows

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both better patient engagement and simultaneous visit documentation. In clinical environments with desktop computers without webcams, the provider’s smartphone or other device can be used for the video encounter.

Having the hardware and software infrastructure in place will be worthwhile only if ongoing training and technology support is available to the users. Provider and staff training, coding and billing integration, institutional information technology support, and lastly, but most importantly, patient and caretaker education are critical to successful adoption and durable implementation (see Figure 1, this page).

Billing and reimbursement

New visit billing has been greatly facilitated by the January 2021 E/M billing changes. Reimbursement is now based on time and complexity alone, and the cumbersome review of systems and specific examination requirements have been removed; both of these changes are particularly impactful in telemedicine billing. The COVID-19 pandemic experience confirmed that remote encounters facilitated via audiovisual technology can count toward the postoperative visit. These visits fall under the global period and, therefore, are not billable events. This situation always has and will continue to represent a real opportunity for telemedicine growth after surgical care. The PHE telephone waiver is in place so that audio-only visits are possible, but many expect the telephone-only provision to be discontinued when the PHE expires.

Remote patient monitoring billing is more complex because many codes (such as chronic care management codes) require a monthly copayment. Furthermore, specific time documentation must be included to bill for asynchronous monitoring data. At present, interpretation of real-time data by a call center (to ensure safety) is a considerable challenge to generating meaningful revenue. Emerging codes and opportunities for billing of remotely transmitted data and self-entered data exist, but at this point, the time and workflow make this approach less optimal to creating a real revenue stream. It is expected that this area will continue

to evolve and become a more significant revenue opportunity.

Peer-to-peer evaluations were billable before the pandemic and continue to be so under the Interprofessional Consult Codes. Surgeons can convey a second opinion to a local physician and couple it with peer-to-peer medical licensing. Most states offer this type of cross-state, instance-based licensing opportunity.

Third-party payor reimbursement for telemedicine remains an active issue and more than 40 states have laws in place that govern private payor telemedicine reimbursement. Payment parity remains a challenging topic as payors view telemedicine as a service with less overhead and hence hold the view that it should not be paid on par with in-person encounters. Physicians, on the other hand, believe that their sunk costs and overhead are not variable. (Sunk costs is a business term that refers to money already spent and that cannot be recovered.) In the end, payment parity is critical for adoption and utilization.

### Regulatory environment, interstate issues

Physicians must be licensed to practice in every state in which they practice, including delivery of telehealth services across state lines. During the COVID-19 pandemic, the regulations prohibiting practice across state lines were relaxed, which facilitated the development of surgical virtual clinics. The practice restrictions across state lines are governed by the states, and this situation is unlikely to change permanently any time soon. The Federation of State Medical Boards has a compact in place to facilitate multi-state licensing, which is expanding, but still requires work to obtain. State and federal legislators are facing a growing demand to reexamine limitations on cross-state licensing. Although the urge to expand access for patients and providers is obvious, a national license would present potential risks, such as a bullish telemedicine company or delivery system with nationally licensed physicians having wide-open access to regional provider referral networks and patients.

Another key regulated area is the “originating site” for telemedicine, which is defined on the basis of where the patient is located at the time of the telemedicine encounter. For example, in a video visit conducted with patients in their own homes, the patient’s home is the originating site. The originating site historically was limited by both rurality and specific locations, such as the hospital and physician office. There are a few minor exemptions, such as telestroke carts, end-stage renal disease, or substance abuse care, but, by and large, the PHE has enabled physicians to deliver significant amounts of care at home. Legislation is in progress to cement the originating site waiver under the PHE, which is a key area for the ACS to support. The site waiver will be a major determinant of expanded access to surgical telemedicine.

### Innovations

Telemedicine is not a replacement for, but rather an enhancement to, in-person care. The next section reviews opportunities for innovations in patient care, interdisciplinary communication, and education.

**Promote patient self-care management and monitoring**

Existing technology allows for remote patient care via real-time (synchronous) encounters like video visits or telephone calls, or asynchronous encounters such as patient portal messaging, secure texting, or e-mail, where information is exchanged when convenient for both parties. Preoperative preparation may include engaging with patients on weight loss and smoking cessation through goal setting and electronic reminders.

Smartphone or web-based apps can provide a secure real-time forum for physician-patient communication centered on patient-generated health data. Bluetooth-enabled devices, such as body composition scales, fitness trackers, and blood pressure, pulse, and glucose monitors can link to the patient’s smartphone for data transmission or communicate directly with the EHR. Alternatively, screenshots of the measurements can be obtained and transmitted to the physician via secure messaging or EHR patient portals. Postoperatively, patients can record vital
As the use of telemedicine grows in surgical practices, the College has a critical role to play in promoting thoughtful, feasible workflow integration.

signs, share wound photographs, and report drain output quality and quantity, facilitating better-quality data for postoperative triage and more personalized follow-up care. For patients who travel longer distances to seek care, these elements may improve local care coordination, assist in earlier identification of surgical complications, and even avoid unnecessary in-person travel for wound evaluation.

Adoption of telehealth can be particularly useful for surgical specialties that manage chronic diseases, such as obesity, in which a physical exam is not always necessary. In the context of bariatric surgery practice, engaging patients via remote monitoring has been shown to increase and accelerate preoperative weight loss, decrease program drop-out rates, and decrease time spent in preoperative clinic visits. Although the effect of telemedicine on surgical outcomes has not been widely investigated, early evidence suggests a potential benefit to some surgical specialties.8-10

Improving quality of care
As newly trained surgeons begin independent practice, they sometimes face unexpected challenges in the operating room and uncommon situations/diseases in the clinic. Senior partners or disease-specific experts might not always be available for consultation or just-in-time mentoring, especially in the nonacademic setting. In some rural areas, the nearest surgeon colleague may be 100 or more miles away.

Some surgeons use the ACS Communities to review decision-making on complex cases. Telemedicine provides the opportunity for real-time, peer-to-peer consultation. With the increasing availability of more sophisticated equipment and telecommunication platforms, remote one-on-one intraoperative telementoring also is feasible. Future ACS-based programs could include real-time support from a panel of surgical experts or even formal evaluation of skills as surgeons look to document their expertise and expand their certification.

Care coordination is central to managing patients with complex diseases, such as cancer, or patients facing a long recovery after an unexpected emergency operation. Video-based intra-facility tumor board meetings with secure sharing of patient imaging and pathology allow for improved care coordination and multidisciplinary collaboration. Dependency on long-term nutritional support, complex wound or ostomy care, and physical rehabilitation increases the need for multidisciplinary communication across both space and time. Surgeons often are responsible for connecting multiple post-discharge support services; video conferencing multiple providers both pre- and post-discharge with social worker and nursing support now is feasible and can provide much-needed patient-centered care planning and follow-up. Even emergency consultations can be improved by incorporating telehealth technology. Particularly in this time of resource constraint, it is especially valuable to evaluate imaging and other patient data with a direct video connection to referring physicians to triage the most appropriate emergency transfers.

Surgical telemedicine advocacy
As the use of telemedicine grows in surgical practices, the College has a critical role to play in promoting thoughtful, feasible workflow integration. As we have learned from challenges encountered in adoption of EHR integration, novel means of engaging in and documenting patient care can create an undue burden on physicians and health systems. The very features that make expanding existing care services with telemedicine so attractive—ease of use, increased direct patient access to providers, portability—threaten to overwhelm providers if the integration into existing clinical workflow is mismanaged.

We must establish standards for remote care monitoring so as to set reasonable expectations for response time, as well as what can and cannot be provided virtually. As in any other form of patient care, surgeons require infrastructure and administrative support to use telemedicine efficiently. Providers require support staff, time and coverage systems, and reimbursement mechanisms to integrate telemedicine into their practice. Likewise, telemedicine patients (like all patients)
have needs surrounding disposition planning, scheduling, patient education, and care coordination with other providers spanning services beyond the surgical care episode.

Telemedicine offers tremendous efficiencies compared with the face-to-face health care delivery model, but these efficiencies are lost when critical institutional support functions are cut in the process of streamlining. An institutional commitment to telehealth care delivery must include care team-building through consistent staffing and ongoing training. Resources such as quick-start guides and implementation tool kits can be used to initiate or expand telehealth services, but a long-term commitment from institutional leadership is essential to effect culture change.\textsuperscript{4,11,12} Surgeon champions can be a critical force for care transformation to include telehealth as a part of our standard surgery care delivery.

As the advocate for surgeons and surgical patients, the ACS should lead the way in promoting responsible policy and supporting the use of standards of practice for surgical telemedicine. The ACS should work to define the gold standard or best practices for a virtual surgical examination. Culture change is an issue with telemedicine; the virtual examination relies much more on listening and visualization. This change is analogous to the adoption of laparoscopic surgery, where our hands were removed from direct patient contact during the operation. Surrogates for the hands-on examination include a remote examiner or use of bio-peripherals, and the ACS should advocate for best-practice integration of these enhancements to the clinical encounter.

The ACS also can support grassroots advocacy issues, especially in key areas, such as originating site definition, cross-state licensing, new remote monitoring codes, and payment parity. Finally, the ACS should join the American Telemedicine Association and other surgical organizations, such as the Society of American Gastrointestinal and Endoscopic Surgeons, to advance adoption of surgical telehealth, advocate for government and market normalization, and provide education and resources to help integrate virtual care into emerging value-based delivery models.

\section*{REFERENCES}
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Today’s surgeon compensation models fall short:
Aligning incentives to create more equitable and value-based compensation models

by Susanna Gallani, PhD, MBA; Mary Witkowski, MD, MBA; Lauren Haskins, DO, MBA; Haley Jeffcoat, MPH; Vinita Mujumdar, JD; and Frank Opelka, MD, FACS
Modern medicine is undergoing a transformation, which involves innovative surgical approaches, increased medical treatment options, and increased team-based care. Today’s surgical practices also must understand and incorporate new concepts and tools, such as new digital health technology, health data captured by numerous digital sources, and how to manage and leverage vast amounts of health care knowledge. All of these changes add to the complexity of care delivery. This transformation challenges the health care business model, including the physician compensation model, to evolve, and it prompts questions about the alignment—or lack thereof—between care delivery and the incentive system. How do the moving parts of a modern surgical team combine to produce the value required to achieve optimal patient outcomes? Does the more than 30-year-old relative value units (RVUs) structure, tied to the volume of surgical services, encompass all the contributions surgeons bring to the health care system? Are the existing compensation systems providing proper incentives and motivation to deliver value-based care?

This article examines the state of surgeon compensation and explores concepts that would reform compensation for modern surgical practice. Physician compensation historically has been directly linked to the revenue generated from services rendered to patients and is expressed in the volume of RVUs, specifically physician work RVUs. Increasingly, compensation models are accounting for the additional work that surgeons perform that is not captured by RVUs.

This change in compensation models for surgeons is important because surgeons typically wear many hats within their practices and institutions. In addition to leading successful surgical teams, surgeons may take on added responsibilities, such as coordination of the full cycle of patients’ care, oversight for quality and improvement programs, clinically enriched data analytics, supply chain optimization, marketing, branding, and more. In academic settings, productive research, teaching, advocacy, participation in national conferences, and collaboration with other institutions also are part of the surgeon’s responsibilities. Within traditional compensation models, much of this work goes uncompensated.

Evolution of the payment system
The revenue system for payment predates the Medicare physician fee schedule (MPFS). It began when individual surgeons practiced in small groups with limited specialization and set fees according to usual, customary, and reasonable (UCR) rates. In 1989, significant reforms changed Medicare’s methodology for paying physicians by replacing UCR rates with the resource-based relative value scale (RBRVS). Under this reformed system, the MPFS was adopted, and the concept of RVUs was introduced. RVUs were created to reflect the resources—time, effort, and expenses—required for a medical procedure or service.

Since then, care delivery models have become increasingly complex. Today, more information about
patients, their conditions, potential treatments, and so on is available than ever before, and care for a single patient often is delivered across teams of clinicians throughout the life cycle of their condition. The RVU-based compensation model has failed to keep pace with the evolving resources required to provide modern care effectively.

Transition to value-based care

As payors, health care systems, and institutions shift toward value-based health care, compensation models must transition as well. A system that refrains from compensating surgeons for their other essential duties implies that these activities are unimportant and fails to acknowledge the full value surgeons bring to their patients, hospitals, and health care systems.

Thus, to align and motivate surgeons with proper compensation, it is vital to examine the current state of physician compensation and assess its adequacy to reflect physicians’ workflows in the modern surgical care environment. If we seek to focus on delivering care that meets patients’ personalized goals, incorporating advanced applied sciences of surgical care at the bedside, and optimizing quality improvement programs, the incentives in a compensation plan must reflect the significance of these elements. These themes converge with the concept of value, which should be foundational in the design of modern physician compensation models.

Principles of modern compensation theory and applications in health care

Surgeon compensation plans vary along a continuum, spanning from fixed pay arrangements to plans that heavily—and, at the extreme, exclusively—are anchored to volume-based metrics, such as RVUs, revenue generated, and so on. Most compensation plans combine some characteristics of both extremes; however, a large share of these plans is closer to the volume-based end of the spectrum. In many cases, these compensation plans are designed to reflect the structure of the reimbursements the provider facility receives from its payors; that is to say, surgeons may be compensated based on the volume of activities that are reimbursed by the payors. For example, if payors adopt a fee-for-service approach, then surgeons effectively are paid using a fee-for-service model, too. A fundamental issue underlying this practice is that surgeon compensation risks becoming aligned with the strategic priorities of the payor, which may not reflect the goals of the health care facility and optimal patient care.

Unquestionably, there are good reasons to link the incentive system to the payment system. For example, it ensures financial sustainability, at least in the short term, as the activities that are incentivized internally are the same ones that generate revenue for the institution. In addition, revenue-generating activities are typically recorded in the billing system, making them easier to measure for compensation purposes. However, this compensation design creates some real challenges.

A fundamental principle of compensation design is that “you get what you pay for.” This is more than a catchphrase, as this principle is backed by a large body of academic literature exploring the roles that compensation arrangements play beyond simply rewarding physicians for their effort. For example, compensation plans highlight and clarify strategic institutional priorities. When individuals perform complex jobs and face multiple competing demands on their limited time and attention, they tend to focus more on those activities that are clearly stated in their compensation plan, easy to measure in objective terms, and rewarded with higher payoffs relative to other activities. Other activities that may contribute significantly to creating value in a health care system may then receive less attention and time and, in extreme cases, may be ignored entirely. Therefore, explicit links between revenue-generating activities and compensation plans lead surgeons to prioritize volume at the expense of other value-creating activities. This approach has the following undesirable consequences:
A fundamental philosophical change lies in decoupling the internal incentive system from the payor to ensure that compensation design corresponds to the institution’s strategic priorities, not those of the payor.

- Prioritizing volume may serve as a distraction from outcomes, safety, and quality.
- Efforts to maximize volume promote innovations in optimizing throughput, which then contributes to professional burnout.
- An excessive focus on revenue often translates into prioritizing short-term performance, thus reducing investments in activities that may benefit future patients.
- Volume-based contracts focus on individual performance and do not explicitly reward teamwork toward optimal patient goals.

These issues affect the delivery of quality care to current patients. They also can lead to critical motivational consequences for the surgeons, which may affect their well-being and, in turn, the value of health care delivery for future patients.

By implying that nonrevenue-generating activities are less valuable, volume-based compensation plans expose surgeons to a moral disconnect ensuing from the conflict they face between performing activities that they believe are adding value for their patients and taking time away from revenue-generating work. In extreme cases, peer pressure can exacerbate this tension and introduce feelings that belittle the contributions of those surgeons who act in discordance with their incentive system and perform those value-generating activities despite not being financially rewarded for them. This dilemma is a consequence of the communication role of compensation, whereby incentives highlight and clarify institutional priorities. Therefore, pursuing activities that take time and resources away from these stated priorities may be regarded as playing against the institution’s best interests.

To avoid the downsides of volume-based compensation, some institutions opt for flat-pay physician contracts. These arrangements reduce the concerns related to focusing surgeons’ attention excessively on revenue-generating activities but exhibit other important shortcomings. For example, flat-pay contracts are ineffective in communicating institutional priorities. In many cases, institutions accompany flat-pay arrangements with a stack of performance metrics for which members of the institutions are held accountable. By not linking pay with performance while, at the same time, monitoring several metrics, these pay arrangements lead individuals to focus on activities that are more clearly and visibly measured, easier for them to carry out based on their abilities, and more enjoyable. Again, this system does not ensure alignment between individual behaviors, institutional strategic goals, and value for patients.

Furthermore, flat-pay contracts fail to reward effort. When incentives to work hard are weak, they may lead to complacency and low motivation, which are reflected in suboptimal institutional performance. In addition, weak performance incentives spur insufficient creative tensions, hampering innovative and collaborative problem-solving and improvement.

So, how do we improve surgeon compensation design? A fundamental philosophical change lies in decoupling the internal incentive system from the payor to ensure that compensation design corresponds to the institution’s strategic priorities, not those of the payor. Revenues provide the resources that fund the operations of the health care provider, including surgeon compensation. The allocation of such funds to surgeon compensation needs to be informed by the institution’s value creation. Therefore, health care providers need to start by mapping their activities into their value-creation flow.

Understanding value and value creation
Michael Porter and Elizabeth Teisberg, in their 2006 book *Redefining Health Care,* state that a value-based health care system defines value in terms of patient-centered results and, when implemented, unites the

interests of patients and providers. When paid for value, providers who improve patient outcomes and lower costs will succeed when patients succeed. As health care institutions transition to a value-based system, the compensation system also must reflect and reward how surgeons contribute to the hospital’s ability to create value for the patients it serves.

Within hospitals and medical centers, value is created in the care delivered and measured by the results achieved for both current and future patients. Clinical teams create value not only when they see patients or provide billable services but through the full set of activities, decisions, conversations, supervision, and so on that contribute to their patients’ improved health. Value is created over the full longitudinal cycle of care that patients receive and is created not only through the actions of individual surgeons but also through their leadership and collaboration with surgical and medical teams. These actions include delivering evidence-based treatment plans to other supporting providers and ensuring that patients are informed and engaged in their care. This approach includes bringing in appropriate resources for patients based on their physical, mental, and social needs.

Think of value creation in terms of impact on current and future patients. For current patients, value is most easily recognized as direct patient care with face-to-face interactions (for example, surgical procedures, inpatient care, office visits, telehealth visits, and patient phone calls). Surgeons also generate value through nonclinical activities—multidisciplinary team meetings, consults, medication ordering, and note writing—that contribute to their patients’ outcomes, even without direct interface.

Surgeons contribute tremendous value through the indirect management of their patients’ overall care cycle, which often is unrecognized. Patients have better outcomes when coordination of care between surgical and consulting services is optimized. Time spent communicating, managing, and overseeing other members of a clinical team, or coordinating perioperative care, all contribute to patient outcomes and costs of care. The surgeons’ time, attention, involvement, and leadership in these care processes generate value for the patient (see Table 1, page 38, and sidebar, page 39).

Beyond the value that surgeons create for their current patients is the value that can and must be built today for future patients. In this category of value creation, physicians hold several roles in three primary areas of performance management: staff development, strategic leadership, and institutional leadership. Clinician involvement in the institution’s future investment and improvement is critical for a health care center’s ability to deliver higher levels of value.

Value creation is not a one-size-fits-all solution. It depends on the mission, context, and strategy of the individual institution. Academic medical centers often have separate mission statements for patient care, education, and research. All three of these missions create value and deserve recognition. Rural medical centers create value differently than urban or suburban centers; they provide value to a community by being accessible even when not fully used. Based on location, providers must focus their resources on addressing the most common conditions in their geography.

Even within the clinical care mission, different providers choose to focus on different patients for various reasons. Some providers are best positioned to treat more complex patients and novel diseases, whereas others, such as health care centers that support rural communities, provide the highest value for their populations by meeting the urgent care needs in the area and by having generalized medical and surgical staffing available to treat or stabilize a range of conditions. Many providers specialize in families of conditions or special populations, for example, cancer centers, orthopaedic centers, or groups of geriatricians. The goal—to optimize value for the patient focus group—is the same, but the institutional approach varies based on institutional means and their mission statement.

Each institution needs to think about its mission and strategy to deliver value to patients and inform the notion of value creation within their institutions. Each institution must map its value creation flow. The way
it generates value for patients is largely idiosyncratic to its institutional characteristics, such as size, location, patient demographics, affiliation with medical schools, and so on. These activities should be rewarded in proportion to their contribution to value creation.

A starting point for health care institutions is to think about the unique value proposition for their patients and analyze the sources of value creation that are most critical to delivering on their mission. Filling in the specific details of each facility’s value creation map is the work not only of clinical and management leadership, but, most importantly, it is a collaborative data-driven process involving people at all levels of the institution.

Some activities that create value are easily measurable and quantifiable, whereas others, such as teamwork and mentoring, are more difficult to capture using objective measurement and may often be unplanned. Subjective evaluations will be necessary to assess and reward these activities. Most information systems that providers have adopted are structured to support billing and the collection of information about patients to aid in the design and implementation of care plans. Providers will need to develop repositories to record performance evaluations and link them to pay for performance.

**Imagining a better compensation model**
Surgeons and surgeon leaders can envision a better compensation model—one that incorporates value creation as its guiding principle. Surgeon compensation based on the volume of activities performed tends to align surgeons with payor goals and strategies rather than those of the institution. A compensation model that empowers institutions to distribute payor funds internally, based on their value creation flows, rewards behaviors that contribute to a facility’s goals. Successful
OTHER FORMS OF VALUE CREATION

• Value creation in education: Teaching medical students and residents—the next generation of physicians who are likely to leave your institution—versus training attendings and other team members who anticipate staying at the institutions

• Value creation in research: Basic science, clinical research, and delivery science research that leads to better treatments, pathways, and delivery of care

models recognize the importance of fiscal autonomy within the institution.

A better system bases compensation on both productivity and other value-adding activities with the appropriate balance tailored to the practice, hospital, and region. Examples of value generators not directly linked to revenue include research, teaching and training, administrative tasks and appointments, participation in quality improvement initiatives, clinical care coordination, and perioperative care. An ideal compensation model accounts for these essential contributions.

When hospitals fail to compensate for value-adding activities, it implies that they are tangential to the institution’s overall success. Often, bonuses are used at the chair’s discretion to reward productivity, quality, and outcome metrics. Still, a lack of transparency in how funds are used leads to questions about how surgeons’ contributions are valued. A better compensation model includes explicit compensation for the activities that add value yet are not captured by RVUs. Transparency in the way bonuses are distributed fosters trust and facilitates departmental and surgeon goal alignment.

Anticipated challenges

A shift from the traditional “eat what you kill” compensation mantra—compensation tied to the number of patients seen, operations performed, and RVUs earned—will come with anticipated challenges. This article addresses an entirely new way of thinking about compensation, which is important because incremental changes instead of comprehensive revisions are less likely to catalyze significant shifts in existing compensation models.

There is foreseeable difficulty with aligning ideas of value for the institution, the surgeon, and patient care. However, under a value-based model, patient care is the aligning force. The challenge is to orient the stakeholders to patient value by changing the underlying incentive systems. Furthermore, assigning value to clinical and nonclinical activities is challenging. There can be significant variation in the value that the same activity provides, based on variables such as location, supply and demand, health system priorities, practice setting, patient population, and specialty. Successful compensation models that reward value creation will be developed within each institution, based on its strategic plan and idiosyncratic constraints.

Furthermore, this shift will require novel ways of thinking and financial investment in new systems. Finite resources and budget constraints mean that when innovative ways of distributing the revenue funds are adopted, there are limitations on what can be accomplished. It is essential to secure buy-in from physicians and health care systems regarding increased or more liberal distribution of funds. Leaders must be willing to invest in the messy work of changing compensation structures and should allow for providers’ short-term stability during transition from one compensation model to another.

Moreover, compensation systems cannot be changed in a vacuum without attention to other changes and a commitment to patient-centered, value-based care delivery and payment systems. A final challenge will be to confront the seeded belief of many surgeons, that those tasks that generate the most revenue are the most “valuable,” and that by extension, value-generating surgical functions that contribute to education, improved patient care, and the hospital system are equally important and deserve financial reward under an evolved compensation model.
The rise and fall of gender identity clinics in the 1960s and 1970s

by Melanie Fritz and Nat Mulkey
Editor’s note: This article is based on the second-place poster in the American College of Surgeons History of Surgery poster contest at the virtual Clinical Congress 2020. The authors note that as the field of medicine and society have evolved to better understand the experiences of transgender individuals, terminology has changed significantly. The authors have kept the original wording of direct quotes, but elsewhere in the article terminology is used that is consistent with present-day standards; that is, “transgender” or “transgender and gender nonbinary.”

Transgender and gender nonbinary (TGNB) individuals have existed for thousands of years and in cultures throughout the world. In Western medicine, however, the modern era of gender-affirming surgery (GAS) began at the Institute of Sexual Research in Berlin, Germany, under the leadership of Magnus Hirschfeld, MD. Surgeons at the institute performed the earliest vaginal constructions in the 1930s. Early patients included an employee of the facility, known by the last name of Dorchen, and the Danish painter Lili Elbe, whose story was depicted in the 2015 film *The Danish Girl.*

Around the same time that Dr. Hirschfeld’s institute began performing vaginoplasties, the father of plastic surgery, Sir Harold Gillies, OBE, FRCS, had been refining techniques for genital construction in Britain. He did so primarily by operating on British men who had sustained genital injuries during wartime and subsequently presented to him for assistance. In the 1940s, he performed the first known phalloplasty for a transgender patient on Michael Dillon, MD, a British physician. Dr. Gillies later performed a vaginoplasty on patient Roberta Cowell, who gained some renown in Britain.

In the 1950s, Georges Burou, MD, began performing vaginoplasty operations in Casablanca, Morocco, and is widely credited with inventing the anteriorly pedicled penile skin flap inversion vaginoplasty.

Increased awareness in the U.S.

One of the earliest known GAS procedures performed in the U.S. was for patient Alan Hart, MD, a transgender man and physician, who underwent a hysterectomy in 1910.

The field of GAS subsequently remained dormant in the U.S. until the 1950s, when pioneers like Elmer Belt, MD, University of California Los Angeles, and Milton Edgerton, MD, Johns Hopkins University (JHU) began performing GAS.

The work of sexologist and endocrinologist Harry Benjamin, MD, in the 1950s and 1960s provided additional momentum to the field within the medical community. At the time, many psychiatrists and physicians believed that the correct approach to treating transgender patients was exclusively through psychoanalytic therapy aimed at altering the desire to live as a different gender. Dr. Benjamin is attributed with being one of the first physicians to challenge this notion.

In 1966, he published *The Transsexual Phenomenon,* which detailed the era’s approach to GAS. Notably, this text includes far more detail about male-to-female (MTF) surgical operations, such as vaginoplasty, than female-to-male (FTM) operations, such as phalloplasty or metoidioplasty. At the time, transgender men were incorrectly believed to be less common than transgender women, and surgeons were reluctant to perform FTM GAS procedures. Based on writings from the era, some of this reluctance stemmed from uncertainty as to whether surgical techniques were capable of constructing a neophallus that would be satisfactory to the patient.
A boom of awareness of GAS within both the field of medicine and the larger U.S. public can primarily be attributed to one individual: Christine Jorgensen. Ms. Jorgensen was a transgender woman who captured the attention and interest of the general public after undergoing a series of operations for GAS in Denmark from 1951 to 1952. Her coming out story and transition were covered extensively in popular media, appearing in the *New York Daily News* under the eye-catching headline “Ex-GI Becomes Blonde Beauty.”

Wave of clinics providing GAS
Publication of Dr. Benjamin’s book coincided with the public announcement of JHU Gender Identity Clinic in November 1966. While several major academic centers had internally discussed the formation of research institutes to study the treatment of transgender patients since the early 1960s, the opening of the JHU clinic marked a transition from quiet deliberation to public recruitment for research on GAS. Initiatives quickly sprung up at many major universities and hospitals, marked by interdisciplinary collaboration between psychiatrists, urologists, plastic surgeons, gynecologists, and social workers. While estimates vary, the increase in U.S. patients who underwent GAS was dramatic, growing to more than 1,000 by the end of the 1970s from approximately 100 patients in 1969.

Producing positive results in a stigmatized field
Whereas GAS was a new endeavor for U.S. physicians, these clinics primarily operated as research programs. As a new field of practice, the physicians involved in the clinics faced significant skepticism from colleagues, such as psychiatrist Joost Meerloo, MD, who outlined his concerns in the *American Journal of Psychiatry* in 1967. Dr. Meerloo wrote, “Unwittingly, many a physician does not treat the disease as such but treats, rather, the fantasy a patient develops about his disease… I believe the surgical treatment of transsexual yearnings easily falls into this trap…. What about our medical responsibility and ethics? Do we have to collaborate with the sexual delusions of our patients?”

Understandably, physicians involved in these gender identity clinics described feeling pressure to demonstrate successful postoperative outcomes in order to justify their work. In the introduction to a published case series on GAS, Norman Fisk, MD, a psychiatrist at Stanford University, CA, wrote, “In our efforts we were preoccupied with obtaining good results. This preoccupation, we believed, would enable us to continue our work in an area where many professional colleagues had, and retain, serious doubts as to the validity of gender reorientation.”

In an attempt to obtain good results, these clinics often maintained rigorous selection criteria that excluded a number of patients. The evaluation process required that patients undergo hormone treatment and live for a set period of time as the gender to which they intended to transition. This period of time could extend up to five years depending on the clinic, imposing a significant burden on patients. As one patient, transgender man Mario Martino, stated, “One talks of a period of two to five years. I agree that people should be tested. I think that they should be tested in every way possible before being accepted as a candidate for treatment. However, one of the problems that people tend to forget is that a female with a 48-inch bust cannot pass as a male for one day, much less for one year or five years, no matter how much he tries.”

Individuals who were considered traditionally attractive and were expected to be easily perceived as a member of the other sex, as well as individuals who were heterosexual per their gender identity, were considered better surgical candidates. To demonstrate the scale of this selectivity, out of 2,000 applications sent to JHU within two years of opening, only 24 patients underwent an operation.

Though early studies were small, many did, in fact, demonstrate successful psychiatric outcomes. A report from Edgerton and colleagues in 1970 found that at one to two years postoperatively, of nine patients who underwent GAS, all were glad to have undergone surgery, had greater self-confidence, and held “a brighter
outlook for their future.” When considering the competing demands of producing positive outcomes and providing GAS to patients in need, it’s clear how physicians working in these clinics were confronted with challenges in their roles. They were advocates for a marginalized population, and yet they also functioned as gatekeepers for thousands of transgender patients desperate for surgery and who faced reinforced gender-based stereotypes as described earlier in the eligibility criteria.

**Timeline and clinic closure**

Toward the end of the 1970s, many centers closed their doors to new patients. These closures often were kept out of the public eye, making it difficult to discern precise timing or causes. There were, however, two notable exceptions to the pattern of patient enrollment quietly declining and ceasing.

At JHU, a new chair of psychiatry, Paul McHugh, MD, was hired in 1975. Dr. McHugh disapproved of offering GAS to transgender patients and acknowledged that from the moment he was hired, he intended to stop this practice at the clinic. Under his leadership, JHU psychiatrist Jon Meyer, MD, published a study of 50 surgical patients from the JHU clinic, which concluded that GAS offered “no objective benefit” for transgender people. Although this claim directly contradicted a growing body of evidence that found significant benefit for transgender patients, the publication sparked the rapid closure of the JHU clinic in 1979.

Another gender identity clinic where operations were abruptly terminated was the Baptist Medical Center in Oklahoma City. The Gender Identity Foundation at the center had offered a variety of services for transgender patients, including GAS, since 1973, under the radar of local religious leaders. In 1977, however, the issue of GAS was brought to the attention of the board of directors of the Baptist General Convention of Oklahoma. The physicians involved fervently advocated to be allowed to continue their practice, including surgeons Charles L. Reynolds, Jr., MD, FACS, and David W. Foerster, MD, FACS, who issued a joint statement that said, “[I]f Jesus Christ were alive today, undoubtedly he would render help and comfort to the transsexual.” Despite these appeals, the board of directors voted 54–2 to ban GAS at the Baptist Medical Center.

Given the known timing of when these two clinics closed, they are marked with a box in a timeline constructed by the authors (see Figure 1, this page). The remaining end dates are estimates derived from the latest reported operations in the medical literature and news articles, which likely underestimate the length of time the clinics were in operation. The reasons for closure of the remaining clinics appear to be multifactorial.

The publicity around the Meyer paper that led to JHU’s clinic closure may have played a role in the decision to close other clinics. In addition, some clinics described financial challenges during this time, as patients often were unable to afford the expensive operations, and insurance companies refused to cover...
them. For example, at the University of Minnesota, Minneapolis, clinic, the first two dozen operations were funded by a research grant at the expense of the state, but a news article from 1972 suggests that funding difficulties were exacerbated when the state no longer wanted to fund the project.9 Institutional pushback, such as that experienced at JHU, and the retirement of leading surgeons also may have played a role in the closure of gender identity clinics across the nation.

Even though many clinics’ GAS-related research was winding down in the late 1970s, the last 15 years of academic interest motivated the 1979 establishment of the Harry Benjamin International Gender Dysphoria Association. This organization, formed with the goal of organizing professionals who were “interested in the study and care of transexualism and gender dysphoria,” has since been renamed the World Professional Association for Transgender Health (WPATH) and has grown into an international interdisciplinary organization.17 WPATH has established internationally accepted guidelines for treating individuals with gender dysphoria, which are periodically updated. The most recent of these guidelines is the Standards of Care Version 7 (SOC7).18 Today, insurance companies, national payors, and treatment teams in both the U.S. and Europe use the WPATH SOC7 guidelines for establishing surgical eligibility.

Present day significance
The contemporaneous evolution of the first wave of gender identity clinics generated a rich field for refinement of surgical technique, as well as the assessment of postoperative outcomes, and produced a foundation of scientific literature demonstrating successful psychiatric outcomes for transgender people undergoing GAS. These milestones foreshadowed a resurgence of multidisciplinary clinics for TGNB individuals in academic centers and paved the way for private practitioners to specialize in GAS. For example, Stanley Biber, MD, a private practice surgeon in Colorado, performed more than 5,000 GAS operations during his 35 years in practice.19
Many centers for transgender medicine and surgery now exist across the U.S., and the number of GAS operations being performed in the U.S. has increased substantially, along with expanded insurance coverage. In 2015, the U.S. Transgender Survey found that 25 percent of TGNB individuals had one or more gender-affirming operations. Similar to the earlier wave of clinics, present-day clinics still are frequently composed of an interdisciplinary team of primary care, surgical, and mental health professionals.

Although the number of GAS continues to increase, the current discourse echoes earlier concerns about how to limit barriers for this marginalized population while prioritizing positive surgical outcomes. The WPATH standards of care often function as guides to assist health care centers in creating TGNB health programs. The WPATH SOCs have evolved since their establishment and presently tend to include fewer preoperative requirements for TGNB patients than in the 1970s and 1980s.

However, TGNB patients continue to face significant barriers to accessing GAS. A 2018 survey of TGNB patients found that the most commonly cited barriers to gender-affirming care are financial concerns, access to physicians who are knowledgeable about GAS, and access to reliable information. These financial concerns can be exacerbated by the cost of obtaining the mental health evaluations recommended by WPATH SOC7, and challenges associated with insurance coverage. To address these barriers, institutions are considering preoperative models besides the WPATH SOC7 to potentially reduce challenges.

Moreover, general medical education initiatives are under way to increase provider knowledge about this population. As the field of GAS continues to evolve in the present day, we look forward to seeing how the surgical and medical community partners with patients to minimize these barriers and promote access to these essential surgical treatments.

REFERENCES, CONTINUED


Federal surprise billing legislation becomes law

by Carrie Zlatos

HIGHLIGHTS

• Describes congressional committees’ perspectives on surprise medical billing
• Summarizes the bipartisan, bicameral agreement on the No Surprises Act
• Outlines patient protections under the No Surprises Act
• Provides an overview of payment dispute resolution processes
For two years, from the end of 2018 through the end of 2020, congressional leaders explored different policy solutions to protect patients from surprise medical bills. A February 2020 Bulletin article outlined the leading policy options last year to address surprise medical bills at the federal level. From the outset, the American College of Surgeons (ACS) advocated for a comprehensive solution that would remove patients from the middle of the payment negotiations between providers and insurers and that would require equitable and coordinated efforts by health care insurers, hospitals, and physicians.

Throughout the process, the ACS consistently advocated for surprise medical billing legislation that would protect patients, increase insurance plan transparency and accountability, and address narrow and inadequate networks. Furthermore, the College opposed any solution that would rely on a benchmark payment rate (also known as rate setting) based on negotiated in-network rates or a percentage of Medicare to pay for out-of-network (OON) care. The ACS asserted that a viable solution to surprise billing issues should strike a careful balance, allowing physicians and insurers to negotiate a final payment through a fair, independent dispute resolution (IDR) process, while protecting patients from surprise medical bills.

**Differing committee perspectives**

All congressional committees agreed on the end goal of protecting patients from surprise medical bills, but the primary committees of jurisdiction had differing opinions on the structure of the legislation. Original versions of bills offered by the Senate Health, Education, Labor, and Pensions (HELP) Committee and the House Energy and Commerce Committee did not include an IDR process and set a benchmark payment rate for all OON care at the median in-network rate. The ACS asserted that a viable solution to surprise billing issues should strike a careful balance, allowing physicians and insurers to negotiate a final payment through a fair, independent dispute resolution (IDR) process, while protecting patients from surprise medical bills. Facing pressure from opposing congressional leaders and opposition from physician organizations, subsequent versions of the legislation and alternative compromises from those committees included an IDR process but placed significant limitations on claims eligible for this type of resolution process. Inclusion of an IDR process was an important step; however, the limits placed on accessing the process rendered it practically unusable.

The House Ways and Means Committee offered an alternative approach in the Consumer Protections Against Surprise Medical Bills Act of 2020, H.R. 5826. This legislation did not set a payment rate for OON claims, and it offered an open negotiation period during which insurers and providers could try to resolve a payment dispute. If that process failed, the bill provided a mediation mechanism to settle the payment dispute. No minimum amount was set for a claim to be eligible for the mediation process. While the mediation allowed for consideration of the median in-network rate, it was not the sole factor to be considered. This legislation was viewed as more favorable to physicians than the alternative proposed by the other key committees.

Momentum for advancing surprise medical billing legislation stalled with the onset of the coronavirus 2019 (COVID-19) pandemic. Although surprise medical bills resulting from treatment for COVID-19 garnered the attention of congressional leaders, the first iteration of COVID-19 relief legislation only included a ban on balance billing for providers who accepted COVID-19 relief funding. As a condition of eligibility, the Coronavirus Aid, Relief, and Economic Security (CARES) Act, H.R. 748/P.L. 116-136, banned balance billing of presumptive and confirmed COVID-19 patients. Physicians had to certify that they would not try to collect more money from COVID-19 patients than the patients would have been expected to pay if the services had been provided in-network.

The ban applied to patients covered by commercial, government, or employer-sponsored insurance plans. While further congressional action on surprise medical billing seemed to be losing steam, then-President Donald Trump issued an executive order (EO), which
called on Congress to act on a solution before the end of the year. Although the EO did not have a mechanism for a solution, it kept surprise billing as part of the dialogue through the end of 2020. As the 116th legislative session began to wrap up, congressional leaders were eager to issue another round of COVID relief, extend government funding, and address a few remaining critical issues, which provided an opportunity to include surprise medical billing legislation in the end-of-year appropriations package.

**Bipartisan leaders reach a compromise**

On December 11, 2020, leaders of the Senate HELP Committee and House Committees on Education and Labor, Energy and Commerce, and Ways and Means announced a comprehensive bipartisan, bicameral agreement on the No Surprises Act. Subsequently, this agreement was included in the last-minute funding and COVID-19 relief package on December 21. The Consolidated Appropriations Act of 2021, H.R. 133/P.L. 116-260, was signed into law December 27, 2020.

A revised version of the No Surprises Act was included in the legislation. Starting January 1, 2022, plans and providers (including hospitals, facilities, individual practitioners, and air ambulance providers) will be prohibited from billing patients more than in-network cost-sharing amounts. The prohibition applies to emergency care and to certain nonurgent situations in which patients are unable to choose an in-network provider.

The compromise combines elements from the various proposals, but also makes key changes to the IDR process and eliminated the median in-network payment for OON care. These changes were intended to address some of the key concerns of the physician community. The ACS has consistently opposed using the median in-network payment rate as the default payment for OON care. The Congressional Budget Office (CBO) has previously acknowledged that most health care services are delivered within patients’ networks, and more than 80 percent of the estimated budgetary effects of previous versions of the No Surprises Act would arise from changes to in-network payment rates. The CBO and Joint Committee on Taxation maintain that if OON care were reimbursed at median in-network rates, payments to providers—inside and outside of networks—would converge around those median rates.

This surprise billing legislation is a dramatic shift from the initial versions offered in 2018 and 2019, which would have allowed health plans to pay the median in-network rate to OON physicians who were not chosen by the patient and with no opportunity for independent review. The ACS had actively opposed initial surprise billing legislation and many subsequent versions because they lacked a strong independent review process and relied too heavily on the median in-network payment rate. Although the legislative language is imperfect, and the ACS did not support it, it is significantly improved compared with the legislation from two years ago.

**Patient protections**

The legislation holds patients harmless from surprise medical bills by ensuring they are responsible only for their in-network cost-sharing amounts, including deductibles, in both emergency situations and certain nonemergency situations in which patients are unable to choose an in-network provider. Furthermore, the No Surprises Act prohibits certain OON providers from balance billing patients unless they give patients notice of the treating providers’ network status and an estimate of charges 72 hours before receiving OON services and patients consenting to OON care.

To ensure patients are not relying on outdated provider directories, the law includes provisions that require health plans to have up-to-date directories of in-network providers. The directories must be available to patients online or within one business day of an inquiry. Patients who provide documentation that they received incorrect information from an insurer about their providers’ network status prior to a visit will be responsible only for the in-network cost-sharing amount. Patients’ cost-sharing amounts are based
on the median in-network rate for 2019, adjusted for inflation.

**Resolving payment disputes**

In states that have passed surprise billing laws, the legislation defers to state payment standards or dispute resolution processes for state-regulated group and individual plans. In addition, in states that have all-payer model agreements, the amount approved under that system should be applied in lieu of the federal payment standard. The process outlined in this article will otherwise be applicable to federally regulated plans. Having two systems in place for some states will likely create confusion and add an additional burden to physicians; however, until the federal law is implemented, it is impossible to know the full impact of two separate dispute resolution processes.

To reconcile payment disputes between plans and providers, the legislation calls for a 30-day open negotiation process between the parties and then a prescribed IDR process if negotiations fail. Specifically, the IDR process does not set a minimum dollar threshold for claims eligible for IDR and allows for batching of claims for similar services when claims are from the same payor. IDR entities shall be independent, unbiased bodies with no affiliation to providers or payors. The IDR entity must pick one of the amounts submitted by the parties and the loser pays the cost of the IDR process.

The IDR is required to consider the following factors:

- Market-based median in-network rate.
- Relevant information brought by either party.
- Information requested by the reviewer.
- Provider’s training and experience.
- Patient acuity and the complexity of furnishing the resource or service.
- In cases involving facilities rather than health care professionals, the IDR entity shall consider the teaching status, case mix, and scope of services of the institutions.
- Market share of either party.
- Demonstrations of good faith efforts (or lack thereof) to enter into a network agreement.
- Contracted rates during the previous four plan years.
- An IDR body may not consider billed charges or public payor rates.

Following IDR, the party that initiated the process may not take the same party to IDR for the same claim for 90 days following a determination by the IDR entity so as to encourage settlement of similar claims. However, all claims that occur during the 90-day period may still be eligible for IDR upon completion of the 90-day period.

The ACS has concerns about delays in payment related to the 90-day cooling-off period; however, the legislation included a provision that calls for a study of whether the 90-day suspension results in delayed payment determinations or affects resolution through open negotiation. The report shall be submitted to Congress on an interim basis no later than two years and the final report no later than four years after implementation. The final report will review whether any health plans have a pattern or practice of routine denial, low payment, down-coding of claims, or abuse of the 90-day suspension of the IDR period. Additionally, the report will include recommendations on ways to discourage such a pattern or practice.

**Notice and consent requirements for surgeons**

One specific area of concern is the responsibility and corresponding burden placed on providers by the notice and consent requirements for nonemergency services. The law provides for exceptions to the balance billing
The ACS has long argued that inadequate insurance networks are the root cause of surprise medical bills. Unfortunately, the No Surprises Act did not include network adequacy improvements.

protections when patients who receive nonemergency services from OON providers consent to receive those services from those providers. This exception does not apply to non-ancillary services. However, the requirements for surgeons who still opt to treat OON patients may be rather burdensome. Patients must provide written consent to take responsibility for OON amounts, including OON cost sharing and any balance billings with respect to the patients’ health plans.

To satisfy the notice and consent requirement established in the No Surprises Act, eligible providers or facilities must obtain the required consent from patients or their authorized representatives within 72 hours of the date of the delivery of the items or services. The notice and consent may be given on the date of the appointment, if patients make an appointment within 72 hours of furnishing the items or services.

According to the No Surprises Act, the notice must comply with the following requirements:

- A good-faith estimated amount that the provider or facility may charge the patient, including a notification that the provision of the estimate or the consent to be treated does not constitute a contract with respect to those estimated charges
- A list of any participating providers at the facility who can furnish the items and services involved and that the patient may be referred, at their option, to that provider
- Information about whether prior authorization or other care management limitations may be required in advance of receiving the items or services at the facility

The consent form must acknowledge, in clear and understandable language, the following items:

- The patient was provided with the written notice
- The patient was informed that the payment may not accrue toward meeting any limitation that the health plan places on cost sharing, including the in-network deductible
- The patient had the opportunity to select the form (paper or digital) of written notice
- The patient received the written notice in the chosen form
- The date of receipt of the written notice and date on which the enrollee signed the consent

Rulemaking will fill in the details
The legislation included a lot of information about the process for handling OON claims, but some of the details will become clearer once the Biden Administration begins the required rulemaking process before the law’s implementation. Specific details will depend on those regulations, particularly with respect to the notice and consent requirements, as well as the IDR process. Rulemaking also will come into play to determine the methodology for calculating the median
in-network rate for the purposes of IDR consideration, as well as an enrollee’s in-network cost-sharing information.

**Looking forward**

Congress has recognized the imbalance in the playing field between physicians and insurers. At the end of the last session, in a last-minute legislative push, Congress passed the Competitive Health Insurance Reform Act H.R. 1418/P.L. 116-327. The legislation was signed into law January 13. The law repeals the insurance industry’s exemption under the McCarran-Ferguson Law regarding health and dental insurance. This long-overdue reform is one step in the process of putting insurance plans and physicians on equal footing with respect to contract negotiations.

The ACS has long argued that inadequate insurance networks are the root cause of surprise medical bills. Legislation aimed at effectively and permanently remedying surprise billing must address network adequacy. Unfortunately, the No Surprises Act did not include network adequacy improvements. Should Congress choose to consider options to strengthen the Affordable Care Act, it could provide a legislative opportunity for network adequacy improvements.

The ACS maintains that insurance plans must be mandated to meet minimum standards of network adequacy to include contracting with an adequate number of surgeons, specialist and subspecialist surgeons, emergency physicians, and hospital-based physicians. In addition, Congress should consider geographic and driving distance standards, as well as maximum wait times. Comprehensive oversight and rigorous enforcement of network adequacy will be required from both federal and state governments to ensure the effectiveness of such requirements. As opportunities for improving network adequacy requirements arise, the ACS will continue to engage with policymakers.

**REFERENCES**

Transformational change continues in the delivery of health care and, as a result, many surgical practices have developed and adopted new arrangements for providing patient care. In the 2020 ACS Governors Survey, only 48 Governors (17 percent) were in private practice—28 in the U.S. and 20 international surgeons. Twenty-five percent of the private-practice Governors believed they would not finish their careers in private practice. This trend was slightly lower (14 percent) for the international private practice respondents.

Since 2017, the number of private-practice Governors has decreased from 21 percent to 17 percent (see Table 1, page 53). This decline is consistent with the decreasing trend of independent private practitioners in the last decade. An even greater disparity between employed and independent physicians emerged when analyzing the YFA leadership results—only 8 percent were in private practice, more than 80 percent in full-time academic practice, and 12 percent were hospital-employed.
Although a small percentage of Governors are in private practice, approximately 80 percent of Governors believed that the preservation of independent practices in some form was moderately important/quite important/essential (see Figure 1, page 54). More than 70 percent of international Governors stated that they believe the preservation of private practice was necessary, and 95 percent of the YFA leadership agreed it was important to preserve private practice. Nonetheless, nearly all the YFA leadership respondents indicated that it would be extremely difficult to remain in private practice in the present health care climate.

To help preserve private practice, the College should continue to focus on the drivers of the sharp decrease in private practice and the subsequent rise in hospital employment and academic careers. Strategies to address and preserve independent practices also should be explored.

**Likely use of new ACS resources**

To determine how the College might assist surgeons with their practices, Governors were queried on their use of new products and services, such as credentialing assistance, liability products, and billing assistance. Most Governors (75 percent) responded they would be moderately/extremely likely to use assistance with establishing credentialing guidelines. A slightly larger proportion (86 percent) of international Governors were moderately/extremely likely to use assistance with establishing credentialing guidelines.

Interestingly, although fewer than half of the Governors (49 percent) would use liability products if offered, more than 78 percent of surgeons in private practice said they would use them. Most likely this is because those in private practice are more directly affected by medical liability claims and also have greater difficulty bargaining with insurance companies than surgeons in other practice arrangements. Similarly, 72 percent of international Governors would use liability products.

Slightly fewer than half of the Governors (48 percent) indicated they were very likely/moderately likely to use centralized billing services. Likewise, 51 percent of Governors in private practice and 51 percent of international Governors would use these services.

If the College were to offer a fee schedule, most Governors (77 percent) would find this service somewhat/moderately/extremely helpful. Private practitioners (83 percent) were most likely to value this product, with international surgeons (66 percent) placing less value on an ACS-created fee schedule. Less than one-third of the Governors (28 percent) believed an ACS fee schedule would be extremely helpful.

Overwhelming, the Governors indicate a desire to use these resources if the College offered them. The development of these resources should be explored (see Table 2, page 54).

**Retirement**

Significant changes in physician retirement planning have occurred recently, in large part because of the coronavirus 2019 (COVID-19) pandemic. More than
half of the Governors (52 percent) indicated they recently have adjusted their retirement plans. In fact, 66 percent of the Governors who have altered their retirement plans will delay it, whereas 34 percent plan to retire earlier than originally anticipated. Among international Governors who have revisited their retirement plans, 89 percent said they will delay retirement (see Figure 2, page 55).

In recent years, the physicians choosing early retirement have indicated excessive regulations, the increasing inability for surgeons to control operating room business decisions, and burnout as the major deciding factors in those decisions. This survey found similar reasons for early retirement.

Interestingly, 33 percent of the YFA leadership indicated they would change their retirement plans, with 20 percent planning to retire earlier and 13 percent delaying retirement. The reasons for retiring earlier also remained consistent for the YFA leadership. The reduction of young surgeons in the workforce because of early retirement is particularly disconcerting and will significantly affect patient

---

**TABLE 2. LIKELIHOOD OF USING ACS RESOURCES**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Very unlikely</th>
<th>Moderately unlikely</th>
<th>Moderately likely</th>
<th>Extremely likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance with establishing credentialing guidelines</td>
<td>10.29%</td>
<td>14.71%</td>
<td>45.96%</td>
<td>29.04%</td>
</tr>
<tr>
<td>Professional liability insurance products</td>
<td>31.37%</td>
<td>19.93%</td>
<td>31.73%</td>
<td>16.97%</td>
</tr>
<tr>
<td>Centralized billing service</td>
<td>43.54%</td>
<td>18.08%</td>
<td>24.35%</td>
<td>14.02%</td>
</tr>
</tbody>
</table>
care. The early retirement of many young surgeons will have a dramatic impact on the future workforce and is a call for action for the College to address these issues and attempt to reverse the trend.

Young surgeon involvement in the ACS
To emphasize the important role of young surgeons in moving the surgical profession into a new era, the survey asked about this group’s unique needs and perceptions of the ACS. Most Governors (66 percent) said they believe younger surgeons were adequately included in College activities. Similarly, 75 percent of the YFA leadership agreed with this perception, whereas only 57 percent of international Governors expressed the same sentiment.

Respondents offered several constructive suggestions for changes and improvements to increase the involvement of young surgeons in College activities, such as making greater use of social media and other digital communication vehicles (including videos, virtual lectures, webinars, and so on). Another common recommendation was that the College explore additional formal mentorship programs.

YFA leaders also recommended increased opportunities for young surgeons to chair or co-chair ACS committees and to moderate or co-moderate Clinical Congress sessions. They suggested formalizing specific leadership roles for young surgeons throughout the College, similar to how many chapters have designated key leadership roles for YFA and Resident and Associate Society members on their boards or executive councils.

Additional recommendations focused on increasing heterogeneity in the surgical workforce and providing short-term nonclinical practice options for personal or other reasons, as well as pathways to safely and effectively reenter the surgical workforce. A progressive approach should be implemented to accommodate the changing culture of the surgical profession, especially as it relates to younger surgeons.

Conclusion
As the surgical profession continues to evolve, the need to preserve, protect, and support private practices increases. Without interventions or changes, private practices as we know them will perish. Credentialing and navigating the intricacies of fee scheduling remain a challenge and potentially undermine the physician-patient relationship. The College should continue to explore ways to improve, reduce, or eliminate these drivers.
Governors also believe that the College needs to continue a strong integration of the next generation of surgeons, as they represent the future of the profession. Chapters can play a critical role by actively encouraging the participation of younger surgeons, as well as providing leadership opportunities for the next generation. Continued emphasis also should be placed on the importance of mentorship opportunities.

Early retirement is another area that the College should continue to focus on in light of evidence that burnout and decreasing reimbursement are accelerating surgeon retirements and thereby decreasing the surgical workforce.

Acknowledgments

Members of the Board of Governors Survey Workgroup want to thank the College for the privilege of working on the survey. We owe a great debt of gratitude to Emily Kalata, Manager, Board of Governors, Division of Member Services, Chicago, IL, for the immense amount of work she has done on behalf of the workgroup, as well as her wonderful insight. We thank all the Governors for their participation in this important survey.

BIBLIOGRAPHY


Editor’s note: The Bulletin of the American College of Surgeons is launching a new series of articles profiling leaders of the College. This feature will be published monthly. The questions are intended to give readers a look at the person behind the surgical mask and to inspire other members of the College to consider taking on leadership positions within the organization and the institutions where they practice.

In this second profile of American College of Surgeons (ACS) leadership, we interview Ronald J. Weigel, MD, PhD, MBA, FACS, Chair of the ACS Board of Governors. Dr. Weigel is the E.A. Crowell, Jr., Professor and Chair of Surgery, professor of molecular physiology and biophysics, professor of surgery (surgical oncology and endocrine surgery), professor of biochemistry, and professor of anatomy and cell biology, University of Iowa Health Care, Iowa City.

With all your diverse interests in science, how did you decide to pursue a career in surgery?

I suppose there are a couple of reasons why I chose to go into surgery. One is I tend to be a very active person. I like to do things and get things done. Surgeons are people who do things, whereas other specialties seem to do more talking about what could be done.

As a medical student, I noticed that surgeons seemed to be more involved in directly caring for patients. They seemed to be much more definitive and understood how to take care of patients. I remember rounding on the medical service, and people would be arguing about recent publications and details about relatively minor issues but not really recognizing that a patient was very sick and needed immediate attention. I also remember taking care of a patient on the medical service who was admitted with a fever of unknown origin. The patient languished for days without...
a diagnosis after numerous X rays, lab tests, and scans until a surgery consult was called. The surgeon diagnosed an acute abdomen on physical exam, took the patient to the operating room (OR), and removed a toothpick that perforated his small bowel. That was the kind of physician I wanted to be.

Also, I was attracted to the technology. Surgery offers a lot of cutting-edge new technology that can be readily applied to patient care.

And finally, I don’t like the fact that there are things we don’t understand, meaning that you don’t know how it works, and it’s a black box. I want to understand the full scope of what is known. Surgery offered the ability not only to train in medicine because we medically manage our patients, but we also took patients to the OR. We were in the intensive care unit and emergency room. We were everywhere in the hospital taking care of patients, whereas if you went into medicine, the patient would go off to the OR, which would be a black box, and you had no idea what was going on. Surgery allowed me to understand and be involved in the full care of patients, and that involved everything.

That’s also why I got my [doctor of philosophy degree] in molecular biophysics and biochemistry: because I wanted to understand the basic biology driving patient care and disease processes.

I ended up getting my master of business administration degree because when I started thinking about becoming chair of the department of surgery at the University of Iowa, I realized that I really didn’t understand much about business or finance or marketing or any of those kinds of issues, and I didn’t want those aspects of leading a department to be a black box. That’s why I was interested in learning about so many diverse fields, which I think helps me do my job.

Who were some of your mentors along the way, and what did you learn from them that you feel like you apply almost every day?

Obviously, it starts with your parents. It goes without saying that they teach you a tremendous amount and instill in you a sense of obligation to give back to humanity and to be the best person you can be.

I think the individual with whom I did my PhD—George Miller, MD [John F. Enders Professor of Pediatrics (infectious disease); professor of epidemiology (microbial diseases) and of molecular biophysics and biochemistry; and section chief, pediatric infectious diseases, Yale University School of Medicine, New Haven, CT]—really instilled a tremendous amount of understanding and approach to scientific problems that I have to say I use on a daily basis. I was strongly influenced by his approach, which is to look at your data and build your next question based on what you found and avoid bandwagoning and skipping from one project to the next based on what is hot—which is considered scientifically sexy at the time. I’ve fundamentally developed my entire laboratory investigation on that approach.

And then, clinically, I trained at Duke University School of Medicine [Durham, NC], and was strongly influenced by David Sabiston, MD, FACS, who obviously had a strong relationship with the ACS. Dr. Sabiston did a number of things that I still do to this day. For example, we had morning reports, and it was the chief resident on what was called “the green service,” who gave the report every morning at 7:00 am. Based on that model, when I became chair of surgery at the University of Iowa School of Medicine, I started doing exactly that. I did that this morning at 6:45 am. Every morning, I meet with the chief resident on the administrative services and do exactly what Dr. Sabiston did, which is to go through all the emergency admissions over the last day, go over the operating schedule for the day, discuss any problems on the service, and add whatever the current problems are. So, for example, at this morning’s report, we discussed whether there are any resident work-hour issues, whether there are COVID 2019 (coronavirus) infections among the residents or faculty, and we went over whether there were any deaths or complications on the surgery service. That’s what I’ve done since the first day I was chair. That, again, was based on Dr. Sabiston’s belief that you need to keep your finger on the pulse.
Later in my career, I’ve had tremendous mentorship from leaders in surgical organizations. For example, Timothy J. Eberlein, MD, FACS [ACS Regent and editor in chief, Journal of the American College of Surgeons], is a tremendous confidant with whom I talk on a regular basis and who has provided a wealth of advice. He is about eight or nine years ahead of me, and I think that my career and relationships within organizations and societies have paralleled what he has done to the degree that I’m able to do that. He’s obviously much more accomplished and has done a whole lot more in his career, but I’ve done my best to meagerly follow in his footsteps.

What interests or hobbies do you have outside of surgery?

Probably first and foremost is my family, which is one of the reasons we were attracted to coming back to Iowa from the northeast. My wife grew up in Des Moines and went to and graduated from the University of Iowa, and when I had the opportunity to come back here, it made a lot of sense because it allowed us to focus on the two things that matter most to me, which are my family and my job. By coming back to Iowa, I was able to do that. I’ve been back here now 16 years—we moved here a week after my fourth child was born, and we’ve been here ever since—and it has really allowed me to focus on our family and on work.

We have a place in Colorado that we try to get to whenever we can, and that’s to do things that we enjoy, such as skiing in the wintertime, and hiking and fly fishing in the summer.

What is your proudest accomplishment so far?

Personally, it’s the kids that we’ve raised and what they’ve been able to accomplish.

Professionally, I think it’s the influence I’ve been able to have locally and nationally with surgery. I’m quite proud of the department of surgery that we have managed to build at the University of Iowa, and I say “we” because although I’ve recruited a lot of people, they’ve done a tremendous amount to advance the department and build an academic medical center.

I think the next thing I’m proud of is the people I’ve trained and then watched build their own careers.

And third would be trying to have influence over supporting research as a surgical science. I have managed to keep my lab funded for the entire time that I’ve had a career in surgery. I think that’s important, and I’m very proud of the residents, medical students, and postdoctorate fellows who I’ve trained in the lab and who have gone on to run their own laboratories and develop their own surgical careers.

What advice do you give to young people who are interested in going into surgery?

Number one is be true to your passions. You have to have a very strong moral compass and a strong
direction in your career to stay on path. There are a lot of forces that try to distract individuals because of the complexity just of daily living. I think health care financing and those sorts of things have a powerful influence on what we do on a day-to-day basis, but I try to encourage people to keep true to their passion, to try to remember why they went into surgery in the first place, and to continue to renew that passion on a daily basis.

What I’m trying to get at is that being in academic surgery allows you to continue to renew your interest in surgery, and the reasons why you went into it. If you’re involved in research and discovery, that discovery is new every day. There are so many things that we don’t understand about biology, about clinical care, and staying in academics allows you to renew that interest and to pass it on to the next generation.

Learning and education is one of those things that the more you try to give it away, the more it is ingrained in yourself. So, by taking the time to teach the junior people, the residents, the more it reinforces in yourself the understanding of what we’re doing on a day-to-day basis.

And I think it’s important to try not to get bogged down in the constant drudgery of doing the same thing over and over again. Even in the College, we talk a lot about how to avoid burnout, and I think that individuals who are five to 15 years out of their training can begin to get burdened by the repetition of what they do and sometimes forget how incredible it is what we do on a daily basis. I think that being involved in a training program, being involved in research, helps you come to each day renewed in knowing the amazing things that we do on a daily basis.

Anything you would like to add?

People who know me understand that I’m committed to quality surgical care, and to training the next generation of surgeons, researchers, and educators. One thing I would add is the role that the College has played in facilitating our ability to do that. The College gave me one of my first grants and has been supportive throughout my career. Other people who are members of the College have been extremely supportive of my career, and I rely heavily on them. The College has provided me with a network of people who I can call when I need advice or when I need help getting something done, and I think that’s only become a greater force in my professional career as I’ve gotten older. ♦
Technology has continued to drive advances in surgery toward more minimally invasive, cost-conscious, patient-centric procedures. At the same time, the battle to prevent surgical complications has taken center stage as a means to improve patient outcomes and reduce overall health care costs for both patients and hospitals. Complications and their associated costs after surgical intervention vary widely in both complexity and cost. Wound infections alone can vary from estimated costs of $400 to $30,000 depending on complexity.* Major operations with significant complications, including those requiring reoperation, can drive up costs by five times, approximating an increase of $159,345 per case.†

Many guidelines have been developed to reduce surgical complications. Initiatives like Enhanced Recovery After Surgery (ERAS) have greatly reduced complications, reoperations, and readmissions, all while reducing costs and improving patient satisfaction.‡

Ideally, developing an overall plan that incorporates a multi-initiative approach to reduce complications and minimize returns to the operating room (OR) while decreasing length of stay (LOS) and improving patient satisfaction is key.

In 2017, Holston Valley Medical Center, Ballad Health, Kingsport, TN, launched an initiative to increase efficiency, quality of care, and safety within the OR. During a retrospective review of cases, concern arose regarding patient returns to the OR. These issues were brought to light when multiple returns labeled as “planned,” often consisting of acute care surgical patients left in discontinuity with wound vacuum-assisted closures, were identified as a cause for concern. For example, multiple surgeons returned one patient to the OR more than 30 times.

Whereas a reasonable number of returns to the OR is expected, we began our journey by reviewing all returns in an attempt to identify specific areas for improvement. Review of the nearly 11,000 cases performed yearly in the main OR at Holston Valley demonstrated that one in six patients experienced a return to the OR, most of which were unplanned. These returns led to decreased patient satisfaction and increased health care costs not only for the hospital, but, more importantly, for the patients. The return cases were clustered between acute care surgery and orthopaedic surgery, many of which were emergent/urgent in nature.

The goal of this quality improvement (QI) initiative was to focus on improving quality of care by working through a team effort to identify and reduce returns to the OR while improving overall outcomes. We identified that the cooperative involvement of our quality team, surgeons, and OR team combined with overall support of our hospital’s administrative team was critical to the success of this project. Of utmost importance was obtaining surgeon buy-in while maintaining a nonpunitive approach in both case review and communication.

Putting the QI activity in place
Holston Valley Medical Center is a not-for-profit, tertiary center. When this initiative began, Holston Valley served as one of two Level I trauma centers in our region. Since then, Holston Valley has merged into a larger system, Ballad Health. To minimize duplication and better serve our communities, Holston Valley became a Level III trauma center but remained a large tertiary care center in our region.

Since 2016, Holston Valley has participated in the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP®) and is an active member of the Tennessee Surgical Quality Collaborative (TSQC). The hospital’s involvement in both programs dramatically increased from 2016 forward. As a result, our focus turned to improving areas demonstrated on our ACS NSQIP risk-adjusted score card. While focusing on overall improvements in surgical site infections, LOS, and moving forward with starting our ERAS program, reducing returns to the OR became a priority.

Once we learned that our return to the OR rate was 16.67 percent, we knew we needed to act swiftly. The process for improvement started by designating that all cases returned to the OR within 30 days of the original operation would be reviewed weekly, then presented to an overseeing body—the incident review committee (IRC). Additional review would be provided if necessary at monthly peer review or existing quality committee meetings. These committees report to the medical executive committee, which, in turn, report to the community board for Holston Valley.

To obtain buy-in from the surgeons, establishing their involvement early on was critical. The medical director of the OR, a surgeon, reviewed all return to the OR cases. Once presented to the IRC, the attending surgeon was sent a letter either stating that there were no concerns of care identified or asking for clarification. This letter serves to keep the surgeon in the loop regarding which cases are being reviewed and allows him or her to actively participate in the quality review process.

Having garnered the support of both surgeons and the administration, we began to outline a clear process that incorporated both the involvement of our quality team and our medical staff to facilitate change. The overall process was two-pronged. First, we established a process to review each return to the OR. Second, we focused on changes that can be made in the OR to reduce potential causes for unplanned returns.

With regard to the review process for returns to the OR, we developed the policy to review all returns to the OR on a case-by-case basis, regardless of whether the return was planned or unplanned. In addition, any case for which a concern is identified, regardless of whether it involves a return to the OR, can be reported through the incident report system by any staff member. This policy has allowed all staff members to feel empowered to report quality-of-care concerns in real time for evaluation.

The medical director of the OR reviews each return to the OR or reported concern. Once the case is reviewed, the medical director reports the details of the case along with a recommendation to either validate, invalidate, or request further review to the IRC. The IRC comprises the chief medical officer (CMO); medical staff executive committee, including the president, president-elect, past-president, and secretary/treasurer; quality physician chair; quality manager; risk management; chief nursing officer (CNO); and pharmacy director.

At this point, the reviewed case can be deemed invalid with no concerns, valid with concerns, or recommended to peer review for the respective specialty for further evaluation or to request an explanation from the attending surgeon. Peer review recommendations are sent to the quality committee, which forwards information to the medical executive committee. Validated concerns are placed...
on the surgeon’s ongoing professional practice evaluation scorecard for two years. The surgeon is contacted throughout the course of the review by letter for full transparency and is allowed to contribute to the dialogue throughout.

The second arm of our approach to QI focused on reducing potential risks contributing to returns to the OR. A considerable portion of the focus in the area used a team of infection prevention, quality, and OR managers who drove an effort to reeducate surgical care team members. Emphasis was placed on reinforcing sterilization techniques, hand hygiene, and patient care optimization as the patient moved through all phases of care. Traffic in and out of the individual operating suites was minimized. Vendors were monitored to ensure scrubs were changed, movement in and out of the operating suite was reduced, and reeducation performed to reiterate the importance of not violating sterile field.

In conjunction with the implementation of our return to the OR reduction initiative in late 2018, other initiatives contributed to a reduction in returns. In November 2016, a colorectal bundle aimed at reducing colon surgical site infections began, and ERAS protocols were implemented in April 2017. Both these initiatives reduced surgical complications in colorectal patients, thereby helping to reduce returns to the OR and improve quality of care.

The orthopaedists assisted during the initiative by helping to develop appropriate guidelines governing elective orthopaedic cases. These guidelines established body mass index (BMI) and glucose parameters that determine if a patient qualifies for elective orthopaedic procedures or if weight loss/improved glucose control is required before an operation can be scheduled. Appropriate antibiotic use also was closely monitored.

To further contribute to the QI initiative, the orthopaedics peer review team requested the opportunity to review all joint infections on a monthly basis.

### Resources used and skills needed

The staffing required for this QI project was filled with existing staff members. Those staff members included: perioperative and surgical nursing staff, OR manager, a quality nurse, and a risk manager. Leadership included the CMO, CNO, medical director of the OR, medical executive committee staff, and the quality chair. No additional staffing positions were created for this initiative. All surgeons actively participated on an as-needed basis depending on the cases under review.

No additional costs were created beyond existing costs, and funding in the form of an annual stipend from the TSQC was used to create the colorectal bundle and ERAS patient information and signs that contributed to this initiative.

### Results

When the percentage of returns to the OR were calculated for 2017 and 2018 prior to our

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**TABLE 1. HOLSTON VALLEY MEDICAL CENTER RETURN TO THE OR, 2019**

<table>
<thead>
<tr>
<th></th>
<th>Returns</th>
<th>Total Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>7.3%</td>
<td>1000</td>
</tr>
<tr>
<td>Feb</td>
<td>6.6%</td>
<td>1000</td>
</tr>
<tr>
<td>Mar</td>
<td>11.3%</td>
<td>1000</td>
</tr>
<tr>
<td>Apr</td>
<td>8.6%</td>
<td>1000</td>
</tr>
<tr>
<td>May</td>
<td>8.4%</td>
<td>1000</td>
</tr>
<tr>
<td>Jun</td>
<td>7.9%</td>
<td>1000</td>
</tr>
<tr>
<td>Jul</td>
<td>6.6%</td>
<td>1000</td>
</tr>
<tr>
<td>Aug</td>
<td>8.4%</td>
<td>1000</td>
</tr>
</tbody>
</table>
Once the pathway for data collection, monitoring, and implementation for change has been established, routine meetings must be scheduled to allow for constant data analysis and near real-time implementation of change.

At times during the initiative, we did experience setbacks, mostly related to lack of communication or unwillingness to participate in reeducation opportunities. These experiences reiterated the need for continued open communication and use of our available resources to provide data in support of the initiative. For example, when resistance was met regarding guidelines for elective orthopaedic cases regarding BMI or appropriate antibiotic preoperatively, instead of demanding adoption of the recommendations, we relied on the orthopaedic service line meeting to discuss among themselves, provide the most recent guidelines/recommendations, and vote them into acceptance. Using experts in their respective specialty facilitates buy-in and lends credibility to the initiative.

The overall magnitude of cost savings realized by our initiative is difficult to calculate. As cited earlier, complications range in severity, and therefore, their additional health care costs also vary widely, from as low as $400 to as much as $159,345.* Assuming the case volume held stable for 2019 at 10,770 cases, 8.2 percent returns to the OR translates to approximately 883 fewer cases of varying complexity. The cost savings from this decrease in returns is demonstrated by multiple factors, including fewer incurred OR costs, decreased complications necessitating a return, and reduced LOS.

Tips for others
Fortunately, this initiative and many others that have a significant impact do not require considerable funding. Identifying those individuals in key roles who have access to the data and collect it appropriately is critical. Once the plan for data collection is solidified, the data often can be gathered relatively quickly. When the goal of the initiative and the plan for data collection are established, early involvement from critical participants (surgeons, managers, and staff) is crucial. These individuals should be motivated and supportive of the task at hand.

Once the pathway for data collection, monitoring, and implementation for change has been established, routine meetings must be scheduled to allow for constant data analysis and near real-time implementation of change. It is far too easy to allow backward slipping into old habits and the progress made is lost.

Sharing of outcomes data can be a strong motivator, especially to outliers or late adaptors. It is important to always remain supportive and not malevolent in all interactions with data sharing. Individuals take data very personally and often will self-motivate once the data are available.

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It is astonishing to consider that it was only 10 years ago that the first immune checkpoint blockade inhibitor garnered Food and Drug Administration approval. Modern immunotherapy began as single-agent therapy in patients with widely metastatic disease in just a few types of cancer, whereas today, hundreds of different agents targeting various aspects of the anti-tumor immune response are being tested in all phases of clinical trials across different cancer histologies. Immunotherapy has evolved from the treatment of widely metastatic disease to adjuvant treatment following surgical resection and more recently to neoadjuvant therapy for resectable disease.

More than 100 clinical trials are now investigating neoadjuvant immunotherapeutic strategies alone in diverse malignancies, including melanoma, non-small cell lung cancer (NSCLC), breast cancer, head and neck squamous cell carcinoma (HNSCC), sarcoma, and others (see Table 1, page 67). These neoadjuvant trials include both true neoadjuvant studies (typically a longer course of treatment with the goal of a measurable pathologic or clinical response) and window-of-opportunity trials, where agents are administered in the window between cancer diagnosis and planned definitive surgical therapy, allowing for short-term assessment of therapeutic efficacy.

Rationale for neoadjuvant immunotherapy

The overarching goal of administering immunotherapy in the neoadjuvant setting is to incite the most robust systemic anti-tumor immune response possible while the tumor remains in situ. The hope is that this immune response will persist long after the tumor is resected. Preclinical studies and early-stage clinical trials do, indeed, suggest an improved anti-tumor immune response to neoadjuvant versus adjuvant administration of immune checkpoint blockade. Neoadjuvant strategies also can provide insight into the therapeutic efficacy of these relatively novel agents upon evaluation of the treated surgical specimen. Longitudinal biopsies (diagnostic biopsy, early on-treatment biopsy, and surgical...
specimen) are critical for translational research; specimens collected during neoadjuvant immunotherapy trials have provided key insights into our understanding of the anti-tumor immune response, resulting in improvement in current therapies, as well as development of novel therapeutics.

Successful use of neoadjuvant immunotherapy trials in melanoma

The rollout of clinical trials for neoadjuvant immunotherapy in advanced melanoma is a story of incremental progress built on international collaboration and thoughtful trial design. These trials are rapidly changing clinical practice and have become a model for others.

Early neoadjuvant trials in melanoma were small and used agents with little to no prior proven efficacy; thus, interest was limited, and most patients with advanced or oligometastatic disease proceeded immediately to surgical resection. The development of effective immune checkpoint blockade therapies reignited interest in neoadjuvant strategies, and initial studies were conducted using anti-CTLA-4 (cytotoxic T-lymphocyte antigen-4) in combination with high-dose interferon. More recent trials have used anti-PD-1 or PD-L1 therapies alone or combined with anti-CTLA-4 agents.

The Phase 1b OpACIN (Optimal Adjuvant Combination Scheme of Ipilimumab and Nivolumab in Melanoma Patients) trial compared neoadjuvant and adjuvant administration of combined anti-PD-1 and anti-CTLA-4 therapies with adjuvant administration alone. A concurrent study compared neoadjuvant administration of anti-PD-1 alone with a combination of anti-PD-1 and anti-CTLA-4 therapy; both groups received adjuvant anti-PD-1 therapy. Both studies had an excellent response rate (33 percent to 45 percent pathologic complete response [pCR]) but were hindered by concerningly high toxicity in the most efficacious combination treatment groups (up to 70 percent to 90 percent Grade 3 or higher). A follow-up study (OpACIN-neo; Optimal Neo-adjuvant Combination Scheme of Ipilimumab and Nivolumab) identified a dosing strategy for combination anti-PD1 and anti-CTLA-4 therapy that maintained efficacy (pCR of 57 percent) with markedly lower toxicity rates (20 percent Grade 3 adverse events).

24-month relapse-free survival has been impressive. This finding has called into question the need for adjuvant therapy or even surgical resection when a pCR is obtained and has led to an intriguing ongoing trial, which tailors additional therapy based on pathologic response to neoadjuvant treatment (PRADO extension cohort of OpACIN-neo).

The success of these trials has spurred interest in developing similar early-phase clinical trials in melanoma, including those combining immunotherapy with targeted therapies (NeoTrio NCT02858921, NeoACTIVATE NCT03554083, NeoPeLe NCT04207086) or other therapeutic modalities including radiation and intratumoral oncolytic viral therapies (Neo-NivoHF10 NCT03259425), concentrated cytokines (NCT04326730), and additional immunomodulators (NCT04708418), among others.

Many of the clinicians and researchers involved in these studies have united to form the International Neoadjuvant Melanoma Consortium to establish standardized protocols and trial design platforms that have been made widely available. This group also has established common criteria for the pathologic evaluation of surgical specimens following neoadjuvant...
immunotherapy and has taken a concerted look at potential biomarkers of response/survival across trials.

Early promise across multiple solid tumor types

Results from neoadjuvant trials using immune checkpoint blockade in other solid-tumor malignancies are similarly encouraging. These trials have confirmed both the safety and efficacy of this treatment strategy (see Table 1, this page). In NSCLC, neoadjuvant immune checkpoint blockade used in early-stage resectable NSCLC led to a 43 percent major pathologic response (MPR) and 14 percent pCR rate at time of resection. In soft-tissue sarcoma, MPR was seen in 89 percent of patients with extremity/trunk undifferentiated pleomorphic sarcoma treated with immune checkpoint blockade and radiation. Although no pCRs were observed in a trial investigating anti-PD-1 agents in resectable HPV-unrelated HNSCC, 44 percent of patients exhibited a pathologic response in the tumor. Grade 3 or higher adverse event rates have generally been much lower than those complications observed in the early melanoma trials discussed earlier, as low as 8 percent in the HNSCC trial using a single anti-PD-1 agent.

These studies have generally enrolled small numbers of patients, but larger studies are beginning to mature. A Phase 3 study involving 1,174 patients with treatment-naive triple-negative breast cancer showed that combining an anti-PD-1 agent with chemotherapy (n = 784) led to a significant increase in pCR rates at the time of surgical resection compared with patients receiving chemotherapy alone (n = 390) (64.8 percent versus 51.2 percent).

Unanswered questions

Not unlike the integration of radiation and/or chemotherapeutic strategies, the use of immunotherapeutic agents is transforming the operative management of patients with solid tumors. Although the long-term outcomes in patients achieving a complete response to these strategies are remarkable, this still represents only a minority of patients. Furthermore, these agents often have significant adverse effects, which may be severe and include colitis, myocarditis, hepatitis, renal injury, pneumonitis, and.

### TABLE 1. SELECTED EXAMPLES OF RESULTS FOR NEOADJUVANT IMMUNOTHERAPY TRIALS

<table>
<thead>
<tr>
<th>Histology</th>
<th>Number of patients</th>
<th>AJCC stage</th>
<th>Agent(s)</th>
<th>Grade 3 or higher toxicity (%)</th>
<th>Pathologic response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melanoma</td>
<td>23</td>
<td>IIIB-IV</td>
<td>Nivolumab +/- ipilimumab</td>
<td>73%</td>
<td>45% pCR</td>
</tr>
<tr>
<td>NSCLC</td>
<td>21</td>
<td>I-IIIA</td>
<td>Nivolumab</td>
<td>23%</td>
<td>45% MPR</td>
</tr>
<tr>
<td>Breast</td>
<td>784</td>
<td>II-III</td>
<td>Pembrolizumab + chemotherapy</td>
<td>76%</td>
<td>64.8% pCR</td>
</tr>
<tr>
<td>Head and neck squamous cell cancer</td>
<td>36</td>
<td>III-IVB HPV unrelated</td>
<td>Pembrolizumab</td>
<td>8%</td>
<td>44% pTR &gt; 10%</td>
</tr>
<tr>
<td>Undifferentiated pleomorphic sarcoma</td>
<td>9</td>
<td>I-III</td>
<td>Nivolumab/XRT +/- ipilimumab</td>
<td>56%</td>
<td>89% &lt; 15% viable tumor</td>
</tr>
<tr>
<td>Dedifferentiated liposarcoma</td>
<td>14</td>
<td>II-III</td>
<td>Nivolumab +/- ipilimumab</td>
<td>29%</td>
<td>37% pTR &gt; 20%</td>
</tr>
</tbody>
</table>

MPR: major pathologic response; pCR: pathologic complete response; pTR: pathologic tumor response
endocrinopathies such as hypopituitarism, among others. Moreover, many of the endocrinopathies associated with immune checkpoint blockade, including thyroiditis and type 1 diabetes, have lifelong effects and can significantly affect the patient’s quality of life.  

There is a dire need for identification of biomarkers of treatment response to guide patients’ selection and minimize the potential toxicity of these agents, as well as the continued development of novel therapeutic agents. However, the sheer magnitude of progress in this realm in a short amount of time and translation across disease groups has provided much hope for patients.

REFERENCES

Surgical smoke—a harmful byproduct created through the thermal destruction of tissue by medical devices such as lasers, electrosurgical systems, radio-frequency devices, hyfrecators, ultrasonic scalpels, power tools, and other heat-destructive devices—can be detrimental to the health of surgeons, nurses, health care professionals, and patients in an operating room (OR).

The smoke may contain small-particle toxins and proinflammatory agents, as well as carcinogens. Although the risk of patient exposure is low and short-lived, surgeons and other members of the OR team may be exposed to surgical smoke daily. At high concentrations, surgical smoke can cause ocular and upper respiratory tract irritation and create visual problems for the surgeon. Therefore, surgeons should be aware of the hazards surgical smoke can cause.

Common toxins
A recent issue of Quick Safety examines the dangers surgical smoke presents, citing studies that confirm that the surgical smoke plume may contain toxic gases and vapors, including the following:

- Benzene
- Hydrogen cyanide
- Formaldehyde
- Bioaerosols
- Dead and live cellular material (including blood fragments)
- Viruses

The Quick Safety article states that in some disciplines, such as orthopaedics, dentistry, and plastic surgery, it is possible to generate particulates and metal fumes.

According to the article, research showed that nanoparticles comprise 80 percent of surgical smoke and “are the real danger of inhaled smoke.” Measuring at less than 100 nanometers, these tiny particulates can enter a person’s blood and lymphatic circulatory systems after inhalation and travel to vital organs.

The “Environment of care” chapter of The Joint Commission’s accreditation manuals for hospitals, critical access hospitals, and ambulatory care and office-based surgery centers includes a standard that requires these facilities to minimize risks associated with selecting, handling, storing, transporting, using, and disposing of hazardous gases and vapors. The standard includes the following note: “Hazardous gases and vapors include, but are not limited to, ethylene oxide and nitrous oxide gases; vapors generated by glutaraldehyde; cauterizing equipment, such as lasers; waste anesthetic gas disposal; and laboratory rooftop exhaust.”

The Quick Safety article bolsters the standard by noting some government agencies and professional organizations that have issued recommendations or standards related to surgical smoke or the use of lasers. Examples include the Association of periOperative Registered Nurses, the Occupational Safety and Health Administration, the National Institute of Occupational Safety & Health, and the American National Standards Institute.
Although the risk of patient exposure is low and short-lived, surgeons and other members of the OR team may be exposed to surgical smoke daily.

**Precautionary measures**
The *Quick Safety* article suggests some safety actions health care centers might consider implementing to address this issue, such as instituting a standard procedure for the removal of surgical smoke and plume using engineering controls, including smoke evacuators and high-filtration masks. Although N95s offer optimal protection, high-filtration masks with a smoke evacuator may provide staff with compatible protection.

Other safety recommendations are as follows:

- Use specific insufflators for patients undergoing laparoscopic procedures that lessen the methemoglobin buildup in the intra-abdominal cavity. For example, a laparoshield smoke evacuation device—a filter that attaches to a trocar—helps clear the field inside the abdomen.

- During laser procedures, apply standard precautions, such as those promulgated in the Bloodborne Pathogen Standard (29CFR1910.1030) and the Centers for Disease Control and Prevention’s Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings—to prevent exposure to the aerosolized blood, blood byproducts, and pathogens in surgical smoke plumes.

- Establish and periodically review policies and procedures for surgical smoke safety and control.

- Make these policies and procedures available to staff in all areas where surgical smoke is generated.

- Provide the OR team with initial and ongoing education and competency verification, including the facility’s policies and procedures.

- Conduct periodic training exercises to assess surgical smoke precautions and consistent evacuation of the surgical suite or procedural area.


**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.

**REFERENCES**


Practicing medicine in a low- and middle-income country (LMIC) is a challenge—for everyone. Everything from human capital to clean water is in short supply relative to the massive demand. Access to care is low, complication rates high, and mortality rates tragic. Physicians are stretched thin and asked by flawed and underdeveloped systems to practice medicine within a broad spectrum of medical conditions. Specialized training programs are limited in number and subspecialization is rare to nonexistent in many LMICs. In this context, African Inland Church–Kijabe Hospital (AICKH) was an anomaly in that, as of 2010, it was able to offer multiple physician training programs, including surgical training in orthopaedic surgery, general surgery, pediatric surgery, and pediatric neurosurgery.

Founded in 1915 as a small, dispensary-type hospital ward, AICKH has grown to become a regional referral and training center. In 2007, East Africa’s first accredited pediatric surgical training program began under the direction of Daniel Poenaru, MD, FACS, FRCSC, a Canadian pediatric surgeon, and Richard Bransford, MD, FACS, the consummate missionary general surgeon whose practice in Kenya spanned decades and whose focus had become children with surgically treatable disabilities.

Dr. Bransford’s passion had birthed the not-for-profit Bethany Relief and Rehabilitation International, also known as BethanyKids, to care for children with surgical conditions, especially patients with spina bifida and hydrocephalus. The single pediatric surgical service cared for children with a broad spectrum of conditions, including neurologic, craniofacial, thoracic, gastrointestinal, urologic, trauma, and burn-related conditions. By mid-2010, a separate pediatric neurosurgical service under the direction of Leland Albright, MD, had been established and the pediatric surgical service focused on the remaining nonorthopaedic surgical conditions in children.

In 2010, a few short months after completing my formal pediatric surgery training in the U.S., my family and I relocated to Kijabe, Kenya, to join an effort begun almost a century earlier and carried on by hundreds of Kenyan and dozens of expatriate medical, administrative, and support personnel.

The pediatric surgery program I joined as faculty was run by BethanyKids at AICKH in conjunction with the Pan-African Academy of Christian Surgeons and accredited by the College of Surgeons of East, Central and Southern Africa. Somewhat naïve as to the breadth of the pediatric surgical practice at AICKH, I quickly realized that I needed to be simultaneously an educator and a student.

**Training the trainer**

“If you know it, you’ll use it,” was my father’s response to my complaints as a child and teenager of being expected to learn what I considered useless information in junior and senior high school. Working in a low-resource setting without a full breadth of surgical subspecialists to lean on, the truth of his admonition constantly rang true. Pediatric surgery in this context meant reconstructing the femoral artery of a child presenting with a pulseless lower
extremity after a dog attack, resecting half the liver in a child with hepatoblastoma, and caring for the child with gastrochisis without adequate central lines or parenteral nutrition. It meant managing burn victims while relying on the living blood bank that is the hospital staff and surrounding community.

My general surgery training, then pediatric surgical subspecialty training, provided me with a strong foundation in the context of structured, formal didactic programs from which I could draw on past experiences.

sections, drain abscesses, or set bones. The pediatrician is expected to be the primary care provider, neonatologist, oncologist, nephrologist, intensivist, and emergency and critical care physician. The surgeon plates fractures, performs laparotomies, resects tumors, drills burr holes, reams prostates, removes thyroids, and corrects midgut volvulus.

On one level, I think this breadth is attractive to the hyper-specialized physician practicing in high-income countries and the increasing number of medical students and residents interested in a global health experience. Interestingly, and perhaps ironically, many of my African surgical colleagues at AICKH aggressively pursued subspecialty training in pediatric surgery, pediatric orthopaedic surgery, minimally invasive urology, plastic surgery, and head-and-neck surgery. I believe young surgeons are attracted to the expertise gained in a specialized field of study, which allows them to develop a deep and nuanced understanding of a narrower area of focus.

Moral injury
The caring and conscientious physicians feel the weight of their own ignorance. They want the best for their patients
and work hard to be able to provide it. Perhaps the obvious conclusion is that the necessarily broad practice of medicine in an LMIC context precludes being an expert at everything. Should the lack of specialty expertise preclude offering care in that area? What is “good enough” when patients and their families have few or no options in their country or perhaps in an entire region of the continent where they live? Five billion people, including 1.7 billion children, around the globe cannot access safe, affordable surgical care when they need it. Patients are desperate. At times, I saw patients who had traveled across several countries seeking care. The implications of turning them away because I lacked subspecialty fellowship training in an area were significant to the patients and their families. This reality left me asking myself, “Is something better than nothing?” I don’t know whether there is a universally applicable answer to that question. Sometimes the answer is a clear but heartbreaking, hope-dashing “no.” Other times, it’s a “yes,” filled with trepidation couched in a fundamental principle of “primum non nocere.”

The practice of surgery intrinsically requires a humble fortitude that includes a willingness to inflict pain for the greater reward that is the alleviation of suffering and restoration of health. At times, I found practicing on the edge of one’s expertise to be immensely trying, both emotionally and ethically. “The only way not to spill water is not to carry water” was Tarp’s way of saying that surgical complications are unavoidable. AICKH physicians, medical and clinical officers, nurses, and health care workers in LMICs know how true this sentiment is.

Across the newborn, pediatric medical, and pediatric surgical inpatient units at AICKH, the overall death rate was 7 percent. During a 100-day national physicians’ strike in Kenya, December 2016–March 2017, the death rate at AICKH across these same pediatric services rose to 28.4 percent. In a study of perioperative pediatric mortality involving 24 government and nongovernment Kenyan hospitals (including AICKH) over a three-year period, January 2014–December 2016, the seven-day perioperative mortality rate for pediatric surgical cases was 1.7 percent—100-fold higher than in high-resource settings.

Sometimes, such as during a strike, the demand overwhelms the imperfect system and patients suffer. Other times,
physicians and other health care professionals make mistakes. Patients and their families must bear this reality, but so, too, do physicians who can become the second victim in the story.9 

In 2018, Simon G. Talbot, MD, and Wendy Dean, MD, introduced me to the concept of moral injury when they asserted it as a major factor contributing to the more than 40 percent of U.S. physicians who report experiencing burnout.10 They posited that U.S. physicians are not burning out, but rather are suffering moral injury resulting from the “[inability] to provide high-quality care and healing” because of systems issues, such as financial conflicts of interest, fragmentation of care, and the deterrent to face-to-face physician-patient encounters posed by the demands of electronic health records, that inflict minor but frequent emotional wounds. 

If, in the U.S., physicians experience moral injury and suffer “death by a thousand cuts,” how much deeper must be the wounds experienced by physicians in low-resource settings where supplies, personnel, training opportunities, finances, and functional health care systems are vastly more scarce. Organizations like the United Nations provide “rest and recuperation” leave for workers in “hazardous, stressful, and difficult conditions,” because they have seen the deleterious effects of working in these settings.11 But what if the stressful environment is simply the daily work of providing health care in one’s home country or if the locale isn’t necessarily “hazardous” but fraught with imperfect systems of care that are unable to alleviate suffering adequately and avoid harm? 

Many people working in LMICs deal with moral injuries routinely. Some respond by burning out and leaving medicine. Others suffer inurement and become complacent, believing real change is impossible. Still others find the strength to lean into the pain and work to change and improve the systems, sometimes at great emotional and personal cost. I believe everyone needs and can benefit from personal and professional support structures that provide the emotional space to process the perceived and real trauma of providing care in harsh circumstances.

Growing awareness offers new hope for underserved patients

Within the 100-plus years of AICKH’s existence, my eight-and-a-half years there were in some ways a drop in the bucket. But even with the hardships of working in an imperfect, under-resourced system, I developed relationships with Kenyan and expatriate staff who are brilliant and passionately committed to making life better for suffering children and their families. As a pediatric surgeon, I’m encouraged that amid the global health care need, awareness of the burden that surgical disease plays in children and adolescents is growing.12 The Global Initiative for Children’s Surgery was established in 2016 to bring together international multidisciplinary experts in pediatric surgery to offer solutions to surgical problems affecting children.13 

Multifaceted efforts are under way globally that I believe will increasingly provide necessary surgical care to the 1.7 billion children in the world who desperately need it.8 We’ve seen the results of some of these efforts at AICKH. In the last nine years, AICKH has seen its first survivors of esophageal atresia and gastroschisis. A pediatric oncology service has been established, which is staffed by a subspecialty-trained Kenyan pediatric oncologist, specialty-trained nurses, and advanced practice providers. Since 2007, 14 pediatric surgeons from 10 sub-Saharan African countries have trained,
The practice of surgery intrinsically requires a humble fortitude that includes a willingness to inflict pain for the greater reward that is the alleviation of suffering and restoration of health.

or are training, at AICKH. Nine of the 10 practicing pediatric surgeons are actively involved in training surgeons in their home countries.

Beyond that, John Kennedy Muma Nyagetuba, MD, the pediatric surgery program’s first Kenyan graduate, earned a master of business administration degree and now is program director of the pediatric surgery training program and chief executive officer of AICKH. He is leading efforts to disrupt and change the broken systems of health care within the region. AICKH serves as a site for East Africa’s first pediatric anesthesiology and first pediatric emergency medicine and critical care training programs in the region. These are just a few of the milestones that capture the work done at AICKH. Similar efforts and accomplishments are being seen throughout LMICs, and I’m grateful for the increased awareness of, and interest in, global surgery among students, trainees, and universities in the U.S. and throughout high-income nations.

As I reflect on the years my family and I spent in Kijabe, I’m struck by the strength and fortitude of the people with whom I was privileged to live and work. My Kenyan and expatriate colleagues were, and are, willing not just to show up, but to work, strive, sacrifice, suffer, and succeed in providing compassionate, holistic care to patients and their families. I learned more than I taught; I received more than I gave. ♦

REFERENCES

The American College of Surgeons (ACS) will host the eighth annual Leadership & Advocacy Summit, May 15–17, 2021. The summit is a dual meeting offering comprehensive and specialized sessions that provide ACS members, leaders, and advocates with the skills and tools necessary to be effective in these roles. The summit will take place virtually this year, enabling a larger audience to participate in this engaging and timely event.

Registration for the 2021 virtual summit is now open at facs.org/summit.

Leadership Summit
The Leadership Summit will offer compelling speakers on key topics in surgical leadership. The summit provides a venue for members to learn new and innovative ways to face challenges and enhance their leadership skills, both in and out of the operating room. The Leadership Summit will take place Saturday, May 15, 10:00 am–2:30 pm Central Time.

The virtual Leadership Summit is open to all U.S. and international ACS members and nonmembers. Featured topics will include implementing impactful ideas in health care delivery, empowering early-career surgeons to reach their full potential, improving patient outcomes and fostering innovation through team diversity, helping your team manage moral injury through the coronavirus 2019 (COVID-19) pandemic and beyond, stumbling into authentic leadership, and cultivating high-performing teams. A session also will be dedicated to sharing chapter success stories from three ACS chapter leaders.

For more information about the Leadership Summit, contact Brian Frankel, Manager, ACS International Chapter Services and Special Initiatives, at bfrankel@facs.org or 312-202-5361.

Advocacy Summit
The Advocacy Summit offers attendees the unique opportunity to gain insight and additional tools to become more knowledgeable and effective advocates for surgery.

Surgeon advocates play a critical role in educating lawmakers about important health care issues and effecting change.

The Advocacy Summit will highlight health policy priorities the College is pursuing on your behalf and will allow ACS members to develop their advocacy skills, learn more about current legislative efforts, and participate in virtual meetings with members of Congress and their staff. The Advocacy Summit will take place Sunday, May 16, 10:00 am–4:00 pm Central Time, and the virtual congressional visits will occur Monday, May 17, at 8:00 am–3:30 pm Central Time.

The virtual Advocacy Summit is open to all ACS members and nonmembers in the U.S. The content is not applicable to international registrants. Only active ACS members and Chapter Administrators in the U.S. are eligible to attend the virtual congressional visits.

For more information about the Advocacy Summit, contact Maggie Draughn, Grassroots and PAC Coordinator, at mdraughn@facs.org or 202-534-0192.
With 52 percent of surgeons reporting burnout, the American College of Surgeons (ACS) is committed to fostering well-being, resilience, and work-life integration for surgeons at every career stage. Through education, resources, tools, and advocacy, the ACS fosters and encourages surgeons’ health and well-being to ensure they have the physical and mental strength necessary to support their professional pursuits and provide optimal patient care.

At a systems level, the ACS advocates for workplace cultures that support optimal work-life integration for surgeons. By providing education, resources, and tools, the ACS Surgeon Well-Being Program strives to minimize the stigma surrounding burnout; address adverse effects of decreased surgeon well-being, including signs and symptoms associated with burnout and environment culture; promote resilience; increase work-life integration by supporting resources that aid the individual surgeon and their family and friends; and advocate for systems-level change at the local, regional, national, and international levels within programs, health care systems, hospitals, institutions, and government agencies on practices and policies that affect well-being.

**Physician Well-Being Index**
As a member of the ACS, you have access to the Physician Well-Being Index. This validated, confidential tool provides an opportunity for you to better understand your overall well-being and identify areas of risk compared with physicians and residents across the nation, and access local and national resources that are targeted to you based on your results. The tool is 100 percent anonymous; your individual score will not be shared with anyone. The assessment takes an average of two minutes or less to complete and results are available immediately. The Physician Well-Being Index tracks your results over time, so you can retake the assessment as often as you like, and it allows the user to set personalized reminders to reassess well-being and to correlate changes in well-being results to life and practice events. Visit [facs.org/member-services/surgeon-wellbeing/index](https://facs.org/member-services/surgeon-wellbeing/index) to access the Physician Well-Being Index.

**Surgeon well-being resources**
The Surgeon Well-Being Program maintains a repository of resources on surgeon well-being. This repository contains information on articles, webinars, and tool kits focused on creating and maintaining well-being and preventing, identifying, and managing burnout. The resources explore the various drivers and factors of surgeon well-being and burnout at the individual and systemic level. These resources are accessible through the ACS website at [facs.org/wellbeing](https://facs.org/wellbeing).

**Surgeon well-being webinars**
The Surgeon Well-Being Program launched its webinar program in January 2021. The webinars focus on engaging the surgeon
Through education, resources, tools, and advocacy, the ACS fosters and encourages surgeon’s health and well-being to ensure they have physical and mental strength necessary to support their professional pursuits and provide optimal patient care.

and learn about future webinars, visit facs.org/wellbeing.

Well-being and COVID-19 resources
The Surgeon Well-Being Program provides weekly articles featuring content focused on well-being topics and coronavirus 2019 (COVID-19) through the ACS Bulletin Brief. Past articles focused on eight dimensions of well-being: mindfulness, time management, stress and anxiety, and more. Explore past articles in the Bulletin Brief archives at facs.org/bulletin-brief, and look for future articles in the weekly Bulletin Brief distributed each Tuesday from the ACS.

In addition to the weekly Bulletin Brief articles, the Surgeon Well-Being Program offers a repository of resources related to well-being and COVID-19. You can explore these resources at facs.org/covid-19/well-being.

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The downloadable version is also available in Arabic, German, Japanese, Portuguese, Chinese (Simple and Traditional), and Spanish.
The American College of Surgeons (ACS) has awarded four Faculty Research Fellowships for 2021–2023. The fellowship is to assist a surgeon in the establishment of their research program under mentorship with the goal of transitioning to becoming an independent investigator. Each fellowship award is $40,000 per year for each of two years and is supported through the generosity of Fellows, Chapters, and friends of the College.

The award recipients are as follows:

- **Franklin H. Martin, MD, FACS, Faculty Research Fellowship:** Donnele Daley, MD, University of Michigan, Ann Arbor, MI. Specialty: Surgical oncology. Research title: Modulation of Immune Development in Pancreatic Cancer by the Gut Microbiome.

- **C. James Carrico, MD, FACS, Faculty Research Fellowship for the Study of Trauma and Critical Care:** Joshua Brown, MD, University of Pittsburgh Medical Center, PA. Specialty: Trauma/critical care. Research title: Volume Outcome Link in Trauma for Emergency Medical Services (VOLT-EMS).

- **Yinin Hu, MD, University of Maryland, Baltimore.**: Specialty: Surgical oncology. Research title: Establishing a Preference-based Standard for Health State Valuation in Low-Risk Thyroid Cancer.


The online application for the Faculty Research Fellowship will reopen in September; visit the ACS website for more details at [facs.org/member-services/scholarships/research/acsfaculty](facs.org/member-services/scholarships/research/acsfaculty).
Benefits Beyond Medicine

The benefits of ACS membership extend beyond your professional life. They include an exclusive insurance program designed to help meet the personal needs of surgeons and their families.

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* About each plan’s features, costs, eligibility, renewability, exclusions and limitations.
The American College of Surgeons (ACS) has awarded six Resident Research Scholarships for 2021–2023. The scholarships are offered to encourage residents pursuing careers in academic surgery. This award offers $30,000 for each of two years, beginning July 1, 2021, and is supported by the Scholarship Endowment Fund of the College.

The recipients of these scholarships are as follows:

• **Emily C. Barrett, MD**, University of Michigan, Ann Arbor. Projected specialty: Colorectal surgery. Research project title: Notch Signaling Increases Inflammation in Diabetic Wounds.

• **Holly N. Blackburn, MD**, Yale University, New Haven, CT. Projected specialty: Surgical oncology. Research project title: Delineating the Cellular Origin and Molecular Pathways Driving Intra-Abdominal Adhesions.


• **Hannah M. Phelps, MD**, Washington University,
The Resident Research Scholarships are offered to encourage residents pursuing careers in academic surgery.


The online application for the Resident Research Scholarship will reopen in mid-July. Visit the ACS website for more details at facs.org/member-services/scholarships/resident/acresident.

The Scholarship Endowment Fund was established to provide income to fund scholarships and fellowships awarded by the Board of Regents. Direct contributions to support the Scholarship Endowment Fund are welcome. Fellows wishing to make tax-deductible gifts to fund these vital programs are encouraged to contact the ACS Foundation at 312-202-5338. ◆

ACS Case Reviews in Surgery


ACS Case Reviews in Surgery is an online-only journal that offers readers open access to high-quality, in-depth analyses of actual surgical cases.
The American College of Surgeons (ACS) Geriatric Surgery Verification (GSV) Implementation Course is a unique, comprehensive resource available to all hospitals participating in the GSV Program and is intended to guide hospitals through the implementation process as they prepare for verification. The course is unique to the GSV program, not only as a comprehensive resource but also in structure and content. Composed of 10 self-paced modules grouped together by a focused learning objective, the course is intended to guide hospitals step-by-step through the process of implementing the GSV standards. Whether a hospital has applied to the GSV Program at the commitment or verification levels, participants will find valuable resources such as a gap analysis, best practices, and real-time examples to guide standards implementation.

A focused module, Function & Mobility: Identifying High-Risk Patients & Addressing Vulnerabilities (accessible at https://reports.nsqip.facs.org/GSVEducationalCenter/samples/#/), has been provided to serve as a sample of the overall GSV Implementation Course. The structure, content, and available resources in this module are representative of all modules in the GSV Implementation Course.

Adapted from Module 4: Identifying High-Risk Patients & Addressing Vulnerabilities, this abbreviated module addresses components of the following GSV standards:

- GSV standard 5.6—Geriatric Vulnerability Screens
- GSV standard 5.7—Management Plan for Patients with Positive Geriatric Vulnerability Screens
- GSV standard 5.16—Assessment of Geriatric Vulnerabilities at Discharge.

Older adult patients may have a higher burden of underlying medical conditions, have varying levels of functional disability, and are at risk for cognitive impairment. These conditions can worsen as patients age. Identifying vulnerable older adults, and understanding the causes and consequences of their vulnerabilities, will assist in the way teams care for these patients. It is vital that geriatric syndromes are addressed preoperatively to decrease their risk of adverse postoperative outcomes.

At the end of this module, hospitals will have a better understanding of how to successfully screen for impaired function and mobility and create management plans for identified vulnerabilities. If your hospital is ready to improve the quality of geriatric surgical care for patients undergoing inpatient surgery, visit the Implementation Course section of the ACS GSV web page at facs.org/quality-programs/geriatric-surgery/implementation-course to learn more.
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