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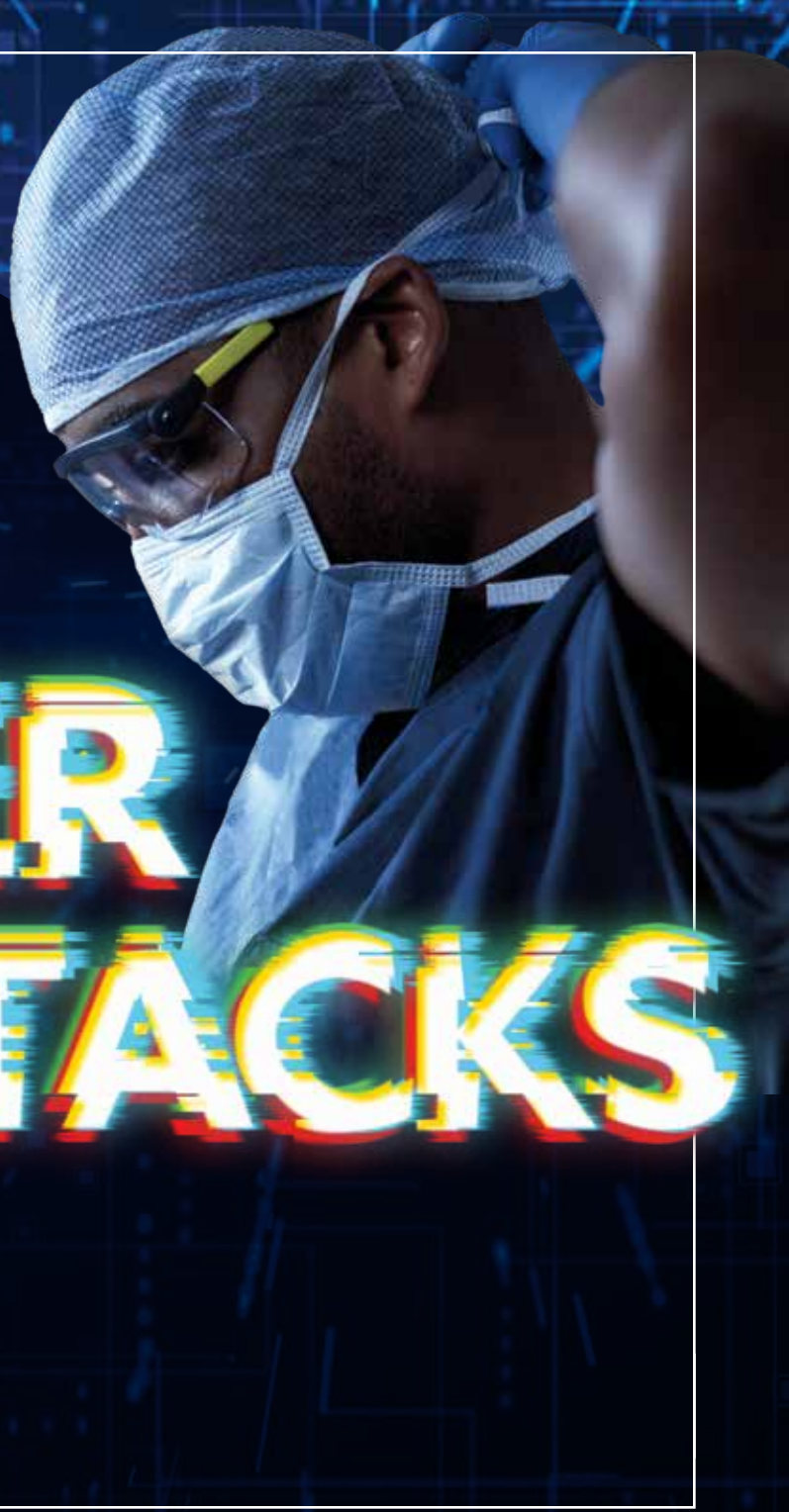

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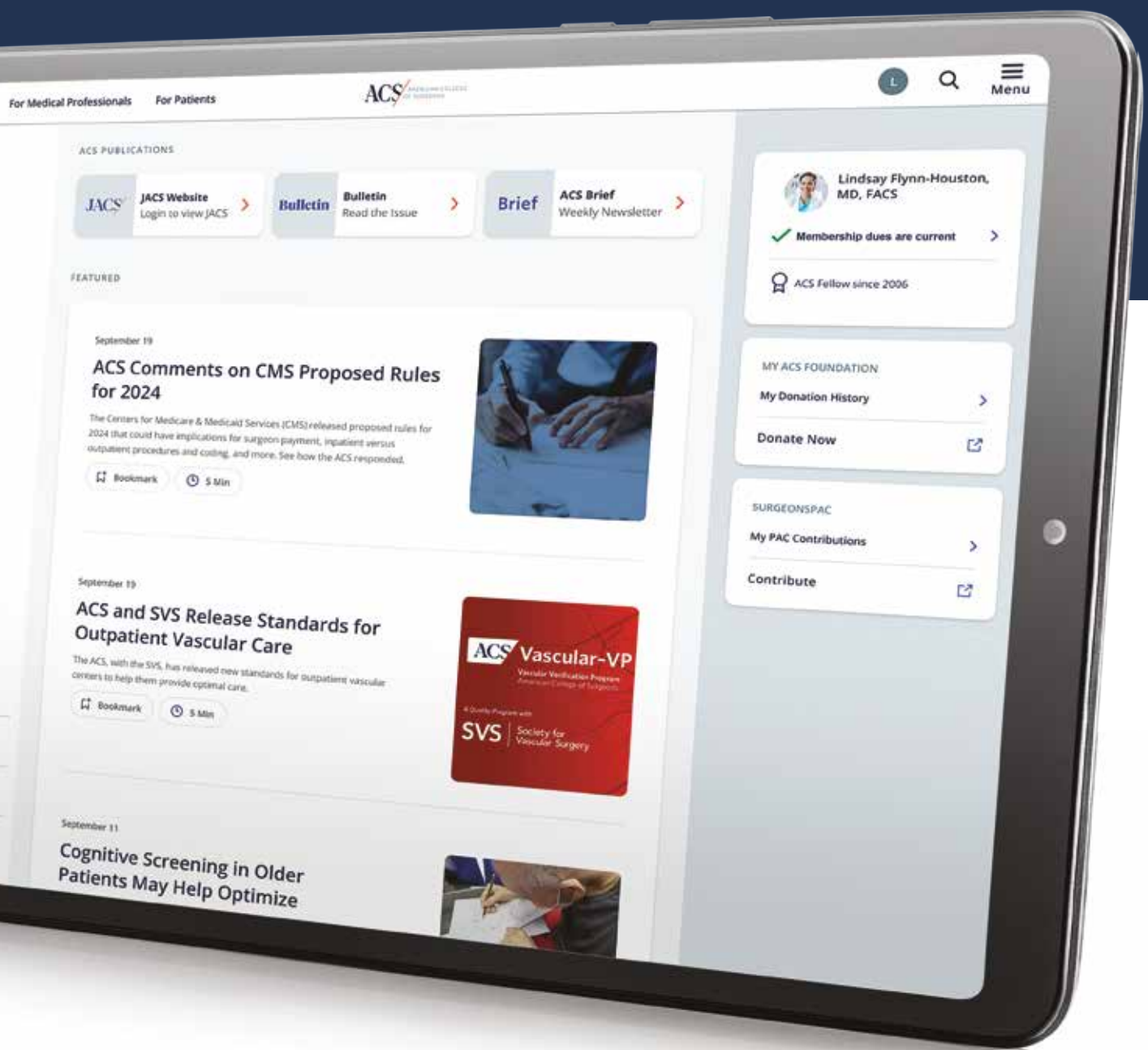

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Advocating for All Surgeons in a Time of Change

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EVERY SPRING, the ACS holds its Leadership & Advocacy Summit, a 3-day event in Washington, DC, that culminates with in-person visits to Capitol Hill. During Hill Day, surgeons meet with elected officials representing their states and districts to help them understand issues affecting surgical practice and patients—an important task given that just 21 of the 535 current members of Congress have medical backgrounds. Together, we advocate for policies that can enhance our surgical practices and patient outcomes.

We know that our voices as surgeons are powerful, particularly when we unite. As the US undergoes sweeping change, as occurs with every new administration, we face a crucial time to exercise that power. Surgeon engagement with advocacy is more important than ever. We must continue to prioritize evidence, research, truth, patient-centered care, and stay true to our motto: "To Heal All with Skill and Trust."

The ACS has chosen three main advocacy priorities as special areas of focus this year based, in part, on results of a survey of all US-based members in which they were asked to identify their highest practice priorities.

Reducing Administrative Burdens and Protecting the Surgeon-Patient Relationship

The US healthcare system is unique, especially when it comes to the paperwork obligations placed on us as physicians. A 2020 study found that the median time per day that US clinicians spend actively using electronic health records (EHR) is 90.1 minutes. That is the same amount of time that clinicians in the *99th percentile* of active daily EHR use will spend in other countries (90.7 minutes). While that study was not specific to surgery, we know our administrative burdens are excessive.

Resulting frustrations can be particularly intense when these requirements interfere with the best interests of our patients, as when prior authorization and other paperwork-related delays compromise prompt, effective surgical care.

For several years, ACS advocates have engaged with regulators and legislators about practical solutions to excessive paperwork. For example, we supported the Improving Seniors' Timely Access to Care Act, which sought to improve the transparency and efficiency of the prior authorization process for Medicare Advantage. Although it has not yet become law, that bill passed

the House of Representatives in 2022 by a unanimous vote. This important legislation is due to be reintroduced in Congress this month.

We continue to aggressively pursue improvements in federal legislation and regulations on this issue. We also communicate with insurance companies directly to help reduce administrative burdens.

Ensuring Surgeons Are Compensated Appropriately

Helping surgeons receive reasonable reimbursement rates has been a key focus of ACS advocacy for many decades. We have been successful several times in persuading Congress to avoid or roll back cuts to Medicare and Medicaid reimbursement rates and make other beneficial changes. (Read more in my column from the April 2024 *Bulletin*.)

We are at work on another such effort now. On January 1, the Centers for Medicare & Medicaid Services (CMS) implemented a 2.8% cut to Medicare physician payments. The bipartisan Medicare Patient Access and Practice Stabilization Act (H.R. 879) is currently pending. This legislation would reverse the cut and provide a 2.0% inflationary adjustment for the rest of 2025. We are working diligently to help ensure this bill passes, while simultaneously driving efforts that would fix the broken Medicare system.

Reimbursement rates are essential to the financial health of surgeons, no matter their practice configuration. Through our advocacy, the ACS is fighting for passage of a rate that corrects for inflation and past cuts. We must ensure that all of us can care for our patients in our chosen practice settings, without financial constraints limiting our options.

Incentivizing True High-Quality Surgical Care

Another longstanding priority is the pursuit of optimal patient outcomes. The ACS launched its first Quality Program in 1918, and more than a century of continuous expertise has given us enormous insight into implementing and measuring high-quality surgical care.

We recognize that true quality and cost-reducing efforts have broad appeal yet may be challenging to create and sustain. A key goal is for laws, regulations, and private payer practices related to quality to be based on sound quality principles.

Over the past few years, our focus on quality has included successfully advocating for federal legislation supporting military-civilian partnerships and pursuing federal law improving pediatric emergency care. In addition, in August 2024, CMS adopted the Age Friendly Hospital Measure, a regulation advanced by ACS advocacy and based largely on the ACS Geriatric Surgery Verification Program. The measure, which took effect on January 1, aims to provide high-quality care for patients over 65 years.

Through these successes, we continue to advance toward our goal: to ensure quality programs use effective methods, employ appropriate incentives, and provide optimal outcomes for patients. This is a clear example of the values encapsulated in our long-standing motto.

How You Can Help

During this time of change, I urge all ACS members to engage with us and make sure your voices are heard. Please communicate with us about your specific priorities and areas of interest. One way to do that is through SurgeonsVoice, our online advocacy center that allows US surgeons to reach their Congress members via email on key issues. Sending correspondence is possible at any time and takes just a few clicks with our pre-written templates.

We know that the collective efforts of surgeons can influence elected officials to act—and I urge you to participate. You might wish to start by supporting our current push for passage of the Medicare Patient Access and Practice Stabilization Act. Your personal relationship with Congresspersons and Senators at home can also be incredibly meaningful to our efforts, so please let us know if you have those connections.

Learn More

For regular updates on our advocacy efforts, please sign up for our monthly *Advocacy Brief* e-newsletter. Please also learn more about the ACS Professional Association political action committee, SurgeonsPAC. Finally, keep up to date by logging in to your profile at *profile.facs.org* and updating your personalized Surgeon's Dashboard to reflect your advocacy interests.

Thank you to those who joined us at the 2025 Leadership & Advocacy Summit, April 5-8. If you missed the summit this year, a recap will be available in the May *Bulletin*.

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

Surgeons Need to Engage in Battle against CYBER ATTACKS

Jim McCartney

Cyberattacks on healthcare organizations, including hospital systems, clinics, blood banks, and health insurers, are part of an alarmingly rising trend that has contributed to the vulnerability of healthcare networks and operations and caused substantial financial losses.

THESE ATTACKS ALSO SIGNIFICANTLY disrupt patient care, causing delays in treatment, disabling entire hospital networks, compromising sensitive medical data, crippling health insurance payment systems, diverting ambulances, and, most importantly, putting patients at risk.

"The main motive of the attackers is to get money, usually through ransomware," said Greg Young, vice president of cybersecurity and corporate development at a global cybersecurity company based in Irving, Texas. He added, though, that the impact of these data breaches often reaches far beyond just a hit on the target's bottom line through ransom payments, reputational loss, and legal fees.

As leaders in the hospitals, surgeons have significant influence over the culture of the organization, especially daily practices, and this includes best practices related to cybersecurity. As a result, surgeons need to champion best practices when it comes to battling cyberattacks.

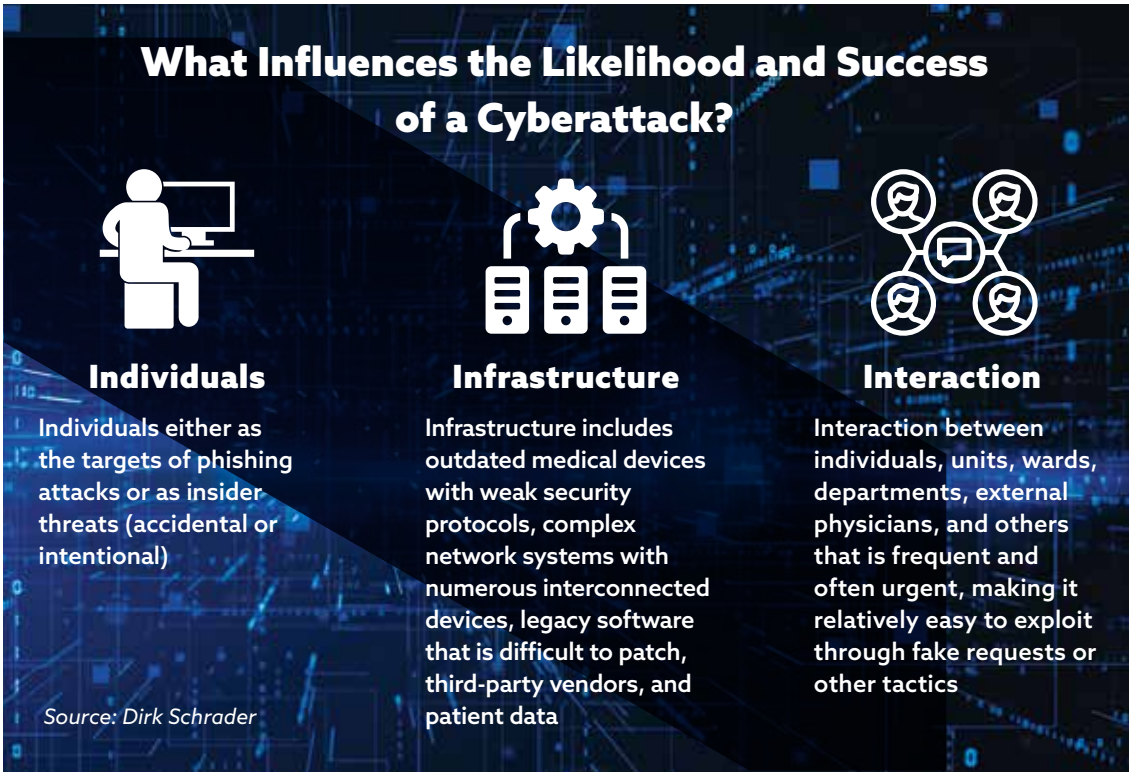
Cyberattacks can jeopardize patient safety and care delivery. Losing access to medical records and lifesaving medical devices, due to ransomware, could hinder a healthcare organization from effectively caring for patients. Cyber terrorists also could accidentally or intentionally alter data in patient records or medical images, which could threaten patient health. This criminal activity could interfere with medical equipment during a procedure and immediately jeopardize a patient's life.[1]

A 2024 survey showed that after a cyberattack, healthcare was more likely than other targets to experience a change in senior leadership (21% for hospitals versus 13% for others) or be the target of a related lawsuit (19% versus 13%).[2] These changes in leadership typically are associated with information technology (IT) leaders, "even if it's not their fault," Young said.

This turnover—losing leaders who know the organization and how to protect it—can weaken the cybersecurity of healthcare organizations. Since each hospital operates differently, institutional knowledge is important to strengthen cybersecurity efforts.

Rise in Severity, Frequency of Cyberattacks

In 2024, more than 8 out of 10 healthcare organizations reported a cyberattack, up from 2023, according to two cybersecurity industry reports.[1,2] (See the sidebar on page 13 for examples of major cyberattacks on healthcare organizations in the news last year.[3-6])



Healthcare organizations are lucrative targets for cyberattacks because they possess a wealth of information, specifically patient data, with high monetary and intelligence value.

One cyberattack that didn't receive as much attention from the mainstream media, but definitely captured the interest of healthcare providers across the US, was a ransomware attack on a south Florida blood bank in July 2024 that led to blood product shortages and delayed surgeries.

Hospital transfusion teams in the area learned that the region's major blood supplier was hit by a ransomware attack from a nonstate Russian actor, said Enrique Ginzburg, MD, FACS, a trauma surgeon from the University of Miami Miller School of Medicine in Florida. The primary impact, due to computer software malfunction, was the ability to label the blood products for distribution.

"The first 72 hours were really touch and go," Dr. Ginzburg said. "There had to be a lot of coordination between hospitals. A lot of the community hospitals stopped their surgical schedules."

The event created a statewide crisis of blood product shortage, especially platelets. The incident resulted in new transfusion policies and procedures at his organization to help prevent future cyberattacks. (To learn more about this attack, read the October 2024 *Bulletin* article, "Cybersecurity Attack on South Florida Hospital System Leads to Valuable Lessons Learned.")

Why Healthcare Organizations Are Targets

"Hospitals have become a major target for cyberattacks because they are labor-intensive organizations using highly regulated digital assets, such as insulin pumps and heart rate monitors, with numerous interactions between busy individuals, who may or may not know each other," said Dirk Schrader, vice president of security research at a cybersecurity company in Frisco, Texas. Add to that the healthcare industry's "chronic underfunding of cybersecurity."[7]

"From an attacker's mindset, that's the perfect storm," Schrader said.

Other reasons why healthcare organizations are especially vulnerable to cyberattacks, include the following:

Patient data are valuable. Healthcare organizations are lucrative targets for cyberattacks because they possess a wealth of information, specifically patient data, with high monetary and intelligence value.

"So much private information makes it a rich environment," Young said.

The targeted data include patients' protected health information, financial information like credit card and bank account numbers, personally identifying information such as Social Security numbers, and intellectual property related to medical research and innovation.[8]

"A patient data record is worth 50 times more than a payment card dataset because of what you can do with it," Schrader said.

Aside from the valuable personal information, these data also can be used to launch other cyberattacks or conduct insurance fraud.

Healthcare organizations are uniquely vulnerable. Internet-connected medical devices, legacy technology systems, and patient data breaches may contribute to the risk of cyberattacks as a result of weak access controls.[9] The urgency of interactions between healthcare employees also contributes to that vulnerability, as does the fact that many employees don't know each other due to frequent changes in personnel from turnover, medical student rotations, mergers, and other factors.

The rapid trend toward electronic health records (EHRs) and health technology, which have

Access related video content online.

numerous potential entry points, has made patient data and devices much more susceptible than they were previously. In addition to EHRs, targets include myriad endpoints, many of which have wired or wireless connections to the internet, such as patient devices (e.g., glucometers, pacemakers), hospital devices (e.g., infusion pumps, MRI scanners), medication dispensing systems, laboratory systems, and anesthesia systems. Since these devices often need to be accessible, they are typically left in hallways and patient rooms, which means they are not always secure, according to Young.[9]

"There are so many different kinds of technology, and sometimes compliance requirements require older technology to stay around longer than it should," Young said, adding that these older models typically lack the latest electronic security measures.

The number and variety of medical devices allow the attacker to move from one type of device to the other, making it hard to pin them down and root them out. If the breach is found in one device, the attacker may still have a foothold in another, Young explained.

"Because of this complex IT environment, it's very easy for ransomware attackers to move laterally," he said.

Since healthcare organizations focus on patient care, cybersecurity protection often is not prioritized. "When I visit hospitals, too often the IT and security departments are in the basement. Although that's changing, it's the legacy of why healthcare is so vulnerable," Young said.

Common Cyber Threats Faced by Hospitals

Of all the modes of cyberattack that target healthcare organizations, ransomware is the most common. Other forms of cyberattack, such as phishing, are simply the opening gambit in a ransomware attack.

"If you're going to get hurt today, almost certainly it's going to be ransomware," Young said.

Ransomware encrypts files, making them inaccessible. The attacker then demands a ransom from the victim to decrypt and restore access to the data upon payment. EHRs and medical imaging systems are particularly vulnerable to ransomware attacks due to the critical nature of their data.

But cyberthieves have taken ransomware to new levels in recent years, especially against healthcare organizations, which is what cybersecurity analysts call the "triple play," Schrader said.

The first action is to encrypt the data and ask for a ransom to decrypt. The second action is to extract data and threaten to publish or sell the data on the black market. Finally, some attackers threaten to go after the patients who were included in the data.

"We have encrypted your data, we've exfiltrated the data, and now we're targeting your patients," Schrader said. "That's the triple play."

Another common threat to healthcare is phishing, which misleads or deceives people into giving away sensitive information. The attacker crafts a fake email that appears legitimate, often with the assistance of artificial intelligence (AI) and language models. The information may be sold or used to commit identity theft.[10]

"Phishing is almost always an entry into a ransomware or other attack," Young said.

This type of attack has become more sophisticated. Rather than a general "spray and pray" approach, the phishing attempt may target a healthcare executive to get them to transfer funds or send information.

Hospitals are especially vulnerable to phishing because hospital workers regularly communicate with many people they do not know personally, such as patients, laboratory assistants, external auditors, other physicians, radiology experts, medical students, residents, and so on.

Humans Are Weakest Link

Because cybersecurity awareness among healthcare personnel is low, human behavior is widely considered the most common initial attack vector or entry point in any cybersecurity system. As a result, that's often where attacks start in a healthcare organization.

An employee may accidentally send an email with patient data to the wrong recipient or put sensitive information on an exposed server or on a laptop that is lost or stolen. Attackers frequently exploit user errors like clicking malicious links in phishing emails, using weak passwords, or neglecting security updates to gain access to systems. Typically, these incidents are accidents involving poor data handling, but occasionally a disgruntled worker may

purposefully expose sensitive information to hurt their employer, Schrader said.

Aside from the human factor, there has been an explosion in wired and wireless devices used daily in the care of patients, called Internet of Things (IoT) devices: ventilators, anesthetic machines, infusion pumps, pacing devices, organ support, and several monitoring modalities. This exponential increase in IoT and the increasing wireless connectivity of anesthesia, as well as ICU and implantable devices, make them vulnerable to attack.[7]

Medical imaging is a vulnerable point for many healthcare organizations. More than 2,500 hospitals have picture archiving and communication (PAC) systems that are connected to the internet, Schrader said. Research from his firm shows about 15% of these PAC systems are completely unprotected.

"They are open for anyone to see the patient data, to see the images, to see names, dates of birth, and in some cases, Social Security numbers," he shared.

One of the possible scenarios is when an attacker has access to the radiology data, they claim to have altered the images and show the hospital what they've done by sending an original and altered image of a patient scan. This could wreak havoc on patient care, especially surgery.

"As a surgeon, do you take the risk and perform surgeries the next day in such a scenario even though patient safety might be at risk?" asked Schrader.

In addition, clinicians increasingly rely on digital and technological capabilities to improve, augment, or enable procedures and operations, and these devices also vulnerable to cyberattack. For example, research has shown that surgical robots are complex systems with many potential vulnerabilities that could be hacked. A cyberattack during a procedure could cause significant physical harm to the patient.[11]

How Surgeons Can Help Protect Hospitals, Patients

Surgeons can strengthen their organization's cybersecurity by understanding their role as active users of sensitive data and systems, adopting best practices around recognizing phishing attempts and using strong passwords, and avoiding unauthorized devices or unsecured networks.

Major Cyberattacks on Healthcare Organizations in 2024

February

Change Healthcare, a major healthcare data processor and subsidiary of UnitedHealth Group, was hit by a ransomware attack that compromised the personal health information of approximately 190 million individuals. As a result, patients struggled to get timely access to care, and providers lost billions of dollars. This stands as the largest breach of medical data in US history to date.

March

HealthEquity, a benefits administrator, suffered a data breach that exposed the personal and health information of more than 4 million individuals.

May

Ascension Health, a nonprofit health system, experienced a data breach after a worker accidentally downloaded a malicious file. The attack affected more than 5 million patient records, forcing ambulance diversions and delaying patient care.

Since surgeons often need access to sensitive information on short notice, they are considered to be "super users" of data and technology, Young said. As a result, surgeons are key players in cybersecurity and must be especially vigilant about protecting data and technology.

Defining the surgeon's role in cybersecurity can be enhanced by better collaboration and communication between the surgical and IT departments. "Each side needs to better understand how the other operates," Schrader said. "In this way, they can balance the need to protect data with the need to access data."

Surgeons and their teams should receive regular updates on their organization's strategic cyber risk profile and what measures are being taken to mitigate these constantly evolving threats.

Digital viruses and attacks mutate so frequently that even an AI-based detection system cannot fully protect a healthcare organization from cyberattacks, Schrader said. That means surgeons need to regularly communicate with IT and remain cautious about "what you do, what you see, and what you receive," he said.

Neglecting cybersecurity best practices puts an organization and patient safety at risk.

"A cyberattack is a very negative event to go through," Young said. "Healthcare is tough enough right now without going through this kind of event."

Best Cybersecurity Practices

Every healthcare organization should adopt and teach best practices to their personnel, including their surgeons.

Awareness training, which should take place as soon as updated information becomes available, can help surgeons and others recognize and report phishing attempts. Typically, this involves reminding staffers that most phishing attempts are emails that use incentives or threats to pressure the receiver to act quickly, Schrader said.

"If this kind of messaging is part of an email you read, slow down and read it twice before you click on something," Schrader advised. "And if it's suspicious, report it to IT."

Surgeons can play a key role in preserving IT security, but in reality, all healthcare organization staff members need to be trained in cybersecurity, irrespective of role. Annual online courses focused on cybersecurity and, particularly, phishing, should be required. Sending regular "fake" phishing emails from IT to staff members also is a highly recommended practice to help employees identify and avoid real phishing attempts by improving their awareness and ability to recognize suspicious emails.[7] Surgeons need to embrace this training and even lead it, as it's important that everyone is on board.

Fostering a Culture of Cybersecurity

By helping to instill a patient-focused culture of cybersecurity, where the staff members view themselves as initiative-taking defenders of patients and their data, surgeons can have a tremendous impact in mitigating cyber risk to the organization and patients.

Hospitals need to develop and practice a rapid response plan for cyberattacks, and surgeons need to understand their roles as part of this plan.

Surgeons should not only follow cybersecurity protocols but raise questions when they see something that concerns them, Young said. "If you see practices that aren't good, if you see technology that you have questions or concerns about, get involved."

Healthcare organizations cannot afford to underinvest in cybersecurity. Surgeons and other healthcare leaders must be attentive to updating

"You are a prime target for a cyberattack. Don't assume that it will not come to your doorstep."

Dirk Schrader

software as needed, identifying digital vulnerabilities as they arise, and requesting and employing endpoint protection.

Cybersecurity is as much a part of patient safety as surgical precision—both are indispensable.

That's why surgeons and other senior leaders should view cybersecurity not as an IT issue, but instead, recognize that strengthening their cybersecurity infrastructure, which involves patient safety and enterprise risk, is one of the most important priorities that should be instilled throughout the hospital's culture.[12]

Surgical professional organizations also should make cybersecurity a priority, Dr. Ginzburg said.

"While there is a lot of discussion about AI at professional meetings right now, there is not much about cybersecurity issues," he shared. "Maybe there needs to be a wake-up call."

Schrader concluded with a strong message for surgeons. "You are a prime target for a cyberattack. Don't assume that it will not come to your doorstep." B

Jim McCartney *is a freelance writer.*

EDITOR'S NOTE: *Additional information about cybersecurity is available in the article, "Disastrous Consequences Result from Medical Billing Cyberattack on Small Practice," found in this issue.*

References

1. Riggi J. The importance of cybersecurity in protecting patient safety. American Hospital Association. Available at: https://www.aha.org/center/cybersecurity-and-risk-advisory-services/importance-cybersecurity-protecting-patient-safety#:~:text=Losing%20access%20to%20medical%20records,also%20to%20either%20intentionally%20or. Accessed February 28, 2025.
2. 2024 Hybrid Security Trends Report. Additional Findings for the Healthcare Sector. Netwrix. January 2025. Available at: https://www.netwrix.com/download/reports/Netwrix%20Hybrid%20Security%20Trends%20Report%202024_Healthcare.pdf. Accessed February 28, 2025.
3. 2024 Ponemon Healthcare Cybersecurity Report. Proofpoint.com. Available at: https://www.proofpoint.com/us/resources/threat-reports/ponemon-healthcare-cybersecurity-report. Accessed February 28, 2025.
4. Top 10 Biggest Cyber Attacks of 2024. Cyber Management Alliance, January 20, 2025. Available at: https://www.cm-alliance.com/cybersecurity-blog/top-10-biggest-cyber-attacks-of-2024-25-other-attacks-to-know-about#:~:text=Attacks%20in%202024-,1.,deployed%20ransomware%20that%20crippled%20operations. Accessed February 28, 2025.
5. Riggi J. A Look at 2024's Health Care Cybersecurity Challenges. American Hospital Association, October 7, 2024. Available at: https://www.aha.org/news/aha-cyber-intel/2024-10-07-look-2024s-health-care-cybersecurity-challenges. Accessed February 28, 2025.
6. Olsen E. Ascension cyberattack exposes data from 5.6M people. Cybersecurity Dive. December 20, 2024. Available at: https://www.cybersecuritydive.com/news/ascension-cyberattack-data-breach/736183/#:~:text=Ascension%2C%20one%20of%20the%20nation%27s,full%20patient%20records%20are%20stored. Accessed February 28, 2025.
7. Cartwright AJ. The elephant in the room: Cybersecurity in healthcare. *J Clin Monit Comput.* 2023;37(5):1123-1132.
8. IBM. Cost of healthcare data breach is $408 per stolen record, x3 industry average says IBM and Ponemon. July 17, 2018. Available at: https://www.healthcare.digital/single-post/2018/07/17/cost-of-healthcare-data-breach-is-408-per-stolen-record-x3-industry-average-says-ibm-and. Accessed February 28, 2025.
9. Gordon WJ, Ikoma N, Lyu H, Jackson GP, Landman A. Protecting procedural care-cybersecurity considerations for robotic surgery. *NPJ Digit Med.* 2022;5(1):148. Available at: https://pmc.ncbi.nlm.nih.gov/articles/PMC9489690/. Accessed February 28, 2025.
10. Terranova Security. The 7 most dangerous healthcare cyber attacks. February 2, 2024. Available at: https://www.terranovasecurity.com/blog/most-dangerous-healthcare-cyber-attacks. Accessed February 28, 2025.
11. Gordon WJ, et al. Protecting procedural care—cybersecurity considerations for robotic surgery. *npj Digital Medicine* (2022). Available at: https://www.nature.com/articles/s41746-022-00693-8. Accessed February 28, 2025.
12. Riggi J. The importance of cybersecurity in protecting patient safety. American Hospital Association. Available at: https://www.aha.org/center/cybersecurity-and-risk-advisory-services/importance-cybersecurity-protecting-patient-safety. Accessed February 28, 2025.

To Node or Not to Node: The Paradigm Is Shifting in Early Stage Lung Cancer

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Stage IA non-small cell lung cancer (NSCLC) with no evidence of nodal disease is generally perceived to have a favorable prognosis.

WHILE CURRENT GUIDELINES from the National Comprehensive Cancer Network (NCCN) recommend invasive nodal staging (INS) in stages IB–IIIA NSCLC, it is not universally required for stage 1A disease given the low likelihood of positive mediastinal nodes with peripheral tumors ≤3 cm and node-negative fluorodeoxyglucose (FDG) positron emission tomography (PET)/computed tomography (CT) or CT scans.

However, occult nodal metastasis may be more common than previously believed, raising concerns regarding the adequacy of current staging practices. While this research suggests that preoperative lymph node staging may be an attractive option for patients with early stage disease, cancer outcomes are influenced by competing factors such as timeliness to surgery.

This article reviews current practice patterns and nuances of nodal staging for early stage lung cancers (see Figure 1, page 19).

Lessons Learned about Nodal Staging

Peripheral lung cancers with clinical node-negative disease may have higher rates of occult nodal disease, which is different than what was previously understood.[1]

A review of 58 patients with small (≤2 cm) clinical T1ab, N0, M0 NSCLC from the Cancer and Leukemia Group B (CALGB) 140503 trial found that 14% had occult N1 metastasis and 3% had occult N2 metastasis after hilar and mediastinal lymph node dissection. Upstaging was primarily detected in peripheral interlobar, lobar, or segmental stations (stations 11-13), with no differences in PET uptake or CT tumor diameter between upstaged and non-upstaged patients.

These findings from the Memorial Sloan Kettering Cancer Center study team may not be entirely surprising as evidence has suggested that nodal status historically was underassessed, and the prevalence of occult disease may be higher than previously reported. Concordantly, the rates of upstaging are similar to the rates of false-negative nodal disease on FDG PET/CT for lung cancer staging.[2]

While INS by either endobronchial ultrasound (EBUS) or mediastinoscopy has greater sensitivity to detect nodal disease compared to standard cross-sectional imaging alone, these techniques are not perfect. It may be tempting to forego intraoperative surgical nodal staging in early stage cancers with both negative PET/CT and preoperative INS. However, despite its increased sensitivity, INS does not eliminate missed nodal metastasis. In fact, some estimates show that INS may miss up to 19% of nodal disease.[3]

More specifically, an analysis of The Society of Thoracic Surgeons (STS) General Thoracic Surgery Database (GTSD) of more than 6,600 patients who had both a

Opposite: Dr. Jeffrey Velotta and University of California San Francisco (UCSF)-East Bay chief resident Diana Hsu, MD, perform an operation in the chest.

preoperative CT and PET, found that patients who underwent EBUS and mediastinoscopy had 20% and 18% of missed nodal disease, respectively.[3] Despite the advantage of EBUS having the ability to evaluate both hilar and mediastinal nodes, this staging modality was not shown to have superior detection rates compared to mediastinoscopy.

Recognizing that smaller tumors may have a lower risk of nodal metastasis, the subgroup of patients with tumors ≤2 cm still found a rate of missed nodal disease in 16% of EBUS patients and 14% of mediastinoscopy patients. It is likely that the true rate of nodal microinvasion is even higher, as not all surgeons in that cohort performed a complete nodal dissection and, even among those who did, homogeny lacked on which stations were sampled.

Having negative cross-sectional imaging and INS preoperatively does not negate the need for a comprehensive surgical lymph node evaluation as patients with early stage disease may still have nodal disease, undetectable by current techniques.

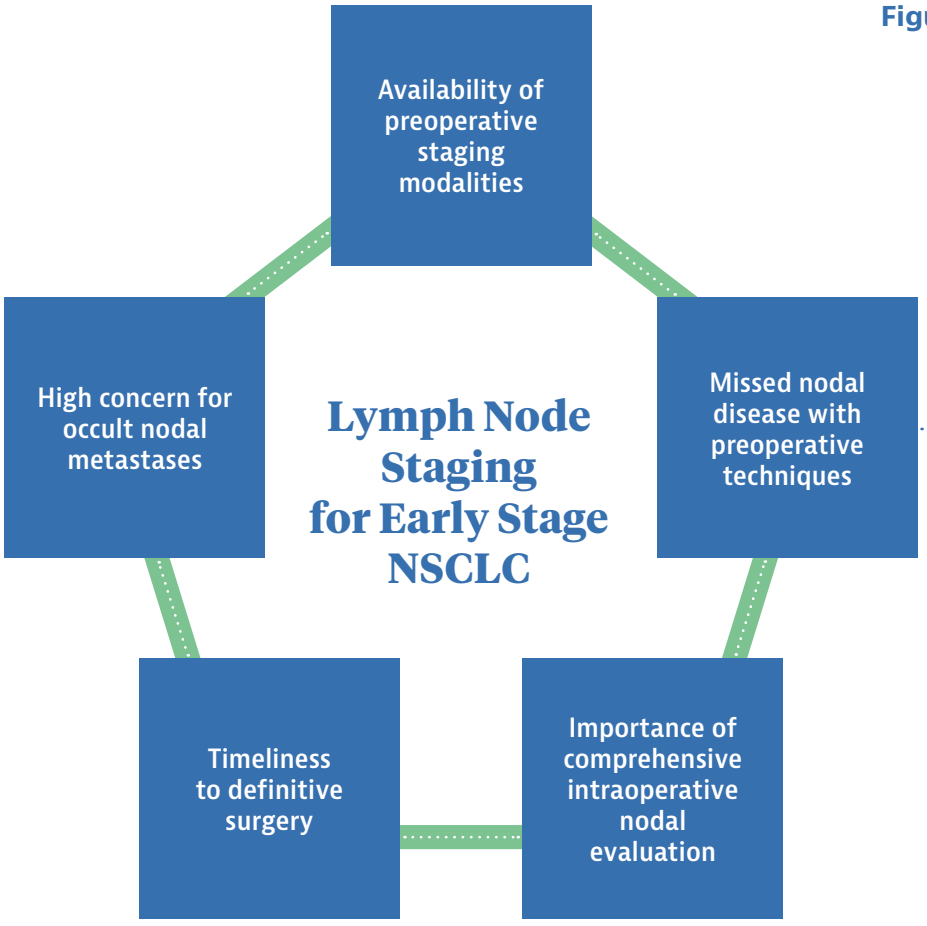
Several reasons may explain these high rates of missed nodal disease, including high rates of user variability. For example, there are no currently established minimal standard requirements for EBUS-guided mediastinal nodal staging. While some providers may do a comprehensive sampling of each visible node with at least four to six passes per node, others may only perform selective sampling of suspicious nodes >5 mm or even abstain from sampling at all.

Currently, the STS GTSD does not consider EBUS-guided mediastinal nodal staging adequate without nodal biopsies, further invalidating a significant proportion of EBUS procedures performed in current practice. Missed nodal metastasis due to inherent technological limitations, coupled with significant practice variations make INS an imperfect mechanism in which the false-negative rate may be higher than generally realized. While INS may more frequently rule in nodal disease, negative cross-sectional imaging coupled with INS certainly does not exclude lymph node metastasis.

Differences in Outcomes

A key question to consider is whether preoperative INS in early stage lung cancers meaningfully alters the treatment course. Our recently published results

Figure 1.



examining close to 3,000 surgical patients with node-negative stage I-II NSCLC found that only 18.7% underwent invasive nodal staging and of those patients, only 0.4% were upstaged to stage IIIA or greater in which clinical management and order of sequence may significantly change.[4] There was no association between upstaging and lack of preoperative invasive nodal staging, challenging the notion that preoperative nodal staging is routinely necessary in all early stage lung cancers.

For patients with micrometastases undetectable by imaging and INS, differences in outcome or survival would support the need for more clear preoperative staging and biopsy.

However, a recent study published in *The Lancet* found that, when matched for factors such as performance status, centrality, tumor size, and FDG avidity, there were no differences in both 5-year overall survival nor recurrence-free survival between those who did and did not have INS.[5] Patients with INS had a 5-year overall survival of 74% and 5-year recurrence-free survival of 65%, while patients without INS had a survival of 72% and 68%, respectively.

Not surprisingly, most of the missed nodal metastasis were micrometastases with a maximal diameter of 5 mm, which is difficult to detect with current INS techniques. If the detection of micrometastatic disease significantly alters disease treatment or long-term outcomes (>5 years) for which we currently have minimal data, more widespread use in N0 cancers would be warranted.

With the rise of novel immunotherapies, it remains to be seen whether neoadjuvant immunotherapy for early stage, N1-positive cancers would offer better long-term outcomes and disease-free survival. Cost burden, complications, and delays in definitive treatment must be weighed against comprehensive INS in early cancers.

Time to Surgery as a New Quality Metric

Time to surgery has recently emerged as an important predictor of outcome (see Figure 2, page 20). In more than 2,500 patients with clinical stages I-II NSCLC, our group concluded that delays in surgery of more than 8 weeks was shown to increase 5-year risk of mortality (hazard ratio 1.19) and 1-year risk of recurrence (hazard ratio 1.25).[6]

Figure 1. Considerations for invasive preoperative lymph node evaluation for early stage NSCLC

Figure 2.

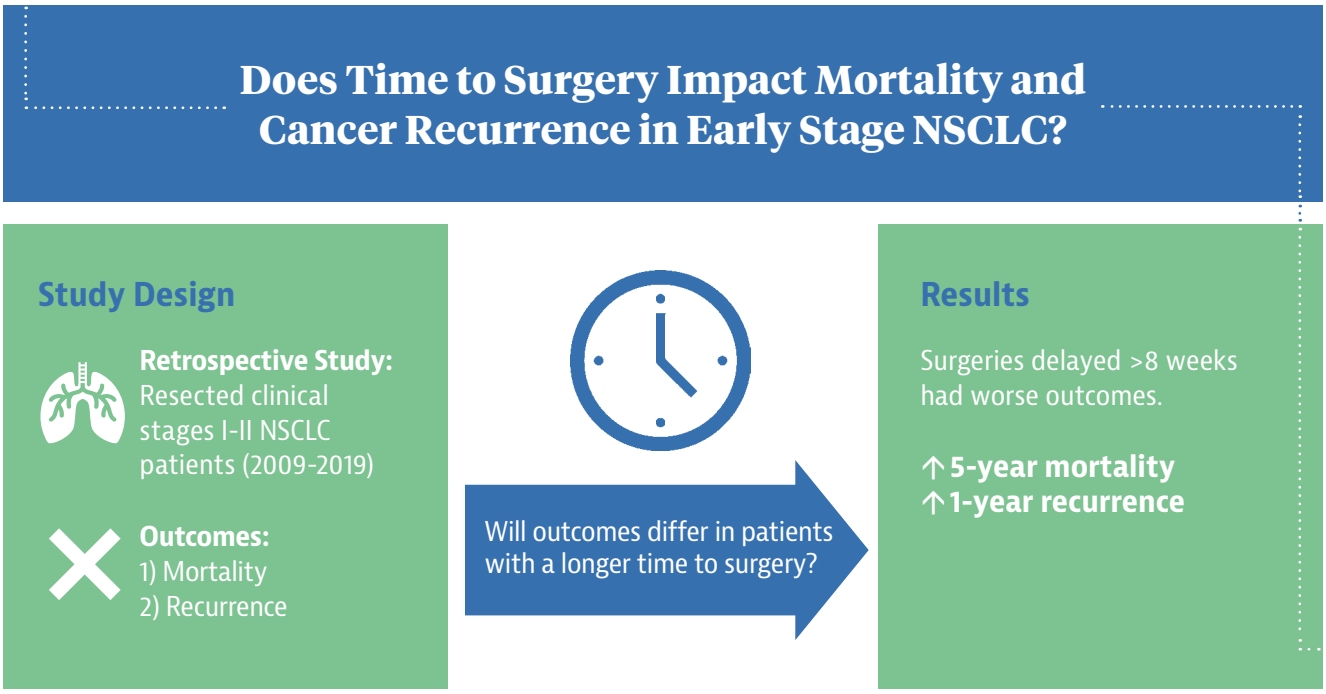


Figure 2.
Impact of time to surgery on outcomes in early stage NSCLC

Opposite:
UCSF medical student Samuel Lashof-Regas learns from Dr. Jeffrey Velotta.

In certain cases, upfront surgery may be preferable in early cancers rather than delay for more precise preoperative staging. The complexity of cancer care continues to grow, and additional diagnostic tests have inevitably lengthened the time from diagnosis to treatment.

Patients within a comprehensive healthcare system may experience minimal impact while underserved, low health literacy populations may face the most significant delays in care, especially when navigating fragmented care across multiple health systems. Access to healthcare even for those with adequate insurance may become more challenging as the population ages and the physician shortage continues to grow.

Many projections estimate that in the next 2 decades, the US could face a shortage of more than 100,000 physicians. The ability to schedule a timely appointment with a provider may become increasingly problematic, especially as new technologies allow for the earlier detection of disease. As the burden of disease and patient demand increases, the ability for medicine as a whole to meet that demand will be more difficult.

In select cases of early stage lung cancers with a negative PET/CT scan, upfront surgery with a comprehensive intraoperative mediastinal, and hilar lymph node dissection may lead to better outcomes. In fact, an STS clinical practice guideline strongly recommends definitive surgical resection with curative intent within 8-12 weeks from the time of diagnosis for patients with screening-detected suspicious lesions or patients with clinical stage 1 NSCLC who are good operative candidates.

Importance of Intraoperative Nodal Sampling

With the limitations surrounding preoperative lymph node staging described in this article, comprehensive intraoperative nodal evaluations are becoming increasingly important. Prior research has shown that a lack of lymph node examination leads to worse survival for patients.

Five-year survival rates of patients in the Surveillance, Epidemiology, and End Results Program who had no lymph nodes examined during definitive surgery (47%) were similar to those with N1 disease (45%), contrasted to patients with no disease (67%).[7] Similarly, median duration of survival in patients with no nodes examined (3 years) was also similar to those with N1 disease (2.8 years), markedly lower than patients with N0 cancer (6.4 years).

Even after exclusion of patients who had a sublobar resection, a proportion of the population that may have confounded the results due to increased frailty and overall mortality, survival results in patients without lymph node examination remained similar to those with N1 disease. In fact, overall survival in those with six or more lymph nodes examined was higher when compared to those with one to five lymph nodes.

To address this variability in cancer surgery, over the last decade, the ACS has published a series of manuals, known as the *Operative Standards for Cancer Surgery,* defining key surgical techniques to achieve optimal surgical outcomes. In 2021, the ACS Commission on Cancer (CoC) adopted six operative standards as part of its national accreditation program across 1,400 hospitals nationwide.

Among these standards is Standard 5.8, requiring examination of one hilar lymph node (stations 10-14) and three mediastinal lymph nodes from three distinct stations (stations 2-9) for all lung cancer surgery with curative intent (see Figure 3, page 22).

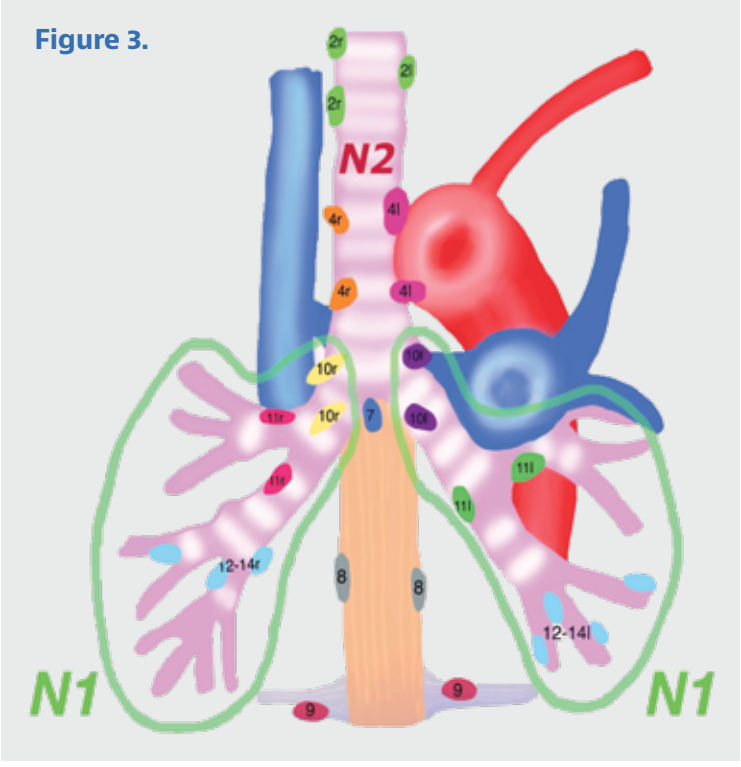
Standard 5.8 applies to all surgical patients with NSCLC, small cell lung cancer, and carcinoid tumors of the lung, regardless of type of surgical resection or operative approach (see Figure 4, page 23).

Currently, CoC Standard 5.8 is still in its initial implementation period, with limited published data on national hospital compliance.

Figure 3.
Lymph node stations for lung cancer staging; N1 hilar stations circled in green, N2 mediastinal stations not circled

However, in our examination within an integrated healthcare system, significant heterogeneity exists with substantial room for improvement. In a sample of lung surgeries performed between 2009 and 2019, only 44% of patients had surgical nodes sampled meeting the Standard 5.8 criteria, a rate that was significantly higher than prior national averages.[4]

Although cancer care has improved dramatically within the last 2 decades, clinicians still face the ever-present variability in outcomes in a portion of patients.



Despite patients having similar cancer staging, patient characteristics, and treatment, recurrence and overall survival may still vary drastically in a subset. Part of this incongruity may be due to differences in surgical practice. Lack of proper intraoperative surgical examination of lymph nodes will inevitably lead to the underdiagnosis of patients who would otherwise be upstaged and benefit from adjuvant therapy.

Investigations regarding the implementation and effectiveness of the CoC operative standards are underway, including the Assessing the Effectiveness and Significance of the Operative Standards Program (also known as AESOP) study, supported by a federally funded research grant led by investigators at the University of Michigan in Ann Arbor and Yale University in New Haven, Connecticut, in collaboration with the ACS.

Accurate lymph node staging is essential for diagnosis, staging, and guiding treatment decisions for NSCLC. Invasive nodal staging has an important role

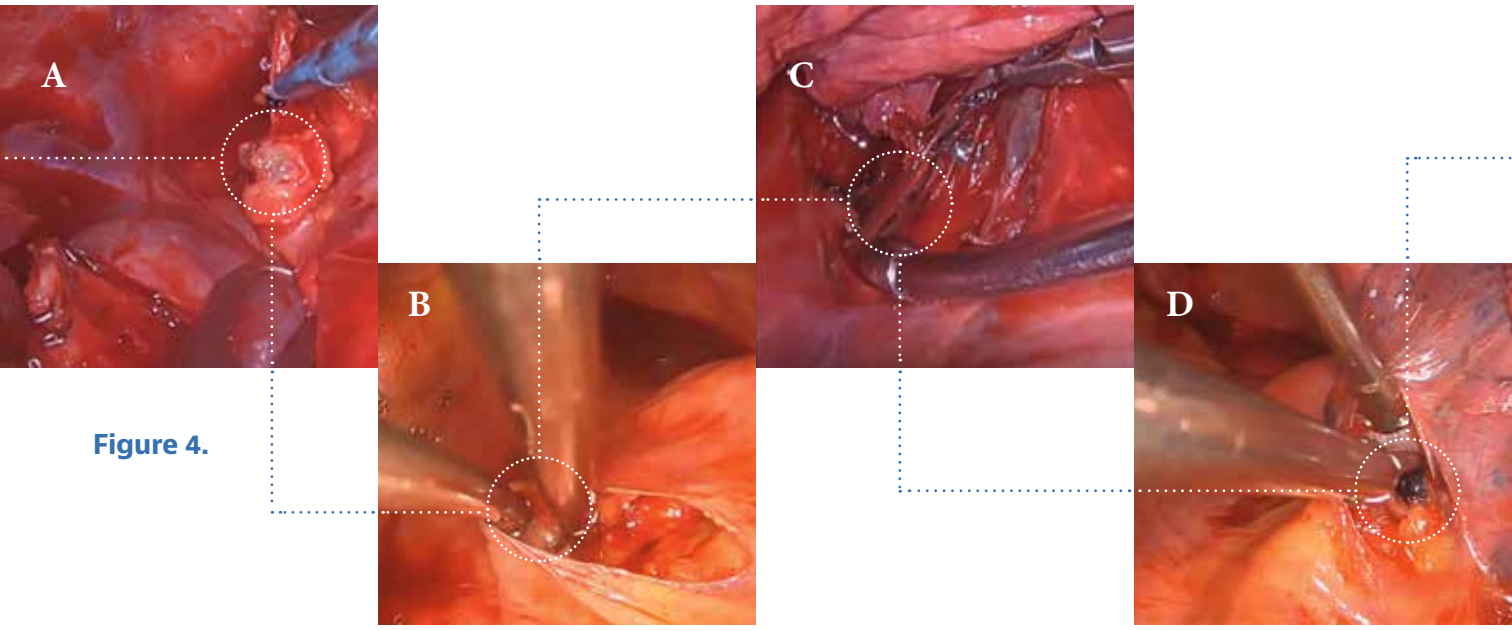


Figure 4.

in ruling in nodal disease and ruling out false positives such as in granulomatous nodes. However, in the subset of patients with early stage NSCLC with no suspicious lymph nodes on imaging, the utility of preoperative invasive nodal staging must be balanced with the potential delays they introduce.

Until recently, time from diagnosis to surgery has not played a large role in the overall management of NSCLC but new data have emerged showing that this metric may be more important than previously realized. In certain cases of node negative, early stage cancers—forgoing preoperative invasive nodal staging for upfront surgery with intraoperative nodal sampling—may be preferred, particularly if preoperative invasive staging risks delaying care. Vital to this approach, though, is a comprehensive, intraoperative lymph node dissection.

As treatment strategies continue to evolve, striking the right balance between accurate staging and timely intervention will remain essential for optimizing patient outcomes.

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References

1. Robinson EM, Ilonen IK, Tan KS, et al. Prevalence of occult peribronchial n1 nodal metastasis in peripheral clinical no small (≤2 cm) non-small cell lung cancer. *Ann Thorac Surg*. 2020;109(1):270-276.
2. Park HK, Jeon K, Koh WJ, et al. Occult nodal metastasis in patients with non-small cell lung cancer at clinical stage IA by PET/CT. *Respirology*. 2010;15(8):1179-1184.
3. Resio BJ, Canavan M, Mase V, et al. Invasive staging procedures do not prevent nodal metastases from being missed in stage I lung cancer. *Ann Thorac Surg*. 2020;110(2):390-397.
4. Banks KC, Sarovar V, Sun A, Wile RK, et al. The impact of preoperative invasive nodal staging on unexpected mediastinal upstaging in early-stage non-small cell lung cancer. *Ann Surg Oncol*. Available online February 20, 2025. Accessed March 5, 2025.
5. Kim HK, Jeon YJ, Um SW, et al. Role of invasive mediastinal nodal staging in survival outcomes of patients with non-small cell lung cancer and without radiologic lymph node metastasis: A retrospective cohort study. *eClinicalMedicine*. 2024;69:102478.
6. Tupper HI, Sarovar V, Banks KC, et al. Time to surgery in early-stage non-small cell lung cancer: Defining the optimal diagnosis-to-resection interval to reduce mortality. *J Thorac Cardiovasc Surg*. Available online December 16, 2024:S0022-5223(24)01125-5.
7. Osarogiagbon RU, Yu X. Nonexamination of lymph nodes and survival after resection of non-small cell lung cancer. *Ann Thorac Surg*. 2013;96(4):1178-1189.

Figure 4. Video-assisted thoracoscopic surgery with lymph node dissection meeting CoC Standard 5.8 criteria. Panels A-C illustrate mediastinal stations 4, 5, and 7, respectively. Panel D illustrates hilar station 10. Lymph nodes are circled in white.

Are Anti–Obesity Medications Changing Bariatric Surgery?

M. Sophia Newman, MPH

Anti-obesity medications (AOMs) are having a powerful impact worldwide.

THE GLUCAGON-LIKE peptide-1 (GLP-1) receptor agonist Ozempic (semaglutide) is so popular that the economy of Denmark, where Novo Nordisk produces the drug, now hinges on the drug's success; nearly one in every five Danish jobs created in 2023 was at the manufacturer.[1]

Moreover, a 2025 study of more than 215,000 patients who used a GLP-1 drug found an extensive range of unexpected health benefits additional to weight loss, ranging from reduced rates of respiratory failure to a lower risk of developing gangrene to fewer seizures.[2] Upheaval in the lives of those taking GLP-1 drugs also appears to extend far beyond health per se, involving shifts in lifestyle choices and romantic relationships.[3]

In short, there seems to be no end to the wide range of changes AOMs may bring. Indeed, their scope may soon expand further: more than 120 AOMs are now in the pharmaceutical development pipeline, one-third of which work by mechanisms similar to those of existing GLP-1 drugs.[4] Because obesity affects approximately 40% of all US adults and 16% of the global population,[5] the economic, medical, and cultural impacts of AOM use may prove to be extremely far-reaching.

Table. Current US Food and Drug Administration–Approved Drugs for Weight Loss

Generic name	Brand name(s)	FDA approval year	Mechanism of action
Orlistat	Xenical, Alli	1999 (Xenical) 2007 (Alli)	Lipase inhibitor
Phentermine-topiramate	Qsymia	2012	A combination of a sympathomimetic amine anorectic and a carbonic anhydrase inhibitor/glutamate inhibitor
Naltrexone-bupropion	Contrave	2014	A combination of an opioid antagonist and an antidepressant
Liraglutide	Saxenda	2014	GLP-1 receptor agonist
Semaglutide	Wegovy, Ozempic	2017 (Wegovy) 2022 (Ozempic)	GLP-1 receptor agonist
Tirzepatide	Mounjaro, Zepbound	2023 (both)	Glucose-dependent insulinotropic polypeptide/GLP-1 agonist

Amid all this, the question remains: what does this mean for metabolic and bariatric surgery, the other highly effective weight-loss option?

Brief History of AOMs

Although the massive popularity of AOMs is relatively new, these drugs have been available for more than 30 years. In the 1990s, fenfluramine, dexfenfluramine, and phentermine cumulatively reached 2.5 million patients seeking weight-loss options.[6] However, after reports of pulmonary hypertension and heart-valve abnormalities, fenfluramine and dexfenfluramine were removed from the market in 1997 and overall AOM use declined.[6]

Over the next 20 years, the available options proved to be unpopular. This included orlistat, which received US Food and Drug Administration (FDA) approval in 1999 as Xenical and in 2007 as Alli. This lipase inhibitor reduces absorption of fats but is associated with minor weight loss and a side effect of steatorrhea, dimming patient interest. Phentermine-topiramate and bupropion-naltrexone also combined a range of side effects with modest weight loss and had poor patient uptake. Per data from the National Health and Nutrition Examination Survey, just 0.8% of eligible US adults were taking AOMs between 2015–2018.[7]

It wasn't until the rise in the off-label use of diabetes drugs liraglutide (brand-named Saxenda; approved as an AOM in 2014), semaglutide (approved in 2017 as Wegovy and 2022 as Ozempic), and tirzepatide (approved for sale as Mounjaro and Zepbound, both in 2023), that GLP-1s became a substantial part of treating the obesity epidemic.

"It's only been recently that medical weight management has been this effective, with up to 20% weight loss with GLP-1 use," explained Luke Funk, MD, MPH, FACS, a bariatric surgeon at the University of Wisconsin-Madison.

Public interest has increased so swiftly that patients, including those using AOMs to treat diabetes or heart disease, have struggled with supply shortages and other access issues. As of mid-2024, approximately 22% of those who are overweight or obese were taking a GLP-1 drug.[8] Of those, 40% were taking these drugs primarily to lose weight[8]—or 11 times as many as who took

In addition to its lifesaving effects, the primary goal of weight loss is met more effectively with surgery.

weight-loss medications 2015–2018.[7] As options increase and prices potentially decrease, that number is expected to rise.

Bariatric Surgery or AOMs?

In the 2010s, bariatric surgery was used by approximately 0.5% of the eligible US population,[7] and this value has risen to less than 1% of all eligible US patients in more recent years.[9] This statistic is true despite a growing range of options for weight-loss surgery, including myriad endoscopic and laparoscopic approaches.

This lack of patient interest persists even though bariatric surgery has unquestionably better results than AOMs. Marina S. Kurian, MD, FACS, who practices bariatric and metabolic surgery as a clinical professor of surgery at NYU Langone Health in New York City, explained, "People talk about how these medications have decreased risk of major adverse cardiovascular events by 20%. That's great. Worldwide, that's going to make a huge difference in cardiac death. But surgery reduces it by 40%."

As striking as that statement is, Dr. Kurian may be understating the case. For example, in a cohort of Israeli patients with diabetes who received either bariatric surgery or GLP-1 drugs, those who underwent surgery had 62% lower mortality risk than those who received a drug regimen (hazard ratio, 0.38 [95% CI, 0.25-0.58]).[10]

In addition to its lifesaving effects, the primary goal of weight loss is met more effectively with surgery. Bariatric procedures typically offer both a greater percentage of total weight loss and longer-lasting weight loss than AOMs do.[11]

Additionally, surgery appears to be more cost-effective than AOMs for weight loss. An abstract[12] presented at Clinical Congress 2024 assessed relative costs and quality-of-life outcomes and found that, because AOMs required ongoing expenses over the long term (calculated at $11,628 annually), they were less cost-effective than the higher one-time cost of weight-loss surgery (estimated at $18,581). This held true until the cost of AOMs dropped to $568 per month or less—significantly lower than the current price.

Given these facts, why has bariatric surgery remained relatively unpopular?

A major question, however, is how to combine the two approaches to maximize patient outcomes.

Dr. Kurian described the problem as multifaceted. It includes widespread stigma against obesity and patients' misplaced sense of personal responsibility: "Getting patients to recognize that they don't have a disease of willpower, that it's not their shame—all those things will go further to get them to say, 'Hey, I need to have surgery.'"

In addition, both Drs. Kurian and Funk described complex barriers in insurance coverage and care access for a procedure that can have high upfront costs. Dr. Funk has led a research team that has examined this question for several years via qualitative methods; they found a mix of administrative and logistical barriers, particularly a failure of insurance to cover bariatric procedures.

"We have to fight for insurance coverage and also even anti-obesity medication coverage," Dr. Kurian said of the experience at her own institution.

She noted a current misunderstanding of how definitive a cure for obesity and overweight AOMs might be, which, to some, leads to a kind of false dichotomy.

"It's like saying Lipitor should prevent heart attacks and CABG [coronary artery bypass grafting surgery], right?" Dr. Kurian said. "But it doesn't. Severe heart disease doesn't go on medication. It gets bypassed. Severe heart disease needs to be treated with surgery. But we understand that these patients may also need medications long term to keep the disease at bay. You don't just get a heart stent and a CABG; then there's a continuum, where we need more than one thing in our armamentarium to treat the patients appropriately."

AOMs as Gateway to Comprehensive Care

Both AOMs and bariatric surgery are indisputably relevant to the same patient population. Indeed, the ACS Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) permits metabolic and bariatric surgery centers with

a Comprehensive Center designation to incorporate AOMs into their practice and add obesity medicine qualifications, per the 2022 MBSAQIP standards manual, *Optimal Resources for Metabolic and Bariatric Surgery*.

"The most effective approach to patient care recognizes that anti-obesity medication and bariatric surgery work best together, rather than in competition, to achieve and sustain significant weight-loss and health improvements," summarized Lisa Hale, MSN, RN, CNOR, CPHQ, who is the manager of MBSAQIP at the ACS.

A major question, however, is how to combine the two approaches to maximize patient outcomes.

Intriguingly, the cost-effectiveness study[7] presented at Clinical Congress 2024 found that combining medication use and weight-loss surgery was the most cost-effective approach, despite the higher overall cost of combining the two approaches. Relative to expense, the combination provided the greatest estimated increase in quality-adjusted life-years.

Thus far, however, insufficient data are available on when and how to best combine AOMs and surgery for weight-loss patients. Studies are not yet conclusive on whether preoperative GLP-1 use results in greater total weight loss than surgery without any AOM use. Dr. Funk noted that the results of the early studies on this question suggest that preoperative AOM use does not increase postsurgical weight loss,[11] concord with his clinical experience.

He also noted that "the best prediction tool" used to calculate weight loss—the MBSAQIP Bariatric Surgical Risk/Benefit Calculator—does not yet take preoperative GLP-1 use into account. Studies also are not always clear on when in the patient's clinical journey key data on weight loss are collected, obscuring current answers to this question.

In addition, Dr. Funk explained that using AOMs prior to surgery can be potentially beneficial even in the absence of an impact on the patient's ultimate body mass index (BMI). "Generally, if we have a BMI that is exceedingly high, and we have a weight-loss goal for that patient before surgery, GLP-1s are an option for getting them in the range of successful surgery."

He described using no single cutoff BMI for this approach, as body shape can contribute to clinical assessment, although "a weight over 500 pounds, even in the 400s" commonly requires preoperative weight loss to optimize surgical safety.

For patients with less severe cases of obesity, a GLP-1 prescription can also be an onramp to surgical care—albeit for psychological reasons. "That is the initial gateway for a lot of patients," said Dr. Funk. "They feel comfortable, they see that weight loss, and they are more willing to engage in evidence-based approaches."

On this point, Dr. Kurian agreed the rise of GLP-1 has been advantageous. "Now, most of my colleagues around the country are seeing an increase in new consults coming for surgery, which was what we always thought would happen, because this rise in anti-obesity medication use will be bringing people to care, right? That's critical to making sure that people get appropriate treatment."

Implications beyond Bariatric Surgery

Just as patients undergoing bariatric surgery may benefit from weight loss through GLP-1 drugs before an operation, so will some patients who need to undergo other surgical procedures. Dr. Funk noted

For now, what is clear is that the need for effective care is urgent. Approximately 40% of US adults are categorized as overweight; another 40% have obesity, and half of those have severe obesity.

that some patients requiring ventral or inguinal hernia repair, cholecystectomy, or other operations can require weight loss to undergo surgery safely.

"For surgeons looking for preoperative weight loss from patients, GLP-1s are an effective treatment—placing those patients on a GLP-1 so that the outcomes would be optimized," he said.

That said, a research abstract from the forthcoming American Association of Plastic Surgeons Annual Meeting suggests that the risk of surgical site infections is increased among patients without diabetes, cardiovascular, and other major diseases who are using GLP-1 medications at the time of surgery.[14]

Dr. Kurian added that for patients who have already undergone bariatric surgery who need additional, non-bariatric procedures, their postoperative bariatric status can raise questions for other surgeons.

"This is a lifelong follow-up, with things that come up that are very specific that need to be addressed by a bariatric surgeon. If you have a gastric bypass or a traditional duodenal switch, some of that anatomy is different. So, if you have concerns, if you're not familiar with it, definitely call a bariatric surgeon. Phone a friend, if you will," she said.

Sea Change?

While AOMs appear to be creating a sea change in how patients who are obese and overweight approach their clinical care, it is less clear how public opinion on these health conditions will shift.

"I don't know if medications are changing that," Dr. Funk said. "There's still a lot of stigma and frankly discrimination against patients with higher BMIs."

Nor is it clear how long the intense popularity of the GLP-1 drugs may last. Both Drs. Funk and Kurian cited statistics that more than half of all patients prescribed GLP-1 drugs intended for lifelong use cease taking them within 1 year—in which case, they are likely to regain all the weight they lost.

"That's where we lose them," Dr. Kurian said, describing some patients' disillusionment with all clinical weight-loss care after AOMs fail.

Because several of the most popular AOMs were approved for weight-loss use within the past 3 years, long-term follow-up data on the outcomes of ongoing and terminated usage are not yet available.

"What happens at 5 years, 10 years?" Dr. Funk asked. "We don't know."

For now, what is clear is that the need for effective care is urgent. Approximately 40% of US adults are categorized as overweight; another 40% have obesity, and half of those have severe obesity. As of 2022, excess weight was estimated to contribute to 500,000 deaths in the US per year.[15]

In the face of this massive health crisis, nearly 50% of the US adult population, or 130 million people, are now eligible for the first category of drugs that could turn the tide.

While no drug is a miracle cure, bringing evidence-based, potentially lifesaving clinical care into the realm of possibility for millions of people may prove to be an inflection point in medical history—and a watershed moment for metabolic and bariatric surgery as well.

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References

1. Shchukina S. Ozempic's biggest side effect: Turning Denmark into a 'pharmastate'? Published July 30, 2024. Accessed February 10, 2025. https://www.npr.org/sections/planet-money/2024/07/26/g-s1-13534/ozempic-biggest-side-effect-denmark-pharmastate.
2. Xie Y, Choi T, Al-Aly Z. Mapping the effectiveness and risks of GLP-1 receptor agonists. *Nat Med*. 2025;31:951–962.
3. Miller L. How weight-loss drugs can upend a marriage. Published February 2, 2025. Accessed February 10, 2025. https://www.nytimes.com/2025/02/02/magazine/weight-loss-side-effects-sex-ozempic.html.
4. Gardner J. Chasing Novo and Lilly: The obesity drugs that could challenge Wegovy and Zepbound. Published April 30, 2024. Accessed February 10, 2025. https://www.biopharmadive.com/news/obesity-glp-1-next-drug-development-biotech/714507/
5. US Centers for Disease Control and Prevention. Adult obesity facts. Published May 14, 2024. Accessed February 26, 2025. https://www.cdc.gov/obesity/adult-obesity-facts/index.html.
6. Stafford RS, Radley DC. National trends in antiobesity medication use. *Arch Intern Med*. 2003;163(9):1046-1050.
7. MacEwan J, Kan H, Chiu K, Poon JL, Shinde S, Ahmad NN. Antiobesity medication use among overweight and obese adults in the United States: 2015–2018. *Endocr Pract.* 2021;27(11):1139-1148.
8. Montero A, Sparks G, Presiado M, Hamel L. KFF health tracking poll May 2024: The public's use and views of GLP-1 drugs. Published May 2024. Accessed February 27, 2025. https://www.kff.org/health-costs/poll-finding/kff-health-tracking-poll-may-2024-the-publics-use-and-views-of-glp-1-drugs/.
9. Liu N, Funk L. Bariatric surgery trends in the U.S.: 1% is the loneliest number. *Ann Surg*. 2020; 271(2):210–211.
10. Dicker D, Wolff Sagy Y, Ramot N, et al. Bariatric metabolic surgery vs glucagon-like peptide-1 receptor agonists and mortality. *JAMA Netw Open*. 2024;7(6):e2415392.
11. Syn NL, Cummings DE, Wang LZ, et al. Association of metabolic–bariatric surgery with long-term survival in adults with and without diabetes: A one-stage meta-analysis of matched cohort and prospective controlled studies with 174 772 participants. *Lancet*. 2021;397(10287):1830–1841.
12. Sanchez JE, Lundberg A, Jones WN, et al. Comparative cost effectiveness analysis of bariatric surgery and GLP 1 receptor agonists for the management of obesity. Abstract presented at Clinical Congress 2024; October 21-24, 2024.
13. AbuHasan Q, Funk LM, Holl JL, et al. Preoperative glucagon-like peptide-1 receptor agonist utilization and association with bariatric surgery outcomes. *Obes Surg*. 2025;35(2):556-560.
14. Lee CC, Yau A, Chroneos R, Johnson TS. Impact of GLP-1 agonist weight loss drugs on surgical wound complications following plastic surgery procedures. Abstract presented at American Association of Plastic Surgeons Annual Meeting; May 25-27, 2025.
15. Ward ZJ, Willett WC, Hu FB, Pacheco LS, Long MW, Gortmaker SL. Excess mortality associated with elevated body weight in the USA by state and demographic subgroup: A modelling study. *eClinicalMedicine*. 2022;48: 101429.

Surgeons Provide Clarity on Applications for Generative AI in Patient Care

Jayson S. Marwaha, MD, MSc
Tyler J. Loftus, MD, PHD, FACS
Gabriel A. Brat, MD, MPH, FACS
Genevieve Melton-Meaux, MD, PHD, FACMI, FACS
Daniel A. Hashimoto, MD, MTR, FACS
Caroline Park, MD, MPH, FACS

Artificial intelligence (AI) has evolved into a technology capable of prognostication, communication, and decision-making at a level previously considered uniquely human.

THE TRANSFORMATIVE potential of AI is poised to reshape numerous fields, including healthcare and, specifically, surgical care.

During the 2024 Clinical Congress Panel Session, "Generative AI Tools for Surgery: Will AI Change My Practice?," Genevieve Melton-Meaux, MD, PhD, FACMI, FACS, professor of surgery at the University of Minnesota in Minneapolis, proclaimed that "AI is ushering in a new industrial revolution."

The evolution of AI in healthcare can be broadly categorized into three stages: standardization, automation, and adaptation.[1] The first epoch focused on creating standardized prediction scores, which laid the groundwork for data-driven insights. The second stage introduced automation, such as data summarization and report generation, streamlining routine tasks.

We are now entering the third period of adaptation, where AI tools collaborate with and augment human capabilities, which has fostered in a new era of human-AI partnership in medicine. Generative AI—a rapidly growing field in which large, complex models trained on massive amounts of data are able to generate new content and perform new tasks they haven't been explicitly trained to do—will likely play a large role in enabling this new era.

AI in Surgical Practice Today

While generative AI tools specifically designed and approved for clinical use are still emerging, the precedent for using this technology to enhance patient outcomes is well-established. Tyler Loftus, MD, PhD, FACS, associate professor of surgery at the University of Florida in Gainesville, pointed out that several conventional AI-powered prediction tools already have been tested in clinical workflows, demonstrating tangible improvements in care. These tools often focus on specific tasks (i.e., predicting the likelihood of a specific outcome) and showcase the power of AI in targeted applications.

One notable example is a widely used commercial computer vision tool developed by a large medical technology company for real-time colonic polyp detection during colonoscopy. By highlighting potential polyps in real time, this tool assists endoscopists in identifying and removing precancerous lesions, ultimately increasing quality-adjusted life years for patients undergoing colonoscopies.[2,3] This tool exemplifies how AI can augment human capabilities in real time, improving diagnostic accuracy and patient outcomes.

Another compelling example comes from the Hypotension Prediction trial (also known

The evolution of AI in healthcare can be broadly categorized into three stages—automation, standardization, and adaptation—as shown in this image, which was created using AI.

as the HYPE trial)—a large study that demonstrated how an AI tool capable of predicting intraoperative hypotension can actually decrease intraoperative hypotensive events.[4] By proactively identifying patients at risk of experiencing low blood pressure during surgery, clinicians may be able to intervene earlier, possibly mitigating complications after surgery and potentially improving overall surgical safety. These examples demonstrate the value of AI in enhancing clinical decision-making and improving patient care.

Generative AI Use Inside and Outside the OR

Generative AI represents a significant leap forward in capabilities compared to the traditional, yet already impactful, AI tools. Unlike traditional AI, which is trained for specific tasks, generative AI possesses greater flexibility, adapting to diverse inputs and performing tasks for which it hasn't explicitly been trained. This adaptability opens up exciting possibilities for its application in surgery.

A crucial consideration for implementing generative AI in surgery is identifying areas where its potential impact is high while the associated risk is low. Achieving this balance means focusing on applications where a potential AI error would not directly lead to serious patient morbidity or mortality.

Several promising areas of research and early development highlight the potential of generative AI in surgery, including surgical registry curation, intraoperative guidance, and operative video analysis. Gabriel Brat, MD, MPH, FACS, an associate professor of surgery at Beth Israel Deaconess Medical Center in Boston, Massachusetts, and instructor of biomedical informatics at Harvard Medical School in Boston, highlighted some of these potential future applications.

One significant application lies in automating large-scale clinical data extraction. Large language models can automate the laborious process of extracting, curating, and harmonizing clinical data from electronic health records for inclusion in national registries like the ACS National Surgical Quality Improvement Program. This automation can significantly reduce the time and resources required for data collection, potentially accelerating research and quality improvement efforts. The feasibility of this concept has been demonstrated in vascular surgery.[5]

Another exciting area is leveraging generative AI to understand intraoperative events through operative video analysis. This functionality has numerous

A crucial consideration for implementing generative AI in surgery is identifying areas where its potential impact is high while the associated risk is low.

applications, including surgical education (providing coaching and feedback for surgeons and trainees); quality improvement (identifying critical steps during procedures, such as achieving the critical view of safety during cholecystectomy); and administrative tasks (automatically generating written operative reports from video footage).

Finally, generative AI holds potential for real-time intraoperative decision support through image-guided recommendations. In the near future, generative AI tools may be able to overlay a patient's preoperative imaging (such as their computed tomography scan) in real time during a surgery, providing surgeons with a dynamic understanding of the patient's anatomy and facilitating more precise surgical planning.

Barriers to Generative AI Implementation in Surgery

Despite the immense potential of generative AI in surgery, significant barriers to its widespread adoption remain, according to Daniel A. Hashimoto, MD, MTR, FACS, an assistant professor of surgery and computer and information science at the University of Pennsylvania in Philadelphia and director of the Penn Computer Assisted Surgery and Outcomes Laboratory.

One fundamental challenge is establishing robust methods for measuring the performance of these complex tools.[6] There is no universally accepted standard, and each metric has its limitations.

For instance, evaluating a computer vision tool designed to detect polyps during colonoscopy requires distinguishing between pixel-level accuracy (correctly identifying individual pixels) and lesion-level accuracy (correctly identifying entire polyps). A tool might achieve high pixel-level accuracy while missing critical lesions, highlighting the importance of choosing appropriate performance metrics. Another challenge in performance measurement is that aggregated metrics can mask poor performance in specific cases or among marginalized populations. It is crucial to ensure these tools perform equitably across all patient demographics.

Regulating generative AI tools presents unique challenges due to their non-deterministic nature, as the same input can sometimes produce different outputs, making it difficult to guarantee consistent safety

and effectiveness. Regulatory bodies, such as the US Food and Drug Administration (FDA), are still grappling with how to effectively oversee these rapidly evolving technologies, particularly regarding post-market surveillance.[7]

While there is tremendous excitement around using large language models in daily clinical tasks, they have largely been studied in the context of medical examination question-answering; not much evaluation of these tools with real-world data sets has been performed.[8] More broadly, only about half of all FDA-approved AI applications in healthcare undergo clinical validation prior to approval. Surgeons will have an important role to play in the evaluation and validation of new AI tools as they become available.[9]

Caroline Park, MD, MPH, FACS, an associate professor of surgery at The University of Texas Southwestern Medical Center in Dallas, suggested that effective implementation is critical for leveraging this technology in healthcare. These tools must integrate seamlessly into existing clinical workflows without adding complexity or inefficiency. More importantly, they must be designed to enhance, not hinder, physician decision-making. Poorly designed AI tools, regardless of their accuracy, can have little to no positive impact or even negatively impact clinical decisions.

Public perception and trust are crucial for the successful integration of generative AI in healthcare. A recent study revealed that while approximately 30% of patients express distrust toward health information produced by generative AI itself, a majority (64%) trust their doctors to use it responsibly to improve their care.[10] This highlights the vital role surgeons will undoubtedly play in evaluating and guiding the adoption and implementation of these powerful tools.

Patients trust their physicians to leverage these technologies safely and effectively, underscoring the responsibility of the medical community to ensure that these advancements are used ethically and in the best interests of patient care.

Dr. Jayson Marwaha *is a general surgery resident at Georgetown University in Washington, DC, and an incoming minimally invasive surgery fellow at the University of Michigan in Ann Arbor.*

References

1. Howell MD, Corrado GS, DeSalvo KB. Three epochs of artificial intelligence in health care. *JAMA*. 2024;331(3):242-244.
2. Barkun AN, von Renteln D, Sadri H. Cost-effectiveness of artificial intelligence-aided colonoscopy for adenoma detection in colon cancer screening. *J Can Assoc Gastroenterol*. 2023;6(3):97-105.
3. Hassan C, Povero M, Pradelli L, Spadaccini M, Repici A. Cost-utility analysis of real-time artificial intelligence-assisted colonoscopy in Italy. *Endosc Int Open*. 2023;11(11):E1046-E1055.
4. Wijnberge M, Geerts BF, Hol L, et al. Effect of a machine learning–derived early warning system for intraoperative hypotension vs standard care on depth and duration of intraoperative hypotension during elective noncardiac surgery: The HYPE randomized clinical trial. *JAMA*. 2020;323(11):1052–1060.
5. Flanagan CP, Trang K, Nacario J, et al. Large language models can accurately populate Vascular Quality Initiative procedural databases using narrative operative reports. *J Vasc Surg*. Published online December 16, 2024.
6. Reinke A, Tizabi MD, Baumgartner M, Eisenmann M, et al. Understanding metric-related pitfalls in image analysis validation. *Nat Methods*. 2024;21(2):182-194.
7. Warraich HJ, Tazbaz T, Califf RM. FDA perspective on the regulation of artificial intelligence in health care and biomedicine. *JAMA*. 2025;333(3):241-247.
8. Bedi S, Liu Y, Orr-Ewing L, Dash D, et al. Testing and evaluation of health care applications of large language models: A systematic review. *JAMA*. 2025;333(4):319-328.
9. Chouffani El Fassi S, Abdullah A, Fang Y, Natarajan S, et al. Not all AI health tools with regulatory authorization are clinically validated. *Nat Med*. 2024;30(10):2718-2720.
10. Deloitte Cener for Health Solutions. Building and maintaining health care consumers' trust in generative AI. *Deloitte Insights*. June 6, 2024. Available at: https://www2.deloitte.com/us/en/insights/industry/health-care/consumer-trust-in-health-care-generative-ai.html. Accessed March 3, 2025.

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Dr. Christopher Childers

Is It Time for an Obesity Modifier?

Christopher P. Childers, MD, PHD
Christopher K. Senkowski, MD, FACS
Don J. Selzer, MD, MS, FACS

Your pager goes off. The clock on the side table reads 12:31 am. The resident apologizes for waking you but says they have a case.

IT'S A 67-YEAR-OLD MAN with 1 day of abdominal pain. He's tachycardic and has a concerning abdominal exam. The CT shows free air, diffuse fluid, and sigmoid diverticulitis. You tell the resident to book the case and that you will be in shortly.

The patient is understandably anxious, and on exam, he is peritonitic. You discuss the diagnosis at length, the need for emergent surgery, and the likely necessity of an ostomy. The patient rolls into the OR at 2:15 am. The anesthesiologist intubates him on the bed, and the team works to transfer him to the table. His size presents a challenge—he's 5'11" and weighs 355 lbs. (BMI: 49). At this hour, staffing is limited, and it takes six people to safely move him.

After challenges with lines, catheters, and positioning, you make the incision at 3:30 am. Feculent material is found throughout the abdomen, necessitating extensive irrigation. A retractor is placed, but the blades are too short. You call for a different set. The omentum is plastered to the pelvis, and mobilizing it causes nuisance bleeding. Eventually, you expose the pelvis and find a 3-cm hole in the sigmoid. The plane to mobilize the sigmoid is obscured by adipose tissue. While entering the thick mesentery, there is additional bleeding that further limits visibility. You are unable to visualize the ureters. Eventually, you are able to staple the colon proximally and distally.

Creating the ostomy proves to be nearly impossible due to the thick abdominal wall and the foreshortened, heavy mesentery. Several colic branches are ligated, leaving a dusky ostomy. You place multiple drains and close. The subcutaneous layer is several inches thick, so you leave it open, planning for a wound vac in the coming days. Thankfully, the patient remains stable, and the anesthesia team is able to extubate him. He is transferred back to a bariatric bed and admitted to the step-down unit. You leave the OR at 7:30 am, grab a coffee, and head to clinic for 8:00 am patients.

His postoperative recovery unfolds as expected—acute kidney injury, pain issues, ileus, parenteral nutrition, difficulty mobilizing, challenging wound care, and volume overload. The patient is eventually discharged on postoperative day 13 and follows up in clinic weekly until his drains are removed and his wound has closed. At 3 months, he asks when you will reverse his ostomy.

The Current Procedural Terminology (CPT) code for a Hartmann procedure is 44143, valued at 27.79 work relative value units (wRVUs). This valuation assumes 150 minutes of operative time, approximately a week of hospitalization, and three postoperative clinic visits in the 90 days after surgery. However, there is no correlation between the work described for this patient and the work assumed in this CPT code.

What about modifier 22? This modifier can be appended to surgical claims to indicate cases requiring extraordinary effort. However, there is no evidence that modifier 22 effectively reimburses surgeons for this added work. A recent national analysis of Medicare claims data shows that while charges are indeed higher for claims with modifier 22, actual reimbursement is negligibly increased, and these claims are denied at a much higher rate than those without it. As a result, modifier 22 does not lead to increased surgeon reimbursement. This leaves no mechanism for surgeons to account for cases requiring extraordinary effort.

While the case described earlier highlights several challenges of being an on-call surgeon—such as being woken up in the middle of the night for emergencies—the most familiar challenge is performing abdominal operations on an increasing segment of the population: obese patients.

With this premise, we conducted a comprehensive national analysis of the work required to operate on overweight and obese patients. We examined 10 common abdominal operations—including appendectomies, hernia repairs, colon resections, and Whipple procedures—to determine whether systemic increases in surgical workload exist as patient weight increases. We evaluated nearly 160,000 operations from the 2022 ACS National Surgical Quality Improvement Program dataset using operative time as a measure of workload and postoperative complications as a proxy for intensity.

These data clearly support the premise that obesity adds significant surgical workload. So, what mechanisms exist for surgeons to be compensated for this added effort?

Our findings revealed a linear increase in operative time with rising weight categories, with similar effects across different procedures. Compared to healthy-weight individuals, operative times increased by approximately:

- 5% for overweight patients (BMI 25-29)
- 10% for class I obesity (BMI 30-34)
- 15% for class II obesity (BMI 35-39)
- 20% for class III obesity (BMI 40-49)
- 25% for extreme obesity (BMI 50+)

More striking were the increased odds of complications, which ranged from a modest 6% increase in overweight patients to a dramatic 103% increase in the extreme obesity group. In particular, we observed higher rates of superficial and deep wound infections, kidney injury, and pulmonary embolism.

These data clearly support the premise that obesity adds significant surgical workload. So, what mechanisms exist for surgeons to be compensated for this added effort?

The existing evidence suggests that modifier 22 is ineffective. Alternative solutions, such as new modifiers or add-on codes, may be more effective.

A modifier would allow flexibility across different procedures. For example, a 10% modifier for BMI >30 and a 20% modifier for BMI >40 would align with our data. However, enforceability remains a concern, given that modifier 22 has proven ineffective.

Add-on codes may offer a more reliable solution but would require careful development. One approach could involve stratifying codes based on both the obesity category and baseline work RVU valuation. For example:

- Low-valuation procedures (<20 wRVUs) with BMI >30 could receive an additional 3 wRVUs
- Medium-valuation procedures (20–35 wRVUs) with BMI >40 could receive an additional 7.5 wRVUs

This study provides evidence that obesity materially affects surgeons and their patients. It is not an exaggeration to state that the patient described in this article would not have survived without the intervention of a highly trained surgeon, available in person, 24 hours, 7 days a week. While treating obese patients is only one of many challenges surgeons face, it is a measurable and predictable factor that must be appropriately incorporated into a modern physician fee schedule.

Disclaimer

The thoughts and opinions expressed in this column are solely those of the authors and do not necessarily reflect those of the ACS.

Dr. Christopher Childers *is an assistant professor of hepatopancreatobiliary surgery at the University of Washington and Fred Hutchinson Cancer Center in Seattle. He also is a member of the ACS General Surgery Coding and Reimbursement Committee.*

Bibliography

Childers CP, Manisundaram NV, Hu CY, et al. Modifier 22 use in fee-for-service Medicare. *JAMA Surg.* 2024;159(5):563-569.

Childers CP, Petty AM, Selzer SJ, et al. Obesity and work in abdominal surgery. *J Am Coll Surg.* 2025;241(2). In press.

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Dr. Shahmir Chauhan

Phase III Trial Examines Lanreotide for Prevention of Postoperative Pancreatic Fistula

Sardar Shahmir B. Chauhan, MBBS
Venu G. Pillarisetty, MD, FACS
Jonathan G. Sham, MD, MBEE, FACS

Postoperative pancreatic fistula (POPF) remains the defining complication of pancreatectomy, leading to significant morbidity, mortality, and increased healthcare costs. Multiple trialed interventions have failed to meaningfully reduce the incidence of POPF.[1]

Somatostatin Analogs as Fistula Prophylaxis

Since the early 1990s, numerous studies have explored the role of perioperative somatostatin analogs (SSAs) for POPF prophylaxis. Early trials primarily used octreotide and reported mixed results, and interpretation of study findings is complicated by evolving definitions of POPF over time.[2]

In 2014, a landmark randomized controlled trial (RCT) by Allen and colleagues demonstrated that perioperative pasireotide, a newer generation SSA, significantly reduced the incidence of POPF in patients undergoing pancreatectomy. The trial reported reductions in POPF rates in patients undergoing both Whipple (10% versus 21%) and distal pancreatectomy (7% versus 23%), but has been criticized due to its single-center design and off-target effects (e.g., nausea, bloating) associated with the drug.[3]

Lanreotide, a long-acting SSA with a more favorable dosing and side-effect profile has been proposed for use in POPF prophylaxis. In a recent single-arm phase 2 trial conducted at the University of Washington in Seattle, a single dose of preoperative lanreotide was associated with POPF rates of 11% in patients undergoing pancreaticoduodenectomy and 3% for distal pancreatectomy, both significantly lower than institutional and published historical rates.[1,2,4]

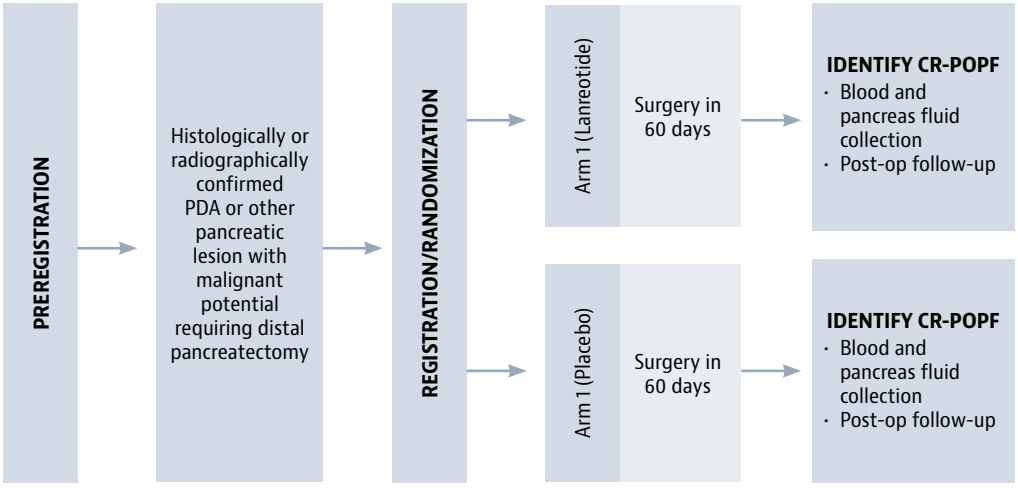
Interestingly, in both the pasireotide and lanreotide studies, SSA administration was associated with a greater effect in patients undergoing distal pancreatectomy (as opposed to pancreaticoduodenectomy). This relationship has been observed in other studies, including a meta-analysis of 18 trials evaluating multiple perioperative SSAs, showing a relative risk for developing POPF of 0.41 in patients undergoing distal pancreatectomy, compared to 0.87 in patients undergoing pancreaticoduodenectomy. Researchers concluded that "further RCTs are urgently needed to investigate the effect of somatostatin analogues after distal pancreatectomy."[2]

Latest Trial Seeks to Improve Outcomes

SWOG 2408 (NCT06807437) is a multicenter, phase III randomized controlled trial sponsored by the National Cancer Institute (NCI) Division of Cancer Prevention comparing the incidence of POPF in participants undergoing distal pancreatectomy who receive a single dose of preoperative lanreotide (120 mg subcutaneous) versus placebo (see Figure, page 46). Participants must be planning to undergo elective distal pancreatectomy for a malignancy or lesion with malignant potential within 60 days of registration. Planned enrollment of 274 eligible participants will take place at academic and community sites in the US and Canada.

Due to recent data suggesting differential rates of POPF with the use of postsurgical drains,[5] postoperative drain use is optional, and participant randomization will be stratified by each surgeon's planned placement of a drain at the time of registration. Secondary study endpoints include comparing rates of biochemical leak, number of postoperative hospital days, and cancer-specific

Figure: Schema for SWOG 2408



quality-of-life metrics (EORTC QLQ-C30). Other pancreatectomy-related complications such as delayed gastric emptying, post-pancreatectomy hemorrhage, and time to initiation of chemotherapy will be evaluated as exploratory endpoints.

Inclusion criteria are intentionally broad in an attempt to perform a pragmatic, generalizable trial. Any patient with a histologic or radiographic diagnosis of pancreas malignancy or a lesion with malignant potential is potentially eligible. Common clinical diagnoses may include pancreas ductal adenocarcinoma, pancreatic neuroendocrine tumor, intraductal papillary mucinous neoplasm, and mucinous cystic neoplasm. Notable exclusion criteria include planned multivisceral resection (e.g., partial gastrectomy, modified Appleby-type procedure), treatment with a SSA within the prior 180 days, previous radiation therapy to the pancreas, a history of peptide receptor radionuclide therapy, and a primary diagnosis of pancreatitis (without suspicion of malignancy).

Opportunity to Improve

Researchers participating in the SWOG 2408 trial aim to bring clarity to the role of SSAs in POPF prophylaxis through a straightforward study targeting participants most likely to benefit from the intervention. The study was activated in February 2025 and is open to all participants of the NCI National Clinical Trials Network and the NCI Community Oncology Research Program sites.

For more information, contact national study chair Dr. Jonathan Sham at jsham@uw.edu.

Disclaimer

The thoughts and opinions expressed in this column are solely those of the authors and do not necessarily reflect those of the ACS.

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References

1. Chauhan SSB, Vierra B, Park JO, Pillarisetty VG, et al. Prophylactic somatostatin analogs for postoperative pancreatic fistulas: A cross-sectional survey of AHPBA surgeons. *HPB (Oxford)*. 2024;26(10):1229-1236.
2. Schorn S, Vogel T, Demir IE, et al. Do somatostatin-analogues have the same impact on postoperative morbidity and pancreatic fistula in patients after pancreaticoduodenectomy and distal pancreatectomy? – A systematic review with meta-analysis of randomized-controlled trials. *Pancreatology*. 2020;20(8):1770-1778.
3. Allen PJ, Gönen M, Brennan MF, et al. Pasireotide for postoperative pancreatic fistula. *N Engl J Med*. 2014;370(21):2014-2022.
4. Pillarisetty VG, Abbasi A, Park JO, Sham JG. A phase II trial of lanreotide for the prevention of postoperative pancreatic fistula. *HPB (Oxford)*. 2022;24(11):2029-2034.
5. Vissers FL, Balduzzi A, van Bodegraven EA, et al. Prophylactic abdominal drainage or no drainage after distal pancreatectomy (PANDORINA): A study protocol of a binational multicenter randomized controlled trial. *Trials*. 2022;23(1):809.

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Disastrous Consequences Result from Medical Billing Cyberattack on Small Practice

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

It is hard work to complete medical school, a residency, a fellowship, and then begin the early years of a practice.

IT IS EVEN MORE CHALLENGING to manage the growing patient volume and acquire new partners.

Managing a large office practice can be an escalating obstacle for busy physicians. But after several years of putting in the hard work, the partners are typically able to relax to a certain degree as their dream of a successful practice becomes a reality.

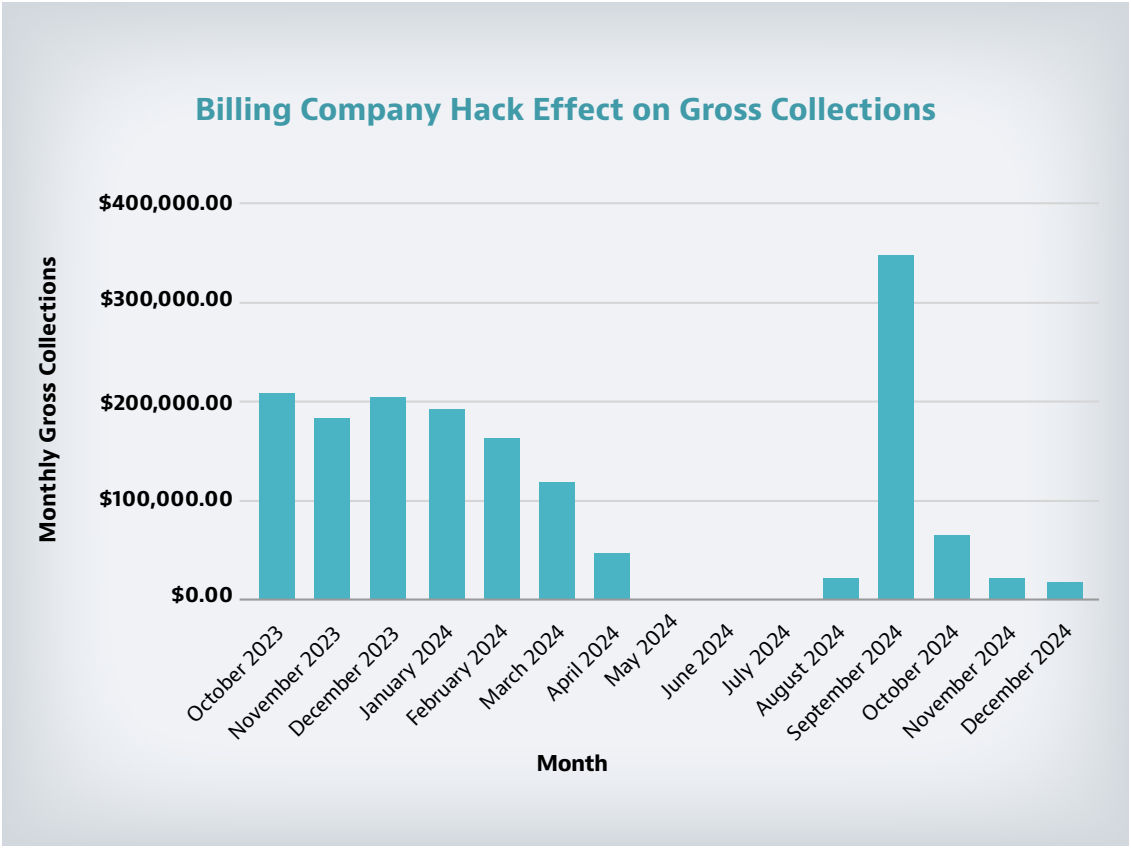
All it takes is one disruption—one seismic shock—to threaten everything that has developed over decades. This kind of disruptive event is often a cyberattack, one that specifically interrupts the billing process.

A billing-related hack was experienced by a small surgery practice in February 2024, when cyber criminals unleashed a ransomware attack on the medical billing company used by the practice.

We all know the process. The billing company gets the billing codes from the physician and converts them into claims, which are then sent to the insurance company that approves the claims and pays the medical practice.

As a result of this cyberattack, no invoices were processed by the billing company. Very quickly, the surgery practice's income stream went dry and came to a complete stop.

It became clear that a loan would have to be secured to pay the salaries of the staff and the expenses of managing the practice. But who would provide this six- or seven-figure loan? How would it be secured? Who would be responsible for the interest? How long would it take for the billing company to restart the billing process, and how



could it guarantee further attacks weren't on the way? How long would the physician partners in the medical practice be able to handle a dramatically reduced income—or none?

It took 3 months for the medical practice to secure a loan from the billing company. During that time, the physicians in the practice continued to see patients, perform procedures, generate notes in the chart, and provide professional service codes for the billing company. But no bills were being sent from the billing company to the insurance company. Therefore, no income was being generated to pay the office staff, partners, or mortgage on the facility.

If this situation reads like a nightmare scenario, that is because it is and, unfortunately, it is far more common than you might like to believe.

Since 2019, the US Department of Health and Human Services reported that data breaches from hacking and ransomware have increased by 89% and 102%, respectively. In 2024, 259 million US residents had some portion of their healthcare records stolen over the course of about 590 cyberattacks—190 million of which came from a single ransomware attack.

"These types of attacks cause significant delay and disruption to healthcare delivery, posing a very significant and real risk to patient safety and community safety," said John Riggi, national advisor for cybersecurity and risk for the American Hospital Association (AHA).

In 2023, Riggi helped The Joint Commission develop "*Sentinel Event Alert* 67: Preserving patient safety after a cyberattack" to provide guidance and safety actions for healthcare organizations:

- Evaluate hazards vulnerability analysis findings and prioritize hospital services that must be kept operational and safe for an extended downtime.
- Form a downtime planning committee to develop preparedness actions and mitigations, with representation from all stakeholders.
- Designate response teams.

The guidance also includes recommendations for smaller surgical practices:

- Understand your dependency on technology and ensure you have the proper cybersecurity controls to prevent or detect a cyberattack when it occurs; plan for how to respond and recover. The Health Industry Cybersecurity Practices web page has free resources and guidance.
- Find competent professional security companies to review and monitor your cybersecurity.
- Know what to do if your third-party providers are hacked, including how that will disrupt your practice.
- Set up immutable backups that cannot be accessed and encrypted by the hackers.

"The intent of all this is not to scare, but to help organizations be aware of the threat and help them prepare," Riggi said.

Additionally, smaller practices that are hacked and cannot submit invoices to an insurance company should ask their billing company if it can provide a secured loan, as well as what the terms of that loan would be and who would be responsible for paying the interest on it.

Surgical practices should ensure their systems and software are regularly updated and patched to protect against known vulnerabilities, and staff should be provided with regular cybersecurity training so they can learn how to recognize phishing attempts, social engineering tactics, and other common threats.

These strategies are critical for physicians and surgeons, because even one misstep can lead to catastrophic results for their practice, disrupting the income stream and partners' long-term dreams of having successful careers.

"Small practices are effectively small businesses and they are going to take a huge hit if they are offline for an extended period of time," said Scott Gee, deputy national advisor for cybersecurity and risk for the AHA. "For a small business, the impact of a 30-day outage is incredible. A hospital with a lot of cash on hand or a much larger enterprise has a very hard time surviving that. But, for a small surgical practice, this is going to be devastating. So, having those contingencies and having a plan in advance is critical." B

EDITOR'S NOTE: *Additional information about cybersecurity is available in the article, "Surgeons Need to Engage in Battle against Cyberattacks," found in this issue.*

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.

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The Nearly Headless Patient

Tyler G. Hughes, MD, FACS

NOTE FROM DR. HUGHES: *Talking about the "average" surgeon is like referring to an "average" astronaut. Every story is unique; there is no average. In this article series, I will feature surgeons of different specialties, backgrounds, ages, and practice types. Some of the surgeons you may know well, while others have worked in near obscurity. As surgeons, they serve all with skill and trust. If you are an ACS member and would like to meet with me to share your experiences, contact bulletin@facs.org.*

WHEN A PHONE RINGS in the middle of the night in a surgeon's home, the adrenal glands do what they do—secrete adrenaline into the bloodstream. Sleep stops. A hand instinctively gropes for the noisy device. As the surgeon lifts the phone to their ear, they wonder whether all the skill and experience of a lifetime will be necessary to answer the call or if it is a false alarm.

If it is the former, the surgeon will be bounding out of bed and away from the warmth and comfort of home. The surgeon will be dead tired in the morning, and all the work planned for the day will still be there to be addressed at some point. If the call is a false alarm, sleep will still be disrupted as the effects of adrenaline slowly burn off during the next 20–40 minutes: heart pounding, blood pressure elevated, pupils dilated.

At the time of this particular phone call, Jim Conyers, MD, FACS, was a young general surgeon not long out of training. With Robert Redford-chiseled features and blond hair, he looked more the part of a movie star. He sported a drooping western cowboy-style mustache and had a slow Texas drawl.

Calm under fire and studious by nature with just a dash of mischief about him, Dr. Conyers was a steady influence during situations that were inherently chaotic. Under this veneer of perfection, Jim was like any other surgeon—willing to take on challenges, fascinated with the human body and what it can withstand, dedicated to his patients, and always carrying that small doubt

as to whether he would be good enough to deserve the trust he needed to do his job.

"Dr. Conyers," a female voice said about an octave higher than normal. "We need you to come to the hospital right now. We have a man coming in with his head cut off."

Instantly awake, Dr. Conyers thought, "You don't hear that every day! This sounds more like a case for a coroner than a general surgeon. I'm going in just to see what is really happening."

"Is the patient alive?" Dr. Conyers asked.

"We think so."

"I'm on my way. 'Time to ride to the sound of the guns,'" he said, quoting his mentor, Ernest Poulos, MD, FACS.

Dr. Conyers slipped out of bed. His wife, Sharon, stirred slightly but she had learned ways of sleeping through most of these late-night calls. She figured out if the call was serious by whether Jim was in bed when she awoke.

By the bed hung a pair of scrubs, which surgeons generally keep at the ready for occasions like this. Excursions to the hospital at night often resulted in stains on street clothes that tended to be permanent. It is cheaper and better to have scrubs on when facing the unknown.

Trusted Mentor Reappears

Dr. Conyers rounded the corner to the tiny emergency department (ED) of his country hospital. As he did so, the ambulance bay doors flew open. A patient on a gurney came through with three emergency medical services (EMS) clinicians in tow and was rushed into ED #1.

"Well, probably not dead. Probably not decapitated," Dr. Conyers said to himself.

He took a breath and followed the patient into the room. There, he saw the usual ordered chaos of a major trauma arrival. IV lines were being checked, vital signs were being taken, and nurses were talking to the patient. But the patient wasn't talking back.

As Dr. Conyers surveyed the situation, his attention gravitated toward the patient's head and neck, and he noticed that the monitors confirmed the patient was alive, but mostly, dead. The blood pressure was sickeningly low, the pulse rate dizzily high, and the oxygen content of his blood dangerously low. Within moments, the pulse rate would likely nosedive, then stop.

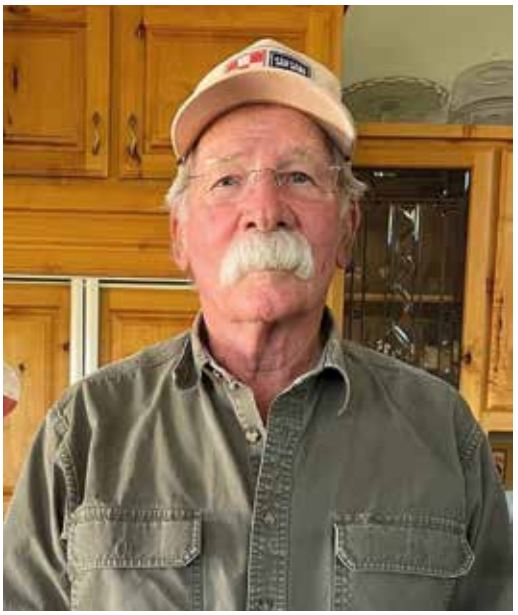
A large, bloody bandage covered the patient's neck. His face was bluish in color. He was suffocating. Basic first aid is to put pressure on a bleeding wound, but this is hazardous in the neck area. All the tubing that carries blood to the brain is in the neck. All the wires ("nerves") that control the body go through the neck. All the air going to the lungs goes through the neck.

There was nothing to do but relieve this pressure and deal with whatever was lurking underneath the bloody bandage that had kept the patient alive to this point but if not removed soon, would contribute to his death.

Donning gloves, Dr. Conyers began removing the heavy bandage while simultaneously adjusting his head so that he

Opposite: This photo of Dr. Jim Conyers was taken around the same time as the decapitation case.

Above: Throughout the years, Dr. Conyers's wife, Sharon, learned to sleep through most of his late-night interruptions.



Left:
Dr. Jim Conyers teaches a local girls group how to tie surgical knots.

Right:
Now retired, Dr. Jim Conyers is a rancher.

wouldn't be blinded by a gush of blood from the wound. A surgeon learns this trick early in their career. It seems like a squirting blood vessel always aims at one's eyes. Protective goggles might keep things out of the eyes, but you still need to be able to see. So, turning your head slightly can keep the blood out of your line of sight.

An hour previously, while Dr. Conyers was still asleep, the patient had been traveling down a farm-to-market road. For unknown reasons, he had lost control of the vehicle—perhaps he fell asleep. His car exited the road and barreled into a typical Texas field full of cattle and bound by barbed wire fencing. All probably would have been well since barbed wire fences are hardly a barrier to two tons of steel traveling 60 miles per hour.

However, directly in the path of the hurtling car was a classic tin shed in the pasture used to house feed and other assorted tools of the cattle trade. As the car struck the shed, it sheared the tin wall into a horizontal and vertical set of fragments. The horizontal piece took on the appearance of a giant scythe entering the windshield as if it was soft butter and then struck the driver across his neck.

Upon removing the bandage, two things happened. The patient took a breath, but not through his mouth. Furious bleeding started, although it did not squirt as far as it normally would since the blood pressure was fading fast. The patient then exhaled, delivering a mixture of blood and bubbles into the wound.

Dr. Conyers could see the trachea was transected and held together only by the thin membrane of tissue along the back of the windpipe. The patient could breathe but was literally drowning in his own blood. Dr. Conyers asked for a breathing tube and shoved it down the trachea. The patient had a stable airway now—well, stable compared to the drowning proposition before. The trachea could tear completely in two and retract into the chest if they weren't incredibly careful.

Airway temporarily controlled, Dr. Conyers placed clamps on the large vessels he could see and then applied moderate pressure on the many small areas oozing blood. He still had a living patient.

"Is the OR ready?"

"Yes."

"Do we have anesthesia?"

"Yes."

"Blood on the way?"

"Yes."

Dr. Conyers contemplated the situation. He had a barely alive patient with an unstable airway. He was in a small hospital and had no assistant, except perhaps a scrub nurse who would have to do double duty passing instruments and assisting him.

They had blood, but not a lot on hand. Trying to transfer the patient would just deliver a corpse to the receiving hospital. He had to go to the OR. How he wished Dr. Poulos was next to him now.

About that time, he heard in his right ear, "Would you like some help, Jim?"

He recognized that voice. It was William C. Brooks, MD, FACS, one of his teachers from his residency. A genial man of indeterminant age, Dr. Brooks was one of the few surgical oncologists practicing in Dallas, Texas, those days.

Dr. Brooks had completed his fellowship after residency at MD Anderson Cancer Center in Houston, Texas. He routinely performed radical neck cancer surgery and was probably one of the most knowledgeable surgeons in neck anatomy in Dallas.

Glancing to his right, Dr. Conyers saw Dr. Brooks with his toupee on his head and a wry smile on his face.

Inwardly, Dr. Conyers exulted in seeing one of his mentors magically by his side, and said, "As a matter of fact, Dr. Brooks, I would like some help."

And so, the two surgeons walked rapidly together down the hall to the OR suite with Dr. Conyers holding pressure on the patient's neck while he and Dr. Brooks discussed their approach once they had the patient ready for operation. They were in the never-never land that surgeons experience when they are about to face a lethal challenge.

The surgeons had an idea of what they might do, but they also knew that rapid improvisation could very well be necessary. The patient was in such extremis that they could not assess the neurologic status. Being young was an advantage, as the patient probably had enough blood going through some of the vessels to the brain to keep it alive for a while.

This was the priority—to fix any vessels to the head. The airway would come next. Finally, a look around for injury to the esophagus, nerves, thyroid, and muscles.

Working through the night, the surgeons ultimately found the right carotid artery transected, the right jugular vein transected, and the trachea hanging by a thread. The esophagus was mercifully intact. One by one, the two pieced together what tin had rent asunder.

There were many miracles that night:

- The patient had not been decapitated.
- He was found quickly.
- He happened to be a member of the ambulance team, and word spread via scanner that one of their own was grievously injured.
- Dr. Brooks had a relative who worked with EMS in the town, and since the surgeon lived close to that country hospital, he got a call that help might be needed.
- Two very competent surgeons were present at just the right time, and one of them was an expert in neck anatomy.
- The patient's brain stayed alive long enough for vessel repairs to save him from stroke.

In the long run, the patient went home and lived a normal life except for the hoarseness of his voice (the nerve to the right side of his vocal cords was destroyed) and a surprisingly faint scar that belied the havoc ravaged upon him that fateful night.

Dr. Conyers went on to have an outstanding career as a general surgeon and eventually retired to a ranch in San Saba, Texas, where his physiognomy finally matched his hobby of being a real-life cowboy.

As for Dr. Brooks, he kept teaching surgeons, including yours truly, the secrets of neck dissection. No one ever figured out how old Bill Brooks really was, but he lived a long time saving lives. Quick with a smile and gentle of voice, he had the knack of magically appearing when he was most needed.

Disclaimer

The thoughts and opinions expressed in this article are solely those of the author and do not necessarily reflect those of the ACS.

Dr. Tyler Hughes *is a retired Kansas rural surgeon. Born in Texas, he trained in Dallas but spent most of his career working as a surgeon in McPherson, Kansas—a town of 13,000. In retirement, Dr. Hughes plans to travel the world in search of surgeon stories.*

Five Key Takeaways Emerge from 2025 ACS Cancer Conference

Sheila Lai, MA

More than half of cancer patients diagnosed at ACS Commission on Cancer (CoC)-accredited hospitals undergo surgery as part of their treatment.[1]

Nearly 500 cancer specialists, including surgeons, cancer registrars, and program managers, attended the conference.

WHILE SURGEONS play a significant role in the treatment of cancer patients, collaboration with oncologists, nurse practitioners, physical therapists, and other specialists remains a critical component to care.

Organized under the theme "Harnessing the Power of Collaboration," the 2025 ACS Cancer Conference, held in Phoenix, Arizona, March 12–14, explored the meaning of collaboration and how teams can work together to address the evolving needs of cancer patients, survivors, and their caregivers. The conference drew nearly 500 attendees, including surgeons, cancer registrars, and other cancer specialists.

"Taking care of cancer patients requires multidisciplinary care," said Ronald J. Weigel, MD, PhD, MBA, FACS, Medical Director for ACS Cancer Programs, during his opening remarks. "We want to highlight collaboration between hospitals, particularly as it relates to taking care of patients in underserved areas, one of them being rural."

Throughout more than 25 sessions divided into four tracks (clinical, quality improvement, accreditation, and research), attendees filled sessions with meaningful discussions on the quality of cancer care in an age when treatments are not a one-size-fits-all approach.

Five key takeaways from the cancer conference are:

1. Collaboration Requires Strategic Planning

In the keynote panel session, representatives from multiple societies that collaborate with the ACS CoC—American Cancer Society, American Society of Clinical Oncology, American Society for Radiation Oncology (ASTRO), National Comprehensive Center Network (NCCN), Society for Immunotherapy of Cancer, and Society of Surgical Oncology—presided over a panel discussion on ways national organizations can work

together to not only improve cancer care but also develop pathways that foster innovation.

"There's this overarching need for us to not be so siloed," said Laurie J. Kirstein, MD, FACS, a breast surgical oncologist from Memorial Sloan Kettering Cancer Center in Middletown, New Jersey, and Chair of the CoC. Dr. Kirstein called for organizations to meet more formally and more frequently. "We all care about improving the quality of patient care and making sure that quality doesn't decrease in any way."

The panel focused on two specific areas where more collaboration likely can make the most impact in cancer care: streamlining the development of uniform guidelines and standards, as well as uniting on legislative priorities, such as reducing the burden of insurance pre-authorizations and advocating for increased funding of cancer research.

"We are all much better off when we work together," said ASTRO CEO Vivek S. Kavadi, MD, MBA, FASTRO. "We work together across the House of Medicine, specifically with various cancer organizations and coalitions, to advocate for cancer care in the multiple venues where it's necessary."

Panelists also emphasized that guidelines are more effective when they are cross-referenced by other organizations and developed with input from multiple stakeholders.

"There should be a consistent way for each of our organizations to amplify the collective voice of all guidelines and organizations," said Wui-Jin Koh, MD, NCCN senior vice president and chief medical officer.

Dr. Koh noted that 97% of NCCN guidelines panels include a patient advocate, which they define as someone who is a cancer survivor or caregiver to a patient with cancer. These viewpoints are fundamental to driving change and highlighting multiple perspectives that otherwise go unheard, Dr. Koh said.

Collaboration also fosters unity in the wake of natural disasters and other disruptive events. Leticia Nogueira, PhD, MPH, scientific director of health services research at the American Cancer Society, recalled that the COVID-19 pandemic was a notable period that called for uniform clinical guidance in an unprecedented time.

"Nowadays, we think of the LA wildfires or Hurricane Helene as disasters, but COVID was also a disaster," she said, explaining that several medical organizations came together to develop guidelines related to the care of cancer patients during the pandemic. "I think that collaboration was key. None of these organizations could have figured out everything alone."

2. Rural Cancer Patients Require Innovative Solutions

Despite evidence demonstrating that CoC accreditation increases high-quality care and outcomes for cancer patients, not all rural settings have the resources to apply for and maintain accreditation, and some CoC standards may not be achievable for smaller hospital groups. Recognizing the distinct needs of rural patients, who compose about 15%-20% of the US population,[2] the CoC will be launching a new accreditation track for hospitals located in rural counties.

Presenters described the unique challenges of rural areas,

Phoenix, bustling with activity from spring training, provided a lively atmosphere to host a conference focused on collaboration and teamwork.

where maintaining surgeons and linking care can be a struggle, noted Neal W. Wilkinson, MD, FACS, a general surgeon in Kalispell, Montana, and an ACS Governor. Each rural state ideally should have access to multidisciplinary and regional hospital units/teams, he said, and the CoC-accreditation process should entice and encourage participation by considering the distinct needs of this population.

It also is important to recognize that one approach to improving rural cancer care won't work everywhere, noted Waddah B. Al-Refaie, MD, FACS, chair of surgery at Creighton University School of Medicine in Omaha, Nebraska. He described the potential of artificial intelligence (AI) to track patient well-being and recovery beyond the use of standard clinical measures.

One of his team's projects with Georgetown University in Washington, DC—Remote Symptom Collection to Improve Postoperative Care (RECOVER)—is evaluating the potential of a voice-assisted remote symptom monitoring system to improve patient-clinician communication and treatment adherence. The tool, which alerts care teams if a patient experiences a concerning health issue postoperatively, is being assessed in rural and suburban patient populations.

"The digital divide is a real problem in rural America. AI can offer plausible solutions," said Dr. Al-Refaie. "To our surprise, there was a higher retention rate found in the rural populations to stay in those studies."

While barriers to care in rural regions are significant, panelists also offered strategic solutions to support hospitals of all sizes in achieving accreditation.

"In our region, going through the CoC-accreditation process has been what I call the great equalizer," said Charles H. Shelton, MD, medical director of Outer Banks Health in Nags Head, North Carolina, and a member of the CoC Quality Improvement Committee. Outer Banks Health, a 19-bed hospital situated in the Barrier Islands, received CoC accreditation in 2016 and National Accreditation Program for Breast Centers (NAPBC) accreditation in 2022.

Dr. Shelton estimated that before receiving CoC accreditation, approximately 85% of patients in the county traveled to urban areas, sometimes as far as 40-80 miles, to receive their cancer care.

After implementing the CoC and NAPBC standards, which provided the hospital with guidance to leverage their existing community relationships and strategically invest in cancer care, that model has flipped: patient volumes for cancer have increased nearly five-fold, and the region's cancer mortality

Attendees participated in several discussions and Q&A sessions on showing the value of accreditation and evolving treatment options for patients with cancer.

Dr. Leticia Nogueira of the American Cancer Society presented on the value of the ACS National Cancer Database.

rates, once the worst in the state, are now on par with state averages. Access to comparative data on patient retention, shifts in cancer stage, and timeliness metrics has especially helped fuel improvements for patient-centered outcomes, Dr. Shelton added.

Building a network also can help rural providers and hospitals, which often struggle with access to clinical trials and face financial constraints from operating in low-volume, high-fixed cost settings, said Mary Charlton, PhD, a professor of epidemiology at the University of Iowa in Iowa City. A multidisciplinary team at the University of Iowa is collaborating with the University of Kentucky in Lexington to translate lessons learned from the Markey Cancer Center Affiliate Network (MCCAN) model to Iowa. The MCCAN network assists hospitals in achieving the CoC standards through tailored programs and resources, taking into account smaller staff sizes and helping centers gradually increase accreditation efforts.

"It helps to have other people to bounce ideas off of. If you're a lone person at a rural hospital with a full caseload, that's a really hard model to follow," Dr. Charlton said.

3. Care Plans Should Consider Quality of Life and Survivorship

The number of cancer survivors is expected to grow from 8 million to nearly 26 million in 2040.[3] To prioritize resources for patients both during and after their cancer treatment, survivorship standards remain an important component of the CoC and NAPBC.

Several presentations at the conference described opportunities to pivot guidelines and support patients with evidence-based practices focused on nutrition, exercise oncology programs, and comprehensive pre- and post-rehabilitation efforts.

"If I find out about a patient who has lost 40 pounds and they are about to undergo a Whipple procedure, I am going to play investigator: Why did they lose the weight? What happened? It's often very surprising what the issue is," said Renee E. Stubbins, PhD, RD, a clinical oncology dietitian educator at Houston Methodist Neal Cancer Center in Texas.

Specifically, transportation issues, lack of access to healthy food, or emotional distress might contribute to lower nutritional status.

"It's my job to figure out why, and it's often not what you think it is—sometimes it is related to the cancer, but sometimes it's not," Dr. Stubbins said.

4. Accreditation Adds Value to Hospitals

A growing body of research demonstrates the value of accreditation,[4,5] and national quality improvement (QI) projects have allowed teams across the country to focus on specific care gaps such as smoking assessments and missed radiation appointments. However, each hospital faces unique challenges and barriers to improving quality.

Daniel J. Boffa, MD, MBA, FACS, division chief of thoracic surgery at Yale Medicine in New Haven, Connecticut, and Vice Chair of the CoC, facilitated a discussion on ways multiple programs can be managed more efficiently within hospitals without putting undue strain on them. While there may be some general overlap between the accreditation programs, each program guides the hospitals in distinct ways to look at specific aspects of care. Opportunities exist to streamline the accreditation process for hospitals managing multiple programs, as well as to explain the value of accreditation better to the public and providers outside of cancer care, especially among primary care physicians who may be making patient referrals.

"There is brand recognition to being in an accreditation program; it is not a trivial thing," Dr. Boffa said. "There is a real opportunity to let many more people know what is behind the accreditation process."

Some changes are in progress to streamline the accreditation process for hospitals with multiple programs. A unification project between the CoC and NAPBC also is underway to reduce redundancy and allow for more meaningful collaboration

During the keynote panel, Dr. Laurie Kirstein called for organizations to meet more formally and more frequently.

on quality collaboratives and projects. To help accomplish this goal, NAPBC programs applying for an initial site visit in 2026 or beyond must be CoC accredited.

5. Data for Quality Projects and Research Must Be Leveraged Smartly

The need for smarter and faster access to data was at the forefront of several presentations, spanning discussions on AI as well as how to leverage data more efficiently for projects. There are several upcoming components to help streamline access to real-time data, including new data query and visualization techniques within the Rapid Cancer Reporting System of the National Cancer Database.

AI also has the possibility of transforming cancer care, but only when integrated properly.

Taryne A. Imai, MD, FACS, chief of the Division of Thoracic Surgery at Queen's Medical Center in Honolulu, Hawaii, and Vice Chair of the CoC Education Committee, described the potential of a "virtual nodule clinic" to automatically identify patients at risk of lung cancer who might otherwise miss screening.

By developing an AI software that screens all radiology reports with natural language processing, the team has been able to apply risk calculators to assess the patient's risk for lung cancer. The project has the potential to close critical lung cancer care gaps in Hawaii, which has the sixth highest incidence of lung cancer in the country and ranks last in the country for early detection of lung cancer.[6]

However, for AI to provide the most impact, especially for diagnostic and predictive analyses purposes, the AI program should be fully integrated within a medical record system, and clinician involvement is also key.

"The idea is for AI to enhance the work of healthcare providers and not necessarily replace their decision-making or the human workforce," Dr. Imai said. "AI needs to be able to adapt to new data and an expansive healthcare environment. We need to regularly evaluate AI performance."

A keynote panel on the value of collaboration, moderated by Dr. Ronald Weigel, featured representatives from several national cancer organizations.

Dr. Waddah Al-Refaie described the potential of AI to close care gaps in rural America.

Other news presented at the conference:

- **New operative standards grant:** Assessing the Effectiveness and Significance of the Operative Standards Program will be one of the first large-scale projects aimed at evaluating operative standards across cancers and hospital types and assessing the main barriers faced when implementing the standards.
- **American Joint Committee on Cancer (AJCC) Version 9 Protocols:** The AJCC team is transitioning from editions to versions and is refining the Version 9 protocol production process. Four protocols were released in 2025—thymus, lung, diffuse pleural mesothelioma, and nasopharynx—and several other protocols are in the pipeline, including HPV-associated oropharyngeal cancer and conjunctival carcinoma.

The 2026 Cancer Conference will be combined with the Quality & Safety Conference. More details on this new format will be announced in the coming months. B

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References

1. American College of Surgeons. National Cancer Database. Available at: https://www.facs.org/quality-programs/cancer-programs/national-cancer-database. Accessed March 26, 2025.
2. Curtin SC, Spencer MR. Trends in death rates in urban and rural areas: United States, 1999–2019. NCHS Data Brief. September 21, 2021. Available at: https://dx.doi.org/10.15620/cdc:109049. Accessed March 26, 2025.
3. Office of Cancer Survivorship: Statistics and graphs. National Cancer Institute. Available at: https://cancercontrol.cancer.gov/ocs/statistics. Accessed March 21, 2025.
4. Chan K. Value of Commission on Cancer hospital accreditation. Presented at the ACS Cancer Conference, March 13, 2025, Phoenix, Arizona. Available at: www.facs.org/media/bxfpz5to/chan-kelley-coc-value-of-accreditation.pdf. Accessed March 27, 2025.
5. Bell R. Value of NAPBC/NAPRC. Presented at the ACS Cancer Conference, March 13, 2025. Available at: www.facs.org/media/zlldzhix/bell-raheem-value-of-napbc-naprc-accreditation.pdf. Accessed March 31, 2025.
6. Imai T. Can AI improve the quality of care? Presented at the ACS Cancer Conference, March 13, 2025, Phoenix, Arizona. Available at: www.facs.org/media/o1sdqmy1/imai-taryne-can-ai-improve-the-quality-of-care.pdf. Accessed March 27, 2025.

Trauma Surgeons Warn Civilian Systems Lack Readiness

Tony Peregrin

The ACS Committee on Trauma (COT) 2025 Annual Meeting convened jointly with the Advanced Trauma Life Support® (ATLS®) Global Symposium, March 12–16, in Chicago, Illinois, offering inspirational stories and best practices, as well as warnings about a changing geopolitical landscape.

MORE THAN 700 PARTICIPANTS from 45 countries attended. The COT Annual Meeting, which is open to COT members only, recognized the 10th anniversary of the Future Trauma Leaders (FTL) Program, an initiative that provides in-depth training and mentoring opportunities for early career trauma and acute care surgeons. The ATLS Global Symposium, which expanded this year to 2.5 days of programming, focused on the launch of the *ATLS Course Manual* (11th edition), with sessions providing best practices for trauma education from around the world.

Role of Civilian Trauma Centers during Military Conflict

In addition to central and regional COT updates, 15 Spotlight Discussions were presented with the goal of enhancing collaboration and eliciting feedback on topics, including prehospital blood protocols, pediatric trauma, injury prevention, and National Trauma Emergency Preparedness System (NTEPS) development.

This year's Special Session, "A Bias for Action: Preparing the US Healthcare System for Large-Scale Combat Operations (LSCO)," was inspired by a Spotlight Discussion from the COT meetings held during the 2024 Clinical Congress. It addressed the critical role civilian trauma centers will play in managing modern warfare-related injuries. Conflicts with peer or near-peer adversaries could result in a substantial number of casualties during the initial phase, with estimates suggesting the repatriation of 1,000 to 3,000 casualties to the US per day for the first 100 days of combat.

"Our civilian beds will be overwhelmed fairly quickly if this happens—and not just trauma beds," said session moderator Jeffrey D. Kerby, MD, PhD, FACS,

Chair of the ACS COT. "When you look at hospital capacity across the country, the total capacity of Level I trauma centers is 17,000 beds a day—so 1,000 patients a day returning to the US means we have 17 days of capacity," he added, noting that the US trauma system would still need to maintain care for civilian patients as well.

US Army Colonel (retired) John B. Holcomb, MD, FACS, a professor of surgery at The University of Alabama at Birmingham and the Uniformed Services University of the Health Sciences in Bethesda, Maryland, noted that—until now—virtually all military combat events resulted in expected injury patterns, including extremity, truncal, junctional, head, burn, and psychological—depending on the setting (urban, rural, sea, and trench).

New warfare-related injury patterns, including hyperbaric- and hypersonic-related injuries, are now being reported from Ukraine, said Dr. Holcomb, with larger numbers of tympanic membrane (TM) injuries in survivors, likely a result of blast overpressure.

"If it's enough blast overpressure to rupture the TM, they probably have an injury to their brain as well," suggested Dr. Holcomb. He also described an increase in amputations and renal failure cases related to extremely prolonged evacuation times, due to limited, if any, air evacuation options.

Citing observations from colleagues recently or currently deployed in an LSCO situation, Dr. Holcomb said that combat has shifted from artillery to drone use. "It's a different war. Even within the last 18 months—this has turned into a drone war. Unfortunately, any kind of electronic warfare countermeasures don't work because some of these drones are controlled by fiber-optic cable."

Left to right: Maryana Svirchuk, Dr. John Holcomb, Dr. Jeffrey Kerby, Dr. John Armstrong, US Public Health Service Rear Admiral Craig Vanderwagen, MD, and Kyle Remick, MD, FACS

"Are we prepared as a medical community? I think the answer is actually no."

Dr. Brian Eastridge

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Paraphrasing something he heard from a young major on the front lines, Dr. Holcomb explained that if a drone can see it, a drone can kill it. "There is something known as 'clearing the battlefield' for the medics, a military practice since at least the Civil War. But today, if you clear the battlefield, and you've got a drone up there observing with medics moving the severely injured—you've just created more deaths," he said.

Drones also are deployed to attack military aid stations, which provide initial medical care to the wounded, and the Forward Surgical Team units, which offer more advanced mobile surgical care closer to the front lines.

"Imagine a drone flying into your forward surgery team tent and blowing up inside—this can easily be done with these devices. The answer is to go underground. It's a World War II message," Dr. Holcomb said, referring to the necessity of building subterranean healthcare facilities in combat zones to keep patients and physicians safe.

Preparing to effectively manage patient care within the scale of contemporary warfare also will depend on a national trauma care infrastructure—specifically NTEPS 2.0—with the capacity to care for large numbers of conflict casualties on a daily basis.

"In 20 years of war in southwest Asia, there were roughly 50,000 wounded heroes—20 years, 50,000 wounded heroes in an LSCO. Today, with estimates of the repatriation of at least 1,000 casualties per day to the US, we will have 50,000 wounded heroes is just 50 days," said John H. Armstrong, MD, FACS, Chair of the ACS COT Advocacy Pillar, chair of the US Defense Health Board's Trauma and Injury Subcommittee, and a retired US Army colonel.

A regionalized system of care is essential for wide-scale disaster preparedness, noted Dr. Armstrong, as evidenced by the healthcare profession's response to the COVID-19 pandemic. During this public health emergency, trauma surgeons and emergency medicine physicians helped establish Regional Medical Operations Coordination Centers (RMOCCs) in their states and regions to facilitate resource distribution alignment with emergency medical services, healthcare systems, and other agencies.

The five core elements of NTEPS 2.0, which are part of the request to the US Congress to establish a national trauma system, include public health readiness, standards, performance improvement, research, and public outreach.

"We should not be despondent. We have a good story to tell, and we need to leverage all the vehicles of advocacy to ensure Congress establishes NTEPS. The clock is ticking," Dr. Armstrong warned.

The sessions also included presentations describing the challenges related to transitioning civilian hospitals to treat severe trauma during the LSCO in Ukraine; an overview of the National Disaster Medical System Pilot Program; and an outline of the National Academies and RMOCCs Action Collaborative.

Building High-Functioning Trauma Systems

A session on "Improving Trauma Systems during Challenging Times" featured three panels addressing universal challenges associated with building and maintaining high-functioning trauma systems, including protracted conflicts, global pandemics, and limited healthcare funding.

The first panel, "Conflict and Trauma Systems—The Intersection of Improving Care for Those Injured in Conflict and to Develop Trauma Systems for Civilians"—outlined the importance of battle injury data and registries, which help drive innovation and implementation of new policies and

Left to right: Kristan Staudenmayer, MD, MS, FACS, US Navy Commander Jay Yelon, DO, FACS, Dr. John Holcomb, Dr. Jeffrey Bailey, Colonel Dhafer Kamal, MD, MSc, FRCS, and Dr. Brian Eastridge

procedures that ultimately improve patient care.

Jeffrey A. Bailey, MD, FACS, a professor of surgery at Washington University in St. Louis, Missouri, and a retired US Army colonel, spoke specifically about the evolution of Joint Trauma System (JTS) data. "This is the secret sauce of the JTS: delivery of trauma care, input that data into a registry, analyze the data, and then through process improvement, develop best practices. It's pretty simple."

US Army Colonel (retired) Brian J. Eastridge, MD, FACS, a professor of surgery at The University of Texas Health Science Center at San Antonio and Medical Director of the Military Health System Strategic Partnership ACS, described what a large-scale combat involving the US could look like in the future.

"Tomorrow's war is going to be much different. We're expecting LSCO with a near-peer adversary, which is something we haven't done in 75 years," he said. "It's going to be fought in multiple domains that we haven't been in in the last several years, including the addition of sea, space, and cyber. And there is going to be an imminent threat to your home."

Another key difference regarding LSCOs of the future is lower numbers of military physicians and surgeons.

"Are we prepared as a medical community?" asked Dr. Eastridge. "I think the answer is actually no. If you look at World War II, they started off with about 1,500 physicians and 500 surgeons. By the end of 1945, there were 55,000 physicians in the military. Today, we have about 500 surgeons in the US military. Even if they were to deploy all the active duty and all the reserve component, that's still not enough physicians."

The remaining two panels featured a townhall format with panelists addressing questions posed by the audience, sparking thought-provoking discussions on a variety of trauma care topics. In "Success in Adapting EMS Systems," the speakers outlined their biggest successes in prehospital care, including getting whole blood out into the community. They also described the importance of viewing EMS team members as clinicians and highlighted challenges, including low compensation and high turnover.

The "Show Me the Money/Advocacy for Trauma System Funding" panelists outlined how the ACS prioritizes its advocacy efforts, offered best practices for taking on an advocacy-related role, and summarized College resources, such as SurgeonsVoice and Action Alerts, that help members engage with lawmakers at state and federal levels.

For more information about the COT Annual Meeting, visit *The House of Surgery* podcast web page at *facs.org/houseofsurgery* and listen to episode 59 (dropping in mid-April).

John P. Sutyak, MD, FACS, ATLS Education Program Chair, introduces the forthcoming *ATLS Course Manual* (11th edition) at the Global Symposium.

Recommendations for Successful ATLS Promulgation

The 2025 ATLS Global Symposium drew course directors, instructors, site coordinators, and others to the meeting, which featured sessions on the ATLS 11 revision, developing trauma education simulations, and other programming, as well as the "Fostering Successful Global ATLS Programs" session that described best practices for overcoming challenges to successfully promulgate the ATLS course.

The panel of international ATLS instructors included Mentor Ahmeti, MD, FACS, Geoffrey Anderson, MD, MPH, FACS, Samir Ballouz, RN, BSN, MSc, IHM, Christopher M. Dodgion, MD, MSPH, MBA, FACS, and Adam Goldstein, MD.

Each panelist offered their perspectives on teaching the ATLS Course in areas with limited resources or in regions experiencing military conflict, including Ukraine, Israel, Lebanon, Kosovo, and sub-Saharan Africa. Notably, almost half of the ATLS courses offered annually take place outside the US and Canada, and the global trauma education community participates in all aspects of course design and content updates.

In lieu of formal presentations, panelists responded to questions posed by Dany Westerband, MD, FACS, the session moderator.

"There are a lot of physicians in Ukraine who don't do trauma in their daily lives, and they were getting flooded with trauma patients," said Dr. Anderson, when asked about his experiences with bringing ATLS to the eastern European country. "The need was immediate and urgent, and so we put together a suite of courses, including the flagship ATLS Course—which they asked for by name."

Dr. Anderson worked closely with the Ukraine Ministry of Health and the ACS COT starting in 2022 to overcome logistical barriers in order to offer the course to physicians in Ukraine. He traveled to Ukraine from Boston, Massachusetts, with a team of US physicians to teach ATLS, offering critical knowledge and skills to those who likely would be treating trauma patients.

Working in tandem with Tamer Jreis, MD, Dr. Goldstein also provided ATLS training in a region experiencing severe military conflict. They bring Israeli and Palestinian physicians together to engage in ATLS training through a program called Operating Together.

"We started Operating Together 3 years ago," explained Dr. Goldstein. "We brought 10 Israelis and 10 Palestinians together for the ATLS courses. And even during the war, we've managed to do seven courses now. There have been many challenges, as you can imagine, but ultimately, it's about community. It's about looking above

Left to right: Dr. Mentor Ahmeti, Dr. Geoff Anderson, Samir Ballouz, Dr. Chris Dodgion, and Dr. Adam Goldstein

everything that we see on social media and in politics. It's about humanity. ATLS really is the perfect building block to number one, improving trauma care, and then secondary, which is no less important, building the community."

Dr. Goldstein also described the logistical challenges of organizing the courses, including the long distances (30-40 kilometers) that Palestinian physicians would have to travel to attend the course. With early morning travel start times combined with long travel distances, physicians were arriving exhausted before the intensive training session started. To remedy this, Palestinian physicians were invited to arrive the night before the course.

"The idea is that eventually there will be a sustainable Palestinian trauma system," Dr. Goldstein said, underscoring the tenacity and courage of the physicians taking the ATLS Course, given the tensions in the region impacting everyone.

"During the war, as you all can imagine, the television is on everywhere, and everyone is on their phones getting alerts," said Dr. Goldstein. "The bravery, and what everyone is going through, on both sides in the most extreme situation, while simply focusing on improving trauma care—that's it. Nothing else comes up. And that is extraordinary because everyone has been affected by the war."

A notable discussion topic addressed during the session centered around advice for individuals or organizations that are considering promulgating the ATLS Course.

"The key to success is identifying and establishing relationships with your local champions and making sure that you have the leadership on board to support the course," said Dr. Dodgion. "If you don't know people in the area, contact the COT Region Chiefs. The programs that we promulgated in Ethiopia and Rwanda wouldn't have been successful without the immense support of Region 17. For both courses, we had ongoing support from the region after initial promulgation."

A recap of the 2025 ATLS Global Symposium is featured in episode 58 of *The House of Surgery* podcast; visit *facs.org/houseofsurgery.*

The 2026 COT Annual Meeting and ATLS Global Symposium will be held March 11–15, in Birmingham, Alabama. B

Tony Peregrin *is the Managing Editor of Special Projects in the ACS Division of Integrated Communications in Chicago, IL.*

Excelsior Surgical Society Celebrates 80 Years of Legacy in Rome

Jennifer Bagley, MA

In a powerful show of history, innovation, and international collaboration, nearly 100 military and civilian surgical leaders from around the world recently convened in Rome for the 80/10 commemorative Excelsior Surgical Society (ESS) Anniversary Meeting.

THE EVENT HONORED 80 YEARS since the original Excelsior Surgical Club was founded by military surgeons in the final months of World War II, while also celebrating 10 years since the Society was reestablished. The meeting also recognized the history, legacy, and ethos of military surgery and looked to the future as the US Department of Defense prepares for the potential of large-scale combat operations (LSCOs).

Held at the iconic Excelsior Hotel—the same venue where allied military surgeons first gathered in February 1945—the 3-day event paid tribute to the enduring legacy of military medicine and its ongoing improvement of combat casualty care.

"This was a truly historic event that celebrated the past, focused on lessons learned, and examined how we get better for future combat casualty care. Everyone was engaged during the meeting; it was collaborative, reflective, and inspirational to see the dedication to continuing the improvement of battlefield care for all servicemembers," said US Army Colonel Jennifer M. Gurney, MD, FACS, Immediate Past-President of ESS. "I hope that when people reflect on this meeting, it is a source of strength and resilience for them and a reminder of how important our mission is. Personally, I was humbled and inspired by everyone. It was a wonderful event for which I will forever be grateful to have been a part of."

Honoring the Past, Shaping the Future

The original Excelsior Surgical Club was born from the shared experiences of surgeons from the US and allied countries who were deployed in the Mediterranean Theater of Operations and came together to reflect on battlefield surgical cases and advance best practices in trauma care. What began as a wartime necessity soon became a lifelong commitment to medical collaboration, with bonds that lasted until the final founding member passed away in 2008.

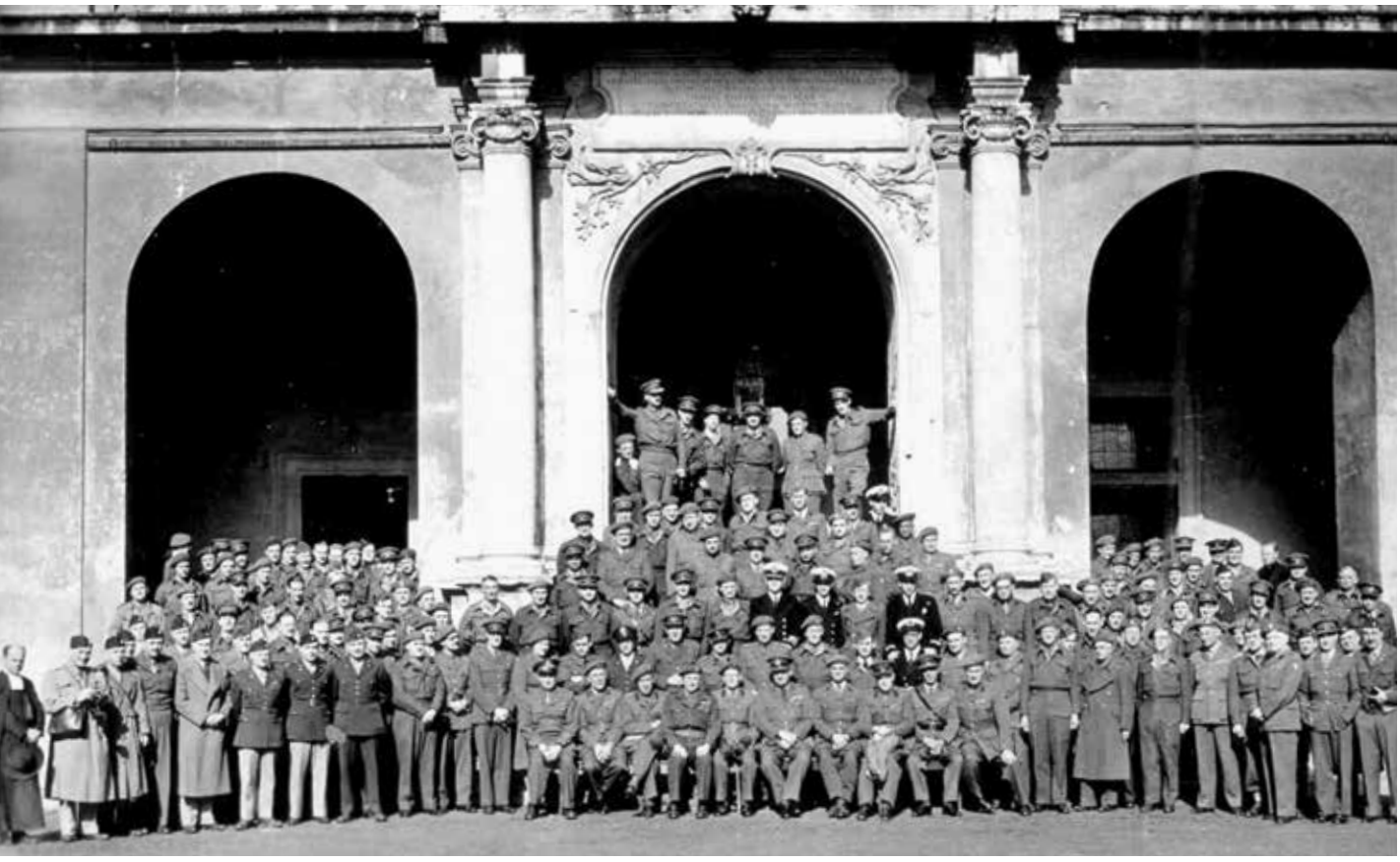
Although the original ESS disbanded, its impact endured—eventually leading to the start of its formal resurrection in 2014 through a strategic partnership between the US Department of Defense Military Health System and the ACS, known as the Military Health System Strategic Partnership ACS. This helped breathe new life into the Society's mission and values, and in 2015, the first meeting of the new ESS was held in Chicago, Illinois. The ESS also serves as the ACS Military Chapter.

"The return to the Excelsior Hotel honored ESS's legacy and commitment to improving best surgical practices for combat care, ensuring a lasting connection between generations of military surgeons through mentorship, and strengthening the bond between military and civilian medicine," said Michael J. Sutherland, MD, MBA, FACS, Senior Vice President of ACS Member Services and a retired US Air Force major.

Above:
Nearly 100 military and civilian surgical leaders from around the world came together in Rome for the 80/10 ESS Anniversary Meeting.

Opposite, left:
"I hope that when people reflect on this meeting, it is a source of strength and resilience for them and a reminder of how important our mission is," said Dr. Jennifer Gurney.

Opposite, right:
US Army Colonel (retired) Kirby R. Gross, MD, FACS, joins US Navy Captain (retired) Frank K. Butler Jr., MD (left), and Commander William Burns, MD, at the ESS Meeting in Rome.



Above:
In 1945, military surgeons from allied countries gathered at the Excelsior Hotel in Rome to discuss their war experiences and surgical cases, forming the foundation of what would become the Excelsior Surgical Society.

Global Platform for Education and Interoperability

This commemorative meeting featured a comprehensive educational agenda, thoughtfully divided into sessions that addressed historical perspectives, international interoperability, battlefield care, and forward-looking strategies in combat casualty care.

The opening session, "Those Who Do Not Understand History Are Doomed to Repeat It," focused on the importance of understanding history to avoid repeating past mistakes, emphasizing "lessons learned, lessons earned, and lessons forgotten." This was paired with a discussion on the evolution of battlefield medicine, recognizing the milestones and revolutions that have shaped surgical care in combat environments.

Subsequent sessions on Day 1 offered international perspectives and explored how the global surgical community can best prepare for emerging challenges. In addition, topics included the integration of trauma care across tactical, operational, and strategic levels, and how wartime trauma lessons can be applied to managing civilian injuries and mass casualty events.

A significant portion of the Day 2 program centered on prehospital care, reinforcing the critical principle that "trauma patients must arrive alive" for surgeons to make a difference. Experts emphasized that the greatest opportunity for improving outcomes lies in prehospital intervention, where collaboration between emergency responders, surgeons, and line leadership is vital for success.

A senior leader panel discussed improving communication and fostering a high operational IQ among physicians—key elements in delivering better care on and off the battlefield.

In addition to educational sessions, participants took part in a historical tour, including a visit to the Sicily-Rome American Cemetery, a World War II memorial and cemetery that honors more than 7,800 American servicemembers.

Discussions on Day 3 addressed the importance of bridging gaps between military and civilian surgical communities, sharing perspectives to mitigate what is often referred to as the "Walker Dip"—a period

Above: Attendees recreated the original photo during the 3-day ESS meeting held last month in Rome.

of decreased trauma readiness during peacetime.

A forward-focused session explored strategies for building a globally integrated trauma system capable of responding to the demands of LSCOs and future crises.

The final presentations emphasized leadership development and highlighted the ACS's continued dedication to military surgery. Senior leaders shared top leadership pearls for navigating complex environments and ensuring surgical teams thrive in high-stakes settings, while also stressing the importance of interoperability.

The meeting concluded with a session titled "The Way Ahead," which underscored the commitment to preserving and advancing the next 80 years of military surgery, with a continued focus on excellence in combat casualty care.

"While this meeting took more than a year to plan and was a tour de force to put together, it was worth it," said Dr. Gurney. "I think everyone left more committed to our mission. For some of the retired surgeons who have greatly impacted combat casualty care, it was a bit of a reunion. It's inspirational to see their continued commitment."

Continuing the Legacy of Military Surgery

The 80/10 ESS Meeting served not only as a commemoration of a remarkable past but as a vital catalyst for the next era of surgical excellence in combat casualty care.

"To be in attendance and part of these meaningful discussions was important for me as a trauma surgeon, a Fellow of the ACS, and as a veteran. I look forward to our continued work and commitment to improving the care both in combat and civilian trauma centers," said Dr. Sutherland.

With a renewed sense of purpose and global unity, the ESS is planning to return to Rome in 2035 for the 90/20 ESS Anniversary Meeting. B

Jennifer Bagley *is Editor-in-Chief of the* Bulletin *and Senior Manager in the ACS Division of Integrated Communications in Chicago, IL.*

JACS JOURNAL OF THE AMERICAN COLLEGE OF SURGEONS

Highlights

The following articles appear in the April 2025 issue of the *Journal of the American College of Surgeons*. A complimentary online subscription to *JACS* is a benefit of ACS membership. See more articles at ***facs.org/jacs***.

Challenging Legacy Burn Resuscitation Paradigms with Fluid Restriction and Early Plasma

Steven A. Kahn, MD, FACS, Mallorie L. Huff, MD, MPH, Justin Taylor, MD, and colleagues

This study found that restrictive resuscitation of burn patients with limited crystalloid and early plasma is safe, feasible, and associated with better outcomes than crystalloid-heavy resuscitation paradigms.

Metabolic and Bariatric Operation and the Path to Kidney Transplantation

Abdallah Attia, MD, Eman Toraih, MD, PhD, Claire Ardis, MS, and colleagues

Metabolic and bariatric surgery (MBS) significantly improves access to kidney transplantation and long-term survival for obese end-stage renal disease patients. Patients who underwent MBS demonstrated notable improvement in cardiovascular health, potentially leading to a better quality of life and survival.

The Passion Tax: Valuation Disparity among Academic and Nonacademic Surgery Subspecialty

Rajavi S. Parikh, DO, Emily A. Grimsley, MD, David O. Anderson, MBA, MHA, and colleagues

The goal of this study was to determine the difference in valuation of clinical effort between academic and nonacademic surgeons across general surgery subspecialties. Despite generating higher work relative value units (wRVUs) based on total cash compensation per wRVU, most academic general surgery subspecialties are compensated less than their nonacademic counterparts.

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Deadline to Submit Nominations for ACS Treasurer Is Extended

A FEW WEEKS REMAIN to submit nominations for the position of ACS Treasurer. The deadline for submissions to the ACS 2025 Nominating Committee of the Board of Regents (BoR) has been extended to **April 30.**

Responsibilities

The responsibilities of the position include:

- The Treasurer shall oversee, in conjunction with the Chief Financial Officer, the funds of the College under the supervision of the Finance Committee and shall make such reports to the Finance Committee, the BoR Executive Committee, and the BoR as may be required.
- The Treasurer will attend the meetings of the BoR and will have a reporting relationship with the Finance Committee and ACS Executive Director.
- The College shall purchase a bond or insurance coverage to ensure the faithful performance of the duties of the office of Treasurer. In the absence or inability to act as the Treasurer, the duties of the Treasurer shall be performed by such person and in such manner as the Finance Committee may direct.
- The Treasurer shall serve as the Chair of the Investment Subcommittee.
- The Treasurer shall serve an initial 3-year term and may serve a maximum of two 3-year terms.

Criteria for Consideration

The Nominating Committee of the BoR (NCBR) will use the following guidelines when considering potential candidates:

- Loyal members of the College who have demonstrated outstanding integrity and medical statesmanship, along with impeccable adherence to the highest principles of surgical practice.
- Demonstrated leadership qualities that might be reflected by service and active participation on ACS committees or in other components of the College.
- Nominees must have prior experience serving on a financial committee, preferably of a nonprofit organization; additional experience serving on an investment committee is desirable.
- Nominees must be able to read and understand financial statements and exhibit astute business acumen.
- Members of the NCBR recognize the importance of achieving representation of all who practice surgery.
- The ACS encourages consideration of women and other underrepresented minorities for all leadership positions.

Nomination Process

All nominations must include:

- A letter of nomination
- A current curriculum vitae
- A personal statement from the candidate detailing ACS service
- Name of one individual who can serve as a reference

Any attempt by a candidate or on behalf of a candidate to contact members of the NCBR will be viewed negatively and may result in disqualification. Applications submitted without the requested information will not be considered.

Nominations must be submitted by **April 30,** via the online form at *www.surveymonkey.com/r/Treasurer25.* For more information, contact Ken Puttbach at kputtbach@facs.org.

Member News

Kreisel Leads Research at WashU

Daniel Kreisel, MD, PhD, FACS, the G. Alexander Patterson, MD/Mid-America Transplant Endowed Distinguished Chair in Lung Transplantation, is vice chair for research in the Department of Surgery at Washington University School of Medicine in St. Louis (Missouri). In this new role, he will oversee basic science, clinical, translational, and public health sciences research programs across the Department of Surgery. Dr. Kreisel also is the surgical director of lung transplantation at Washington University Medicine and Barnes-Jewish Hospital in St. Louis, Missouri.

Dudeja Is Chair, DEO of UI Department of Surgery

Vikas Dudeja, MD, FACS, will take over as chair and department executive officer (DEO) of the Department of Surgery at the University of Iowa (UI) Carver College of Medicine in Iowa City. He will begin this new role on June 30, when he takes over from Ronald J. Weigel, MD, PhD, MBA, FACS, Medical Director for ACS Cancer Programs. An expert in pancreatic cancer and other hepatobiliary cancers, Dr. Dudeja currently serves as a professor and director of the Division of Surgical Oncology in the Department of Surgery at The University of Alabama at Birmingham. He also is president-elect of the Association for Academic Surgery. He will begin his term as president in February 2026.

Chu Is SUS President

Danny Chu, MD, FACS, was named president of the Society of University Surgeons (SUS), an organization that promotes excellence and leadership in academic surgery. Dr. Chu, a cardiothoracic surgeon, serves as director of the University of Pittsburgh Medical Center Ozaki Center of Excellence and director of cardiac surgery at the Veterans Affairs Pittsburgh Healthcare System in Pennsylvania. Thomas K. Varghese Jr., MD, MS, MBA, FACS, from The University of Utah in Salt Lake City, and Editor-in-Chief of the *Journal of the American College of Surgeons*, previously was SUS president.

Martin Is President-Elect of SUS

Colin A. Martin, MD, FACS, is president-elect of the Society of University Surgeons (SUS). The organization supports and advances leaders in academic surgery. Dr. Martin is the Brad and Barbara Warner Endowed Professor of Surgery, chief of the Division of Pediatric Surgery at Washington University in St. Louis (Missouri), and surgeon-in-chief at St. Louis Children's Hospital. His 1-year term will begin in 2026.

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

Bavaria Directs Vascular Institute in Philadelphia

Joseph E. Bavaria, MD, FACS, FRCS, was appointed executive director of the Bruce & Robbi Toll Heart and Vascular Institute at Jefferson Health in Philadelphia, Pennsylvania, and chair of the newly established Department of Cardiac Surgery at Thomas Jefferson University's Sidney Kimmel Medical College. Dr. Bavaria joined Jefferson Health in 2024.

Ferrada Is Surgery Chair at Inova

Paula A. Ferrada, MD, FACS, is the new chair of the Department of Surgery at Inova Fairfax Hospital in Falls Church, Virginia. She also will continue in her role as chief of the Division of Trauma and Acute Care Surgery. Dr. Ferrada currently serves as an ACS Governor-at-Large.

Pei Moves to NYU Langone

Kevin Y. Pei, MD, MHSEd, FACS, is a professor of surgery in the Acute Care Surgery Division and vice-chair of academic affairs and education innovation in the Department of Surgery at NYU Langone in New York City. Previously, Dr. Pei was a professor of surgery at the Indiana University School of Medicine in Indianapolis. He also served as vice-president and director of the General Surgery Residency Program at Parkview Health in Fort Wayne, Indiana.

Golshan Receives Ellis Island Medal of Honor

Mehra Golshan, MD, MBA, FACS, was awarded the 2025 Ellis Island Medal of Honor from the Ellis Island Honors Society. The medal recognizes Dr. Golshan's contributions to breast cancer treatment and research, his dedication to patient care, and his commitment to mentorship. A cancer surgeon, he is a professor of surgery at Yale School of Medicine, executive vice-chair in the Department of Surgery at Yale Medicine, and deputy chief medical officer for surgical services at the Smilow Cancer Hospital, all in New Haven, Connecticut.

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