Diving into the evolving demands of resident training
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his month’s Centennial reprint from a past issue of the Bulletin, which appears on page 50, centers on the roots of one of the American College of Surgeons’ (ACS) most successful educational programs—the Advanced Trauma Life Support® (ATLS®) course. Since the ACS began presenting the course more than 30 years ago, more than 1 million physicians in more than 60 nations have trained in the lifesaving techniques presented in this program.

**Modest beginnings**

ATLS has humble roots. The pilot course was presented in Auburn, NE, in 1978 at the request of several physicians and nurses in nearby Lincoln. This appeal came on the heels of an airplane crash in a rural Nebraska cornfield in February 1976. Piloting the plane was J.K. Styner, MD, FACS, an orthopaedic surgeon. Dr. Styner sustained serious injuries, three of his children sustained critical injuries, and one child sustained minor injuries. His wife died on impact. Dr. Styner maintained that the care he and his family received was inadequate, stating, “When I can provide better care in the field with limited resources than what my children and I received at the primary care facility, there is something wrong with the system, and the system has to be changed.”

Soon after the pilot course was presented in Auburn, Paul E. “Skip” Collicott, MD, FACS, Past-Director of the ACS Division of Member Services and a recipient of the College’s Distinguished Service Award, introduced the concept of the ATLS program to the ACS Committee on Trauma (COT) at their 1979 annual meeting in Houston, TX. The COT enthusiastically endorsed the proposal and called upon its Region Chiefs to meet in Lincoln for an introduction to the course.

With that, in January 1980, the College initiated the promulgation of ATLS as an educational program to teach health care professionals about the initial care of injured patients. Later that year, the course was presented in Denver, CO; Dallas, TX; San Diego, CA; Washington-


Fellows’ perspectives

As we reflect on the College’s litany of efforts to promote quality patient care, many Fellows would agree that the ATLS course ranks high on that list with respect to success—both nationally and internationally. I recently contacted several prominent trauma surgeons who have been involved in presenting and fostering the ATLS course and asked them to share their experiences and insights. Here’s what they had to say:

“Starting in 1974–1975 the COT took on a number of projects to improve trauma care and outcome in trauma patients. The ones that were very successful included ATLS, verification, and the National Trauma Data Bank®, to name a few,” said Donald Trunkey, MD, FACS, Past-Chair of the COT. “ATLS has been a clear winner. First, it allows surgeons to develop their own criteria, which is very important to get better outcomes. In many centers, ATLS can salvage up to 30 percent of major injuries where cardiac function has ceased. Clearly, Dr. Styner, who founded this resuscitation model after he had a plane accident and his wife was killed and the children very severely injured, deserves kudos, as does Skip Collicott for bringing it to the COT.”

John A. Weigelt, MD, FACS, Past-Chair of the COT, said, “I remember my first ATLS course vividly. Skip Collicott and other Nebraska surgeons were present for the first instructor course in Dallas, TX. I was a senior resident and was impressed with the dedication of the faculty and especially the educator, which was John George [MD, FACS],” he said.

“I have never seen a more dedicated group of doctors from around the world come to consensus on difficult issues,” Dr. Weigelt said of his experience in working with other surgeons and physicians to develop three editions of the ATLS manual. “All viewpoints were allowed and vetted until true agreement was reached. Such cooperation simply strengthens the ATLS content and truly makes it a common language for the care of the injured patient.

“My other fond memory of ATLS is when we took the first course to Hong Kong and Beijing,” Dr. Weigelt added. “In Beijing we presented parts of the course using a translator, which was challenging. It was terrific to watch our audience attempt to capture every word and concept that we presented. I am not sure I have ever had as attentive an audience for our ATLS principles.”

The international experience is one that resonates particularly strongly with other ATLS leaders as well. “As President, I’m finding in country after country ATLS is our most successful outreach program and has won us friends all over the world,” said ACS President and Past-Chair of the COT A. Brent Eastman, MD, FACS. He attributes some of the course’s successful promulgation internationally to the efforts of former ATLS Committee Chair Brent Krantz, MD, FACS, whom Dr. Eastman appointed. “Brent Krantz did a spectacular job always with his strong rural background and sense of humor,” he said.

“To further promote the program internationally, I was involved in a seminal meeting with Stephen Deane [MB, BS, FACS] and Peter Danne [MB, BS, FACS, FRACS] from Australia when I was Chair of the COT,” Dr. Eastman said. “The Royal Australasian College of Surgeons wanted to adopt ATLS but felt there needed to be some flexibility to make it relevant to their needs. The situation had reached a critical impasse. However, in an evening meeting in a lounge in San Antonio, TX, Drs. Deane, Danne, and I managed to work out an agreement that moved things forward. This was an important bit of international diplomacy, because the Royal Australasian College of Surgeons has gone on
Now in its ninth edition, ATLS has become the gold standard in care for injured patients throughout the world.

to have one of the strongest ATLS—they call it Early Management of Severe Trauma, EMST—programs in the world.”

Also addressing ATLS’ effect on improving trauma care internationally, Past ATLS Committee Chair John B. Kortbeek, MD, FACS, said, “I witnessed firsthand the difference ATLS made in my home province of Alberta, Canada. Referring centers as well as our inhouse trauma teams now provide standardized, safe, high-quality care. The program has evolved from its humble beginnings to a global partnership supported by experts across cultures and disciplines,” added Dr. Kortbeek, who received the ATLS Meritorious Service Award in 2012 and is presently involved in international promulgation of the program.

“It’s hard to put into words what the opportunity to lead ATLS has meant to me,” said current ATLS Committee Chair Karen Brasel, MD, FACS. “To see people who might agree on little else put aside personal and political differences to invest countless hours (and in many cases, their own money and other resources) to improve the program, and to bring trauma education to their own countries speaks to the value of the program and to what can be accomplished when the focus is truly on the patient and doing the right thing,” she noted.

“The recent adoption of ATLS by countries in the Middle East, where there are both political and safety hurdles, is truly a triumph of the regional structure and international ATLS family in addition to the triumph of right over politics,” Dr. Brasel added.

A program for the next century

Now in its ninth edition, ATLS has become the gold standard in care for injured patients throughout the world. To ensure that health care professionals have easier access to the latest information and techniques in trauma care, the newest edition of the ATLS Student Course Manual, released at the 2012 Clinical Congress, has a companion app. The mobile app is available for download at MyATLS.com and is being continually updated for use in the field.

The College couldn’t be more proud of the success that ATLS has experienced. As ACS Past-President L. D. Britt, MD, MPH, DSc(Hon), FACS, FCCM, FRCSEng(Hon), FRCSEd(Hon), FWACS(Hon), FRCSI(Hon), FCS(SA)(Hon), said, “There has been no program that has been as effective as ATLS in saving lives and decreasing the morbidity of injuries. It is one of the greatest medical innovations—worldwide—in the last 75 years!”

The College looks forward to building on this achievement as we move into the next 100 years. ◆
ACS Resident and Associate Society:

Diving into
the evolving demands
of resident training
Hold the onions: Training in an era of heightened diversity and expectations

by Brian J. Santin, MD

HIGHLIGHTS

• Compares the recent dramatic changes in surgical practice and training to the increased diversity in culinary techniques now seen in restaurants throughout the U.S.

• Provides an overview of the history of GME

• Emphasizes transformations that have occurred in GME in the last 20 years, including the implementation of work-hour restrictions and a focus on the delivery of patient-centered, coordinated care

• Notes surgeons’ concerns regarding how these changes will affect their role in the future delivery of health care

In a recent interview published in Delta Sky magazine, Anthony Bourdain, author, chef, and host of the Travel Channel’s No Reservations, explained how the U.S. culinary scene has experienced a multitude of changes throughout the past 60 years—essentially a culinary explosion. He recalled the complete absence of sushi or most other “non-American” foods in the Manhattan, NY, restaurants of his childhood; it was “ham with a pineapple ring” back then. This is in stark contrast to the now commonplace appearance of sashimi, Vietnamese noodle bowls, tableside guacamole, or any other so-called non-American dishes on menus across the country. In not so many words,
the food culture in America has likely adapted and incorporated more variety in the past few decades than in all of human history combined.

Mr. Bourdain described how this culinary revolution has resulted in a much more inclusive, worldly, and extensive array of tantalizing treats to spread across our palates. A few Sundays ago, as I was reading the interview and enjoying the most amazing French macaroons made fresh just two blocks away from my home, I thought of how the changes in medical education and patient-centered care have exploded in recent years as well.

**History of medical education**

Many of the changes in academic medicine date back to 1910, when Abraham Flexner conducted an observational study and later published a report on the state of medical education in the U.S. and Canada. Mr. Flexner essentially described the state of affairs to be equivalent to a Wild West show featuring a man with a monkey head trying to ride a unicycle while juggling flaming bowling pins. Many medical schools were termed “diploma mills.” There was a complete lack of infrastructure and no standards for schools to follow to ensure medical trainees were being adequately taught. Not since Flexner’s landmark findings more than 100 years ago have such dramatic changes in medical education and training in this country occurred than as in the past 20 or so years.

As the American College of Surgeons (ACS) celebrates its Centennial year, now is an appropriate time to reflect on just how much has changed with regard to medical education and surgical practice over the past 100 years—and how much it continues to evolve.

Take for example, graduate medical education (GME) and even more specifically surgical education. Within just the past 20 years, the entire landscape of GME has changed. Surgical folklore recounts stories of case logs being inscribed on rolls of toilet paper and residents spending an entire week straight within the confines of their training institution, barely able to see sunlight through panes of glass—almost an eerie resemblance to penitentiary life. The mantra of “see one, do one, teach one” was commonplace in the surgical training environment for decades.

Resident work hours are monitored more closely than ever; not only are trainees not to work more than 80 hours per week, but first-year residents are banned from spending more than 16 hours straight in a hospital. Case logs are carefully entered into complex online databases with the capabilities to constantly update Current Procedural Terminology codes. Expensive, high-tech computer simulators are now used as substitutes for live patients when interns perform their first case.

In the late 1840s, when a cholera epidemic was sweeping through the U.K., the scholars and physicians of the time believed that the transmission of the nearly always fatal disease was via a respiratory route. Fortunately, a surgeon named John Snow, MD, who later became recognized as the father of modern epidemiology, wrote the landmark book On the Mode of Communication of Cholera. In his book, Dr. Snow argued against the accepted dogma of a respiratory transmissible route for one favoring the gastrointestinal tract. Despite widespread opposition to his theory and public dismissal of it, Dr. Snow persevered, and eventually, history proved his logic to be correct.

It is with time and increased breadth of knowledge that the medical profession has gained a far better appreciation for the work of Dr. Snow and countless other physicians and surgeons who faced similar difficulties in going against the norm, attempting to see a problem from a different perspective, or simply doing things differently.

**Embracing change**

Why are so many people resistant to change? I am the product of the work-hour restriction era in GME. My internship year, albeit seven years ago, was the first in which residents were mandated to work no more
To date, there remains a paucity of data to actually support the fact that work-hour changes have a clinical benefit. Yet some would argue that there has been a positive effect, if none other than to make the choice of pursuing surgery more appealing to residents—men and women alike.

This example of human nature adapting under the auspice of awareness has been observed in multiple venues since the 1950s. Should we as physicians and surgeons expect anything different from the general public’s increasing observation of our professional results? HealthGrades.com, UCompareHealthCare.com, and Vitals.com are three of the most prominent websites that rate patient satisfaction. (For more information about these sites, see the upcoming article in the September issue of the Bulletin.) The claim that these sites provide “outcomes” remains to be justified, as they are technically opinions and not verified outcomes measured against a standardized set of benchmarks. Our very own patients are taking the time to complete surveys online about how well we did: Was the physician’s bedside manner poor, good, or great? How was the promptness of scheduling an appointment? These are just some of the criteria and measures upon which we are being compared; whether we choose to participate in these measures or not, the public will continue to report on their experiences.

Role of public perception
Should patient feedback affect our pay and delivery of care? I suspect that the Hawthorne Effect may not hold true in this realm as the equation for quality care is far more complex than public observation. However, physicians’ attempts to solve the equation must still place appropriate emphasis on this confounding variable. The role of public perception on physicians and hospitals has gained increasing ground. A 2010 article in the Journal of the American College of Surgeons is among the accumulating evidence that popular media and Internet-based quality ratings are increasingly important to patients.

The simplistic or propagandistic model of online reporting, outcomes, and survey-driven websites are forms of democracy at play within the natural context and scope of society, termed social media. The antagonistic or, arguably, the theoretical model con-

than an average of 80 hours in a single week. Since then, countless articles, editorials, surveys, and opinion pieces have been published by everyone from the youngest of medical students to the eldest of surgeons, all surrounding this radical change in the way physicians are taught in this country. Some of these individuals have been quite critical of these changes. Herbert Fred, MD, in an editorial from 2007, criticized work-hour restrictions, claiming that “we are exchanging sleep-deprived healers for a cadre of wide-awake technicians.” He wasn’t alone in expressing this sentiment.

Are these commentators really just concerned about change or have they created an environment similar to the one Dr. Snow encountered? To date, there remains a paucity of data to actually support the fact that work-hour changes have a clinical benefit. Yet some individuals would argue that there has been a positive effect, if none other than to make the choice of pursuing surgery more appealing to residents—men and women alike. I hope surgical educators 100 years from now don’t look back at the past 20 years in medical education and think we were similarly irresponsible for not more readily embracing the changes in the training paradigm.

The Hawthorne Effect
In 1950, Henry Landsberger was analyzing previous studies conducted outside of Chicago, IL, at the Hawthorne Works factory when he coined a now familiar term: the Hawthorne Effect. In the original series of studies dating back to the 1920s, workers in a factory were observed to see whether the installation of new light bulbs in the warehouse affected their productivity. Productivity did increase during the study period; however, upon completion of the study, when the workers were no longer being observed, productivity slowed to its pre-study pace even with the brighter bulbs. Thus, Mr. Landsberger hypothesized that the workers were becoming more productive simply because they were being watched, not because of the light amplitude overhead.
tends that these sites are attempting to change the hierarchal model of the medical profession. Is it really just the profession of medicine getting in line behind the celebrities, book authors, Amazon.com sellers, and pretty much anyone or anything else that has come under the scrutiny of the public on the Internet? Everyone has the right to voice their opinion, and, to continue the culinary metaphor mentioned earlier, “hold the onions” in the current state of affairs in the online kitchen. But is the medical profession held to a different standard inherent in a heightened sense of ethical and moral concerns in caring for a human being’s life? Herein lies a great discrepancy between medicinal care and thumbs up/down from a food critic.

Medical decision making is built upon a foundation of evidence-based literature and scientific conclusions, not on an opinion regarding whether or not a Le Plat Principal was too fishy tasting. David O’Connor, PhD, a scholar in bioethics at Johns Hopkins University, Baltimore, MD, wrote, “In this online environment personal experience (that of the patient) is sometimes valued more highly (more authentic and less mediated by professional stricture) than the expertise of the physician.” Fueling the fire is the finding that many of these patient satisfaction websites are without an overseeing, editorial review process—allowing defaming comments to be posted and mar a physician’s record without any objective evidence to support the claim.

But why do patients run to these websites to vent their frustrations regarding a physician’s poor bedside manner and not report their concerns to a representative/authoritative medical body? Do patients have a sense of futility when they do complain to a state medical board or surgical society and feel that their voice isn’t being heard? Is this an area in which the ACS could play a proactive role? Could the ACS develop a national marketing campaign to increase the awareness of the importance of the physician-patient relationship or offer an official “postprandial” satisfaction survey? If consumers are disenfranchised with a surgeon, should the surgeon’s peers, colleagues, and trusted organizations be the ones handling the issue or should the issue be permitted to perseverate on the Internet? Could self-regulation really turn this issue around? The old adage “Trust me. I’m a Doctor” seems almost antiquated in today’s environment. In fact, Chantler and Ashton have suggested “a need to redefine medical professionalism given the changing roles of physicians and the increasing expectations of the public, and this in turn will have an effect on regulation.”

The automaton theory
The increasing role of the health care consumer raises the question of how the medical profession is truly being run. Matthew Wynia, MD, MPH, a physician working for the Institute of Ethics of the American Medical Association, addressed the very real possibility that medicine is being transformed into a more commercial system. “Professionalism is a distinct ideology from consumerism, in which regulation of medical practice would be based primarily on expectations established by medical ‘consumers’ and implemented through competitive marketplace mechanisms,” noted Dr. Wynia in 2010. The results of various consumer-driven programs to rate and grade surgeons may be tied to the likelihood of whether a surgical practice will thrive or not. Jain and Cassel argue that physicians are becoming “automatons” whose actions are defined by external forces and public opinion. Is that why we have all traveled this long, and, at times, self-depriving road—just to become an automaton?

Public policy is increasingly supportive of the automaton theory. “Rather than being counted on to maintain their knowledge and expertise on their own accord, they [physicians] are subject to periodic examinations to demonstrate continued proficiency.” Are increased regulations for credentialing and recertifying really just a way to replace the self-motivation of surgeons to pursue continuing education and lifelong learning opportunities?
The increasing role of the health care consumer raises the question of how the medical profession is truly being run.

While I may be at an early stage in my career, I know that I will continue to seek knowledge to help care for my patients and remain at the forefront of delivery of quality patient care. I don’t simply owe this to my patients, but I have an internal drive to continue to honing my skills. Even without the increased requirements for recertification and continuing medical education documentation, I am responsible to myself and my patients to maintain and improve my proficiency. Other surgeons who I have encountered in my training have been tough on me at times, but, like so many other surgeons, no one is ever tougher on me than I am on myself. If this mind-set were to ever change, that is the day I would stop practicing the fine art of surgery.

In contrast to the increasing scrutiny surgeons are coming under from their patients, some have asked the reciprocal question: “When patients call, will physicians respond?” With the projected continual decline of physician reimbursements and the suspicion that surgical subspecialists will be the hardest hit in the pocketbook, will surgeons be willing and in some cases even financially able to care for the increased demand for services that is imminent when the Affordable Care Act is fully implemented? And while it may be a bit of this mind-set were to ever change, that is the day I would stop practicing the fine art of surgery.

So tonight, as I make sure to not forget to add the extra pinch of Hawaiian Alaea Red Sea Salt to the chicken paprikash, I will be reminded of the increasing array of changes and adaptations we continue to appreciate in medicine, surgery, and GME. And while it may be a bit time-consuming and out of the way to stop by my local Sur La Table for that red sea salt, I will thank myself for doing it—for taking the time to educate residents under new guidelines and spend appropriate time with patients and their families. I’ll even go so far as to encourage my patients to fill out those online surveys.

REFERENCES

A defining quality of professionalism is commitment to a core set of values, regardless of divergent external pressures. The external forces affecting surgical training and practice have grown in recent years. Fortunately, the values and professional commitments of surgeons have not necessarily been in conflict with these outside demands. However, over the past century, the profession has morphed in such a way as to be able to better respond to these pressures, and in turn, the training pathways have changed as well. It is unclear whether this metamorphosis will have a positive or negative effect in the long term, but it clearly will have an impact on issues that affect surgical training, including finance and health care policy, workforce shortages, work-hour restrictions, informed consent, and attending supervision in the operating room (OR).

Finance and health care policy
The health care delivery system and health care policy have had significant influence on the surgical training environment since the formal residency model was adopted in the early 20th century. Under this system, the resident is both a government employee and student; and teaching hospitals serve a dual mission of providing medical education and charitable care while operating in a competitive marketplace.1,2

Until the 20th century, surgeons trained via informal pathways, including apprenticeships, training abroad, or short graduate courses. The length and quality of training varied and the financial arrangements between the apprentice and the “master surgeon” were made in a free-market environment.3 William S. Halsted, MD, FACS, developed the first formal surgical residency model in 1889. In the true Halstedian model, residents trained in a teaching hospital and attended to ward and OR tasks under graduated levels of supervision in exchange for room and board and a small salary.4,5 Teaching hospitals at this time served patients who were largely receiving charitable care and who generally accepted that training physicians would be providing some of their hospital care.6

Fueled by the growing safety and sophistication of modern surgery, by the 1920s, a new kind of patient sought hospital services: middle- and upper-class Americans who were willing and able to pay for increasingly elective care.7 This population did not last long because the costs of health care quickly rose to an unaffordable height. However, these private-payment patients played a significant role in shaping the view that medical care was a product that...
could be purchased and should be provided by fully trained physicians and surgeons—not residents. Surgical residents necessarily assumed less independent roles, and hands-on learning was replaced with increasingly menial tasks.

To address the problem of increasing medical costs, the nation turned to prepaid insurance plans, and by the early 1960s, most Americans had employer-based health care insurance. This payor solution served to increase the “paying” patient population, heightening competition between hospital systems. Teaching hospitals were not protected from these market forces and because resident care and teaching activities are economically inefficient, these realities further restrained the educational mission.

In 1965, Medicare and Medicaid were established to support the two populations that had been left out of the employee-based system: the elderly and indigent. While this was an important and just payor solution, the legislation only worsened the commercial pressure on teaching hospitals. Recognizing this conflict, the federal government pledged financial support of graduate medical education (GME) by increasing reimbursement to teaching hospitals with greater funding than nonteaching hospitals on a per-patient basis under Medicare Part A. Training physician costs were initially covered in Medicare Part B, but a major movement in 1969—in which Medicare refused to pay for services performed by residents—affected teaching hospitals in a negative way. The next decades saw political battles over reimbursement for resident services, and although some deals were worked out, the ultimate consequence was a steep downturn in the number of operations that residents performed. The issue largely remains unresolved today.

New reimbursement regulations were put in place in 1984 in an effort to respond to increasing GME costs with the enactment of Medicare’s prospective payment system (PPS). Under this system, which is still in use today, hospitals are reimbursed for GME based on number of residents, estimated costs based on Medicare patient volume, and other factors. Medicare pays hospitals for direct medical education expenses (DME), which covers resident salaries, funding for faculty teaching, and educational facility costs—and indirect medical expenses (IME), which include the increased costs teaching hospitals incur due to increased lab tests and increased complexity of disease and care. DME is calculated on a per-resident basis with the amount varying between hospitals based on the proportion and number of Medicare patients treated.

Simultaneously with the PPS came managed care trends with payment based diagnosis-related groups (DRGs), which reimburse hospitals a fixed amount of money for a specific diagnosis rather than for actual costs. Managed care reimbursement rewards volume and lower prices, which not only increases pressure for teaching hospitals to run in a commercial fashion, but puts pressure on faculty to concentrate on treating more patients faster. This environment increases the number of admissions with quicker turnover/discharges, essentially increases administrative work for residents, and dampens opportunities for bedside learning.

Historically, surgical training has benefited from—but has also and tragically been impeded by—political and financial forces. After all, federal policymakers control reimbursement of hospitals for activities related to GME, which stands to fund appropriate facilities and competent faculty for teaching. They also dictate the financial pressures of the health care marketplace, which affects the balance between commercialism and the educational mission of academic medical centers. Furthermore, the delivery system indirectly influences cultural trends in patient expectations, which affects the ability of a surgeon-in-training to participate in providing meaningful patient care. In an era of health care reform and ongoing debate about federal funding of GME, it is important to understand how the political climate has influenced surgical training throughout history and its potential impact moving forward.

**Surgeon shortages**

National politics has long played a significant role in determining the distribution of the medical and surgical workforce. Within a span of more than three de-
New reimbursement regulations were put in place in 1984 in an effort to respond to increasing GME costs with the enactment of Medicare’s prospective payment system. Under this system, which is still in use today, hospitals are reimbursed for GME based on number of residents, estimated costs based on Medicare patient volume, and other factors.

cades, from the late 1970s and early 1980s to the present time, the pendulum has swung from a perceived excess of physicians and surgeons to an acknowledgment of severe shortages of physicians, particularly in surgery and primary care. Among the many statutes affecting GME and, as a result, the surgical workforce, perhaps the most significant piece of legislation has been the Balanced Budget Act of 1997, which capped the number of residency training positions that Medicare would fund.12

Fast-forwarding to 2009, the American College of Surgeons (ACS) Health Policy Research Institute (HPRi) revealed some startling statistics in its report Surgical Deserts in the U.S.: Places without Surgeons. In 2006, 30 percent (925) of the 3,107 U.S. counties lacked a single surgeon, had a total population of nearly 9.5 million Americans, and had 433 critical access hospitals.13 A study by Etzioni and colleagues in 2003 noted that due to an expanding/aging population, there would be a 31 percent increase in surgical services between 2001 and 2020.14 This combination of circumstances will likely result in a 9 percent shortage in the general surgical workforce, with greater shortages in other surgical specialties.15 The Dartmouth model used to benchmark regional procedures and specialist variations also shows that the degree of the variation in regional physician supply is significant. The number of physicians per capita was 1.6 times higher in high-supply versus low-supply regions.16

Other issues that have affected the surgeon shortage include the declining number of medical student applications for general surgery residency; a desire among current trainees for a more balanced lifestyle; increased subspecialization; the liability crisis; and declining reimbursement.17 Whereas the implementation of the 80-
hour workweek has resulted in significant improvements in the current quality of life of residents, many concerns have been expressed with regard to the potentially negative effects on professional development, including young surgeons feeling less comfortable starting out in solo practices, especially in rural areas, where they may be the sole surgeon in the county. 18

In the early 1990s, Medicare introduced the relative value unit (RVU), and it is now a prominent component in determining physician reimbursement. 19 Because the health care system could no longer support the “historical fees” general surgeons charged, Medicare developed a list of procedures it deemed overvalued and downwardly adjusted payment accordingly. 20 The early 1990s also saw a redistribution of funds from surgeons to primary care physicians as Congress shifted its focus to the management of chronic illness. The primary care fee schedule was readjusted upward at the expense of “proceduralists.” All of these changes in payment undoubtedly discouraged surgeons from remaining in practice any longer than necessary and medical students and residents from pursuing surgical training. Some studies have noted that the attrition rate among general surgery residents ranges from 14 to 32 percent nationally, and the economics of the profession have had a role in this high drop-out rate. 21, 22

The cost of practicing surgery, in operational expenses and liability insurance premiums, has a major impact on the decision to enter the profession. Limiting liability and potential economic disaster could attract more graduating students to a surgical career. Damage caps, which directly limit the magnitude of a liability award and thereby theoretically lower liability insurance premiums, are one means of protection. Legislative reform has resulted in non-economic damage caps in many states. 22

Recognizing that the residency caps from the Balanced Budget Act need to be repealed if the number of U.S. physicians is to increase, Sen. Bill Nelson (D-FL) and eight other co-sponsors introduced the Resident Physician Shortage Reduction Act of 2009. This bill proposed a 15 percent increase in the number of residency positions funded through Medicare. Of great interest to general surgeons was the fact that the bill included provisions that would give specific preference for increasing direct GME funding and indirect medical education slots to hospitals that submit applications for new primary care and general surgery residency positions. 22 This important piece of legislation was reintroduced in 2013 by Senator Nelson and the bill’s other co-sponsors and is currently in the Senate Finance Committee.

Rural areas in particular are known to have a surgeon-to-population ratio that is significantly lower than non-rural areas. 23, 24 If the goal is to alleviate shortages, simply increasing the number of general surgeons will not necessarily lead to an increased supply of surgeons in the areas where the need is greatest. Research has shown that new physicians preferentially settle in areas where supply is already high. 12 Political support is imperative to achieve geographically focused recruitment/retention with immigration visas, loan forgiveness, improved reimbursement, and other incentives to optimize the delivery of care in underserved areas.

Other recent changes on the political front will affect surgical training in the near future, directly and otherwise. The Affordable Care Act of 2010 increases access to insurance coverage for Americans, which theoretically will increase patient load. Additionally, on March 1, the budget sequestration cuts took effect, which will reduce Medicare spending by 2 percent. This funding cut is likely to affect the creation of more surgical training positions.

Political support similar to that for encouraging surgeons to practice in underserved areas could likely be the tipping point for medical students to consider surgical residency.

Work-hour restrictions and public pressure

The health care landscape was categorically different in the U.S. before World War II, as many illnesses were untreatable, hospital length of stay was extensive, procedures were less technically complex, and the volume and nature of surgical practice was quite different.25 When the resident training system originated in 1889, trainees were expected to reside at hospitals, always be on call, and not marry. Though these expectations changed somewhat over the years,
in spirit they remained relatively constant until recently, with physicians self-regulating work hours without much input from the rest of society. Even in 1975, when residents at New York City hospitals went on a one-day strike for a reduction in on-call frequency, their concerns were addressed directly by area training institutions.26

National attention to resident work hours dramatically increased in the late 1980s when 18-year-old Libby Zion, the daughter of a prominent journalist, died at New York Hospital, partly due to misdiagnosis by two exhausted emergency room residents. Working for 18 continuous hours, the first- and second-year residents attempted treatment that resulted in a lethal drug interaction with Ms. Zion’s outpatient medication.26 In the years following her death in 1984, New York State’s Bell Commission was formed in response to the public perception that residents were overworked and undersupervised. The commission evaluated resident work hours and ultimately recommended restricting residents to 80 hours of work per week averaged over four weeks with a maximum of 24 consecutive hours per shift.27

New York codified the recommendations of the Bell Commission Report in 1989. Residents continued to work long hours, though it wasn’t until 10 years later that New York State mandated an 80-hour workweek enforced through fines on noncompliant teaching hospitals. The issue of work-hour limits catapulted to the national stage. The U.S. Department of Health and Human Services found that long work hours may impair physician performance, but the federal government hesitated to adopt a national policy on resident work hours. The department deferred this responsibility to the Accreditation Council for Graduate Medical Education (ACGME), which in 2003 mandated nationally what the Bell Commission Report recommended a decade earlier for New York.26 The ACGME’s restrictions applied to all specialties in all residency programs across the country. The ACGME further restricted interns to 16-hour shifts in 2011, in line with the Institute of Medicine’s quality improvement recommendations.

These regulatory measures failed to change actual work hours, as residents continued to work more than 80 hours per week. To maintain continuity of care, residents applied work-arounds, such as swiping cards and returning to work, and underreporting actual work hours, to avoid loss of their program’s accreditation. Before the ACGME mandate, surgical residents easily experienced weeks of more than 100 actual work hours, and some reported on-call shifts of up to 60 consecutive hours.28 Although surgical residents report better quality of life and reduced burnout since the work-hour restrictions went into effect, the realities of patient care are unchanged.18 Residents need to be at the hospital both for the well-being of their patients and for the sake of their education. The volume and quality of work performed in those 100 hours must in some way benefit the patient.

Unfortunately, the correlation between work hours and patient outcomes is dubious. Long work hours can undoubtedly make residents tired, but no statistically significant evidence is available to show that their reduction actually leads to fewer adverse events. Data from the College’s National Surgical Quality Improvement Program (ACS NSQIP®) indicate no significant improvement in quality of patient care after the work-hour restriction, and there is no conclusive evidence that decreased sleep deprivation leads to decreased medical error.18,29,30

Perhaps the biggest problem with connecting work-hour restrictions to better patient outcomes is the fragmentation of patient care that results from caps.25 The trade-off between reducing work hours and increasing hand-offs may be impossible to bypass. Errors are prone to occur during care transitions due to miscommunication and are likely to result in poor outcomes for the patient.31 An increased number of residents in programs or a higher reliance on mid-level providers may be needed to approximate the same level of care that can be achieved with a single resident working long hours. Either way, risky hand-offs are more likely to occur. Furthermore, the physician-patient relationship may be fragmented because residents must often leave the hospital rather than provide continual care to the same patient.29

The concerns of decreased continuity of care point to another drawback of work-hour caps: their negative effect on surgical residency training independent of patient outcomes. It stands to reason that reduced time in the hospital may result in fewer opportuni-
National attention to resident work hours dramatically increased in the late-1980s when 18-year-old Libby Zion, the daughter of a prominent journalist, died at New York Hospital partly due to misdiagnosis by two exhausted emergency room residents.

ties for hands-on training. Many hours of practice are required to achieve expertise in any field. It has been forecast that longer residency programs may be required to maintain training quality. Lengthening residency may further deter medical students from entering surgical residency. Another fear regarding the effect of work-hour restrictions on resident education is that they may prevent residents from receiving critical instruction in morning reports and attending rounds and other conferences.

A counterpoint to this claim is that residents have more time for independent study; junior residents at a New York hospital experienced a significant improvement in American Board of Surgery In Training Examination scores after the state restricted work hours. The ACGME’s work-hour restrictions protect six hours of time for education and hand-offs. Additionally, data from multiple studies suggest no significant change in resident operative case volume after the work-hour cap. One year after the restriction was implemented, 39 percent of surveyed surgical residents felt that although it worsened the quality of their training, it raised their quality of life.

Raising resident quality of life and maximizing patient safety are not conflicting goals, so it is unfortunate that the health care system’s structure created the illusion that they are. The best way to approach scarcity of surgical residents’ time is to find efficient evidence-based ways to make the most of it. Fabri suggested that reducing redundancies, promoting collaboration, improving hand-offs, and establishing solid clinical mentorship are appropriate strategies to accomplish this goal. The long-term effects of work-hour restrictions on both the training of surgical residents and the health of their patients remain to be seen. Public demand for these restrictions is overwhelming since the Libby Zion case and demonstrates the effect of social pressure on how physicians are trained. Most likely, these restrictions are here to stay. Teaching hospitals will have to implement creative scheduling solutions to achieve the best outcomes for everyone. Additionally, as society takes an indirect role in influencing residency training, it is important to provide nonphysicians with evidence-based reasoning so that their opinions about work-hour restrictions and other matters are well-informed.

Patient safety and informed consent

Patient consent has been an important topic since Plato made the distinction between physicians and physician assistants in his dialogues, “Laws,” and since he discussed the concept of medical consent and coercion in “The Statesman.” However, the first legal decision addressing informed consent in the U.S. was the 1914 ruling Mary E. Schloendorff v. the Society of the New York Hospital—the first case upholding a patient’s right to refuse medical care. Ms. Schloendorff agreed to an exam under anesthesia to determine if a fibroid tumor was malignant. Even though Ms. Schloendorff stated she was not consenting to resection of the tumor, the surgeon removed the mass. In his final ruling, the judge in the New York Court of Appeals found the surgeon guilty of battery and wrote, “Every human being of adult years and sound mind has the right to determine what shall be done with his own body.” That opinion became the basis for subsequent cases involving a patient’s right to autonomous decision making.

The term “informed consent” first appeared in the case of Martin Salgo v. Leland Stanf ord Jr. University Board of Trustees in 1957. Mr. Salgo awoke paralyzed after an angiogram and had never been informed that the procedure involved the risk of paralysis. The ruling in favor of the plaintiff stated that sufficient disclosure of risks and complications—informed consent—was necessary for patients to make appropriate autonomous decisions.

Today, informed consent and the role of surgical trainees remains an important topic in surgical training. The three major ethical requirements of informed consent are disclosure, patient understanding, and patient decision making. The role of surgical trainees during the patient’s procedure and how it affects patient informed consent is another frontier in the evolution of general surgical training that is still being elucidated.

Knifed and colleagues surveyed surgeons (n=274) at the University of Toronto, ON, to determine what surgeons tell patients about the role of residents in their care and found that only 17 percent explicitly inform patients—without being asked by the patient—that residents may do portions of their operation. During qualitative interviews with surgeons, several themes emerged, which were that surgeons are comfortable allowing residents to operate with graded responsibility, see residents as important assets beneficial to
The best way to approach scarcity of surgical residents’ time is to find efficient evidence-based ways to make the most of it.

patient care, and recognize the trust patients place in them. However, another theme emerged from these qualitative interviews, which is that surgeons do not routinely voluntarily inform patients about the role of residents in the OR. Researchers also qualitatively interviewed patients undergoing elective neurosurgical procedures about the role of residents in their surgery. Most patient respondents had a low level of knowledge about what residents are and do, but also had some anxiety about the involvement of residents. Most of these patients were unaware that residents have medical degrees and did not know the difference between medical students, junior residents, and senior residents. However, they understood that residents would be present in the OR, supported residents’ educational needs, and overall stated they trusted the medical system. These respondents understood and accepted that hands-on training is essential for residents to become competent surgeons, with at least one respondent stating, “It’s better for them and just for the future of medical practice that they’re in surgery.” However, most patients thought surgeons should be responsible for informing them about resident involvement in their operation and indicated that they would like to meet the residents involved before the operation. Only 24 percent of surgeons surveyed require that residents meet the patients before operating on them.32

Cowles and colleagues also surveyed general surgery patients (n=200) regarding their perceptions of resident involvement in their surgical procedure.33 In contrast to the study by Knifed et al, most of these patients, 70 percent, knew that residents had completed medical school. Among these patients, 91 percent believed resident involvement in their care was important to help in the education of future surgeons, and 86 percent were comfortable with resident involvement.33 However, only 64 percent were willing to allow residents to perform some of the procedure. When examining patient expectation and association with patient attitudes regarding resident involvement, the awareness that there would be multiple physicians involved in their care was positively correlated with positive patient attitudes toward the role of residents in their care. When patients anticipated that several physicians would be involved in their medical care,

REFERENCES


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they were more likely to feel it was important to help in the education of future surgeons, to know who was in charge of their care, to feel that surgical residents helped them better understand their plan of care, and to have positive responses to resident involvement.

Porta and colleagues surveyed patients (n=316) specifically about disclosure of resident participation and its effect on patient informed consent. They found that 94 percent of patients had consented to having a resident participate in their operation, and 91 percent believed that their care at a teaching hospital was equivalent to or better than that of a private hospital. Most patients believed that they received personal benefit from participating in resident training and that their participation would benefit other patients. However, most patients wanted to be informed if a resident was going to be involved in their operation (87 percent for a minor procedure and 95 percent for a major procedure). Additionally, 92 percent wanted to be informed if this was the first time the trainee was performing a particular procedure, with 55 percent stating that this information would make them less likely to consent. Patient belief that there was a societal or personal benefit associated with the participation of residents in their procedures correlated with their willingness to consent to resident involvement.

These studies show that, in general, patient knowledge about surgical trainee involvement in an operation is low but has a large impact on patient informed consent. Also, when patients anticipate that their care will be provided through a team approach, are given the opportunity to meet the resident members of their surgical team before the procedure, and understand the personal and societal benefits of resident participation, they are more likely to consent to having a trainee assist in their operation.

**Supervision in the OR**

While surgical trainees in the past were free to independently manage the care of indigent patients, today’s training programs require an increasing amount of attending supervision due to economic and social pressures, including an increasing num-
The role of surgical trainees during the patient’s procedure and how it affects patient informed consent is another frontier in the evolution of general surgical training that is still being elucidated.

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46. Borman KR, Fuhrman GM, Association of Program Directors in Surgery. Resident duty hours: Enhancing sleep, supervision, and reduced duty hours. This concern is less commonly expressed among other nonsurgical specialists who report that increased attending involvement has proven to be beneficial to their education and patient care. However, the unique procedural and acute nature of surgery requires a gradation of responsibility to fully develop an independent surgeon.

Loss of resident autonomy has been a consequence of social, economic, and political pressures. Although the effects of increased attending involvement in the operating room are not well studied, it is imperative that technical skills and intraoperative decision making are taught through alternative methods to ensure the continued development of skilled surgeons. ◆
Effective communication is a key component and common denominator in successful organizations and businesses, and medical practices are no exceptions to this rule. Studies have consistently demonstrated that effective communication is essential to delivering safe and high-quality patient care.\(^1,2\) Until recently, residents have not been required to complete standardized courses in communication, and the subject has never been a formal component of graduate medical education. However, the emphasis placed on communication has increased since the Accreditation Council on Graduate Medical Education (ACGME) has identified it as one of the six core competencies for physicians.\(^3\)

Consequently, many surgical training programs are teaching residents to become more effective communicators and developing processes to improve care coordination and provide more patient-centric care. As surgical training continues to evolve, renewed focus and innovative approaches in communication across disciplines ultimately will enhance the quality of patient care.

Health care documentation has advanced from paper charts to electronic health records (EHR). This new method of communication between health care providers eliminates many potential errors. Illegible handwriting, misplaced orders, and delays in the processing of orders are all less likely to pose problems because of the new system.
As medicine has evolved over the last few decades, so has surgery. Historically, patients who required surgery were brought into the operating room (OR), and the procedure began when the surgeon made the incision. Times have changed. Currently, a number of systematic protocols are implemented prior to patients undergoing surgery. With the advent of surgical checklists to confirm variables, such as patient’s consent, site of surgery, and procedure performed, morbidity and mortality have declined.

Furthermore, as health care has become increasingly specialized, it has concordantly become more fragmented. Patients with complex diseases may often encounter multiple specialized health care teams during their hospital stay, each with its own management priorities and treatment plans. Communication failure among different health care providers is one of the most frequently cited causes of preventable harm to patients, and The Joint Commission has reaffirmed the relevance of improving the effectiveness of communication among care providers as a national patient safety goal.4

In addition to the communication challenges addressed here, it is important to note that the 80-hour workweek has completely changed surgical training. In order to abide by this rule, residents are engaged in the practice of sign-outs. These sign-outs place responsibility on the resident on call. Although the continuity of care by the same resident is compromised, the overall care of the patient should not be. Thorough and accurate sign-outs between residents ensure that everyone is reading off the same page and that the safety and quality of patient care remains intact.

Checklists—a tool for enhanced communication and teamwork

The aviation sector developed the first checklist after pilot Maj. P. Hill piloted a Boeing Model 299 that took off in Dayton, OH, on October 30, 1935, but then stalled and crashed. An investigation concluded that Maj. Hill forgot to release the elevator lock before taking off. The crash was classified as “pilot error,” and newspapers reported it was “too much airplane for one man to fly.” A group of test pilots evaluated the incident and instead of abandoning the plane or requiring longer training, they created a checklist. This checklist resulted in the Model 299 flying nearly 2 million miles without an accident.5

Health care practitioners have been using checklists to improve patient safety and quality of care for at least 20 years. The Northern New England Cardiovascular Disease Study Group developed a checklist for all cardiac surgery patients in the early 1990s, which decreased the number of patient deaths by almost 300.6 In 1998, the American Academy of Orthopedic Surgeons made it standard practice for surgeons to initial, with a marker, the operative site before bringing a patient to the OR.6 In 2003, The Joint Commission approved the Universal Protocol for Preventing Wrong Site, Wrong Procedure, and Wrong Person Surgery.

In the medical literature, checklists have shown successful reduction of morbidity and mortality. One memorable demonstration was by Peter Pronovost, MD, PhD, FCCM, senior vice-president for patient safety and quality and director, Armstrong Institute for Patient Safety and Quality, Johns Hopkins Medicine, Baltimore, MD, who created a five-item checklist for preventing infection during insertion of a central venous line.7 Although the five steps are simple and obvious—wash hands; clean the patient’s skin with chlorhexidine; put sterile drapes over the entire patient; wear a mask, hat, sterile gown, and gloves; and put a sterile dressing over the insertion site—Dr. Pronovost found that even experienced clinicians skipped at least one step in more than one-third of patients. After several years of implementing the checklist during central venous line insertion, his hospital and other hospitals in the U.S. successfully reduced infections and deaths, and there was a demonstrated reduction in costs. At Johns Hopkins, the checklist decreased the 10-day line-infection rate from 11 percent to only two line infections in more than two years, resulting in $2 million in savings. When the checklist was implemented in Michigan intensive care units (ICUs), hospitals saved more than 1,500 lives and approximately $175 million in the first 18 months.5
In surgery, communication in the OR is complicated by having multiple team members who often have never worked together, including the circulating nurse, scrub nurse, anesthesia assistant, anesthesiologist, surgeon, and surgical assistant.

Despite the obvious benefits of using checklists, they were met with some resistance. Some physicians believe their jobs were far too complicated to be reduced to a checklist or that clinical judgment was superior to protocol. Some physicians were offended by the suggestion that they needed checklists, and viewed checklists as beneath them and an embarrassment. Tom Piskorowski, MD, an ICU physician, said, “Forget the paperwork. Take care of the patient.” Others were concerned that the checklist had been developed by nonphysicians without their input. Some surgeons saw it as an irritation or an interference with their turf. They feared that the checklist broke with the surgical tradition of the virtuoso surgeon who could do it all himself.

In surgery, communication in the OR is complicated by having multiple team members who often have never worked together, including the circulating nurse, scrub nurse, anesthesia assistant, anesthesiologist, surgeon, and surgical assistant. Studies have shown that nearly half the time the operating staff did not know each other’s names, but the silver lining was that when they did, communication ratings improved substantially.

Recognizing the dangers in surgical care, health care professionals met at the World Health Organization (WHO) headquarters in 2007 to initiate the WHO Safe Surgery Saves Lives Campaign. At this meeting, leading experts identified problems, such as unsafe anesthesia, infections, and the surgeon’s lack of communication and respect for anesthetists and nurses. Several surgeons had experience with OR checklists, and with their input, the WHO group came to a consensus on several checkpoints important in surgery.

A WHO working group took these checklists and condensed them into one document with three pause points where the team must stop to run through the checks before proceeding:

1. Before induction of anesthesia
2. Before skin incision
3. Before the patient leaves the OR

Much of the recent attention on surgical checklists evolved from the work of Atul Gawande, MD, MPH, FACS, who led the WHO Safe Surgery Saves Lives program and authored *The Checklist Manifesto*. The WHO group agreed on a 19-item checklist in spring 2007. This checklist decreased the rate of death from 1.5 percent to 0.8 percent, the rate of complications from 11 percent to 7 percent, the rate of surgical site infection from 6.2 percent to 3.4 percent, and the rate of unplanned reoperation from 2.4 percent to 1.8 percent (all p <0.05). The WHO checklist has been translated into 11 other languages, and it has been studied, adapted, and applied in various different countries.

The WHO Safe Surgery Saves Lives team had 10 objectives they hoped the checklist would address, and one was, “The team will effectively communicate and exchange critical information for the safe conduct of the operation.” The checklist was designed to enhance communication and calls for all members of the OR team to introduce themselves by name and role.

Checklists are designed to address (1) the fallibility of memory, (2) the fallibility of attention (for example, distraction), and (3) the minimum necessary steps. Checklists can protect anyone, even the skilled and experienced surgeon, against failure. They ensure people communicate, coordinate, and accept responsibility.

Checklists revolutionized aviation and prevented pilots from making human errors while flying. Like pilots, surgeons are susceptible to making mistakes while performing complicated tasks. Fortunately, the American College of Surgeons (ACS) acknowledges the benefits of combining communications team training with an international recognized surgical checklist. Currently, more than 3,000 hospitals participate in the WHO Safe Surgery Saves Lives Campaign and use the organization's checklist.

**Coordination of care**

Communication and coordination of care are two significant challenges currently facing the delivery of surgical care and are critical to its success. Patients with multiple, complex comorbidities that require attention from numerous providers with distinct areas of expertise frequently find themselves navigating through diagnoses and treatments from an often disjointed and
loosely associated group of providers. In U.S. hospitals, where resources are abundantly available, one would expect care to be better coordinated and communication to be more effective. However, failures in these two essential components of care continue to contribute to the shortcomings of the nation’s health care system and have been underscored by the Institute of Medicine.4

To meet the challenges of communication and coordination of care, health care must be delivered in an environment of collaboration with a focus on delivering patient-centered, high-quality surgical care. In her book High Performance Healthcare: Using the Power of Relationships to Achieve Quality, Efficiency and Resilience, Gittell observes that when doctors, nurses, therapists, case managers, social workers, other clinical staff and administrative staff are connected by shared goals, shared knowledge, and mutual respect, their communication tends to be more frequent, timely, accurate, and focused on problem solving, enabling them to deliver cost-effective, high quality patient care.11 This intricate interdependency between relationships, communication, and coordination in the setting of shared goals, shared knowledge, and mutual respect defines relational coordination.11 Because surgeons spend a significant portion of their day in the OR away from inpatient care activities, successful and well-developed relational coordination can help bridge the gaps in patient care.

High levels of relational coordination among care providers have been associated with shorter hospital stays, greater patient-perceived quality of care, and improved clinical outcomes.11 A successful multidisciplinary and collaborative approach has been reported in the surgical oncology literature and was shown to affect patient treatment plans.12,13 Expanding the concept of relational coordination into the realm of surgical rounding with different disciplines may provide an opportunity to improve communication, as well as patient care and satisfaction. Some health care institutions and providers have experimented with different models to achieve these aims.14-19 At Penn State in Pittsburgh, a multidisciplinary process known as “collaborative care rounds” was instituted based on the aforementioned principles. This process includes daily mid-day bedside rounds with multiple providers, including residents, nurses, social workers, and care coordinators. Morning plans are reassessed; new data are reviewed; and patient questions, concerns, and future plans are addressed from the patient’s perspective. Educational elements are emphasized as these collaborative care rounds provide an opportunity to reinforce lifestyle and behavioral modifications in a concerted and unified fashion. As a result of these bedside rounds, patients have reported feeling they are at the center of their care and are primary participants in the interaction, discussion, and formulation of their care plans. Six months into implementation, unit and service-based Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores improved dramatically.

The literature on multidisciplinary rounding, as a basis for collaborative care, is limited—particularly for surgical patients.14,15 Multidisciplinary rounding has been implemented in many different forms with varying levels of success with respect to cost savings, length of stay (LOS), and quality outcomes.16-19 In a model that used regularly scheduled multidisciplinary rounds in a conference room setting, Felten and colleagues demonstrated cost savings and decrease in LOS in general surgery patients with participants reporting improvements in communication and teamwork.14 Even in studies that failed to support benefit in LOS and hospital costs, the benefit of multidisciplinary rounds on teamwork, collaboration, and efficiency of the workday persisted.20 Observational studies have demonstrated that higher ratings of collaboration and teamwork have been associated with better patient outcomes.15,20-22 Furthermore, higher nurse retention and greater job satisfaction among team members has also been shown.21 A recent Cochrane review addressing the impact of interprofessional collaboration and the effects of practice-based interventions on professional practice and health care outcomes described these efforts as “promising” and recommends further dedicated research.24

Notably, surgical care is undergoing a paradigm shift from a physician-centered model to one that is patient-centric. The emerging model embraces a partnership between the patient and health care providers
Patient-centered care requires successful relational coordination, deliberate collaboration, and communication between health care teams and their members.

Effects of work-hour restrictions
While the implementation of checklists and multidisciplinary rounds represents a significant improvement in health care delivery over the past decade, there have been sweeping changes related to regulation of resident duty hours. In 2003, the ACGME implemented a series of resident work-hour rules, including the controversial 80-hour workweek, which was intended to reduce resident fatigue and thus improve patient safety.

More recently, a series of additional restrictions were implemented, including a new rule that limits interns to no more than 16 hours of continuous duty. This policy has led to the widespread adoption of shift coverage among junior residents. Although the impact of these changes is still being evaluated, they do not appear to have resulted in a measurable improvement in patient outcomes. However, as these rules have been implemented, a number of issues have been identified, particularly in surgical residency training programs.

With the limitation on resident work hours, it has been challenging to optimize the service-to-education ratio in order to maximize time spent involved in direct patient care and the OR. As a result, many programs have expanded service coverage by hiring mid-level providers to offset the resident workload and hours regulations. For these reasons, there has been an increase in the number of sign-outs among residents and midlevel providers, leading to more than 300 patient sign-outs for the typical intern over a one-month period.25

As the frequency of patient sign-outs increases, particularly among complex surgical patients, concern that communication breakdowns may lead to medical errors is on the rise. The effects of sign-outs on patient care has been challenging to study, as it involves a qualitative evaluation of the sign-out process and longitudinal follow up of patient outcomes. Recently, Yeung and colleagues examined the effect of frequent patient sign-outs on a busy trauma service to determine whether they affected patient outcomes.26 In a retrospective review of more than 4,000 patients, they observed no difference in time spent in the emergency department, ICU length of stay, ventilator days, or mortality when patients were admitted during shift change periods (6:00 to 8:00 am and 6:00 to 8:00 pm) versus those admitted during other times of the day. However, they observed a small but significant increase in overall length of stay (five versus four days) in patients admitted during shift change periods. Although these data are encouraging, more studies designed to evaluate the impact of frequent patient sign-outs need to be carried out to fully understand the true effect on patient care.

Traditionally, one of the tenets of surgical residency training has involved pre-rounding as a junior resident. This process typically involves arriving at the hospitalearly, reviewing patient data, and assembling this information into a patient list for the surgical team. In the context of resident duty hours, this process consumes 10 percent or more of an intern’s assigned shift. Also, the integrity of patient data may be compromised during the transcription process. The enactment of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 has led to the widespread adoption of the EHR in hospitals across the U.S.

Despite the variety of high-quality EHR products available, few suppliers have developed software to facilitate patient sign-off among health care providers. Recognizing that patient data are largely maintained in an electronic record, a number of surgical training programs have developed computerized database programs to seamlessly translate patient data into a working patient list and sign-out tool. The leader in this area has been the University of Washington, Seattle, which developed a computerized rounding and sign-
out instrument (CORES) in 2003. This program was designed with three goals: improve workflow efficiency, enhance sign-out communication quality, and increase the time spent in direct patient-care activities. As the program was implemented, some individuals expressed concern that medical errors may arise because residents were not directly reviewing patient information, medications, and other data in the patient’s electronic chart before rounding because the information was automatically populating in the report on rounds. To study this potential problem, a randomized crossover cohort study was performed, comparing residents (internal medicine and general surgery) who rounded in the traditional way versus using the new computerized rounding report. Researchers found that adoption of the CORES program resulted in reduced pre-rounding time, improved the quality of patient sign-out, and did not increase medical error. A number of surgical residency programs have followed the University of Washington’s lead and developed their own computerized sign-out tool. These range from a simple Excel spreadsheet model to a formalized, custom-built program via collaboration between the residents, program directors, and hospital administration. In each system, the authors observed a measurable decrease in time spent pre-rounding and an improvement in communication and patient sign-out.

Moving forward, it is clear that changes in resident duty-hour regulations will require constant adaptation to maintain educational standards and to optimize delivery of quality patient care. Present challenges include transitioning to a shiftwork schedule among junior residents, which has resulted in more frequent patient sign-outs. The rounding and sign-out process can be integrated with the data in the EHR, which would streamline these tasks and increase resident efficiency,

REFERENCES


continued on next page
As the frequency of patient sign-outs increases, particularly among complex surgical patients, concern that communication breakdowns may lead to medical errors is on the rise.

resulting in more time spent in direct patient care and the OR. Development of a high-quality electronic sign-out tool requires the support of the hospital administration and collaboration among residency programs. As these instruments are developed and sign-out procedures are standardized, continued research into their effects on patient safety and outcomes needs to be conducted to identify methods to improve these tasks.

Conclusion
This year, the ACS commemorates its 100th anniversary. Since its establishment in 1913, the ACS has continued to make efforts in starting committees, initiatives, and setting the standard for surgeons to improve quality in hospitals and, most importantly, patient care. The ACS’s goal of Inspiring Quality: Highest Standards, Better Outcomes remains constant as health care delivery changes.

Many aspects of communication in surgery have received particular attention in the past decade in an effort to advance quality improvement. Surgery checklists have undoubtedly revolutionized standards of practice and prevented errors. Patients undergoing surgery 100 years ago were more susceptible to infection and other preventable morbidities. Although complications may be inevitable, checklists have yielded concrete results, including decreases in infection rates and preventable errors. Another communication transformation is the increased frequency of collaboration and coordination among health care providers. These types of relational coordination are a key component of patient-centered care. Lastly, changes in duty-hour regulation have required residency programs to adopt better sign-out methods.

The ACS will always have a strong commitment to ensuring that the surgical patient receives quality care. These current and future communication initiatives will provide young surgeons and surgeons in training with the skills they need to provide optimal care to surgical patients for the next 100 years.

REFERENCES (CONTINUED)
The surgeon’s character is one of a natural leader with a zest for exploring new opportunities and furthering one’s knowledge and experience. In an era of increasing globalization, the dramatic advances in transportation methods and social media have truly transformed the world into a veritable “global village.” As such, increasing numbers of surgical trainees are seeking to include international experience as a component of their surgical education. Many of these trainees will choose a residency based upon a program’s established rotations abroad, or upon the flexibility of the program in allowing a foreign surgical experience.

International surgical involvement within residency training often occurs in a setting with few medical and surgical resources and requires a dedicated effort on the part of the trainee to manage his or her time effectively, be cognizant of legal documentation requirements, and to become familiar with culturally competent care and practices. In fact, it is usually the cultural environment that heightens the experience for a visiting team of volunteers. There are several reasons to pursue these opportunities, and this article provide an overview of the benefits of international training experiences.

Benefits of international training
First, foreign surgical experience may enrich a surgical trainee’s personal education. This time away from home provides exposure to situations and medical conditions rare in North America. Dedicated ancillary staff and auxiliary high-technology radiological facilities are far...
Although the Internet and other forms of telecommunication have greatly expedited our capabilities to transmit knowledge to one another with relative ease, and simulation has been developed recently to enhance learning of procedural skills, the traditional method of “hands-on” experience from experts in various fields can never be underestimated.

less common in many countries, and consequently, a greater emphasis and reliance on surgical clinical examination and diagnosis is essential. Residents encounter more advanced disease and have to assimilate treatment plans with scarce resources. Furthermore, it is timely during this era of health care reform that trainees be exposed to differing health care delivery models and practices from around the world.

International experiences also ensure that people in need throughout the world have access to necessary medical and surgical services. Many less-developed countries have an overwhelming disease burden, and this situation is often compounded by a paucity of trained surgeons. Many residents plan to spend significant time abroad at the faculty level, helping to train surgeons in areas of the world that have a limited supply of trained surgeons or specialty-trained surgeons per capita. To this end, some surgical programs have successfully built in a supplementary year to train residents in rural and international surgery, and the graduating residents are now on staff as adjunct faculty working in underdeveloped areas of the U.S. and other parts of the world.1

Another benefit of overseas training is that it helps to encourage international collaboration. Although the Internet and other forms of telecommunication have greatly expedited our capabilities to transmit knowledge to one another with relative ease, and simulation has been developed recently to enhance learning of procedural skills, the traditional method of hands-on experience with experts in various fields can never be underestimated. A big part of surgical training is still based on an apprenticeship model and a continued fostering of the collaboration within our specialties and transference of concepts and techniques remains imperative.

Unfortunately, published data on the availability of international training opportunities within residency programs are limited. In a 2011 survey of U.S. general surgery program directors, Mitchell and colleagues found that 12 percent of U.S. programs had a formal international elective in place, with only 20 percent of these programs having a formal curriculum; 60 percent reported informal programs in place for international rotations for residents.2 A similar study in 2009 with 73 respondents reported 33 percent of U.S. programs with educational opportunities in global surgery, 86 percent of which offer rotations abroad.3

Most surgical residents have an expressed interest in international educational opportunities. A 2009 survey of 724 general surgery residents found that 92 percent were interested in an international elective.4 In fact, more than half of them were willing to use allotted vacation time to pursue this elective, and 74 percent would have participated even if cases did not count toward residency requirements. Furthermore, the interest in global surgical electives extends beyond general surgery into the surgical subspecialties, with most trainees in plastic surgery, otolaryngology, and other disciplines expressing a desire for such experiences.5,6 The most frequent barrier for these residents, understandably, was logistics. As such, a concerted effort to gain a wider awareness and acceptance of this need is important.

Volunteerism and education

The American College of Surgeons (ACS) Operation Giving Back program defines volunteerism as providing “prospective, planned care or services to patients outside of the routine practice environment with no anticipation of reimbursement or economic gain.”7 The value of volunteerism is often in providing much-needed medical expertise and care in resource-poor settings. Whether provided by a single surgeon visiting a rural hospital or by a group of medical professionals in an organized fashion, this care often includes necessary operations and services for patients who otherwise would not have access. Areas of the world with a paucity of general surgeons or of surgical subspecialists may benefit from time given by visiting volunteers.

In contrast, educational experiences place emphasis on the training of those visiting the country or the training of surgeons who reside in that country. Visiting physicians who are on international educa-
tion rotations, often medical students or residents, have valuable opportunities to see pathology that is less common in their own country or to obtain more experience in less commonly performed procedures. Imperative in such situations is adequate trainee supervision during the rotation to ensure that residents practice within the parameters and usual limitations of the home training program. To act otherwise would be unethical.8

Training of international surgeons

The education that U.S. surgeons can provide to health care professionals in limited resource areas of the world is an area that continues to evolve.

For many Western surgeons, participation in medical missions historically was tied to their religious principles—part of an effort to fulfill their faith’s doctrine of serving others. Organized religions often supported these programs with the recognition that providing needed health care may lead to acceptance within the populations to which they hoped to spread their faith.

This trend continued in the 20th century; however, many governmental and non-governmental secular organizations started to become involved as international travel made the containment and eradication of disease a global concern. Today, many organizations focus on short-term trips to provide care. Critics note that without proper planning, these trips may become self-serving and “provide value for visitors without meeting the local community’s needs” or be ineffective, providing only temporary and short-term therapies.9

A logical response to these concerns and a more effective means of providing care to a large population is to train the people living in that society. An example is the collaboration between U.S. surgeons and the Pan-African Academy of Christian Surgeons (PAACS). PAACS formed in 1996 when a group of general surgeons from mission hospitals in Africa partnered with the Christian Medical and Dental Association in the U.S. Since then, it has grown to encompass eight hospitals in Africa that serve as the training sites for seven formal general surgery residencies and a single pediatric surgery training program.9 Numerous secular U.S. institution-sponsored surgical residencies have been established in African nations as well, including one in Eritrea10 and one in Malawi.11

The desired outcome of these collaborations is the training of surgeons who will then go on to train other health care professionals within their country and culture, obviating the need for short-term missions. Once this aim is accomplished in a particular area, North American surgical residents can continue to benefit from training in these locations by rotating through now self-sustaining training programs abroad.

Getting involved

The benefit of the surgical volunteerism experience is a lifelong reward, and multiple opportunities are available to surgeons, including programs sponsored by Operation Giving Back. And, for students and residents who are interested in the experience of training abroad, many residency programs around the country now have an established curriculum involving international rotations.

Medical students applying for general surgery residency frequently inquire about the availability of these opportunities, and the authors support this practice. However, it is important to query program directors regarding the details about their rotations abroad. Important questions or topics to discuss with these individuals include whether the program has an established affiliation with an institution in the visiting country, the number of residents who are allowed to participate per year, whether the institution has a structured curriculum for that time, and whether the program provides residents with the ability to count cases performed abroad toward the Accreditation Council on Graduate Medical Education case log requirements. Applicants also are encouraged to contact residents from each program who have already participated in these rotations to get their feedback and perspectives.
Exploring your options

International training can be obtained in several ways. The most common is an elective rotation abroad, wherein a resident spends a predetermined time (usually four to eight weeks) at a structured medical facility. This is mostly limited to first through fourth postgraduate year (PGY) residents; chief residents may be allowed if their PGY-4 curriculum included chief-level rotations as all of these rotations must be completed in integrated institutions. The Residency Review Committee (RRC) has specific requirements that must be met in order for this time to count toward the required 48 weeks of clinical practice per year. A second option—more applicable to subspecialty and integrated residencies—involves participation in a mission under the supervision of a U.S.-based faculty. It is important to note that this experience may not count as clinical practice, and residents may need to use vacation time to participate.

As mentioned previously, general surgery residents as a group are interested in international training experiences. Residents in programs with already established electives need to discuss with their program director their interest as early as possible to allow for mandatory planning. The residency administration may require clearance both by the institutional graduate medical education office and the RRC on an individual basis, so timing is important.

Surgery residents who are enthusiastic about international rotations and enrolled in a program without an established elective may still be able to arrange for such experience, but early planning and communication are key to success. The RRC has developed the following list of requirements:

- Name and location of the international site
- PGY level of the resident
- Dates of the rotation
- Verification that the rotation is an elective
- Program’s accreditation status and cycle length (must be continued accreditation with at least a four-year cycle)
- Statement that the American Board of Medical Specialties-certified faculty will supervise the resident (the RRC may be able to accept non-certified faculty if their review finds these professors acceptable, but this often translates to even further time until approval)
- Description of the goals and objectives of the rotation
- Educational rationale for the rotation
- Verification of the process of resident evaluation during the rotation
- Detailed description of the clinical experience
- Verification of salary, expenses, and travel/evacuation insurance
- Verification of access to educational resources (library or Web-based)
- A copy of the program’s Letter of Agreement

The list of requirements may appear lengthy, but the rationale behind it is sound. The RRC is interested in enhancing resident education. Only programs in good standing are allowed to offer such an elective. Deficiencies in operative case volumes, duty-hour compliance, and board pass rates are likely to inhibit the development of an international rotation, as the residency program’s goals should first aim at improving the already established experience. The clinical setting needs to be well-defined. The type of institution, referral pattern, and scope of practice must be identified, and the institution’s operative volume, type, and mix must be assessed. The same is true for the ancillary, anesthetic, radiologic, and laboratory support.

The list of requirements may appear lengthy, but the rationale behind it is sound. The RRC is interested in enhancing resident education. To that end, the requirements are meant to ensure that residents will obtain valuable experience in a safe environment. The educational standards and supervision should be similar to...
that of any approved training program in the U.S., and the residency program must meet these mandates.

The factor that traditionally has inhibited residents from pursuing international experience has been the fact that the operative case volume from these rotations has not counted toward the ACGME case log requirements. However, because the RRC now recognizes that the operative experience obtained abroad can be unique and valuable, credit may be allowed for cases performed under the supervision of a U.S.-appointed teaching faculty, after appropriate communication with the RRC.

Program directors must exert significant effort to develop and maintain international experience as part of their curriculum. However, with residents’ increasing interest in this training and the ability to count the operative cases for ACGME case logs, more programs are getting involved with international training. For residents who are enthusiastic and committed to expanding their training in this domain, early recognition and communication are essential. The RRC must be intimately involved in the process, and, therefore, we encourage all interested parties to contact their RRC and obtain updated material in terms of requirements and guidelines before initiating a plan.

Conclusion
U.S. surgical training programs need to undergo remodeling to meet the needs of a globalizing world with dramatic health care disparities. Surgical trainees recognize these needs and relish the opportunity both to provide clinical services to people in underdeveloped countries and as a means of broadening their educational experience. The ACS has been supportive of the booming interest in creating programs that address the surgical needs in underserved areas of the U.S. and abroad. As natural leaders, surgeons need to overcome the challenges of an over-regulated training system and embrace a leadership role in forming international partnerships.

REFERENCES
Early surgical subspecialization:

A new paradigm?

Part I

by Scott B. Grant, MD; Jennifer L. Dixon, MD; Nina E. Glass, MD; and Joseph V. Sakran, MD, MPH

Early specialization in surgical training is a concept that has been evolving for as long as surgical training has been in place. It started with early specialists who provided only one procedure, such as lithotomy for bladder stones, to the point that now surgical trainees may have early systematic exposure in the field of their choice, with options including colorectal, pediatric, or transplant surgery. The American Board of Surgery’s (ABS) Flexibility in General Surgery Residency Specialty-Specific Guidelines allow residents to spend up to 12 months of time on flexible rotations during their last 36 months of general surgery training to offer an opportunity for “early tracking” into the resident’s preferred subspecialty.

The paradigm of a residency program that would provide advanced training emerged in the 19th century and was formalized in the early 20th century by William Osler, MD, in medicine and later William S. Halsted, MD, FACS, in surgery, both at Johns Hopkins University in Baltimore, MD. Prior to that time, all individuals with medical degrees were considered “physicians and surgeons.” Ophthalmologists, otolaryngologists, gynecologists, orthopaedists, and genitourinary surgeons comprised 43 percent of the first class of Fellows of the American College of Surgeons (ACS) in 1913. However, the term “general surgery” was not a category in the ACS directory until 1965. Since then, the practice of surgery has become increasingly specialized, so that orthopaedic surgeons often practice on only one particular joint, general surgeons on a particular organ, or neurosurgeons on a particular disease.

The course of study to become subspecialized traditionally proceeded through medical school, internship, general surgery residency, and often into a subspecialty of general surgery. Trainees and educators have asked whether all those years of background training are required for residents who plan to practice a single subspecialty, and there has been a move toward earlier subspecialization. One advantage of shorter training is that physicians can repay their educational debt earlier. Several subspecialties have already devel-
Several subspecialties have already developed well-formed paradigms for training programs independent of general surgery residency programs. These programs are the focus of this article.

Vascular surgery
Over the last 50 years, the training of vascular surgeons has gone from apprenticeships in the early 1960s to the development of fellowships certified by the ABS. In this century, a new training model for vascular surgeons has emerged and more changes are likely on the horizon.

During the 1960s and 1970s the norm was a five-year general surgery residency followed by one year of specialization with pioneers in vascular surgery. As time passed, the need for more formalized vascular fellowships became apparent. Edwin J. Wiley, MD, was one of the key contributors to the development and promotion of training in vascular surgery. The Society for Vascular Surgery (SVS) and the North American Chapter of the International Society of Cardiovascular Surgery spearheaded these efforts under the leadership of Dr. Wiley and other pioneers in the field. The collaboration between both societies continued with the development of the Joint Council (JC) in the early 1970s. Over the next decade, the governing bodies for graduate medical education agreed on guidelines for essentials in the training of vascular surgeons. By 1982, the JC had credentialed 52 programs in vascular training; 1982 also marked the inception of a certificate of special qualifications in vascular surgery by the ABS.

In these early years, vascular training consisted of a one-year fellowship after a five-year general surgery residency. The requirement for ABS special certification consisted of a written examination in 1983 and subsequently incorporated an oral examination in 1986. As the requirements of certification changed, so did the training, with expansion into a two-year fellowship program. The second year was initially tailored to bolster research efforts; however, a more clinical component was incorporated in 1995 as the endovascular aspect of vascular surgery began to flourish. From 1982 through 2007, the ABS certified 2,676 diplomats. The key turning point took place on July 1, 2006, when the ABS converted the subspecialty certificate of special qualifications in vascular surgery to a primary specialty certificate. This move allowed for the creation and development of new training paradigms to prepare competent future leaders in vascular surgery.

The training pathways may be divided into two categories: independent and integrated. The independent category consists of the following pathways: 5+2, 4+2, and 3+3 (see Table 1, page 40). The integrated program, also known as the 0+5 pathway, consists of two years of core surgical education followed by three years of concentrated vascular surgery. This new training paradigm allows residents to participate in a variety of rotations related to vascular surgery that are difficult to incorporate in the traditional 5+2 model.

In 2007, the inaugural year of the integrated (0+5) pathway, three institutions participated in this model. Since then, the number of individuals training in vascular surgery has increased rapidly, and 40 integrated programs are now in place nationwide. The paradigm shift is probably a multi-factorial response related to: (1) the technological advancement within the specialty, such as the rapid expansion of endovascular surgery; (2) the increase in overall trainee debt; (3) residents’ desire to curtail length of training; and (4) the societal obligation to provide well-rounded competent vascular surgical care. Although a number of different training pathways still exist, the integrated pathway is gaining the greatest momentum.

Plastic and reconstructive surgery
Plastic and reconstructive surgery training in the U.S. has become quite competitive. Medical student applications to plastic surgery residency programs increased 34 percent from 2002 to 2005. An online survey of 49 programs found that only 4.7 percent had a residency spot go unfilled in the last 10 years. Nonetheless, 10 programs (23.3 percent) were less than satisfied with the selection process.

The American Society of Plastic Surgeons (ASPS) was founded in 1931 and is the largest plastic surgery organization in the world. The American Board of Plastic Surgery (ABPS) began in 1938 as a subsidiary of the ABS and achieved status as a major specialty board in May 1941. In 1958, S. Milton Dupertuis, MD, president of the ASPS, noted that there were 36 residency programs in plastic surgery with an additional 28 preceptorships that provided training for 140 plastic
TABLE 1. VASCULAR SURGERY TRAINING PATHWAYS

<table>
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<th>PATHWAY</th>
<th>YEARS OF TRAINING</th>
<th>BOARD CERTIFICATION</th>
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<tbody>
<tr>
<td>5+2 (traditional)</td>
<td>7</td>
<td>General surgery and vascular surgery</td>
</tr>
<tr>
<td>4+2</td>
<td>6</td>
<td>General surgery and vascular surgery</td>
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<td>3+3</td>
<td>6</td>
<td>Vascular surgery</td>
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<tr>
<td>0+5 (integrated)</td>
<td>5</td>
<td>Vascular surgery</td>
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surgeons. Dr. Dupertuis recommended a gradual conversion from preceptorships to residency programs, noting that “all other surgical specialty boards have either discontinued preceptorships or now permit preceptor training only to supplement approved residencies.” Since then, plastic surgery training programs have continued to evolve.

The plastic surgery program at Columbia-Presbyterian Medical Center, New York, NY, is considered the oldest continuously running plastic surgery training program in the nation. Shortly after the formation of the ABPS, a certified two-year residency program was established at Columbia, one of the first of its kind, with Dr. Dupertuis as the first plastic surgery resident in 1938. In 1958, the ABPS officially increased the requirement of approved residency training in “basic surgery” from two to three years effective in 1960. In 1994, the Association of Academic Chairmen of Plastic Surgery reported that approximately 4,300 fully trained plastic surgeons were actively practicing in the U.S. As a result, the ratio of plastic surgeons to population was 1:59,302, with 200 plastic surgery trainees per year. Furthermore, the report suggested lengthening all two-year plastic surgery programs to three years and reducing prerequisite training to three years.

Plastic surgery trainees now follow one of three pathways, as summarized in Table 2, page 41.

Both the combined and integrated models are recognized by the ABPS, but the integrated model is also recognized by the Accreditation Council for Graduate Medical Education (ACGME), whereas the ACGME does not recognize the combined model. Roughly half of all plastic surgery training programs have adopted the integrated model, which accounts for approximately 50 percent of all training spots. However, four programs stopped taking residents through the integrated model within the last 10 years, and nearly half of the integrated and combined programs surveyed also take residents via the traditional pathway.

A recent 40-question survey looking at 130 graduates of the integrated program at Stanford University School of Medicine, CA, graduates from 1966 to 2009 found that career outcomes between integrated and traditional plastic surgery graduates appear to be similar. Of the integrated Stanford graduates, 86 percent were in clinical practice. All of the graduates were either board certified (82 percent), board-eligible (recent graduates, 9 percent), or retired. Although most of these plastic surgeons were in private practice, at least 82 percent had been academically productive, whether through contributing to peer-reviewed publications and book chapters, or serving as program directors.

Plastic surgery training has evolved over the last century. The rise of the three models of training has raised the question about which one is best, which begs the larger question of the pros and cons of early surgical subspecialization. Although an argument may be made in favor of each model, and each model produces successful graduates, only time will tell which pathway becomes preferred.

Cardiothoracic surgery
Cardiothoracic surgery training first began at the University of Michigan, Ann Arbor, in 1928, mainly for surgical treatment of empyema and tuberculosis. It subsequently developed more formally after World War II, propelled by the invention of the cardiopulmonary bypass machine. Finally, in 1971, the American Board of Thoracic Surgery (ABTS) was established. Despite the high rate of general surgery graduates pursuing fellowship, the number of candidates for traditional cardiothoracic surgery fellowship has been declining. From 1994 to 2003 the candidate pool decreased at a rate of 4 to 5 percent per year but then dropped precipitously thereafter, leading to unfilled positions every year since 2004. In 2012, 24 percent of fellowship positions remained unfilled, despite an approximate 20 percent reduction in available positions over the last five years.

Decreasing interest in cardiothoracic fellowships was thought to be due to the decreased exposure to the specialty, especially since these rotations are no
longer a mandatory requirement for general surgery board certification. Only an estimated 70 percent of general surgery residents have a cardiothoracic surgery rotation as a required part of their curriculum, and this training may be on the general thoracic service only.\textsuperscript{10} Cited drawbacks of specializing in cardiothoracic surgery include the work schedule and length of training.\textsuperscript{10-20} Therefore, the aim became to pique interest in students earlier in the career path and to decrease the onerous length of training.

To alleviate the impending shortage of cardiothoracic surgeons, in 2003, the ABTS revised the available pathways for cardiothoracic surgery board certification by retracting the mandate of general surgery board certification. See Table 3, page 42, for the three currently available pathways to ABTS certification.

Thus, integrated six-year (I-6) programs began development at institutions with an existing cardiothoracic residency program in place. They first entered the National Resident Matching Program in 2007, and the first graduate completed training two years ago, in 2011.\textsuperscript{24} Based on the most recent match data from 2012, 13 I-6 programs are in place, with 20 positions filled by graduating medical students.\textsuperscript{24} The same year, 72 programs and 102 positions were available for the traditional cardiothoracic fellowship offered after completion of general surgery residency.\textsuperscript{22} Ratios of candidates to available positions were 27:1 and 131:1 for traditional and integrated programs respectively, and like other subspecialties, candidates for the integrated programs have higher United States Medical Licensing Examination (USMLE) scores than candidates for traditional programs.\textsuperscript{21} It is hard to say whether the field is attracting high-quality applicants due in part to the highly competitive nature of this newly formed track with only 20 positions available, and if this trend would persist with an increase of available I-6 positions.

The future of cardiothoracic training is still variable, especially considering the rapidly diverging tracks of thoracic and cardiac surgery and the unique requirements for board certification in both branches of the specialty.

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**REFERENCES**


continued on next page
TABLE 3. CARDIOTHORACIC SURGERY TRAINING PATHWAYS

<table>
<thead>
<tr>
<th>PATHWAY</th>
<th>YEARS OF TRAINING</th>
<th>BOARD CERTIFICATION</th>
</tr>
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<tbody>
<tr>
<td>Traditional</td>
<td>7 or 8 (5 general surgery + 2 or 3 cardiothoracic)</td>
<td>General surgery and cardiothoracic surgery</td>
</tr>
<tr>
<td>Joint</td>
<td>7 (4 general surgery + 3 cardiothoracic)</td>
<td>General surgery and cardiothoracic surgery</td>
</tr>
<tr>
<td>Integrated/I-6</td>
<td>6 (all cardiothoracic)</td>
<td>Cardiothoracic surgery</td>
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Discussion

Surgical training has been rapidly changing and developing over the past 30 years, especially within certain subspecialties as described in this article. The optimal training paradigm for each remains the source of ongoing debate. The integrated and combined pathways are shorter (and thus cheaper) and have increased training time spent focused in each specialty, but some argue that more general surgery training is necessary to fulfill patient needs. Independent pathway trainees may be at a more mature point in life with more subspecialty experience when they make their career choice than the typical medical student. The counterpoint is that integrated programs lock in quality candidates early.

Overall, it appears that applicants for integrated programs may have stronger applications. A study by Guo and colleagues examining the plastic surgery training program at Harvard University School of Medicine, Boston, MA, showed that when comparing integrated to independent programs, trainees applying to integrated residencies graduated from more highly ranked medical schools, had higher USMLE step 1 scores (mean 235, versus 220 p = 0.015), had higher pre-residency publication scores, and included more MD/PhDs (33 percent versus 4 percent).25 Researchers at the Medical College of Wisconsin, Milwaukee, compared the demographics and applications of cardiothoracic candidates from their traditional program and their newly formed I-6 training program. They found a much higher candidate-to-position ratio after developing the I-6 program and that applicants had higher USMLE Step 1 and 2 scores, had contributed to more publications, and had more advanced degrees compared with the traditional group.21 Researchers at Mount Sinai Medical Center in New York, NY, also found that cardiothoracic integrated applicants had higher USMLE scores but found no difference in research activity. Given that candidates with advanced degrees have spent a substantial amount of time in training already, many are looking for a shorter path to board certification.

It may be that no one paradigm fits every specialty, and by providing multiple pathways, all qualified candidates may enter the field of their choice. The current shift appears to be back in the direction of allowing early specialization and less general training. ◆

REFERENCES (CONTINUED)

Early surgical subspecialization: A new paradigm?

The practice of general surgery is constantly evolving. Numerous factors such as advances in surgical knowledge, techniques, and technology, as well as patient and physician preferences, have driven an increasing numbers of surgeons to specialization. More general surgery (GS) graduates are specializing; in fact, more than 80 percent of graduates of general surgery programs are pursuing additional training beyond the five-year surgical residency.1

To accommodate these trends, a number of early-specialization training models have emerged. Models vary with respect to time of entry, board certification process, and length of training. The most well-established approach is the fully integrated model, which is used in plastic, vascular, and car-

HIGHLIGHTS

- Describes various pathways to specialization, including the traditional integrated model, the American Board of Surgery-approved Early Specialization Program, the flexibility in surgical training programs, and transition to practice models
- Leading surgical educators and training program directors offer their views on issues related to early specialization, including the challenges associated with implementation and the possible effects on the future of surgical training

Part II: Interviews with leaders in surgical education

Afif N. Kulaylat, MD; Feibi Zheng, MD; SreyRam Kuy, MD, MHS; and James G. Bittner IV, MD
diothoracic surgery. In 2004, the American Board of Surgery (ABS) approved the Early Specialization Program (ESP), whereby residents interested in vascular or cardiothoracic surgery would receive one year of fellowship credit for pursuing 12 months of their respective subspecialty training during their fourth and fifth years of general surgery residency. For approval, programs must demonstrate that residents are able to complete the caseload requirements for general surgery board certification and must have a fellowship program in vascular or cardiothoracic surgery, into which residents would track.

Most recently, in 2011, the ABS approved a flexibility in surgery training option (or FIST), which allows general surgery residents up to 12 months of flexible rotations within postgraduate years (PGY) 3–5 to tailor training to a resident’s future career interests. Although there has been a strong trend toward specialization, a countervailing movement has advocated for the strengthening of broad-based general surgery. This year, the American College of Surgeons (ACS) began pilot testing the ACS Transition to Practice Fellowship in General Surgery for trainees who plan on becoming community or rural surgeons at five sites around the country.

The authors of this article had the opportunity to discuss early specialization options and the transition to practice program with residency directors and national leaders in surgical education. (For the full names and titles of the surgeons interviewed, see the sidebar on page 45.) Through the following excerpts from our interviews, we hope to convey some prevailing thoughts on current experiences with early specialization, the challenges encountered, and the future of early specialization and general surgery training paradigms.

What are the practical considerations in deciding whether it is prudent or feasible to begin a new training pathway?

Integrated programs
Dr. Bass: “For our integrated vascular track, which we started two years ago, we looked at three main criteria. First, it was really the endovascular revolution that pushed us over the top. We had already started to see it as a natural evolution of this surgical subspecialty. When certain subspecialties mature into their own unique set of diagnostic and therapeutic tools, they are ripe for picking. Second, I think it’s a matter of what the needs of your community are. In Houston, and in probably the vast majority of large cities, what you need are deep and narrow surgeons. If you’re in rural Texas, that’s probably not the case. Third, we had the volume, the faculty expertise, and a track record of teaching by the faculty. In addition, we had a general surgery residency that was able to lend the foundational aspects of all surgery: wound management, critical care, etc., to the vascular residency.”

Dr. Ricotta: “I see the gulf between skills needed for vascular and general surgery residents widening. Over the last decade, general surgery residents are less well-trained in vascular surgery than they were; often, even those who have had an interest had little experience in the operating room, especially in aortic procedures.”

FIST
Dr. Delman: “When the opportunity came to join a group of programs [that] will not only jointly pursue the FIST option within their institutions, but study..."
We have always supported the concept that learners learn better when pursuing an area of interest, and teachers are more enthusiastic when the learners are engaged.

—Dr. Delman

it and collect data to see the impact on resident education, we jumped at the chance. The big issues for us were: first, making sure that the fellowships at our institution and the specialty divisions were supportive and willing to work towards this end; second, ensuring that we could do this while not compromising the resident who wanted the traditional Emory [Atlanta, GA] training experience; and finally, the actual scheduling of the residents into these flexibility options while still covering all of our services.”

ESP
Dr. Awad: “There are a couple of things that are important when you have an ESP. It is important to have a traditional 5+2 or 5+3 in vascular or CT [cardiothoracic] surgery, respectively. The reason for this is in case you do not have residents in a given year that are interested in pursuing vascular and CT surgery ESP. We have actually had a fairly persistent track of folks [who] have wanted to pursue those specialties, so it has not been a terribly big issue, but you do need to have that backup option such that in a given year if you do not have a resident [who] wants to pursue that, you can still match a senior trainee through a traditional fellowship match.

“In vascular ESP, one pursues four years of general surgery, such that in the PGY-5 year, all rotations are in vascular surgery. It is your chief year, but really your first year of vascular fellowship. So, if you had a year where you did not have anybody slotted for that position, then presumably you could still match somebody through the formal match. Cardiothoracic is split up differently, with six months as a PGY-4 and six months as a PGY-5, then that together is considered one year of fellowship. Then they do two additional years, PGY-6 and 7, of formal cardiothoracic fellowship. That does trim it down a year, but their first year is split up, instead of contiguous like in vascular surgery.

“I do think that it does take a certain critical mass of categorical residents, because if you had a smaller program, say five categoricals, and two or three of them went into a cardiothoracic or vascular ESP, then you are down that many chief residents and that can have significant impact on your program.”

INTERVIEWEES
• Barbara L. Bass, MD, FACS, is the John F. and Carolyn Bookout Distinguished and Endowed Chair of Surgery at Methodist Hospital Research Institute, Houston, TX, and professor of surgery at Weill Cornell Medical College, New York, NY.
• John J. Ricotta, MD, FACS, is the Harold H. Hawfield Chair of Surgery and professor of surgery at Georgetown University, Washington Hospital Center, Washington, DC.
• Keith A. Delman, MD, FACS, is the general surgery residency program director and associate professor of surgery at Emory University-Winship Cancer Institute, Atlanta, GA.
• Michael A. Awad, MD, FACS, is an assistant professor of surgery, the associate dean for medical student education, program director of the general surgery residency, and director of the Institute for Surgical Education at Washington University School of Medicine, St. Louis, MO.
• Thomas H. Cogbill, MD, FACS, is the program director for the Transition to Practice Fellowship at Gunderson-Lutheran Hospital in La Crosse, WI, and the chair of the American Board of Surgery.
Transition to practice
Dr. Cogbill: “There were four major considerations. First, protection of our GS residents. We have a small program of three chiefs each year and we wanted to make sure that the fellows would not be competing for the same high-level cases as our senior residents. Second, protection of our young faculty. These faculty members are also trying to build their practices, so we wanted to make sure that the fellows would have enough cases that they wouldn’t start affecting the young faculty. Third, coordination and buy-in from other specialties. We needed orthopedics/hand, obstetrics-gynecology (OB-GYN), gastroenterology (GI), otolaryngology (ENT) on board to agree to help train a fellow. And fourth, balance autonomy with supervision.

“Our intake process for our new fellow would look like this: we would examine his or her current level of skill and experience, consider his or her career goals, and design a one-year curriculum to fit those needs. Six months would be spent in the fields of orthopedics/hand, OB-GYN, GI, ENT, and up to six months would be spent on a rural surgery rotation in community hospitals based in towns with populations of less than 10,000 people.”

What are the advantages to establishing these new tracks?

Integrated programs
Dr. Ricotta: “Exposure to vascular surgery for a number of months every year for five years has a number of advantages. The total exposure to both open and endovascular cases and the exposure to the out-patient practice of vascular surgery are much more complete with a 36-month experience through the vascular integrated program than it is in the independent program. Graduated responsibility is much more easily achieved than it is in a two-year program. Also, our vascular residents attend our conferences for five years instead of two and the breadth and depth of their experience should be anticipated to be better than a two-year program. Finally, I also saw a different source of vascular trainees to tap into. The number of general surgery residents choosing vascular has been static for about a decade. We were not going to train more vascular surgeons if we did not tap into a new source of trainees.”

FIST
Dr. Delman: “Next year, we will have flexibility options in endocrine, surgical oncology, plastics, comprehensive general surgery/global health, minimally invasive/advanced foregut, and transplant. We have always supported the concept that learners learn better when pursuing an area of interest, and teachers are more enthusiastic when the learners are engaged. As a result, I have always supported the idea of electives and have believed that, within the constraints designed by the ABS, it is nice to allow residents some opportunities to garner ‘personalized education’ that will enhance their career.”

Dr. Awad: “The ability to do the flexibility option will be very attractive and will draw some of the best applicants. Certainly in our own institution we have seen that...some of the really top-notch applicants coming to our program have come in the last few years because of the ability to do vascular or cardiothoracic ESP. Now that the word is out in this coming year when we have a flexibility option and we are really implementing it across the board, we are curious to see, with our applicant pool, whether or not that impacts their decision to come to our institution or others that offer this [option] as well.

“One-third of graduating chiefs do not feel comfortable practicing independently. I think there is a clear need for a fellowship program such as ours for the new graduate who wants to perhaps practice in a rural or underserved setting.”

—Dr. Cogbill
“The biggest challenge is in what we alluded to earlier, the resident complement of each given year.”  
—Dr. Awad

“This [option] will allow more exposure and more experience earlier, and as the name implies provide you with flexibility. In the past the Resident Review Committee (RRC) and ABS have been very strict about making sure that everyone looks the same (in fact, you get a citation by your RRC) and that all your residents should have the same rotations—that they should have similar case numbers for any given year of residency—whereas now, it allows folks to look different from each other, and that is something fairly new and exciting.”

ESP
Dr. Awad: “The benefits are that the ESPs can shorten a year of your training. In those two specialties [cardiothoracic and vascular] in particular, the residents are still eligible for general surgery boards, but if they found out that they were not able to or that they did not want to sit for their boards, it would not jeopardize their careers; they could still pursue a career in vascular surgery or cardiothoracic surgery.... We have really studied our experience with those two programs, carefully looking at the in-service training exam scores and the board passage rates, as well as their qualifications to sit for the boards, such as their case numbers and so forth. We found that they were able to meet all their case numbers even if they did one less year of general surgery, they were still doing well on the American Board of Surgery In-Service Training Exam, and they were still passing their vascular and cardiothoracic surgery board exams.”

TTP
Dr. Cogbill: “One-third of graduating chiefs do not feel comfortable practicing independently. I think there is a clear need for a fellowship program such as ours for the new graduate who wants to perhaps practice in a rural or underserved setting.”

What concerns do you have about these new programs?

Integrated programs
Dr. Bass: “There has certainly been some angst about whether the final surgeon produced from these new integrated training pathways will be as good as [those surgeons who trained under] the traditional 5+2 model, and it’s too early to tell. But the same concerns existed for plastic surgery when they began integrated programs, and now most people would agree that the final surgeon product is equivalent. There is also angst about whether medical students coming out of residency know what they’re committing to. The average general surgery resident will change their minds several times about the type of fellowship they want to pursue. But again, we had the same concerns about orthopaedics, urology, etc., in the past, and the people who go into urology stay in urology.”

What have been the challenges in implementing your new programs?

Integrated programs
Dr. Bass: “In the beginning, our general surgery night float system took vascular call, but it became clear that the volume of vascular care required at night required an extra resident in house, so we split the system and now vascular takes their own calls. We’ve had some lateral moves out of general surgery residency into the vascular residency in the beginning. One drawback is that we have probably seen a decline in interest in our own general surgery residents in going into vascular surgery, and since we no longer have a vascular fellowship, we currently have no pathway for them here if that’s what they want to do; they’ll have to go somewhere else.”
Dr. Ricotta: “The operative experience in the first three years and, in particular, on the core surgery rotations have been lower than anticipated. Part of this [equation] is the desire to “save” cases for general surgery residents, but part is because junior general surgery trainees simply do not operate much in most programs. It has also been a challenge to have our vascular faculty let junior trainees, even in vascular surgery, do major parts of vascular reconstructive operations such as carotids and distal bypasses or open aortic exposures. We are used to not allowing junior residents to do much, and this now has to change. Finally, some of the core rotations we chose have had to be altered because they did not give the residents the experience that we thought they would.”

ESP
Dr. Awad: “You have to really map out carefully the resident block or resident cohort in any given year for the next couple of years for people who are going to do the ESP so that you are not going to be short in that given year. We have to pick these folks in their third year of residency, and for CT it is fairly early in the third year when that decision is made. We have to march out our grids and look at what our resident complements will be a year from now, two years from now, and make sure there is not a significant impact there, and if there is, [determine] how we are going to mitigate that. Sometimes it works out...we have somebody coming out of the lab earlier and it just happens to march out. But we have to be very careful and that’s one of the challenges we identified early.”

TTP
Dr. Cogbill: “This is the first cohort of five programs piloting transitions to practice. There will be some leeway in the start time, it may not be in the traditional academic year, but there will be standardization in terms of total length of the fellowship (1 year).”

What additional specialties will be ripe for new tracks?

Dr. Ricotta: “I would like to see advanced minimally invasive surgery, which I see as the basis of general surgery, brought back into the core general surgery training, along with enhanced endoscopy and good training in bariatric surgery. I think that advanced surgical oncology and hepatopancreaticobiliary should probably merge.”

Dr. Bass: “The wish list would be thoracic and perhaps then, further down the line, colorectal. For thoracic, we have an existing co-managed fellowship that we would have to evolve first. It may be best for that [fellowship] to live in the 3,4,5 tailored modification [flexibility option] for a few years before fully integrating the track. Again, a lot of this depends on our community and the local resources/expertise over the next couple of years.”

Conclusion
Since 1968, surgical specialties such as urology, ENT, and orthopaedics have reduced or eliminated their time in general surgical training to accommodate increased exposure to their subspecialty. In similar fashion, there is presently a trend toward the development of alternative tracks or pathways to provide earlier or increased exposure to subspecialties and disciplines that were traditionally two- to three-year fellowships after the completion of five years of general surgery training.

There is certainly an interest in and place for early specialization in surgery today. Various early specialization routes are attracting highly competitive medical student applicants. Many of these applicants are interested in completing their training sooner, paying off medical school or undergraduate debt faster, and developing a more focused area of expertise. This
The enthusiasm for early specialization is tempered with a pragmatic understanding and mindfulness of the importance and need for broad-based general surgeons. There is also concern that increased focus on early specialization will reduce interest in general surgery. The fact of the matter is that the need for general surgeons is increasing as community-based general surgeons provide the majority of surgical care delivered in the U.S. Consequently, there is a growing need for more broadly trained surgeons capable of addressing a diverse array of surgical conditions. Concerns have also been raised regarding accountability for the surgical patient as a whole, as one job of specialists is often to determine whether a problem falls within their scope of expertise or practice. As Dr. C.M. Ferguson, former director, Massachusetts General Hospital, Boston, cautions, “as a surgeon concentrates on a single disease and becomes more specialized, he or she becomes less competent in treating other diseases. The specialist becomes disease centered rather than patient centered.”

Dr. Awad noted that much of the current training paradigm is based on tradition and history and not necessarily educational theory or practices. Early specialization is still young, and the outcomes that these new models may yield will certainly have a significant impact on future surgical training. As Walter Longo, MD, professor of surgery at Yale University School of Medicine, New Haven, CT, reaffirmed in stating the principles of surgical training, “It is the goal of general surgery residency training to produce competent surgeons who will be able to meet the challenges of innovation, new technology, difficult pathology, and above all, to be safe, compassionate doctors.”

The challenge rests in developing training paradigms that satisfy and reconcile surgical history and tradition with educational rationale, as well as with the needs of physicians, patients, and society.

REFERENCES

To help commemorate the American College of Surgeons’ (ACS) Centennial, the Bulletin of the American College of Surgeons has been reprinting articles that exemplify how the organization has responded to the pressing issues in surgery over the last century. This month’s reprint from the October 1982 issue describes the purposes of the Advanced Trauma Life Support (ATLS®) course.

This article explains why the ACS Committee on Trauma agreed to sponsor and contribute to the development of the course. The purposes of the course, the format of the program, and the national and international response to it also are described. For a more complete overview of the ATLS course, see the “Looking forward” column by ACS Executive Director David B. Hoyt, MD, FACS, on page 8. ♦
ATLS course: Assessment and management of trauma

Trauma is the leading cause of death in the United States for persons aged one to forty and is surpassed only by cancer and arteriosclerosis as the leading cause of death in all age groups. Over 50 million injuries occur annually, ten million of which are disabling. More than 150,000 trauma-related deaths occur each year, and approximately 52,000 of these are the result of vehicular crashes. The cost in human suffering and dollars is incalculable. Deaths from other serious diseases have decreased in incidence over time, but trauma mortality continues to increase.

Trauma has no respect for age, is swift to attack and slow to retreat, and holds many pitfalls for the responsible physician. When prevention fails, the physician must be sufficiently knowledgeable to meet the injured patient’s needs and reduce the mortality and morbidity from trauma.

The quality of the initial assessment and management of the severely injured patient may influence the final outcome, as it does with other critical illnesses. Trauma cuts across the entire field of medicine; thus physicians must have knowledge of a broad base of treatment principles and an appreciation of the many types of injury. An organized approach by trauma-care personnel can significantly reduce morbidity and mortality from trauma.

The American College of Surgeons was founded to improve the care of surgical patients. The ACS Committee on Trauma, believing that trauma is a surgical disease, has worked to establish standards for the care of the trauma patient. Accordingly, the Committee sponsored and contributed to the development of the Advanced Trauma Life Support (ATLS) Course. The ATLS course does not present new concepts in trauma care. It does use established treatment methods and approaches trauma care in a systematic manner, presenting to the physician a concise method of initiating a primary survey, secondary assessment, and subsequently the management of the trauma victim in the first few crucial hours.

Purpose of the course
The ATLS course is designed to teach the physician a standardized approach to caring for trauma victims within an hour after trauma occurs. Even though trauma is recognized as a surgical disease, it has been difficult to get some surgeons involved as instructors in the program. The lifesaving skills taught in the ATLS course are surgically oriented. Two of the features originally written into the program to maintain its high surgical standards are that surgeons should be on the course faculties and that organizational control should be exerted by regional and state or provincial trauma committee chairmen. It is vital that all ATLS courses be conducted in a manner that reflects credit on the College.

The educational program consists of two courses: a provider/student course and an instructor course. The provider/student course offers training in the concepts, skills, and techniques necessary for the initial management of the trauma victim through lectures, demonstrations, and a skill practicum. This format affords the physician the opportunity to practice life-saving techniques under realistic and simulated conditions.

The instructor course is a training program designed to teach physicians to become ATLS instructors. The course content emphasizes teaching methods and techniques. Training physicians how to teach the ATLS course is a way of expanding the faculty core in order to meet training needs for the provider/student courses.

Skill stations
The most valuable aspects of the ATLS course are the skill stations, where trained faculty teach “laying on of hands” techniques, and participants have the opportunity to practice the skills learned. Examples are endotracheal and nasotracheal intubation, intravenous techniques and fluid administration, tube thoracostomy, pericardiocentesis, cricothyroidotomy, peritoneal lavage, venous cutdown, use of the antishock garment, spinal immobilization, and trauma problem-solving exercises consisting of initial patient assessment and interpretation of radiographs. The surgical procedures are conducted on anesthetized and ventilated
animals prepared for surgery under conditions that meet federal standards.

Perhaps the most demanding and rewarding skills taught are those of the initial assessment and management of the multiply injured patient. An individual made up through the use of moulages to look like a multiply injured patient and coached to act out his injuries is presented to the student for assessment. The student receives a case history and appropriate physical findings. Within a specified time and in a systematic manner, the student is expected to assess and manage the simulated patient, order and interpret the appropriate laboratory tests and x-rays, and perform the proper life-saving techniques to prevent the programmed patient from succumbing to his injuries.

To complete the course successfully, the student must demonstrate to the faculty's satisfaction that he is able to perform the lifesaving techniques. Should a student not perform satisfactorily at the skill stations or on a written test, he or she is offered the opportunity to repeat portions of the course.

Response

Physician response to this educational format has been favorable. Although the College has never formally advertised the availability of the ATLS course, more than 11,000 physicians have attended over 650 courses in the past 2 1/2 years, indicating the popularity of this program. Enthusiastic response from the participants and their subsequent word-of-mouth promotion of the course have made advertising unnecessary.

The ATLS course is now being conducted in 49 states, and in Canada, Puerto Rico, the U.S. Virgin Islands, and Europe. Students trained in ATLS include the bush physicians in Alaska and physicians from Guam, Central America, England, and West Germany. Some state trauma committees are trying to have the ATLS course included in their medical school curricula. The Canadians are planning to have the ATLS manual translated into French. There has also been discussion of a Spanish translation. The ACS trauma committee's military region is considering a plan to train civilian and military physicians working in military hospitals in Europe to the ATLS method.

The ATLS course and related materials, such as slides, x-rays, patient-management problems, manuals, and tests are repeatedly revised as new procedures, trends, and methods for teaching and training physicians in trauma care become available. Information on the availability of courses can be obtained from the trauma department of the American College of Surgeons.

Irvene K. Hughes, RN
National ATLS course coordinator
ACS trauma department
Using S-CAHPS

Patient experience-of-care measures have been identified as critical for increasing the quality of care in the U.S. Expanding patients’ involvement in their own care has shown to improve health outcomes. Access to reliable, meaningful, and understandable health care information empowers patients to determine which providers offer high-value care and to make health care decisions that are aligned with their personal needs.

The National Quality Strategy (NQS), part of the Affordable Care Act (ACA), sets priorities to guide local, state, and national efforts to improve the quality of health care in the U.S. The NQS aims to provide better, more affordable care, and to make person-and family-centered care as one of its top priorities, and gives precedence to the inclusion of validated patient experience-of-care survey measures in national payment, quality improvement, and public reporting programs. This column summarizes the benefits and application of the Consumer Assessment of Healthcare Providers and Systems Surgical Care Survey (S-CAHPS).

What is the purpose of S-CAHPS?
To offer surgical patients and surgeons valid and reliable information on patient experience of care, the American College of Surgeons (ACS), in partnership with other surgical and anesthesia organizations, sponsored the development of the S-CAHPS. The S-CAHPS is a patient experience-of-care survey measure specifically tailored for surgical patients. The S-CAHPS survey was developed by working with patients to report on the full experience of surgical care, including their experience with the surgeon, the anesthesiologist, and the facility. The data gathered through S-CAHPS assist consumers in identifying a high-quality surgeon and help surgeons to better understand and ultimately improve patient care.

What does S-CAHPS measure?
In 2007, the ACS, in partnership with other surgical and anesthesia organizations, reviewed the Clinician and Group CAHPS (CG-CAHPS), which measures patients’ perceptions of care in the physician office setting, and concluded that it did not adequately capture information that is relevant to patients’ assessment of surgical care. As a result, the surgical and anesthesia groups and the Agency for Healthcare Quality and Research’s (AHRQ) CAHPS Consortium collaborated to create a CAHPS survey to assess surgical patients’ experiences and thereby identify opportunities to improve quality of care, surgical outcomes, and patient experience. CAHPS is a multi-year initiative of AHRQ to support and promote the assessment of consumers’ experiences with health care. AHRQ is an agency of the U.S. Department of Health and Human Services that seeks to improve the quality, safety, efficiency, and effectiveness of health care services by supporting research that helps people make informed decisions.

The development of the survey followed the standardized and evidence-based methods that are used in the creation of all CAHPS surveys. The S-CAHPS expands on the CG-CAHPS Survey, which focuses on primary and specialty care, by incorporating domains that are relevant to surgical care, including informed consent, anesthesia care, and postoperative follow-up. The survey assesses surgical patients’ experiences before, during, and after surgical procedures and focuses on concerns that patients identified as most important to their experience. Specifically, the S-CAHPS survey captures data on such issues as how well patients were prepared for their operation, how the surgeon communicated with them about what to expect when having an operation, and what information was provided to aid in recovery. The use of this type of standardized surgical care survey is critical in comparing individual practice against benchmarks.

To develop the S-CAHPS survey, six patient focus groups were formed to identify important quality issues inherent...
in patients’ experiences of surgical care. Nine surgical specialties—
colon-rectal, ophthalmology, general, orthopaedic, plastic, otolaryngology, thoracic, urology, and vascular—participated in the main field test. The S-CAHPS Technical Advisory Panel included 21 representatives of various surgical specialty societies.

How is S-CAHPS used to measure quality?
The S-CAHPS is the only National Quality Forum (NQF)-endorsed measure designed to assess surgical quality from the patient’s perspective. The NQF endorses quality measures through scientific and evidence-based review and a multi-stakeholder consensus development process with the aim of improving quality of care. Measures that the NQF endorses are rigorously reviewed to determine whether they meet certain criteria, including the ability to make significant gains in health care quality, scientific acceptability, usability, feasibility, and reliability. NQF endorsement confirms that the survey meets the “gold standard” in quality measurement. The NQF endorsed the S-CAHPS as a measure that includes six composite measures and one single-item measure (see Figure 1, this page). Composite measures summarize categories of experiences, thereby shortening the report, which makes it easier for consumers to understand. (Figure 2 on page 55 provides an example of a composite measure included in the S-CAHPS.)

Why should surgeons use S-CAHPS?
Surgeons can be confident that survey results will accurately assess patients’ surgical care experiences because S-CAHPS was developed in consultation with patients using the most sophisticated, valid, and reliable methodologies available in survey and measurement science. An important distinction when comparing patient experience versus patient satisfaction is that patient experience measures aspects of care that are actionable for surgical quality improvement. And because the survey instrument, protocol, analysis, and reporting are standardized, surgeons can benchmark and compare their performance with that of their peers.

Surgeons may customize the S-CAHPS survey by adding survey items that are specific to their patients and practice. However, the core survey must be used in its entirety in order to be comparable with other S-CAHPS data. The S-CAHPS survey may be used in both the inpatient and outpatient setting.

Where are CAHPS surveys being used?
The implementation of patient experience-of-care measurement is a priority for national payment and public reporting programs. The Centers for Medicare & Medicaid Services (CMS) has included the CG-CAHPS survey in the Physician Quality Reporting System (PQRS) as a measure that may be applied to the physician value-based payment modifier (VM) under the quality-tiering option for PQRS reporters, and as a measure that may be reported for large group practices on the CMS Physician Compare website. The American Board of Surgery (ABS) has also elected to participate in the PQRS Maintenance of Certification Incentive Program. In order to be eligible for the incentive payment associated with that program, a surgeon must submit data on patient

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**FIGURE 1**

<table>
<thead>
<tr>
<th>NQF-ENDORSED S-CAHPS SURVEY MEASURES</th>
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<tbody>
<tr>
<td><strong>S-CAHPS composite measures:</strong></td>
</tr>
<tr>
<td>Information to help you prepare for surgery (2 items)</td>
</tr>
<tr>
<td>How well surgeon communicates with patients before surgery (4 items)</td>
</tr>
<tr>
<td>Surgeon’s attentiveness on day of surgery (2 items)</td>
</tr>
<tr>
<td>Information to help you recover from surgery (4 items)</td>
</tr>
<tr>
<td>How well surgeon communicates with patients after surgery (4 items)</td>
</tr>
<tr>
<td>Helpful, courteous, and respectful staff at surgeon’s office (2 items)</td>
</tr>
<tr>
<td><strong>S-CAHPS single item:</strong></td>
</tr>
<tr>
<td>Rating of surgeon (1 item)</td>
</tr>
</tbody>
</table>

experience-of-care surveys. Following are descriptions of how CAHPS surveys have been incorporated into quality improvement programs.

**How does my practice use CAHPS when applying the VM?**
The Affordable Care Act (ACA) requires staged implementation of a VM to physicians enrolled in the Medicare program. The VM will be applied to specific physicians and groups of physicians starting in 2015 and to all physicians and groups of physicians by 2017. Under this program, physicians who report through PQRS have a few reporting options, including a quality-tiering option that calculates the VM based on a quality-of-care composite score and a cost composite score. For those who choose the quality-tiering option, PQRS patient experience measures are included as one of the domains of the quality composite, as illustrated in Figure 3 on page 56. Currently, CG-CAHPS is the only patient-experience-of-care measure in the PQRS program, and thus the only measure of its type that can be used to calculate the VM. The ACS has emphasized to CMS that it is critical that the measures included in the quality-tiering composite are valid, reliable, and applicable to all health care professionals, to avert the unintended consequence of misclassifying a physician’s care and unfairly affecting payment.3

**Where can surgical patients get information on patient experience of care? Is CAHPS information reported on Physician Compare?**
Physician Compare is a website that provides information to consumers to help them make better-informed health care decisions and to encourage physicians to maximize performance.4 In support of consumer choice and value-based purchasing, the ACA requires CMS to publicly report patient experience-of-care measures on Physician Compare. As early as 2014, CMS will include the names of physicians who earned a PQRS Maintenance of Certification (MOC) Payment Incentive on Physician Compare and will post performance information collected through the PQRS Group Practice Reporting Option (GPRO) Web interface, which applies to groups of 100 or more providers, and for groups that participated in the Accountable Care Organization GPRO. For similar reasons for concerns regarding the inclusion of measures that could misclassify a physician’s care and impact payment, it is critical that CMS select measures that accurately attribute patient care so that patients can select physicians who truly deliver high-value care.

**Can I report CAHPS as part of MOC?**
During 2013 and 2014, physicians who participate in PQRS have the opportunity to earn an additional 0.5 percent incentive payment through the PQRS MOC Payment Incentive Program. Physicians may participate by (1) satisfactorily submitting data on quality measures under PQRS for a 12-month reporting period, and (2) reporting “more frequently than is required” to qualify for or maintain board certification.7 As part of this program, the ABS will submit information from a patient experience-of-care survey. The ABS has applied in 2013 for CMS approval of its MOC program for the PQRS MOC Incentive and will include S-CAHPS as a patient experience-of-care survey option. For more information on the submission process, contact the ABS at http://www.absurgery.org/.

The CG-CAHPS is the first step in the implementation of patient experience-of-care measures across physician-level CMS programs. The Hospital CAHPS (H-CAHPS) has been used nationally since 2008 for facility-level patient experience of care.8 The ACS has recommended the future inclusion of S-CAHPS

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**FIGURE 2**

<table>
<thead>
<tr>
<th>NQF-ENDORSED S-CAHPS COMPOSITE</th>
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<tbody>
<tr>
<td><strong>How well surgeon communicates with patients after surgery</strong></td>
</tr>
<tr>
<td>1. After your surgery, did this surgeon listen carefully to you?</td>
</tr>
<tr>
<td>2. After your surgery, did this surgeon spend enough time with you?</td>
</tr>
<tr>
<td>3. After your surgery, did this surgeon encourage you to ask questions?</td>
</tr>
<tr>
<td>4. After your surgery, did this surgeon show respect for what you had to say?</td>
</tr>
<tr>
<td><strong>Response options:</strong> Yes, definitely; Yes, somewhat; No</td>
</tr>
</tbody>
</table>

for the VM, Physician Compare, and PQRS, stressing that the CG-CAHPS is not equally meaningful to surgical patients, and is an inappropriate patient experience-of-care survey for surgeons and surgical groups.

The S-CAHPS assesses care by focusing on aspects of surgical quality that are important to patients and for which patients are the best source of information. As patient experience-of-care measures are increasingly incorporated into public reporting and payment programs, it is especially important that the patient-centered instruments chosen accurately reflect patient experience and are meaningful to both consumers and surgeons. For more information and to access the survey, visit the ACS website at www.facs.org/ahp/cahps/index.html.
Coding for damage-control surgery

by Linda M. Barney, MD, FACS; Jenny J. Jackson, MPH, CPC; Charles D. Mabry, MD, FACS; Mark T. Savarise, MD, FACS; and Christopher K. Senkowski, MD, FACS

The American College of Surgeons (ACS) General Surgery Coding and Reimbursement Committee (GSCRC) frequently receives questions regarding appropriate coding for “damage-control laparotomy” or “damage-control surgery.” Damage-control surgery typically involves a multistage approach and is performed with the intention to first avoid or correct the lethal triad of hypothermia, acidosis, and coagulopathy before definitive management of injuries. The general concept is the expedient control of life-threatening bleeding and contamination, usually terminated as soon as possible in order for the patient to undergo correction of physiologic abnormalities due to hemorrhagic shock or sepsis. Subsequent stages of surgery address definitive management when the patient is stable and able to undergo more prolonged procedures. Initially developed by the military and major trauma centers, the concept of damage-control surgery is now widely accepted and may be applied to the chest, abdomen, or extremities.

In the initial stage of damage control, hemorrhage is stopped, contamination is controlled, and temporary wound closure methods may be employed. Vascular control may include ligating bleeding vessels, oversewing mesentery or organ injury, packing of the abdomen or chest, and even placing vascular shunts without definitive repair of blood vessels. For gastrointestinal contamination, the bowel is resected or lacerations oversewn. Restoration of bowel continuity (anastomosis) or maturation of an ostomy is performed at a later stage. The resuscitation phase is characterized by correction of physiologic abnormalities (metabolic acidosis, anemia, coagulopathy) and volume replacement, as well as provision of ventilation and vasopressor support. Massive tissue edema and concern for compartment syndrome may necessitate a temporary closure strategy.

During the subsequent phases of damage control, the surgeon completes definitive operative management in the stable patient, reestablishes gastrointestinal continuity, evaluates all areas for viability, and delineates any missed injuries. Vascular shunts are removed and long-term repairs of vascular injuries are constructed. Orthopaedic, plastic, head and neck, or other specialty-specific repairs are also performed in concert with the abdominal, chest, or vascular surgery, as necessary. With the advent of temporary abdominal closure technology, the concept of damage control also applies to the second-look laparotomy approach to ischemic bowel, severe necrotizing infections...
seen in pancreatitis, and a host of other conditions.

Because of the complexity and range of injuries treated for purposes of damage control, no single Current Procedural Terminology (CPT)* code can adequately describe all of the potential combinations and permutations of the procedures that may be required. More importantly, because the Centers for Medicare & Medicaid Services (CMS) requires that any value assigned to a CPT code represent the typical patient, any attempt to arrive at one proper value for a single damage laparotomy code would likely devalue the complexity of work performed in many instances. For procedures such as damage-control surgery, where many combinations are possible, it is always best to use a series of discrete CPT codes to both describe and value the services performed rather than attempt to lump these myriad of procedures into a single damage-control surgery CPT code.

To help Fellows and their staff properly code for damage-control surgery, the ACS GSCRC has carefully reviewed the existing CPT codes and has determined that most variations of damage-control surgery can be adequately reported with existing CPT codes. This column explains how to correctly code for damage-control approaches using the current CPT manual, which could prove useful to surgeons and their coding staff.

### CPT codes to avoid or to use

An exploratory laparotomy, whether for trauma or a medical condition, may be reported using CPT code 49000 (exploratory laparotomy, exploratory celiotomy with or without biopsy(s) (separate procedure). The term “separate procedure” refers to a complete procedure that stands alone. Therefore, CPT code 49000 refers to a complete procedure that stands alone and normally is not billed with other procedure codes. Thus, CPT code 49000 describes a laparotomy where nothing is repaired, removed, or reconstructed, for example, a negative laparotomy. This scenario would be unlikely in the face of a damage-control situation in which other CPT codes would typically be required, such as bowel repair or splenectomy.

Typically during a trauma laparotomy, multiple extensive abdominal procedures are performed. The surgeon should first select a series of CPT codes that appropriately reports the specific repairs, excisions, anastomoses, or drainage procedures performed. From those procedures, one is then selected that represents the primary or most major surgical procedure, and is reported first, with the additional procedures performed being reported with the appropriate CPT codes and modifiers (typically modifier 51 is appended).

### Temporary closure of abdomen, large extremity wounds

In many cases of damage-control surgery, the patient’s condition may require that closure of skin, subcutaneous tissue, muscle, or fascia be delayed, resulting in the abdominal wound left open and the abdominal contents protected by application of one of various mechanical techniques to maintain sterility, moisture, and heat in the abdominal cavity.

Temporary closure is typically used during the first operation but may also be used during subsequent re-explorations of the abdomen if abdominal fascia and skin closure cannot be achieved. For large contaminated extremity wounds, this temporary closure technique also may be applied. Although there is not a specific CPT code to describe a specific temporary closure technique, some codes may be used if a negative pressure wound dressing is used as part of the temporary wound closure technique. For example, use CPT 97606 (negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters, for application of this type of device as an aid to close large wounds of the abdomen, trunk, or extremities.
Reopening of a recent laparotomy

As previously discussed, damage-control surgery involves a follow-up phase in which the abdomen is re-explored and definitive procedures may be performed, for example, bowel anastomosis, packing removed, and so on. Final abdominal fascial closure will likely be part of the final procedure in a damage-control scenario. For re-exploration that involves re-opening, completely exploring, and irrigating the abdomen, where no other major procedures (for example, bowel anastomosis or resections) are performed, report CPT code 49002 (reopening of recent laparotomy). CPT code 49002 describes a procedure that may be used in instances of trauma, sepsis, or ischemic bowel surgery to examine the progress of healing, check on the integrity of an anastomosis, detect missed injuries or further ischemia, and irrigate the abdomen. In the case of damage-control surgery, the re-exploration falls within the 90-day global period of the initial procedure. Therefore, it is important to append modifier 58 (staged or related procedure by the same physician) if re-explorations of the abdomen are performed by the same surgeon (or a surgeon in the same billing group) in order to capture the correct value of this procedure. Remember, if a more extensive abdominal procedure is required in the same operative session as the re-exploration of the laparotomy, such as CPT code 44120 (enterectomy, resection of small intestine; single resection and anastomosis), then re-exploration of the laparotomy (49002) should not be used, as it is considered inherent to the more extensive procedure and is not separately reportable.

Clinical scenarios

Case 1: A 40-year-old gunshot-wound patient is taken to the operating room for a planned reopening of a recent laparotomy to examine the progress of healing.

The surgeon completes an abdominal exploration; the small bowel is examined, revealing the site of the anastomosis to be completely intact with no evidence of a leak or vascular compromise. The surgeon irrigates the abdomen and then applies vacuum-assisted wound drainage before closing the wound again. Reportable procedures include:

- 49002-58, Reopening of recent laparotomy
- 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters

Case 2: A 38-year-old motor-vehicle crash patient with multiple injuries initially undergoes a damage-control laparotomy with direct repair of torn mesenteric blood vessels, small bowel resection without reconstruction, and temporary abdominal closure using a vacuum-assisted wound drainage device.

On hospital day three, following resuscitation in the intensive care unit (ICU), the patient undergoes re-exploration of the laparotomy, debridement/resection of the previously stapled ends of the bowel, and anastomosis of the small intestine, again with temporary abdominal closure. On the fifth day, the surgeon completes an abdominal exploration to confirm anastomotic integrity, irrigates the abdomen, and applies a vacuum-assisted wound drainage as part of the progression to fascial and skin closure when the timing is appropriate. The reportable procedures include:

Day 1:
- 44120-52, Enterectomy, resection of small intestine; single resection and anastomosis
- 35221, Repair blood vessel, direct; intraabdominal
- 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s)
surface area greater than 50 square centimeters

Note that modifier 52 (reduced services, is applied to the enterectomy code because a resection, but not an anastomosis) was performed.

Day 3:
• 44120-58, Enterectomy, resection of small intestine; single resection and anastomosis

• 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters

Day 5:
• 49002-58, Reopening of recent laparotomy

• 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters

It is important to note that at some point the abdominal fascia is closed, leaving only a superficial abdominal wound. Thus, when the procedure involves only a negative pressure wound therapy device change and “active wound management” but the fascia of the abdominal cavity remains closed, or the granulation tissue of the abdominal wall is not entered to gain access to the abdomen, the appropriate code to report is 97606 plus any applicable wound debridement codes (CPT 11042–11047). You should not report CPT 49002 if the abdominal cavity is not entered.

Case 3: A 32-year-old gunshot-wound patient undergoes an initial laparotomy for repair of stomach and liver, with debridement of the liver and packing, plus placement of negative pressure dressing for temporary closure.

The next day, the patient is re-explored and the liver packing is removed with no other injuries found, but the abdomen still cannot be closed. Over the next three days the patient is managed aggressively in the ICU, including diuresis, and on day six, the patient can be returned to the operating room for final inspection, washout, debridement, and closure of the abdominal fascia.

Day 1:
• 47361, Management of liver hemorrhage; exploration of hepatic wound, extensive debridement, coagulation and/or suture, with or without packing of liver

• 43840-51, Gastrorrhopathy, suture of perforated duodenal or gastric ulcer, wound, or injury

• 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters

Day 2:
• 47362-58, Management of liver hemorrhage; re-exploration of hepatic wound for removal of packing. Note that there is a specific code for re-exploration for liver wound, and 49002 is not appropriate here.)

• 97606, Negative pressure wound therapy (eg, vacuum-assisted drainage collection), including topical application(s), wound assessment, and instruction(s) for ongoing care, per session; total wound(s) surface area greater than 50 square centimeters

Day 6:
• 49002-58, Reopening of recent laparotomy

Definitive abdomen closure
To appropriately report the delayed definitive closure of the open abdomen, the condition of the abdomen, abdominal wall, and soft tissue around the open defect will help to determine the best combination of CPT codes to report. Many abdominal wounds need some form of debridement prior to, or at the time of, definitive closure.
In some instances in which a certain amount of time has passed between the initial surgery and definitive closure of the abdomen, a wide gap between the opposing fascial edges may develop in the abdominal wall. Under these circumstances, the resultant fascial defect creates a potential hernia. If this fascial defect can be closed primarily, report CPT code 49560 (repair initial incisional or ventral hernia; reducible) which would include any isolation and dissection of fascia or a hernia sac, reduction of intraperitoneal contents, fascial repair, and soft tissue closure. Additionally, if the fascia cannot be easily or safely approximated, implantation of mesh or other prosthesis is described with the use of an add-on CPT code 49568 (implantation of mesh or other prosthesis for open incisional or ventral hernia repair or mesh for closure of debridement for necrotizing soft tissue infection. [List separately in addition to code for the incisional or ventral hernia repair.]) This add-on code applies to any type of mesh or other prosthesis—whether synthetic, biologic, or otherwise.

Other patients with complicated conditions may have lost part of their abdominal wall or have contractures of the abdominal musculature over time so that more complex procedures are needed to properly close this fascial gap. Component separation, also known as the “separation of parts operation,” to achieve closure of large fascial defects or ventral hernias is becoming more common in these complicated cases. The muscle flap code 15734 (muscle, myocutaneous, or fasciocutaneous flap; trunk) is the appropriate code to report; it is reported twice to represent the mobilization of the musculo-fascial flap on both sides and is paid at 150 percent of a unilateral separation. For a more detailed explanation on coding component separation, go to www.facs.org/ahp/pubs/tips/index.html.

For additional information on billing critical care services for severely ill or injured patients, see the June Bulletin column, “Effectively using E/M codes for trauma care” (Bull Am Coll Surg, 98(6):56–65).

The coding for damage-control surgery involves many potential CPT codes, modifiers, and concurrent coding rules. If you have additional coding questions, contact the ACS Coding Hotline at 800-227-7911 between 7:00 am and 4:00 pm Mountain time, excluding holidays, or go to www.facs.org/ahp/pubs/tips/index.html.

Editor’s note
Accurate coding is the responsibility of the provider. This summary is only intended as a resource to assist in the billing process.
Improving cancer care through quality measures:
Putting evidence to work with the CoC

by Christopher M. Pezzi, MD, FACS; Henry M. Kuerer, MD, PhD, FACS; and Heidi Nelson, MD, FACS

The emphasis on quality health care has continued to increase in recent years in the U.S. However, defining and then measuring quality fairly and appropriately can be a challenge, and keeping up with the large number of organizations involved in this evolving process can be daunting. Cancer and specifically breast cancer quality measures are being developed by a host of often jointly collaborating organizations and subsidiary groups (see Table 1, this page), and the types of quality measures for breast cancer may be grouped into at least six general categories (see Table 2, page 63).

Strong evidence has emerged from prospective, randomized trials and other high-quality clinical research in oncology, which is useful in determining the optimal treatment currently available—not just for each major cancer type, but for each stage of each disease site. This evidence serves as the basis for detailed, accessible national guidelines for cancer care, such as those that the National Comprehensive Cancer Network (NCCN) has developed.

However, inconsistencies in care persist across the country, resulting in some patients being unable to receive the proven and optimal care that would maximize their outcomes. If all patients with a cancer diagnosis had access to and were offered the evidence-based care they deserve, outcomes would improve and fewer patients would die from cancer without any additional breakthrough in treatment. To achieve this goal, the development, measurement, and reporting of quality measures in cancer care are necessary. Increasingly, insurers, accrediting bodies, the federal government (the largest insurer), and the public expect us to find ways to measure quality, report our outcomes, and minimize deviations from evidence-based care.

### Raising the bar
The American College of Surgeons (ACS) Commission on Cancer (CoC) collects more than 100 individual data points regarding the treatment of every cancer patient at more than 1,500 CoC-accredited hospitals. Certified cancer registrars collect and submit the data. CoC hospitals treat approximately 70 percent of all new patients diagnosed with cancer annually in the U.S. The data collected resides in the National Cancer Data Base (NCDB), which contains the records of more than 30 million cancer patients. Long-term follow-up also allows

### TABLE 1.
ORGANIZATIONS INVOLVED IN DEFINING AND MEASURING BREAST CANCER QUALITY CARE

- ACS CoC
- ACS National Accreditation Program of Breast Centers
- Quality Oncology Practice Initiative of the American Society of Clinical Oncology
- American Society of Breast Surgeons
- Society of Surgical Oncology
- American Society for Radiation Oncology
- NQF
- Physician Quality Reporting System of the Centers for Medicare and Medicaid Services
- PPS-Exempt Cancer Hospital Quality Reporting Program mandated under the Affordable Care Act
- American Medical Association Physician Consortium for Performance Improvement
- College of American Pathology
- National Comprehensive Cancer Network
- National Consortium of Breast Centers
The American College of Surgeons Commission on Cancer collects more than 100 individual data points regarding the treatment of every cancer patient at more than 1,500 CoC-accredited hospitals.

<table>
<thead>
<tr>
<th>TABLE 2.</th>
<th>CATEGORIES OF QUALITY MEASURE FOR BREAST CANCER</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Breast cancer risk assessment</td>
<td></td>
</tr>
<tr>
<td>• Appropriateness of care (diagnostic and imaging, pathologic, surgical, medical, radiation, and follow-up)</td>
<td></td>
</tr>
<tr>
<td>• Timeliness of breast cancer care</td>
<td></td>
</tr>
<tr>
<td>• Patient-centered satisfaction with care</td>
<td></td>
</tr>
<tr>
<td>• Treatment-related complication rates</td>
<td></td>
</tr>
<tr>
<td>• Breast cancer care outcomes (recurrence and survival)</td>
<td></td>
</tr>
</tbody>
</table>

the examination of survival rates. In addition to emerging as a powerful tool for research and national cancer control efforts, the NCDB enables the CoC to measure and report specifics of cancer care individually to CoC-accredited hospitals.

The CoC has adopted a panel of clinically proven, specific quality measures and provides this information to participating hospitals. The CoC also submits appropriate measures to the National Quality Forum (NQF) for potential endorsement. CoC quality measures currently address cancers of the breast, lung, esophagus, stomach, colon, and rectum. New measures are planned, which will address other disease sites including melanoma, sarcoma, gynecologic, and urologic. These measures will be adopted in collaboration with leaders from premier disease-site societies in each field.

**CoC quality measure categories**

Three levels of quality measures are considered: accountability, quality improvement, and surveillance. Accountability measures are supported by the highest level of medical evidence (usually prospective randomized clinical trials), indicating that it is appropriate to expect nearly all patients to be considered for the treatment. Quality improvement measures are strongly supported by the literature and are considered optimal care, but supporting evidence often is less definitive than for accountability measures. Finally, surveillance measures report patterns of care that the CoC believes hospitals should monitor, but for which no optimal pattern of care is known, and for which patterns of care may vary for legitimate reasons.

The CoC has adopted five breast cancer accountability or quality improvement measures and the NQF has endorsed four of them. These four NQF-endorsed measures are summarized in Table 3 on page 64. The fifth breast quality measure that the CoC has adopted states that patients undergoing mastectomy and having four or more positive lymph nodes should be offered radiation therapy in addition to the surgical procedure. This measure will be submitted for NQF consideration this year.

The CoC confidentially reports compliance levels with quality measures to all 1,500 accredited hospitals. However, federal law mandates public reporting of compliance with two of the NQF-endorsed breast cancer quality measures (NQF 0220 and 0559 from Table 3 on page 64) for 11 prospective payment system (PPS)-exempt cancer hospitals start-
The CoC also submits appropriate measures to the National Quality Forum for potential endorsement. CoC quality measures currently address cancers of the breast, lung, esophagus, stomach, colon, and rectum.

TABLE 3.
FOUR NQF-ENDORSED CoC BREAST CANCER MEASURES (AS OF OCTOBER 2012)*

- Post-breast conservation surgery irradiation:
  Percentage of female patients, age 18 to 69, who have their first diagnosis of breast cancer (epithelial malignancy), at American Joint Committee on Cancer (AJCC) stage I, II, or III, receiving breast conserving surgery, who receive radiation therapy within one year of diagnosis (NQF 0219)

- Adjuvant hormonal therapy:
  Percentage of female patients, age 18 and older at diagnosis, who have their first diagnosis of breast cancer (epithelial malignancy), at AJCC stage I, II, or III, whose primary tumor is progesterone or estrogen receptor-positive recommended for tamoxifen or third-generation aromatase inhibitor (considered or administered) within one year of diagnosis (NQF 0220)

- Combination chemotherapy is considered or administered within four months (120 days) of diagnosis for women under age 70 with AJCC T1c, or stage II or III hormone receptor-negative breast cancer:
  Percentage of female patients, age 18 and older at diagnosis, who have their first diagnosis of breast cancer (epithelial malignancy), at AJCC stage T1c, or stage II or III, whose primary tumor is progesterone and estrogen receptor-negative recommended for multi-agent chemotherapy (considered or administered) within four months (120 days) of diagnosis (NQF 0559)

- Needle biopsy to establish the diagnosis of cancer precedes surgical excision/resection:
  Percentage of patients presenting with AJCC stage group 0, I, II, or III disease, who undergo surgical excision/resection of a primary breast tumor, who undergo a needle biopsy to establish diagnosis of cancer preceding surgical excision/resection (NQF 0221)

Preventing surgical fires

Fires rarely occur during an operation, but the estimated 650 surgical fires that do break out every year can inflict serious damage in a matter of seconds, according to the ECRI Institute, a not-for-profit scientific research firm, Plymouth Meeting, PA.* The most common surgical fire locations are the patient airway (34 percent), face or head (28 percent), and elsewhere inside or on the patient (38 percent).† In addition to the human toll, surgical fires pose a hazard to the capabilities and long-term reputation of hospitals and ambulatory surgery centers (ASCs).

Surgical fires are among the ECRI’s top 10 technology hazards for 2013.‡ Surgical fire protection.

Fortunately, most surgical fires can be avoided when OR team members thoroughly understand the causes and dangers, follow Joint Commission standards and recommendations, and practice preventive measures.

“Fire triangle”

Surgical fires occur when three primary elements—fire, heat, and an oxidizer—combine to create a fire triangle. Many flammable materials, or fuels, are present in the operating room (OR), including gowns, hoods, towels, blankets, masks, ointments, and dressings.

The most common heat sources in the OR are electrosurgical equipment, such as electrosurgical units (ESUs) or electrocautery units, fiberoptic light sources and cables, and lasers. Lasers, ESUs, and high-speed drills can create incandescent sparks that can jump off the tissue target and ignite specific fuels.

Oxygen, room air, and nitrous oxide are examples of oxidizers. Many surgical fires erupt in oxygen-enriched environments (OEEs), where the percentage of oxygen is higher than in typical room air. An example of an OEE would be environments in which patients are receiving supplemental oxygen, particularly via a mask or nasal cannula rather than a laryngeal mask. In an OEE, materials that may not otherwise combust in room air can ignite and burn. In 74 percent of all surgical fire cases, OEE was a contributing factor.

Preventing surgical fires

Fortunately, most surgical fires can be avoided when OR team members thoroughly understand the causes and dangers, follow Joint Commission standards and recommendations, and practice preventive measures.

Several key Joint Commission Environment of Care (EC)

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A health care facility must critique its fire drills to assess and document fire safety equipment, building features, and staff response.

Standards and associated elements of performance (EPs) address fire safety. Hospitals and ASCs should review and follow these requirements to eliminate related hazards and minimize liabilities.

Among the accreditation standards are the following:

- Standard EC.02.03.01 requires that organizations manage fire risks. EPs 9 and 10 of this standard are particularly valuable, requiring an organization to have a written fire response plan that describes the specific roles of staff and licensed independent practitioners at and away from a fire’s point of origin—including when and how to sound fire alarms, contain fire and smoke, use a fire extinguisher, and evacuate to safe areas.

- Standard EC.02.03.03 mandates fire drills. EPs 1, 3, and 5 state that organizations should conduct these drills once per shift per quarter in each building defined by the Life Safety Code as a health care occupancy; each building defined by the Life Safety Code as an ambulatory health care occupancy should conduct these drills quarterly (with half of these quarterly drills classified as “unannounced”). A health care facility must critique its fire drills to assess and document fire safety equipment, building features, and staff response.

- EPs 1, 2, 3 of EC.03.01.01 mandate staff and licensed independent practitioners to be familiar with their responsibilities and roles related to the EC. They should be able to demonstrate or describe methods for eradicating and reducing physical risks in the EC, actions to take in the event of an EC incident, and how to report EC risks. In addition, organizations should pay particular attention to EC.04.01.01, which stipulates that practitioners collect information to monitor conditions in the environment. EP 1 requires that a process or processes be established for sustained monitoring, internal reporting, and examination of several types of conditions, including injuries to facility occupants; property damage; fire safety management problems, failures, and deficiencies; and problems, failures, and user errors related to management of medical/laboratory equipment or utility systems.

Tips to prevent surgical fires

The Joint Commission recommends that hospitals and ASCs take the following actions to prevent surgical fires:

- Inform staff members, such as surgeons and anesthesiologists, of the importance of controlling heat sources by adhering to laser and ESU safety practices, properly managing fuels by allowing adequate time for patient prep, and establishing guidelines for reducing oxygen concentration beneath drapes.

- Develop, implement, and test procedures to ensure that all members of the OR teams are able to respond appropriately to OR fires. (This list includes full participation in the fire drills.)

- Report to The Joint Commission, ECRI Institute, and the U.S. Food and Drug Administration any surgical fires in order to increase awareness and, most importantly, prevent fires.

For more information about preventing surgical fires, go to www.jointcommission.org/sentinel_event_alert_issue_29_preventing_surgical_fires/ to access Sentinel Event Alert Issue 29: Preventing surgical fires. ♦
Parachutes have been in use for hundreds of years and date back to China in the 1100s. The pyramid-shaped wooden frame from which a man is suspended in Leonardo da Vinci’s 1495 sketch was actually built and tested centuries later by Adrian Nicholas in the late 20th century. The modern sport of skydiving began as jumping out of hot air balloons in France near the end of the 18th century. Women started to appear on the scene later in the 19th century. Today, women account for between 15 percent and 20 percent of skydivers.*

Parachutes were used in World War I to rescue occupants of observation balloons that had emergencies, while pilots were still instructed to land in these situations. It was not until 1925 that the first emergency bailout from an airplane took place. The first troop insertion by parachute took place in World War II and is credited with turning the tide of the war against the Axis powers. After World War II, there was a surplus of military parachutes and former soldiers with the courage to jump. By 1957, the first commercial skydiving schools began to appear and the term “skydiver” was coined.*

Improving record
According to the United States Parachute Association (USPA), the sport of skydiving continues to be associated with an improved safety record. In the 1960s, close to 8,000 individuals were members of the USPA, with a fatality rate of 3.65 per 1,000 members.† Over the last five decades, the activity’s popularity has grown, and the USPA’s membership has increased to close to 34,000 in 2012; members performed more than 3 million jumps with a fatality rate of 0.64 per 1,000 members. In 2012, there were 19 skydiving fatalities and another 915 skydiving injuries. Skydiving involves inherent risk with most injuries resulting from human error. Through the efforts of the USPA and an adherence to strict safety standards, training policies, and programs, skydiving is a relatively safe sport.

To examine the occurrence of skydiving injuries in the National Trauma Data Bank® (NTDB®) research dataset for 2012, admissions medical records were searched using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM). Specifically searched was the external cause of injury code (E-code) E844.7 (other specified air transport accidents injuring parachutist in voluntary descent). A total of 133 records were found; 128 contained a hospital admission.
discharge status including 96 patients discharged to home, 18 to acute care/rehab, and 12 to skilled nursing facilities; two died. These patients were 75 percent male, on average 38.2 years of age, had an average hospital length of stay of 6.6 days, an intensive care unit length of stay of 4.2 days, an average injury severity score of 11.2, and were on the ventilator for an average of 5.4 days. A total of 22 percent went directly to the operating room, and another 20 percent went to the intensive care unit directly from the emergency department (see figure, this page).

While jumping out of a perfectly good airplane is not everyone’s idea of fun, those who are apprehensive or fearful of the jump may look to history for inspiration. In 1940, before a planned mass military training jump, several soldiers were scared due to the potential for mishap with so many departing the aircraft at once. In an effort to encourage their trepidatious comrades, a number of soldiers shouted out the name of the movie that was shown on base the night before as they exited the plane: Geronimo.

Throughout the year, we will be highlighting data through brief reports in the Bulletin. The NTDB Annual Report 2012 is available on the ACS website as a PDF file and as a PowerPoint presentation at www.ntdb.org. In addition, information regarding how to obtain NTDB data for more detailed study is available on the website. If you are interested in submitting your trauma center’s data, contact Melanie L. Neal, Manager, NTDB, at mneal@facs.org.

Acknowledgement
Statistical support for this article has been provided by Chrystal Caden-Price, data analyst, NTDB.
Susan E. Mackinnon, MD, FACS, FRCSC, receives 2013 Jacobson Innovation Award

Susan E. Mackinnon, MD, FACS, FRCSC, the Sydney M. Shoenberg, Jr., and Robert H. Shoenberg Endowed Chair and professor and chief, division of plastic and reconstructive surgery at Washington University School of Medicine, St. Louis, MO, received the 2013 Jacobson Innovation Award of the American College of Surgeons (ACS). The award was presented at a dinner held in Dr. Mackinnon’s honor June 7 at the The J.B. Murphy Memorial Auditorium Building in Chicago, IL.

The prestigious Jacobson Innovation Award, made possible through a gift from Julius H. Jacobson II, MD, FACS, and his wife Joan, New York, NY, honors living surgeons who have developed original and significant surgical techniques. Dr. Jacobson is a general vascular surgeon known for his pioneering work in the development of microsurgery. Unfortunately, Dr. and Mrs. Jacobson were unable to attend the dinner this year, but President A. Brent Eastman, MD, FACS, and Dr. Mackinnon commented on Dr. Jacobson’s many innovative contributions to surgery and expressed gratitude for the Jacobsons’ generosity to the College.

Pioneer in nerve transfer procedures

Dr. Mackinnon was selected to receive this year’s award because of her leadership in the innovative use of nerve transfer procedures for patients with devastating peripheral nerve injuries. Before Dr. Mackinnon’s pioneering work, which began in 1991, peripheral nerve injuries were generally treated with a procedure that involved repairing the nerve at the site of the injury with microsutures and expendable sensory nerves from elsewhere in the body to bridge a gap. However, this method had significant limitations, resulting in slow nerve regeneration and poor return of muscle function.

Rather than concentrating on the anatomical area of nerve injury, Dr. Mackinnon’s approach focuses on the motor endplates of the denervated muscle. This surgical technique involves working with expendable branches within major nerves near the compromised muscle. The nerve transfer procedure changes a high-level proximal injury (such as at the neck) to a more distal injury (such as at the axilla, arm, forearm, or hand) and avoids the detrimental impact of prolonged muscle denervation.

Previously, Dr. Mackinnon performed the first nerve transplant in 1988, using nerves...
Dr. Mackinnon’s groundbreaking work has produced a paradigm shift in the treatment of peripheral nerve injuries. Today surgeons use new nerve transfers to help patients around the globe.

JACOBSON INNOVATION AWARD RECIPIENTS

1994  Professor Francois Dubois, Paris, France: Laparoscopic cholecystectomy
1995  Thomas Starzl, MD, FACS, Pittsburgh, PA: Liver transplantation
1996  Joel D. Cooper, MD, FACS, St. Louis, MO: Lung transplantation and lung volume reduction surgery
1998  Juan Carlos Parodi, MD, Buenos Aires, Argentina: Treatment of arterial aneurysms, occlusive disease, and vascular injuries by using endovascular stent grafts
1999  John F. Burke, MD, FACS, Boston, MA: Development and implementation of a number of innovative techniques in burn care, including the co-development of an artificial skin (Integra™)
2000  Paul L. Tessier, MD, FACS(Hon), Boulogne, France: Development and establishment of the surgical specialty of craniofacial surgery
2001  Thomas J. Fogarty, MD, FACS, Portola Valley, CA: Design and development of industry standard minimally invasive surgical instrumentation, especially for cardiovascular surgery
2002  Michael R. Harrison, MD, FACS, San Francisco, CA: Creator of the specialty of fetal surgery and developing techniques of fetoscopy for minimally invasive fetal technology
2003  Robert H. Bartlett, MD, FACS, Ann Arbor, MI: Pioneer in the development and establishment of the first extracorporeal membrane oxygenation (ECMO) program
2004  Harry J. Buncke, MD, FACS, San Francisco, CA: Pioneer in the field of microsurgery and replantation
2005  Stanley J. Dudrick, MD, FACS, Waterbury, CT: Innovator of specialized nutrition support and a pioneer in the field of clinical nutrition
2006  Judah Folkman, MD, FACS, Boston, MA: Pioneer in the field of angiogenesis
2007  William S. Pierce, MD, FACS, Hershey, PA: Pioneer in the conception and development of mechanical circulatory support and the total artificial mechanical heart
2008  Donald L. Morton, MD, FACS, Santa Monica, CA: Pioneer in research efforts toward the development and clinical application of sentinel lymph node biopsy
2009  Bernard Fisher, MD, FACS, Pittsburgh, PA: Development and implementation of a new course for the treatment of breast cancer by proposing that it is a systemic disease that metastasizes unpredictably and would best be treated with lumpectomy combined with adjuvant chemotherapy
2010  Lazar J. Greenfield, MD, FACS, Ann Arbor, MI: Development of the Greenfield filter, a vena cava filter implanted under fluoroscopic guidance to prevent pulmonary embolism in susceptible surgical patients
2011  George Berci, MD, FACS, FRCS(Ed)(Hon), Los Angeles, CA: Pioneering contributor to the art and science of endoscopy and laparoscopy, resulting in the high level of technology used to perform many endoscopic and laparoscopic surgical procedures
2012  W. Hardy Hendren III, MD, FACS, FRCS(Ire, Eng, Glas)(Hon), Boston, MA, Developed novel reconstruction procedures for children with severe urogenital abnormalities

from a cadaver to restore feeling and movement to a boy’s injured leg. This landmark operation began a quarter-century of novel work in nerve transplantation and led to many other surgical firsts. She has transplanted branches of the median nerve at the wrist to the ulnar nerve and from the median nerve to the radial nerve—the latter for patients with difficult high radial injuries associated with fractures of the humerus. Similarly, patients with previously disastrous brachial plexus injuries at the shoulder can now be treated with transfers of a nerve branch to the motor components of the median nerve for finger flexion and pronation and the ulnar nerve for intrinsic hand function.

In 2012, Dr. Mackinnon and her surgical team at Barnes-Jewish Hospital, St. Louis, received worldwide attention for a nerve transfer procedure that successfully enabled a quadriplegic patient to regain some use of one of his hands. This procedure was the first report of using nerve transfer to restore the ability to flex the thumb and index finger after a spinal cord injury.

Dr. Mackinnon’s groundbreaking work has produced a paradigm shift in the treatment of peripheral nerve injuries. Today surgeons use new nerve transfers to help patients around the globe. The practice has significantly improved care of patients.
with previously devastating peripheral nerve injuries who now experience a return of function only dreamed of in earlier generations. Legions of patients who have experienced returned function to their injured arms and legs have benefitted from Dr. Mackinnon’s insightful approach to developing nerve transfer operations.

**Renowned educator and researcher**

Dr. Mackinnon is a renowned teacher who has assumed the interdisciplinary training of an entire generation of specialists interested in the surgical treatment of peripheral nerve injuries, including neurosurgeons, orthopaedists, and plastic surgeons. She credits her remarkable success in the field to three decades of research funding support from the Medical Research Council in Canada and the National Institutes of Health in the U.S. In recent years, she has worked on a military-funded website that shares surgical procedures in step-by-step detail—“surgical recipes,” Dr. Mackinnon says, for disseminating information to a greater number of surgeons. Dr. Mackinnon has been a prolific contributor to the medical literature, with more than 450 peer-reviewed manuscripts and 140 book chapters. She has received numerous awards, including the Royal College Medal Award in Surgery from the Royal College of Physicians and Surgeons of Canada in 1988. She has served in leadership positions for several surgical societies, most recently in 2012, as president of the American Association of Plastic Surgeons, and in 2007, she received the high honor of being elected a fellow of the Institute of Medicine of the National Academy of Sciences.

Born in Campbellton, New Brunswick, Dr. Mackinnon earned her medical degree at Queen’s University, Kingston, ON, where she performed her residency training in general surgery for three years. She completed her training in plastic surgery and a fellowship in neurosurgery research at the University of Toronto. She served as associate professor in the division of plastic surgery at the University of Toronto and served one fellowship year at Raymond Curtis Hand Center in Baltimore, MD. Dr. Mackinnon moved to the U.S. in 1991 and served as professor, division of plastic surgery, at Washington University School of Medicine, St. Louis, and has since held several medical leadership positions. ♦
Approximately 200 individuals attended a general session during the annual meeting of the Commission on Cancer (CoC), May 16–17, at the American College of Surgeons (ACS) headquarters in Chicago, IL. Daniel P. McKellar, MD, FACS, CoC Chair, clinical professor of surgery at Wright State University, Dayton, OH, and director of the cancer program at Wayne HealthCare, Greenville, OH, presided over the session, which focused on advances in care for oncology patients.

**Patient-centered medical home**
In a keynote address, John D. Sprandio, MD, described the oncology patient-centered medical home (OPCMH) model that he pioneered at Oncology Management Services, Drexel, PA. Dr. Sprandio is the chief of medical oncology and hematology and chief physician at the institution, and told the gathering that the OPCMH has enhanced quality of care and reduced costs.

Each year, Dr. Sprandio said, some 1.6 million Americans receive a cancer diagnosis, and they enter a health care environment that is expensive and fragmented. Health care’s basic equation, Dr. Sprandio said, is that the value of care equals quality divided by cost. Quality of care improves when the reliability of health care services increases, and therefore, this equation turns the focus to consistent and reliable care, with costs controlled by reducing waste. Waste in health care occurs when physicians fail to deliver and coordinate patient care, which, in turn, leads to fragmentation and overtreatment, he noted.

In 2012, U.S. health care came at a cost of $2.8 trillion, which, taken alone, would represent the world’s fifth largest economy, Dr. Sprandio said. The U.S. pays a high price for health care and outspends the rest of the industrial world by 141 percent.* Ultimately, the high cost of health care is driven by deficiencies in delivery of services, coordination of care, overuse of resources, pricing, administrative burden, and fraud. Physicians, he noted, have control only over the first three factors: delivery, coordination of care, and overuse of resources.

These shortcomings, which lead to duplication of services, are attributable in part to low adherence to clinical guidelines and cause the patient population not only to face unnecessary delays in treatment, but also to assume a secondary role in their own care.

Using evidence-based platforms, including the National Committee for Quality Assurance’s patient-centered medical home model, Dr. Sprandio and other clinicians at his institution reengineered the model to address issues of quality and cost and matters of practice accountability for all cancer care, standardized patient evaluations, multidisciplinary care plans, the support of patient navigators, and ongoing performance reviews.

“The process of improving the delivery of cancer care and reducing unnecessary use are intertwined. They are one and the same,” he said. “If improving care is the plan, then physicians own the plan,” he said. “Government can’t do it. Payors can’t do it. Regulations can’t do it. Only the people who give the care can improve the care.”

Dr. Sprandio asserted that the patient-centered medical home model defines the measurement of care and ultimately responds to patients’ needs, and noted improvements in clinical measures that the OPCMH model has produced:

- Emergency department visits by chemotherapy patients per year declined by 65 percent
- The number of patients admitted to the hospital dropped by 45 percent over a five-year period
- Length of stay for patients admitted declined by 21 percent

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“If improving care is the plan, then physicians own the plan. Government can’t do it. Payors can’t do it. Regulations can’t do it. Only the people who give the care can improve the care.”

—Dr. Sprandio

The model, he said, transforms the delivery of cancer care within the practice without the need for a costly third-party vendor.

**Updates on CoC activities**

The general session also featured updates on current CoC-related activities and programs.

Heidi Nelson, MD, FACS, Rochester, MN, Program Director of the ACS Clinical Research Program within the Alliance for Clinical Trials in Oncology, noted the group’s ongoing work to seek out new ways to connect diverse types of research efforts. “Our work is to take basic science and turn it into cancer treatment,” Dr. Nelson said.

The CoC Accreditation Committee, represented by Chair Linda W. Ferris, PhD, vice-president, oncology system service line, Centura Health, Denver, CO, continues to create new accreditation products and enhance the best practices repository. The Accreditation Committee also has identified potential new surveyors and begun to revamp the orientation these individuals receive. A patient Web portal for cancer survivors to collect information on the survivorship experience was discussed and approved for further evaluation.

Reporting on the work of the Quality Integration Committee, Chair Christopher M. Pezzi, MD, FACS, senior surgeon, director of surgical oncology, and associate program director for general surgery residence at Abington (PA) Memorial Hospital, and clinical associate professor, Drexel University College of Medicine, Philadelphia, described the expansion of quality measures that define cancer care. Part of the committee’s work is to promote the quality, breadth, and timeliness of the data provided for entry into the National Cancer Data Base (NCDB).

Speaking on behalf of the CoC-member Organization Steering Committee, Chair Virginia Vaitones, MSE, OSW-C, Rockport, ME, noted efforts to raise awareness of the CoC mission, including use of the Commission’s logo, and to support the work of the Advocacy Subcommittee. Ms. Vaitones spoke of One Voice Against Cancer Lobby Day, which took place this year in July.

Ms. Vaitones also presented the results of a 2013 survey that was sent to the executive directors of all member organizations. Among other findings, the study showed that the most prevalent reason
The enemy of quality cancer care, Dr. McKellar concluded, includes the 2 percent sequestration cuts, which the U.S. Congress imposed on March 1, and the out-of-pocket expenses required for cancer patients.

Need for advocacy

The enemy of quality cancer care, Dr. McKellar concluded, includes the 2 percent sequestration cuts, which the U.S. Congress imposed on March 1, and the out-of-pocket expenses required for cancer patients.

“We are in a nasty transition period,” Dr. McKellar said. “Hospitals under the most duress may have to stop accepting Medicare patients.”

Does the CoC have the ability to respond to external events such as these? asked a member of the audience. “No, we do not,” responded Dr. McKellar. “That’s why the CoC needs to increase its advocacy efforts nationally.”

that members stay involved in the CoC is the benefits of participation in CoC programs and initiatives. Executive directors who responded to the survey indicated that the CoC’s most vital responsibility is to work collaboratively with other member organizations, to promote the organization to CoC members, and to provide the membership with regular CoC updates.

Howard Kaufman, MD, FACS, Rush University Medical Center, Chicago, and Chair of the CoC Education Committee, noted that a number of webinars are available for educating CoC members on the newly launched ACS Cancer Programs Online Education Portal (at http://eo2.commpartners.com/users/acsnew/). The new portal allows CoC-accredited cancer program staff complimentary access to CoC webinars. The committee is actively seeking nominations for the 2014 Clinical Congress Oncology Lecturer among other activities.

Committee on Cancer Liaison Chair Phillip Y. Roland, MD, FACS, gynecologic oncologist, St. Francis Hospital and Medical Center, Hartford, CT, presented a report on activities of the volunteer State and Regional Chairs. The Cancer Liaison Physician’s (CLP) role has evolved, he said, from participation in performance monitoring to improving the quality of cancer care and shaping cancer leaders. The state chairs, he noted, also collaborate with the American Cancer Society and use NCDB data to monitor quality of care. In a recent survey, the committee learned that 87 percent of CLPs use NCDB data to monitor the quality of care and that 41 percent of the CLPs are involved in advocating for state legislation.

Former CoC Chair Stephen Edge, MD, FACS, the Alfieri Family Charitable Foundation Endowed Chair in Breast Oncology and medical director of the Breast Center at Roswell Park Cancer Institute in Buffalo, NY, and Chair of the CoC Nominating Committee, described a new process for nominating members to the CoC as ACS representatives. The CoC, he said, increasingly requires specific expertise and experience, and the current system does not identify all of the individuals who might contribute significantly to the work of the Commission.

“It’s very exciting to see the work of the Commission,” Dr. Edge said. “It’s easy to forget that this is a volunteer organization.”

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NOTE: 2013 Webcasts will be available for viewing from December 15, 2013; access expires December 31, 2014.
Residents and Associates Fellows who will be attending the 2013 American College of Surgeons (ACS) Clinical Congress, October 6–10, in Washington, DC, at the Walter E. Washington Convention Center, are invited to attend sessions designed to respond to their special interests. These programs, sponsored by the Resident and Associate Society (RAS-ACS) and the ACS Division of Education, include the following:

**Sunday, October 6**

- **Free Networking Lunch**, 11:30 am–12:30 pm
- **Meet with RAS-ACS leadership**
- **Focus on RAS-ACS—Resident Leadership Session**, 12:30–3:00 pm
  - ACS President A. Brent Eastman, MD, FACS
  - Keynote Address: Learn How to Become Involved in RAS-ACS
- **RAS Symposium**, 3:00–5:30 pm
  - Patient Rankings: Should Patient Feedback Affect Our Pay and Delivery of Care? A debate among leaders in surgery on the timely topic of patient rankings and their use in day-to-day practice

**Monday, October 7**

- **Starting Surgical Practice: Essentials for Success**, 10:00 am–5:45 pm
  - Surgical residents from all postgraduate levels

**Tuesday, October 8**

- **Spectacular Cases**, 8:00–11:15 am
  - Spectacular surgical cases that pose challenging management issues to expert panel members

**Wednesday, October 9**

- **Surgical Jeopardy**, 8:00–11:15 am
  - Based on the popular TV game show, with surgical questions and teams of residents competing to showcase their surgical knowledge

For more information on these sessions, contact RAS@facs.org and look for updates in the weekly electronic ACS NewsScope and on Facebook at https://www.facebook.com/RASACS. ♦

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**Event Hashtag:** #ACS100 identifies tweets related to the College’s centennial celebration, as well as highlights people and events from our 100-year history.

**Social media questions?**

For more assistance or if you have questions or comments about the American College of Surgeons’ social media sites, send an e-mail to socialmedia@facs.org.
College seeks Medical Director for Washington, DC, Office

The American College of Surgeons (ACS) has initiated a search process for a full-time staff position: Medical Director, Division of Advocacy and Health Policy (DAHP). The individual selected for this position will be based in the Washington, DC, Office and will work with the staff of the DAHP and other areas throughout the College.

Responsibilities of this position will include but not be limited to: attending quality, coalition, congressional, administration, and other meetings related to health care issues; supporting policy and network development; contributing to publications and committee work assignments; and serving as a staffing and budgeting resource. Only Fellows of the College will be considered for this position. View the complete job description at http://www.facs.org/ahp/employ/index.html.

Interested Fellows should send a curriculum vitae and a statement of interest by e-mail to acssearchcom@facs.org. Applications will be accepted through August 31, 2013.

(The American College of Surgeons is an Equal Opportunity/Affirmative Action Employer, AA/EEO/M/F/D/V.)

MOC Review: Essentials for Surgical Specialties to be offered at Clinical Congress

The American College of Surgeons (ACS) 2013 Clinical Congress will offer a first-time course titled Maintenance of Certification (MOC) Review: Essentials for Surgical Specialties. The course, which will take place Tuesday, October 8, 12:30–4:45 pm, will address surgical fundamentals common across the specialties, such as emergency airway management; deep vein thrombosis prophylaxis; postoperative management, including myocardial infarction recognition; pain management; and patient safety.

Course Chair Robert R. Lorenz, MD, FACS—an otolaryngologist and attending surgeon, Cleveland (OH) Clinic—and Co-Chair Robert Bahnson, MD, FACS—a urological surgeon at the Arthur G. James Cancer Hospital and Solove Research Institute and Ohio State University Medical Center, Columbus, and Chair of the American College of Surgeons Professional Association’s political action committee (ACSPA-SurgeonsPAC)—have developed a course that is designed to help prepare participants for recertification examinations and support lifelong learning and practice improvement. Sponsored by the ACS Division of Education and approved by the Program Committee, the MOC course will include continuing medical education credit that may be used for self-assessment purposes.

The College has arranged a special fee structure for this premiere course, charging nonmembers the same enrollment fee as ACS Fellows. This reduced fee applies to this course only and not to the Clinical Congress registration fee. To register for the course, go to the 2013 Clinical Congress Web page at http://www.facs.org/clincon2013/index.html.

For details on this course, contact Dr. Bahnson at Robert.Bahnson@osumc.edu, or Dr. Lorenz at lorenzr@ccf.org. For more information on the scientific sessions at the ACS 2013 Clinical Congress and to register, go to the ACS Clinical Congress Web page at http://www.facs.org/clincon2013/scientific/postgraduate.html.
**Procedure-Specific Consents available online**

Web-based standardized informed consent documents with pre- and postoperative instructions for more than 2,300 surgical procedures help ensure compliance with accreditation and regulatory requirements. The documents are embedded in a template that the American College of Surgeons (ACS) has reviewed and can be individualized to specific surgical routines.

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**NAPBC announces milestone: Accreditation of 500 breast centers**

The National Accreditation Program for Breast Centers (NAPBC) announced recently that it has accredited more than 500 breast centers, and the program has widespread distribution in 48 states, including Alaska and Hawaii, as well as Puerto Rico. This achievement comes after surpassing the 100-accredited-centers mark in 2009, a little more than one year after the NAPBC began the formal process of surveying breast centers for accreditation in September 2008.


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The 2013 dividend is made possible by the excellent claims experience of our physician insureds. The Doctors Company is strong, with 73,000 members and $4 billion in assets. This strength allows us to deliver on our promise to defend, protect, and reward the practice of good medicine.

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The Doctors Company has been sponsored by the ACS since 2002. To join your colleagues as a member of The Doctors Company, call (800) 352-0320 or visit www.thedoctors.com/ACS to learn more about the many benefits of our medical malpractice insurance program.

*Available in eligible states.
The B/G Committees have been reorganized to complement the divisions—or pillars—of the ACS. Each new pillar is designed to better engage the individual Governors in areas that are most compatible with their own interests and talents, to reduce duplication and limited work product, and to better serve the ACS mission and goals.

**AMERICAN COLLEGE OF SURGEONS PROFESSIONAL ASSOCIATION (ACSPA)**

Through June 2013, the American College of Surgeons Professional Association’s political action committee (ACSPA-SurgeonsPAC) has raised $275,000 (including personal and corporate contributions) from 875 College members and staff, with an average contribution of $314. Of this amount, $237,413.32 represent personal (hard) dollars and $37,320 are corporate (soft) dollars. So far in the 2014 election cycle, the PAC has contributed $146,000 to 37 candidates, leadership PACs, and party committees. Of this amount, 56 percent was given to Republicans and 44 percent to Democrats.

The ACSPA-SurgeonsPAC and 26 physician groups cohosted meetings with the Republican and Democrat freshman classes in February and March, respectively. The meetings provided opportunities to establish connections with new members of Congress and to foster new surgical champions.

The PAC also hosted a number of events at the 2012 Advocacy Summit, April 14–16, in Washington, DC. The political luncheon, presented April 15, featured Mike Allen, Politico reporter and author of the Politico Playbook. Mr. Allen, who offered an insider’s look at DC politics and the life of a political reporter, answered audience questions on specific upcoming races and previewed the political landscape for the 2016 presidential race. Later that evening, the PAC hosted a wine-tasting fundraiser at the National Museum for Women in the Arts. A total of 11 members of Congress, most with medical backgrounds, joined the attendees for the evening reception, which helped the ACSPA-SurgeonsPAC raise more than $56,000.

**AMERICAN COLLEGE OF SURGEONS (ACS)**

**Member Services**

A number of significant advances will enable the Board of Governors (B/G) to serve as a more vital and active component of the College. One of the B/G’s Executive Committee’s major goals this past year was to review and revise the Governors’ responsibilities to be fully aligned with ACS goals. Currently, 270 individuals serve on the ACS B/G, including 149 Governors-at-Large representing each U.S. state and Canadian province, 81 specialty Governors representing surgical associations and societies, and 40 Governors who represent countries and chapters internationally. The B/G serves as a liaison between the Board of Regents and the Board of Governors.
Fellows and as a clearinghouse for the Regents on assigned subjects and local problems.

Specific responsibilities under the new paradigm are listed in the sidebar on this page.

The B/G Committees have been reorganized to complement the divisions—or pillars—of the American College of Surgeons. The five pillars consist of:

- Member Services
- Education
- Advocacy and Health Policy
- Quality, Research, and Optimal Care
- Communications

Each new pillar is designed to better engage the individual Governors in areas that are most compatible with their own interests and talents, to reduce duplication of work, and to better serve the ACS mission and goals. The B/G Executive Committee is finalizing the implementation of the five pillars, and Executive Committee members will serve as Pillar Leads. Each pillar contains relevant workgroups, and each Governor is asked to serve on at least one workgroup.

The new structure is illustrated in the sidebars on pages 82–86.

In addition, the Board of Governors will retain the B/G Fiscal Affairs Committee, which is responsible for monitoring and providing Governor input to ACS leadership on matters of dues and finance. The B/G Secretary (currently William G. Cioffi, Jr., MD, FACS) will serve as the Chair of this Committee.

Advocacy

The ACS recently released the Surgeons and Bundled Payment Models: A Primer for Understanding Alternative Physician Payment Approaches, which summarizes the concept of bundled payment and its potential effect on surgical practices. Given the increased focus on bundling as an approach to payment reform, the ACS General Surgery Coding and Reimbursement Committee formed a workgroup to develop a process for creating clinically coherent bundled payment models and analyzing the possible opportunities and barriers. The workgroup was composed of surgeon experts in quality and coding and reimbursement, and was tasked with:

- Determining the resources and expertise necessary for developing clinically coherent surgical bundles
- Developing general principles regarding the selection, optimal structure, and function of surgical bundles
- Providing robust guidelines about which procedures

B/G: SPECIFIC RESPONSIBILITIES UNDER THE NEW PARADIGM

- Provide bi-directional communication between Board of Governors and constituents
- Participate in B/G pillars and workgroups
- Attend B/G meetings, Clinical Congress, and spring leadership conference
- Participate in Clinical Congress Convocation
- Attend Annual Business Meeting of Members
- Complete annual survey
- Attend chapter or specialty society meetings
- Provide report to chapter or specialty society and B/G Executive and Communications Committees
- Participate in local Committee on Applicants Meetings and interviews
- Promote ACS Fellowship in state and specialty societies
- Engage new initiates in ACS activities
or condition characteristics must be present to construct a usable bundle.

• Providing insight about which characteristics might make a procedure or condition a poor candidate for bundled payment

The primer also provides an overview of existing bundled payment programs at Geisinger Health System in Pennsylvania and BlueCross BlueShield of Massachusetts, as well as common issues to consider when developing a bundle. To access this members-only resource, go to www.ejacs.org, and enter your ACS-issued username and password.

On April 26, the Centers for Medicare & Medicaid Services (CMS) released the fiscal year (FY) 2014 Inpatient Prospective Payment System proposed rule, which calls for increasing average inpatient payments by 0.8 percent in FY 2014, which begins October 1, 2013. This update is contingent on hospitals reporting specified quality data set forth in the Inpatient Quality Reporting Program.

The proposed rule also would reduce the disproportionate share of hospital payments to 25 percent of the amount that Medicare currently pays. The remaining 75 percent would be distributed to hospitals based on their share of uncompensated care for Medicare patients. The proposed rule also makes a number of quality-related changes, including an increase from the current 1 percent to 2 percent in the amount of Medicare payments that hospitals would lose based on excessive readmissions under the Hospital Readmissions Reduction Program; an increase in the percent reduction of hospital Medicare payments to fund the Hospital Value-Based Purchasing Program from the current 1 percent to 1.25 percent; and reducing Medicare payments by 1 percent for hospitals that are in the highest quartile with respect to their rates of Hospital-Acquired Conditions.

Another significant proposal would revise the definition of inpatient. The new definition would presume that hospital inpatient admissions of more than one Medicare utilization day (defined by crossing two midnights) in the hospital are appropriate for Medicare patients receiving medically necessary services.

ACS staff is evaluating these and other elements of the proposed rule to determine their impact on surgery and will submit a comment letter to CMS. To read a copy of the proposed rule, go to http://www.ofr.gov/OFRUpload/OFRData/2013-10234_PI.pdf. To read fact sheets on the payment and quality aspects of the proposed rule, go to http://www.cms.gov/apps/media/fact_sheets.asp.

The “fiscal cliff” legislation that Congress passed January 1, 2013, postponed the 27 percent cut in Medicare reimbursement that was scheduled to take effect in January and froze payment at current rates through December 31, 2013. The ACS continues to lead the physician charge to eliminate the sustainable growth rate (SGR) formula. The ACS spent much of 2012 lobbying for physician payment reform, urging Congress to address the long-term implications of a broken physician payment system and its incompatibility with the provision of care. The ACS continues to urge Congress to find the political will to pass permanent repeal legislation and better serve American patients.
Efforts in the 112th Congress have helped to establish the ACS as one of the leading organizations at the table in discussions on proposals to repeal and replace the SGR. The ACS is one of the only physician organizations that testified before the three key congressional committees that have jurisdiction over the SGR: the Senate Finance, the House Energy and Commerce, and the House Ways and Means Committees. At these hearings and in ongoing meetings with members of Congress and congressional staff on Medicare physician payment reform proposals, College leaders have discussed the organization’s Value-Based Update (VBU) framework for reform.

Furthermore, the ACS has commented on drafts of a joint proposal on Medicare physician payment reform put forth by the House Ways and Means and Energy and Commerce Committees. As a first step in the reform process, the joint proposal would eliminate the SGR, a move that the College has long supported. The congressional Super Committee’s failure to reach a deal to cut spending last year resulted in automatic sequestration of billions of dollars in both defense and domestic spending, including Medicare. As a result, Medicare physician and graduate medical education payments were cut 2 percent beginning in March. The Medicare portion of these mandated cuts is expected to reduce Medicare reimbursements to physicians by 2 percent as well as a 2 percent cut to graduate medical education. Sequestration also has had a major effect on medical research. It is estimated that funding for the National Institutes of Health (NIH) will be reduced by as much as $2.4 billion (8 percent) next year, forcing the NIH to eliminate as many as 2,300 grants. The ACS has been working to increase awareness of this issue and will continue to discuss the health care-related cuts during meetings with legislators and congressional staff.

A provision of H.R. 8, the legislation that averted the fiscal cliff at the end of 2012, would allow physicians to meet Physician Quality Reporting System (PQRS) requirements through participation in specialty registries. The ACS has also expressed concerns with some of the concepts in the joint proposal and will continue to work closely with the committees as the plan is further developed.

The ACS has been working to increase awareness of this issue and will continue to discuss the health care-related cuts during meetings with legislators and congressional staff.

A provision of H.R. 8, the legislation that averted the fiscal cliff at the end of 2012, would allow physicians to meet Physician Quality Reporting System (PQRS) requirements through participation in specialty registries. The ACS was one of a few groups to lead this effort, which could encourage more hospitals to
participate in the College’s National Surgical Quality Improvement Program (ACS NSQIP®). The provision would essentially grant the Secretary of the Department of Health and Human Services the authority to deem eligible physicians as having satisfactorily submitted data on quality measures for purposes of PQRS if they participate in a qualified clinical data registry beginning in 2014.

In April, the ACS responded to a CMS request for information on the use of Clinical Quality Measures (CQMs) reported under the PQRS and Electronic Health Record (EHR) Incentive Program as outlined in the Tax Payer Relief Act. These provisions were included in the law because of programs’ inflexibility and low participation rates. The letter indicates ACS support of the expanded use of specialty registries in these programs because measures from these registries are typically more relevant, clinically appropriate, and actionable for surgeons. By allowing surgeons to participate through a source developed and run by surgeons, surgeon participation in reporting CQMs to CMS will likely increase. The College noted that the ACS has five quality registries: the Surgeon-Specific Registry, ACS NSQIP, Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program, National Cancer Data Base, and the Trauma Quality Improvement Program.

In February 2012, the ACS sent a letter to CMS in response to a request for public comment on whether CMS should change the national coverage decision (NCD) facility certification requirement for bariatric surgery for the treatment of morbid obesity. CMS solicited responses questioning whether accreditation should continue to be required for Medicare reimbursement. The NCD covers bariatric surgery procedures that the ACS or the American Society of Metabolic and Bariatric Surgeons have accredited in order to promote continuous quality improvement and patient safety. The ACS letter supported the continuation of the NCD certification requirement because it contributes to the advancement of quality and safety in bariatric surgical procedures.

In March, Rep. Diane Black (R-TN) reintroduced legislation to address a number of concerns with the current EHR incentive program. The bill, H.R. 1131, the Electronic Health Record Improvement Act would, among other things: create a hardship exemption from penalties for small practices and physicians in and near retirement to avoid workforce shortages, shorten the gap between the performance period and the application of the penalty, expand options for participation in the incentive program, improve quality measures by using specialty-led registries, and establish an appeals process before application of penalties. Twenty-one other medical organizations joined the ACS in sending a letter of support for the legislation in March. The ACS continues to seek enactment of the legislation.

Education

The 2013 ACS Clinical Congress will take place October 6–10, in Washington, DC. The Clinical Congress program is being continually transformed to address the evolving learning needs of surgeons and members of surgical teams. This year’s program addresses a range of important clinical and non-clinical topics and includes the requisite balance between review sessions and presentations of original scientific work. The program is organized into tracks that are composed of blocks and include various sessions and postgraduate courses.

In addition to opportunities to earn Category 1 continuing medical education (CME) credits, attendees may earn other CME credits for patient safety, trauma
and critical care, ethics, and palliative care. In 2013, Special Certificates for Self-Assessment Credits earned will be awarded for designated sessions and postgraduate courses.

The final 2013 Clinical Congress program is composed of 25 tracks and includes 11 Named Lectures, 102 Panel Sessions, and 28 Didactic and Skills Postgraduate Courses. A new track for rural surgery has been added, along with a special Centennial track. Two new sessions, “Ten Hot Topics in General Surgery” and “What’s New in Advocacy and Health Policy: Top Ten Advances in the Past Year,” will take place October 10. The abstract-driven Scientific Sessions include Scientific Papers, Poster Presentations, presentations in the Owen H. Wangensteen Surgical Forum Sessions, Video-based Education Sessions, and Meet-the-Expert Luncheons. In addition, several Town Hall Meetings will convene. Approximately 1,700 speakers and faculty will participate in the 2013 Clinical Congress Program.

Several new Didactic and Skills Postgraduate Courses have been included. Postgraduate courses designed to address critical needs in the changing health care environment are listed below:

- Measure Twice, Cut Once! Optimizing Surgical Systems of Care

- MOC Review: Essentials for Surgical Specialties
- Non-Technical Skills for Surgeons (NOTSS) in the Operating Room
- Behaviors in High-Performing Teams

Additional new Postgraduate Courses aimed at addressing vital topics:

- Minimally Invasive Colorectal Surgery Skills Course
- Ultrasound for Pediatric Surgeons
- Emergency Airways

Each Postgraduate Course of the 2013 Clinical Congress will offer the opportunity to earn a special Certificate of Verification based on the Division of Education’s Five-Level Verification Program. Of the Didactic Postgraduate Courses, eight will offer Level I Verification, and five will offer Level II Verification. Of the Skills Courses, two will offer Level I Verification, 10 will offer Level II Verification, and three will offer Level III Verification.

Awards will be presented for the best scientific submissions to the 2013 Clinical Congress Program. These will include 15 awards for the best abstracts submitted for the Surgical Forum. Posters of Exceptional Merit will be presented by the authors on Tuesday during the lunch break, and one will be recognized as the Best Scientific Poster.

The 2013 Clinical Congress will be supported by an enhanced Clinical Congress smartphone app, which will make it easier for attendees to manage their schedules and programs. The College is working to replace the traditional paper evaluations with electronic evaluations for Clinical Congress sessions. Thirty-five sessions have been selected for webcasting.

Surgical Education and Self-Assessment Program (SESAP®) 15 is scheduled for release at the 2013 Clinical Congress and will feature more content and questions than before. More than 825 questions and critiques will be available. Up to 90 Category 1 CME Self-Assessment Credits™ will be available and for the first time, learners will be able to claim credits after they complete each category listed in the sidebar on page 87.

Additional SESAP products are SESAP Sampler and SESAP Audio Companion, a home study program that helps surgeons maintain knowledge of clinical surgery.

SESAP Sampler is a Web-based resource consisting of monthly modules designed to enhance surgical decision making and patient care through ongoing self-assessment and review of surgical content. This product includes previously unpublished SESAP 14 questions and is available through an annual

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subscription. It provides the opportunity to earn six Category 1 CME credits annually. As of March 31, SESAP Sampler had 170 subscribers. Unpublished questions from SESAP 15 will be added beginning in October. "Fundamentals of Laparoscopic Surgery (FLS™) is a collaborative program between the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) and the College that has had a significant effect on resident education. The grant that supports dissemination and implementation of this program is coming to a close. In February 2012, the Executive Committee of the ACS Board of Regents approved publication of a Joint Statement with SAGES that recommends that all surgeons practicing laparoscopic surgery be certified through the FLS program and the institutions credentialing surgeons to perform laparoscopic surgery consider FLS certification as a requirement in their credentialing process.

Development of guidelines involves a multi-step process. Once a preliminary draft of a module has been completed, the ACS Board of Governors Best Practices Workgroup reviews the module. Suggested changes are incorporated, and the module is sent to a group of experts appointed by the Chair of the Advisory Council for General Surgery for final approval. The module is then formatted for online use.

Much progress has been made in the ACS Practice Guidelines Program over the past year. A manager has been recruited, an initial group of guidelines has been identified, and the first module, covering the management of differentiated thyroid cancer, has been completed. The ACS also has identified a vendor that will develop the distribution system for the modules. The first set of

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**SESAP 15:**

Categories available for Category 1 CME Self-Assessment Credits™

- Head and Neck
- Breast
- Alimentary Tract
- Abdomen
- Vascular System
- Endocrine
- Trauma
- Perioperative Care
- Surgical Critical Care
- Immunocompromised Patient
- Surgery Problems in Related Specialties
- Oncology
- Skin/Soft Tissue
- Anesthesia/Pain Management
- Legal and Ethics

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an analysis of the strength of the evidence supporting the recommendations, a flow diagram of a typical patient, a page summarizing the resources necessary to implement the guidelines in a surgeon’s practice, and a listing of the data necessary to determine if the guideline is working appropriately in practice. Each module concludes with a list of recommended articles for additional information. The modules are intended to be used at the point-of-care and may be accessed through an electronic device.

The ACS Practice Guidelines Program is designed to produce concise, focused modules containing practice guidelines. The modules present the parts of the guidelines that are pertinent to the practice of general surgery. Guidelines are chosen based on diagnoses that are relevant to the 20 operations that general surgeons most frequently perform. The modules consist of six to eight pages of information, including the source of the guidelines,
modules will be introduced at the 2013 Clinical Congress.

The Accreditation Council for Continuing Medical Education has approved the ACS to provide Category 1 CME credits for educational programs. The ACS also participates in a joint sponsorship program that provides CME credits to individuals participating in educational programs of other surgical organizations. In calendar year 2012, ACS accredited a total of 1,844 activities and provided more than 24,000 credits to more than 140,000 physicians. These activities included a variety of learning formats such as live conferences and courses, Internet-based activities, and journal-based CME. The Joint Sponsorship Program provides other surgical societies the opportunity to offer CME credits for their educational conferences and meetings; 140 applied for credits in 2012.

Journal of the American College of Surgeons (JACS)

From 2008 to 2012 the number of original scientific manuscripts submitted to JACS increased by 66 percent, in part because JACS now publishes papers presented at two surgical society meetings—the Southern Surgical Association and the Western Surgical Association. The increase in high-quality original scientific articles will continue with the addition of papers submitted from the New England Surgical Society meeting this fall. So far in 2013, JACS articles have been covered in diverse media ranging from US News & World Report and Medical News Today to the Harvard Gazette, and in articles distributed by UPI and Reuters news services.

The popular JACS app, free to Fellows and subscribers, offers a convenient way to read the full text of JACS articles. In the year since it was launched, the number of users has steadily increased. In May 2013, the JACS website had 8,609 visits through the app. In the first four months of 2013, JACS provided 26,666 CME credits to 1,977 individuals, averaging about 13.5 credits per person.

The JACS CME mobile-friendly website has recently launched. It was developed by the College’s Information Technology (IT) staff and allows Fellows and subscribers to take the tests for CME credit using their smartphones and iPads. The ACS anticipates the number of Fellows and subscribers who get their CME credits through JACS will increase because of this innovation.

ACs Information Technology (IT)

The College is a complex organization with a diverse set of programs and services. The IT infrastructure to support these programs contains more than 30 software applications including:

- Membership management
- E-commerce
- Accreditation/verification management (cancer, breast, trauma, bariatric, education)
- Trauma course management
- Abstract and speaker management
- Online CME

These programs are migrating to a single constituent management platform, which allows the College to share common data about members and institutions across the various programs.

Benefits of this approach include:

- When a constituent updates their data, such as contact information, it will be available across all programs.
- The single member profile will allow the College to personalize communications based on a member’s interests.
- The College will have a better view of institutional participation across its programs.
There will be economy of scale in internal software development and maintenance. The use of mobile devices among members is growing rapidly. The College is in the process of updating its Web presence to support access on mobile devices. Two technical alternatives are available to accomplish this goal—one is to develop mobile apps, the other is to develop mobile-friendly Web pages. The ACS is leaning toward initial development of mobile-friendly Web pages, where possible. The College has hired a consultant to assist the College in developing an IT strategy for the coming years. The scope includes a review of IT needs across the College.

ACS Centennial
A number of activities related to the College’s Centennial celebration will take place at the 2013 Clinical Congress.

• Flags will be flown over the Capitol building in honor of the Centennial, and one will be presented to the Board of Regents for permanent placement at ACS headquarters.

• Centennial banners will be displayed at convention hotels, on shuttle buses, at the convention center, and at 20 F Street.

• Plans are under way to display a permanent street banner in front of the Chicago headquarters building.

• A military choir has been invited to perform the Canadian and U.S. national anthems at the Opening Ceremony.

• Ads and features about the Centennial on Shuttle Vision (buses) during the Clinical Congress will continue.

• An updated timeline, website, display, and video focusing on 100 years of the ACS juxtaposed with a century of major world events and accomplishments will be displayed at the convention center.

• There will be ongoing participation by and recognition of our major exhibitor partners.

• Special “100 Years” logo will continue to be featured on College materials, including all publications, badges, signage, podiums, social invitations, menus, flyers, and letterheads.

• The celebratory reception following the Convocation at the Clinical Congress, along with a cake-cutting event on Tuesday evening after the Board of Governors Dinner, will be repeated.

• Commemorative champagne flutes will be available for toasts at luncheons, receptions, dinners, and special Centennial events.

• Continue featuring the Centennial in the Bulletin and on the website throughout the year and in the 2013 Clinical Congress News.

• Distinctive and targeted gifts will be presented to leadership, all Clinical Congress attendees, and staff, and once again the new Fellows will receive a special lapel pin with the “100 Years” logo.

• College staff are currently submitting their comments for the College’s internal publication (The Saint Clairion) on what is means to work for the College as it celebrates its 100-year birthday. Staff will also sign a giant birthday card. ✉

• Continue featuring the Centennial in the Bulletin and on the website throughout the year and in the 2013 Clinical Congress News.
Jim Henry, Incorporated has dedicated itself to providing custom, personalized service to Fellows of the American College of Surgeons for sixty years. Jim Henry salutes the College on its one hundredth anniversary and is pleased to present its centennial portfolio of commemorative gifts, awards, and accessories.

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Mexico, Federal District Chapter of the ACS institutes A. Brent Eastman Trauma Lecture

In honor of the participation of American College of Surgeons (ACS) President A. Brent Eastman, MD, FACS, at its annual meeting on February 4, the Mexico, Federal District Chapter of the ACS instituted the first “A. Brent Eastman Trauma Lecture,” which was delivered by Dr. Eastman. The lecture will be presented each year as a special event of the Committee on Trauma for Mexico. During the visit, Dr. Eastman and Elias Horta Bustillos, MD, vice-president of medical affairs of the American British Cowdray Medical Center, Mexico City, inaugurated the new Mexico, Federal District Chapter office in Mexico City (see photo, this page).

North and South Dakota Chapters present joint meeting

The North Dakota and South Dakota Chapters of the American College of Surgeons (ACS) convened in Bismarck, ND, April 28–29 for their annual meeting, the 14th consecutive joint meeting for the two state chapters. A total of 50 surgeons were in attendance, 18 of whom chartered two aircraft to make the 432-mile trip from Sioux Falls, SD, to Bismarck. Fellows from Colorado, Montana, and Canada also attended (see photo, this page).

The meeting featured more than 20 original presentations from surgeons, researchers,
and medical students. Five State Trauma Coordinators also attended, and Jerry Jurkovich, MD, FACS, director of surgery for Denver (CO) Health and Hospital Authority, was the featured presenter. He discussed the topics of trauma systems and thoracic trauma.

The North Dakota and South Dakota Chapters of the ACS contribute generously to the American College of Surgeons Professional Association’s political action committee (ACSPA-SurgeonsPAC). In fact, the North Dakota Chapter was recognized earlier this year as the chapter with the highest percentage of PAC contributions, and the South Dakota Chapter was noted as having the second highest level of PAC contributions.

An announcement was made during the meeting that the Leona Helmsley Trust has endowed both the North and South Dakota Chapters with mobile simulation vehicles. The vehicles will provide rural hospitals and emergency medical services with mobile medical simulation centers, which will help rural surgeons advance their skills.

The North Dakota and South Dakota chapters have enjoyed many years of camaraderie and success and together promote and foster progressive outcome-based surgical care. Young surgeons are encouraged to join the state chapters.

**Dr. Numann attends West Virginia Chapter annual meeting**

The West Virginia Chapter of the ACS welcomed Patricia Numann, MD, FACS, ACS Past-President, as the guest speaker at the chapter’s annual meeting May 9–11 at White Sulphur Springs, WV (see photo, this page). Dr. Numann delivered an address titled The ACS Foundation and You. Sharon Henry, MD, FACS, The Ann Scalea Professor of Trauma Surgery at the University of Maryland, Baltimore, delivered a lecture titled Starve a Cold, Feed the Critically Ill: Update in Nutritional Support.

Of particular note, Generoso Duremdes, MD, FACS, Past-President of the West Virginia Chapter, attended the annual meeting. Dr. Duremdes’ son, Gene B. Duremdes, MD, FACS, was recently elected President of the West Virginia Chapter (see photo, this page). Father and son share a surgical practice in Princeton, WV.

**Dr. Britt addresses challenges in American surgery at meeting of Philadelphia, PA, surgeons**

On May 20, more than 115 physicians were honored to hear L. D. Britt, MD, MPH, DSc(Hon), FACS, FCCM, FRCSEng(Hon), FRCSEd(Hon), FWACS(Hon), present American Surgery: The Great Challenges That Must be Addressed at the annual Joint Dinner Meeting of the ACS Metro Philadelphia Chapter and the Philadelphia Academy of Surgery (see photo, page 93). Dr. Britt is the Brickhouse Professor
of Surgery and Chairman at the Eastern Virginia Medical School, Norfolk, and Past-President of the ACS. Philadelphia surgeons have come to expect excellent presentations at this annual event, and this year was no exception.

Vermont Chapter presents annual meeting at Quechee Club
The Vermont Chapter of the ACS held its annual meeting May 9 in Quechee, VT. The chapter elected a new representative to the Commission on Cancer (CoC), Ted James, MD, FACS, attending surgeon, Fletcher Allen Health Care, Burlington; associate professor, University of Vermont, Burlington; and member, CoC Quality Integration Committee. Dr. James replaces Simon Drew, MD, FACS, attending surgeon, Southwestern Vermont Health Care, Bennington. The Vermont Chapter is grateful for Dr. Drew’s service during the last six years.

The chapter conducted the annual Surgical Resident and Medical Student presentation competition at the meeting. This year’s winners were Cristine Velazco, MD, Scottsdale, AZ, and Griffin Boll, Boston, MA, respectively.

Chapter members representing a majority of the hospitals in the state discussed plans to form a statewide ACS National Surgical Quality Improvement Program (ACS NSQIP®) collaborative. Neil Hyman, MD, FACS, a colorectal surgeon, Fletcher Allen Health Care; and Paul Penar, MD, FACS, a neurological surgeon, Fletcher Allen Health Care, led the discussion, along with guest Allen Ramsay, MD, who serves on Vermont’s Green Mountain Care Board, Montpelier. Dr. Ramsay assured chapter members that Vermont residents eagerly anticipate the Green Mountain project, the health insurance program for Vermont residents, and he suggested ideas for future direction and possible resources to cover program costs.

Illinois Chapter meeting features variety of sessions, award presentations
The Illinois Chapter of the ACS, under President Garish N. Patel, MD, FACS, hosted its 63rd Annual Scientific Meeting, June 6–8, in Springfield. Program Chair Paul E. Pacheco, MD, assembled a wide-ranging program featuring 22 presentations. The keynote speaker for the meeting was Julie A. Margenthaler, MD, FACS, associate professor of surgery, Washington University School of Medicine, St. Louis, MO, who spoke on the Changing Landscape of Breast Cancer Care: Impact of Molecular Diagnostics.

The meeting also comprised a Founder’s Competition, involving...
seven resident presentations. A highlight of the 2013 meeting was the chapter dinner at the Abraham Lincoln Presidential Museum in Springfield. The winners of the Founder’s Competition were recognized during the dinner and received cash prizes. Taking first place, and the winner of the Robert Patton, MD, FACS, Award, was Eben True, MD, University of Illinois College of Medicine (UICM) at Peoria, for Fecal Microbiota Therapy for Refractory Clostridium Difficle Colitis. Second place went to Steven Vander Naalt, MD, UICM at Peoria, for Single Incision Robotic Cholecystectomy. Third place was awarded to Zachary Osborne, University of Illinois College of Medicine at Urbana, for Obesity in Trauma: Outcomes, Injury Patterns, and Disposition Trends in Blunt Trauma.

The chapter also recognized several honorary members, including Rhonda Peebles, Past ACS Chapter Services Manager, and Carolyn Koch, Past Executive Director of the Illinois Chapter. Both Ms. Peebles and Ms. Koch were recognized for 25 years of service to the chapter. The Illinois Chapter looks forward to holding a joint meeting with the Illinois Surgical Society in Champaign, September 18–20, 2014.

New York Chapter presents first “Jeopardy” program
The New York Chapter hosted its First Annual Resident Jeopardy competition on May 18 in conjunction with the chapter’s annual Resident Paper Contest in Fishkill, NY. Six residency teams (from the State University of New York [SUNY] Upstate, Albany Medical Center, Lenox Hill, Bronx Lebanon, Montefiore Medical Center, and Harlem Hospital) participated in the competition.

The quick-witted hosts for the evening were Daniel “Alex Trebek” Bonville, MD, FACS; Samuel Robert “Answer Man” Todd, MD, FACS; and Danielle “Vanna White” Katz, MD, FACS. Two single Jeopardy rounds took place, from which the top three highest scorers moved on to a double Jeopardy round. Although all of the contestants were quick to “buzz” their answers, in the end only one team claimed the $1,000 prize and the Golden Scalpel plaque. The winner of the First Annual Resident Jeopardy competition was the Harlem Hospital department of surgery team, led by Shantanu Razdan, MD, and Paritosh Suman, MD. Second place went to the SUNY Upstate Medical Center team led by Taimur Saleem, MD, and Lisa Lai, MD. Third place went to the Lenox Hill Hospital team, which Robert Sung, MD, and Jamie Eridon-Olbrei, MD, captained.

The Bok Lee Resident Paper Contest presentations were well-received. Presentations were awarded as follows:

- The first-place winner was Aisha Shaheen, MD, from Montefiore Medical Center for her paper, Hemorrhagic Shock with Massive Resuscitation after Abdominal Trauma Is Associated with Abdominal Compartment Syndrome and Longer Lengths of Stay, Increased 30-day Mortality and Organ Failure: A Multi-Institutional Study.
- Second place went to medical student Christopher Ovanez,
Mount Sinai School of Medicine of New York University, for his paper, Novel Access Method for Extracorporeal Membrane Oxygenation in the Emergency Department: Case Report of a Patient in Cardiogenic Shock.


A series of awards were presented, as follows:

• The James G. Donald Memorial Residents Paper Award went to Yann-Leei Lee, MD, USA, for Elevated mtDNA CAMPs are Linked to Outcome in the Severely Injured and to Melissa L. Korb, MD, University of Alabama Medical Center (UAMC), Tuscaloosa, for Use of Optical Imaging to Improve the Surgical Resection of Breast Cancer.

• The William A. Maddox Cancer Award went to Brett Broussard, MD, UAMC, for Multi-targeted approaches in the treatment of Pancreatic Ductal Adenocarcinoma (PDAC).

• The Doyle Haynes Memorial Trauma Award was given to Christopher Richardson, MD, UAB, for his presentation on Transesophageal Echocardiography May Be Superior to Pulmonary Artery Catheterization in the Trauma/Burn Intensive Care Unit.

• David McKinley, MD, FACS, UAMC, received special recognition for his year of service as President of the Alabama Chapter.

Alabama and Mississippi Chapters: Incoming President Mary Hawn, MD, FACS (right), thanks Dr. McKinley for his year of service as President of the Alabama Chapter.

The Alabama and Mississippi Chapters of the ACS held their joint annual conference June 13–15 at the Grand Hotel Marriott Resort, Point Clear, AL. Surgeons from both states gathered for panel discussions and welcomed John M. Daly, MD, FACS, Second Vice-President of the ACS, who gave an update on College activities.

Ten residents provided scientific posters, representing Baptist Health System, University of Alabama at Birmingham (UAB), and the University of South Alabama (USA), Mobile.

A series of awards were presented, as follows:

• The William A. Maddox Cancer Award went to Brett Broussard, MD, UAMC, for Multi-targeted approaches in the treatment of Pancreatic Ductal Adenocarcinoma (PDAC).

The Northern California Chapter of the American College of Surgeons (ACS) held its Annual Meeting June 8 at the Marines Memorial Club and Hotel in San Francisco under the leadership and coordination of Chapter President John Garry, MD, FACS, from the University of San Francisco-(UCSF Fresno) Medical Education and Research, and Chapter Executive Director Christina McDevitt. More than 100 surgical professionals attended the meeting, including residents and medical students. Two plenary sessions were offered at the event, along with a Resident and Medical Student Competition moderated by David Cooke, MD, FACS, of the University of California (UC-Davis).

A debate between California Medical Association speaker Luther Cobb, MD, FACS, from Eureka, and Hung Ho, MD, FACS, of UC-Davis, focused on the trend toward laparoscopic cholecystectomy nationally and the indications and results for cholecystectomy, particularly for the diagnosis of biliary dyskinesia in the absence of gallstones. During the business luncheon, Krista Kaups, MD, FACS, attending surgeon, Community Regional Medical Center, and health sciences clinical professor of surgery, UCSF-Fresno, reported...
on the upcoming Chapter Legislative Day in Sacramento in support of S.B. 37, which promotes firearm safety. During the June 8 chapter meeting, Dr. Garry presented the Arthur Ellenberger Award for Excellence in State Advocacy to incoming President John Maa, MD, FACS, of UCSF-Fresno. Preparations are currently under way for an Inspiring Quality Forum to take place in Northern California in early 2014.

**Merged Southwestern Pennsylvania Chapter flourishes**

The Pittsburgh Surgical Society and the local ACS chapter merged in 2011 to create the Southwestern Pennsylvania Chapter of the ACS. New bylaws have been created, driven by the goals of promoting the art and science of surgery through educational programs and enhancing the quality of surgical care. “Both the ACS chapter and the Pittsburgh Surgical Society have long and proud traditions serving the local surgical community,” said James McCormick, DO, FACS, FASCRS, Chapter President (see photo, this page). “The mission statements of both organizations were virtually identical and most (surgeons) were members of both. It seemed logical and inevitable that we merge as we did. Consolidating leadership, administration, and fees has allowed us to bring increased benefit to more local surgeons.” The 325 chapter members hold three local meetings annually, including the fall meeting, which will take place this year in November.

**Indiana Chapter holds 60th Scientific Meeting in Chicago**

The Indiana Chapter held its 60th Annual Scientific Meeting at ACS headquarters in Chicago, IL, April 26-27. Members enjoyed two days of scientific presentations and attended a Chapter Awards Dinner at the J. B. Murphy Memorial Auditorium Building, Chicago. Resident award winners were recognized at the dinner, and former presidents of the Indiana Chapter were honored during the meeting. ACS President A. Brent Eastman, MD, FACS, was the guest lecturer for the event.

**Connecticut Chapter co-hosts ACS Inspiring Quality Forum**

On April 26, the Connecticut Chapter co-hosted the ACS Inspiring Quality Forum in Hartford, CT, along with the chapter-sponsored Connecticut Surgical Quality Collaborative (CtSQC) (see photo, this page). For full coverage of this meeting, see the July Bulletin, available at http://bulletin.facs.org/2013/07/acss-connecticut-health-care-leaders-discuss-quality-improvement-and-health-care-reform/.

**Dr. Eastman speaks at Brooklyn and Long Island Chapter Young Surgeons Dinner**

ACS President A. Brent Eastman, MD, FACS, was the keynote speaker at the Brooklyn and Long Island (BLI) Chapter Annual Young Surgeons Dinner on June 11 at the Garden City Hotel, Long Island, NY. The dinner was well-attended by chapter members and young surgeons. Dr. Eastman inspired the gathering with his speech titled The Next Hundred Years of ACS (see photo, this page).
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TRANSITION TO PRACTICE
FROM RESIDENT TO GENERAL SURGEON

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Participating Institutions
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A total of 18 ACS Health Policy Scholars participated in the Leadership Program in Health Policy and Management at Brandeis University, Waltham, MA, in June. Each scholar who participated in the weeklong intensive course is required to serve for one year in a health policy-related capacity to the College and the surgical specialty society cosponsoring the awardee.

The recipients of this year’s scholarships are as follows:
Each scholar who participated in the weeklong intensive course is required to serve for one year in a health policy-related capacity to the College and the surgical specialty society cosponsoring the awardee.

• ACS Health Policy Scholar for General Surgery: John A. Aucar, MD, FACS, EmCare Acute Care Surgery, Dallas, TX

• ACS Health Policy Scholar for General Surgery: Jo Carol Hiatt, MD, FACS, Southern California Permanente Medical Group, Pasadena

• ACS/American Association of Neurological Surgeons Health Policy Scholar: Paul L. Penar, MD, FACS, University of Vermont, Burlington

• ACS/American Academy of Otolaryngology-Head & Neck Surgery Health Policy Scholar: Robert Lorenz, MD, FACS, Cleveland Clinic Foundation, OH

• ACS/American Association for the Surgery of Trauma Health Policy Scholar: Peter Rhee, MD, MPH, FACS, University of Arizona, Tucson

• ACS/American Pediatric Surgery Association Health Policy Scholar: Steven Teich, MD, FACS, Nationwide Children’s Hospital, Columbus, OH

• ACS/American Surgical Association Health Policy Scholar: Peter W. T. Pisters, MD, FACS, M.D. Anderson Cancer Center, Houston, TX

• ACS/American Society of Breast Surgeons Health Policy Scholar: David Pearlstone, MD, FACS, Hackensack (NJ) University Medical Center

• ACS/American Society of Colon and Rectal Surgeons Health Policy Scholar: Maher A. Abbas, MD, FACS, FASCR, Southern California Permanente Medical Group, Los Angeles

• ACS/American Society of Plastic Surgeons Health Policy Scholar: C. Bob Basu, MD, MPH, FACS, Basu Plastic Surgery and Institute of Advanced Breast Reconstruction, Houston, TX

• ACS/American Society for Surgery of the Alimentary Tract Health Policy Scholar: Steven Minaglia, MD, FACS, FACOG, University of Hawaii, Honolulu

• ACS/American Urological Association Health Policy Scholar: Mark T. Edney, MD, FACS, Peninsula Regional Medical Center, Salisbury, MD

• ACS/American Urological Association Health Policy Scholar: Eugene Y. Rhee, MD, Southern California Permanente Medical Group, San Diego

• ACS/Eastern Association for the Surgery of Trauma Health Policy Scholar: Marie Crandall, MD, MPH, FACS, Northwestern University Feinberg School of Medicine, Chicago, IL

• ACS/New England Society of Surgery Health Policy Scholar: Michael P. Hirsh, MD, FACS, UMass Memorial Children’s Medical Center, Worcester

• ACS/Society for Surgery of Thoracic Surgeons Health Policy Scholar: Paul D. Robison, MD, FACS, Alexian Brothers Health System, Elk Grove Village, IL

• ACS/Society for Vascular Surgery Health Policy Scholar: Matthew W. Mell, MD, MS, FACS, Stanford (CA) University
ACS offers two-year Resident Research Scholarships

The American College of Surgeons (ACS) is offering six two-year Resident Research Scholarships to encourage surgery trainees to pursue academic careers. Eligibility for these scholarships is limited to the research projects of residents in general surgery or a surgical specialty and are supported by the generosity of Fellows, Chapters, and friends of the College.

Candidates for the scholarships, which will support research conducted from July 2014 through June 2016, must apply no later than September 3, 2013. Details regarding the Resident Research Scholarships are as follows:

• The applicant must be a Resident Member of the ACS who has completed two postdoctoral years in an accredited surgical training program in the U.S. or Canada when the scholarship is awarded on July 1, 2014, and will complete formal training after June 2016. Scholarships do not support research after completion of the chief residency year.

• Acceptance of the award requires a commitment for the two-year period it spans, July 2014 through June 2016. Priority will be given to the projects of residents involved in full-time laboratory investigation. Study outside the U.S. or Canada is permissible. Renewal of the scholarship for the second year is required and is contingent upon the acceptance of a progress report and research study protocol for the second year, which must be submitted to the Scholarships Section of the College by May 1, 2015.

• Residents may apply for these scholarships, even if they have applied for comparable scholarships offered by other organizations. If another organization offers a scholarship, fellowship, or research award to the ACS scholar, the recipient must contact the College’s Scholarships Administrator to request approval of the additional award. The Scholarships Committee reserves the right to review potentially overlapping awards and adjust its award accordingly.

• The scholarship is $30,000 per year; the total amount is to support the research of the recipient and is not to diminish or replace the usual or expected compensation or benefits of the recipient. The College will not pay indirect costs to the recipient or to the recipient’s institution.

• The scholar is expected to attend the 2016 Clinical Congress of the ACS and present a report at the Surgical Forum on his or her research and to receive a certificate at the annual meeting of the Scholarships Committee.

• The administration of the resident’s institution (such as the dean or fiscal affairs officer) must approve the application. Supporting letters from the head of the department of surgery (or the surgical specialty) and from the mentor who will be supervising the applicant’s research must be submitted. Only in exceptional circumstances will more than one scholarship be granted in a single year to applicants from the same institution.

Application forms may be obtained from the College’s website, www.facs.org, or upon request from the Scholarships Administrator, Kate Early, at kearly@facs.org or Scholarships Section, American College of Surgeons, 633 N. Saint Clair St., Chicago, IL 60611-3211.
Calendar of events

*Dates and locations subject to change. For more information on College events, visit http://www.facs.org/cmecalendar/index.html or http://web2.facs.org/ChapterMeetings.cfm

**AUGUST**

2013 ACS Comprehensive General Surgery Review Course
August 8–August 11
Chicago, IL
Contact: Ulrike Langenscheidt, ulangenscheidt@facs.org, www.facs.org

Georgia Society of the ACS
August 24–25
Grand Hyatt Atlanta, GA
Contact: Kathy D. Browning, kdb@georgiaacs.org, http://www.georgiaacs.org/

**SEPTEMBER**

Kansas Chapter
September 7–8
Overland Park, KS
Contact: Gary Caruthers, gcaruthers@kmsonline.org, http://www.kansaschapteracs.org/

Kentucky Chapter
September 10
Louisville, KY
Contact: Linda Silvestri, lsilv2@email.uky.edu

New Mexico Chapter
September 13–14
Albuquerque, NM
Contact: Gloria A. Chavez, GChavez@nmms.org

Utah Chapter
September 13–14
Little America Hotel
Salt Lake City, UT
Contact: Teresa Holdaway, email: teresa@utahmed.org

Arkansas Chapter
September 21
Little Rock, AR
Contact: Linda Clayton, lindac92@comcast.net

**OCTOBER**

ACS Clinical Congress
October 6–10
Washington, DC
www.facs.org

Iowa Chapter
October 24–25
Iowa City, IA
Contact: Sue Hyler, hylersse@q.com, http://medcom.uiowa.edu/acs/

**NOVEMBER**

Connecticut Chapter
November 1
Farmington, CT
Contact: Chris Tasik, info@CTACS.org, http://ctacs.org/

Wisconsin Surgical Society—
a Chapter of the ACS
November 8
Kohler, WI
Contact: Terry Estness, wisurgical@att.net, http://www.wisurgicalsociety.com/

Keystone Chapter
November 8
Danville, PA
Contact: Lauren Ramsey, lramsey@pamedsoc.org, http://www.keystonesurgeons.org/

Maryland Chapter
November 9
Sheraton Inner Harbor
Baltimore, MD
Contact: Jennifer Starkey, maryland@marylandfacs.org

Arizona Chapter
November 9–10
Phoenix, AZ
Contact: Joni L. Bowers, Jonib@azmed.org, http://www.azacs.org/

**FUTURE CLINICAL CONGRESSES**

2013
October 6–10
Washington, DC

2014
October 26–30
San Francisco, CA